N00102.PF.001150
NSY PORTSMOUTH
5090.3b

Baseline Interim Offshore Monitoring Report For Operable Unit 4

Volume I - Text

Portsmouth Naval Shipyard
Kittery, Maine

Engineering Field Activity Northeast
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0815

July 2002

TETRA TECH NUS, INC.

100111/P

BASELINE INTERIM OFFSHORE MONITORING REPORT FOR OPERABLE UNIT 4

FOR

PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Engineering Field Activity Northeast
Environmental Branch Code EV2
Naval Facilities Engineering Command
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CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0815

JULY 2002

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LIST OF REVISIONS

Section	Date	Revision	Description
4.0 – Data Analysis	7/31/02	Revision 1	Footnotes were added to Tables 4-7 and 4-8. Pages 4-47 through 4-56 reprinted.
6.0 – Recommendation for Proposed Sampling Season	7/31/02	Revision 1	Revised the first sentence after the table on Page 6-4. Pages 6-3 and 6-4 reprinted.
Appendix A	7/31/02	Revision 1	Revised Table A.1-1 to correct the first two columns in the table for dioxins. The rows for the reference station data were out of order. Reprinted Table A.1.1.
Appendix L	7/31/02	Revision 1	Added the response to comments on Draft Final Baseline Report to this appendix and changed the appendix cover page to reflect the RTC.

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ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
AOC	Area of Concern
AVS	Acid Volatile Sulfide
BAF	Bioaccumulation Factor
BSAF	Biota Sediment Accumulation Factor
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	Chemical of Concern
CTE	Central Tendency Exposure
CTO	Contract Task Order
CV	Coefficients of Variation
DQA	Data Quality Assessment
DQI	Data Quality Indicators
DRMO	Defense Reutilization and Marketing Office
EERA	Estuarine Ecological Risk Assessment
EFANE	Engineering Field Activity North East
FS	Feasibility Study
GPS	Global Positioning System
HMW	High Molecular Weight
IRG	Interim Remediation Goal
IRP	Installation Restoration Program
LCS	Laboratory Control Sample
LMW	Low Molecular Weight
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Navy	U.S. Department of the Navy
NOAA	National Oceanic and Atmospheric Administration
OU4	Operable Unit 4
PAH	Polycyclic Aromatic Hydrocarbon
PARCC	Precision, Accuracy, Representativeness, Comparability, and Completeness
PCB	Polychlorinated Biphenyl
PNS	Portsmouth Naval Shipyard
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance/Quality Control

RAO	Remedial Action Objective
RI	Remedial Investigation
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RPD	Relative Percent Difference
SAIC	Science Applications International Corporation
SDG	Sample Delivery Group
SEM	Simultaneously Extracted Metals
SOP	Standard Operating Procedures
SQL	Sample Quantitation Limit
TAMU	Texas A & M University
TEF	Toxic Equivalent Factor
TEQ	Toxic Equivalent Concentrations
TOC	Total Organic Carbon
TtNUS	Tetra Tech NUS, Inc.
URI	University of Rhode Island
USEPA	U.S. Environmental Protection Agency

EXECUTIVE SUMMARY

This Baseline Interim Offshore Monitoring Report for Operable Unit 4 (OU4) at Portsmouth Naval Shipyard (PNS) in Kittery, Maine was prepared for the U. S. Department of the Navy, Engineering Field Activity North East (EFANE) by Tetra Tech NUS, Inc. (TtNUS) under the Comprehensive Long-Term Environmental Action Navy (CLEAN), Contract No. N62467-94-D-0888, Contract Task Order (CTO) 815. The Baseline Report was prepared in accordance with the Interim Offshore Monitoring Plan for Operable Unit 4 (TtNUS, October 1999).

OU4 includes the areas offshore of PNS that were potentially affected by PNS onshore Installation Restoration Program (IRP) sites. OU4 is divided into six areas of concern (AOCs) based on the nearshore habitats adjacent to PNS; Clark Cove AOC, Sullivan Point AOC, DRMO Storage Yard AOC, Dry Docks AOC, Back Channel AOC, and Jamaica Cove AOC. Two onshore IRP sites, near the Dry Docks AOC, were considered sites (Sites 5 and 26) that had offshore impacts and no onshore impacts. Therefore, these two sites were included only as part of OU4. Operations at Site 5, Industrial Waste Outfalls, were discontinued in 1975. Operations for Site 26, Portable Oil/Water Tanks, have been modified so that the tanks only handle petroleum related waste and so that the tanks no longer are impacting the offshore. A decision document for Site 26 was signed in August 2001 indicating that no further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly referred to as Superfund) is necessary and therefore, Site 26 is no longer an IRP site (and no longer included in OU4) (Navy, August 2001). Previous releases from Sites 5 and 26 to the offshore area are being addressed as part of OU4.

In May 1999 an Interim Record of Decision (ROD) for OU4 (Navy, May 1999) was signed requiring the Navy to conduct monitoring in the offshore area of PNS in the interim period before a final remedy is selected and implemented for OU4. The Navy determined that interim monitoring was warranted for OU4 to provide current data on the offshore areas to determine whether onshore remedial actions, natural process, and/or other sources have affected the chemical concentrations in OU4. At the time a final remedial action for OU4 is implemented, interim monitoring will be discontinued. However, the interim monitoring program was developed to provide a basis for any monitoring program that may be required as part of the final action for OU4.

The Interim Offshore Monitoring Plan (TtNUS, October 1999) was prepared as required by the Interim ROD to present the monitoring program that would be conducted as the interim action. In accordance with this monitoring plan, sampling is being conducted at 14 monitoring stations around PNS and four reference stations in the Great Bay Estuary. Samples are collected of the surficial sediment (0 to 10 cm) to determine whether interim remedial action objectives (RAOs) are being met and of the mussel and

juvenile lobster tissue to determine the comparability between sediment and biota concentrations. The first four rounds of sampling (first two years of monitoring) are the baseline rounds and data for these rounds were used for this baseline report. The four rounds of sampling were conducted between September 1999 and May 2001 as follows: Round 1 in early September 1999, Round 2 in early May 2000, Round 3 in late August 2000, and Round 4 in early May 2001. A data package for each round was prepared and includes a summary of sampling activities, the analytical data, and field notes for the round (TtNUS, February 2000, October 2000, January 2001, and September 2001).

The main objective of this baseline report, as required by the Interim Offshore Monitoring Plan, is to recommend the appropriate season for future monitoring rounds. The report also provides a comparison of chemical concentrations in the sediment to the interim remediation goals (IRGs), evaluation of the need for continued juvenile lobster sampling, and risk evaluation of dioxin data. Several additional evaluations are also included in this report. Biota sediment accumulation factors (BSAFs) for organic chemicals and biota accumulation factors (BAFs) for inorganic chemicals were calculated for mussels and juvenile lobsters. Chemical concentrations in the sediment and mussels from the monitoring stations were compared to historical concentrations. Chemical concentrations in sediment were compared between habitat types (saltmarsh versus eelgrass beds) and areas (intertidal versus subtidal) at the monitoring stations and reference stations. The coefficients of variation (CVs) of the sediment concentrations at each of the AOCs were calculated for comparison to historic values. Finally, an outlier analysis was conducted to determine if any data should be removed from the reference data set, and a statistical comparison was made between the monitoring station data and the reference station data to determine if chemical concentrations were statistically elevated at the monitoring stations.

The first four rounds of data were evaluated to determine the appropriate season for subsequent monitoring rounds. No significant seasonal differences were identified based on the data collected during the spring (Rounds 2 and 4) or late summer (Rounds 1 and 3) rounds that would change the outcome of the other data evaluations completed in this report. Samples for round 5 (Year 3) were collected in the late summer time-frame because the outcome of the evaluation of seasonal differences was not known at that time. Based on the overall seasonal evaluation, the Navy recommends continuing to collect future rounds of samples in the late summer.

The ecologically-based IRGs are the sediment chemical concentrations that will be used (as part of the 5-year review) to determine whether the interim RAOs are being met. Using the methodology provided in the Interim Offshore Monitoring Plan, IRGs for OU4 were developed for the chemicals that are potentially causing the most offshore impact [copper, nickel, acenaphthylene, anthracene, fluorene, and high molecular weight polycyclic aromatic hydrocarbons (HMW PAHs)]. Sediment concentrations were compared to the IRGs to provide a preliminary indication of monitoring stations showing potential offshore

impacts. Chemical concentration trends from Rounds 1 through 6 in comparison to the IRGs will be used as part of the 5-year review to determine potential offshore adverse impacts (i.e., whether the interim RAOs are being met); however, based on comparison of the first four rounds of data to the IRGs the following were noted:

- PAH concentrations exceeded IRGs at monitoring station M01. This station is located near the Gate 1 bridge, offshore of Site 34, Former Oil Gasification Plant. Investigation of Site 34 should consider whether PAHs are present at the site that may be migrating to the offshore area.

- Metal (particularly copper) concentrations exceeded IRGs at monitoring stations M03 and M04. These stations are located offshore of Site 32, Topeka Pier Site, where foundry slag with high concentrations of copper was found in the intertidal area. The current investigation of Site 32 will consider potential sources onshore and in the intertidal area for the metals.

- The metals concentrations at monitoring station M11 exceed IRGs. Monitoring station M11 is located offshore of the DRMO, where erosion of metals contaminated soil at the DRMO (Site 6) was identified in 1999 and emergency remedial activities were conducted to prevent further erosion of contaminants.

- PAH concentrations at monitoring stations M12 and M13 exceed IRGs. These monitoring stations are within in the Dry Dock AOC. This AOC is located in the main channel of the Piscataqua River and includes the dry docks (location of M13) and the offshore of the dry docks (location of M12). The elevated levels of PAHs at these locations may be caused by a combination of sources that may or may not be related to PNS including; potential migration or transport from IR sites, discharges from barges/boats, storm water outfalls located in the vicinity of the shipyard, and dock-side activities, to name a few.

An evaluation of juvenile lobster data was completed per the Interim Offshore Monitoring Plan to determine if juvenile lobsters should be collected as part of future monitoring rounds. Continued sampling of juvenile lobsters is not warranted for OU4 for several reasons discussed below. Most of the chemicals in the juvenile lobsters at the majority of the monitoring stations were detected at similar levels to those found at reference stations. This indicates that the juvenile lobsters were not assimilating chemicals associated with PNS to any large degree, except in a limited instances. Also, continued monitoring of juvenile lobsters is not expected to improve the low correlation between sediment concentrations and juvenile lobster concentrations observed based on the Rounds 1 through 4 data. Therefore, monitoring of chemical concentrations in juvenile lobsters is not providing the Navy with any additional information that is not already being obtained by collecting sediment and mussel samples.

Dioxin risks were also evaluated for the monitoring stations selected for dioxin analysis. Monitoring stations (M07 through M12) potentially impacted by IRP Sites 8 and 29 were selected for dioxin analysis because these sites were identified in the Interim Offshore Monitoring Plan as sites where dioxin may be a potential chemical of concern. Site 29 is where an incinerator site was located and ash from Site 29 was reportedly disposed at Site 8. The risk evaluation of the offshore dioxin data included comparison of the dioxin data to human health and ecological risk-based screening levels. The dioxin concentrations in sediment, mussel, and juvenile lobster collected from the monitoring stations do not appear to be at levels that would result in unacceptable risks to human or ecological receptors. It is recommended that an evaluation for discontinuing dioxin analysis, as part of the interim offshore monitoring program, be completed as part of the 5-Year Review Report.

BSAFs and BAFs were calculated for mussels using data from all four rounds of the interim offshore monitoring program. The mean BSAFs for mussels at the monitoring stations were 0.07 for PAHs, 1.18 for dioxins, 1.26 for PCBs, and 3.9 for pesticides. The BAFs for mussels at the monitoring stations were less than 1.0 for all the inorganic chemicals except cadmium, mercury, and silver. These values were similar to those found in the literature for mussels and other bottom dwelling aquatic organisms.

Sediment and mussel samples were collected by the Navy in 1991 and 1993 to support the Estuarine Ecological Risk Assessment (EERA) report (NCCOSC, 2000). The Navy also collected sediment samples in 1996 and 1997 (TtNUS, August 2000) as part of a sediment/seep evaluation. Many of the samples collected as part of the interim offshore monitoring program were collected near these historic samples. Therefore, an evaluation was conducted to identify any gross differences among the chemical concentrations between the current sampling program and historical data. The overall conclusion of the evaluation was that the chemical concentrations in the sediment and mussel samples were similar between the sampling events, with some exceptions.

The comparison of chemical concentrations in the sediment between different habitats (i.e., saltmarsh and eelgrass bed) and different areas (i.e., subtidal versus intertidal) was conducted to determine if there were any differences in chemical concentrations between the habitats or areas. Several observations were made from the data. The intertidal areas at the monitoring stations appeared to be more contaminated than the subtidal areas, which may be occurring because the intertidal areas are closer to onshore source areas. The sediment concentrations in the eelgrass beds were greater than the concentrations in the saltmarshes and may be caused by the locations of the saltmarshes (at stations with low overall chemical concentrations). Finally, the saltmarsh samples had lower chemical concentrations than the intertidal area as a whole, whereas the eelgrass samples had similar chemical concentrations to the subtidal area as a whole. Comparisons of the habitat data sets will be performed as

part of the 5-year review to determine whether the results are statistically different among the habitats since some differences in mean concentrations and standard deviations were identified. If such differences are found, the impact on the interim monitoring program (e.g., use of weighting of habitat coverage in calculating the station averages) may be evaluated as part of the 5-year review report.

The CV is a measure of how much the analytical results vary in the data set. The CV results from the historic samples were used to determine how many sediment samples would need to be collected at each monitoring station. For the Rounds 1 through 4 data, most of the average CVs for each of the parameter groups for each of the AOCs were similar to the CVs from the historic data. The CVs were higher for all parameter groups in the Back Channel and for the pesticide/PCB parameter group at all the AOCs. Most of the average CVs for the PAHs and inorganic chemicals were similar to the historic CVs. Dioxins were not analyzed in the historic samples; however, their CVs were similar to those for pesticides/PCBs. Although the average CVs for the pesticides/PCBs and dioxins were higher than the 0.5 value that was used to determine the number of locations per monitoring station, PCBs were not limiting COCs and pesticides and dioxins are not considered to be COCs for OU4. Rounds 5 and 6 samples need to be evaluated to determine if additional samples should be collected at select monitoring stations.

An analysis was conducted to determine if there were any outliers that would warrant removal of data from the reference station data set. This evaluation was only conducted for chemicals with IRGs. An analysis also was conducted to determine if the total organic carbon (TOC) and grain size for each AOC were similar. As was discussed in the Draft Interim Offshore Monitoring Report for OU 4 (TtNUS, December 2001) one mussel sample (OU4-MU-R02-400A) from one of the four reference stations had elevated levels of PAHs in the third sampling round. These levels were identified as statistical outliers in that report. It was determined through chemical reanalysis of the sample by the laboratory that the mussel tissue from monitoring station M13 was likely used for the analysis of the reference mussel. See attachment to the April 2, 2002 conference call minutes in Appendix L. Based on the April 2, 2002 conference call, the Navy, regulators, and SAPL agreed that sample OU4-MU-R02-400A should be removed from the data set, but not replaced with the reanalysis results since the sample was past the analytical hold time. Therefore, this sample was removed from all of the data tables, figures, and evaluations in this report. Other chemicals identified as statistical outliers in the sediment and mussels data sets were not detected at levels that warrant removal of the samples or parameters from the data set. No chemicals were identified as statistical outliers in the juvenile lobster data set. TOC levels and grain size distributions were similar between AOCs, thus different IRGs do not need to be calculated on an individual AOC basis.

Finally, a statistical evaluation of the chemical concentrations in the sediment, mussel, and juvenile lobster samples was conducted to determine if the chemical concentrations in the samples from the

monitoring stations were elevated when compared to the samples from the reference stations. This evaluation was only conducted for chemicals with IRGs. The evaluation of the combined monitoring station data set showed that overall levels of copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs in sediment were elevated in the monitoring stations versus the reference stations. However, only the overall levels of copper and nickel in mussels, and no chemicals in juvenile lobsters were elevated in the monitoring stations versus the reference stations.

An evaluation of each monitoring station was then conducted to determine which monitoring stations had elevated levels of chemicals. At least three chemicals were statistically elevated in the sediment of each monitoring station compared to the reference stations. For mussels, the elevations were much more sporadic. No chemicals were elevated in the juvenile lobsters. In summary, the results of the evaluation indicate that monitoring of chemical concentrations in sediment as the primary indicator of contamination is appropriate. The chemical concentrations in sediment were more often elevated in the monitoring stations versus the reference stations, compared to chemical concentrations in mussels or juvenile lobsters. Therefore, it is important to monitor the sediments to determine if the levels of chemicals in the sediment are causing an unacceptable risk. The evaluation also showed that monitoring the chemicals in mussels as a secondary indicator provides valuable information on the bioavailability of the chemicals. The evaluation indicated that the monitoring juvenile lobsters as a third indicator is not providing useful information for monitoring purposes. None of the chemicals that were evaluated were detected at statistically elevated concentrations in the juvenile lobsters at the monitoring stations.

Appendix L contains the response to comments and conference call minutes for the comment resolution. In summary, the major decisions that were agreed to by the Navy, regulators, and SAPL are as follows:

- Sediment samples in future rounds will not be analyzed for acid volatile sulfides (AVS) or simultaneously extracted metals (SEM).
- The juvenile lobster sampling will be discontinued in future rounds.
- Sampling will be conducted in late summer in future rounds.

1.0 INTRODUCTION

This Baseline Interim Offshore Monitoring Report for Operable Unit 4 (OU4) at Portsmouth Naval Shipyard (PNS) in Kittery, Maine was prepared for the U.S. Department of Navy (Navy), Engineering Field Activity North East (EFANE) by Tetra Tech NUS, Inc. (TtNUS) under the Comprehensive Long-Term Environmental Action Navy (CLEAN), Contract Number N62467-94-D-0888, Contract Task Order (CTO) 815. The baseline report was prepared in accordance with the Interim Offshore Monitoring Plan for Operable Unit 4 (TtNUS, October 1999).

This section provides background information on PNS, OU4, and the interim offshore monitoring program for OU4. The objectives and scope of the report and report organization are also provided.

1.1 BACKGROUND INFORMATION

The facility description and history, OU4 description and history, and summary of the interim offshore monitoring program are provided in this section.

1.1.1 Facility Description and History

PNS is located on an island in the Piscataqua River, referred to on National Oceanic and Atmospheric Administration (NOAA) nautical charts as Seavey Island, with the eastern tip given the name Jamaica Island. Attached by a rock causeway is Clark's Island, which is not industrialized. The Piscataqua River is a tidal estuary that forms the southern boundary between Maine and New Hampshire. PNS is located at the mouth of the Great Bay Estuary (commonly referred to as Portsmouth Harbor). The locations of the Great Bay Estuary and PNS are shown on Figure 1-1.

PNS is engaged in the conversion, overhaul, and repair of submarines for the Navy. The long history of shipbuilding in Portsmouth Harbor dates back to 1690, when the first warship launched in North America, the Falkland, was built. PNS was first established as a government facility in 1800, and it served as a repair and building facility for ships during the Civil War. The first government-built submarine was designed and constructed at PNS during World War I. A large number of submarines have been designed, constructed, and repaired at this facility from 1917 to the present. PNS continues to service submarines as its primary military focus.

1.1.2 OU4 Description and History

OU4 is divided into six areas of concern (AOCs). These areas were identified in the Estuarine Ecological Risk Assessment (EERA) Report (NCCOSC, 2000) as nearshore habitats adjacent to PNS that may have

been affected by onshore Installation Restoration Program (IRP) sites. A conceptual model developed as part of the risk assessment was used to identify the AOCs. These areas are referred to as Clark Cove AOC, Sullivan Point AOC, DRMO Storage Yard AOC, Dry Docks AOC, Back Channel AOC, and Jamaica Cove AOC. The AOC and IRP site locations are shown on Figure 1-2. Table 1-1 provides a brief description of the IRP sites and the associated OU designation.

Two IRP sites, Site 5, Industrial Waste Outfalls, and Site 26, Portable Oil/Water Tanks, were considered sites that had offshore impacts and no onshore impacts. Therefore, these two sites were included only as part of OU4. Both sites are located within the Dry Docks AOC and any impacts that Sites 5 and 26 may have had on the offshore will be addressed as part of the Dry Dock AOC. Site 5 consisted of numerous discharge points along the Piscataqua River at the western end of PNS in the dry dock area. The outfalls were used to discharge liquid industrial wastes before the Industrial Waste Treatment Plan was constructed. The outfalls are believed to have operated from 1945 to 1975. The wastewaters may have contained heavy metals (mercury, lead, cadmium, chromium, copper, and zinc), oils and grease, and polychlorinated biphenyls (PCBs). In 1978, dredging was conducted offshore in the vicinity of the outfalls (in the berth areas by the dry docks) and maintenance dredging is conducted periodically in the berth areas.

Site 26 only consists of portable oil/water tanks. Currently, the tanks are used for petroleum waste storage before the petroleum waste is disposed at a facility off the shipyard (in accordance with the appropriate waste management and disposal regulations). Before 1980, acidic and alkaline cleaning solutions may have been included in the tanks. Before 1991, there were numerous spills during filling of the tanks that reportedly went into the adjacent the Piscataqua River near the dry docks. However, because of modifications in tank-filling operations and equipment improvement, only two spill incidences for Site 26 have occurred since 1991, neither of which reportedly entered the adjacent surface water. In August 2001, a decision document was signed indicating that no further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 is necessary for Site 26 therefore, Site 26 is no longer included in OU4. However, previous releases from Site 26 to the offshore area are being addressed as part of OU4 (Navy, August 2001).

The offshore AOCs at PNS include pelagic, channel bottom/subtidal, eelgrass, intertidal mudflat, rocky intertidal, and salt marsh habitats. The pelagic habitat around PNS is the open water of the Piscataqua River, which includes the back channel of the river, Jamaica Cove, and Clark Cove. The channel bottom/subtidal habitat is the bottom of the pelagic area and includes hard-bottom areas and fine-grained depositional areas. The hard-bottom areas occur in regions experiencing tidal scouring and active erosion such as by the areas of the shipyard in the main flow of the Piscataqua River. The fine-grained depositional areas occur outside the main flow of the Piscataqua River, along the Back Channel, Jamaica

Cove, and Clark Cove. Eelgrass areas (characterized by the presence of the rooted marine angiosperm *Zostera marina*) occur in subtidal areas by Jamaica Cove, Clark Cove, Sullivan Point, the Dry Docks, and in the Back Channel. Intertidal mudflats are generally muddy-sand or sandy-mud areas fringing the shoreline along the Back Channel, off Jamaica Island (in Jamaica Cove), and around Clark's Island. The rocky intertidal habitat occurs in many locations along Seavey and Jamaica Islands where the shoreline is exposed to river currents and there are no appreciable fine-grained sediment accumulations (such as offshore of the DRMO, Site 6). Salt marsh habitats have been identified inside Clark Cove, by Clark's Island, and in the Back Channel (including Jamaica Cove).

The Navy determined that interim monitoring was warranted for OU4 to provide current data on the offshore areas to determine whether onshore remedial actions, natural processes, and/or other sources have affected the chemical concentrations in OU4. Therefore, an Interim Record of Decision (ROD) for OU4 was signed in May 1999 that requires the Navy to conduct interim offshore monitoring for OU4.

1.1.3 Summary of the Interim Offshore Monitoring Program

The Interim Offshore Monitoring Plan (TtNUS, October 1999) was prepared as required by the Interim ROD for OU4 (Navy, May 1999) to support the interim action for OU4. The monitoring program is designed to provide offshore monitoring in the interim period before completion of the offshore feasibility study (FS) and selection and implementation of the final remedy for OU4 when the final remedial action for OU4 is implemented, interim monitoring will be discontinued. The interim monitoring program was developed to provide a basis for any monitoring program that may be required as part of the final action for OU4.

The offshore monitoring provides information on the condition of the offshore areas of concern before the final remedy. The monitoring program provides data to determine whether the interim remedial action objectives (RAOs) for OU4 are being met. The interim RAOs (listed in the Interim ROD) provide for the protection of ecological offshore communities by identification of exposure to chemicals of concern (COCs) at concentrations greater than acceptable levels.

The Interim Offshore Monitoring Plan provides the methodology for development of the acceptable levels (referred to as interim remediation goals or IRGs). Preliminary remediation goals (PRGs) have been developed for OU4 (TtNUS, November 2001). The PRGs that were identified as COCs for OU4 are used as the IRGs in this report. Only sediment based ecological PRGs were developed for OU4. Section 5 of this baseline report presents the PRGs that were developed.

The Interim Offshore Monitoring Plan for OU4 provides background information on PNS, OU4, and the offshore area (including information on previous investigations and studies for OU4); the sampling and

analysis plan for the collection of data for the interim offshore monitoring program and the approach for interpreting and reporting the data; and the project organization and responsibilities, the field sampling plan, the laboratory sample analysis plan, the quality assurance/quality control (QA/QC) plan, and the information management plan.

The interim offshore monitoring program includes the following sampling and analysis activities:

- Sampling and analysis of surficial sediment (0 to 10 cm) as the primary measure of exposure to determine whether interim RAOs are being met.

- Sampling and analysis of mussel and juvenile lobster tissue as a secondary measure to confirm the comparability between sediment and biota concentrations.

Sampling is being conducted at 14 monitoring stations located around PNS and at four reference stations in the Great Bay Estuary. Figures 1-3 and 1-4 show the locations of the monitoring stations and reference stations, respectively. The interim offshore monitoring program includes 2-year baseline monitoring, biennial monitoring, and 5-year review monitoring. Baseline monitoring (Years 1 and 2), biennial monitoring prior to the first 5-year review (Year 3), and 5-year review monitoring (Years 4, 9, 14, etc.) for all stations and biennial monitoring after the first 5-year review (Years 6 and 8, Years 11 and 13, etc.) at select stations are included as part of the interim monitoring program. The Interim Offshore Monitoring Plan specifies that Baseline and 5-year Interim Monitoring Reports will be prepared. The subject document is being prepared as required by the monitoring plan as discussed in Section 1.2 below.

1.2 OBJECTIVES AND SCOPE OF BASELINE REPORT

This Baseline Interim Offshore Monitoring Report was prepared as required by the Interim Offshore Monitoring Plan (TtNUS, October 1999) to provide the results of the evaluation of the four baseline interim monitoring rounds (Rounds 1 through 4). Round 1 was conducted in early September 1999 (TtNUS, February 2000), Round 2 was conducted in early May 2000 (TtNUS, October 2000), Round 3 was conducted in late August 2000 (TtNUS, January 2001), and Round 4 was conducted in early May 2001 (TtNUS, September 2001).

The main objective of the evaluation of the baseline data is to provide the Navy's recommendation for the appropriate sampling season for future monitoring rounds. In addition, this report provides the comparison to IRGs, evaluation of the need for continued juvenile lobster sampling, risk evaluation of the dioxin data, and the results of other evaluations conducted with the data. The report also provides a summary of the sampling activities and analytical methods used for the baseline rounds.

1.3 REPORT ORGANIZATION

The baseline report is divided into eight sections. This section provides the introduction. Section 2.0 summarizes the sampling program for the baseline rounds and deviations from the Interim Offshore Monitoring Plan. Section 3.0 summarizes the analytical methods that were used, provides a comparison of the actual analytical methods to the planned methods (including detection limits), identifies outstanding analysis problems, and discusses the statistical treatment of the data. Section 4.0 provides the discussion of the various data analyses including descriptive statistics, accumulation factor calculation, comparison of baseline data to historical data, comparison of data from different habitats, and evaluation of the coefficient of variation. Section 5.0 provides a comparison of the baseline data to the IRGs and includes an outlier analysis, some descriptive statistics, and comparison to reference stations. Section 6.0 provides the evaluation and recommendation for sampling season for future rounds. Section 7.0 provides the evaluation and recommendation for discontinuing juvenile lobster sampling. Section 8.0 provides the risk evaluation of the dioxin data.

The report is supported by several appendices. Reports providing the data quality assessment (DQA) evaluation for each of the baseline rounds are provided in Appendix A. Supporting data tables and calculations for the evaluation of the baseline round data are provided in Appendix B through K. Response to comments and conference call minutes are provided in Appendix L.

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TABLE 1-1

OPERABLE UNITS DESIGNATION[1]
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 1 OF 3

Operable Unit	Site	Site Name	Dates of operation	Description and Remedial Activities [2]
OU1	10	Building 238, Battery Acid Tank No. 24	1974 to 1984	Storage tank for waste battery acid, removed from operation in 1984 when tank was found to be leaking. Tank and soils excavated in 1986. Investigated as part of RFI and remedial investigation in 1998. Additional RI investigation was conducted in November 2001
	21	Acid/Alkaline Drain Tank	1974 to 1991	Tank used for discharge from clothes washing machines used to clean air filters. Tank excavated in 1991. No further action for soil documented in 1996. Additional groundwater investigation was conducted in conjunction with the investigation of the West Timber Basin Landfill (Site 31) in 1998 and no further action was recommended.
OU2	6	Defense Reutilization and Marketing Office Storage Yard (including Impact Area Quarters S, N, and 68)	Approximately 1960s to present	Temporary storage area for used materials prior to off-site recycling and disposal. Investigated as part of the IAS, FCS, RFI, and RFI Data Gap Investigation. In 1993, sections of site capped or paved, storm water controls installed, and new concrete curb installed. Shoreline erosion that exposed contaminated soil at Site 6 was discovered In the summer of 1999 and interim erosion controls were put in place in September 1999. Shoreline rehabilitation was conducted in November 1999
	29	Teepee Incinerator Site	1918-1975	Area beneath and around Industrial Waste Treatment Plant originally used for open pit burning from 1918 to 1965 and for incinerator burning from 1965 to 1975. Investigated as part of RFI and remedial investigation in 1998.
OU3/OU6[3]	8	Jamaica Island Landfill [JILF](including Impact Area Former Child Development Center [CDC])	Approximately 1945 to 1978	Landfill for general refuse, trash and construction rubble and various industrial wastes. Site investigated as part of the IAS, FCS, RFI, and RFI Data Gap Investigation. In 1978, a dike and soil cover were placed at a portion of the landfill to contain dredged spoils from Berths 6, 11, and 13. A ROD was signed in August 2001 to cap for OU3. A pre-design investigation to support the landfill cover design was conducted in August/September 2001. Remedial design is being prepared. The Former CDC will be addressed separately from the remedy for OU3.

TABLE 1-1

OPERABLE UNITS DESIGNATION[1]
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 3

Operable Unit	Site	Site Name	Dates of operation	Description and Remedial Activities [2]
OU3/OU6 (Continued)	9	Mercury Burial Sites (MBI and MBII)	Buried between 1973 and 1975	Concrete blocks and pipes containing mercury contaminated wastes were buried at two locations within Site 8. The site was investigated as part of the IAS, RFI, and RFI Data Gap Investigation. MBI was removed in 1997. MBII was located and removed in 2000. Site 9 is included in the OU3 remedy.
	11	Former Waste Oil Tanks 6 & 7	1943 to 1989	Two tanks used for storage of waste oils prior to off-site disposal. Tanks removed in 1989. The site has been investigated as part of the RFI and RFI Data Gap Investigation. Site 11 is included in the OU3 remedy.
OU4	5	Industrial Waste Outfalls	1945 to 1975	Numerous discharge points located in the dry dock area used to discharge liquid industrial waste. The site was investigated as part of the RFI. Offshore area nearby also investigated as part of the EERA and interim offshore monitoring.
	26	Waste Oil/Water Portable Tanks	Unknown to present	Portable tanks used for cleanout of submarine bilges and various tanks in the dry dock area. No further action under CERCLA decision document signed in August 2001 and Site 26 is no longer in OU4. Offshore area nearby investigated as part of the EERA and interim offshore monitoring.
	---	Offshore Area Potentially Impacted by PNS Onshore Sites 6, 8, 9, 10, 11, and 29	---	Areas offshore of PNS affected by PNS onshore sites. Offshore area investigated as part of the EERA and interim offshore monitoring. OU4 is split into 6 AOCs based on the EERA. For the Interim Offshore Monitoring Program, a total of 14 monitoring stations were located in the 6 AOCs.
OU5	27	Berth 6 Industrial Area	1978	An underground pipeline near Berth 6 ruptured in 1978 and released No. 6 fuel oil. Sections of the pipeline and surrounding contaminated soils were excavated. No further action under CERCLA decision document signed in August 2001 and there are no longer any sites within OU5.
OU7	32	Topeka Pier Site	Approximately 1900 - 1945	The site is the fill area east of Dennett's Island and north of Seavey Island near Topeka Pier. Various materials were used to fill the area including bricks, wood, glass, asbestos cloth, and foundry waste. An RI was recommended for the site based on the site screening investigation conducted in 1998 and RI planning has started.

TABLE 1-1

OPERABLE UNITS DESIGNATION(1)
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 3 OF 3

Operable Unit	Site	Site Name	Dates of operation	Description and Remedial Activities (2)
OU8	31	West Timber Basin	Early 1900s to 1940	The site is a portion of the filled area between Dry Docks 1 and 3. Original operations at the site were storage and seasoning for wood used in the production of Navy ships. Metal washing and pickling activities were also conducted at the site. A site screening investigation was conducted at the site in 1998 and based on the investigation an RI was recommended for the site.

FCS – Final Confirmation Study, Loureiro Engineering Associates, June 1986.
IAS – Initial Assessment Study, NEESA 13-032, Roy F. Weston, June 1983.
MBI – Mercury Burial Site I.
MBII – Mercury Burial Site II.
RFI – RCRA Facility Investigation Report, McLaren/Hart Environmental Engineering Corporation, July 1992.
RFI Data Gap Investigation – RCRA Facilities Investigation Data Gap Report, Halliburton NUS Corporation, November 1995.
EERA –Final Estuarine Ecological Risk Assessment (NCCOSC, 2000).

1 Site 30 (Galvanizing Plant, Building 184) was investigated in the site screening process in 1998 and in 2001. The Navy is currently planning to conduct a non-time critical removal action for the pit at Site 30. Site 34 (Former Oil Gasification Plant) is being investigated in the site screening process.
2 Groundwater monitoring and seep/sediment sampling were conducted during four rounds of sampling from 1996 to 1997. The results of the groundwater monitoring investigation are presented in the Groundwater Monitoring Summary Report, Tetra Tech NUS, Inc., August 1999.
3 In October 2000, a decision was made to separate out the remedy for management of migration of groundwater from within the boundary of the JILF to the offshore from the remedy for source control (i.e., the remedy for soil, waste, and/or groundwater within the JILF boundary). Therefore the remedy for OU3 addresses source control. OU6 was created and management of migration of groundwater from the JILF to the offshore will be addressed as part of OU6.

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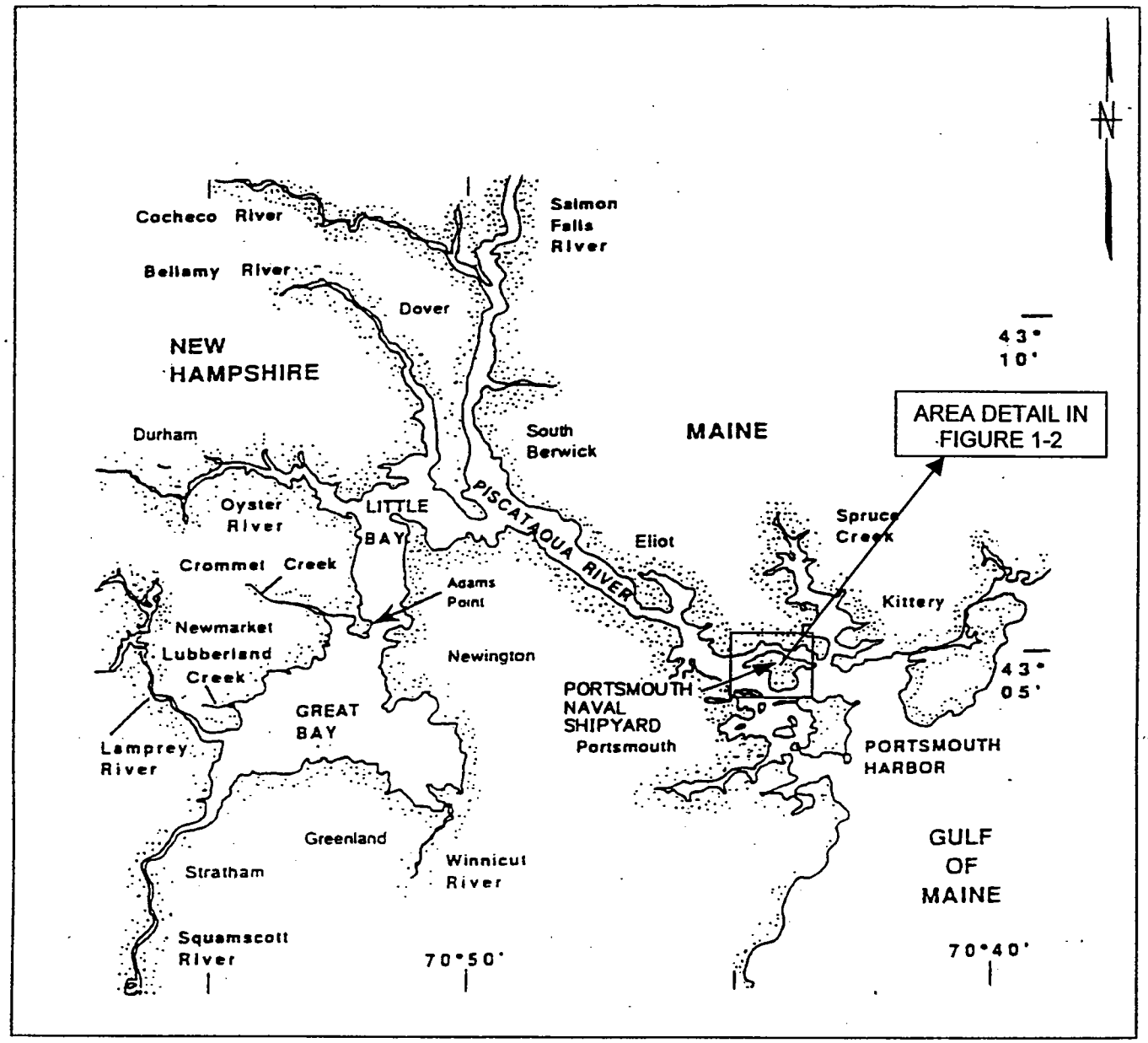
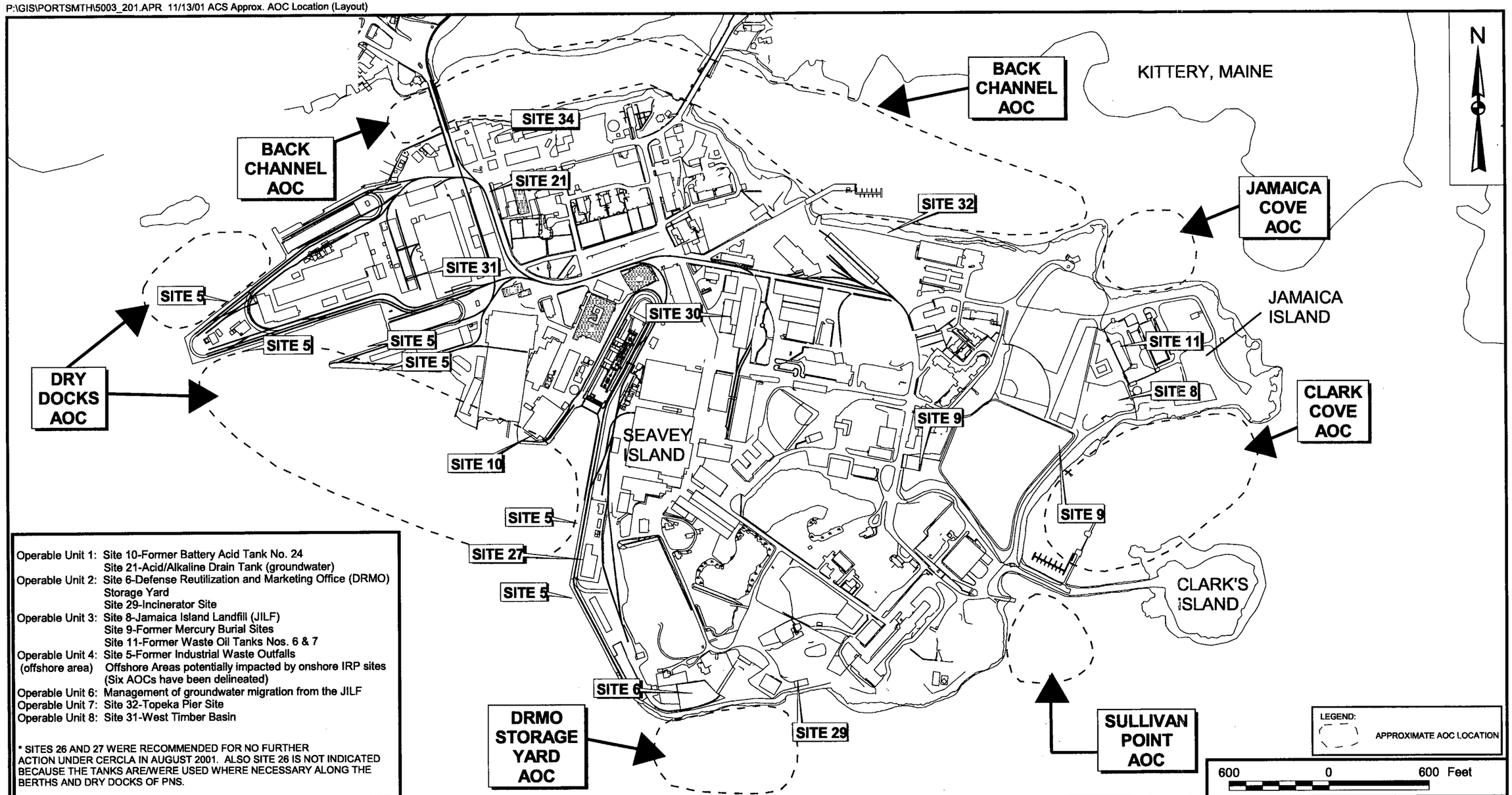


FIGURE 1-1

GREAT BAY ESTUARY AND PORTSMOUTH NAVAL SHIPYARD LOCATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

P:\GIS\PORTSMTH\5003_201.APR 11/13/01 ACS Approx. AOC Location (Layout)



Operable Unit 1: Site 10-Former Battery Acid Tank No. 24
Site 21-Acid/Alkaline Drain Tank (groundwater)
Operable Unit 2: Site 6-Defense Reutilization and Marketing Office (DRMO) Storage Yard
Site 29-Incinerator Site
Operable Unit 3: Site 8-Jamaica Island Landfill (JILF)
Site 9-Former Mercury Burial Sites
Site 11-Former Waste Oil Tanks Nos. 6 & 7
Operable Unit 4: Site 5-Former Industrial Waste Outfalls
(offshore area) Offshore Areas potentially impacted by onshore IRP sites (Six AOCs have been delineated)
Operable Unit 6: Management of groundwater migration from the JILF
Operable Unit 7: Site 32-Topeka Pier Site
Operable Unit 8: Site 31-West Timber Basin

* SITES 26 AND 27 WERE RECOMMENDED FOR NO FURTHER ACTION UNDER CERCLA IN AUGUST 2001. ALSO SITE 26 IS NOT INDICATED BECAUSE THE TANKS ARE/WERE USED WHERE NECESSARY ALONG THE BERTHS AND DRY DOCKS OF PNS.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

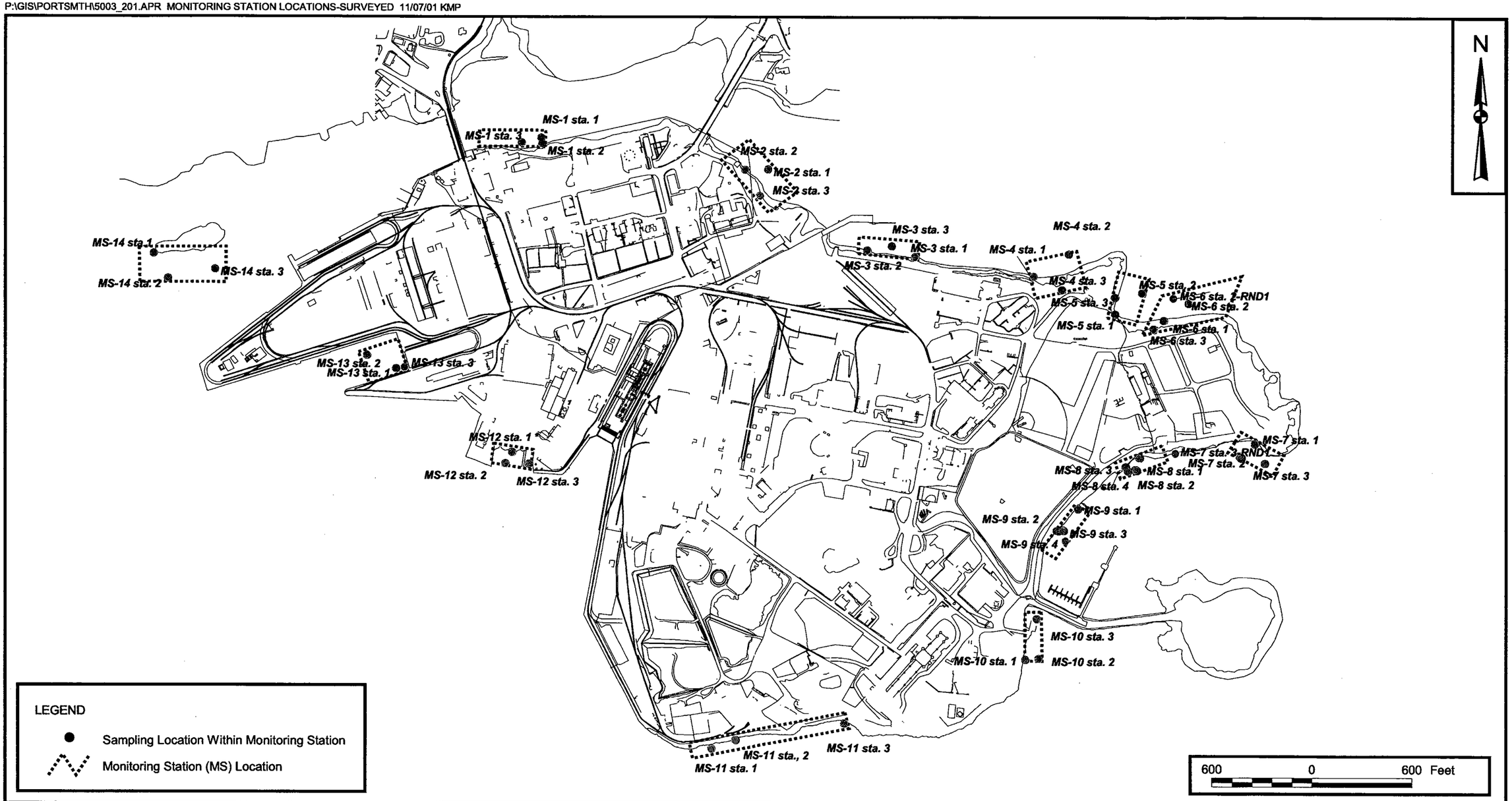
DRAWN BY D. PERRY	DATE 4/16/99
CHECKED BY A. BERNHARDT	DATE 11/06/01
COST/SCHEDULE-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

AOC AND IRP SITE LOCATIONS
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

CONTRACT NUMBER 6515	OWNER NUMBER 0232
APPROVED BY —	DATE —
APPROVED BY —	DATE —
DRAWING NO. FIGURE 1-2	REV 0

P:\GIS\PORTSMTH\5003_201.APR MONITORING STATION LOCATIONS-SURVEYED 11/07/01 KMP



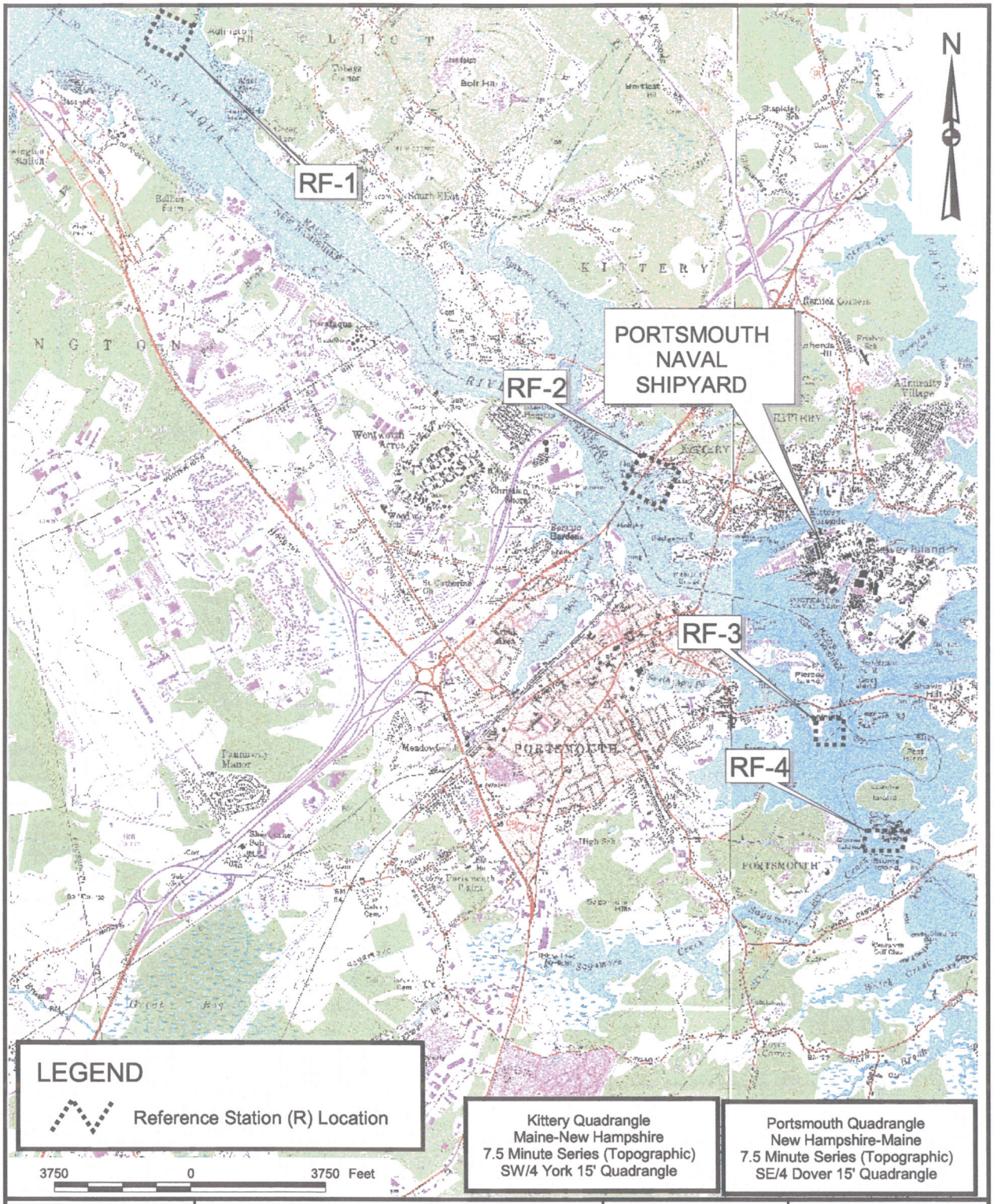
NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY J. LAMEY	DATE 12/15/99
CHECKED BY A. BERNHARDT	DATE 11/06/01
COST/SCHEDULE-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

OVERVIEW OF MONITORING STATION LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
APPROVED BY —	DATE —
APPROVED BY —	DATE —
DRAWING NO. FIGURE 1-3	REV 0



DRAWN BY — DATE —	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833	OWNER NO. CTO 0815
CHECKED BY A. BERNHARDT DATE 11/06/01	OVERVIEW OF REFERENCE STATION LOCATIONS BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 1-4	REV 0

P:\GIS\PORTSMOUTH\5003_201.APR OVERVIEW OF REFERENCE STATION LOCATIONS 11/07/01 KMP

2.0 SAMPLING INVESTIGATION

Samples were collected twice a year during the first four rounds of the interim offshore monitoring program. Two sets of samples were collected in early May (Rounds 2 and 4) and two rounds were collected in late August-early September (Rounds 1 and 3). The specific sampling times were selected based on the lowest tide for the month as follows:

- Round 1 - September 7 through 11, 1999
- Round 2 - May 2 through 7 and May 23, 2000
- Round 3 - August 27 through 30, 2000
- Round 4 - May 5 through 9, 2001

The University of Rhode Island (URI) conducted the sampling under the direction and supervision of TtNUS. The laboratory analysis is discussed in Section 3.0 of this report.

2.1 STATION DESCRIPTIONS

As presented in Section 1.0 of this report, 14 monitoring stations (M01 through M14) are adjacent to PNS and four reference stations (R01 through R04) are in the Piscataqua River. Figures 1-3 and 1-4 present the overall layout of the monitoring and reference stations, respectively, and Figures 2-1 through 2-10 are blow-ups of each of the stations. Table 3-3 in the Interim Offshore Monitoring Plan (TtNUS, October 1999) presents the rationale for the location of each station.

Three sediment samples (with the exception of M11), one to three mussel samples, and one juvenile lobster sample were collected at each monitoring station. Four sediment samples, two mussel samples, and one juvenile lobster sample were collected at each reference station. For this report, the dash and number after the monitoring station designates the sample location for that station. For example, M01-3 is location 3 at monitoring station M01. The full sample nomenclature was described in the Interim Offshore Monitoring Plan (TtNUS, October 1999). Table 2-1 lists the media (i.e., sediment, mussel, and juvenile lobster) that were collected at each location and the habitats (i.e., eelgrass bed, mussel bed, or salt marsh) and areas (i.e., subtidal or intertidal) of each location.

The station and sample descriptions were presented in Table 2-2 in the Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, and September 2001). The information from Table 2-2 in each data package is combined for this baseline report and is included as Table 2-2 in this report for ease of review.

2.2 SAMPLING PROCEDURES

The proposed sampling procedures are presented in the Interim Offshore Monitoring Plan for Operable Unit 4 (TtNUS, October 1999). The sample identification system, decontamination procedures, and other sampling procedures were conducted as proposed in the Interim Offshore Monitoring Plan for Operable Unit 4 (TtNUS, October 1999) and are not repeated in this report.

During Round 2, permanent station markers were placed at most of the intertidal stations to make it easier to collect the samples at the same location in each round. A Global Positioning System (GPS) was used to return to each subtidal station in each round. Table 2-3 presents the coordinates for the sampling locations.

The following sections detail the specific procedures that were used to collect the sediment, mussel, and juvenile lobster samples.

2.2.1 Sediment Sample Collection

Surficial sediment samples were collected at all monitoring stations and reference stations where sediment was present. During all the sampling rounds, three sediment samples were collected from each monitoring station for chemical [including simultaneously extracted metals (SEM) and acid volatile sulfides (AVS)], total organic carbon (TOC), and grain-size analyses except for monitoring station M11 (see Section 2.3). Additional volumes of sediment from select sample locations were collected during Round 2 for sediment toxicity testing and for porewater extraction, analyses, and toxicity testing (see Round 2 data package for sampling procedures for PRG data needs, TtNUS, October 2000). These additional data collected during the first late winter round were used to develop PRGs (TtNUS, November 2001).

Subtidal sediment samples were collected from the surface (0 to 2 cm for AVS only; 0 to 10 cm for all other analyses including AVS and SEM) of the seafloor using a Smith-MacIntyre grab sampler or Eckman grab sampler. Both samplers were opened from the top to gain access to the top of the sample. A minimum of three grabs were collected from each sample location, although sometimes more grabs were necessary because of refusal.

As each grab sample was retrieved, the water from the sampler was slowly decanted (or suctioned off) immediately before the sediment sample was collected. Equal portions of sediment (0 to 2 cm) were removed from each grab using a clean Teflon-coated titanium scoop and placed directly into the sample bottle for AVS analysis (total of 60 grams required). The sample bottle was filled to the top to have minimum air-space. The remaining portion from each grab (from 0 to 10 cm) was removed from the sampler and placed in a chemically cleaned, stainless-steel mixing bowl to form a single composite

sample for each sampling location. For sample locations that could be accessed by foot, the sample was collected using a stainless-steel or titanium scoop or spatula and treated as above.

For each sampling location, when a sufficient volume of sediment was collected in the bowl, it was mixed until homogenous and then apportioned to appropriate sample containers for shipment to the laboratory(s). Excess water in the sample jars was decanted after the sample was placed in the jar.

Before each sample was collected, a clean, clear tube (with no caps on either end) was pushed at least 10 cm into the sediment. A stopper was placed in the exposed end of the tube and the tube was removed from the sediment. The tube was visually inspected to determine the approximate depth where the sediment changed color (usually from brown to black). The depth where the sediment changes color is termed the "redox discontinuity" because it gives an indication of where the sediment probably becomes reduced (i.e., less oxygenated). The redox discontinuity for each sediment sample is provided in Table 6-3 of this report.

2.2.2 Mussel Sample Collection

Mussel samples were collected at all the monitoring station locations where mussels were present and at two of the four locations at each reference station. The mussels were collected as close as possible to the location of the sediment samples collected for chemical analysis. At all stations (except M09-1, location 1), they were collected within a 10-meter radius of the sediment sample. At M09-1 some of the mussels were collected slightly farther than 10 meters because only a few mussels were available at this location. Mussel samples were collected primarily by hand or with bivalve rakes. Some mussels were collected incidentally in the sediment grab.

Approximately 50 mussels were collected at each location, when available and composited into one sample. Most of the mussels collected were between 5 and 6 cm in length, as proposed in the Interim Offshore Monitoring Plan (TtNUS, October 1999). As indicated in the DQA reports in Appendix A, the mussels collected from some of the subtidal stations were larger than 5 to 6 cm because only larger mussels were available. The mussels were not composited between the locations; each location was analyzed as a separate sample.

All mussels selected for analysis were cleaned with a brush and seawater to remove sediment and other material on the shell (if necessary), and a representative portion (at least 25 percent) of the mussels were measured (length only). The mussels were placed into one plastic bag per composite sample. Mussel samples were shipped overnight to the analytical laboratory in sealed plastic bags, cooled to 4°C.

2.2.3 Juvenile Lobster Sampling

Juvenile lobster samples were collected at all monitoring stations and reference stations where juvenile lobsters were present. Modified lobster traps were used to ensure that juvenile lobsters with a carapace length between 3 and 6 cm were collected. Juvenile lobsters with carapace lengths between 5 and 6 cm were preferred. Five juvenile lobsters with carapace lengths between 5 and 6 cm were selected for analysis from each station, when available and composited into one sample. As presented in the DQA reports (Appendix A), some samples had fewer than five juvenile lobsters and some of the juvenile lobsters were either slightly smaller or slightly larger than the preferred size range.

A minimum of three traps were placed at a given station until adequate numbers of juvenile lobsters were collected, or for a maximum of 4 or 5 days. Up to a maximum of 60 traps (59 after one was lost during Round 4) were available for the sampling, and they were rotated among the stations based on the availability of juvenile lobsters at each station. If insufficient juvenile lobsters were collected at a station after 4 or 5 days the traps were removed.

After the traps were retrieved, the contents were emptied into a clean tub. The juvenile lobsters in the above-mentioned size range were collected, measured, and washed with river water (if necessary). At the “site trailer” the lobsters were wrapped individually in aluminum foil and placed into plastic bags. The remaining lobsters were returned to the water. The juvenile lobster samples were shipped overnight to the analytical laboratory on wet ice, cooled to 4°C.

During Round 1, the juvenile lobster samples that were initially analyzed by TAMU consisted of the muscle tissue (tail and claw) with the intestine remaining in the tail. It was then determined that the intestines were removed from the tails of the juvenile lobsters that were collected and analyzed as part of the EERA for PNS (NCCOSC, 2000). Because the intestine can contain substantial amounts of sediment, it was decided to analyze muscle tissue from the extra juvenile lobsters that were collected from that round, after the intestine was removed (via dissection) from the tails. Note that only the results of the juvenile lobster samples without the intestines are evaluated in this baseline report. The procedure for removing the intestines prior to chemical analysis was used for Rounds 2 through 4. This was done to remove some of the potential variability in the tissue concentrations between sampling rounds if the juvenile lobsters had substantial amounts of sediment in their intestine during one round but not in another round.

2.3 DEVIATIONS/MODIFICATIONS FROM INTERIM OFFSHORE MONITORING PLAN

There were a few deviations from the Interim Offshore Monitoring Plan that were discussed in detail in the Round 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, and September 2001). The significant deviations are summarized below.

The size of the eelgrass beds was not estimated in the field during Rounds 1 through 3 because the eelgrass is difficult to see from the boat until the boat is directly over the bed. The eelgrass bed size could not be estimated with sufficient accuracy to warrant inclusion in the notes. However, during Round 4, an attempt was made to document the approximate sizes of the eelgrass beds; see the field notes in the Round 4 data package (TtNUS, September 2001).

2.3.1 Round 1

During Round 1, a few samples were not collected in the proposed locations because the areas were rocky; one sample was not collected in the proposed locations because of some confusion between the field team and the Navy regarding the former location of a demolished building. Based on a review of the sampling locations and discussions with the project team, monitoring stations M06-2 and M07-3 were moved to new locations within the monitoring stations for subsequent sampling rounds so that they could be located in eelgrass beds within the monitoring stations, as originally proposed.

At monitoring station M11, there was only enough sediment present for chemical analysis at two of the locations. No sediment was observed at the third location at M11 (OU4-SD-M11-199A). Also, a separate sediment sample for AVS only was not collected from 0 to 2 cm at OU4-SD-11-299A because there were only a few shallow pockets of sediment (trapped behind mussel clumps). The AVS sample was collected from the sediment after it was homogenized in the mixing bowl.

During Round 1 only, the tomalley samples from the juvenile lobsters (without the intestines) were analyzed for organic parameters (which may preferentially accumulate in the tomalley). This was done as a proactive measure in the event that a significant number of chemicals were not detected in the muscle samples after the intestines were removed. The results of this analysis are presented in the Round 1 data package (TtNUS, February 2000).

2.3.2 Round 2

During Round 2, a few deviations occurred in the sampling and analysis related to the data needs for the development of the PRGs. These deviations did not impact the monitoring program so they are not presented in this baseline report. As part of the PRG data needs, two additional sediment samples were

collected from monitoring stations M08 (OU4-SD-M08-400B) and M09 (OU4-SD-M09-400B). Because these samples only were collected during Round 2, the results are not presented in this report.

During the validation of the Round 2 data, it was observed that the PAH levels in sediment sample OU4-SD-M01-300B were three times higher than the PAH level in the duplicate sediment sample (OU4-FD-003-000B). Therefore, the laboratory re-extracted and reanalyzed those two samples organic chemicals. It was also observed during the initial data review that the lead concentrations in juvenile lobster composite sample OU4-LJ-M01-100B (and its duplicate) were approximately 100 times greater than the lead concentrations in other samples across the stations. It was possible the intestines were not adequately dissected from the lobsters used to make the homogenate. This may have added sediment that contained lead to the sample. The laboratory analyzed two individual juvenile lobsters (samples OU4-LJ-M01-100B-5 and OU4-LJ-M01-100B-4) for metals to determine if the lead in the lobster tissue is actually elevated at that station. None of the juvenile lobsters were in the size range (5.0 to 5.5 cm) of the composite sample for that station. Therefore, those two lobsters were selected because one was smaller (OU4-LJ-M01-100B-5 was 4.8 cm) and one was larger (OU4-LJ-M01-100B-4 was 6 cm) than the lobsters used in the composite sample. This additional data was provided to the regulators on August 8, 2001.

At monitoring station M11, there was only enough sediment present for chemical analysis at one of the locations. No sediment was observed at the other two locations at M11 (OU4-SD-M11-100B and OU4-SD-M11-200B). Finally, one mussel sample was inadvertently not collected during this round from monitoring station M02-1.

2.3.3 Round 3

At monitoring station M11, there was only enough sediment present for chemical analysis at one of the locations. No sediment was observed at the other two locations at M11 (OU4-SD-M11-100A and OU4-SD-M11-200A).

As discussed in more detail in Section 5.2 and Appendix L of this report, the mussel sample from reference station 2 (OU4-MU-R02-400A) was removed from the data set after it was determined that there was an error at the laboratory.

2.3.4 Round 4

During Round 4, the mussels from stations OU4-MU-M10-201B and OU4-MU-M10-301B were inadvertently not measured in the field. However, these mussels were noted as being larger than 5.0 to 6.0 cm as they were during previous rounds. Also, no juvenile lobsters were collected from station

OU4-LJ-R04-101B. The lobster traps were set for 4 days, but they were full of crabs and contained no juvenile lobsters in the preferred size range.

At monitoring station M11, there was only enough sediment present for chemical analysis at one of the locations. No sediment was observed at the other two locations at M11 (OU4-SD-M11-101B and OU4-SD-M11-201B).

Elevated levels of copper in the sediment at monitoring station M04-1 were observed in the first three rounds of samples. Therefore, the following additional sediment samples were collected (and analyzed for metals) near this location to determine the extent of contamination. Because these samples were only collected during Round 4, the results are not presented in this report.

- Sample OU4-SD-M04-401B was collected 40 feet north of OU4-SD-M04-101B
- Sample OU4-SD-M04-501B was collected 25 feet west of OU4-SD-M04-101B
- Sample OU4-SD-M04-601B was collected 25 feet east of OU4-SD-M04-101B

Also, two samples (OU4-ME-M05-101B and OU4-ME-M05-201B) of metal debris were collected near monitoring station MO5-1 and analyzed for metals. The same type of metal debris was located adjacent to monitoring stations M03 and M04.

The analytical results from those five samples are presented in the Round 4 data package (TtNUS, September 2001).

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TABLE 2-1

SAMPLES COLLECTED PER STATION AND THE HABITAT/AREA OF EACH SAMPLE
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Station[1]		Samples Collected			Habitat/Area Sampled				
		Sediment	Mussel	Juvenile Lobster	Intertidal Zone	Subtidal Zone	Eelgrass Bed	Mussel Bed[2]	Salt Marsh
M01	-1	X		X		X			
	-2	X	X		X			X	
	-3	X	X			X		X	
M02	-1	X	X[3]	X		X		X	
	-2	X	X		X			X	
	-3	X	X		X			X	X
M03	-1	X	X	X	X				
	-2	X	X		X				
	-3	X				X			
M04	-1	X	X	X	X				
	-2	X				X			
	-3	X			X				X
M05	-1	X	X	X	X				
	-2	X				X	X		
	-3	X	X		X				
M06	-1	X	X	X	X				
	-2	X	X			X	X[4]		
	-3	X	X		X				X
M07	-1	X	X	X	X			X	
	-2	X				X			
	-3	X	X			X	X[4]	X	
M08	-1	X	X	X	X			X	
	-2	X	X			X		X	
	-3	X	X		X			X	
M09	-1	X	X	X	X				
	-2	X	X		X			X	
	-3	X				X			
M10	-1	X	X	X	X			X	
	-2	X	X			X	X		
	-3	X	X			X			

TABLE 2-1

SAMPLES COLLECTED PER STATION AND THE HABITAT/AREA OF EACH SAMPLE
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Station[1]		Samples Collected			Habitat/Area Sampled				
		Sediment	Mussel	Juvenile Lobster	Intertidal Zone	Subtidal Zone	Eelgrass Bed	Mussel Bed[2]	Salt Marsh
M11	-1		X	X	X				
	-2	X[5]	X		X				
	-3	X	X		X			X	
M12	-1	X	X	X	X			X	
	-2	X	X			X	X		
	-3	X				X	X		
M13	-1	X	X	X		X			
	-2	X				X			
	-3	X	X			X[6]			
M14	-1	X	X	X	X				X
	-2	X	X			X			
	-3	X				X			
R01	-1	X		X	X				X
	-2	X				X			
	-3	X	X			X			
	-4	X	X		X			X	
R02	-1	X		X	X				X
	-2	X				X	X		
	-3	X	X			X			
	-4	X	X		X			X	
R03	-1	X		X	X				X
	-2	X				X	X		
	-3	X	X			X	X		
	-4	X	X		X			X	

TABLE 2-1

SAMPLES COLLECTED PER STATION AND THE HABITAT/AREA OF EACH SAMPLE
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Station[1]		Samples Collected			Habitat/Area Sampled				
		Sediment	Mussel	Juvenile Lobster	Intertidal Zone	Subtidal Zone	Eelgrass Bed	Mussel Bed[2]	Salt Marsh
R04	-1	X		X	X				X
	-2	X				X	X		
	-3	X	X			X		X	
	-4	X	X		X				

Notes:

1 - The -1, -2, -3, and -4 are the location numbers for each station
Note that samples were collected from some additional locations during the rounds; however, they are not listed on this table because they are not specifically part of the Interim Offshore Monitoring program.

2 - The mussel bed cell is marked when the sediment samples were collected in a mussel bed. At several locations, the mussels were collected within 10 meters of the sediment based on available sediment near the mussels or because other habitats were the primary focus of the sample (i.e., eelgrass, saltmarsh). In those cases, the mussel bed cell is not marked.

3 - Mussels were inadvertently not collected from this location during Round 2.

4 - Note that these two samples were not collected in eelgrass beds during Round 1. They were moved to eelgrass beds for Rounds 2 through 4 and will remain there for subsequent sampling rounds.

5 - Sediment was only available for collection during Round 1.

6 - The mussels from this location previously identified as being collected from the intertidal zone in the Rounds 1 to 4 Data Packages. However, it was recently learned that the mussel samples from the location that were collected for chemical analysis were actually collected from the subtidal zone.

Source data located in Rounds 1 to 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M01-1	1	0.5-1	sandy, somewhat mottled		
	2	1	0-1 cm (coarse yellow sand and gravel); 1-10 cm (mottled transition zone; grades to black silty sand); 7-8 cm (worm burrows)	many clam worms	
	3	1-2	0-2 cm (light brown coarse sand with gravel); 2-9 cm (black sandy silt with shell pieces); many rocks and shells, including mussel shells	hermit crab, snail, many worms; young starfish, sea stars, sea urchins, and brittle star	
	4	0.5-2	0.5-2 cm, reddish brown, mottled 3-5, black 5-10 cm, silty coarse sand; cobbles on surface, shelly sediment	Crab in grab, lots of redworms, and crepidula shell; Eelgrass on anchor (none visible from boat, too deep)	
M01-2	1	0.3	0-0.3 cm(thin layer of mud); 0.3 - 10 cm (sandy area with smaller rocks); primarily 0-6 cm was collected, but collected some 0-10 cm because of hard substrate.	abundant ascophyllum, fucus, and many mussels	very rocky (sharp rocks), intertidal, gentle slope
	2	12	surface (armor of cobbles); 0-12 cm (light to medium brown); >12 cm (reddish dark brown); sediment was gravelly coarse sand	abundant mussels and worms	cobbled intertidal zone
	3	>7	light to medium brown coarse sand and gravel		
	4	9	coarse sand and gravel medium to light brown, beneath redox red to reddish brown		

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M01-3	1	0.5-1	surface (black sand lag); below (dense sandy/clay silt); several worm burrows	many large clam worms, pipe fish, mostly large mussels (6-7 cm).	gravel, shells, seaweed made it difficult to collect grabs, added weights to grab
	2	4-6	surface (many mussel shells); 0-4 cm (dark brown coarse sand); 4-10 cm (grades to dark gray silty sand)	some large mussels; one sea anemone	very strong current; due to the lack of sediment present, >3 grabs were required
	3	2	surface (cobbles and mussel shells); 0-2 cm (medium to light brown sand with cobbles); 2-11 cm (mottled dark brown and black sandy silt with worm tubes)	many worms, mussel (dead), some green algae, other plant material	
	4	5-10	0-3.5 cm brown; 5-10 cm mottled black and gray gravelly silty sand, shelly; rocks/gravel on surface	Big clam worm, lots of red worms, kelp, lots of small snails (alive).	Very strong current. It is >4m deep but CTD won't go down and is moving up and down in the current.
M02-1	1	3-4	surface (brown); below (black gray); sediment was sandy/clay silt, mottled, with many worm burrows	many large clam worms; abundant green, brown, and red algae on surface	
	2	1	0-1 cm (light brown); 1-10 cm (black); sediment was silty sand with gravel	many mussels	difficult to collect sediment because of the large quantity of mussels
	3	2.5	0-2.5 cm (gravel with coarse brown sand); 2.5-6 cm (light gray clayey silt); many rocks		bullets present in the sediment; very strong currents made it difficult to maintain the same position
	4	0-3	0 to 1-3cm light brown silty sand 1-3 to 6-10 cm mottled brown/black; very shelly	Tube worms	Area contained high currents and eddies
M02-2	1	1.2	0-1.2 (brown); 1.2-4 cm (gray silty sand); 4-10 cm (gray	good mussel bed; abundant seaweed	15-20 feet east of old boat ramp in mud flat
	2	0.5	0-0.5 cm (gray silt and sand); 0.5-3.5 cm (black silt and sand); 3.5-10 cm (orange/brown coarse sand)	abundant mussels	sampling location is 2 feet seaward of the station marker
	3	0.2	surface (covered with mussel shells); 0-0.2 (medium brown silt); 0.2-3 cm (black silty mud with sand); 3-10 cm (brown sand); sediment contains gravel		
	4	0-5	coarse sands/rocks	Mussel shells	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M02-3	1	9	black/dark brown silt with rhizome roots	salt marsh	50-75 foot intertidal zone; mostly rocky with mussels and mudflat closer to water
	2	none recorded	saltmarsh mud with *Spartina alterniflora* roots	mussels, *Spartina alterniflora*	rocky intertidal zone; sampling location is 3.5 feet seaward of the station marker
	3	>10	0-10 cm (silt with marsh grass roots)	marsh grass	
	4	none observed	0-2 cm light brown silt with roots (salt marsh); 2-10 cm dark brown silt with roots.	Mussels 20-30 from sample location	No metal debris noted
M03-1	1	0.7	0-0.7 cm (brown); 0.7-10 cm (black); sediment was muddy clay with trace gravel; high water content	mussels; algae on rocks	near seep BC 1018; large flow of water from seep; creating a "cove" at low tide with 1' of water; sediment/mussels collected at top of "cove"
	2	0.1	0-0.1 cm (brown silt with clay); 0.1-10 cm (black clayey silt)	abundant mussels toward shore	sampling location is on the bank of seep BC 1018, 5 feet seaward of the station marker in a straight line from the short piling
	3	0.2	none recorded		sampling location is approximately 10 feet east of seep BC 1018
	4	0.5-10	0-0.5 cm, light brown sandy silt; 0.5-10 cm dark gray sandy silt; sporadic shells 0-10 cm, some plant strands, approx 10 cm shell hash layer	Hundreds of mussels	Some metal debris present
M03-2	1	1	0-1 cm (brown); 1-10 cm (gray/black); sediment was a silty clay	abundant mussels within 3-10 feet of sample; harder substrate, seaweed present	near seep BC 1020; much anthropogenic debris (i.e., metal, plastic); 100 feet intertidal zone (50' rock, 50' mudflat); collected sediment 2-3" from main rivulet because silt present (sand/gravel in rivulet)
	2	1.5	0-1.5 cm (brown silty clay); 1.5-10 cm (black silty clay with small pebbles)	mussels	upper layer of sediment has more pore water; sampling location is 3 feet seaward of the station marker in a straight line from the tallest birch tree
	3	0.1	0-0.1 cm (black silt); many rocks	snails	sampling location is 15 feet west of the seep
	4	0-2	0 - 2 cm, light gray silt black below, silty-sand, small pebbles	Lots of shells and mussels	Much metal debris, copper

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M03-3	1	0.5-1	black sandy silt; many worm burrows		
	2	1-2	0-2 cm (medium brown); 2-10 cm (mottled brown and black); sediment was sandy, clayey silt, more fine-grained at the bottom; 0-6 cm (many worm burrows); some shells	many worms	
	3	2-3	0-2 cm (brown); 2-10 cm (mottled gray and black); 8-10 cm (black fades to gray); sediment was sandy silt; many worm tubes	large clam worm	
	4	1.5-2	0 - 2 cm, sandy silt top light brown/green; bottom gray dark	Big sand worm	
M04-1	1	0.3	0-6 cm (brown muddy clay); 6-10 cm (shells)	sparsely covered with seaweed and fucus; mussels present; mudflat	near seep BC-1016
	2	4	surface (cobbles); 0-4 cm (brown); 4-10 cm (black); sediment was mostly sand with some gravel, silt, and	very abundant mussels	seep BC 1016 flows across the site; mussel sampling location is 5 feet seaward of the station marker
	3	>10	coarse gravel with sand		seep BC 1016 flows across the sampling location
	4	none observed	0-10 cm brown sand with silt and some reddish pockets		No apparent redox zone; Lots of metal debris (copper & iron) around seep and upgradiant of seep
M04-2	1	3	0-3 cm (light brown); 3-10 cm (black)	little seaweed; mudflat; abundant clam worms	
	2	2-3.5	0-3.5 cm (medium brown); 3-6 cm (transition zone); 4-14 cm (mottled medium gray and black); sediment was clayey silt with amphipod tubes; 3-6 cm (worm burrows)		
	3	2.5-3	0 to 2.5-3 cm (medium brown); 3-8 cm (mottled medium gray and black); 8-12 cm (medium gray); sediment was sandy silt with some shells	some worms, and isopods (or decapods)	
	4	2-5	0-2 cm light brown, 2-3 cm mottled dark brown gray, 3-12 dark gray sandy silt	Gastropod shells, living snails, lots of worms, thin 5-10 cm long	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M04-3	1	none observed	brown sand and gravel; very rocky; sediment under a layer of gravel	no mussels present, saltmarsh	collected at fringe of saltmarsh
	2	none recorded	surface (cobbles); 0-10 cm (brown gravelly sand with some silt); cobble beach	small salt marsh; rock snails	sample collected from beneath cobbles; sampling location is approximately 2 feet seaward of the station marker
	3	>6	gravel and sand with many marsh grass roots		
	4	none observed	0-10 cm brown silt, sand, and gravel		
M05-1	1	0.2	0-0.2 cm (brown); 0.2 - 10 cm (black); sediment was a silty clay	mussels and snail shells present	near seep BC-1005
	2	0.2-0.5	0 to 0.2-0.5 cm (brown); 0.2-0.5 to 10 cm (black); sediment was silty sand	mussels	sampling location is 8 inches west of the station marker
	3	1	0-1 cm (light brown); 1-10 cm (dark black); sediment was fine silt	abundant mussels and snails	sampling location is approximately 1 foot from the station marker in the mud flat
	4	1-10	Redox 1 cm; 0-1 cm light brown silt; 1-10 cm dark gray sandy silt	Hundreds of mussels	2 metal bars (look like very old rebar), copper chunk.
M05-2	1	0.8	0-0.8 cm (light brown); 0.8 to 10 cm (black); floc layer on top of sediment	none observed	
	2	4	0-4 cm (medium brown); 4-8 cm (grades to gray); 8-16 cm (black); sediment was clayey silt; 0-5 cm (worm burrows)		
	3	0.8-1.4	0-1.4 cm (medium brown); 1.4-5 cm (black); 5-11 cm (mottled dark gray and black); sediment was sandy silt	algae, eelgrass bed, soft-shelled clam	
	4	3-11	0-3 cm, sandy-silt (fine sand) light brown, 3-11 cm dark gray sandy silt	Lots of red worms, worm burrows.	Sulfur odor

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M05-3	1	0.3	0-0.3 cm (brown sandy mud); 0.3-4 cm (mottled, dark gray/black sandy mud); 4-10 cm (brown sand, gravel, shells)	mudflat; abundant mussels	near seep BC-1012 but could not locate stakes
	2	1	0-1 cm (brown); 1-10 cm (black); sediment was gravelly silty sand	mussels	sediment sampling location is 1 foot east of the station marker
	3	1	0-1 cm (light brown silty sand); 1-10 cm (black medium sand with silt)		sampling location is adjacent to the station marker
	4	1	0-1 cm light brown silt; 1-10 cm dark brown/black sand with silt	Hundreds of mussels, but patchy; snails and seaweed present	
M06-1	1	0.5	0-0.5 cm (brown); 0.5-10 cm (black) sediment was a sandy silt	mussels present	near seep BC-1006, culvert; 71 feet intertidal zone when sampled
	2	1.5	0-1.5 cm (brown); 1.5-10 cm (black); sediment was silty	abundant mussels	sample located in seep BC 1008 (note that this sample was mis-identified as BC 1006 in the Round 1 Data Package); sediment sampling location is 7 inches southeast of the station marker
	3	0.1	0-0.1 cm (light brown); 0.1-10 cm (black); sediment was silt with some fine sand	mussels	sampling location was in seep BC 1008, approximately 1 foot seaward of the station marker
	4	4	0-4 cm light brown silty sand 4-10 cm black; some shells	Worms	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M06-2	1	1.5	black, silty sand	mussels present	rock outcrop prevented sample from being collected in eel grass bed
	2	1-3	0-3 cm (light brown); 3-8 cm (light gray mottled with black); 8-16 cm (mottled darker black); sediment was silt; 0-8 cm (many worm burrows)	eelgrass bed, mussels	
	3	0.1	0-10 cm (dark brown sandy silt)	eelgrass (including rhizomes), algae, snails, small sea star, fish (in grab), large clam worms	used maps to find this sampling location - no GPS
	4	2-3	0-2 cm light brown sandy silt, 3-8 cm black-dark gray, 8-11 cm light brown half sand half silt (coarser)	Tube worms - looks like fecal pellets 1/2 cm. Large eelgrass bed around sed sampling station pretty big; mussels on rocks	
M06-3	1	0.2	0-0.2 cm (brown); 0.2-10 cm (black) sediment was silty with abundant roots	collected at saltmarsh	
	2	none recorded	0-5 cm (thick mat of roots); 5-10 cm (gray, gravelly, fine sand and silt)	salt marsh; mussels	sampling location is 6 feet seaward of the station marker; mussels collected within 5-8 feet of sediment
	3	>10	0-10 cm (light brown silty sand with many roots)	salt marsh	sampling location is approximately 1 feet east of the previous location on the edge of the salt marsh (near the station marker)
	4	1-6	0-1 cm peaty gravel with sand well oxidized 1-6 cm darker		Salt marsh station
M07-1	1	0.1	black sand/thick mud layer	abundant mussels; ascophyllum and fucus on boulders; large mud flat surrounded by rocks and boulders	near seep CC-1011; 111 foot intertidal zone when sampled
	2	0.2	0-0.2 cm (brown); 0.2-10 cm (black); sediment was silt and fine sand with clay; 10 cm (black, more sand)	many worms and mussels	sampling location is 4 feet southeast of the station marker
	3	1	0-1 cm (light brown); 1-10 cm (dark gray); sediment was sandy silt		
	4	1	1 cm redox 0-1 cm light brown silty sand. 1-10 cm dark gray sandy silt	hundreds of mussels	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M07-2	1	0.1-0.4	brown silt	none observed	
	2	2-3	0 to 2-3 cm (light brown); 2-3 to 10 cm (dark brown); sediment was silt; 0-12 cm (many burrows, not many worm tubes)	many clam worms	
	3	0.6-1	0 to 1 cm (medium brown); 1 to 6 cm (mottled light brown and black); 6-10 (medium brown, less black); sediment was silty sand	clam worms, eelgrass (dead)	sampling location was near hazardous rock
	4	1	0 -1 cm light brown, 1-11 cm black silt with a bit of sand (5%)	Lots of worms, clam worm, stinky	
M07-3	1	0.5	black/dark gray sandy silt	mussels	
	2	4-5	0-1 cm (green); 1-5 cm (light brown); 5-10 cm (mottled gray and black); sediment was sandy silt	abundant eelgrass (shoots, rhizomes, and blades), many small red worms, mussels	
	3	3	0-3 cm (medium brown sandy silt); 3-10 cm (mottled light gray/brown and black sandy silt); 10-13 cm (mottled brown and black silty sand); shells present	eelgrass	
	4	3	0-3 cm light brown silt, 3-6 cm mottled light brown/gray (worm burrows), 6-10 cm mottled dark gray black silt	Eelgrass on anchor, eelgrass piece in grab-eelgrass bed around; Clam worms, small worms, snails	
M08-1	1	redox discontinuity at surface	black sand	abundant mussels; mudflat	near seep CC-1004.5; 54 foot intertidal zone when sampled
	2	none recorded	silt with clay, gravel patches	mussel beds all around	sample location is 6 inches east of the station marker
	3	1	0-1 (light brown); 1-10 (black); sediment was sandy-clayey silt with a few pebbles	some small worms	used maps to find this sampling location - no GPS; station marker was just above the mud
	4	0.5-2	0 to 1/2 cm light brown, 1/2 to 2 cm med gray with light brown burrow tubes, 2-10 cm dark gray all sandy silt		Metal plate, rusting approx. 1' by 2' 5-10 feet from marker; station is at edge of mucky tidal flat; hard station to locate- marker gets buried. Marked location with a rebar hook

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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M08-2	1	0.2-0.3	black/dark gray sandy silt	none observed	
	2	1.5	0-7 cm (silty mud); 7-10 cm (dense silty-clay or clayey silt)	mussels, many red worms and worm tubes	collected mussels at low tide by walking out and raking
	3	0.3-0.7	0-0.7 cm (medium brown); 0.7-4 cm (mottled dark gray/black); 4-9 (medium to light gray); sediment is silty sand	worm, green crab	low tide, lobster pots, and a hazardous rock made exact positioning difficult
	4	2.0	0 to 1-2 cm light brown sandy silt (medium sand) 4 cm worm burrow depth 2-11 cm mottled gray-black clayey silt (pebbles in matrix-probably from rock wall next to station)	Worm tubes on surface, amphipods "tons of them", 2 big clam worms, many red worms	
M08-3	1	none observed	light tan isolated patches of coarse sand with gravel	small mussels under rock weed	
	2	none recorded	cobble gravel and sand beach; boulders adjacent to the site	abundant rockweed; abundant mussels (especially 20 ft seaward of the site)	sample was collected adjacent to the station marker
	3	none observed	0-10 cm brown sand with some cobbles and gravel		sampling location was 1 foot east of the station marker
	4	none observed	brown-gray sand with pebbles, cobbles on surface		
M08-4	2	2	0-2 cm (brown); 2-10 cm (dark brown/black); sediment was silt with some fine sand; mud flat	many worms	approximately 34 feet seaward of sample OU4-SD-M08-300B
M09-1	1	0.1	0-0.1 cm (brown); 0.1-10 cm (black); sediment was a sand with gravel	only 3 mussels present within 30 feet	
	2	none recorded	surface (boulders); 0-10 cm (coarse gravel and sand)	mussels	station is on a 60 degree slope
	3	>5	gray and brown gravelly, coarse sand with a little mud; many rocks		
	4	0.5	gray gravel	few mussels	

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INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M09-2	1	0.1-0.3	sediment collected under water (still intertidal)	seaweed on lower rocks	very rocky area near seep CC-1004.3
	2	5	0-9 cm (gravel and silt)	many mussels	sample was collected close to the station marker; rocks prevented collection of the sample deeper than 9 cm
	3	0.4	0-0.4 cm (brown silt); 0.4-10 cm (dark gray/black sandy silt with gravel)	mussels, snails	sampling location was 10 feet downslope from pipe
	4	0.5	redox 1/2 cm; 0 to 1/2 cm brown sandy silt, 1/2 to 10 cm dark gray coarse sandy silt with gravel and shells		
M09-3	1	0.2-0.3	black silty sand		
	2	1	surface (filamentous organic matter - bacteria/algae); 0-1 cm (brown); 1-10 cm (black with a sulfur odor); sediment was silty mud with many worm tubes	clam worms	
	3	0.6	0-8 cm (mottled black and medium gray); 8-16 cm (medium gray); sediment was very soft silt to clayey silt with a strong odor		
	4	3-6	0-3 cm light brown clayey silt; 3-6 cm mottled brown/dark gray with burrows; 6-11 cm black	brown filamentous algae on surface	A lot of organic material, couple of sticks (leaf on grab) pipes on shore- old and rusty
M09-4	2	4-5	0-5 cm (brown); 5-10 (dark brown/black); sediment was silt with some fine sand and gravel		approximately 10 feet from sample OU4-SD-M09-100B; seeps are flowing upgradient of the sampling location

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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M10-1	1	none observed	brown coarse gravel with some sand	abundant mussels	near seep SP-1001
	2	none recorded	surface (cobbles); 0-2 cm (fine gravel and shell hash with some light brown fine sand and silt); 2-10 cm (more sand and grayer in color)	abundant mussels (especially near adjacent seep)	
	3	4	0-4 cm (dark brown); 4-10 cm (black); sediment was medium-grained sand with silt, a few pebbles, and some larger cobbles		
	4	2	redox at 2 cm 0-2 cm brown silty sand, 2-10 cm dark gray silty sand; old holes found, silty sand patch with eel grass just below mussel patch		Seep flowed through vicinity of station
M10-2	1	1	black sandy mud	collected mussels in eel grass bed; mussels were larger than 5-6 cm; abundant eel grass	offshore of seep SP-1002
	2	1-2	0-2 cm (light brown); 2-10 cm (grades to black); sediment was silty sand with gravel	abundant eelgrass (fresh blades), mussels	raked for subtidal mussels
	3	1-2	0-2 cm (dark brown); 2-9 cm (mottled dark brown and black); sediment was silty sand	eelgrass, slipper shells (dead), clam worm, red crab	strong current
	4	2.0	0 to 1-2 cm oxygenated brown silty medium and coarse sand; 2-4 cm burrows, partially oxygenated; 4-10 cm mottled brown/black silty sand	amphipods, live eelgrass in grab; looks like extensive bed in area; shells in grab, lots of red worms, algae (kelp, ulva) in grab, gastropods, 1 huge blue clam worm	

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INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M10-3	1	0.1	black, abundant shells	mussels and shells	near seep SP-1003
	2	1	0-1 cm (light brown); 1-10 cm (black with a sulfur odor); sediment was sandy silt, which contained a mat of filamentous organic matter; worm tubes	mussels, red worms, clam worms	mussels collected in 3-5 feet of water at the base of a rock face over-hang; no mussels were present in the sediment
	3	2	0-2 cm (medium brown); 2-12 cm (black); sediment was sandy silt with shell pieces, small rocks, and algae pieces; strong odor	many worms, including clam worms	
	4	2-6	0-1 cm reddish brown clayey silt, 2-6 cm med gray, 6-11 cm black; very smelly	amphipods, very soft bottom-could take weights off; couple of small worms	Boom surrounding dock adjacent to the site
M11-1	1		no sediment present	mussels	
	2	not applicable	no sediment present	mud snails; small mussels (approximately 100-150 total) in one localized area	
	3	not applicable	no sediment present	mussels	
	4		no sediment		
M11-2	1	Not deep enough to observe	light brown sand and cobbles; a small patch of sediment was present behind mussels at the erosional area; not deep enough to collect 0-10 cm	mussels present	much metal debris present
	2	not applicable	no sediment present	small patch of mussels (less than 50)	
	3	not applicable	no sediment present	mussels	
	4		no sediment		
M11-3	1	none observed	coarse at surface; cobbles and sand with some silt	mussels were collected 30 feet to the west of the sediment sample; no sediment at this location	very difficult to access by water, would be easier by land
	2	5-8	surface (cobbles); below the surface (cobbles, sand, and some silt)	mussels, knotweed	rust at a depth in the dark part of the redox
	3	4	surface (cobbles); 0-4 cm (yellowish-brown); 4-10 (dark gray); sediment was sandy gravel	mussels	
	4	2	0-2 cm light brown sandy silt with gravel, 2-10 cm black sandy silt gravel		Sandy silt found in conjunction with mussels

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M12-199A	1	not recorded	not recorded	mussels	could not access site with GPS unit.
	2	2	clayey silt; fibrous; many worm tubes	abundant eelgrass; thousands of mussels	mussel sampling location is 5 feet from the station marker directly between the wooden rails located in front of the second bay door from the left
	3	5	0-5 cm (light brown with fibrous material); 5-10 cm (dark gray to black); sediment was silt		sampling location was 2 feet seaward of the station marker between the wooden rail ways
	4	2	0-1(~2) cm light brown, 2-10 cm med-dark gray -, sandy silt; 0-1(~2) cm - many roots	2-10 cm - many worms	
M12-2	1	0.3-1.5	brown and black mottled; worm burrows	eelgrass, mussels, tube worms	
	2	none observed	sandy silt; mottled	abundant eelgrass; many mussels	mussels collected using a clam rake
	3	0.3	0-0.3 cm (medium brown); 0.3-10 cm (mottled dark brown to black); sediment was sandy-silt with some shells and wood pieces	abundant eelgrass (including rhizomes, blades, and roots), brown algae, small snails, worms	collect sample during low wind conditions, and at low boat traffic times (morning) to avoid getting waves in the boat
	4	2	0-1/2 to 2 cm, light brown sandy silt, 2-6 cm dark gray, 6-10 cm light gray silty sand with gravel	worm tubes, worms, some big clam worms; mussel shells, plant debris; algae piles and mussel shells around boat; do not see eelgrass	
M12-3	1	2.5	black	none observed	could not access proposed location; collected near discharge on wall
	2	4-5	0 to 4-5 cm (light brown); 5-10 cm (black); sediment was sandy silt	abundant eelgrass	
	3	0.5-1	0-1 (medium brown); 1-4.5 (dark gray); 4.5-6 (light brown); 6-11.5 (black); sediment was clayey silt	eelgrass bed, blood worms	sampling location was 16 m from the warning sign; position 2 (from May 2000) was used because position 1 is currently under a barge
	4	0.1	0-1 mm light brown sandy silt, 1 mm -12 cm black, > 12 cm shell hash sandy layer; broken up shells a couple of whole shells; in third grab the sandy layer is at ~ 10 cm so some got sampled; smelly	plant debris, eelgrass patches around boat	Water very turbid, though, can't see extent of eelgrass

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M13-1	1	0.1	dark gray to black clayey silt; no bioturbation, strong sulfur odor	mussels collected from floating raft	
	2	1.5-2	0 to 1.5-2 cm (medium brown); 2-10 cm (black); sediment was clayey, sandy silt (fine sand)	mussels, one living worm	oil sheen on waste water[3]
	3	1.5-3	0 to 1.5-3 cm (medium brown); 3-9 cm (black); sediment was sandy silt with worm tubes, a small mussel shell, and wood pieces	brown algae (kelp), sea lettuce	
	4	3	0 to 1.5-3 cm light brown clayey silt; 3-10 cm jet black; stinky	plant debris- a couple of leaves, a couple of shells (mussel, snail)	
M13-2	1	3	black clayey silt; strong sulfur odor	none observed	
	2	0-3	0-3 cm (light to medium brown); 5-10 cm (black); sediment was sandy silt with some worm tubes; 0-5 cm (worm burrows)		oil sheen on waste water[3]
	3	1-2	surface (small amphipod tubes); 0-2 cm (light brown); 2-4 cm (black); 4-9 cm (mottled medium to dark gray and black); sediment was sandy silt with many worm tubes	eelgrass, worms	
	4	2.5	0 to 2.5 cm medium brown clayey silt, 2.5 - 5 cm gray; 5-10 cm black	plant debris (a lot)	CTD cable was not long enough to reach the bottom
M13-3	1	2	mud, strong sulfur odor	mussels collected from pylons	
	2	0-1.5	0-1.5 cm (medium brown); 1.5-10 cm (dark gray to black); sediment was clayey silt with a lesser sulfur odor than during Round 1	mussels, dead seaweed	oil sheen on waste water[3]
	3	1-2	0 to 1-2 cm (light brown); 2-9 cm (black); sediment was clayey, sandy silt with strong odor; some shells and wood pieces present	eelgrass, algae, leaves (dead)	
	4	1	0-1 light brown oxygenated, 1-4 cm gray, 4-6 light brown, 6-7 black clayey silt with some sand	plant debris, lots of ulva on grab, live snail; live eelgrass in 3rd grab	Distinct odor

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
M14-1	1	1	brown/dark brown and gray sediment with roots, rocks, gravel, fine sand, and a little bit of silt	mussels collected within 30 feet of sediment, saltmarsh	
	2	none recorded	salt marsh sediment	salt marsh, mussels	sampling location was approximately 16 inches from the station marker
	3	none recorded	salt marsh sediment	salt marsh	sampling location was adjacent to the station marker
	4	none observed	salt marsh sed		
M14-2	1	1-2	mottled gray and black silty sand	mussels present	
	2	0-1.5	0-1.5 cm (light brown); 1.5-14 cm (mottled dark brown/black); sediment was sandy silt	mussels	better to sample at mid-high tide
	3	0.5-1	0-1 cm (light brown); 1-12 cm (mottled dark gray and black); sediment was sandy silt with a strong odor	many red worms, shrimp, large clam worm	
	4	1-6	0-1 light brown-green, 1-6 cm mottled brown/dark gray/black, 6-10 cm dark brown	worm, shells, plant debris, large clam worm, large scallop shell; green crab	
M14-3	1	2-3	clayey silt, sandy	algae present	
	2	0-3	0-3 cm (light brown, many worm burrows); 3-7 cm (light gray); 7-13 cm (black); sandy silt with many worm tubes		
	3	0.7-1.5	0-1.5 cm (light brown); 1.5-6 cm (medium gray); 6-13 cm (mottled dark gray and black); sediment was sandy silt with a strong odor	worms, eelgrass (dead)	
	4	3.7	0-1 cm light brown, 1 to 3-7 medium brown, 3-7 to 13 cm black clayey silt	small white tube worms on surface; stinky; larger tube worm with pointy tip; shells (gastropods) in sed; plant debris	

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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
R01-1	1	1.5	0-1.5 cm (brown); 1.5-10 cm (black); sediment was a sandy silt with roots	collected at salt marsh	residential along shoreline; residential with a wooded area and a large salt marsh
	2	none recorded	salt marsh sediment	salt marsh	sampling location is 3 feet seaward of the station marker
	3	1	0-1 cm (light brown); 1-10 cm (dark, almost black); sediment was silty mud		
	4	none observed	silt-clay sized sediment with lots of roots; this is near the edge of the salt marsh.	There are a few patches of young grass here, but the grass is not nearly as dense as it is 5 feet shoreward of the station marker	No bioturbation
R01-2	1	2-7	brown to dark brown medium sand; small eel grass plants/roots present in grabs; worm burrows	eelgrass	near what appears to be a UNH float marking eelgrass locations
	2	0-2	0-2 cm (light brown); 2-10 cm (black); sediment was medium sand	many snails	
	3	none recorded	surface (medium brown); below surface (black)		
	4	0.5	1/2 cm redox; 0 to 1/2 cm reddish brown silty sand, 1/2 to 5 cm mottled dark gray-brown	a lot of plant material, many snail shells, worm tubes; eelgrass all around - thick bed adjacent to sampling, many smaller patches, bed is probably greater than 100 ft by 100 ft	
R01-3	1	1-2.5	fine sand (medium brown to mottled black); some roots, sparse eel grass, and snail shells; many worm burrows	eelgrass; mussels on large rock (most were 6-7 cm)	rocky site; use caution when approaching; collected sediment about 20 feet from rock
	2	none recorded	surface (many pebbles); 0-10 cm (light brown medium sand)	mussels, abundant snails, old rhizomes	difficult to collect the sample due to abundant snails
	3	0.5	0-0.5 cm (medium brown); 0.5-6 cm (dark gray); sediment was silty sand with rocks and shells		
	4	0-3	0-3 cm medium brown, 3-10 cm grading to medium gray sand with gravel	some eelgrass, rockweed, lots of rocks, eelgrass all around	

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Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
R01-4	1	1	0-1 cm (brown); 1-10 cm (black); silty with clay and shells	mussels; mudflat; rockweed	
	2	<1	0-1 cm (brown); 1-10 cm (black); sediment was clayey silt; mud flat with an occasional boulder	many snails, many large mussels, clam worms, rockweed	sampling location is approximately 3 feet seaward of the station marker
	3	1.5-2	0-2 cm (brown); 1-10 cm (darker brown); sediment was silt with marsh grass roots	marsh grass, snails (10 within one square foot), worms	
	4	3	0-3 cm light brown, 3-5 cm light gray, 5-10 cm dark gray black sandy silt with some clay towards bottom of sample; sediment has slight anaerobic odor	lots of mussels, snails, many worms in sediment	Sulfur odor
R02-1	1	none observed	brown silty sand	collected at saltmarsh; snails, bivalves, and crabs present; no mussels present	large mudflat in cove at low tide; only a small rivulet at low tide; residential area in cove, monitoring station adjacent to elevated railroad bridge; sample located about 40 feet toward the river across from boat dock
	2	none observed	0 to 3-4 cm (brown coarse sand with some gravel, shells, and fine sand); 3-4 to 10 cm (grayish-brown fine sand and silt with some medium sand and many roots)	sprouting marsh grass	sampling location is approximately 3 feet straight down from the eroded marsh bank and approximately 1 foot seaward of the station marker
	3	1	coarse sand with some pebbles and marsh grass roots	marsh grass	sampling location is approximately 2 meters from station marker toward drawbridge
	4	5	0-5 cm reddish brown coars sand, 5-10 cm brownish gray very fine sandy silt with marsh roots	a lot of worms present	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
PAGE 18 OF 22

Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
R02-2	1	3-5	silty sand; eel grass and worm tubes in sediment	eelgrass	close to red nun #4 just outside of channel in mooring field
	2	2-4	0-3 cm (yellowish-brown); 3-5 cm (gray); 5-10 cm (black); sediment was medium sand with a small amount of silt and many worm tubes; 0-6 cm (worm burrows)	eelgrass	sponson point was touching red nun #4
	3	4	0-4 cm (medium brown); 4-11 cm (mottled brown and black); sediment was fine- to medium-grained sand (0-7 cm) and silty sand (>7 cm)	eelgrass, tube worms	sample was collected while the boat was tied to red nun #4
	4	2-3	0-2 cm reddish brown, 2-3 cm light gray, 3-11 cm dark gray silty sand	tube worms on surface, clam worm, plant debris, a lot of worms, small white flakes like tiny amphipods	
R02-3	1	0.5-3	sand with clay	very large clam worm; mussels on 1st bridge pylon	had to add weights to grab sample
	2	1.5	surface (thin layer of leaves; shell fragments and worm tubes); 0-1.5 cm (light brown); 1.5-10 cm (black); sediment was a fine sandy silt	mussels	
	3	1-2	surface (rocks and shells); 0-2 cm (medium brown); 2-6 cm (mottled dark gray and black); 6-10.5 cm (dark gray); sediment was a fine sand (0-5 cm), and clayey silt with little, or no sand (5-10.5 cm)	mussels, snail, clam worm	
	4	0-5	0-5 cm light brown coarse sand with some gravel, cobbles; some light gray balls of clay	a mussel; many worms	Rock held jaws open a bit in first grab (still a good one though); 2nd grab- another rock but some sed fine

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
PAGE 19 OF 22

Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
R02-4	1	0.5	0-0.5 cm (brown); 0.5-10 cm (black); sediment was a sandy silt	mudflat; abundant mussels	
	2	2-4	surface (worm tubes); 0 to 2-4 cm (light brown); 2-4 to 10 cm (black); sediment was silt with some clay and fine sand	mussels, clam and crab remnants	sampling location is approximately 2 feet from the seep towards the river and adjacent to the station marker
	3	0.5	0 to 0.5 cm (light brown); 0.5 to 10 cm (black); sediment was silt with 3 or 4 worm burrows		sampling location is approximately 1 meter from the station marker
	4	1-10	redox ~ 1.5 cm; sed light brown silt with some very fine sand below redox (~1.5 to 10 cm) black very fine sandy silt	a lot of worms present	
R03-1	1	none observed	clayey silt with abundant roots in sediment	saltmarsh; some fucus mixed in with grass; abundant snails; no mussels present	patches of trees adjacent saltmarsh
	2	4-8	0 to 4-8 cm (light brown, gradational boundary); 4-8 to 10 cm (light gray); sediment was gravelly silt with many roots	salt marsh; rockweed, abundant snails	sampling location is at the top of the eroded surface of the salt marsh and 3 feet east of the station marker
	3	>10	brown silt with many marsh grass roots	marsh grass, many snails	sampling location is right next to Round 2 hole
	4	none observed	salt marsh, no redox layer, brown sand and silt throughout	marsh grass roots abundant	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
PAGE 20 OF 22

Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
R03-200B	1	0.3-2	1-2 cm (light oxygenated); 2-7 cm (reduced-black), 7-16 cm (dark gray to brown); sediment was a silt with some fine sand; sediment mottled with burrows; abundant eelgrass and roots in one grab	eelgrass and clam worms	
	2	2-4	0 to 2-4 cm (reddish medium brown); 6-10 cm (black with a light odor); sediment was silty sand; 0-6 cm (worm burrows)	dense eelgrass (fresh green blades); many amphipods	
	3	1-2	0 to 1-2 cm (medium brown); 2-10 cm (mottled medium brown and black); sediment was silty sand with worm burrows	eelgrass	
	4	3	0 to 1-3 cm light brown clayey silt; 3-11 cm mottled brown/dark gray; very stiff, cohesive mud; worm burrows to 6 cm	many worms, huge clam worm; lobster burrows possibly; eelgrass patches all around, got some in grab 3, patches were medium size, about 2 coolers in size	
R03-3	1	0.5	black sandy silt	eelgrass; only large mussels available	
	2	1-2	0-2 cm (brown); 2-7 cm (mottled brown /dark gray); 7-12 (black); sediment was sandy silt	mussels, amphipods, eelgrass (fresh blades and rhizomes)	
	3	0.5	0-0.5 cm (medium brown); 0.5-6 cm (mottled dark brown and black); sediment was sandy silt with gravel	eelgrass, many worms including clam worms, small brittle stars, sand shrimp, snails	strong current
	4	6	0 to 5-6 cm light brown, 6-10 cm medium gray light brown burrows; sandy clayey silt	eelgrass patches all around- only a dozen or so blades per patch so very small but a lot of them; dead eelgrass pieces and roots in grab sample; worms, big clam worms	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
PAGE 21 OF 22

Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
R03-4	1	0.5-0.7	0-0.7 cm (brown); 0.7-10 cm (dark gray); sediment was a sandy silt; pebbles present	thick bed of scattered mussel shells	
	2	2	0-2 (pale brown); 0-10 cm (grades to pale gray); sediment was gravelly, silty coarse sand (beach)	mussels	sampling location is 4 feet northwest of the station marker
	3	0.5	0-0.5 (medium brown); 0.5-10 cm (dark gray); sediment was sandy silt		sampling location is 2 feet seaward of the station marker
	4	0.5	0.5 cm redox; sandy silt, light brown thru redox, blackish gray below redox	worms present	
R04-1	1	none observed	fine sand and silt with abundant roots	collected at saltmarsh; 1.5 feet from edge (in marsh)	
	2	none observed	surface (thin layer of light gray sand); below the surface (darker, grayish sand; very rooty; hydrogen sulfide odor)	salt marsh	sampling location is 6.5 feet seaward of the station marker; sampling location is 8 inches shoreward of the Round 1 sample hole because the marsh is being undercut and eroded
	3	>10	0-10 cm (brown silt)	abundant marsh grass	sampling location is 20 yards west of seep; sampling location is adjacent to the Round 2 sample hole
	4	none observed	salt marsh	a lot of marsh grass roots	No mussels
R04-2	1	1-4	light to dark brown coarse sand with some gravel	abundant mud snails, eelgrass	
	2	2.5-3.0	0-3 cm (yellow), 3-8 cm (dark gray); sediment was coarse sand and pebbles		
	3	1-1.5	0-1.5 cm (medium brown), 1.5-6 cm (dark gray); sediment was coarse- to medium-grained sand with gravel and rocks	snails, young crab	very strong current
	4	1-5	0-1 cm, gravel layer, 1-5 cm coarse sand all light brown	worms, rocky and shelly, shrimp type organism in sediment	

TABLE 2-2

INTERIM OFFSHORE MONITORING AND REFERENCE SAMPLE/STATION DESCRIPTIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE
PAGE 22 OF 22

Station	Round	Redox Discontinuity[1] (cm)	Sediment Description	Biota Present	Other Comments/Notes[2]
R04-3	1	2-3	light to dark brown medium to coarse sand with some gravel	mussels by rock causeway; some larger (6-8 cm), but enough 5-6 cm mussels	difficult to collect grab; collected subtidal mussles about 5-7 feet from causeway and about 20-25 feet from sediment (rocks in sediment near mussels)
	2	3-4.5	0-4 cm (medium brown); 4-10 cm (black); sediment was medium sand with mussel shells and a few pebbles	mussels	mussels collected with grab sampler
	3	4	0-4 cm (medium brown); 4-8 cm (dark gray); sediment was coarse- to medium-grained sand with gravel and many shells	snails, eelgrass	very strong current
	4	1-5	0-1 cm light brown, 1-5 cm medium gray some mottling with light brown, coarse sand with snail shells, gravelly sand; gravel to cobbles		
R04-4	1	2	sandy sediment	abundant mussels	
	2	2-4	sediment was medium sand with shells and many worm tubes	mussels	sampling location is 2.5 feet seaward of the station marker
	3	>10	0-10 cm (dark gray to brown fine, silty sand)		
	4	none observed	no obvious redox, but some small, intermittent pockets of dark gray, blackish sand; fine sand light brown to gray		

Notes:
1 - Redox discontinuity is based on a visual observation of where the sediment color changes from brown to black.
2 - Permanent station markers were installed at most of the intertidal locations.
3 - The waste water is the water and excess sediment that is drained from the sediment sampler during sample collection.

Source data located in Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 2-3

MONITORING AND REFERENCE STATION COORDINATES
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 1 OF 2

Stations	Longitude	Latitude	Easting[1]	Northing[1]
Monitoring Stations				
M01-1	70.74008268	43.08462144	346809.7	92107.5
M01-2	70.74006265	43.08452139	346814.8	92071
M01-3	70.7405225	43.08454131	346692	92079.1
M02-1	70.73498259	43.08413134	348171	91919.6
M02-2	70.73550279	43.08412134	348032	91916.9
M02-3	70.73516269	43.08369144	348121.8	91759.6
M03-1	70.73167297	43.08271138	349051.7	91396.1
M03-2	70.73275264	43.08281141	348763.5	91434.5
M03-3	70.73220268	43.08288135	348910.6	91459
M04-1	70.72901296	43.08240127	349761.6	91278.3
M04-2	70.72823292	43.08277139	349970.9	91411.8
M04-3	70.72837276	43.08218135	349932.1	91197
M05-1	70.72718305	43.08179127	350249	91052.7
M05-2	70.72658287	43.08214129	350410.2	91179.2
M05-3	70.72718298	43.0820714	350249.7	91154.8
M06-1	70.72609293	43.08169124	350540	91014.3
M06-2 (Rd 1)	70.72587909	43.08206497	350598.04	91150.13
M06-2	70.72553437	43.08198017	350689.93	91118.61
M06-3	70.72632297	43.08155128	350478.2	90963.7
M07-1	70.7240231	43.07967125	351088.1	90274.4
M07-2	70.72433799	43.07943672	351003.4	90189.48
M07-3 (Rd 1)	70.72579836	43.07950118	350613.38	90215.57
M07-3	70.72379267	43.07934683	351148.88	90155.75
M08-1	70.72661312	43.07942127	350395.5	90187.9
M08-2	70.72669179	43.079224	350374	90116.14
M08-3	70.72692278	43.07927132	350312.4	90133.8
M09-1	70.7279831	43.07857114	350027.4	89880.5
M09-2	70.7284529	43.07821132	349901	89750.2
M09-3	70.72830855	43.07821631	349939.58	89751.76
M10-1	70.72913303	43.07609119	349714.1	88978.7
M10-2	70.72884295	43.0761012	349791.63	88981.83
M10-3	70.72888635	43.07675466	349781.63	89220.07
M11-1	70.73616306	43.07458111	347832	88441
M11-2	70.7356229	43.07473114	347976.7	88494.7
M11-3	70.73318281	43.07502118	348629.4	88596
M12-1	70.74068378	43.07943666	346636.18	90218.92
M12-2	70.74083282	43.07925148	346595.9	90151.7
M12-3	70.74031256	43.07925135	346734.9	90150.7
M13-1	70.74332286	43.08080152	345934.5	90721.2
M13-2	70.74397282	43.08102131	345761.4	90802.5
M13-3	70.7431228	43.08082146	345988	90728.1
M14-1	70.74876255	43.08267154	344485.9	91412.8
M14-2	70.74844239	43.08226161	344570.4	91262.8
M14-3	70.74738266	43.08241159	344853.9	91315.5

TABLE 2-3

MONITORING AND REFERENCE STATION COORDINATES
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 2

Stations	Longitude	Latitude	Easting(1)	Northing(1)
Reference Stations				
R01-1	70.80758014	43.12161301	328880.5	105720.3
R01-2	70.80813027	43.11956285	328727.9	104974.2
R01-3	70.81027035	43.12042306	328158.9	105292.1
R01-4	70.80781037	43.12124297	328818	105585.9
R02-1	70.75892216	43.08837164	341786.3	93509.3
R02-2	70.75908212	43.08714162	341740.4	93061.3
R02-3	70.75931222	43.08771168	341680.4	93269.5
R02-4	70.75892231	43.08792167	341785.1	93345.3
R03-1	70.74061308	43.06902119	346629.1	86422.7
R03-2	70.73993287	43.06815126	346808.7	86104.4
R03-3	70.74030297	43.06811127	346709.7	86090.5
R03-4	70.74028302	43.06874106	346716.6	86320
R04-1	70.73389322	43.06058092	348404	83334.3
R04-2	70.73435303	43.06021098	348280.2	83200.3
R04-3	70.73548318	43.06035106	347978.5	83253.4
R04-4	70.73431315	43.06047101	348291.5	83295

1 - Northings and eastings are in State Plane NAD 87.

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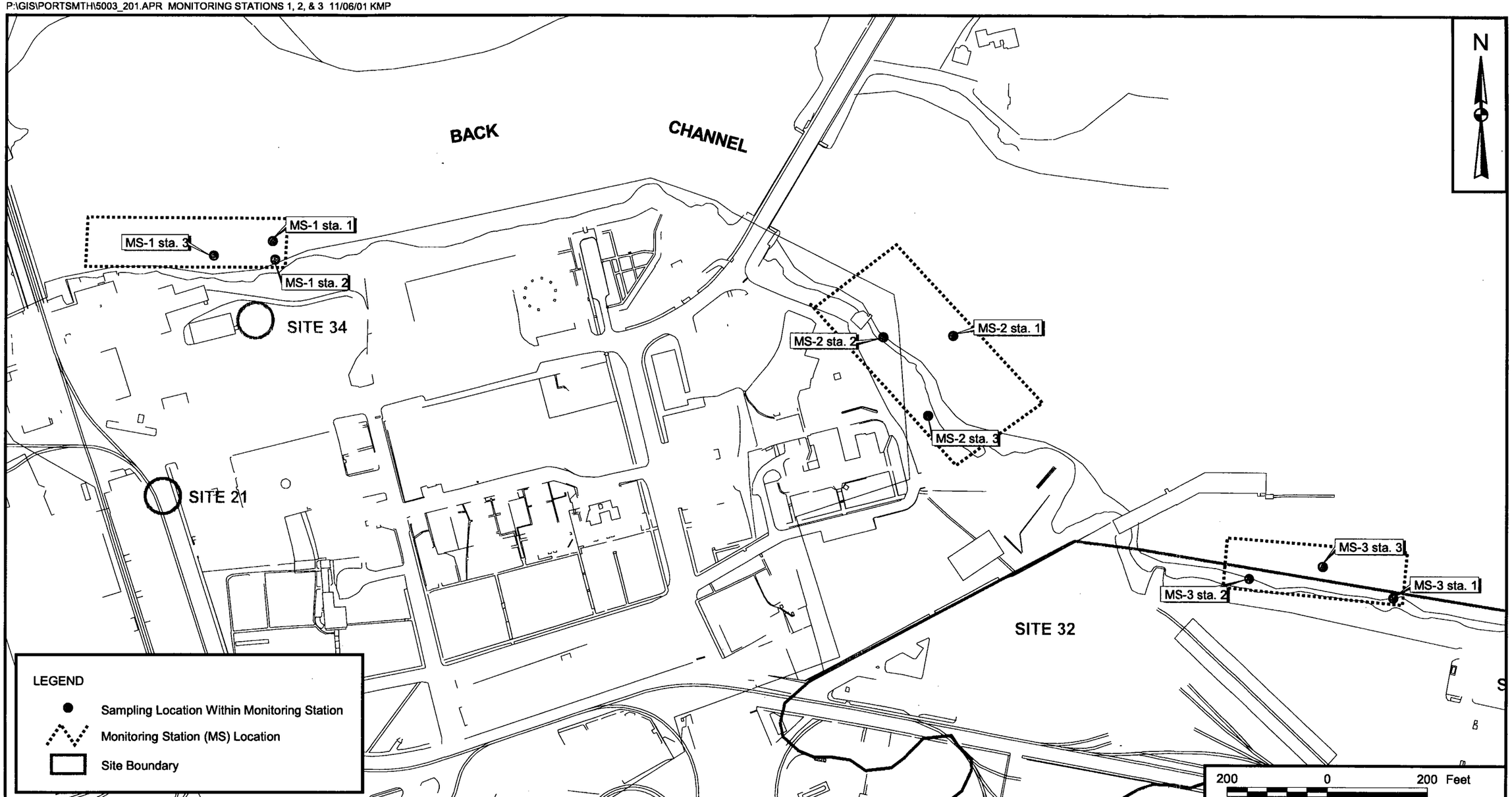

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY J. LAMEY	DATE 1/5/00
CHECKED BY A. BERNHARDT	DATE 11/06/01
COST/SCHEDULE-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

MONITORING STATIONS 1, 2, & 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
APPROVED BY —	DATE —
APPROVED BY —	DATE —
DRAWING NO. FIGURE 2-1	REV 0

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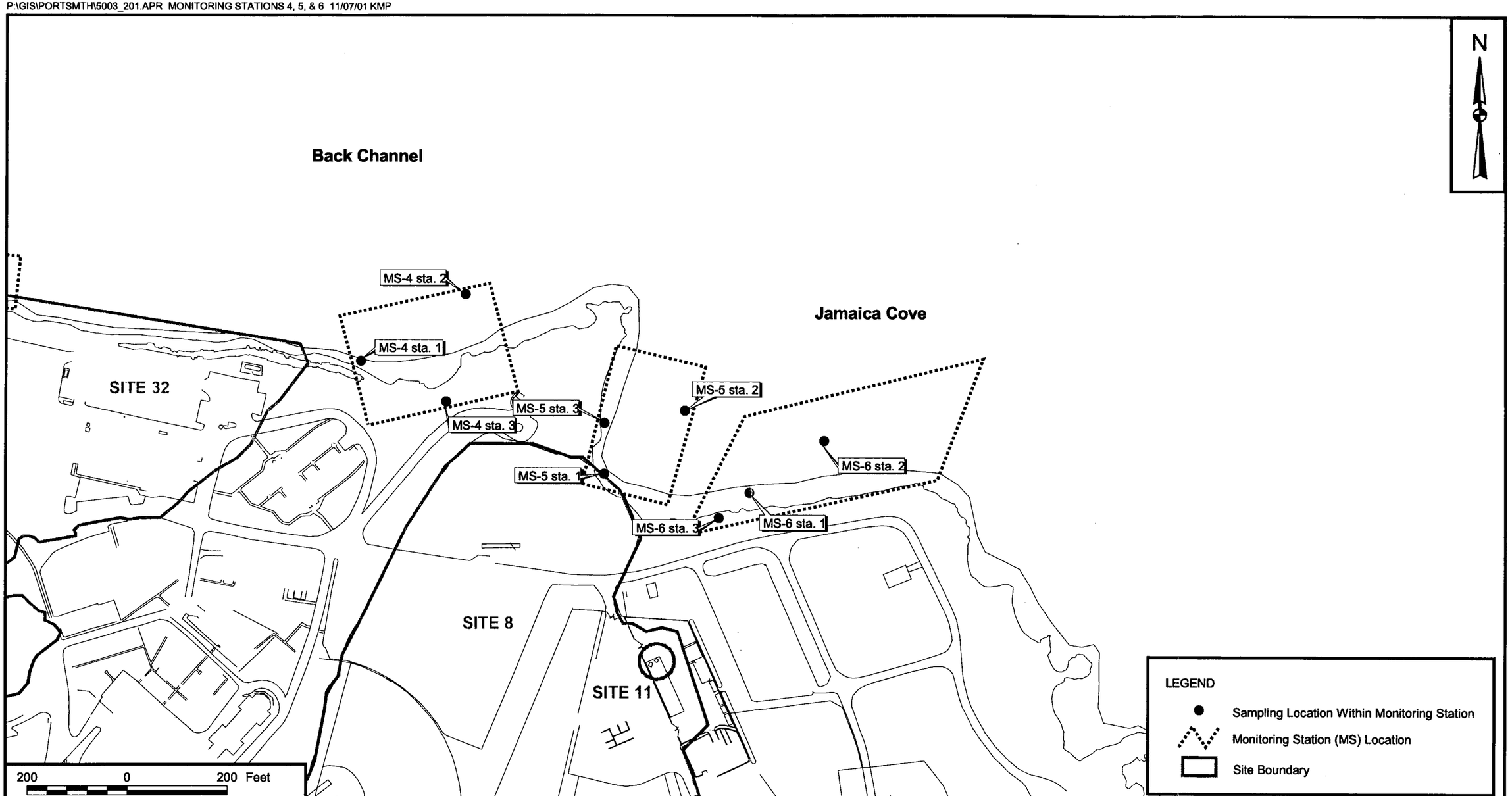

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY J. LAMEY	DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833 / OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT	DATE 11/06/01	MONITORING STATIONS 4, 5, & 6 BASELINE INTERIM OFFSORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — / DATE —
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 2-2 / REV 0

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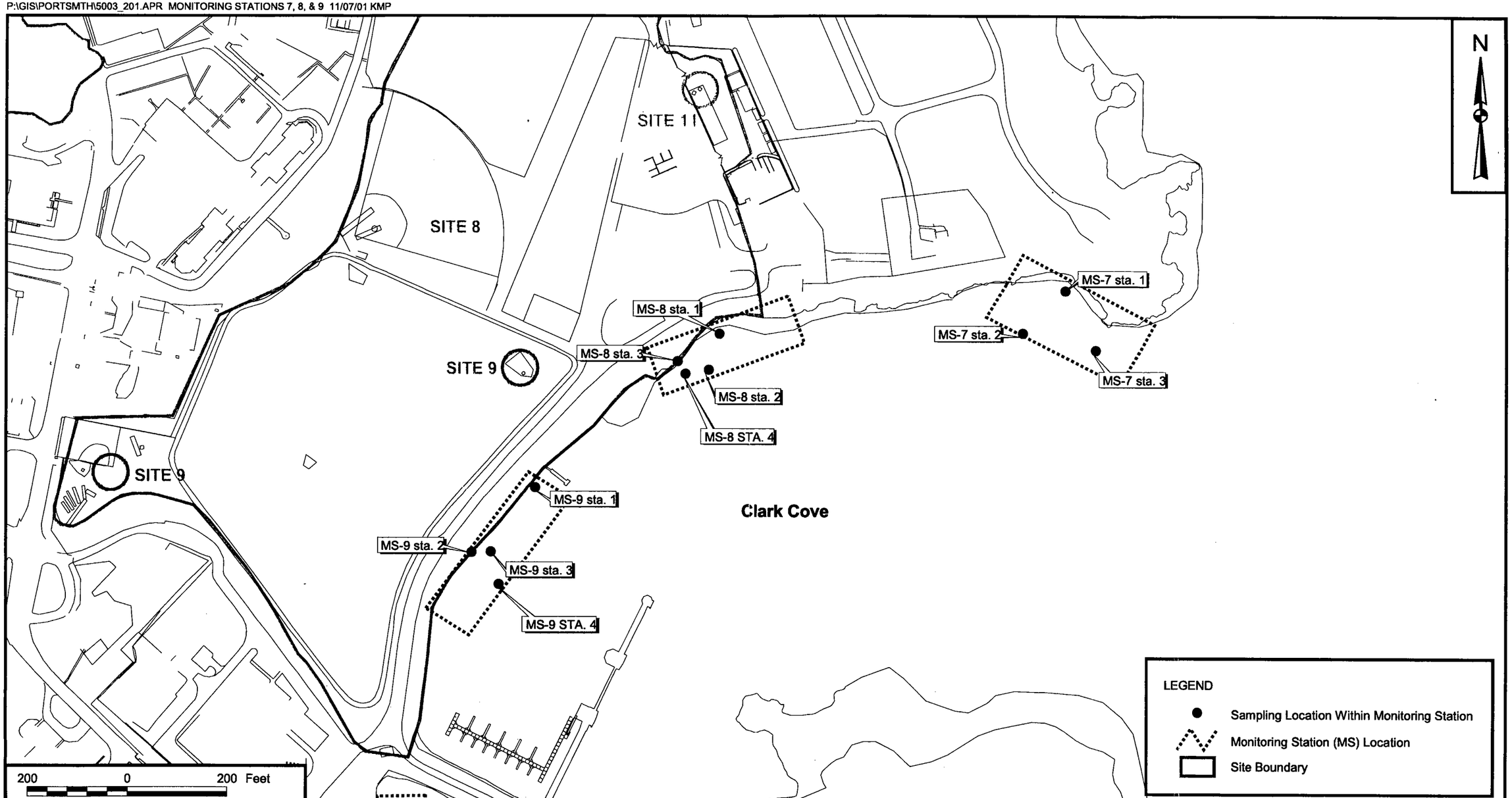
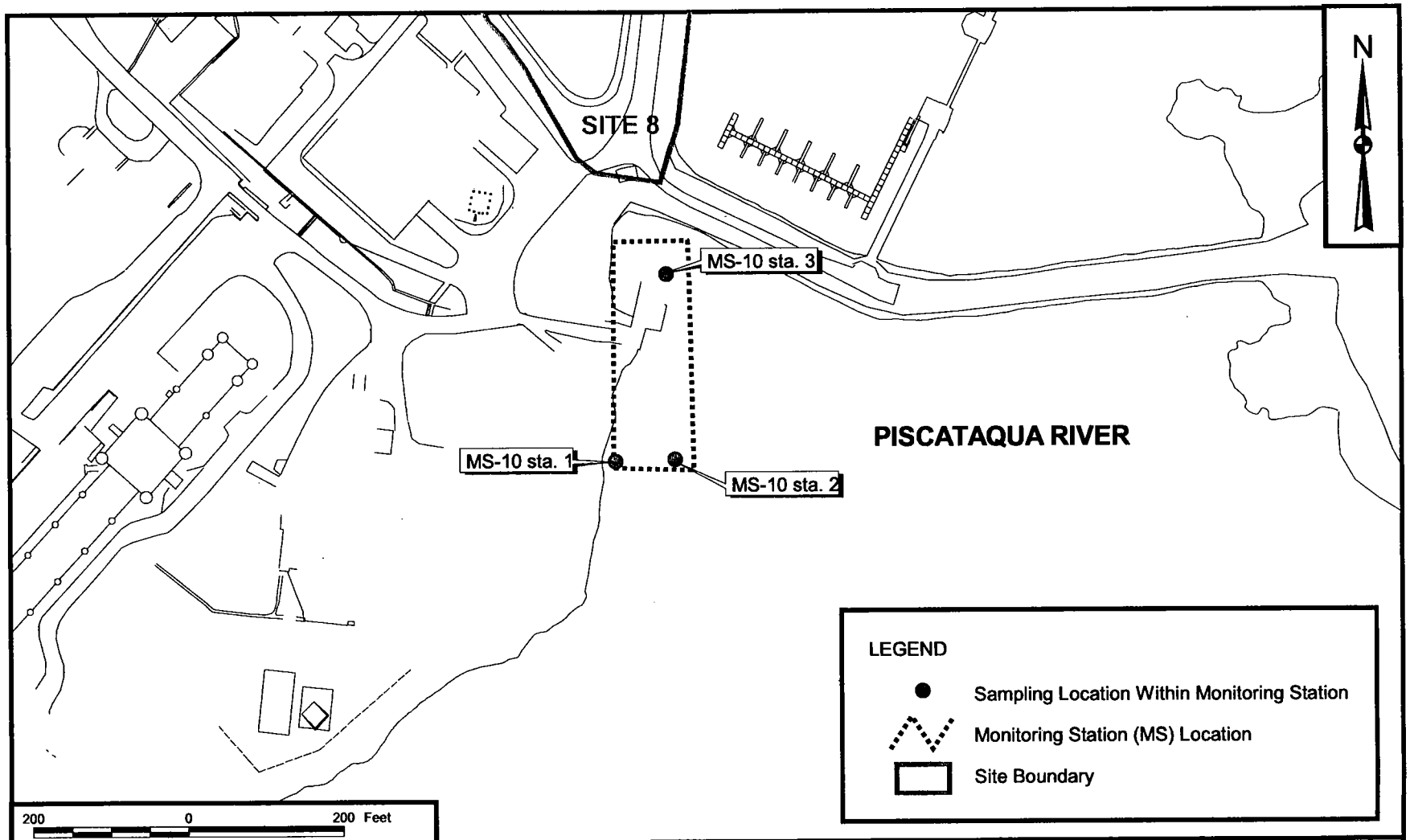


NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY J. LAMEY	DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833 / OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT	DATE 11/06/01	MONITORING STATIONS 7, 8, & 9 BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — / DATE —
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 2-3 / REV 0



DRAWN BY J. LAMEY DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT DATE 11/06/01	MONITORING STATION 10 BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 2-4	REV 0

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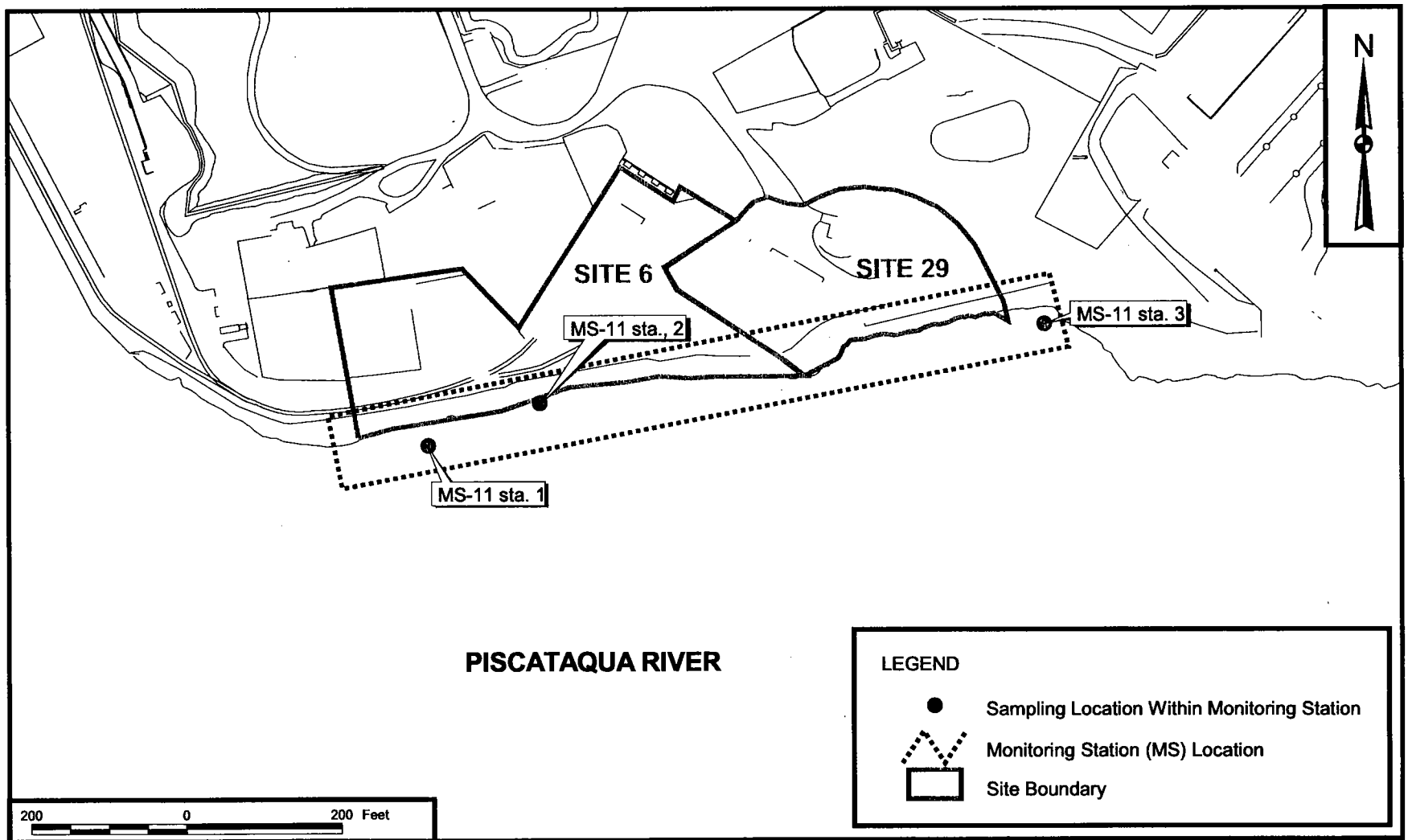

DRAWN BY J. LAMEY DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT DATE 11/06/01	MONITORING STATION 11 BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 2-5	REV 0

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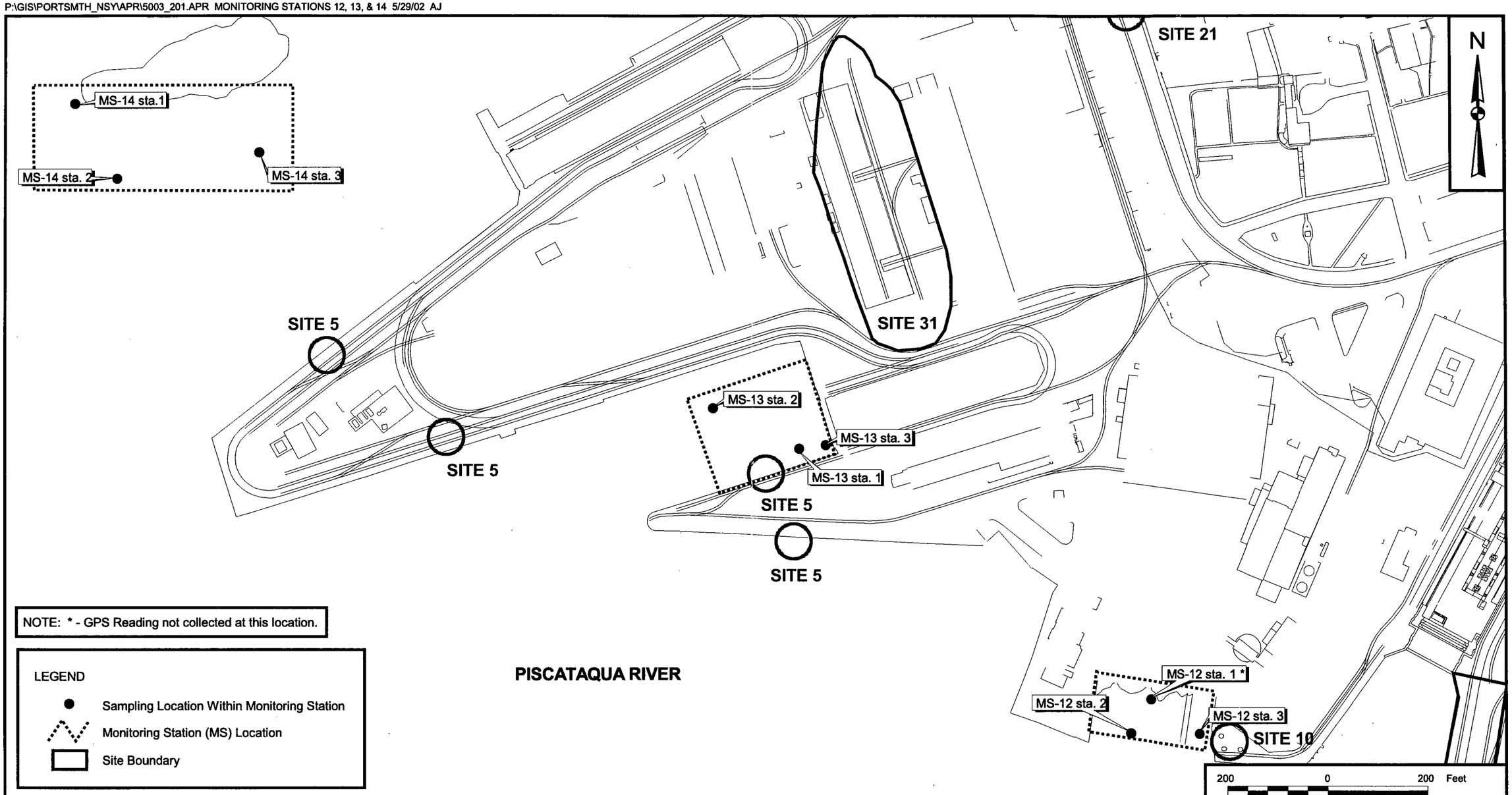


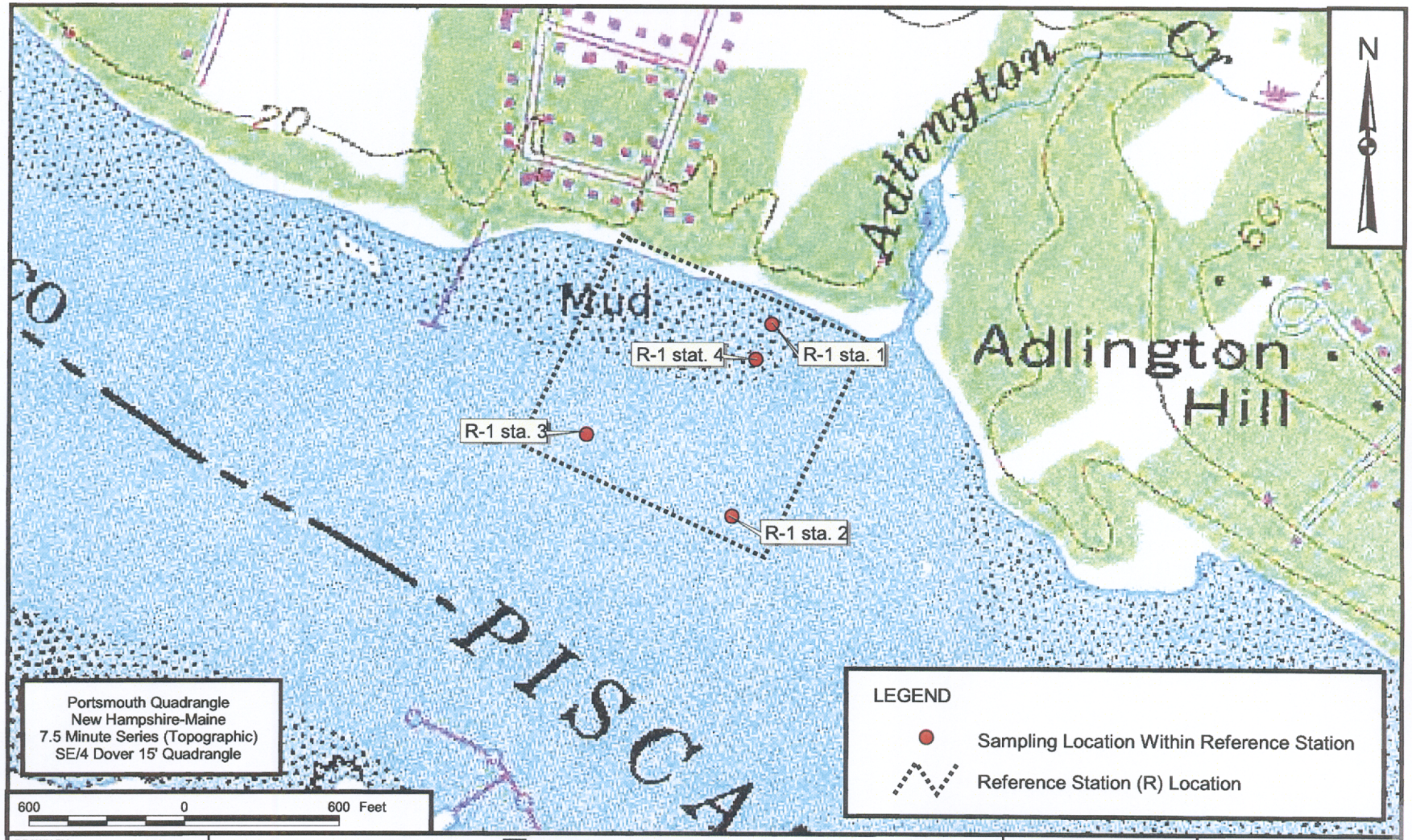
NOTE: * - GPS Reading not collected at this location.

LEGEND

- Sampling Location Within Monitoring Station
- Monitoring Station (MS) Location
- Site Boundary

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY J. LAMEY	DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833 / OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT	DATE 11/06/01	MONITORING STATIONS 12, 13, & 14 INTERIM OFFSHORE MONITORING PROGRAM PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — / DATE —
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 2 - 6 / REV 0



DRAWN BY J. LAMEY — DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT — DATE 11/06/01	REFERENCE STATION 1 BASELINE NTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 2-7	REV 0

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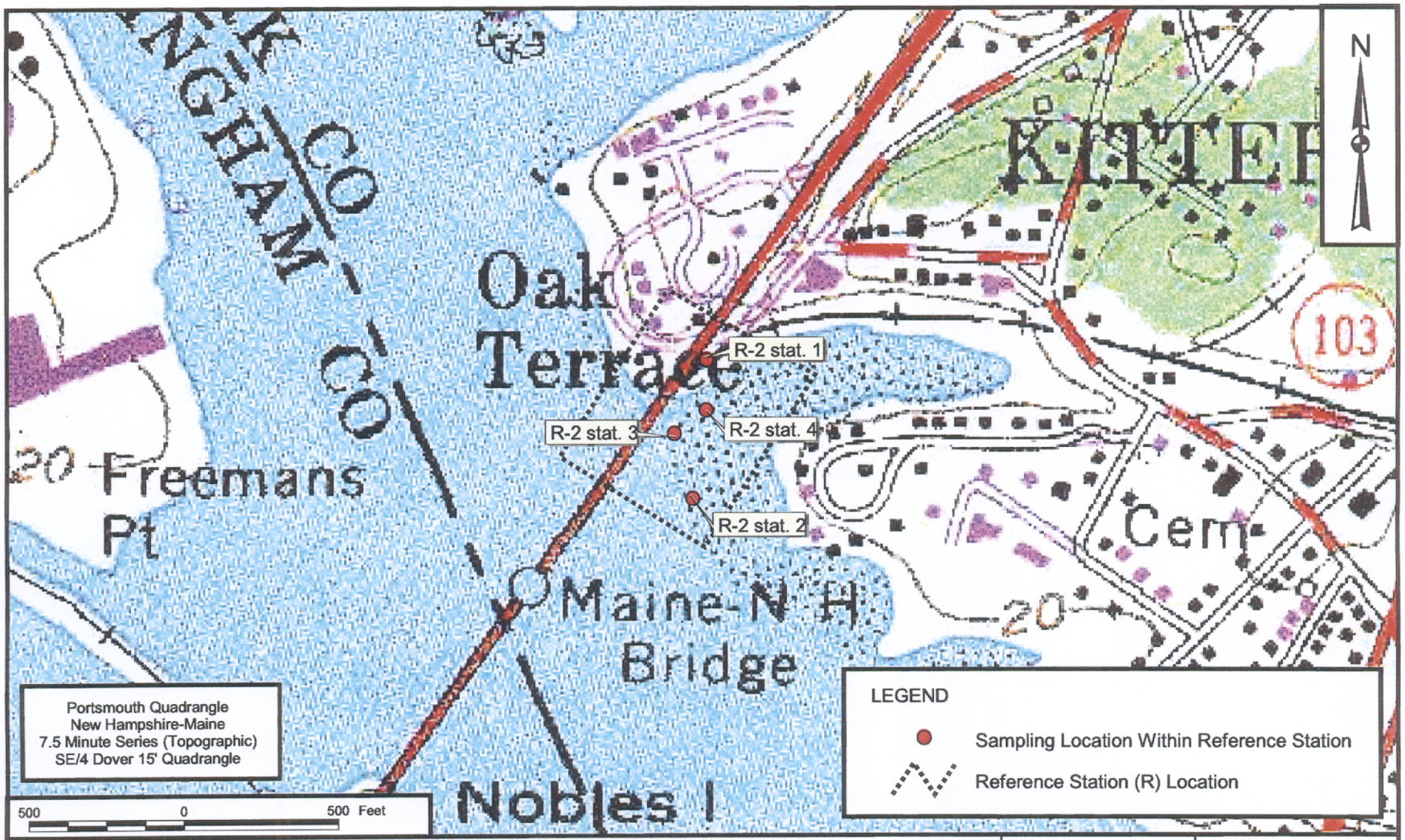

DRAWN BY J. LAMEY — DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT — DATE 11/06/01	REFERENCE STATION 2 BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 2-8	REV 0

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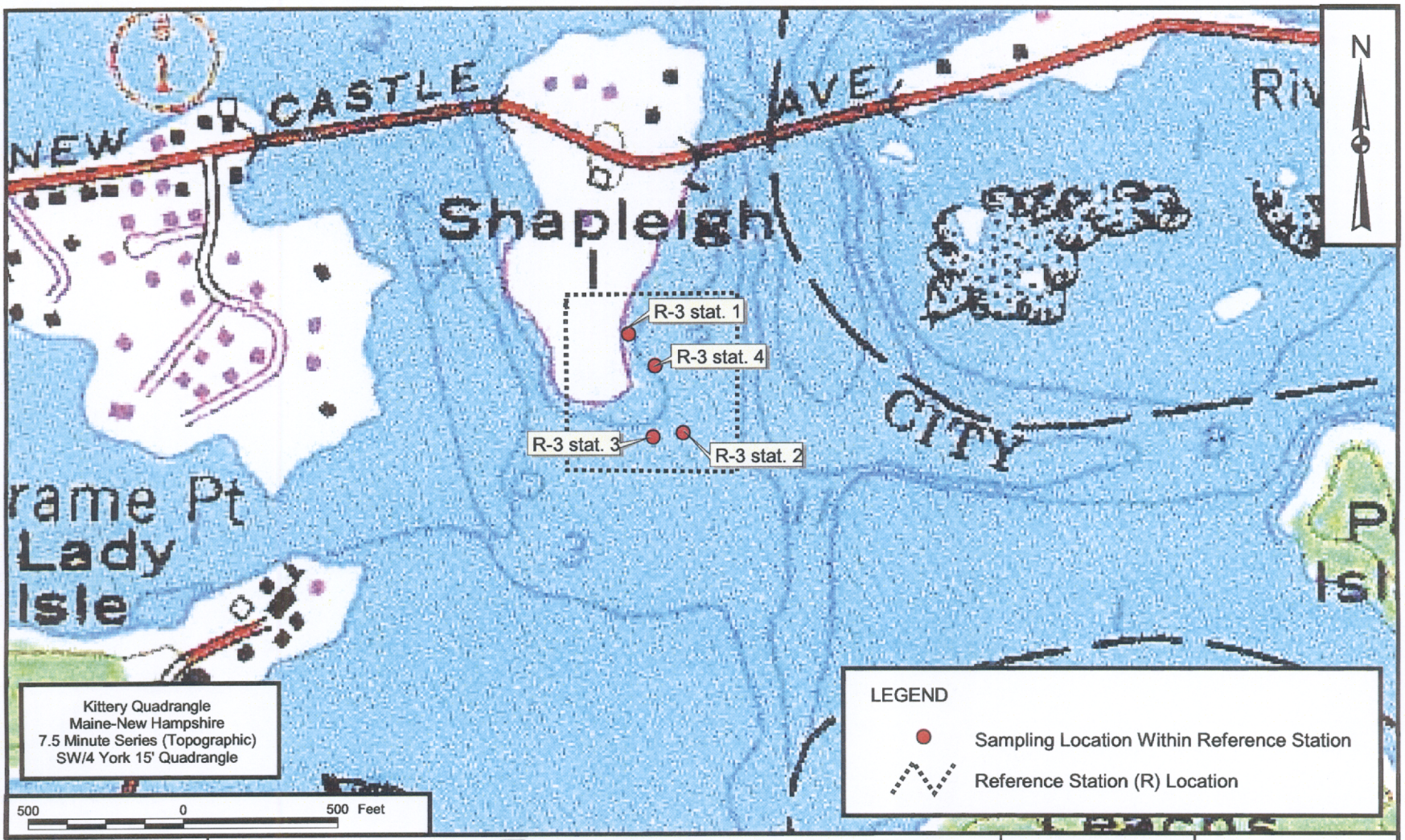

DRAWN BY J. LAMEY — DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT — DATE 11/06/01	REFERENCE STATION 3 BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 2-9	REV 0

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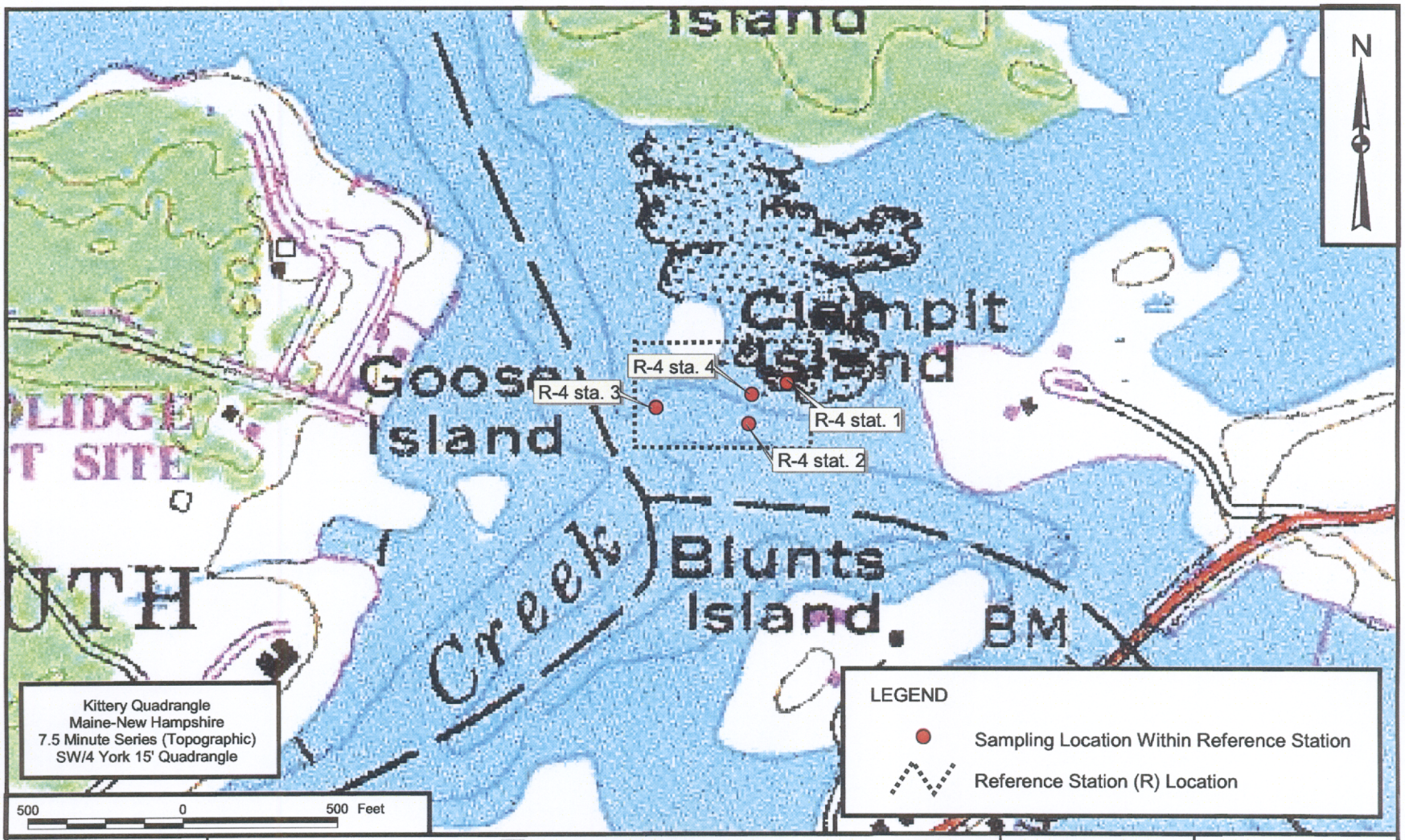

DRAWN BY J. LAMEY DATE 1/5/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 2833	OWNER NUMBER CTO 0815
CHECKED BY A. BERNHARDT DATE 11/06/01	REFERENCE STATION 4 BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 2-10	REV 0

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3.0 ANALYTICAL METHODS/DATA PREPARATION

Analytical methods and data preparation are discussed in this section.

3.1 ANALYTICAL METHODS

For this project, chemical analyses of sediment, sediment porewater (Round 2 only), and tissue (i.e., mussel and juvenile lobster) samples were analyzed by TAMU. The sediment/porewater toxicity tests (Round 2) were performed by the U.S. Geological Survey. The results of the sediment porewater and whole sediment toxicity tests are presented in the Round 2 Data Package (TtNUS, October 2000). The sediment porewater data and toxicity test results were collected specifically to support PRG development; these data are evaluated in the PRG report (TtNUS, November 2001).

Section 6.0 of the Interim Offshore Monitoring Plan (TtNUS, October 1999) details the Quality Assurance/Quality Control (QA/QC) protocols and requirements based on standard practices, methodology, and QA/QC guidance. The DQA reports in Appendix A provide an evaluation of the analytical methods that were used by the laboratories and discuss the data validation results.

Table 3-1 summarizes the parameters that were analyzed for in sediment, mussels, and juvenile lobster.

3.2 PREPARATION OF THE DATA

This section of the baseline report describes the procedures used to prepare the data for the various tables and figures that are presented in this report.

3.2.1 Averaging

As indicated in the Interim Offshore Monitoring Plan (TtNUS, October 1999), trending of the monitoring station data will be conducted using average chemical concentrations from each station as part of the 5-year review. To be consistent with the 5-year review, average station concentrations were presented on several of the tables and figures in this baseline report.

Organic and inorganic chemical concentrations lipids, TOC, and AVS/SEM results from each location at a monitoring or reference station were averaged to calculate a station-wide average. One-half of the method detection limit (MDL) was used for non-detected values. At locations where duplicates samples were collected, the sample and duplicate chemical concentrations were averaged and counted as a single sample. The resulting sample was then used to calculate the station average. If there was a non-detected value and a detected value at the duplicate location, one-half of the MDL was used for non-

detected values, unless the detected value was less than the non-detect value. In this case, the concentration defaulted to the detected value and this concentration was used in the calculation of the station average. The overall reference station concentration for the analytes, lipids, and TOC over the four rounds was calculated in the same manner as was done for each individual station.

3.2.2 Normalizing

When the objective of a particular table or figure was to compare analytical data across stations, the data were usually normalized to percent TOC, percent lipids, or aluminum. This section of the report presents the procedures and rationale for normalizing the analytical data.

Organic chemical concentrations in the sediment samples were divided by the percent of TOC in the sediment because organic chemicals tend to bind to organic carbon (USEPA, September 1997). Therefore, under similar situations, sediment samples with higher TOC concentrations would tend to have higher organic chemical concentrations versus samples with low TOC concentrations. By normalizing the samples, the differences in chemicals concentrations that are caused solely by different TOC concentrations were taken into account. The calculation was as follows for organic chemicals:

$$\text{Normalized sediment concentration} = \frac{\text{sediment concentration}}{\text{percent TOC}}$$

Organic chemical concentrations in the tissue samples were divided by the percent of lipids in the tissue because organic chemicals tend to bind to lipids in tissue (USEPA, September 1997). Therefore, under similar situations, tissue samples with higher lipid concentrations would tend to have higher organic chemical concentrations versus samples with low lipid concentrations. By normalizing the samples, the differences in chemicals concentrations that are caused solely by different percent lipids were taken into account. The calculation was as follows for organic chemicals:

$$\text{Normalized tissue concentration} = \frac{\text{tissue concentration}}{\text{percent lipid}}$$

Metal concentrations in the sediment samples were divided by the concentration of aluminum in the sediment (Summers et al., 1996). Metals in the tissue samples were not normalized because there is no acceptable method for normalizing metals in tissue samples. Aluminum is a naturally occurring crustal element and is not related to site activities. Therefore, under similar situations, sediment samples with higher aluminum concentrations would tend to have higher metals chemical concentrations, if the metals are naturally occurring. By normalizing the sediment data to aluminum, metal concentrations that were

elevated with respect to the aluminum concentration may be related to site (or other offshore) activities. The calculation was as follows for metals:

$$\text{Normalized sediment concentration} = \frac{\text{metal concentration}}{\text{aluminum concentration in sediment}}$$

Averaging of the normalized data followed the procedures previously described. For locations where duplicate samples were collected, sample and duplicate concentrations and percent lipid (or percent TOC) were averaged first. The average concentration was then divided by the average percent lipid (or percent TOC), resulting in the average normalized chemical concentration for the specific location. This value was then used to calculate the normalized station average. There were some tissue samples where the percent lipid was not determined for the duplicate sample. When this occurred, sample and duplicate chemical concentrations were averaged for the location and then divided by the single percent lipid value for that location; the resulting value was then used in the calculation of the normalized station average.

3.2.3 Removal of Outlier

As was discussed in the Draft Interim Offshore Monitoring Report for OU 4 (TtNUS, December 2001) one mussel sample (OU4-MU-R02-400A) from one of the four reference stations had elevated levels of PAHs in the third sampling round. These levels were identified as statistical outliers in that report. It was determined through chemical reanalysis of the sample by the laboratory that the mussel tissue from monitoring station M13 was likely used for the analysis of the reference mussel. See attachment to the April 2, 2002 conference call minutes in Appendix L. Based on the April 2, 2002 conference call, the Navy, regulators, and SAPL agreed that sample OU4-MU-R02-400A should be removed from the data set, but not replaced with the reanalysis results since the sample was past the analytical hold time. Therefore, this sample was removed from all of the data tables, figures, and evaluations in this report.

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TABLE 3-1

PARAMETERS ANALYZED FOR IN SEDIMENT, MUSSELS, AND JUVENILE LOBSTERS BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Sediment	Mussel	Juvenile Lobster
Metals	X	X	X
PAHs	X	X	X
Alkylated PAHs	X	X(1)	X(1)
Pesticides	X	X	X
PCBs	X	X	X
Dioxins	X(2)	X(2)	X(2)
Grain size	X		
Total Organic Carbon	X		
Percent Lipids		X	X
AVS (0 to 2 and 0 to 10 cm)	X		
SEM (0 to 10 cm)	X		

1 – The alkylated PAHs for the tissue samples were not proposed in the Interim Offshore Monitoring Plan (TtNUS, October 1999). However, TAMU analyzed the tissue samples for the alkylated PAHs at no additional cost to the Navy because their laboratory software makes it easier to provide this information than not to provide it.

2 – Dioxins were analyzed in samples collected from monitoring stations M07 through M12 and all four of the reference stations (R01 through R04).

4.0 DATA ANALYSIS

4.1 DESCRIPTIVE STATISTICS ACROSS STATIONS

4.1.1 Objective

The objective of this section of the baseline report is to present the results of the analytical data collected during the first four rounds of the Interim Offshore Monitoring Program and to list general observations about the data across the stations.

4.1.2 Background

As presented in Sections 2.0 and 3.0 of this report, sediment, mussels, and juvenile lobster samples were collected from monitoring and reference stations and analyzed for various chemical constituents. The analytical results are presented and described in the following section. The data in this section were not normalized but were averaged in accordance to the procedures presented in Section 3.0. The sections below indicate the type of data that were included in each evaluation.

4.1.3 Results

4.1.3.1 Summary Statistics

Tables 4-1 through 4-6 present the cumulative summary statistics (Rounds 1 through 4) for sediment, mussel, and juvenile lobster analytical data for the monitoring and reference stations using non-normalized data. These tables include various total values (i.e., total DDT, total PAHs, etc.) that were calculated as follows:

- The dioxin TEQs were calculated as presented in Appendix K. The TEQ-HALFND values were calculated using one-half of the detection limit for non-detects. The TEQ-POSONLY values were calculated using only positive detections.

- The total DDT values were calculated by summing the 2,4'- and 4,4'-DDD, DDE, and DDT values using one-half of the detection limits for non-detects.

- The low molecular weight (LMW) PAH values were calculated by summing the following seven PAHs using one-half of the detection limits for non-detects: 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene.

- The high molecular weight (HMW) PAH values were calculated by summing the following six PAHs using one-half of the detection limits for non-detects: benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, and pyrene.

- The total PAH values ere calculated by summing the LMW and HMW values.

- The total PCB values were calculated by summing the following 18 PCB congeners using one-half of the detection limits for non-detects and multiplying the value by 2.0: PCB-101/90, -105, -118, -128, -138/160, -153/132, -170/190, -18/17, -180, -187, -195/208, -206, -209, -28, -44, -52, -66, and -8/5.

The raw data for each of these chemicals were presented in Table 3-2 in the Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, and September 2001), and are provided in Appendix B as Tables B-1 through B-4 for ease of reference. The mussel sample from R02-4 during Round 3 was removed from this table as per Section 3.2.3 of this report. Tables B-5 through B-7 for the sediment mussels, and juvenile lobsters, respectively, present the various total values described above (excluding dioxin TEQs) because they were not included in Tables B-1 through B-4. Tables 4-1 through 4-6 list the chemicals that were detected in each media. Because the data are combined across all the stations and all four rounds, only the following gross generalizations were made to gain an initial impression of site conditions:

- For sediment, most of the PAHs, PCBs, metals, and some of the pesticides were detected in all or most of the samples. However, several of the pesticides and dioxins were detected in less than half of the sediment samples. For the monitoring and reference stations, the following observations were made:

  - Maximum detections of many dioxins occurred at M09 or M11 (for the monitoring stations) and R03 (for the reference stations).

  - Maximum detections of many PAHs occurred at M01 or M12 (for the monitoring stations) and R03 (for the reference stations).

  - Maximum detections of pesticides and PCBs occurred at several monitoring stations and at R02 and R03 (for the reference stations).

  - Maximum detections of many metals occurred at M11 (for the monitoring stations) and at various reference stations.

- For mussels, most of the PAHs, PCBs, pesticides, and metals were detected in all or most of the samples. However, several of the pesticides, PCBs, and dioxins were detected in less than half of the mussel samples. Also, nickel and silver had fewer detections than the other inorganic chemicals. For the monitoring and reference stations, the following observations were made:

  - Maximum detections of many dioxins occurred at M09, M10, and M12 (for the monitoring stations) and at various reference stations.

  - Maximum detections of many PAHs occurred at M13 (for the monitoring stations) and various reference stations. Round 3 had the maximum concentration for most PAHs at the monitoring stations.

  - Maximum detections of many pesticides occurred at M10 (for the monitoring stations) and various reference stations.

  - Maximum detections of PCBs occurred at various monitoring stations and reference stations.

  - Maximum detections of metals occurred at various monitoring stations and at R02 and R04 (for the reference stations).

- For juvenile lobsters, most of the PAHs, metals, and some of the pesticides and PCBs were detected in all or most of the samples. However, several of the pesticides, PCBs, and dioxins were detected in less than half of the juvenile lobster samples. Also, aluminum, chromium, lead, and nickel had fewer detections than the other inorganic chemicals. For the monitoring and reference stations, the following observations were made:

  - Maximum detections of dioxins occurred at various monitoring stations and at R01 (for the reference stations).

  - Maximum detections of many PAHs occurred at M02 (for the monitoring stations) and various reference stations. Round 1 had the maximum concentration for most PAHs at the monitoring stations.

  - Maximum detections of pesticides and PCBs occurred at various monitoring stations and reference stations.

- Maximum detections of metals occurred at various monitoring stations and at R01 (for the reference stations).

4.1.3.2 Water-Quality Measurements

As part of sediment sampling activities, depth, temperature, salinity, and dissolved oxygen measurements for surface water were collected at all subtidal locations. These measurements are presented in the Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, and September 2001). For this baseline report, only water temperatures are presented because these are the only water quality data that are used in this report (see Section 6.3.2). The water temperatures during Rounds 1 and 3 (summer rounds) were greater than 13°C with most values being greater than 15°C. Most of the water temperatures during Rounds 2 and 4 (spring rounds) were less than 10°C, but some were near 13°C.

4.1.4 Conclusions

The following bullets present the general conclusions from the review of the descriptive statistics for the monitoring stations:

- The maximum dioxin detections were at monitoring stations M09 and M11 (for sediment) and M09, M10, and M12 (for mussels). The maximum dioxin concentrations were at various stations for juvenile lobsters. The dioxins are discussed more in Section 8.0 of this report.

- The maximum PAH detections were at monitoring stations M01 and M12 (for sediment), M13 (for mussels), and M02 (for juvenile lobsters). Monitoring stations M12 and M13 are located in the dry docks. The elevated levels of PAHs at M12 and M13 locations may be caused by a combination of sources that may or may not be related to PNS including; potential migration or transport from IR sites, discharges from barges/boats, storm water outfalls located in the vicinity of the shipyard, and dock-side activities, to name a few. PAHs at M01 may be related to Site 34.

- The maximum pesticide concentrations were at various stations for sediment and juvenile lobsters but were at M10 for mussels. The pesticides have not been linked to an onshore source.

- The maximum PCB concentrations were at various stations for sediment, mussel, and juvenile lobsters.

- The maximum metal concentrations were at various stations for mussels and juvenile lobsters but were at M11 for sediment. Monitoring station M11 is the location by the DRMO where soil containing

elevated levels of metals (i.e., lead and copper) had eroded into the river. An emergency removal action was conducted in 1999 to prevent further erosion of contaminants.

4.2 BIOTA SEDIMENT ACCUMULATION FACTORS/BIOTA ACCUMULATION FACTORS

4.2.1 Objective

The primary objectives for this section of the baseline report were to present the procedures used to calculate the sediment to mussel and sediment to juvenile lobster bioaccumulation factors (BAFs) and biota sediment accumulation factors (BSAFs), and to then present the BAFs and BSAFs for the mussels. The BAFs and BSAFs for the juvenile lobsters are presented in Section 7.0. The mean mussel BAFs and BSAFs were then used to estimate sediment concentrations at locations where sediment was not present (see Section 5.1). A secondary objective was to present the results of the percent lipids evaluation for the mussels and juvenile lobsters.

4.2.2 Background

BAFs and BSAFs are transfer coefficients that relate chemical concentrations in biota to chemical concentrations in sediment (USEPA, September 1997). Typically, the transfer coefficients for metals are termed BAFs and the transfer coefficients for organic chemicals are termed BSAFs. The BAFs and BSAFs are a ratio of the chemical concentration in the tissue divided by the chemical concentration in the collocated sediment and are calculated as follows:

$$\text{BAF} = \frac{\text{tissue concentration}}{\text{sediment concentration}}$$

Where: BAF = Bioaccumulation factor (unitless)

Tissue Concentration = Chemical concentration in mussel or juvenile lobster tissue (mg/kg dry wt)

Sediment Concentration = Chemical concentration in sediment (mg/kg dry wt)

$$\text{BSAF} = \frac{\text{tissue concentration/percent lipids}}{\text{sediment concentration/percent TOC}}$$

Where: BSAF = Biota sediment accumulation factor (unitless)

Tissue Concentration = Chemical concentration in mussel or juvenile lobster tissue (µg/kg dry wt)

Percent Lipids = Percent lipids in tissue sample (%)

Sediment Concentration = Chemical concentration in sediment (µg/kg dry wt)

Percent TOC = Percent total organic carbon of the sediment (%)

The tissue and sediment concentrations for the organic chemicals were normalized to percent lipids and TOC, respectively, because organic chemicals have a tendency to bind to lipids and organic carbon. These tendencies were accounted for by normalizing the chemical concentrations so the BSAFs can be compared to each other by removing sample-specific differences in lipids and TOC. The tissue and sediment concentrations for the inorganic chemicals were not normalized.

Sediment samples were collected from each mussel location, with the exception of two locations at monitoring station M11. The collocated sediment and mussel samples were used to calculate the BAFs and BSAFs at each location. Because juvenile lobsters can move throughout a monitoring station, only one juvenile lobster sample was collected at each monitoring station. The juvenile lobster BAFs and BSAFs were calculated using the juvenile lobster data from a station and the average sediment concentration for that station.

The BAFs and BSAFs were calculated only for detected and non-rejected data. Non-detected data were used to calculate average sediment concentrations when one or two of the locations were non-detect concentrations. However, non-detected data were not used to calculate BAFs or BSAFs if either the tissue or sediment concentrations were non-detect. For example, a BAF or BSAF was not calculated for a chemical in a sample if the chemical was detected in the tissue but not the sediment (or vice versa).

4.2.3 Results

The following sections present the results of the percent lipids evaluation, the mussel BSAFs, and the estimation of sediment contaminant concentrations using the mussel concentrations. The juvenile lobster BSAFs and BAFs are provided in Section 7.0 of this report.

4.2.3.1 Percent Lipids

Figure 4-1 presents the percent lipid data for the mussels and juvenile lobsters at each station for each round. The range of the percent lipids (based on average station values) was 2.7 to 13.6 percent (dry weight) for the mussels and 1.4 to 3.8 percent (dry weight) for the juvenile lobsters. Lipid concentrations from a study in Massachusetts were comparable with values ranging from 6.13 to 11.9 percent (dry weight) for mussels (Lefkowitz et al., 2000). These values were used to validate the results of this report. The percent moistures generally ranged from 80 to 90 percent for mussels and 75 to 85 percent for juvenile lobsters, as presented in the Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, and September 2001). If the percent moisture concentrations were used to convert the dry weight percent lipids for mussels to a wet weight percent lipids, the values would also be similar to those found in Maine shellfish (generally less than one percent lipids) (Sowles et al., 1999).

The percent lipid concentrations were averaged at each station for preparation of Figure 4-1. From the mussel plot, it is apparent that the percent lipids were greater in the spring rounds (Rounds 2 and 4) as compared to the summer rounds (Rounds 1 and 3), with a few exceptions. From the juvenile lobster plot, the percent lipids were greatest during Round 4 but lowest during Round 2. The differences in percent lipids were taken into account when the results were normalized by dividing the concentrations of organic chemicals in the tissue samples by the percent lipids. The seasonal variation of the percent lipids is further evaluated in Section 6.3.2 of this report.

4.2.3.2 Mussel BAFs and BSAFs

Tables 4-7 and 4-8 present the summary statistics (i.e., minimum, maximum, average, etc.) for the mussel BAF and BSAF averaged across all four sampling rounds for the monitoring stations and reference stations, respectively. The tables also present the minimum, maximum, and average BAF for each organic chemical class (i.e., dioxins, PAHs, pesticides, and PCBs).

Several of the chemicals had large standard deviations for the BSAFs and BAFs, which indicates that there is a large range of BSAF and BAF values across the stations and/or rounds. That also can be seen in the large differences between the minimum and maximum BSAFs and BAFs for several of the chemicals. The following bullets present summaries of each set of parameters:

- The mean BSAF for dioxins was 1.18 in the monitoring stations and 0.58 in the reference stations. Most of the mean BSAFs for the individual dioxins were less than 0.50.

- The mean BSAF for PAHs was 0.07 in the monitoring stations and 0.12 in the reference stations. Most of the mean BSAFs for the individual PAHs were less than 0.10 in the monitoring stations but were slightly higher in the reference station samples (most mean BSAFs were less than 0.50).

- The mean BSAF for pesticides was 3.93 in the monitoring stations and 1.85 in the reference stations. Most of the mean BSAFs for the individual pesticides were less than 2.50.

- The mean BSAF for PCBs was 1.26 in the monitoring stations and 1.92 in the reference stations. Most of the mean BSAFs for the individual PCBs were less than 1.50 in the monitoring stations but were greater in the reference station samples (most mean BSAFs were less than 3.0).

- The mean BAFs for most of the individual inorganic chemicals were less than 1.0. Cadmium, mercury, and silver in the monitoring stations, and arsenic, cadmium, copper, mercury, and zinc in the reference stations were the only inorganic chemicals with BAFs that were greater than 1.0.

- In summary, the mean BSAFs and BAFs were greatest for pesticides, PCBs, and dioxins, and lowest for the PAHs. The mean BAFs were low for inorganics. These levels are similar to BSAFs in the literature. For example, USEPA calculated BSAFs for PAHs, PCBs, and pesticides for benthic organisms and demersal (bottom-dwelling fish) (USEPA, September 1997). The 50th percentile BSAFs from that study were 0.29 for PAHs, 1.11 for PCBs, and 1.8 for pesticides, which are similar to the mean BSAFs from the monitoring stations of 0.07 for PAHs, 1.26 for PCBs, and 3.9 for pesticides. USEPA calculated a BSAF of 0.059 for pelagic fish for dioxins, which is much less than the mean BSAF of 1.18 from the monitoring stations. The difference in the values could be caused, in part, because pelagic fish are less likely to have direct contact with the sediment compared to mussels. The BSAFs for PAHs were similar to those presented at the 22nd Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) by Dr. Jerry Neff (Neff, et al., 2001). Dr. Neff calculated mussel BSAFs of 0.038 and 0.069 for PAHs at two locations in Alaska following the *Exxon Valdez* Oil Spill. These values are similar to the mean BSAF of 0.07 from the monitoring stations. Finally, in SAIC (1995), BSAFs were 0.27 for PAHs, 1.57 for PCBs, and 1.62 for pesticides, which are similar to the mean BSAFs from the monitoring stations.

- One study was identified that presented BAFs (although they were referred to as BSAFs in the study) for metals in mussels (Thomann, et al., 1995). The study used data from the National Oceanic and Atmospheric Administration (NOAA) Mussel Watch Program to calculate BAFs for metals. The study then determined mean BAF values for the metals using regression analysis. The mean BAFs for the metals are summarized in the table below:

Metal	Mean BAF for Monitoring Stations	Mean BAF for NOAA Study Data
Aluminum	0.01	0.01
Arsenic	0.69	1.24
Cadmium	5.58	12.1
Chromium	0.03	0.02
Copper	0.19	1
Iron	0.02	0.02
Lead	0.07	0.1
Manganese	0.04	0.42
Mercury	1.42	1.39
Nickel	0.06	0.09
Silver	1.75	6.6
Zinc	0.21	5

As observed from this table, the BAFs presented in Thomann et al. (1995) were similar to the BAFs calculated at the monitoring stations.

4.2.4 Conclusions

The following bullets present a summary of the conclusions from this section of the report:

- The percent lipid values were greater in the spring rounds compared to the summer rounds. These differences were accounted for when the tissue samples were normalized to percent lipids.

- The ranking of the mean BAF and BSAF values for the different parameter classes were as follows: PAHs<inorganics<dioxins<PCBs<pesticides. Therefore, the PAHs had the lowest overall BSAFs and the pesticides had the greatest overall BSAFs. These values were similar to those found in the literature.

4.3 COMPARISON TO HISTORICAL DATA

4.3.1 Objective

The objective of this section was to compare the analytical data collected during Rounds 1 through 4 of the Interim Offshore Monitoring Program and the analytical data collected as part of the EERA (NCCDSC, 2000) and the 1996-1997 sediment investigation (TtNUS, August 2000). The goal of this comparison was to determine whether any gross differences were observed among the chemical concentrations between the current sampling program and historical data.

4.3.2 Background

In 1991 and 1993, samples were collected from a variety of media (i.e., sediment, surface water, seep, tissue, etc.) to support the EERA (NCCOSC, 2000). Some of the EERA samples were collected within the boundaries of the monitoring stations of the offshore monitoring program, although most of the EERA samples were collected further offshore from subtidal areas. In 1996 and 1997, sediment and seep samples were collected from depths between 0 to 6 inches over four sampling rounds to evaluate chemical concentrations in the seeps and associated sediment (TtNUS, August 2000). Most of the 1996-1997 sediment samples were collected within the boundaries of the monitoring stations, although all the sediment samples were collected from intertidal areas. Figure 4-2 shows the location of the historic samples.

Table 4-9 presents the stations from the EERA and the 1996-1997 sediment investigation that were compared to the interim offshore monitoring stations. Several EERA stations or samples from those

stations shown in Figure 4-2 were not used in this comparison. For example, EERA stations that were not near any of the monitoring stations were not used in this comparison. Also, only comparable samples were used for this comparison. For example, deployed mussels that were sampled during the EERA were not used for this comparison because only indigenous mussels were collected during the Interim Offshore Monitoring Program. Only surficial sediment samples (within the top 12 cm) from the EERA were included in this evaluation (Appendix C). Table C-1 lists the specific samples from the EERA that were included in this comparison, along with some descriptive information about the samples. The comparisons were made using non-normalized data.

4.3.3 Results

The sediment and mussel analytical data from the Interim Offshore Monitoring Program were compared to the sediment and mussel analytical data collected during the EERA and 1996-1997 sediment investigation (Tables C-2 and C-3). The juvenile lobster data from the Interim Offshore Monitoring Program were not compared to the lobster data from the EERA because some of the locations were not the same between the data sets and the sizes of the collected juvenile lobsters during the EERA were not always known.

For sediment, the following observations were made after comparing the Interim Offshore Monitoring Program samples to the EERA and 1996-1997 sediment samples:

- PAH concentrations were greater in the Interim Offshore Monitoring Program samples at monitoring stations M04, M10, M12, and M13. However, the PAHs concentrations in the EERA samples from monitoring stations M02 and the 1996-1997 sediment samples from M05 were greater than the PAH concentrations in the Interim Offshore Monitoring Program samples.

- Monitoring stations M03 and M10 had higher pesticide (mainly DDT and breakdown products) concentrations in the 1996-1997 sediment samples compared to the Interim Offshore Monitoring Program samples.

- Monitoring stations M02 and M12 had greater PCB concentrations in Interim Offshore Monitoring Program samples compared to EERA samples.

- Monitoring stations M03 and M04 had greater metals concentrations (primarily copper, lead, nickel, and/or zinc) in Interim Offshore Monitoring Program samples compared to 1996-1997 sediment samples. Also, monitoring station M05 had greater lead concentrations in the 1996-1997 sediment samples compared to the Interim Offshore Monitoring Program samples.

Overall, chemical concentrations in the sediment are similar to the historic concentrations at most monitoring stations for most parameters. However, as presented above, some stations had greater concentrations of chemicals in the Interim Offshore Monitoring Program samples compared to sediment samples collected during the EERA and in the 1996-1997 sediment investigation. These differences in concentrations may be caused by variations in exact sample locations or because the chemical concentrations had changed over time. For most parameters, where there is a difference in concentrations between sampling events, the chemical concentrations were more often greater in the samples collected during the Interim Offshore Monitoring Program, as compared to those collected during the other sampling investigations.

For mussels, the following observations were made after comparing the Interim Offshore Monitoring Program samples to the samples collected during the EERA. Mussels were not collected as part of the 1996-1997 sediment investigation.

- PAH concentrations were greater in EERA samples compared to Interim Offshore Monitoring Program samples at monitoring station M10, but were detected at greater concentrations during the Interim Offshore Monitoring Program compared to EERA at monitoring station M12.

- The PCB and metals concentrations were generally similar between the Interim Offshore Monitoring Program samples and the EERA samples.

- Of the pesticides, 4,4'-DDT (and/or its breakdown compounds) concentrations were greater in EERA samples compared to Interim Offshore Monitoring Program samples at monitoring stations M02, M04, M05, M06, M09, M11, M12, and M14. Concentrations were greater in the Interim Offshore Monitoring Program samples compared to the EERA samples at Monitoring Station M10. Most other pesticides were not detected in the mussel samples collected during the EERA.

Overall, chemical concentrations in mussel were similar between the Interim Offshore Monitoring Program samples compared to EERA samples, with a few exceptions as noted above.

4.3.4 Conclusions

In summary, the overall conclusion of the evaluation conducted in this section is that the chemical concentrations in the sediment and mussel samples were similar between all of the sampling events. There is more variability in chemical concentrations for the sediment samples versus the mussel samples between the sampling events. This is probably because it is more likely that the sediment samples were not collected at the same locations between the EERA, 1996-1997 sediment investigation, and Interim Offshore Monitoring Program compared to the mussel samples. Most of the mussels are confined to a

small area along the shoreline, so it is likely that the mussels were collected at similar locations in the Interim Offshore Monitoring Program and the EERA.

The sediment samples collected as part of the EERA were mostly subtidal, the sediment samples collected as part of the 1996-1997 sediment investigation were all intertidal, and the sediment samples collected as part of the Interim Offshore Monitoring Program were a combination of intertidal and subtidal. As discussed in Section 4.4 of this report, there are some differences in chemical concentrations between the intertidal and subtidal samples. Also, samples were collected from more locations at most monitoring stations as part of the Interim Offshore Monitoring Program compared to the other two sampling investigations. An increase in the number of samples collected increases the chances of obtaining a larger range of chemical concentrations.

4.4 HABITAT TYPE COMPARISON TO SEDIMENTS

4.4.1 Objective

The objective of this section of the baseline report is to evaluate the sediment data from different habitats (i.e., saltmarsh and eelgrass bed) and different areas (i.e., subtidal versus intertidal).

4.4.2 Background

The reason for this evaluation is that some habitats can influence the type of sediment that are present. For example, the grasses in the saltmarsh and eelgrass beds can trap the finer particulates of sediment. Because chemicals typically bind most tightly to fine particulates, the saltmarsh and eelgrass beds may have greater chemical concentrations than the subtidal or intertidal areas as a whole.

Table 2-1 lists the habitat in which each sample was collected. Locations M06-2 and M07-3 were not collected in eelgrass beds during Round 1 because of rocks (M06-2) and miscommunications between the Navy and field team over the location of a demolished building (M07-3). These locations were moved to eelgrass beds during Rounds 2 through 4 and will remain there for subsequent rounds. The mussel bed habitat is marked on Table 2-1 if the sediment sample was collected within a mussel bed. At some locations, the mussels were collected within 10 meters of the sediment but were not necessarily located immediately adjacent to the sediment.

For this evaluation, the samples were grouped as follows: saltmarsh samples, eelgrass bed samples, subtidal samples, and intertidal samples. The saltmarsh samples were included with the intertidal data set, and the eelgrass samples were included with the subtidal data set. Normalized chemical

concentrations were used for the tables presented in this section (except for the TOC and grain size tables).

4.4.3 Results

Tables 4-10 and 4-11 present the frequency of detection and mean concentrations of chemicals in the intertidal and subtidal sediment samples and of the eelgrass beds and saltmarsh sediment samples, respectively. The data in the tables are separated into reference and monitoring stations. In order to compare the mean concentrations among the different data sets, ratios of the mean sediment concentrations among the data sets were calculated and are presented in Table 4-12. The shaded values indicate those ratios that are greater than 3.0; the value of 3.0 was arbitrarily chosen for visual purposes only. The following generalizations can be made from this table:

- The mean chemical concentrations among the intertidal and subtidal areas at the reference stations were similar for all parameters. For the monitoring stations, the mean concentrations of most dioxins, pesticides, PCBs, and metals were greater in the intertidal stations versus the subtidal stations. The mean concentrations of PAHs were similar among the intertidal and subtidal areas at the monitoring stations. This may indicate that, overall, the intertidal areas are more contaminated than the subtidal areas.

- The mean chemical concentrations were greater in the samples collected from the eelgrass beds versus the saltmarsh areas at the reference and monitoring stations for all parameters except metals. The mean concentrations of metals were similar between the eelgrass and saltmarsh samples at the monitoring and reference stations. In general, the ratios of eelgrass to saltmarsh for the PAHs were greater for the monitoring stations, whereas the ratios of eelgrass to saltmarsh for the pesticides and PCBs were greater for the reference stations. This indicates that the chemical concentrations in the sediment samples collected from the eelgrass beds were greater than those collected in the saltmarsh. This was not surprising for the monitoring stations because three of the saltmarsh samples were located at stations that overall had low chemical concentrations (M02, M06, and M14), and the fourth saltmarsh location (M04) spanned mostly coarse sand. Coarse sand will generally retain low levels of contaminants because of its large grain size and low surface area-to-volume ratio.

- The mean chemical concentrations among the intertidal and saltmarsh areas at the reference stations were slightly greater in the intertidal areas for most parameters except metals. For the monitoring stations, the mean concentrations of most of the parameters were greater in the intertidal stations versus the saltmarsh stations. This further supports the observation in the previous bullet that the saltmarshes were located at stations with intrinsically low chemical concentrations.

- The mean concentrations between the subtidal and eelgrass bed areas at the reference and monitoring stations were similar for most parameters. This indicates that the eelgrass areas represent the subtidal areas as a whole.

Tables 4-13 through 4-16 present the TOC and grain size data for the intertidal, subtidal, eelgrass bed, and saltmarsh areas, respectively. Figures 4-3 through 4-10 present these data graphically. In general, the TOC concentration was greater in the subtidal areas and the percent sand was greater in the intertidal areas with a few exceptions. The TOC concentrations in the saltmarsh areas were generally greater than the TOC concentrations in the eelgrass samples. Also, the TOC concentrations were more variable in the saltmarsh samples and the range of values was greater. The difference in TOC concentrations among the areas is the reason that the organic parameters were normalized to TOC in Tables 4-10 and 4-11. Finally, the TOC and grain size values at the reference stations were similar to those values in the intertidal monitoring stations. For the subtidal stations, the TOC concentration was slightly lower in the reference station samples and the percent sand was slightly greater in the reference station samples compared to the monitoring stations.

4.4.4 Conclusions

The following conclusions are made based on the results presented in Section 4.4.3:

- The intertidal areas at the monitoring stations appear to be more contaminated than the subtidal areas. This may be occurring because the intertidal areas are closer to the onshore source areas. For example, the metallic slag at M03 and M04 is in the intertidal area.

- The sediment concentrations in the eelgrass beds were greater than the concentrations in the saltmarshes. This may be caused by the locations of the saltmarshes (at stations with low overall chemical concentrations).

- The saltmarsh samples had lower chemical concentrations than the intertidal area as a whole.

- The eelgrass samples had similar chemical concentrations to the subtidal area as a whole.

- Although the TOC and grain size values at the reference stations were similar to those values in the intertidal monitoring stations, the TOC concentration was slightly lower in the reference station samples and the percent sand was slightly greater in the reference station samples. This indicates that chemical levels may be lower in the reference stations subtidal samples compared to the

monitoring station subtidal samples based on the grain size and TOC differences. Some of these effects were accounted for when the sediment samples were normalized to TOC.

Comparisons of the habitat data sets may be performed as part of the 5-year review to determine whether the results are statistically different among the habitats since some differences in mean concentrations and standard deviations were identified. If such differences are found, the impact on the interim monitoring program (e.g., use of weighting of habitat coverage in calculating the station averages) may be evaluated as part of the 5-year review report. The Navy agreed to discuss the need for weighting the data with the regulators and SAPL prior to preparing the 5-Year Review Report (see April 2, 2002 conference call minutes in Appendix L).

4.5 COEFFICIENT OF VARIATION

4.5.1 Objective

The primary objective for this section of the baseline report is to report the coefficients of variation (CV) for the monitoring station data and determine if the number of locations at each monitoring station are adequate for the monitoring program.

4.5.2 Background

The CV is a measure of how much the analytical results vary in the data set. As discussed below, CV results from the historic samples were used to determine how many sediment samples would need to be collected at each monitoring station.

In 1996 and 1997, sediment samples were collected from locations in Clark Cove, Sullivan Point, Back Channel, and Jamaica Cove. The CVs for each of these areas were calculated for each parameter and then averaged for each parameter class (i.e., PAHs, inorganics, and pesticides/PCBs). As part of the EERA, sediment samples were collected from all of the AOCs (Clark Cove AOC, Sullivan Point AOC, Dry Docks AOC, Back Channel AOC, and Jamaica Cove AOC) except for the DRMO Storage Yard. No sediment was available at the DRMO Storage Yard AOC (location of monitoring station M11). As presented in the Monitoring Plan (TtNUS, October 1999), most of the average CVs were less than 0.7 for the 1996-1997 sediment data, and the CVs ranged from 0.55 to 0.81 for the EERA data. Therefore, a CV of 0.5 was used in the DQO process (required for the USEPA DEFT software package) to calculate the number of samples that were needed to meet the identified decision error tolerances (TtNUS, October 1999). Based on the DEFT model, during the development of the interim offshore monitoring program, it was determined that three sediment samples needed to be collected at each monitoring station (TtNUS, October 1999).

The monitoring program indicated that if the CVs calculated using the Rounds 1 through 4 data were significantly different than the CVs from the historic data, the impact to the interim monitoring program (e.g. changes in the number of samples taken at each station) would be evaluated. The evaluation of the historical CVs is provided as Appendix B.3 of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Also, EERA sediment samples were primarily subtidal while the 1996-1997 sediment samples were all intertidal. The Rounds 1 through 4 samples for the interim offshore monitoring program were a mix of intertidal and subtidal samples. Section 4.4 of this report previously discussed the differences in chemical concentrations between intertidal and subtidal areas.

Some of the tables mentioned have CVs that are grouped per AOC for comparison to the CV data from the 1996-1997 sediment samples. In addition, CVs were calculated separately for M12, M13, and M14 because these areas are not located adjacent to each other. Finally, a CV was not calculated for M11, because with the exception of Round 1, only one sediment sample was collected at that station per round.

4.5.3 Results

Figure 4-11 presents the CVs for Rounds 1 through 4 across all the stations. The CVs for the individual rounds are presented in the DQA reports in Appendix A. These plots show that, although the range in CV varied from round to round, the average CVs were similar across the rounds, with the exception of inorganic chemicals. The high CV for inorganic concentrations in Round 1 was caused primarily by high CVs for copper, lead, nickel, and zinc. These four metals were elevated at monitoring station M11.

Figure 4-12 represents the cumulative average, minimum, and maximum CVs for each parameter group (e.g. dioxins, PAHs, pesticides/PCBs, inorganics) for each AOC. Average CVs for dioxins ranged from 0.78 to 1.25; PAHs ranged from 0.65 to 1.37; pesticides/PCBs ranged from 0.75 to 1.79; and inorganics ranged from 0.30 to 1.11. Appendix D (Table D-1) presents the CVs for each parameter and the values that were used to create Figure 4-4.

The Back Channel CVs had the greatest range of values for pesticides/PCBs and inorganics. The high CVs for pesticides/PCBs were caused, in part, because of the high CVs for eight parameters (4,4'-DDT, aldrin, hexachlorobenzene, PCB-180, PCB-187, PCB-195/208, PCB-201/157/173, and PCB-206) that had average CVs ranging from 3.07 to 5.32. Most of the remaining CVs for the pesticides were less than 2.0. The CVs for PAHs and inorganics in the Back Channel were high because of elevated detections at some of the locations (primarily M01-1 and M04-1 for PAHs and M03-2 and M04-1 for inorganics). Based on the tables in the DQA reports, which present the average station data across all the stations for each

round, monitoring stations M01 and M04 consistently had the highest pesticide concentrations for the Back Channel stations. The trends are not as apparent for the PCBs.

The CVs were compared to the CV values calculated from the sediment samples collected in 1996-1997. Figure 4-13 shows the comparison for the various areas of concern. For all AOCs, PAH and inorganic CVs were similar for both data sets, except for the Back Channel. The CVs were higher in the Rounds 1 through 4 in the Back Channel compared to the 1996-1997 data.

Pesticides/PCBs had a higher average CV from Rounds 1 through 4 compared to the 1996-1997 data in all four areas. Certain stations at some of the AOCs (M01 and M04 in the back channel and M08 Clarks Cove) consistently had greater pesticide concentrations, which may account for the high CV values. At Sullivan Point, location M10-1 appeared to have elevated pesticide concentrations, which could account for the high CV at that AOC. None of the locations at monitoring stations M05 or M06 (in Jamaica Cove) appeared to have elevated pesticide concentrations.

4.5.4 Conclusions

In summary, for the Rounds 1 through 4 data, most of the average CVs for each of the parameter groups for each of the AOCs were similar to the CVs from the historic data. The CVs were higher for all parameter groups in the Back Channel and for the pesticide/PCB parameter group at all the AOCs. As indicated on Figure 4-4, most of the average CVs were 0.8 or lower for the PAHs and inorganics, which were similar to the historic CVs. Dioxins were not analyzed in the historic samples; therefore, evaluations to historic data could not be made. However, their CVs were similar to those for pesticides/PCBs.

As indicated in Section 4.5.2, the number of sampling locations (three) per monitoring station was calculated using an USEPA DEFT model that assumed an average CV value of 0.5, which is similar to the average CVs for the inorganics and PAHs (except for the Back Channel). Two of the three stations causing the elevated CVs for PAHs and/or inorganics in the Back Channel (M03 and M04) are being evaluated as part of the investigation for Site 32. The PAH concentrations appeared to be elevated at the different locations within M01 throughout the rounds. Finally, although the average CVs for the pesticides/PCBs and dioxins were higher than the 0.5 value that was used to determine the number of locations per monitoring station, PCBs were not limiting COCs and pesticides and dioxins are not considered to be COCs for OU4. Rounds 5 and 6 samples need to be evaluated to determine if additional samples should be collected at select monitoring stations.

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TABLE 4-1

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - MONITORING STATION SAMPLES
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	34/65	64.3	3173	526	OU4-SD-M12-100A
1,2,3,4,6,7,8,9-OCDF	26/65	4.1	178	26.0	OU4-SD-M09-300B
1,2,3,4,6,7,8-HPCDD	49/65	7.6	467	74.7	OU4-SD-M10-399A
1,2,3,4,6,7,8-HPCDF	42/65	2.0 J	122	21.0	OU4-SD-M09-300B
1,2,3,4,7,8,9-HPCDF	21/63	0.10 J	7.3 J	1.7	OU4-SD-M09-100B
1,2,3,4,7,8-HXCDD	36/63	0.10 J	4.3	1.2	OU4-SD-M11-300A
1,2,3,4,7,8-HXCDF	24/63	0.11 J	15.2 J	2.3	OU4-SD-M09-100B
1,2,3,6,7,8-HXCDD	51/63	0.28 J	15.5	3.9	OU4-SD-M10-399A
1,2,3,6,7,8-HXCDF	18/63	0.14 J	33.2	2.4	OU4-SD-M11-300A
1,2,3,7,8,9-HXCDD	21/63	0.12 J	9.6	1.9	OU4-SD-M09-300B
1,2,3,7,8,9-HXCDF	22/63	0.05 J	4.22	1.0	OU4-SD-M09-199A
1,2,3,7,8-PECDD	15/64	0.06 J	3.52 J	0.88	OU4-SD-M09-300A-AVG
1,2,3,7,8-PECDF	8/65	1.15 J	17.8	1.4	OU4-SD-M11-300A
2,3,4,6,7,8-HXCDF	22/63	0.12 J	39.4	2.9	OU4-SD-M11-300A
2,3,4,7,8-PECDF	15/64	0.10 J	41.3	2.3	OU4-SD-M11-300A
2,3,7,8-TCDD	14/64	0.07 J	1.0 J	0.22	OU4-SD-M09-300A-AVG
2,3,7,8-TCDF	22/64	0.23 J	17.5	1.3	OU4-SD-M11-300A
TOTAL DIOXINS	34/48	85.1	4306	769	OU4-SD-M12-100A
TOTAL FURANS	29/48	8.5	947	129	OU4-SD-M11-300A
TOTAL HPCDD	51/65	19.2	1290	203	OU4-SD-M10-399A
TOTAL HPCDF	45/65	3.0	260	46.0	OU4-SD-M09-300B
TOTAL HXCDD	34/65	0.50 J	197	32.0	OU4-SD-M09-300B
TOTAL HXCDF	36/64	0.57 J	166	21.7	OU4-SD-M11-300A
TOTAL PECDD	14/63	0.06 J	20 J	2.0	OU4-SD-M09-100A
TOTAL PECDF	20/65	1.30 J	296	15.5	OU4-SD-M11-300A
TOTAL TCDD	34/64	0.20 J	16.2	2.9	OU4-SD-M10-399A
TOTAL TCDF	28/64	0.23 J	286	14.2	OU4-SD-M11-300A
TOTAL DIOXIN/FURANS (TEQ)-HALFND[2]	65/65	1.1	34.3	5.0	OU4-SD-M11-300A
TOTAL DIOXIN/FURANS (TEQ)-POSONLY[2]	64/65	0.02	32.6	3.0	OU4-SD-M11-300A

TABLE 4-1

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - MONITORING STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	123/161	0.75 J	186 J	11.1	OU4-SD-M13-100B
1-METHYLNAPHTHALENE	124/161	0.85 J	304 J	29.1	OU4-SD-M14-200A
1-METHYLPHENANTHRENE	161/161	1.4	1257	95.7	OU4-SD-M14-200A
2,3,5-TRIMETHYLNAPHTHALENE	160/161	0.6	201	17.4	OU4-SD-M13-100B
2,6-DIMETHYLNAPHTHALENE	160/161	0.68 J	383	23.6	OU4-SD-M13-100B
2-METHYLNAPHTHALENE	125/161	1.3 J	353 J	42.5	OU4-SD-M14-200A
ACENAPHTHENE	160/161	0.56	2682 J	135	OU4-SD-M13-100B
ACENAPHTHYLENE	160/161	3.2 J	1116 J	102	OU4-SD-M01-301B-AVG
ANTHRACENE	161/161	5.6 J	4165 J	417	OU4-SD-M04-101B-AVG
BENZO(A)ANTHRACENE	161/161	10.1	5833	656	OU4-SD-M12-100A
BENZO(A)PYRENE	161/161	9.9	8467	775	OU4-SD-M12-100A
BENZO(B)FLUORANTHENE	161/161	15.8	7235	808	OU4-SD-M12-100A
BENZO(E)PYRENE	161/161	9.4	3370 J	420	OU4-SD-M12-100A
BENZO(G,H,I)PERYLENE	161/161	6.9	3248	393	OU4-SD-M12-100A
BENZO(K)FLUORANTHENE	161/161	6.3	2332	256	OU4-SD-M12-100A
C1-CHRYSENES	161/161	7.7	3549 J	391	OU4-SD-M01-301B-AVG
C1-DIBENZOTHIOPHENES	159/161	0.63 J	184	30.4	OU4-SD-M12-199A
C1-FLUORANTHENES/PYRENES	161/161	6.3	7898 J	660	OU4-SD-M01-301B-AVG
C1-FLUORENES	142/161	1.7	1150 J	77.7	OU4-SD-M01-301B-AVG
C1-NAPHTHALENES	126/161	2.2	657 J	72.1	OU4-SD-M14-200A
C1-PHENANTHRENES/ANTHRACENES	161/161	5.4	3090 J	345	OU4-SD-M01-301B-AVG
C2-CHRYSENES	161/161	3.7	1491 J	160	OU4-SD-M01-301B-AVG
C2-DIBENZOTHIOPHENES	161/161	0.81 J	267 J	35.2	OU4-SD-M01-301B-AVG
C2-FLUORENES	157/161	2.0	1188 J	69.3	OU4-SD-M01-301B-AVG
C2-NAPHTHALENES	130/161	2.8 J	758	74.7	OU4-SD-M13-100B
C2-PHENANTHRENES/ANTHRACENES	161/161	3.7	3212 J	223	OU4-SD-M01-301B-AVG
C3-CHRYSENES	161/161	0.27 J	45.4 J	9.6	OU4-SD-M04-101B-AVG
C3-DIBENZOTHIOPHENES	161/161	0.44 J	242 J	29.0	OU4-SD-M01-301B-AVG
C3-FLUORENES	158/161	0.94 J	1073 J	55.8	OU4-SD-M01-301B-AVG
C3-NAPHTHALENES	160/161	2.5 J	517	75.4	OU4-SD-M13-100B
C3-PHENANTHRENES/ANTHRACENES	161/161	2.0	1954 J	127	OU4-SD-M01-301B-AVG

TABLE 4-1

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - MONITORING STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
C4-CHRYSENES	161/161	0.09 J	339 J	26.1	OU4-SD-M04-101B-AVG
C4-NAPHTHALENES	157/161	0.4 J	382 J	39.0	OU4-SD-M01-301B-AVG
C4-PHENANTHRENES/ANTHRACENES	161/161	0.47 J	766 J	53.3	OU4-SD-M01-301B-AVG
CHRYSENE	161/161	0.4	6585	656	OU4-SD-M12-100A
DIBENZO(A,H)ANTHRACENE	161/161	2.0	790	108	OU4-SD-M12-100A
DIBENZOTHIOPHENE	161/161	0.48	512	43.6	OU4-SD-M12-199A
FLUORANTHENE	160/161	14.8	13837 J	1351	OU4-SD-M12-100A
FLUORENE	161/161	1.4 J	3752 J	172	OU4-SD-M13-100B
INDENO(1,2,3-CD)PYRENE	161/161	7.4 J	3740	420	OU4-SD-M12-100A
NAPHTHALENE	122/161	2.1 J	652 J	68.4	OU4-SD-M01-301B-AVG
PERYLENE	161/161	2.7	1016	124	OU4-SD-M12-100A
PHENANTHRENE	161/161	7.4	10224	809	OU4-SD-M12-199A
PYRENE	159/161	0.3	11420 J	1171	OU4-SD-M12-100A
LOW MOLECULAR WEIGHT PAHs[2]	161/161	23.3	18354	1750	OU4-SD-M12-100A
HIGH MOLECULAR WEIGHT PAHs[2]	161/161	62.4	46931	4720	OU4-SD-M12-100A
TOTAL PAHs[2]	161/161	94.5	65285	6460	OU4-SD-M12-100A
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	121/161	0.01 J	1.5	0.19	OU4-SD-M03-300B
1,2,4,5-TETRACHLOROBENZENE	106/161	0.07 J	4.7	0.72	OU4-SD-M09-399A
2,4'-DDD	153/161	0.09	58	6.7	OU4-SD-M01-200B
2,4'-DDE	138/161	0.04 J	3.4	0.44	OU4-SD-M04-300B
2,4'-DDT	138/161	0.03 J	37	3.0	OU4-SD-M08-399A
4,4'-DDD	151/161	0.13	153	13.6	OU4-SD-M01-200B
4,4'-DDE	155/161	0.2	138	7.0	OU4-SD-M04-300B
4,4'-DDT	149/161	0.03 J	1113	23.2	OU4-SD-M01-399A
TOTAL DDT[2]	161/161	0.79	1228	54.1	OU4-SD-M01-399A
ALDRIN	79/161	0.01 J	77	2.1	OU4-SD-M12-199A
ALPHA-BHC	110/161	0.02 J	0.58	0.10	OU4-SD-M03-200B
ALPHA-CHLORDANE	158/161	0.056 J	45	1.4	OU4-SD-M10-199A
BETA-BHC	91/161	0.008 J	3.6	0.42	OU4-SD-M09-399A
CHLORPYRIFOS	44/161	0.006 J	2.5 J	0.21	OU4-SD-M09-300A-AVG
CIS-NONACHLOR	159/161	0.03 J	3.8	0.46	OU4-SD-M10-199A

TABLE 4-1

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - MONITORING STATION SAMPLES
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Parameters	Frequency of Detection(1)	Minimum Concentration(1)	Maximum Concentration(1)	Mean Concentration(1)	Sample with Maximum(1)
DELTA-BHC	105/161	0.004 J	0.77 J	0.08	OU4-SD-M12-101B
DIELDRIN	124/161	0.001 J	32	1.0	OU4-SD-M01-200A
ENDOSULFAN II	133/161	0.01 J	7	0.9	OU4-SD-M01-399A
ENDRIN	30/161	0.02 J	0.89	0.10	OU4-SD-M01-200B
GAMMA-BHC (LINDANE)	55/161	0.01 J	0.69	0.22	OU4-SD-M01-399A
GAMMA-CHLORDANE	129/161	0.02 J	61	1.3	OU4-SD-M10-199A
HEPTACHLOR	111/161	0.02 J	3.2	0.28	OU4-SD-M11-300B
HEPTACHLOR EPOXIDE	38/161	0.007 J	0.81 J	0.06	OU4-SD-M01-301B-AVG
HEXACHLOROBENZENE	83/161	0.01 J	8.5	0.23	OU4-SD-M03-100A
MIREX	76/161	0.005 J	2.3 J	0.13	OU4-SD-M12-101B
OXYCHLORDANE	103/161	0.01 J	1.5 J	0.14	OU4-SD-M13-100B
PCB-101/90	161/161	0.09	38	3.8	OU4-SD-M03-100B
PCB-105	161/161	0.088 J	12.2 J	1.6	OU4-SD-M08-100A-AVG
PCB-114	1/161	0.32	0.32	0.13	OU4-SD-M10-399A
PCB-118	161/161	0.16	19.1 J	2.6	OU4-SD-M08-100A-AVG
PCB-126	76/161	0.005 J	9.8	0.39	OU4-SD-M03-100B
PCB-128	161/161	0.05	7.7 J	1.1	OU4-SD-M11-299A
PCB-138/160	145/161	0.44	89	7.2	OU4-SD-M03-100B
PCB-149/123	153/161	0.09 J	70 J	4.5	OU4-SD-M02-201B
PCB-153/132	146/161	0.42	128 J	8.1	OU4-SD-M02-201B
PCB-156	154/161	0.06 J	9.9	1.6	OU4-SD-M12-100A
PCB-167	158/161	0.02 J	46.3 J	1.7	OU4-SD-M01-301B-AVG
PCB-169	78/161	0.005 J	2.4	0.15	OU4-SD-M03-100B
PCB-170/190	148/161	0.084 J	117	13.2	OU4-SD-M12-101B
PCB-18/17	92/161	0.011 J	9.1 J	0.50	OU4-SD-M09-399A
PCB-180	141/161	0.25	380 J	8.0	OU4-SD-M02-201B
PCB-187	155/161	0.13 J	305 J	6.7	OU4-SD-M02-201B
PCB-189	138/161	0.01 J	11.6 J	0.38	OU4-SD-M01-301B-AVG
PCB-195/208	157/161	0.04 J	126 J	2.5	OU4-SD-M02-201B
PCB-201/157/173	153/161	0.01 J	55 J	1.1	OU4-SD-M02-201B
PCB-206	152/161	0.05 J	258 J	4.9	OU4-SD-M02-201B
PCB-209	148/161	0.03 J	34	1.8	OU4-SD-M12-100A

TABLE 4-1

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - MONITORING STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
PCB-28	137/161	0.02 J	11	1.3	OU4-SD-M13-301B, OU4-SD-M12-199A
PCB-44	154/161	0.01 J	6.2	0.75	OU4-SD-M12-199A
PCB-52	159/161	0.08	15.6 J	1.7	OU4-SD-M08-100A-AVG
PCB-66	157/161	0.04 J	8.5	0.87	OU4-SD-M12-101B
PCB-77	93/161	0.009 J	5	0.20	OU4-SD-M03-100B
PCB-8/5	140/161	0.01 J	8.3	0.75	OU4-SD-M13-100B
PCB-81	113/160	0.007 J	6	0.34	OU4-SD-M03-100B
TOTAL PCB CONGENERS[2]	161/161	6.5	2678	135	OU4-SD-M02-201B
PENTACHLOROANISOLE	94/161	0.032 J	0.68	0.11	OU4-SD-M01-200B
PENTACHLOROBENZENE	102/161	0.009 J	1.2	0.14	OU4-SD-M09-100B
TRANS-NONACHLOR	151/161	0.01 J	21	0.62	OU4-SD-M10-199A
Inorganics (MG/KG)					
ALUMINUM	161/161	34143	67478	52996	OU4-SD-M07-299A
ARSENIC	161/161	5.3	30	12.7	OU4-SD-M11-299A
CADMIUM	135/161	0.05	1.4	0.40	OU4-SD-M13-100B
CHROMIUM	161/161	41.1	224	96.6	OU4-SD-M11-299A
COPPER	161/161	9.8	20507 J	412	OU4-SD-M04-100A
IRON	161/161	15498	92784	29563	OU4-SD-M11-299A
LEAD	161/161	19.0	16250 J	231	OU4-SD-M11-299A
MANGANESE	161/161	185	1503	468	OU4-SD-M01-200A
MERCURY	154/161	0.02	4.2 J	0.40	OU4-SD-M04-101B-AVG
NICKEL	161/161	12.9 J	5601	76.6	OU4-SD-M11-299A
SILVER	161/161	0.03 J	14.4	1.5	OU4-SD-M03-201B
ZINC	161/161	28.5 J	8524	295	OU4-SD-M11-299A
Miscellaneous Parameters (%)					
TOTAL ORGANIC CARBON	161/161	0.2 J	7.3	1.7	OU4-SD-M02-399A

1 The sample and duplicate were averaged and counted as one sample when determining the minimum and maximum detected concentrations and the frequency of detection.
2 See Section 4.1.3 for the methods used to calculate these values.
Source data from Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 4-2

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - REFERENCE STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	41/64	19.5 J	2410 J	453	OU4-SD-R03-100A
1,2,3,4,6,7,8,9-OCDF	25/64	2.14	98.7 J	15.1	OU4-SD-R03-100A
1,2,3,4,6,7,8-HPCDD	54/64	2.60 J	320 J	52.8	OU4-SD-R03-100A
1,2,3,4,6,7,8-HPCDF	39/64	0.80 J	79.4 J	12.9	OU4-SD-R03-100A
1,2,3,4,7,8,9-HPCDF	16/64	0.09 J	2.3 J	0.78	OU4-SD-R02-401B
1,2,3,4,7,8-HXCDD	30/64	0.07 J	4.1 J	0.86	OU4-SD-R01-401B
1,2,3,4,7,8-HXCDF	11/64	0.10 J	1.45 J	0.73	OU4-SD-R04-100A
1,2,3,6,7,8-HXCDD	39/64	0.20 J	13 J	2.47	OU4-SD-R03-100A
1,2,3,6,7,8-HXCDF	20/64	0.20 J	3.38 J	0.80	OU4-SD-R03-100A
1,2,3,7,8,9-HXCDD	22/64	0.70 J	6.2 J	1.29	OU4-SD-R02-401B
1,2,3,7,8,9-HXCDF	6/64	0.08 J	0.80 J	0.75	OU4-SD-R03-201B
1,2,3,7,8-PECDD	14/64	0.10 J	1.9 J	0.71	OU4-SD-R02-401B
1,2,3,7,8-PECDF	7/64	0.30 J	2.34 J	0.64	OU4-SD-R03-100A
2,3,4,6,7,8-HXCDF	16/64	0.54 J	5.19 J	0.99	OU4-SD-R03-100A
2,3,4,7,8-PECDF	6/64	0.10 J	2.84 J	0.67	OU4-SD-R03-100A
2,3,7,8-TCDD	10/64	0.03 J	0.70	0.18	OU4-SD-R04-100A
2,3,7,8-TCDF	13/64	0.20	6.0 J	0.61	OU4-SD-R03-100A
TOTAL DIOXINS	41/48	25.6 J	3274 J	675	OU4-SD-R03-100A
TOTAL FURANS	25/48	4.10	368 J	59.3	OU4-SD-R03-100A
TOTAL HPCDD	56/64	5.79	694 J	123	OU4-SD-R03-100A
TOTAL HPCDF	25/64	1.28	170 J	23.8	OU4-SD-R03-100A
TOTAL HXCDD	43/64	0.90 J	270 J	27.3	OU4-SD-R01-401B
TOTAL HXCDF	36/64	0.60 J	61.7 J	10.8	OU4-SD-R02-401B
TOTAL PECDD	19/64	0.10 J	44.1 J	2.12	OU4-SD-R01-401B
TOTAL PECDF	18/64	0.30 J	27.4 J	3.38	OU4-SD-R03-100A
TOTAL TCDD	29/64	0.00 J	6.6 J	1.16	OU4-SD-R03-100A
TOTAL TCDF	17/64	0.20	13.8 J	1.94	OU4-SD-R03-100A
TOTAL DIOXIN/FURANS (TEQ)-HALFND[2]	64/64	0.75	12.7	2.81	OU4-SD-R03-100A
TOTAL DIOXIN/FURANS (TEQ)-POSONLY[2]	59/64	0.008	10.8	1.35	OU4-SD-R03-100A

TABLE 4-2

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	44/64	0.41 J	16.8	3.8	OU4-SD-R02-300A
1-METHYLNAPHTHALENE	44/64	0.60 J	35.7	8.6	OU4-SD-R02-300A
1-METHYLPHENANTHRENE	64/64	0.54	368	51.9	OU4-SD-R03-300B
2,3,5-TRIMETHYLNAPHTHALENE	64/64	0.19 J	58	11.3	OU4-SD-R03-300B
2,6-DIMETHYLNAPHTHALENE	64/64	0.82 J	35.1	9.8	OU4-SD-R03-300B
2-METHYLNAPHTHALENE	50/64	0.90 J	73.9	13.3	OU4-SD-R02-300A
ACENAPHTHENE	64/64	0.19 J	154 J	18.6	OU4-SD-R03-300B
ACENAPHTHYLENE	62/64	1.7	206	54.7	OU4-SD-R03-299A
ANTHRACENE	63/64	2.3 J	1392 J	195	OU4-SD-R03-299A
BENZO(A)ANTHRACENE	62/64	2.8 J	1949	320	OU4-SD-R03-299A
BENZO(A)PYRENE	61/64	5.0 J	2515	387	OU4-SD-R03-299A
BENZO(B)FLUORANTHENE	62/64	5.8	2138	405	OU4-SD-R03-299A
BENZO(E)PYRENE	61/64	3.0	990	195	OU4-SD-R03-299A
BENZO(G,H,I)PERYLENE	58/64	3.4	1026	188	OU4-SD-R03-299A
BENZO(K)FLUORANTHENE	62/64	1.9	620	127	OU4-SD-R03-299A
C1-CHRYSENES	64/64	2.2	1047	196	OU4-SD-R03-299A
C1-DIBENZOTHIOPHENES	62/64	0.42 J	191	23.2	OU4-SD-R03-199A
C1-FLUORANTHENES/PYRENES	64/64	2.6	1813	319	OU4-SD-R03-299A
C1-FLUORENES	57/64	1.0 J	267	44.2	OU4-SD-R03-300B
C1-NAPHTHALENES	48/64	1.5 J	110	21.8	OU4-SD-R02-300A
C1-PHENANTHRENES/ANTHRACENES	61/64	2.3	1112	200	OU4-SD-R03-299A
C2-CHRYSENES	64/64	0.19 J	417	87.3	OU4-SD-R03-299A
C2-DIBENZOTHIOPHENES	64/64	0.50 J	529	33.3	OU4-SD-R03-199A
C2-FLUORENES	61/64	1.7	506	50.0	OU4-SD-R03-199A
C2-NAPHTHALENES	49/64	1.8 J	186	29.2	OU4-SD-R03-300B
C2-PHENANTHRENES/ANTHRACENES	60/64	2.2	1142	170	OU4-SD-R03-401B
C3-CHRYSENES	63/64	0.00 J	82	6.0	OU4-SD-R03-200B
C3-DIBENZOTHIOPHENES	64/64	0.39 J	420	23.8	OU4-SD-R03-199A
C3-FLUORENES	64/64	0.90 J	763	46.0	OU4-SD-R03-199A

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
C3-NAPHTHALENES	64/64	1.20	460	51.6	OU4-SD-R03-199A
C3-PHENANTHRENES/ANTHRACENES	60/64	0.95	1035	102	OU4-SD-R03-401B
C4-CHRYSENES	61/64	0.010 J	60.3	10.3	OU4-SD-R03-299A
C4-NAPHTHALENES	64/64	0.40 J	1490	46.6	OU4-SD-R03-199A
C4-PHENANTHRENES/ANTHRACENES	64/64	0.0 J	856	48.6	OU4-SD-R03-401B
CHRYSENE	61/64	4.0	1702	299	OU4-SD-R03-299A
DIBENZO(A,H)ANTHRACENE	61/64	0.6 J	262	52.8	OU4-SD-R03-299A
DIBENZOTHIOPHENE	64/64	0.27	104 J	17.4	OU4-SD-R03-299A
FLUORANTHENE	63/64	6.1 J	3324	603	OU4-SD-R03-299A
FLUORENE	64/64	0.6	249 J	41.3	OU4-SD-R03-300B
INDENO(1,2,3-CD)PYRENE	61/64	3.6	1164	223	OU4-SD-R03-299A
NAPHTHALENE	44/64	1.6 J	155	23.4	OU4-SD-R02-300A
PERYLENE	64/64	1.7	352	66.5	OU4-SD-R03-299A
PHENANTHRENE	64/64	3.1	1583	267	OU4-SD-R03-299A
PYRENE	61/64	5.8	2921	517	OU4-SD-R03-299A
LOW MOLECULAR WEIGHT PAHs[2]	64/64	9.8	3496	614	OU4-SD-R03-299A
HIGH MOLECULAR WEIGHT PAHs[2]	64/64	23.4	12673	2178	OU4-SD-R03-299A
TOTAL PAHs[2]	64/64	33.2	16169	2790	OU4-SD-R03-299A
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	30/64	0.020 J	1	0.14	OU4-SD-R02-101B, OU4-SD-R03-400A
2,4'-DDD	55/64	0.020 J	8.2 J	1.66	OU4-SD-R03-301B
2,4'-DDE	40/64	0.033 J	0.80 J	0.14	OU4-SD-R03-100A
2,4'-DDT	30/64	0.010 J	0.98	0.08	OU4-SD-R02-200B
4,4'-DDD	61/64	0.040 J	4.2	0.84	OU4-SD-R02-400B
4,4'-DDE	63/64	0.049	9.7 J	0.73	OU4-SD-R03-100A
4,4'-DDT	49/64	0.010 J	12	0.64	OU4-SD-R02-400B
TOTAL DDT[2]	64/64	0.21	22.2	4.08	OU4-SD-R03-100A
ALDRIN	29/64	0.010 J	5.3	0.53	OU4-SD-R03-200B

TABLE 4-2

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - REFERENCE STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
ALPHA-BHC	50/64	0.020 J	0.29	0.08	OU4-SD-R03-199A
ALPHA-CHLORDANE	57/64	0.010 J	1.5	0.23	OU4-SD-R02-101B
BETA-BHC	16/64	0.047 J	0.40	0.13	OU4-SD-R02-101B
CHLORPYRIFOS	25/64	0.010 J	3.6 J	0.30	OU4-SD-R02-401B
CIS-NONACHLOR	56/64	0.007 J	3.2	0.24	OU4-SD-R02-101B
DELTA-BHC	32/64	0.007 J	0.36 J	0.06	OU4-SD-R03-301B
DIELDRIN	20/64	0.010 J	0.68	0.08	OU4-SD-R02-100B
ENDOSULFAN II	53/64	0.030 J	4.8	0.75	OU4-SD-R02-101B
ENDRIN	4/64	0.023 J	0.45 J	0.07	OU4-SD-R03-100A
GAMMA-BHC (LINDANE)	21/64	0.010 J	1.2	0.19	OU4-SD-R01-101B
GAMMA-CHLORDANE	40/64	0.010 J	0.43	0.08	OU4-SD-R02-100A
HEPTACHLOR	37/64	0.007 J	0.57	0.12	OU4-SD-R02-400A
HEPTACHLOR EPOXIDE	14/64	0.010 J	0.22 J	0.04	OU4-SD-R03-301B
HEXACHLOROBENZENE	22/64	0.006 J	71 J	1.40	OU4-SD-R02-499A
MIREX	18/64	0.047	0.63	0.08	OU4-SD-R03-200B
OXYCHLORDANE	24/64	0.020 J	0.99 J	0.09	OU4-SD-R03-200B
PCB-101/90	54/64	0.050	21	1.40	OU4-SD-R02-200B
PCB-105	57/64	0.015 J	12	0.67	OU4-SD-R02-200B
PCB-118	56/64	0.034 J	22	1.39	OU4-SD-R02-200B
PCB-126	22/58	0.006 J	0.47	0.13	OU4-SD-R03-300B
PCB-128	53/64	0.010 J	5	0.65	OU4-SD-R02-200B
PCB-138/160	40/64	0.150	24	1.70	OU4-SD-R02-101B
PCB-149/123	48/64	0.010 J	6.2	0.71	OU4-SD-R02-101B
PCB-153/132	39/64	0.130	12	1.24	OU4-SD-R02-200B
PCB-156	43/64	0.010 J	5.3	0.51	OU4-SD-R02-101B
PCB-167	55/64	0.020 J	8.4 J	1.09	OU4-SD-R03-301B
PCB-169	17/64	0.005 J	0.09 J	0.09	OU4-SD-R01-100B, OU4-SD-R02-201B
PCB-170/190	46/64	0.480 J	48 J	6.16	OU4-SD-R03-401B
PCB-18/17	26/64	0.046 J	5.4 J	0.29	OU4-SD-R03-100A

TABLE 4-2

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - REFERENCE STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
PCB-180	35/64	0.050	2.4	0.50	OU4-SD-R02-200B
PCB-187	47/64	0.020 J	9.2	0.60	OU4-SD-R02-101B
PCB-189	36/64	0.010 J	0.67 J	0.17	OU4-SD-R03-301B
PCB-195/208	50/64	0.004 J	1.2 J	0.19	OU4-SD-R03-100A
PCB-201/157/173	50/64	0.010	1.41 J	0.26	OU4-SD-R03-100A
PCB-206	49/64	0.020 J	1.5	0.31	OU4-SD-R01-201B, OU4-SD-R02-401B
PCB-209	59/63	0.030 J	1.4 J	0.36	OU4-SD-R03-301B
PCB-28	48/64	0.070 J	3.6 J	0.63	OU4-SD-R03-301B
PCB-44	50/64	0.020 J	3.1	0.32	OU4-SD-R02-200B
PCB-52	55/64	0.030 J	13	1.10	OU4-SD-R02-100A
PCB-66	45/64	0.010 J	3.1	0.31	OU4-SD-R02-200B
PCB-77	36/64	0.010 J	0.33 J	0.07	OU4-SD-R01-100B
PCB-8/5	45/64	0.070 J	4.5	0.59	OU4-SD-R03-300B
PCB-81	33/61	0.006 J	0.39 J	0.08	OU4-SD-R02-401B
TOTAL PCB CONGENERS[2]	64/64	2.2	243.4	36.8	OU4-SD-R02-101B
PENTACHLOROANISOLE	30/64	0.010 J	0.91	0.09	OU4-SD-R02-101B
PENTACHLOROBENZENE	29/64	0.010 J	1 J	0.13	OU4-SD-R04-401B
TRANS-NONACHLOR	42/64	0.011 J	1 J	0.15	OU4-SD-R03-100A
Inorganics (MG/KG)					
ALUMINUM	64/64	30753	59600	46207	OU4-SD-R01-100B
ARSENIC	63/64	1.7	14.8	6.99	OU4-SD-R02-400A
CADMIUM	49/64	0.04	0.81	0.20	OU4-SD-R03-100A
CHROMIUM	64/64	19.3	97.9	51.5	OU4-SD-R02-401B
COPPER	62/64	2.10 J	37.3	11.56	OU4-SD-R02-399A-AVG
IRON	64/64	7086 J	29000	15413	OU4-SD-R01-100B
LEAD	64/64	13.10	108.07	42.8	OU4-SD-R02-401B
MANGANESE	64/64	135.03	1110	395	OU4-SD-R01-300B
MERCURY	56/64	0.015 J	1.5 J	0.15	OU4-SD-R03-299A
NICKEL	61/64	7.15	38.2	15.90	OU4-SD-R03-100B

TABLE 4-2

SEDIMENT SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - REFERENCE STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
SILVER	56/64	0.02	4.2	0.75	OU4-SD-R02-400A
ZINC	62/64	13.4 J	110	49.3	OU4-SD-R01-100B
Miscellaneous Parameters (%)					
TOTAL ORGANIC CARBON	64/64	0.15 J	5.7 J	1.30	OU4-SD-R03-100A

1 The sample and duplicate were averaged and counted as one sample when determining the minimum and maximum detected concentrations and the frequency of detection.
2 See Section 4.1.3 for the methods used to calculate these values.
Source data from Round 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 4-3

MUSSEL SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - MONITORING STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	41/59	28.8 J	303 J	101	OU4-MU-M09-100B
1,2,3,4,6,7,8,9-OCDF	15/57	3.5 J	101 J	28.0	OU4-MU-M12-200B-AVG
1,2,3,4,6,7,8-HPCDD	25/53	9.1 J	57 J	20.7	OU4-MU-M09-100B
1,2,3,4,6,7,8-HPCDF	17/57	2.55 J	14.9 J	12.4	OU4-MU-M09-100B
1,2,3,4,7,8,9-HPCDF	5/57	0.53 J	31.3	14.1	OU4-MU-M10-199A-AVG
1,2,3,4,7,8-HXCDD	9/57	0.6 J	19.8 J	13.1	OU4-MU-M12-200B-AVG
1,2,3,4,7,8-HXCDF	7/58	0.9 J	35.7 J	13.7	OU4-MU-M12-200B-AVG
1,2,3,6,7,8-HXCDD	12/57	0.82 J	24.8 J	12.1	OU4-MU-M12-200B-AVG
1,2,3,6,7,8-HXCDF	5/58	1.05 J	4.74 J	13.6	OU4-MU-M10-199A-AVG
1,2,3,7,8,9-HXCDD	9/57	0.6 J	30.0 J	12.9	OU4-MU-M12-200B-AVG
1,2,3,7,8,9-HXCDF	4/58	1.64 J	13.2	13.9	OU4-MU-M10-199A-AVG
1,2,3,7,8-PECDD	4/60	0.6 J	1.7 J	14.6	OU4-MU-M08-100B
1,2,3,7,8-PECDF	14/60	1.9 J	16 J	14.3	OU4-MU-M09-100B
2,3,4,6,7,8-HXCDF	8/58	0.64 J	19.3 J	13.2	OU4-MU-M12-200B-AVG
2,3,4,7,8-PECDF	11/60	2.05 J	8.3 J	13.8	OU4-MU-M09-200B
2,3,7,8-TCDD	3/50	0.3 J	7.5 J	3.3	OU4-MU-M12-200B-AVG
2,3,7,8-TCDF	17/60	2.6 J	33.3 J	5.4	OU4-MU-M09-100B
TOTAL DIOXINS	40/45	17.6 J	1440 J	189	OU4-MU-M10-200B
TOTAL FURANS	27/45	4.6 J	319 J	49.2	OU4-MU-M12-200B-AVG
TOTAL HPCDD	33/58	4.6 J	356 J	37.8	OU4-MU-M10-200B
TOTAL HPCDF	22/57	0.53 J	47.7 J	14.9	OU4-MU-M10-200B
TOTAL HXCDD	25/57	0.6 J	132 J	15.4	OU4-MU-M10-200B
TOTAL HXCDF	16/58	2.6 J	42.7 J	14.7	OU4-MU-M11-100A
TOTAL PECDD	8/60	0.6 J	6.1 J	13.9	OU4-MU-M07-100B
TOTAL PECDF	18/60	4.11 J	66.6 J	16.4	OU4-MU-M10-200B
TOTAL TCDD	26/60	0.3 J	72.2 J	15.8	OU4-MU-M09-100A
TOTAL TCDF	23/60	3.7 J	75.4	15.0	OU4-MU-M08-300B
TOTAL DIOXIN/FURANS (TEQ)-HALFND[2]	60/60	17.0	122.1	34.8	OU4-MU-M09-199A
TOTAL DIOXIN/FURANS (TEQ)-POSONLY[2]	49/60	0.00091	23.9	2/3	OU4-MU-M12-200B-AVG
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	84/127	1.12 J	79.8	4.1	OU4-MU-M13-100A-AVG
1-METHYLNAPHTHALENE	83/127	1.56 J	98.9	6.2	OU4-MU-M13-100A-AVG
1-METHYLPHENANTHRENE	127/127	1.28 J	505	11.3	OU4-MU-M13-100A-AVG
2,3,5-TRIMETHYLNAPHTHALENE	127/127	0.85 J	99.6	4.5	OU4-MU-M13-100A-AVG
2,6-DIMETHYLNAPHTHALENE	127/127	0.93 J	142	5.8	OU4-MU-M13-100A-AVG
2-METHYLNAPHTHALENE	86/127	2.83 J	146	9.6	OU4-MU-M13-100A-AVG

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
ACENAPHTHENE	127/127	0.49 J	1181 J	24.0	OU4-MU-M13-100A-AVG
ACENAPHTHYLENE	127/127	0.14 J	235	17.6	OU4-MU-M13-100A-AVG
ANTHRACENE	123/127	5.49 J	2009 J	58.9	OU4-MU-M13-100A-AVG
BENZO(A)ANTHRACENE	127/127	4.76	3937	59.6	OU4-MU-M13-100A-AVG
BENZO(A)PYRENE	116/127	3.2 J	3148 J	45.4	OU4-MU-M13-100A-AVG
BENZO(B)FLUORANTHENE	127/127	7.1 J	4051	70.3	OU4-MU-M13-100A-AVG
BENZO(E)PYRENE	127/127	7.09	1878	44.1	OU4-MU-M13-100A-AVG
BENZO(G,H,I)PERYLENE	127/127	3.23 J	850	20.5	OU4-MU-M13-100A-AVG
BENZO(K)FLUORANTHENE	127/127	1.86 J	665	18.5	OU4-MU-M13-100A-AVG
C1-CHRYSENES	127/127	5.75 J	1866	34.3	OU4-MU-M13-100A-AVG
C1-DIBENZOTHIOPHENES	127/127	0.4 J	100	5.0	OU4-MU-M13-100A-AVG
C1-FLUORANTHENES/PYRENES	127/127	11.6	2699	64.7	OU4-MU-M13-100A-AVG
C1-FLUORENES	127/127	5.85 J	567	30.4	OU4-MU-M13-100A-AVG
C1-NAPHTHALENES	83/127	4.44 J	244	15.6	OU4-MU-M13-100A-AVG
C1-PHENANTHRENES/ANTHRACENES	127/127	6.24 J	1645	46.9	OU4-MU-M13-100A-AVG
C2-CHRYSENES	127/127	0.3 J	421	18.5	OU4-MU-M13-100A-AVG
C2-DIBENZOTHIOPHENES	127/127	0.04 J	62.9	9.9	OU4-MU-M13-100A-AVG
C2-FLUORENES	127/127	5.4 J	231	23.9	OU4-MU-M13-100A-AVG
C2-NAPHTHALENES	97/127	3.8 J	271	15.8	OU4-MU-M13-100A-AVG
C2-PHENANTHRENES/ANTHRACENES	127/127	5.31 J	632	37.6	OU4-MU-M13-100A-AVG
C3-CHRYSENES	109/127	0.02 J	9.94	1.8	OU4-MU-M13-100A-AVG
C3-DIBENZOTHIOPHENES	127/127	0.04 J	33.7	9.7	OU4-MU-M13-100A-AVG
C3-FLUORENES	127/127	2.21 J	137	27.2	OU4-MU-M14-299A
C3-NAPHTHALENES	127/127	2.82 J	208	20.4	OU4-MU-M13-100A-AVG
C3-PHENANTHRENES/ANTHRACENES	127/127	2.59 J	263	33.9	OU4-MU-M13-100A-AVG
C4-CHRYSENES	123/127	0.01 J	74.5	1.5	OU4-MU-M13-100A-AVG
C4-NAPHTHALENES	127/127	1.07 J	102	15.9	OU4-MU-M13-100A-AVG
C4-PHENANTHRENES/ANTHRACENES	127/127	0.07 J	77.6	15.3	OU4-MU-M13-100A-AVG
CHRYSENE	127/127	10.1	4734	83.4	OU4-MU-M13-100A-AVG
DIBENZO(A,H)ANTHRACENE	127/127	0.2 J	313	4.7	OU4-MU-M13-100A-AVG
DIBENZOTHIOPHENE	98/127	0.4 J	219	4.6	OU4-MU-M13-100A-AVG
FLUORANTHENE	117/127	18	8457	168	OU4-MU-M13-100A-AVG
FLUORENE	127/127	2.11 J	1769 J	27.8	OU4-MU-M13-100A-AVG
INDENO(1,2,3-CD)PYRENE	127/127	1.64 J	1096	20.3	OU4-MU-M13-100A-AVG
NAPHTHALENE	83/127	3.1 J	116 J	12.2	OU4-MU-M13-100A-AVG
PERYLENE	127/127	1.94 J	543	16.4	OU4-MU-M13-100A-AVG
PHENANTHRENE	100/127	5.28 J	5892	93	OU4-MU-M13-100A-AVG

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
PYRENE	116/127	14.8	5497	120	OU4-MU-M13-100A-AVG
LOW MOLECULAR WEIGHT PAHs[2]	127/127	29.9	11347	243	OU4-MU-M13-100A-AVG
HIGH MOLECULAR WEIGHT PAHs[2]	127/127	55.7	26084	481	OU4-MU-M13-100A-AVG
TOTAL PAHs[2]	127/127	85.5	37431	724	OU4-MU-M13-100A-AVG
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	95/127	0.12 J	17	1.7	OU4-MU-M12-101B
1,2,4,5-TETRACHLOROBENZENE	34/127	0.07 J	8	1.2	OU4-MU-M06-301B
2,4'-DDD	124/127	0.34	183 J	5.4	OU4-MU-M13-100A-AVG
2,4'-DDE	104/127	0.1 J	9.15	0.9	OU4-MU-M10-199A-AVG
2,4'-DDT	122/127	0.084 J	391	5.5	OU4-MU-M10-199A-AVG
4,4'-DDD	127/127	0.31 J	104	7.7	OU4-MU-M10-199A-AVG
4,4'-DDE	127/127	2.8	99	9.5	OU4-MU-M10-199A-AVG
4,4'-DDT	102/127	0.12 J	596	7.4	OU4-MU-M10-199A-AVG
TOTAL DDT[2]	127/127	5.8	1279	36.3	OU4-MU-M10-199A-AVG
ALDRIN	52/127	0.03 J	3.3	0.41	OU4-MU-M10-300B, OU4-MU-M09-100B
ALPHA-BHC	116/127	0.15 J	2.8	0.76	OU4-MU-M11-301B
ALPHA-CHLORDANE	116/127	0.44	32.5	2.5	OU4-MU-M10-199A-AVG
BETA-BHC	72/127	0.235	25	2.3	OU4-MU-M03-200B-AVG
CHLORPYRIFOS	30/127	0.08 J	6.8	1.3	OU4-MU-M12-200B-AVG
CIS-NONACHLOR	126/127	0.09 J	14	1.9	OU4-MU-M03-100B
DELTA-BHC	50/127	0.03 J	3.7	0.41	OU4-MU-M03-299A
DIELDRIN	116/126	0.06 J	3.4	1.0	OU4-MU-M01-201B
ENDOSULFAN II	85/127	0.09 J	4	0.65	OU4-MU-M10-300B
ENDRIN	38/127	0.18 J	4.1	0.7	OU4-MU-M02-200B
GAMMA-BHC (LINDANE)	75/127	0.02 J	2.7	0.48	OU4-MU-M13-100B
GAMMA-CHLORDANE	123/127	0.16 J	31.5	1.5	OU4-MU-M10-199A-AVG
HEPTACHLOR	77/127	0.08 J	4.9	0.81	OU4-MU-M03-299A
HEPTACHLOR EPOXIDE	48/127	0.05 J	21	0.86	OU4-MU-M14-199A
HEXACHLOROBENZENE	120/127	0.05 J	17	0.94	OU4-MU-M12-199A
MIREX	28/127	0.033 J	2.9	0.44	OU4-MU-M07-399A
OXYCHLORDANE	50/127	0.04 J	10.25 J	0.50	OU4-MU-M13-100A-AVG
PCB-101/90	108/127	0.71 J	54	10.0	OU4-MU-M10-301B
PCB-105	127/127	1 J	20	4.6	OU4-MU-M11-299A
PCB-118	121/127	2.9	34	8.1	OU4-MU-M10-301B
PCB-126	91/121	0.009 J	2.2 J	0.39	OU4-MU-M11-300A
PCB-128	125/127	0.63 J	13	2.7	OU4-MU-M11-299A

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
PCB-138/160	74/127	6.3	62	14.0	OU4-MU-M03-299A
PCB-149/123	93/127	0.32 J	43	8.2	OU4-MU-M03-101B
PCB-153/132	78/127	8.4	87	17.4	OU4-MU-M03-101B
PCB-156	107/127	0.16 J	6.7	1.2	OU4-MU-M03-299A
PCB-167	123/127	0.24 J	6.5	1.4	OU4-MU-M03-299A
PCB-169	82/127	0.01 J	1.7	0.38	OU4-MU-M06-300B-AVG
PCB-170/190	53/127	0.11 J	32.5 J	1.2	OU4-MU-M13-100A-AVG
PCB-18/17	79/127	0.1 J	19.7 J	2.3	OU4-MU-M13-100A-AVG
PCB-180	68/127	2.4	32	6.4	OU4-MU-M03-299A
PCB-187	85/127	1.2	54	7.1	OU4-MU-M03-299A
PCB-189	25/127	0.08 J	4.8	0.46	OU4-MU-M10-199A-AVG
PCB-195/208	39/127	0.05 J	2.3	0.33	OU4-MU-M11-100B
PCB-201/157/173	91/127	0.05	5.7	1.0	OU4-MU-M12-199A
PCB-206	17/127	0.015 J	0.92	0.31	OU4-MU-M07-399A
PCB-209	38/127	0.15 J	1.5 J	0.45	OU4-MU-M01-300B
PCB-28	124/127	0.21 J	9.8 J	2.0	OU4-MU-M13-301B
PCB-44	94/127	0.21 J	12 J	2.1	OU4-MU-M01-300B
PCB-52	117/127	1.2	34	5.3	OU4-MU-M10-301B
PCB-66	116/127	0.2 J	8.1	1.5	OU4-MU-M12-199A
PCB-77	97/127	0.01 J	5.6 J	0.60	OU4-MU-M09-199A
PCB-8/5	106/127	0.06 J	26	3.4	OU4-MU-M06-300A
PCB-81	93/127	0.0075 J	2.9 J	0.63	OU4-MU-M09-199A
TOTAL PCB CONGENERS[2]	127/127	41.8	695	178	OU4-MU-M03-299A
PENTACHLOROANISOLE	100/127	0.086 J	5.3	1.4	OU4-MU-M06-301B
PENTACHLOROBENZENE	75/127	0.15 J	6.4	1.3	OU4-MU-M11-199A
TRANS-NONACHLOR	126/127	0.34	22	1.9	OU4-MU-M10-199A-AVG
Inorganics (MG/KG)					
ALUMINUM	127/127	59.5 J	1175	294	OU4-MU-M09-100A
ARSENIC	127/127	4.01	10.9	7.8	OU4-MU-M11-301B
CADMIUM	127/127	0.69	3	1.6	OUR-MU-M10-200B
CHROMIUM	116/127	1.2	8.82	2.9	OU4-MU-M02-300A
COPPER	127/127	5.09 J	101	12.1	OU4-MU-M03-200A
IRON	127/127	186	1877	568	OU4-MU-M09-100A
LEAD	127/127	1.74	199 J	9.42	OU4-MU-M11-299A
MANGANESE	127/127	5.3	312	15.7	OU4-MU-M10-200B
MERCURY	126/127	0.14	2.31	0.29	OU4-MU-M05-100A
NICKEL	83/127	0.82	12.9	2.0	OU4-MU-M09-100A

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
SILVER	81/127	0.02 J	0.74	0.110	OU4-MU-M09-100A
ZINC	127/127	61.8	404	102	OU4-MU-M10-200B
Miscellaneous Parameters (%)					
LIPIDS	127/127	1.1	19.3	7.51	OU4-MU-M03-299A

1 The sample and duplicate were averaged and counted as one sample when determining the minimum and maximum detected concentrations and the frequency of detection.
2 See Section 4.1.3 for the methods used to calculate these values.
Source data from Round 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 4-4

MUSSEL SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - REFERENCE STATION SAMPLES
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Parameters	Frequency of Detection (1)	Minimum Concentration (1)	Maximum Concentration (1)	Mean Concentration (1)	Sample with Maximum (1)
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14/28	69.2	232 J	84.1	OU4-MU-R01-400B
1,2,3,4,6,7,8,9-OCDF	6/28	8.76 J	36.5	21.5	OU4-MU-R02-499A-AVG
1,2,3,4,6,7,8-HPCDD	11/24	13.7 J	53.6 J	19.6	OU4-MU-R01-400B
1,2,3,4,6,7,8-HPCDF	7/28	3.4 J	9.3 J	10.4	OU4-MU-R01-400B
1,2,3,4,7,8,9-HPCDF	1/28	7.46 J	7.46 J	11.6	OU4-MU-R02-499A-AVG
1,2,3,4,7,8-HXCDD	1/28	3.07 J	3.07 J	11.5	OU4-MU-R03-399A
1,2,3,4,7,8-HXCDF	1/28	2.41 J	2.41 J	11.5	OU4-MU-R02-499A-AVG
1,2,3,6,7,8-HXCDD	3/28	1.8 J	3.72 J	10.3	OU4-MU-R03-399A
1,2,3,6,7,8-HXCDF	2/28	0.65 J	1.63 J	11.0	OU4-MU-R02-499A-AVG
1,2,3,7,8,9-HXCDD	2/28	0.7 J	0.88 J	11.2	OU4-MU-R03-399A
1,2,3,7,8,9-HXCDF	1/28	11.6 J	11.6 J	11.8	OU4-MU-R02-499A-AVG
1,2,3,7,8-PECDD	1/31	0.9 J	0.9 J	11.6	OU4-MU-R01-300B
1,2,3,7,8-PECDF	5/31	1.7 J	8.5 J	10.7	OU4-MU-R01-400B
2,3,4,6,7,8-HXCDF	2/28	0.9 J	3.52 J	10.9	OU4-MU-R02-499A-AVG
2,3,4,7,8-PECDF	3/31	0.3 J	1.5 J	10.7	OU4-MU-R01-400B
2,3,7,8-TCDF	5/31	2.9 J	9.2 J	3.09	OU4-MU-R01-300A
TOTAL DIOXINS	14/23	29 J	392 J	136	OU4-MU-R03-400B
TOTAL FURANS	14/23	3.1 J	157 J	30.4	OU4-MU-R01-400B
TOTAL HPCDD	16/29	13 J	117 J	33.6	OU4-MU-R03-400B, OU4-MU-R01-400B
TOTAL HPCDF	9/28	4.5 J	39.6 J	12.1	OU4-MU-R03-400B
TOTAL HXCDD	6/28	0.7 J	23.2 J	12.5	OU4-MU-R03-300B
TOTAL HXCDF	6/28	5.9 J	23.2 J	12.4	OU4-MU-R02-300A
TOTAL PECDD	1/30	0.9 J	0.9 J	11.6	OU4-MU-R01-300B
TOTAL PECDF	8/31	2 J	42.3 J	12.8	OU4-MU-R01-400A
TOTAL TCDD	7/31	21.6 J	68.2 J	14.3	OU4-MU-R03-400A
TOTAL TCDF	11/31	3.5 J	45.1 J	9.22	OU4-MU-R01-400B
TOTAL DIOXIN/FURANS (TEQ)-HALFND(2)	31/31	9.89	35.26	26.9	OU4-MU-R03-301B
TOTAL DIOXIN/FURANS (TEQ)-POSONLY(2)	21/31	0.001	2.58	1.17	OU4-MU-R01-400B
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	23/31	1.7 J	8.4 J	3.59	OU4-MU-R02-401B
1-METHYLNAPHTHALENE	23/31	3.21	12.6	5.87	OU4-MU-R02-400B
1-METHYLPHENANTHRENE	31/31	1.59 J	15.7	5.65	OU4-MU-R03-300B
2,3,5-TRIMETHYLNAPHTHALENE	31/31	1.41 J	8	4.07	OU4-MU-R03-401B
2,6-DIMETHYLNAPHTHALENE	31/31	1.9 J	7.4 J	4.30	OU4-MU-R03-401B
2-METHYLNAPHTHALENE	23/31	6.5 J	24.7	9.34	OU4-MU-R02-400B
ACENAPHTHENE	31/31	0.69 J	14.1 J	4.95	OU4-MU-R03-400B
ACENAPHTHYLENE	31/31	4.77 J	26.4	14.2	OU4-MU-R01-300B
ANTHRACENE	29/31	11.4 J	50.8	28.3	OU4-MU-R01-300B
BENZO(A)ANTHRACENE	31/31	7.4 J	28.7	14.3	OU4-MU-R01-400A
BENZO(A)PYRENE	31/31	5.4	24.4	12.8	OU4-MU-R02-499A-AVG
BENZO(B)FLUORANTHENE	31/31	8.5 J	44.2	22.7	OU4-MU-R01-400A
BENZO(E)PYRENE	31/31	8.8	39.9 J	21.8	OU4-MU-R02-300A
BENZO(G,H,I)PERYLENE	31/31	3 J	18.4	9.23	OU4-MU-R02-400B
BENZO(K)FLUORANTHENE	31/31	2.95 J	18.4 J	7.79	OU4-MU-R02-300A
C1-CHRYSENES	31/31	4.9 J	29.7	15.1	OU4-MU-R02-300A
C1-DIBENZOTHIOPHENES	31/31	1.24 J	11.7	3.95	OU4-MU-R03-400B
C1-FLUORANTHENES/PYRENES	31/31	15.6	56.55	32.1	OU4-MU-R02-499A-AVG

TABLE 4-4

MUSSEL SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - REFERENCE STATION SAMPLES
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Parameters	Frequency of Detection (1)	Minimum Concentration (1)	Maximum Concentration (1)	Mean Concentration (1)	Sample with Maximum (1)
C1-FLUORENES	31/31	6.15 J	55.2	21.5	OU4-MU-R02-401B
C1-NAPHTHALENES	23/31	10.1	37.3	15.2	OU4-MU-R02-400B
C1-PHENANTHRENES/ANTHRACENES	31/31	11.2	51.5	24.8	OU4-MU-R03-300B
C2-CHRYSENES	31/31	2.5 J	41 J	14.7	OU4-MU-R02-499A-AVG
C2-DIBENZOTHIOPHENES	31/31	3.2 J	31.1	10.8	OU4-MU-R03-300B
C2-FLUORENES	31/31	8.9	57.6	24.1	OU4-MU-R03-300B
C2-NAPHTHALENES	23/31	8.56 J	25.6	14.7	OU4-MU-R03-400B, OU4-MU-R03-401B
C2-PHENANTHRENES/ANTHRACENES	31/31	15	76.5	33.0	OU4-MU-R03-300B
C3-CHRYSENES	27/31	0.07 J	2.305 J	1.17	OU4-MU-R02-499A-AVG
C3-DIBENZOTHIOPHENES	31/31	4.5 J	23.4	10.4	OU4-MU-R03-300B
C3-FLUORENES	31/31	8.9 J	106	28.7	OU4-MU-R01-300B
C3-NAPHTHALENES	31/31	7.37 J	33.7	21.0	OU4-MU-R03-400B
C3-PHENANTHRENES/ANTHRACENES	31/31	11.8	120	37.4	OU4-MU-R01-300B
C4-CHRYSENES	30/31	0.04 J	1.6 J	0.68	OU4-MU-R02-300B
C4-NAPHTHALENES	31/31	6.94 J	43.8	18.4	OU4-MU-R03-400A
C4-PHENANTHRENES/ANTHRACENES	31/31	5.5 J	33.7	18.0	OU4-MU-R03-400B
CHRYSENE	31/31	13.6 J	57.6	29.3	OU4-MU-R01-400A
DIBENZO(A,H)ANTHRACENE	31/31	0.3 J	3.7 J	1.22	OU4-MU-R02-400B
DIBENZOTHIOPHENE	23/31	0.7 J	4	1.40	OU4-MU-R03-400B
FLUORANTHENE	31/31	22.9	91.6	52.7	OU4-MU-R02-401B
FLUORENE	31/31	1.87 J	20.2 J	8.06	OU4-MU-R03-400B
INDENO(1,2,3-CD)PYRENE	31/31	2.03 J	14.5	6.17	OU4-MU-R01-300B
NAPHTHALENE	23/31	4.33 J	23.7 J	11.9	OU4-MU-R02-401B
PERYLENE	31/31	3.8 J	23.4 J	10.8	OU4-MU-R01-300A
PHENANTHRENE	23/31	5.4 J	54.7	17.7	OU4-MU-R03-400B
PYRENE	31/31	18.7	69.7	45.4	OU4-MU-R02-300A
LOW MOLECULAR WEIGHT PAHS(2)	31/31	28.97	175	94.4	OU4-MU-R03-400B
HIGH MOLECULAR WEIGHT PAHS(2)	31/31	71.32	232	156	OU4-MU-R02-499A-AVG
TOTAL PAHS(2)	31/31	102	377	250	OU4-MU-R02-401B
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	18/31	0.03 J	27	4.95	OU4-MU-R04-301B, OU4-MU-R02-401B
1,2,4,5-TETRACHLOROBENZENE	2/31	0.65 J	2.4	1.10	OU4-MU-R01-400A
2,4'-DDD	31/31	0.41	3.1	1.70	OU4-MU-R02-499A-AVG
2,4'-DDE	29/31	0.11 J	1.4	0.54	OU4-MU-R01-401B
2,4'-DDT	31/31	0.22 J	6.6	1.42	OU4-MU-R02-499A-AVG
4,4'-DDD	31/31	1.7	6.65	3.38	OU4-MU-R02-499A-AVG
4,4'-DDE	31/31	4.9	10	6.68	OU4-MU-R03-400A
4,4'-DDT	29/31	0.17 J	12 J	2.37	OU4-MU-R03-399A
TOTAL DDT(2)	31/31	8.98	28.36	16.1	OU4-MU-R03-399A
ALDRIN	16/31	0.05 J	0.94	0.27	OU4-MU-R04-300B
ALPHA-BHC	30/31	0.27 J	1.2	0.62	OU4-MU-R03-301B
ALPHA-CHLORDANE	31/31	0.74	3.2	1.79	OU4-MU-R01-400B
BETA-BHC	11/31	0.42	11	1.46	OU4-MU-R02-400B
CHLORPYRIFOS	14/31	0.034 J	3.4	1.57	OU4-MU-R03-301B
CIS-NONACHLOR	31/31	0.56	4.3	1.36	OU4-MU-R04-400B
DELTA-BHC	3/31	0.04 J	0.21 J	0.08	OU4-MU-R04-301B
DIELDRIN	31/31	0.03 J	2.5	1.14	OU4-MU-R02-399A
ENDOSULFAN II	23/31	0.08 J	1.6	0.50	OU4-MU-R01-400B

TABLE 4-4

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Parameters	Frequency of Detection (1)	Minimum Concentration (1)	Maximum Concentration (1)	Mean Concentration (1)	Sample with Maximum (1)
ENDRIN	19/31	0.15 J	1.5	0.53	OU4-MU-R04-400B
GAMMA-BHC (LINDANE)	21/31	0.08 J	2.2	0.72	OU4-MU-R04-300B
GAMMA-CHLORDANE	31/31	0.25 J	2.9	1.04	OU4-MU-R01-400B
HEPTACHLOR	6/31	0.27 J	1	0.24	OU4-MU-R03-300B
HEPTACHLOR EPOXIDE	18/31	0.09 J	1.2	0.48	OU4-MU-R03-399A
HEXACHLOROBENZENE	29/31	0.1 J	1.5	0.39	OU4-MU-R04-300B
MIREX	8/31	1.6	2.95	0.70	OU4-MU-R02-499A-AVG
OXYCHLORDANE	5/31	0.077 J	0.71	0.19	OU4-MU-R03-400B
PCB-101/90	31/31	4.2	11.5	7.20	OU4-MU-R02-499A-AVG
PCB-105	31/31	1.4	5.2	2.58	OU4-MU-R02-499A-AVG
PCB-118	29/31	2.5	11	5.56	OU4-MU-R03-400A
PCB-126	17/31	0.04 J	1.6 J	0.35	OU4-MU-R03-400A
PCB-128	31/31	0.53	3.4	1.93	OU4-MU-R02-400B
PCB-138/160	16/31	7.5	17	8.55	OU4-MU-R03-400A
PCB-149/123	21/31	2	6.5	4.25	OU4-MU-R01-401B
PCB-153/132	22/31	9	21	11.6	OU4-MU-R03-400A
PCB-156	27/31	0.19 J	3.5	1.17	OU4-MU-R03-400B
PCB-167	30/31	0.29 J	2.2	1.14	OU4-MU-R04-300B, OU4-MU-R02-400B
PCB-169	13/31	0.02 J	0.42 J	0.25	OU4-MU-R04-399A
PCB-170/190	10/31	0.19 J	1.8 J	0.51	OU4-MU-R03-301B
PCB-18/17	14/31	0.27 J	2.3	0.97	OU4-MU-R04-301B
PCB-180	14/31	3.9	12	5.53	OU4-MU-R01-300B
PCB-187	23/31	1.1	7.3	3.67	OU4-MU-R03-400A
PCB-189	4/31	0.044 J	0.88	0.40	OU4-MU-R04-300B
PCB-195/208	13/31	0.079 J	2.7	0.40	OU4-MU-R02-400B
PCB-201/157/173	17/31	0.26 J	2.56	0.64	OU4-MU-R03-300B
PCB-206	2/31	0.034 J	0.27 J	0.28	OU4-MU-R03-300B
PCB-209	9/31	0.064 J	0.61	0.36	OU4-MU-R03-300B
PCB-28	31/31	0.39 J	3.2 J	1.67	OU4-MU-R02-301B
PCB-44	14/31	0.46 J	4.7	1.47	OU4-MU-R03-400B
PCB-52	26/31	1.5	9.3	4.44	OU4-MU-R01-400B
PCB-66	31/31	0.26 J	2.3	1.10	OU4-MU-R02-499A-AVG
PCB-77	13/31	0.04 J	1.5 J	0.57	OU4-MU-R01-399A
PCB-8/5	23/31	0.087 J	21	2.85	OU4-MU-R01-400A
PCB-81	21/31	0.01 J	1.1 J	0.56	OU4-MU-R01-399A
TOTAL PCB CONGENERS(2)	31/31	71	188	121	OU4-MU-R03-400A
PENTACHLOROANISOLE	26/31	0.15 J	3.3	1.35	OU4-MU-R04-401B
PENTACHLOROBENZENE	18/31	0.48	1.9	0.81	OU4-MU-R01-400A
TRANS-NONACHLOR	30/31	0.75	3.3	1.66	OU4-MU-R01-400B
Inorganics (MG/KG)					
ALUMINUM	31/31	131 J	579	300	OU4-MU-R04-400A
ARSENIC	31/31	4.22	11.4	7.63	OU4-MU-R02-400B
CADMIUM	31/31	0.93	2.1	1.34	OU4-MU-R04-399A
CHROMIUM	29/31	1.6	11.63	3.15	OU4-MU-R04-301B
COPPER	31/31	5.33	33 J	9.90	OU4-MU-R04-400A
IRON	31/31	287	940	552	OU4-MU-R02-400B
LEAD	31/31	1.9	6.9	3.21	OU4-MU-R02-499A-AVG
MANGANESE	31/31	6.4	17.5	12.0	OU4-MU-R02-399A

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Parameters	Frequency of Detection (1)	Minimum Concentration (1)	Maximum Concentration (1)	Mean Concentration (1)	Sample with Maximum (1)
MERCURY	31/31	0.18	0.41	0.27	OU4-MU-R02-400B
NICKEL	19/31	1	3.26 J	1.50	OU4-MU-R04-301B
SILVER	23/31	0.04 J	0.49 J	0.09	OU4-MU-R01-300A
ZINC	31/31	69.74	117	91.5	OU4-MU-R04-499A
Miscellaneous Parameter (%)					
LIPIDS	31/31	1.7	9.9	6.53	OU4-MU-R01-401B

1 The sample and duplicate were averaged and counted as one sample when determining the minimum and maximum detected concentrations and the frequency of detection.
Source data from Round 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001), excluding sample OU4-MU-R02-400A.
2 See Section 4.1.3 for the methods used to calculate these values.

TABLE 4-5

JUVENILE LOBSTER SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - MONITORING STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	8/24	4.53 J	28.6 J	18.7	OU4-LJ-M07-100A
1,2,3,4,6,7,8,9-OCDF	2/24	6.1 J	19.2 J	20.9	OU4-LJ-M09-101B
1,2,3,4,6,7,8-HPCDD	3/24	1.59 J	5.5 J	9.8	OU4-LJ-M07-100A
2,3,4,6,7,8-HXCDF	2/24	2 J	16.4 J	11.3	OU4-LJ-M12-100B
2,3,7,8-TCDD	1/24	1.8 J	1.8 J	2.2	OU4-LJ-M11-100B-AVG
2,3,7,8-TCDF	3/24	1.84 J	3.02 J	2.3	OU4-LJ-M08-100A
TOTAL DIOXINS	7/18	1.59 J	34 J	12.8	OU4-LJ-M07-100A
TOTAL FURANS	3/18	3.35 J	19.9 J	13.7	OU4-LJ-M10-100B
TOTAL HPCDD	5/24	1.59 J	12.6 J	9.8	OU4-LJ-M12-199AM
TOTAL HXCDD	4/24	4.4 J	9.5 J	10.1	OU4-LJ-M10-199AM
TOTAL HXCDF	1/24	7.8 J	7.8 J	10.7	OU4-LJ-M09-101B
TOTAL PECDF	2/24	8 J	11 J	9.3	OU4-LJ-M07-199AM
TOTAL TCDD	2/24	1.8 J	2.1 J	2.3	OU4-LJ-M12-100B
TOTAL TCDF	3/24	1.84 J	3.02 J	2.3	OU4-LJ-M08-100A
TOTAL DIOXIN/FURANX (TEQ)-HALFND[2]	24/24	7.99	55.7	27.1	OU4-LJ-M07-199AM
TOTAL DIOXIN/FURANS (TEQ)-POSONLY[2]	24-Oct	0.00052	1.8	1.6	OU4-LJ-M11-100B-AVG
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	56/56	0.72 J	8 J	2.9	OU4-LJ-M09-101B
1-METHYLNAPHTHALENE	56/56	1.81 J	22.15	5.5	OU4-LJ-M01-100B-AVG
1-METHYLPHENANTHRENE	56/56	0.51 J	14.7	3.1	OU4-LJ-M02-199AM
2,3,5-TRIMETHYLNAPHTHALENE	56/56	0.5 J	5.2 J	1.9	OU4-LJ-M07-199AM
2,6-DIMETHYLNAPHTHALENE	56/56	0.47 J	7.5	2.0	OU4-LJ-M04-199AM
2-METHYLNAPHTHALENE	56/56	2.56 J	18.3 J	6.9	OU4-LJ-M14-100A
ACENAPHTHENE	56/56	0.4 J	6.71 J	2.0	OU4-LJ-M13-100A
ACENAPHTHYLENE	56/56	0.2 J	7.65	0.88	OU4-LJ-M01-100B-AVG
ANTHRACENE	56/56	0.645 J	28.6	4.2	OU4-LJ-M13-199AM
BENZO(A)ANTHRACENE	56/56	1.2 J	67.5 J	10.0	OU4-LJ-M02-199AM
BENZO(A)PYRENE	56/56	1.3 J	70.9	14.8	OU4-LJ-M02-199AM
BENZO(B)FLUORANTHENE	56/56	1.2 J	36	12.4	OU4-LJ-M13-101B
BENZO(E)PYRENE	56/56	1.8 J	32.7	8.8	OU4-LJ-M02-199AM
BENZO(G,H,I)PERYLENE	56/56	0.4 J	20.8	6.7	OU4-LJ-M02-199AM
BENZO(K)FLUORANTHENE	56/56	0.87 J	44.7 J	7.0	OU4-LJ-M02-199AM
C1-CHRYSENES	56/56	0.1 J	23.3	5.6	OU4-LJ-M02-199AM
C1-DIBENZOTHIOPHENES	56/56	0.06 J	5.6 J	1.3	OU4-LJ-M02-199AM
C1-FLUORANTHENES/PYRENES	56/56	3.03 J	71.7	12.7	OU4-LJ-M02-199AM
C1-FLUORENES	56/56	2.4 J	26.6	5.4	OU4-LJ-M08-100A
C1-NAPHTHALENES	56/56	4.41 J	34.1	12.5	OU4-LJ-M01-100B-AVG

TABLE 4-5

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
C1-PHENANTHRENES/ANTHRACENES	56/56	2.02 J	50	9.6	OU4-LJ-M02-199AM
C2-CHRYSENES	56/56	0.02 J	9.3	2.7	OU4-LJ-M02-199AM
C2-DIBENZOTHIOPHENES	53/56	0.02 J	5.7 J	1.3	OU4-LJ-M02-199AM
C2-FLUORENES	56/56	0.1 J	15.8 J	3.9	OU4-LJ-M08-100A
C2-NAPHTHALENES	56/56	2.2 J	19.55	7.3	OU4-LJ-M01-100B-AVG
C2-PHENANTHRENES/ANTHRACENES	56/56	2.05 J	27.7	7.4	OU4-LJ-M02-199AM
C3-CHRYSENES	48/56	0.03 J	1.2 J	1.4	OU4-LJ-M11-199AM-AVG
C3-DIBENZOTHIOPHENES	51/56	0.01 J	5.5 J	1.1	OU4-LJ-M13-199AM
C3-FLUORENES	55/56	0.04 J	14.6 J	3.9	OU4-LJ-M08-100A
C3-NAPHTHALENES	56/56	0.06 J	15.6	6.2	OU4-LJ-M07-199AM
C3-PHENANTHRENES/ANTHRACENES	56/56	0.06 J	13.6 J	4.5	OU4-LJ-M08-100A
C4-CHRYSENES	45/56	0.02 J	18.2	2.3	OU4-LJ-M01-101B-AVG
C4-NAPHTHALENES	56/56	0.02 J	19.6	3.6	OU4-LJ-M03-199AM
C4-PHENANTHRENES/ANTHRACENES	55/56	0.01 J	10.8	1.9	OU4-LJ-M02-199AM
CHRYSENE	56/56	3.8 J	87.3	16.5	OU4-LJ-M02-199AM
DIBENZO(A,H)ANTHRACENE	56/56	0.04 J	7.9 J	0.77	OU4-LJ-M02-199AM
DIBENZOTHIOPHENE	56/56	0.32 J	5.8	0.97	OU4-LJ-M02-199AM
FLUORANTHENE	56/56	6.69 J	171 J	31.9	OU4-LJ-M02-199AM
FLUORENE	56/56	1.07 J	11.5 J	3.8	OU4-LJ-M02-199AM
INDENO(1,2,3-CD)PYRENE	56/56	0.06 J	26.9 J	7.0	OU4-LJ-M02-199AM
NAPHTHALENE	56/56	3.84 J	22.7	11.1	OU4-LJ-M12-199AM
PERYLENE	56/56	0.4 J	17.6 J	5.7	OU4-LJ-M02-199AM
PHENANTHRENE	56/56	2.795 J	85.2	12.5	OU4-LJ-M02-199AM
PYRENE	56/56	4.9 J	128	24.9	OU4-LJ-M02-199AM
LOW MOLECULAR WEIGHT PAHs[2]	56/56	14.1	153	41.3	OU4-LJ-M02-199AM
HIGH MOLECULAR WEIGHT PAHs[2]	56/56	19.1	533	98.9	OU4-LJ-M02-199AM
TOTAL PAHs[2]	56/56	33.2	686	140	OU4-LJ-M02-199AM
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	56/56	0.07 J	54 J	11.3	OU4-LJ-M01-101B-AVG
1,2,4,5-TETRACHLOROBENZENE	27/56	0.02 J	1.16	0.43	OU4-LJ-M01-199AM
2,4'-DDD	12/56	0.001 J	2.3 J	0.5	OU4-LJ-M02-100B
2,4'-DDE	7/56	0.15 J	1.4 J	0.28	OU4-LJ-M10-100B
2,4'-DDT	13/56	0.13 J	0.87	0.24	OU4-LJ-M08-100A
4,4'-DDD	16/56	0.07 J	2.2 J	0.27	OU4-LJ-M08-100A
4,4'-DDE	56/56	0.79	13.02	2.8	OU4-LJ-M07-199AM
4,4'-DDT	13/56	0.94 J	7.6 J	0.9	OU4-LJ-M02-100B
TOTAL DDT[2]	56/56	1.8	14.4	5.1	OU4-LJ-M08-100A

TABLE 4-5

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
ALDRIN	4/56	0.17 J	0.29 J	0.23	OU4-LJ-M11-100B-AVG
ALPHA-BHC	25/56	0.08 J	0.63	0.25	OU4-LJ-M11-100A-AVG
ALPHA-CHLORDANE	16/56	0.1	25.97 J	1.7	OU4-LJ-M11-199AM-AVG
BETA-BHC	14/56	0.06 J	1.6	0.29	OU4-LJ-M08-100A
CHLORPYRIFOS	16/56	0.6 J	2.865 J	2.6	OU4-LJ-M11-199AM-AVG
CIS-NONACHLOR	11/56	0.02 J	1.4 J	0.18	OU4-LJ-M08-100A
DELTA-BHC	2/56	0.09 J	0.22	0.11	OU4-LJ-M04-100B
DIELDRIN	56/56	0.87 J	3.6 J	1.7	OU4-LJ-M14-100B
ENDOSULFAN II	6/56	0.12 J	1.8	0.21	OU4-LJ-M04-100B
ENDRIN	1/56	1.8 J	1.8 J	0.44	OU4-LJ-M04-100B
GAMMA-BHC (LINDANE)	41/56	0.05 J	2	0.65	OU4-LJ-M14-101B
GAMMA-CHLORDANE	7/56	0.16 J	0.38 J	0.17	OU4-LJ-M08-100A
HEPTACHLOR	2/56	0.81	11 J	0.45	OU4-LJ-M08-100B-AVG
HEPTACHLOR EPOXIDE	1/56	0.24 J	0.24 J	0.38	OU4-LJ-M01-100A-AVG
HEXACHLOROBENZENE	40/56	0.06 J	1.885 J	0.34	OU4-LJ-M11-199AM-AVG
MIREX	8/56	0.13 J	1.2 J	0.42	OU4-LJ-M02-100B
OXYCHLORDANE	47/56	0.11 J	3.83	0.76	OU4-LJ-M07-199AM
PCB-101/90	36/56	0.24 J	8 J	1.1	OU4-LJ-M08-100A
PCB-105	56/56	0.19 J	4.905	0.88	OU4-LJ-M11-199AM-AVG
PCB-118	56/56	0.76	15.87	3.3	OU4-LJ-M11-199AM-AVG
PCB-126	34/50	0.01 J	2.925 J	0.73	OU4-LJ-M11-100B-AVG
PCB-128	47/56	0.14 J	2 J	0.59	OU4-LJ-M08-100A
PCB-138/160	45/56	1	13 J	3.7	OU4-LJ-M08-100A
PCB-149/123	31/56	0.04 J	6.7 J	0.61	OU4-LJ-M08-100A
PCB-153/132	29/56	1.7	18.32	4.2	OU4-LJ-M07-199AM
PCB-156	16/56	0.06 J	2.02	0.68	OU4-LJ-M13-199AM
PCB-167	21/56	0.1 J	1.72	0.59	OU4-LJ-M07-199AM
PCB-169	31/56	0.01 J	2.85	0.71	OU4-LJ-M11-100B-AVG
PCB-170/190	15/56	0.16 J	4.68	0.83	OU4-LJ-M02-199AM
PCB-18/17	37/56	0.15 J	10.14	1.8	OU4-LJ-M13-199AM
PCB-180	43/56	0.47 J	9.14	1.9	OU4-LJ-M02-199AM
PCB-187	56/56	0.36 J	8.1	2.0	OU4-LJ-M13-100A
PCB-189	5/56	0.05 J	0.14 J	0.60	OU4-LJ-M11-100B-AVG
PCB-195/208	21/56	0.12 J	8.1	0.51	OU4-LJ-M13-100A
PCB-201/157/173	9/56	0.16 J	1.19	0.53	OU4-LJ-M04-100B, OU4-LJ-M03-100B
PCB-206	22/56	0.08 J	19	0.79	OU4-LJ-M13-100A
PCB-209	19/56	0.08 J	4.2	0.56	OU4-LJ-M13-100A

TABLE 4-5

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
PCB-28	22/56	0.09 J	3	0.53	OU4-LJ-M08-100B-AVG
PCB-44	20/56	0.1 J	0.64 J	0.32	OU4-LJ-M03-101B
PCB-52	24/56	0.04 J	2.185	0.65	OU4-LJ-M11-199AM-AVG
PCB-66	38/56	0.14 J	2.2	0.56	OU4-LJ-M08-100B-AVG
PCB-77	11/56	0.01 J	1.3	1.06	OU4-LJ-M11-100B-AVG
PCB-8/5	22/56	0.11 J	17 J	1.06	OU4-LJ-M08-100A
PCB-81	20/56	0.01 J	2.645 J	1.27	OU4-LJ-M11-100B-AVG
TOTAL PCB CONGENERS[2]	56/56	15.7	181	50.40	OU4-LJ-M08-100A
PENTACHLOROANISOLE	43/56	0.155 J	3.8 J	0.35	OU4-LJ-M08-100A
PENTACHLOROBENZENE	30/56	0.02 J	2.05	0.60	OU4-LJ-M13-199AM
TRANS-NONACHLOR	22/56	0.03 J	1.9	0.25	OU4-LJ-M10-100B
Inorganics (MG/KG)					
ALUMINUM	28/56	3.48 J	21.2 J	5.1	OU4-LJ-M09-199AM
ARSENIC	56/56	3 J	33.8	13.4	OU4-LJ-M13-101B
CADMIUM	42/56	0.0187	0.744 J	0.06	OU4-LJ-M07-199AM
CHROMIUM	13/56	0.4875	5.2	0.52	OU4-LJ-M04-101B
COPPER	56/56	19.6	77.1	42.2	OU4-LJ-M11-100B-AVG
IRON	53/56	5.99	32.7	12.5	OU4-LJ-M09-199AM
LEAD	38/56	0.07 J	10.45	0.40	OU4-LJ-M01-100B-AVG
MANGANESE	56/56	1.62	13.6 J	4.0	OU4-LJ-M11-101B
MERCURY	56/56	0.38	8.2	0.73	OU4-LJ-M02-100B
NICKEL	9/56	0.305	0.93 J	0.64	OU4-LJ-M12-100B
SILVER	56/56	0.13	1.39 J	0.78	OU4-LJ-M12-199AM, OU4-LJ-M04-199AM
ZINC	56/56	72.6	139.5	98.8	OU4-LJ-M11-199AM-AVG
Miscellaneous Parameter (%)					
LIPIDS	56/56	1.35	3.8	2.5	OU4-LJ-M06-101B

1 The sample and duplicate were averaged and counted as one sample when determining the minimum and maximum detected concentrations and the frequency of detection.
2 See Section 4.1.3 for the methods used to calculate these values.
Source data from Round 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 4-6

JUVENILE LOBSTER SUMMARY STATISTICS FOR ROUNDS 1 THROUGH 4 - REFERENCE STATION SAMPLES
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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	2/15	6.41 J	79.9 J	24.2	OU4-LJ-R01-100B
1,2,3,4,6,7,8,9-OCDF	1/15	74 J	74 J	25.7	OU4-LJ-R01-100B
1,2,3,4,7,8-HXCDD	1/15	29.1 J	29.1 J	13.3	OU4-LJ-R01-100B
1,2,3,4,7,8-HXCDF	1/15	28.3 J	28.3 J	13.2	OU4-LJ-R01-100B
1,2,3,6,7,8-HXCDD	1/15	27.5 J	27.5 J	13.2	OU4-LJ-R01-100B
1,2,3,7,8,9-HXCDD	1/15	24 J	24 J	12.9	OU4-LJ-R01-100B
2,3,4,6,7,8-HXCDF	1/15	20 J	20 J	12.7	OU4-LJ-R01-100B
2,3,4,7,8-PECDF	1/15	37.7	37.7	13.3	OU4-LJ-R01-199AM
2,3,7,8-TCDD	4/15	0.2 J	5.7 J	2.2	OU4-LJ-R01-100B
2,3,7,8-TCDF	3/14	1.77 J	3.5 J	2.8	OU4-LJ-R01-101B
TOTAL DIOXINS	7/11	0.2 J	223 J	31.5	OU4-LJ-R01-100B
TOTAL FURANS	4/11	1.3 J	261 J	33.1	OU4-LJ-R01-100B
TOTAL HPCDD	1/15	8.78 J	8.78 J	10.8	OU4-LJ-R01-100A
TOTAL HXCDD	4/15	7.9 J	80.5 J	16.5	OU4-LJ-R01-100B
TOTAL PECDF	2/15	5.4 J	7.3 J	10.4	OU4-LJ-R04-199AM
TOTAL TCDD	5/15	0.2 J	5.7 J	2.4	OU4-LJ-R01-100B
TOTAL TCDF	5/15	1.24 J	3.5 J	2.7	OU4-LJ-R01-101B
TOTAL DIOXIN/FURANS (TEQ)-HALFND[2]	15/15	13.9	56.5	31.3	OU4-LJ-R01-199AM
TOTAL DIOXIN/FURANS (TEQ)POSONLY[2]	8/15	0.18	18.9	3.7	OU4-LJ-R01-199AM
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	15/15	1.1 J	6.3	2.7	OU4-LJ-R04-100B
1-METHYLNAPHTHALENE	15/15	2.9 J	13.7	6.0	OU4-LJ-R04-199AM
1-METHYLPHENANTHRENE	15/15	0.6 J	20.2 J	4.5	OU4-LJ-R02-101B
2,3,5-TRIMETHYLNAPHTHALENE	15/15	0.72 J	6	2.4	OU4-LJ-R04-199AM
2,6-DIMETHYLNAPHTHALENE	15/15	1.3 J	4.2 J	2.2	OU4-LJ-R04-199AM
2-METHYLNAPHTHALENE	15/15	3.7 J	18.5	7.5	OU4-LJ-R04-199AM
ACENAPHTHENE	15/15	0.4 J	2.4 J	1.4	OU4-LJ-R01-100B
ACENAPHTHYLENE	15/15	0.2 J	1.7 J	0.71	OU4-LJ-R03-199AM
ANTHRACENE	15/15	0.8 J	25.2	4.2	OU4-LJ-R03-199AM
BENZO(A)ANTHRACENE	15/15	1.1 J	47.6	9.7	OU4-LJ-R03-199AM
BENZO(A)PYRENE	15/15	0.5 J	26.3	10.3	OU4-LJ-R03-199AM, OU4-LJ-R04-199AM
BENZO(B)FLUORANTHENE	15/15	1.1 J	29.5	10.2	OU4-LJ-R04-199AM
BENZO(E)PYRENE	15/15	0.1 J	15	6.7	OU4-LJ-R03-199AM
BENZO(G,H,I)PERYLENE	15/15	0.73 J	9.6 J	4.2	OU4-LJ-R03-100B
BENZO(K)FLUORANTHENE	15/15	1 J	28.1 J	6.1	OU4-LJ-R03-199AM

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
C1-CHRYSENES	15/15	0.11 J	12.7 J	5.1	OU4-LJ-R02-101B
C1-DIBENZOTHIOPHENES	15/15	0.28 J	7.7	2.0	OU4-LJ-R02-101B
C1-FLUORANTHENES/PYRENES	15/15	3.1 J	62.9	14.8	OU4-LJ-R02-101B
C1-FLUORENES	15/15	3 J	15.5 J	6.8	OU4-LJ-R02-101B
C1-NAPHTHALENES	15/15	7.1 J	32.2	13.5	OU4-LJ-R04-199AM
C1-PHENANTHRENES/ANTHRACENES	15/15	2.97 J	81.2	16.7	OU4-LJ-R02-101B
C2-CHRYSENES	15/15	0.13 J	5.2 J	2.2	OU4-LJ-R03-100B
C2-DIBENZOTHIOPHENES	15/15	0.03 J	6.3 J	1.3	OU4-LJ-R01-100B
C2-FLUORENES	15/15	2.3 J	17.8	6.6	OU4-LJ-R03-100B
C2-NAPHTHALENES	15/15	3.85 J	17.5	8.5	OU4-LJ-R04-199AM
C2-PHENANTHRENES/ANTHRACENES	15/15	2.9 J	27.5	11.5	OU4-LJ-R02-101B
C3-CHRYSENES	12/15	0.03 J	0.6 J	1.5	OU4-LJ-R03-100B
C3-DIBENZOTHIOPHENES	14/15	0.03 J	4.4 J	1.4	OU4-LJ-R01-100B
C3-FLUORENES	15/15	0.1 J	11.9 J	4.0	OU4-LJ-R01-100B
C3-NAPHTHALENES	15/15	2.3 J	16.5	8.1	OU4-LJ-R04-199AM
C3-PHENANTHRENES/ANTHRACENES	15/15	0.04 J	24.8	6.2	OU4-LJ-R01-100B
C4-CHRYSENES	13/15	0.04 J	1.7 J	1.3	OU4-LJ-R04-199AM
C4-NAPHTHALENES	15/15	0.1 J	15.75	3.9	OU4-LJ-R02-199AM-AVG
C4-PHENANTHRENES/ANTHRACENES	15/15	0.03 J	6.2 J	2.3	OU4-LJ-R01-199AM
CHRYSENE	15/15	3.3 J	62	17.5	OU4-LJ-R02-101B
DIBENZO(A,H)ANTHRACENE	15/15	0.07 J	1.3 J	0.32	OU4-LJ-R03-100B
DIBENZOTHIOPHENE	15/15	0.35 J	6.3	1.5	OU4-LJ-R02-101B
FLUORANTHENE	15/15	8.5 J	353	54.9	OU4-LJ-R02-101B
FLUORENE	15/15	1.76 J	9.2 J	3.6	OU4-LJ-R02-101B
INDENO(1,2,3-CD)PYRENE	15/15	0.2 J	9.2 J	4.3	OU4-LJ-R03-199AM
NAPHTHALENE	15/15	6.15 J	25.2	11.8	OU4-LJ-R04-100B
PERYLENE	15/15	1 J	26.2	6.0	OU4-LJ-R03-100B
PHENANTHRENE	15/15	3.05 J	209	26.6	OU4-LJ-R02-101B
PYRENE	15/15	6.5	177	34.6	OU4-LJ-R02-101B
LOW MOLECULAR WEIGHT PAHs[2]	15/15	19.9	239	55.8	OU4-LJ-R02-101B
HIGH MOLECULAR WEIGHT PAHs[2]	15/15	22	630	127	OU4-LJ-R02-101B
TOTAL PAHs[2]	15/15	52.9	870	183	OU4-LJ-R02-101B
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	15/15	0.16 J	14.91	8.3	OU4-LJ-R03-199AM
1,2,4,5-TETRACHLOROBENZENE	8/15	0.09 J	2.3	0.60	OU4-LJ-R03-100B
2,4'-DDD	2/15	1.4 J	1.4 J	0.5	OU4-LJ-R01-100B, OU4-LJ-R02-100B

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
2,4'-DDE	3/15	0.3 J	0.39 J	0.24	OU4-LJ-R01-100B
2,4'-DDT	4/15	0.19 J	0.39	0.23	OU4-LJ-R01-100B
4,4'-DDD	3/15	0.09 J	0.19 J	0.19	OU4-LJ-R02-100B
4,4'-DDE	15/15	1.8	4.21	2.9	OU4-LJ-R04-199AM
4,4'-DDT	2/15	0.09 J	1.6 J	0.34	OU4-LJ-R01-100B
TOTAL DDT[2]	15/15	2.8	7.2	4.3	OU4-LJ-R01-100B
ALDRIN	3/15	0.18 J	0.39 J	0.24	OU4-LJ-R02-100B
ALPHA-BHC	8/15	0.28 J	1	0.37	OU4-LJ-R02-100B
ALPHA-CHLORDANE	7/15	0.21 J	33.67 J	3.1	OU4-LJ-R02-199AM-AVG
BETA-BHC	3/15	0.26	0.9075	0.27	OU4-LJ-R02-199AM-AVG
CHLORPYRIFOS	3/15	1.6	2.5	3.5	OU4-LJ-R01-101B, OU4-LJ-R03-101B
CIS-NONACHLOR	5/15	0.1 J	0.15 J	0.15	OU4-LJ-R04-199AM
DELTA-BHC	3/15	0.21	0.86	0.18	OU4-LJ-R03-100B
DIELDRIN	14/15	0.73	3.2 J	1.6	OU4-LJ-R01-100B
ENDRIN	1/15	0.97	0.97	0.47	OU4-LJ-R02-199AM-AVG
GAMMA-BHC (LINDANE)	8/15	0.73	1.67	0.71	OU4-LJ-R01-199AM
GAMMA-CHLORDANE	1/15	0.3 J	0.3 J	0.18	OU4-LJ-R01-100B
HEXACHLOROBENZENE	11/15	0.15 J	0.8125	0.34	OU4-LJ-R02-199AM-AVG
MIREX	2/15	0.05 J	0.44 J	0.40	OU4-LJ-R01-100B
OXYCHLORDANE	14/15	0.31 J	1.96	0.90	OU4-LJ-R03-199AM
PCB-101/90	12/15	0.38 J	3.38	1.1	OU4-LJ-R04-199AM
PCB-105	15/15	0.2 J	1.25	0.82	OU4-LJ-R04-199AM
PCB-118	15/15	0.9 J	5	2.6	OU4-LJ-R02-100A
PCB-126	10/15	0.01 J	1.3	0.56	OU4-LJ-R02-100B
PCB-128	12/15	0.17 J	0.91 J	0.48	OU4-LJ-R02-100A
PCB-138/160	11/15	1.6 J	4.8	2.8	OU4-LJ-R02-100B, OU4-LJ-R03-100B
PCB-149/123	9/15	0.12 J	0.78 J	0.40	OU4-LJ-R02-100B
PCB-153/132	7/15	2.69	5.6	3.0	OU4-LJ-R04-199AM
PCB-156	3/15	0.32 J	4.255 J	0.8	OU4-LJ-R02-199AM-AVG
PCB-167	8/15	0.2 J	0.55 J	0.48	OU4-LJ-R02-100A
PCB-169	7/15	0.02 J	0.12 J	0.65	OU4-LJ-R02-100B
PCB-170/190	1/15	1.42	1.42	0.7	OU4-LJ-R04-199AM
PCB-18/17	6/15	0.23 J	23.68 J	2.7	OU4-LJ-R02-199AM-AVG
PCB-180	9/15	0.53 J	3	1.0	OU4-LJ-R02-100B
PCB-187	13/15	0.45 J	2.4	1.3	OU4-LJ-R02-100A

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Parameters	Frequency of Detection[1]	Minimum Concentration[1]	Maximum Concentration[1]	Mean Concentration[1]	Sample with Maximum[1]
PCB-195/208	6/15	0.03 J	0.19 J	0.28	OU4-LJ-R02-100B
PCB-201/157/173	2/15	0.12 J	0.15 J	0.47	OU4-LJ-R01-100B
PCB-206	4/15	0.07 J	0.19 J	0.37	OU4-LJ-R01-100B
PCB-209	4/15	0.06 J	0.43 J	0.53	OU4-LJ-R01-199AM
PCB-28	2/15	0.64 J	0.95	0.41	OU4-LJ-R02-100B
PCB-44	8/15	0.15 J	1.5	0.45	OU4-LJ-R03-100B
PCB-52	6/15	0.34 J	3.8	0.9	OU4-LJ-R03-100B
PCB-66	12/15	0.14 J	0.81 J	0.39	OU4-LJ-R02-100A
PCB-77	5/15	0.01 J	0.37 J	0.78	OU4-LJ-R02-199AM-AVG
PCB-8/5	11/15	0.25 J	4.48	1.3	OU4-LJ-R01-199AM
PCB-81	5/15	0.01 J	1.2	1.06	OU4-LJ-R02-100B
TOTAL PCB CONGENERS[2]	15/15	25.5	80.4	42.2	OU4-LJ-R02-199AM-AVG
PENTACHLOROANISOLE	11/15	0.26 J	0.54	0.29	OU4-LJ-R02-199AM-AVG
PENTACHLOROBENZENE	7/15	0.08 J	1.805	0.97	OU4-LJ-R02-199AM-AVG
TRANS-NONACHLOR	10/15	0.12 J	0.37	0.19	OU4-LJ-R02-100B
Inorganics (MG/KG)					
ALUMINUM	8/15	3.12 J	8.8	4.8	OU4-LJ-R03-100B, OU4-LJ-R02-100B
ARSENIC	15/15	4.11 J	22.1	12.3	OU4-LJ-R01-101B
CADMIUM	11/15	0.0202	0.07	0.032	OU4-LJ-R01-100B
CHROMIUM	5/15	0.503	0.87	0.41	OU4-LJ-R03-100A
COPPER	15/15	21.4	75.1	45.6	OU4-LJ-R04-100B
IRON	15/15	5.9 J	24.9 J	11.6	OU4-LJ-R01-100A
LEAD	8/15	0.16	0.86	0.28	OU4-LJ-R01-101B
MANGANESE	15/15	1.66	9.5 J	4.3	OU4-LJ-R01-101B
MERCURY	14/15	0.504	1.1	0.73	OU4-LJ-R01-100B
NICKEL	3/15	0.56	0.69	0.65	OU4-LJ-R02-100B
SILVER	15/15	0.17	1.72 J	0.93	OU4-LJ-R01-199AM
ZINC	15/15	76.2	143	102	OU4-LJ-R01-101B
Miscellaneous Parameters (%)					
LIPIDS	15/15	1.6	3.5	2.5	OU4-LJ-R02-101B

1 The sample and duplicate were averaged and counted as one sample when determining the minimum and maximum detected concentrations and the frequency of detection.
2 See Section 4.1.3 for the methods used to calculat these values.
Source data from Round 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 4-7

BAF/BSAF VALUES FOR MUSSEL/SEDIMENT
ACROSS ALL MONITORING STATIONS FOR ROUNDS 1-4
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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
Dioxins							
1,2,3,4,6,7,8,9-OCDD	20	0.011	0.397	OU4-MU-M08-200B	0.10	0.10	1.00
1,2,3,4,6,7,8,9-OCDF	4	0.047	0.462	OU4-MU-M08-200B	0.28	0.19	0.69
1,2,3,4,6,7,8-HPCDD	19	0.011	0.643	OU4-MU-M07-300A	0.17	0.18	1.04
1,2,3,4,6,7,8-HPCDF	14	0.004	0.318	OU4-MU-M10-100B-AVG	0.09	0.09	0.96
1,2,3,4,7,8-HXCDD	6	0.040	1.420	OU4-MU-M10-199A-AVG	0.38	0.52	1.36
1,2,3,4,7,8-HXCDF	2	1.400	1.844	OU4-MU-M12-200B-AVG	1.62	0.31	0.19
1,2,3,6,7,8-HXCDD	10	0.022	0.353	OU4-MU-M08-200B	0.11	0.11	0.96
1,2,3,7,8,9-HXCDD	3	0.051	0.114	OU4-MU-M08-300B	0.08	0.03	0.38
1,2,3,7,8,9-HXCDF	4	0.181	2.300	OU4-MU-M07-399A	0.94	0.97	1.03
1,2,3,7,8-PECDD	2	0.157	0.214	OU4-MU-M08-100B	0.19	0.04	0.22
1,2,3,7,8-PECDF	3	0.190	0.404	OU4-MU-M09-200A	0.32	0.11	0.35
2,3,4,6,7,8-HXCDF	2	0.405	3.594	OU4-MU-M10-100A-AVG	2.00	2.26	1.13
2,3,4,7,8-PECDF	4	0.023	14.700	OU4-MU-M10-300B	3.82	7.25	1.90
2,3,7,8-TCDF	6	0.443	7.350	OU4-MU-M10-300B	2.22	2.64	1.19
TOTAL DIOXINS	26	0.008	0.455	OU4-MU-M08-200B	0.10	0.10	1.02
TOTAL FURANS	19	0.001	4.175	OU4-MU-M07-300A	0.37	0.94	2.53
TOTAL HPCDD	25	0.004	0.575	OU4-MU-M08-200B	0.11	0.13	1.17
TOTAL HPCDF	15	0.003	0.432	OU4-MU-M08-200B	0.11	0.13	1.16
TOTAL HXCDD	14	0.004	1.321	OU4-MU-M08-300B	0.31	0.48	1.52
TOTAL HXCDF	8	0.020	16.255	OU4-MU-M08-200A	2.12	5.71	2.69
TOTAL PECDD	2	0.157	0.214	OU4-MU-M08-100B	0.19	0.04	0.22
TOTAL PECDF	8	0.014	0.655	OU4-MU-M10-200B	0.20	0.26	1.31
TOTAL TCDD	14	0.122	7.977	OU4-MU-M10-101B-AVG	2.19	2.47	1.13
TOTAL TCDF	15	0.002	124.306	OU4-MU-M07-300A	10.26	31.76	3.09
Minimum BSAF(1)					**0.08**		
Maximum BSAF(1)					**10.26**		
Average BSAF(1)					**1.18**		

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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
Semi-Volatile Organics							
1,1-BIPHENYL	78	0.004	2.164	OU4-MU-M13-100A-AVG	0.14	0.25	1.80
1-METHYLNAPHTHALENE	78	0.004	1.611	OU4-MU-M13-100A-AVG	0.11	0.19	1.77
1-METHYLPHENANTHRENE	120	0.001	0.361	OU4-MU-M13-100A-AVG	0.04	0.05	1.22
2,3,5-TRIMETHYLNAPHTHALENE	119	0.006	0.602	OU4-MU-M02-301B	0.09	0.09	1.10
2,6-DIMETHYLNAPHTHALENE	119	0.004	1.075	OU4-MU-M13-100A-AVG	0.09	0.12	1.40
2-METHYLNAPHTHALENE	82	0.006	1.774	OU4-MU-M13-100A-AVG	0.11	0.21	1.88
ACENAPHTHENE	120	0.002	1.063	OU4-MU-M02-299A	0.11	0.16	1.49
ACENAPHTHYLENE	119	0.001	0.437	OU4-MU-M09-100A	0.06	0.07	1.12
ANTHRACENE	116	0.002	0.569	OU4-MU-M13-100A-AVG	0.05	0.08	1.50
BENZO(A)ANTHRACENE	120	0.001	0.804	OU4-MU-M13-100A-AVG	0.03	0.08	3.06
BENZO(A)PYRENE	111	0.001	0.866	OU4-MU-M13-100A-AVG	0.03	0.09	3.33
BENZO(B)FLUORANTHENE	120	0.001	1.007	OU4-MU-M13-100A-AVG	0.03	0.09	3.39
BENZO(E)PYRENE	120	0.003	0.893	OU4-MU-M13-100A-AVG	0.04	0.09	2.35
BENZO(G,H,I)PERYLENE	120	0.001	0.725	OU4-MU-M13-100A-AVG	0.02	0.07	3.01
BENZO(K)FLUORANTHENE	120	0.001	0.508	OU4-MU-M13-100A-AVG	0.03	0.06	2.08
C1-CHRYSENES	120	0.002	0.805	OU4-MU-M13-100A-AVG	0.03	0.08	2.69
C1-DIBENZOTHIOPHENES	119	0.003	0.261	OU4-MU-M09-100B	0.05	0.05	0.97
C1-FLUORANTHENES/PYRENES	120	0.002	0.424	OU4-MU-M09-100A	0.03	0.06	1.71
C1-FLUORENES	107	0.004	2.229	OU4-MU-M06-300A	0.18	0.26	1.43
C1-NAPHTHALENES	79	0.005	1.705	OU4-MU-M13-100A-AVG	0.11	0.20	1.86
C1-PHENANTHRENES/ANTHRACENES	120	0.003	0.354	OU4-MU-M13-100A-AVG	0.05	0.06	1.20
C2-CHRYSENES	120	0.000	0.667	OU4-MU-M13-100A-AVG	0.05	0.09	1.94
C2-DIBENZOTHIOPHENES	120	0.001	0.441	OU4-MU-M09-100B	0.09	0.09	0.98
C2-FLUORENES	116	0.008	0.596	OU4-MU-M02-301B	0.13	0.12	0.94
C2-NAPHTHALENES	89	0.005	0.745	OU4-MU-M13-100A-AVG	0.08	0.10	1.29
C2-PHENANTHRENES/ANTHRACENES	120	0.005	0.458	OU4-MU-M09-100A	0.07	0.07	1.11
C3-CHRYSENES	103	0.000	0.483	OU4-MU-M13-100A-AVG	0.04	0.06	1.76
C3-DIBENZOTHIOPHENES	120	0.002	0.905	OU4-MU-M09-100A	0.12	0.12	1.05
C3-FLUORENES	118	0.008	1.839	OU4-MU-M10-199A-AVG	0.22	0.30	1.34
C3-NAPHTHALENES	119	0.005	0.730	OU4-MU-M02-300A	0.09	0.10	1.06
C3-PHENANTHRENES/ANTHRACENES	120	0.006	1.122	OU4-MU-M09-100B	0.11	0.15	1.38
C4-CHRYSENES	116	0.000	2.779	OU4-MU-M13-100A-AVG	0.06	0.26	4.72
C4-NAPHTHALENES	117	0.010	0.806	OU4-MU-M06-300A	0.16	0.15	0.99
C4-PHENANTHRENES/ANTHRACENES	120	0.001	1.243	OU4-MU-M02-200B	0.14	0.19	1.37

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CHRYSENE	120	0.003	0.992	OU4-MU-M13-100A-AVG	0.04	0.10	2.54
DIBENZO(A,H)ANTHRACENE	120	0.000	1.073	OU4-MU-M13-100A-AVG	0.02	0.10	5.28
DIBENZOTHIOPHENE	92	0.002	0.296	OU4-MU-M13-100A-AVG	0.03	0.04	1.21
FLUORANTHENE	110	0.002	0.364	OU4-MU-M13-100A-AVG	0.04	0.06	1.47
FLUORENE	120	0.001	0.771	OU4-MU-M13-100A-AVG	0.06	0.09	1.54
INDENO(1,2,3-CD)PYRENE	120	0.001	0.937	OU4-MU-M13-100A-AVG	0.02	0.09	4.25
NAPHTHALENE	78	0.003	0.501	OU4-MU-M13-100A-AVG	0.07	0.08	1.04
PERYLENE	120	0.003	0.730	OU4-MU-M13-100A-AVG	0.05	0.08	1.76
PHENANTHRENE	94	0.001	0.488	OU4-MU-M13-100A-AVG	0.04	0.06	1.65
PYRENE	107	0.002	0.335	OU4-MU-M13-100A-AVG	0.03	0.05	1.59
Minimum BSAF(1)					**0.02**		
Maximum BSAF(1)					**0.22**		
Average BSAF(1)					**0.07**		
Pesticides							
1,2,3,4-TETRACHLOROBENZENE	67	0.066	97.96	OU4-MU-M10-299A	7.47	16.63	2.23
1,2,4,5-TETRACHLOROBENZENE	15	0.102	4.51	OU4-MU-M12-201B	1.09	1.22	1.12
2,4'-DDD	110	0.010	10.06	OU4-MU-M13-100A-AVG	0.32	0.99	3.06
2,4'-DDE	84	0.020	16.64	OU4-MU-M12-201B	1.15	2.82	2.45
2,4'-DDT	100	0.006	26.01	OU4-MU-M06-200A	1.96	3.81	1.94
4,4'-DDD	111	0.006	3.31	OU4-MU-M14-299A	0.42	0.53	1.26
4,4'-DDE	115	0.026	7.65	OU4-MU-M13-100B	1.06	1.21	1.15
4,4'-DDT	85	0.001	2.83	OU4-MU-M06-300A	0.41	0.67	1.63
ALDRIN	18	0.002	20.11	OU4-MU-M08-200B	2.35	5.16	2.20
ALPHA-BHC	71	0.172	13.44	OU4-MU-M13-100A-AVG	2.36	2.36	1.00
ALPHA-CHLORDANE	108	0.016	10.50	OU4-MU-M02-300A	1.53	2.12	1.39
BETA-BHC	41	0.103	299.15	OU4-MU-M07-399A	9.75	46.53	4.77
CHLORPYRIFOS	9	1.274	221.09	OU4-MU-M14-101B	29.77	71.84	2.41
CIS-NONACHLOR	118	0.044	13.29	OU4-MU-M02-200B	1.48	1.88	1.27
DELTA-BHC	33	0.155	81.48	OU4-MU-M03-299A	7.40	14.63	1.98
DIELDRIN	82	0.009	49.66	OU4-MU-M07-399A	2.74	6.82	2.49
ENDOSULFAN II	68	0.005	1.88	OU4-MU-M06-299A-AVG	0.33	0.45	1.39
ENDRIN	8	0.318	10.24	OU4-MU-M03-199A-AVG	2.24	3.44	1.54
GAMMA-BHC (LINDANE)	31	0.143	14.48	OU4-MU-M14-100B	1.51	2.90	1.92

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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
GAMMA-CHLORDANE	96	0.015	10.54	OU4-MU-M07-300B	1.42	1.77	1.25
HEPTACHLOR	54	0.028	44.02	OU4-MU-M02-299A	2.36	6.35	2.69
HEPTACHLOR EPOXIDE	11	0.023	64.79	OU4-MU-M11-399A-AVG	7.74	19.21	2.48
HEXACHLOROBENZENE	61	0.015	12.02	OU4-MU-M13-100B	1.89	2.54	1.35
MIREX	19	0.017	94.63	OU4-MU-M07-399A	6.44	21.48	3.34
OXYCHLORDANE	32	0.047	16.50	OU4-MU-M14-100A	1.82	3.82	2.10
PENTACHLOROANISOLE	67	0.031	18.21	OU4-MU-M12-199A	2.61	3.03	1.16
PENTACHLOROBENZENE	51	0.197	71.08	OU4-MU-M06-199A	7.31	12.82	1.75
TRANS-NONACHLOR	111	0.028	53.68	OU4-MU-M10-301B	3.04	6.16	2.03
Minimum BSAF(1)					**0.32**		
Maximum BSAF(1)					**29.77**		
Average BSAF(1)					**3.93**		
PCBs							
PCB-101/90	101	0.043	13.22	OU4-MU-M14-101B	1.58	2.19	1.38
PCB-105	120	0.044	11.87	OU4-MU-M14-299A	1.46	1.99	1.36
PCB-118	114	0.065	8.19	OU4-MU-M02-299A	1.35	1.70	1.26
PCB-126	52	0.001	19.88	OU4-MU-M02-399A	1.78	3.51	1.97
PCB-128	118	0.047	7.20	OU4-MU-M14-100A	0.91	1.13	1.25
PCB-138/160	62	0.038	5.40	OU4-MU-M02-200A	1.18	1.37	1.16
PCB-149/123	80	0.017	8.03	OU4-MU-M14-101B	1.04	1.29	1.24
PCB-153/132	63	0.031	9.33	OU4-MU-M14-101B	1.45	1.97	1.35
PCB-156	95	0.012	4.25	OU4-MU-M02-299A	0.38	0.66	1.71
PCB-167	113	0.001	10.03	OU4-MU-M06-200A	0.53	1.20	2.26
PCB-169	47	0.002	5.24	OU4-MU-M02-201B	0.96	1.06	1.10
PCB-170/190	47	0.001	0.69	OU4-MU-M07-300B	0.07	0.13	1.87
PCB-18/17	42	0.010	29.17	OU4-MU-M07-399A	2.30	4.71	2.05
PCB-180	52	0.004	15.10	OU4-MU-M14-101B	1.11	2.30	2.08
PCB-187	74	0.004	8.69	OU4-MU-M06-200A	1.25	1.93	1.55
PCB-189	22	0.034	1.41	OU4-MU-M10-199A-AVG	0.23	0.28	1.22
PCB-195/208	37	0.003	0.99	OU4-MU-M14-199A	0.16	0.25	1.50
PCB-201/157/173	80	0.005	19.57	OU4-MU-M07-399A	0.81	2.39	2.95
PCB-206	16	0.001	0.90	OU4-MU-M07-399A	0.10	0.24	2.27
PCB-209	28	0.004	3.44	OU4-MU-M14-199A	0.23	0.64	2.74

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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
PCB-28	97	0.015	12.62	OU4-MU-M04-101B	0.88	1.66	1.89
PCB-44	85	0.037	89.16	OU4-MU-M14-199A	2.99	10.35	3.46
PCB-52	110	0.049	33.56	OU4-MU-M14-101B	1.83	3.83	2.09
PCB-66	108	0.025	12.08	OU4-MU-M02-200B	0.85	1.38	1.63
PCB-77	52	0.003	58.78	OU4-MU-M07-300A	2.94	8.43	2.87
PCB-8/5	95	0.008	74.88	OU4-MU-M06-300A	3.44	9.31	2.71
PCB-81	68	0.000	40.40	OU4-MU-M09-199A	2.10	5.33	2.54
Minimum BSAF(1)					**0.07**		
Maximum BSAF(1)					**3.44**		
Average BSAF(1)					**1.26**		
Inorganics							
ALUMINUM	120	0.001	0.03	OU4-MU-M09-100A	0.01	0.00	0.59
ARSENIC	120	0.195	1.66	OU4-MU-M05-301B	0.69	0.29	0.42
CADMIUM	101	0.774	23.57	OU4-MU-M06-300B-AVG	5.58	4.47	0.80
CHROMIUM	109	0.007	0.14	OU4-MU-M10-100A-AVG	0.03	0.02	0.57
COPPER	120	0.002	2.91	OU4-MU-M07-101B	0.19	0.54	2.84
IRON	120	0.003	0.06	OU4-MU-M10-100A-AVG	0.02	0.01	0.48
LEAD	120	0.004	1.10	OU4-MU-M05-101B	0.07	0.13	1.74
MANGANESE	120	0.006	0.73	OU4-MU-M10-200B	0.04	0.07	1.80
MERCURY	113	0.074	14.50	OU4-MU-M06-300B-AVG	1.42	1.76	1.24
NICKEL	80	0.000	0.38	OU4-MU-M02-300A	0.06	0.05	0.86
SILVER	77	0.007	3.24	OU4-MU-M13-101B-AVG	1.75	12.86	7.37
ZINC	120	0.014	5.34	OU4-MU-M10-200B	0.21	4.52	22.04

1 - These BSAFs are the minimum, maximum, and average values of the mean BSAFs across each chemical class (i.e., dioxins, PAHs, pesticides, and PCBs). Minimum, maximum, and average BAFs were not calculated across the metals, but the table has the minimum, maximum, and average BAF for each individual metal, which is how they are typically reported.

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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
Dioxins							
1,2,3,4,6,7,8,9-OCDD	11	0.01	0.39	OU4-MU-R01-300A	0.07	0.11	1.62
1,2,3,4,6,7,8,9-OCDF	3	0.07	0.08	OU4-MU-R01-300B	0.08	0.01	0.11
1,2,3,4,6,7,8-HPCDD	10	0.02	0.44	OU4-MU-R04-401B	0.11	0.12	1.17
1,2,3,4,6,7,8-HPCDF	7	0.02	0.27	OU4-MU-R04-301B	0.09	0.09	1.03
1,2,3,6,7,8-HXCDD	2	0.2	0.24	OU4-MU-R03-300B	0.24	0.005	0.02
1,2,3,6,7,8-HXCDF	1	0.15	0.15	OU4-MU-R03-400B	0.15	---	---
2,3,7,8-TCDF	1	1.32	1.32	OU4-MU-R03-300A	1.32	---	---
TOTAL DIOXINS	12	0.004	0.29	OU4-MU-R01-300A	0.06	0.08	1.32
TOTAL FURANS	11	0.005	1.58	OU4-MU-R01-300A	0.24	0.45	1.90
TOTAL HPCDD	16	0.01	0.20	OU4-MU-R02-300A	0.07	0.06	0.91
TOTAL HPCDF	5	0.01	0.15	OU4-MU-R03-400B	0.06	0.05	0.85
TOTAL HXCDD	4	0.004	0.45	OU4-MU-R03-300B	0.15	0.21	1.38
TOTAL HXCDF	4	0.07	1.41	OU4-MU-R02-300A	0.43	0.65	1.52
TOTAL PECDF	2	1.27	1.63	OU4-MU-R01-400A	1.45	0.26	0.18
TOTAL TCDD	6	1.50	7.68	OU4-MU-R02-300A	3.72	2.18	0.59
TOTAL TCDF	5	0.28	1.81	OU4-MU-R01-400A	1.08	0.70	0.65
Minimum BSAF(1)					**0.06**		
Maximum BSAF(1)					**3.72**		
Average BSAF(1)					**0.58**		
Semivolatile Organics							
1,1-BIPHENYL	20	0.05	0.50	OU4-MU-R01-300A	0.16	0.10	0.62
1-METHYLNAPHTHALENE	21	0.04	0.63	OU4-MU-R01-300A	0.20	0.16	0.81
1-METHYLPHENANTHRENE	31	0.003	0.23	OU4-MU-R04-301B	0.06	0.07	1.19
2,3,5-TRIMETHYLNAPHTHALENE	31	0.01	0.40	OU4-MU-R04-301B	0.14	0.13	0.96
2,6-DIMETHYLNAPHTHALENE	31	0.02	0.20	OU4-MU-R01-300A	0.09	0.05	0.56
2-METHYLNAPHTHALENE	23	0.04	0.49	OU4-MU-R01-300A	0.18	0.13	0.68
ACENAPHTHENE	31	0.005	1.08	OU4-MU-R04-300A	0.15	0.24	1.63
ACENAPHTHYLENE	30	0.02	0.35	OU4-MU-R01-300A	0.07	0.07	0.95
ANTHRACENE	28	0.003	0.28	OU4-MU-R01-300A	0.07	0.07	1.04
BENZO(A)ANTHRACENE	29	0.002	0.09	OU4-MU-R01-300A	0.03	0.03	1.08
BENZO(A)PYRENE	29	0.001	0.05	OU4-MU-R01-300A	0.02	0.02	1.02
BENZO(B)FLUORANTHENE	29	0.0015	0.14	OU4-MU-R01-300A	0.03	0.03	1.17

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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
BENZO(E)PYRENE	29	0.004	0.33	OU4-MU-R01-300A	0.05	0.07	1.31
BENZO(G,H,I)PERYLENE	27	0.002	0.10	OU4-MU-R01-300A	0.02	0.02	1.16
BENZO(K)FLUORANTHENE	29	0.002	0.16	OU4-MU-R01-300A	0.03	0.04	1.26
C1-CHRYSENES	31	0.002	0.60	OU4-MU-R03-400A	0.06	0.12	2.01
C1-DIBENZOTHIOPHENES	30	0.005	0.32	OU4-MU-R01-300A	0.08	0.09	1.06
C1-FLUORANTHENES/PYRENES	31	0.004	0.39	OU4-MU-R01-300A	0.05	0.08	1.38
C1-FLUORENES	27	0.01	1.35	OU4-MU-R04-301B	0.26	0.36	1.39
C1-NAPHTHALENES	23	0.04	0.55	OU4-MU-R01-300A	0.19	0.14	0.72
C1-PHENANTHRENES/ANTHRACENES	29	0.003	0.30	OU4-MU-R04-301B	0.06	0.08	1.20
C2-CHRYSENES	31	0.001	16.9	OU4-MU-R03-400A	0.66	3.02	4.57
C2-DIBENZOTHIOPHENES	31	0.02	0.81	OU4-MU-R04-300B	0.16	0.19	1.18
C2-FLUORENES	29	0.01	0.77	OU4-MU-R04-401B	0.18	0.18	1.03
C2-NAPHTHALENES	23	0.02	0.39	OU4-MU-R04-401B	0.14	0.11	0.76
C2-PHENANTHRENES/ANTHRACENES	29	0.002	0.77	OU4-MU-R01-300A	0.12	0.16	1.37
C3-CHRYSENES	27	0.002	0.59	OU4-MU-R01-300A	0.06	0.14	2.23
C3-DIBENZOTHIOPHENES	31	0.03	2.06	OU4-MU-R01-300A	0.24	0.37	1.57
C3-FLUORENES	31	0.02	0.96	OU4-MU-R01-300A	0.24	0.23	0.96
C3-NAPHTHALENES	31	0.01	0.62	OU4-MU-R04-300B	0.19	0.18	0.96
C3-PHENANTHRENES/ANTHRACENES	29	0.002	1.70	OU4-MU-R01-300A	0.21	0.33	1.56
C4-CHRYSENES	29	0.0003	1.18	OU4-MU-R01-300A	0.11	0.23	2.22
C4-NAPHTHALENES	31	0.02	1.17	OU4-MU-R04-300B	0.31	0.31	0.98
C4-PHENANTHRENES/ANTHRACENES	31	0.001	1.78	OU4-MU-R01-300A	0.25	0.33	1.30
CHRYSENE	30	0.004	0.21	OU4-MU-R01-300A	0.05	0.05	1.15
DIBENZO(A,H)ANTHRACENE	29	0.001	0.06	OU4-MU-R01-300A	0.01	0.02	1.26
DIBENZOTHIOPHENE	23	0.01	0.14	OU4-MU-R04-300A	0.05	0.05	0.92
FLUORANTHENE	30	0.002	0.17	OU4-MU-R04-300A	0.04	0.04	1.08
FLUORENE	31	0.003	0.24	OU4-MU-R01-300A	0.08	0.08	0.99
INDENO(1,2,3-CD)PYRENE	29	0.001	0.05	OU4-MU-R04-400A	0.01	0.01	1.12
NAPHTHALENE	21	0.03	0.43	OU4-MU-R01-300A	0.14	0.11	0.81
PERYLENE	31	0.004	0.48	OU4-MU-R01-300A	0.06	0.08	1.50
PHENANTHRENE	23	0.004	0.12	OU4-MU-R04-301B	0.04	0.04	0.97
PYRENE	29	0.002	0.19	OU4-MU-R01-300A	0.04	0.05	1.14
Minimum BSAF(1)					**0.01**		
Maximum BSAF(1)					**0.66**		
Average BSAF(1)					**0.12**		

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BAF/BSAF FOR MUSSEL/SEDIMENT
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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
Pesticides							
1,2,3,4-TETRACHLOROBENZENE	11	0.05	43.6	OU4-MU-R03-301B	6.12	12.8	2.09
2,4'-DDD	25	0.02	3.19	OU4-MU-R01-300A	0.51	0.70	1.37
2,4'-DDE	18	0.05	2.89	OU4-MU-R02-499A-AVG	0.69	0.92	1.33
2,4'-DDT	12	0.34	13.3	OU4-MU-R03-399A	3.70	3.74	1.01
4,4'-DDD	29	0.09	9.12	OU4-MU-R01-300A	1.51	1.98	1.31
4,4'-DDE	30	0.69	20.2	OU4-MU-R01-300A	2.92	3.62	1.24
4,4'-DDT	20	0.01	10.8	OU4-MU-R01-399A	1.18	2.63	2.23
ALDRIN	11	0.01	2.19	OU4-MU-R01-400A	0.30	0.64	2.14
ALPHA-BHC	21	0.34	3.44	OU4-MU-R02-399A	1.10	0.70	0.64
ALPHA-CHLORDANE	27	0.35	7.50	OU4-MU-R01-399A	1.75	1.72	0.99
BETA-BHC	4	0.66	2.81	OU4-MU-R03-300B	1.79	0.89	0.50
CHLORPYRIFOS	9	0.05	3.65	OU4-MU-R02-499A-AVG	1.28	1.33	1.04
CIS-NONACHLOR	27	0.39	8.24	OU4-MU-R01-300A	2.14	1.71	0.80
DELTA-BHC	1	0.10	0.10	OU4-MU-R03-301B	0.10	---	---
DIELDRIN	6	0.24	17.9	OU4-MU-R03-300A	4.46	6.80	1.53
ENDOSULFAN II	15	0.02	2.40	OU4-MU-R02-400B	0.63	0.71	1.11
ENDRIN	1	0.48	0.48	OU4-MU-R04-399A	0.48	---	---
GAMMA-BHC (LINDANE)	8	0.22	4.49	OU4-MU-R03-400B	1.62	1.36	0.84
GAMMA-CHLORDANE	19	0.13	11.3	OU4-MU-R01-401B	2.66	3.19	1.20
HEPTACHLOR	2	0.22	1.23	OU4-MU-R01-400A	0.73	0.72	0.99
HEPTACHLOR EPOXIDE	5	0.24	1.89	OU4-MU-R02-399A	0.77	0.70	0.92
HEXACHLOROBENZENE	13	0.003	6.29	OU4-MU-R03-399A	1.34	1.65	1.24
MIREX	4	1.69	6.63	OU4-MU-R02-499A-AVG	4.06	2.22	0.55
OXYCHLORDANE	1	0.46	0.46	OU4-MU-R03-499A	0.46	---	---
PENTACHLOROANISOLE	14	0.25	5.74	OU4-MU-R01-400B	2.33	1.45	0.62
PENTACHLOROBENZENE	9	0.04	4.40	OU4-MU-R02-399A	1.66	1.30	0.79
TRANS-NONACHLOR	17	0.23	15.2	OU4-MU-R02-401B	3.77	4.58	1.21
Minimum BSAF(1)					**0.10**		
Maximum BSAF(1)					**6.12**		
Average BSAF(1)					**1.85**		

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BAF/BSAF FOR MUSSEL/SEDIMENT
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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
PCBs							
PCB-101/90	26	0.29	19.3	OU4-MU-R01-300A	2.91	4.65	1.60
PCB-105	28	0.13	22.9	OU4-MU-R01-300A	2.80	4.25	1.52
PCB-118	27	0.19	19.6	OU4-MU-R01-399A	2.94	4.58	1.56
PCB-126	10	0.04	3.21	OU4-MU-R01-499A	0.93	1.16	1.24
PCB-128	25	0.12	24.7	OU4-MU-R01-300A	3.14	4.94	1.57
PCB-138/160	12	0.87	10.2	OU4-MU-R01-300A	2.87	2.43	0.85
PCB-149/123	17	0.22	7.99	OU4-MU-R02-300A	2.38	2.12	0.89
PCB-153/132	16	0.44	4.96	OU4-MU-R01-400A	2.06	1.39	0.68
PCB-156	17	0.04	7.06	OU4-MU-R01-300A	1.40	1.82	1.30
PCB-167	24	0.02	6.47	OU4-MU-R01-300A	1.08	1.63	1.51
PCB-169	3	0.33	4.58	OU4-MU-R04-399A	2.21	2.17	0.98
PCB-170/190	6	0.001	0.02	OU4-MU-R03-301B	0.01	0.01	1.07
PCB-18/17	6	0.14	0.61	OU4-MU-R02-301B	0.41	0.19	0.46
PCB-180	9	1.21	4.69	OU4-MU-R01-400A	2.88	1.08	0.38
PCB-187	19	0.15	12.8	OU4-MU-R02-300A	2.91	3.26	1.12
PCB-189	2	0.15	0.15	OU4-MU-R01-499A	0.15	0.00003	0.0002
PCB-195/208	13	0.07	3.76	OU4-MU-R04-300B	0.89	1.08	1.21
PCB-201/157/173	14	0.11	1.76	OU4-MU-R01-300A	0.69	0.45	0.65
PCB-206	2	0.02	0.13	OU4-MU-R03-300B	0.07	0.08	1.01
PCB-209	9	0.02	0.60	OU4-MU-R04-400B	0.17	0.18	1.08
PCB-28	21	0.10	1.21	OU4-MU-R01-399A	0.48	0.30	0.63
PCB-44	14	0.29	27.1	OU4-MU-R02-399A	4.08	6.86	1.68
PCB-52	21	0.26	4.35	OU4-MU-R01-400B	1.75	1.21	0.69
PCB-66	19	0.11	3.87	OU4-MU-R01-399A	1.49	1.30	0.88
PCB-77	9	0.24	19.0	OU4-MU-R02-399A	4.34	5.99	1.38
PCB-8/5	17	0.02	34.9	OU4-MU-R01-400A	2.58	8.36	3.23
PCB-81	14	0.01	16.1	OU4-MU-R02-399A	4.12	5.35	1.30
Minimum BSAF(1)					**0.01**		
Maximum BSAF(1)					**4.34**		
Average BSAF(1)					**1.92**		

TABLE 4-8

BAF/BSAF FOR MUSSEL/SEDIMENT
ACROSS ALL REFERENCE STATIONS FOR ROUNDS 1-4
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Parameter	Count	Minimum	Maximum	Location of Maximum	Mean	Standard Deviation	Coefficient of Variation
Inorganics							
ALUMINUM	31	0.003	0.02	OU4-MU-R04-400A	0.01	0.003	0.43
ARSENIC	30	0.45	4.65	OU4-MU-R04-400B	1.56	1.01	0.65
CADMIUM	23	3.08	28.0	OU4-MU-R04-399A	10.8	7.11	0.66
CHROMIUM	29	0.03	0.33	OU4-MU-R04-301B	0.08	0.06	0.79
COPPER	30	0.19	15.7	OU4-MU-R04-400A	2.11	3.39	1.60
IRON	31	0.02	0.11	OU4-MU-R04-400A	0.04	0.02	0.53
LEAD	31	0.04	0.32	OU4-MU-R04-400A	0.12	0.07	0.61
MANGANESE	31	0.01	0.10	OU4-MU-R01-301B	0.04	0.02	0.60
MERCURY	26	0.65	18.0	OU4-MU-R04-399A	3.99	4.01	1.01
NICKEL	19	0.05	0.33	OU4-MU-R04-301B	0.12	0.06	0.54
SILVER	21	0.13	2.00	OU4-MU-R04-399A	0.60	0.51	0.86
ZINC	30	0.72	7.14	OU4-MU-R04-400A	2.66	1.53	0.57

1 - These BSAFs are the minimum, maximum, and average values of the mean BSAFs across each chemical class (i.e., dioxins, PAHs, pesticides, and PCBs). Minimum, maximum, and average BAFs were not calculated across the metals, but the table has the minimum, maximum, and average BAF for each individual metal, which is how they are typically reported.

TABLE 4-9

HISTORIC STATIONS NEAR INTERIM OFFSHORE MONITORING STATIONS
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Monitoring Station	Location	1996-1997 Sediment[1]	EERA Stations[2]				
			Station #	Sediment	AVS/SEM	Mussel	Comments
MS-01	Back Channel	---	169			X	
MS-02	Back Channel	---	18	X		X	In eelgrass
		---	53	X			In salt marsh
		---	168			X	
MS-03	Back Channel	1017	---				
		1018	---				
		1020	---				
MS-04	Back Channel	1016	167			X	
MS-05	Jamaica Cove	1005	166			X	
		1012					
MS-06	Jamaica Cove	1006	19	X	X	X	In eelgrass
			52	X			In salt marsh
			164			X	
			165			X	
MS-07	Clark Cove	1011	3	X	X	X	In eelgrass
			5	X		X	
			163			X	
MS-08	Clark Cove	1004.5	7	X	X	X	
MS-09	Clark Cove	1004.3	8	X		X	
			161			X	
			162			X	
MS-10	Sullivan Point	1001	9	X	X	X	In eelgrass
		1002	159			X	
		1003	160			X	
MS-11	DRMO	---	10.5			X	
		---	156			X	
		---	157			X	
		---	158			X	
MS-12	Dry Dock	---	12.5		X	X	In eelgrass
MS-13	Dry Dock	---	12	X		X	
		---	152			X	
MS-14	Dry Dock	---	17	X	X	X	In eelgrass

--- - No samples were collected from this station.
1 - The source of these samples is TtNUS, August, 2000.
2 - The source of these samples is NCCOSC, 2000.

TABLE 4-10

SUMMARY OF REFERENCE AND MONITORING STATION ANALYTICAL DATA FOR SEDIMENT IN INTERTIDAL AND SUBTIDAL ZONES
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	Intertidal				Subtidal			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
Dioxins (NG/KG)								
1,2,3,4,6,7,8,9-OCDD	21/32	477	18/33	474	20/32	355	16/32	288
1,2,3,4,6,7,8,9-OCDF	13/32	17.0	13/33	26.8	12/32	13.1	13/32	15.6
1,2,3,4,6,7,8-HPCDD	28/32	59.2	26/33	67.9	26/32	40.5	23/32	42.9
1,2,3,4,6,7,8-HPCDF	19/32	13.8	21/33	37.7	20/32	10.1	21/32	10.1
1,2,3,4,7,8,9-HPCDF	11/32	0.9	12/32	3.0	5/32	1.4	9/31	0.6
1,2,3,4,7,8-HXCDD	17/32	1.0	21/32	1.7	13/32	1.3	15/31	0.7
1,2,3,4,7,8-HXCDF	7/32	0.8	13/32	4.7	4/32	1.3	11/31	0.9
1,2,3,6,7,8-HXCDD	23/32	2.7	28/32	4.7	16/32	2.3	23/31	2.1
1,2,3,6,7,8-HXCDF	15/32	0.9	8/32	7.7	5/32	1.4	10/31	0.7
1,2,3,7,8,9-HXCDD	13/32	1.3	13/32	2.7	9/32	1.7	8/31	1.0
1,2,3,7,8,9-HXCDF	4/32	0.8	12/32	1.3	2/32	1.5	10/31	0.6
1,2,3,7,8-PECDD	10/32	0.7	10/32	1.0	4/32	1.4	5/32	0.6
1,2,3,7,8-PECDF	5/32	0.8	6/33	3.7	2/32	1.3	2/32	0.5
2,3,4,6,7,8-HXCDF	10/32	1.0	14/32	9.4	6/32	1.5	8/31	0.8
2,3,4,7,8-PECDF	4/32	0.7	6/32	8.3	2/32	1.3	9/32	0.7
2,3,7,8-TCDD	5/32	0.2	8/32	0.3	5/32	0.3	6/32	0.1
2,3,7,8-TCDF	9/32	0.6	9/32	3.8	4/32	0.5	13/32	0.5
TOTAL DIOXINS	21/24	742	18/24	787	20/24	459	16/24	375
TOTAL FURANS	13/24	64.0	15/24	313.7	12/24	42.2	14/24	48.9
TOTAL HPCDD	28/32	135	27/33	182	28/32	101	24/32	114
TOTAL HPCDF	12/32	26.1	23/33	73.6	13/32	18.7	22/32	21.8
TOTAL HXCDD	22/32	33.4	19/33	36.6	21/32	19.1	15/32	16.4
TOTAL HXCDF	21/32	11.8	19/33	52.1	15/32	6.1	17/31	7.8
TOTAL PECDD	12/32	3.4	10/32	2.8	7/32	2.0	4/31	0.9
TOTAL PECDF	10/32	3.7	13/33	59.9	8/32	2.2	7/32	3.0
TOTAL TCDD	15/32	1.2	20/32	4.6	14/32	2.0	14/32	1.5
TOTAL TCDF	11/32	1.8	12/32	55.2	6/32	1.2	16/32	2.3
Semi-Volatile Organics (UG/KG)								
1,1-BIPHENYL	21/32	3.0	61/81	6.5	23/32	4.3	62/80	8.1
1-METHYLNAPHTHALENE	22/32	5.9	62/81	18.6	22/32	8.5	62/80	20.4
1-METHYLPHENANTHRENE	32/32	32.5	81/81	48.8	32/32	55.1	80/80	74.2
2,3,5-TRIMETHYLNAPHTHALENE	32/32	6.0	80/81	9.2	32/32	12.3	80/80	13.4
2,6-DIMETHYLNAPHTHALENE	32/32	6.4	80/81	14.8	32/32	11.5	80/80	16.6
2-METHYLNAPHTHALENE	24/32	8.9	63/81	30.1	26/32	13.3	62/80	28.1
ACENAPHTHENE	32/32	11.1	81/81	76.3	32/32	19.3	79/80	93.6
ACENAPHTHYLENE	31/32	43.3	80/81	60.6	31/32	52.0	80/80	72.8
ANTHRACENE	32/32	97	81/81	238	31/32	219	80/80	290
BENZO(A)ANTHRACENE	31/32	197	81/81	418	31/32	330	80/80	443
BENZO(A)PYRENE	30/32	255	81/81	516	31/32	404	80/80	510
BENZO(B)FLUORANTHENE	31/32	283	81/81	561	31/32	380	80/80	520
BENZO(E)PYRENE	30/32	137	81/81	283	31/32	183	80/80	280

TABLE 4-10

SUMMARY OF REFERENCE AND MONITORING STATION ANALYTICAL DATA FOR SEDIMENT IN INTERTIDAL AND SUBTIDAL ZONES
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	Intertidal				Subtidal			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
BENZO(G,H,I)PERYLENE	29/32	133	81/81	282	29/32	172	80/80	255
BENZO(K)FLUORANTHENE	31/32	91	81/81	174	31/32	121	80/80	170
C1-CHRYSENES	32/32	118	81/81	218	32/32	201	80/80	285
C1-DIBENZOTHIOPHENES	30/32	12.6	79/81	18.2	32/32	23.3	80/80	21.3
C1-FLUORANTHENES/PYRENES	32/32	182	81/81	350	32/32	342	80/80	489
C1-FLUORENES	29/32	21.6	68/81	35.9	28/32	49.5	74/80	61.9
C1-NAPHTHALENES	24/32	15.0	64/81	49.2	24/32	21.6	62/80	48.4
C1-PHENANTHRENES/ANTHRACENES	30/32	108	81/81	187	31/32	224	80/80	257
C2-CHRYSENES	32/32	56.2	81/81	92.2	32/32	86.8	80/80	117.1
C2-DIBENZOTHIOPHENES	32/32	20.3	81/81	20.5	32/32	26.7	80/80	24.5
C2-FLUORENES	31/32	28.0	77/81	35.8	30/32	51.2	80/80	52.7
C2-NAPHTHALENES	24/32	16.9	65/81	48.0	25/32	33.0	65/80	52.8
C2-PHENANTHRENES/ANTHRACENES	30/32	122	81/81	109	30/32	163	80/80	174
C3-CHRYSENES	32/32	4.1	81/81	7.8	31/32	4.9	80/80	5.5
C3-DIBENZOTHIOPHENES	32/32	15.7	81/81	15.3	32/32	16.7	80/80	20.9
C3-FLUORENES	32/32	29.7	80/81	27.7	32/32	38.7	78/80	42.4
C3-NAPHTHALENES	32/32	25.4	81/81	48.3	32/32	51.7	79/80	54.9
C3-PHENANTHRENES/ANTHRACENES	30/32	92.4	81/81	59.4	30/32	85.1	80/80	100.6
C4-CHRYSENES	31/32	8.4	81/81	20.9	30/32	8.2	80/80	13.8
C4-NAPHTHALENES	32/32	25.5	79/81	24.1	32/32	26.3	78/80	28.6
C4-PHENANTHRENES/ANTHRACENES	32/32	56.9	81/81	25.4	32/32	31.2	80/80	41.8
CHRYSENE	31/32	208	81/81	439	30/32	291	80/80	427
DIBENZO(A,H)ANTHRACENE	30/32	36.6	81/81	78.3	31/32	49.0	80/80	68.3
DIBENZOTHIOPHENE	32/32	10.2	81/81	26.3	32/32	18.3	80/80	30.0
FLUORANTHENE	32/32	399	81/81	864	31/32	608	79/80	899
FLUORENE	32/32	22.9	81/81	87.0	32/32	45.7	80/80	127.1
INDENO(1,2,3-CD)PYRENE	30/32	156	81/81	299	31/32	206	80/80	275
NAPHTHALENE	22/32	14.5	61/81	44.4	22/32	24.3	61/80	47.4
PERYLENE	32/32	42.3	81/81	82.7	32/32	72.8	80/80	85.1
PHENANTHRENE	32/32	164	81/81	498	32/32	286	80/80	549
PYRENE	30/32	325	80/81	709	31/32	532	79/80	811
Pesticides/PCB's (UG/KG)								
1,2,3,4-TETRACHLOROBENZENE	16/32	0.20	63/81	0.23	14/32	0.17	58/80	0.08
1,2,4,5-TETRACHLOROBENZENE	15/32	0.60	55/81	0.61	16/32	0.60	51/80	0.39
2,4'-DDD	29/32	1.10	77/81	10.5	26/32	1.49	76/80	2.69
2,4'-DDE	19/32	0.13	72/81	0.80	21/32	0.34	66/80	0.15
2,4'-DDT	17/32	0.06	73/81	9.1	13/32	0.20	65/80	0.33
4,4'-DDD	31/32	0.69	76/81	25.6	30/32	0.88	75/80	3.92
4,4'-DDE	31/32	0.62	79/81	16.2	32/32	0.52	76/80	1.10
4,4'-DDT	24/32	0.73	74/81	40.9	25/32	0.62	75/80	12.48
ALDRIN	14/32	0.42	39/81	1.2	15/32	0.41	40/80	1.16
ALPHA-BHC	26/32	0.07	51/81	0.07	24/32	0.12	59/80	0.07

TABLE 4-10

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	Intertidal				Subtidal			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
ALPHA-CHLORDANE	29/32	0.21	79/81	2.27	28/32	0.24	79/80	0.58
BETA-BHC	10/32	0.15	43/81	0.23	6/32	0.22	48/80	0.33
CHLORPYRIFOS	14/32	0.35	22/81	0.23	11/32	0.39	22/80	0.11
CIS-NONACHLOR	28/32	0.20	80/81	0.58	28/32	0.14	79/80	0.19
DELTA-BHC	15/32	0.05	51/81	0.05	17/32	0.08	54/80	0.05
DIELDRIN	14/32	0.08	61/81	1.73	6/32	0.10	63/80	0.28
ENDOSULFAN II	29/32	0.58	66/81	0.65	24/32	0.58	67/80	0.66
ENDRIN	2/32	0.07	12/81	0.09	2/32	0.13	18/80	0.06
GAMMA-BHC (LINDANE)	15/32	0.18	30/81	0.16	6/32	0.24	25/80	0.14
GAMMA-CHLORDANE	22/32	0.09	70/81	2.48	18/32	0.11	59/80	0.36
HEPTACHLOR	18/32	0.12	66/81	0.36	19/32	0.21	45/80	0.10
HEPTACHLOR EPOXIDE	6/32	0.04	19/81	0.06	8/32	0.09	19/80	0.04
HEXACHLOROBENZENE	13/32	1.85	46/81	0.20	9/32	0.17	37/80	0.12
MIREX	11/32	0.05	43/81	0.13	7/32	0.08	33/80	0.06
OXYCHLORDANE	11/32	0.03	47/81	0.10	13/32	0.15	56/80	0.10
PCB-101/90	26/32	0.95	81/81	5.1	28/32	2.24	80/80	1.33
PCB-105	29/32	0.43	81/81	2.0	28/32	1.00	80/80	0.62
PCB-114	0/32	0.14	0/81	0.10	0/32	0.26	1/80	0.09
PCB-118	28/32	0.87	81/81	3.08	28/32	2.01	80/80	1.17
PCB-126	10/28	0.15	42/81	0.37	12/30	0.20	34/80	0.11
PCB-128	30/32	0.44	81/81	1.4	23/32	0.59	80/80	0.51
PCB-138/160	19/32	1.31	72/81	10.3	21/32	2.21	73/80	2.29
PCB-149/123	25/32	0.54	77/81	6.3	23/32	0.84	76/80	1.36
PCB-153/132	21/32	0.94	73/81	10.7	18/32	1.64	73/80	2.62
PCB-156	25/32	0.47	76/81	1.6	18/32	0.41	78/80	0.84
PCB-167	30/32	0.80	78/81	1.0	25/32	0.98	80/80	1.22
PCB-169	8/32	0.10	41/81	0.1	9/32	0.17	37/80	0.08
PCB-170/190	21/32	6.59	76/81	10.7	25/32	5.38	72/80	8.13
PCB-18/17	14/32	0.22	52/81	0.4	12/32	0.30	40/80	0.28
PCB-180	20/32	0.39	70/81	10.4	15/32	0.64	71/80	1.77
PCB-187	24/32	0.63	77/81	8.3	23/32	0.39	78/80	1.53
PCB-189	22/32	0.17	71/81	0.3	14/32	0.27	67/80	0.25
PCB-195/208	24/32	0.16	80/81	2.9	26/32	0.20	77/80	0.66
PCB-201/157/173	27/32	0.21	77/81	1.1	23/32	0.26	76/80	0.40
PCB-206	28/32	0.28	75/81	5.7	21/32	0.37	77/80	1.24
PCB-209	30/32	0.32	73/81	1.9	29/31	0.43	75/80	0.68
PCB-28	24/32	0.47	66/81	0.83	24/32	0.80	71/80	0.78
PCB-44	25/32	0.20	77/81	0.82	25/32	0.62	77/80	0.34
PCB-52	27/32	1.08	79/81	1.96	28/32	1.07	80/80	0.72
PCB-66	27/32	0.19	78/81	0.81	18/32	0.44	79/80	0.46
PCB-77	17/32	0.06	42/81	0.19	19/32	0.11	51/80	0.10
PCB-8/5	24/32	0.39	71/81	0.52	21/32	0.64	69/80	0.48

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	Intertidal				Subtidal			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
PCB-81	17/30	0.09	59/80	0.53	16/31	0.16	54/80	0.10
PENTACHLOROANISOLE	14/32	0.08	52/81	0.13	16/32	0.09	42/80	0.06
PENTACHLOROBENZENE	17/32	0.23	57/81	0.18	12/32	0.19	45/80	0.07
TRANS-NONACHLOR	24/32	0.12	78/81	1.1	18/32	0.18	73/80	0.20
Inorganics (MG/KG)								
ALUMINUM	32/32	1.0	81/81	1.0	32/32	1.0	80/80	1.0
ARSENIC	31/32	0.00017	81/81	0.00027	32/32	0.00013	80/80	0.00022
CADMIUM	25/32	0.00000	71/81	0.00001	24/32	0.00000	64/80	0.00001
CHROMIUM	32/32	0.00122	81/81	0.00208	32/32	0.00098	80/80	0.00161
COPPER	32/32	0.00028	81/81	0.01817	30/32	0.00019	80/80	0.00093
IRON	32/32	0.35992	81/81	0.69255	32/32	0.29635	80/80	0.45693
LEAD	32/32	0.00108	81/81	0.00827	32/32	0.00072	80/80	0.00146
MANGANESE	32/32	0.00837	81/81	0.01105	32/32	0.00865	80/80	0.00717
MERCURY	29/32	0.00000	75/81	0.00001	27/32	0.00000	79/80	0.00000
NICKEL	31/32	0.00037	81/81	0.00271	30/32	0.00030	80/80	0.00046
SILVER	28/32	0.00002	81/81	0.00004	28/32	0.00002	80/80	0.00002
ZINC	32/32	0.00120	81/81	0.00985	30/32	0.00087	80/80	0.00234

Footnotes:
The mean concentrations were cacluated using 1/2 the detection limit for nondetects and the average of duplicate samples.
Normalized concentrations were determined by dividing sediment concentration by percent TOC.
Metal concentrations are normalized to aluminum.
Source data located in Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 4-11

SUMMARY OF REFERENCE AND MONITORING STATION ANALYTICAL DATA FOR SEDIMENT IN EELGRASS AND SALTMARSH HABITATS
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	Eelgrass Bed				Saltmarsh			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
Dioxins (NG/KG)								
1,2,3,4,6,7,8,9-OCDD	15/24	335	8/16	281	11/16	238		
1,2,3,4,6,7,8,9-OCDF	9/24	13.4	6/16	15.9	7/16	7.5		
1,2,3,4,6,7,8-HPCDD	19/24	42.7	12/16	43.1	15/16	28.3		
1,2,3,4,6,7,8-HPCDF	15/24	10.4	10/16	9.8	10/16	6.9		
1,2,3,4,7,8,9-HPCDF	3/24	1.4	5/16	0.7	7/16	0.4		
1,2,3,4,7,8-HXCDD	9/24	1.3	8/16	0.8	9/16	0.4		
1,2,3,4,7,8-HXCDF	3/24	1.3	5/16	1.0	4/16	0.4		
1,2,3,6,7,8-HXCDD	12/24	2.2	10/16	2.1	12/16	1.2		
1,2,3,6,7,8-HXCDF	3/24	1.3	6/16	0.7	7/16	0.4		
1,2,3,7,8,9-HXCDD	6/24	1.7	4/16	1.0	9/16	0.7		
1,2,3,7,8,9-HXCDF	2/24	1.4	6/16	0.7	3/16	0.4		
1,2,3,7,8-PECDD	4/24	1.3	1/16	0.6	5/16	0.4		
1,2,3,7,8-PECDF	1/24	1.2	1/16	0.5	3/16	0.3		
2,3,4,6,7,8-HXCDF	5/24	1.5	4/16	0.8	6/16	0.5		
2,3,4,7,8-PECDF	0/24	1.3	5/16	0.6	3/16	0.3		
2,3,7,8-TCDD	4/24	0.3	4/16	0.1	3/16	0.1		
2,3,7,8-TCDF	3/24	0.5	5/16	0.5	4/16	0.3		
TOTAL DIOXINS	15/18	420	8/12	365	11/12	359		
TOTAL FURANS	9/18	43.1	7/12	46.1	7/12	33.3		
TOTAL HPCDD	21/24	105	12/16	118	15/16	59		
TOTAL HPCDF	10/24	19.5	11/16	21.6	6/16	12.7		
TOTAL HXCDD	15/24	18.5	8/16	16.4	12/16	12.3		
TOTAL HXCDF	11/24	6.3	9/16	7.3	11/16	6.2		
TOTAL PECDD	6/24	2.0	1/16	0.7	5/16	0.5		
TOTAL PECDF	5/24	2.0	4/16	2.6	7/16	2.1		
TOTAL TCDD	9/24	1.3	9/16	1.7	6/16	0.4		
TOTAL TCDF	4/24	1.2	8/16	1.4	6/16	1.1		
Semi-Volatile Organics (UG/KG)								
1,1-BIPHENYL	16/24	4.2	18/24	8.1	10/16	1.7	12/16	1.7
1-METHYLNAPHTHALENE	16/24	8.5	20/24	23.0	11/16	4.2	12/16	3.3
1-METHYLPHENANTHRENE	24/24	63.7	24/24	67.1	16/16	20.2	16/16	12.3
2,3,5-TRIMETHYLNAPHTHALENE	24/24	13.9	24/24	13.8	16/16	4.3	16/16	2.4
2,6-DIMETHYLNAPHTHALENE	24/24	11.6	24/24	16.4	16/16	3.8	16/16	3.1
2-METHYLNAPHTHALENE	19/24	12.8	19/24	30.5	12/16	6.4	12/16	5.5
ACENAPHTHENE	24/24	22.6	24/24	121.4	16/16	6.9	16/16	5.5
ACENAPHTHYLENE	23/24	53.7	24/24	68.5	15/16	30.0	16/16	20.6
ANTHRACENE	23/24	256	24/24	377	16/16	65	16/16	45
BENZO(A)ANTHRACENE	23/24	372	24/24	589	16/16	144	16/16	118
BENZO(A)PYRENE	23/24	452	24/24	682	15/16	173	16/16	138
BENZO(B)FLUORANTHENE	23/24	409	24/24	682	16/16	209	16/16	172
BENZO(E)PYRENE	23/24	196	24/24	334	15/16	104	16/16	93
BENZO(G,H,I)PERYLENE	22/24	187	24/24	329	15/16	98	16/16	98

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	Eelgrass Bed				Saltmarsh			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
BENZO(K)FLUORANTHENE	23/24	132	24/24	233	16/16	69	16/16	57
C1-CHRYSENES	24/24	216	24/24	299	16/16	93	16/16	64
C1-DIBENZOTHIOPHENES	24/24	25.5	24/24	24.6	15/16	10.9	14/16	5.0
C1-FLUORANTHENES/PYRENES	24/24	382	24/24	484	16/16	131	16/16	97
C1-FLUORENES	21/24	56.7	23/24	64.8	15/16	17.4	13/16	7.2
C1-NAPHTHALENES	18/24	21.5	20/24	53.8	12/16	10.8	12/16	8.8
C1-PHENANTHRENES/ANTHRACENES	23/24	259	24/24	280	15/16	67	16/16	47
C2-CHRYSENES	24/24	95.1	24/24	116.4	16/16	44.1	16/16	26.3
C2-DIBENZOTHIOPHENES	24/24	27.3	24/24	22.9	16/16	19.2	16/16	7.9
C2-FLUORENES	22/24	56.9	24/24	48.3	16/16	23.0	15/16	10.6
C2-NAPHTHALENES	19/24	35.0	21/24	60.8	12/16	12.0	12/16	9.3
C2-PHENANTHRENES/ANTHRACENES	22/24	185	24/24	156	15/16	57.3	16/16	31.9
C3-CHRYSENES	23/24	5.4	24/24	6.0	16/16	2.2	16/16	2.4
C3-DIBENZOTHIOPHENES	24/24	15.6	24/24	16.3	16/16	14.8	16/16	6.9
C3-FLUORENES	24/24	39.8	24/24	36.5	16/16	26.0	16/16	7.9
C3-NAPHTHALENES	24/24	59.1	24/24	62.6	16/16	21.2	16/16	13.3
C3-PHENANTHRENES/ANTHRACENES	22/24	94.5	24/24	80.4	15/16	36.2	16/16	21.5
C4-CHRYSENES	23/24	8.7	24/24	16.4	16/16	6.0	16/16	6.7
C4-NAPHTHALENES	24/24	30.1	24/24	25.5	16/16	31.5	16/16	12.9
C4-PHENANTHRENES/ANTHRACENES	24/24	34.4	24/24	31.5	16/16	16.1	16/16	9.7
CHRYSENE	22/24	320	24/24	542	15/16	142	16/16	123
DIBENZO(A,H)ANTHRACENE	23/24	52.9	24/24	93.4	15/16	27.0	16/16	24.8
DIBENZOTHIOPHENE	24/24	20.4	24/24	40.0	16/16	7.2	16/16	4.4
FLUORANTHENE	23/24	686	24/24	1180	16/16	268	16/16	212
FLUORENE	24/24	51.2	24/24	156.9	16/16	14.5	16/16	9.5
INDENO(1,2,3-CD)PYRENE	23/24	223	24/24	387	15/16	112	16/16	105
NAPHTHALENE	16/24	23.8	18/24	61.4	11/16	9.2	12/16	8.5
PERYLENE	24/24	78.0	24/24	117.6	16/16	28.1	16/16	30.9
PHENANTHRENE	24/24	332	24/24	753	16/16	105	16/16	72
PYRENE	23/24	598	24/24	980	15/16	216	16/16	184
Pesticides/PCB's (UG/KG)								
1,2,3,4-TETRACHLOROBENZENE	11/24	0.16	20/24	0.05	8/16	0.09	12/16	0.18
1,2,4,5-TETRACHLOROBENZENE	11/24	0.64	16/24	0.34	7/16	0.32	10/16	0.44
2,4'-DDD	20/24	1.70	22/24	2.38	15/16	0.75	14/16	6.28
2,4'-DDE	15/24	0.29	20/24	0.12	10/16	0.05	13/16	1.50
2,4'-DDT	11/24	0.23	20/24	0.22	10/16	0.06	13/16	11.38
4,4'-DDD	22/24	0.98	22/24	1.76	16/16	0.46	14/16	15.15
4,4'-DDE	24/24	0.55	22/24	0.75	16/16	0.52	16/16	47.60
4,4'-DDT	19/24	0.66	22/24	1.00	13/16	0.40	14/16	47.60
ALDRIN	11/24	0.42	13/24	1.70	8/16	0.27	8/16	0.36
ALPHA-BHC	18/24	0.13	16/24	0.06	14/16	0.04	11/16	0.05
ALPHA-CHLORDANE	21/24	0.21	24/24	0.32	15/16	0.18	15/16	0.21
BETA-BHC	4/24	0.21	13/24	0.32	7/16	0.09	9/16	0.14

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	Eelgrass Bed				Saltmarsh			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
CHLORPYRIFOS	9/24	0.42	8/24	0.12	6/16	0.13	5/16	0.25
CIS-NONACHLOR	22/24	0.15	23/24	0.15	13/16	0.25	15/16	0.41
DELTA-BHC	14/24	0.09	12/24	0.04	7/16	0.03	10/16	0.03
DIELDRIN	6/24	0.12	21/24	0.08	8/16	0.06	10/16	0.20
ENDOSULFAN II	18/24	0.58	22/24	0.64	16/16	0.45	14/16	0.26
ENDRIN	1/24	0.13	3/24	0.06	2/16	0.03	2/16	0.06
GAMMA-BHC (LINDANE)	4/24	0.24	5/24	0.14	9/16	0.11	6/16	0.12
GAMMA-CHLORDANE	12/24	0.10	19/24	0.09	11/16	0.07	12/16	0.12
HEPTACHLOR	15/24	0.21	12/24	0.08	10/16	0.07	13/16	0.11
HEPTACHLOR EPOXIDE	5/24	0.09	7/24	0.04	3/16	0.02	3/16	0.06
HEXACHLOROBENZENE	5/24	0.14	12/24	0.18	4/16	0.04	7/16	0.05
MIREX	6/24	0.08	14/24	0.09	7/16	0.04	7/16	0.05
OXYCHLORDANE	11/24	0.18	19/24	0.09	7/16	0.02	8/16	0.06
PCB-101/90	21/24	2.63	24/24	1.50	13/16	0.87	16/16	1.02
PCB-105	21/24	1.26	24/24	0.65	14/16	0.36	16/16	1.00
PCB-114	0/24	0.24	0/24	0.08	0/16	0.06	0/16	0.08
PCB-118	21/24	2.49	24/24	1.34	14/16	0.76	16/16	0.84
PCB-126	9/22	0.18	13/24	0.09	5/14	0.07	7/16	0.15
PCB-128	18/24	0.72	24/24	0.55	16/16	0.43	16/16	0.80
PCB-138/160	17/24	2.62	20/24	2.73	9/16	1.28	12/16	5.44
PCB-149/123	16/24	0.91	21/24	1.71	13/16	0.46	16/16	3.32
PCB-153/132	13/24	1.84	19/24	3.29	10/16	0.73	13/16	5.65
PCB-156	13/24	0.42	23/24	0.93	12/16	0.41	15/16	0.73
PCB-167	19/24	1.03	24/24	1.10	16/16	0.40	16/16	0.61
PCB-169	7/24	0.16	12/24	0.07	4/16	0.04	6/16	0.10
PCB-170/190	20/24	5.27	20/24	9.80	9/16	3.03	15/16	4.97
PCB-18/17	10/24	0.29	11/24	0.22	8/16	0.20	9/16	0.21
PCB-180	12/24	0.67	19/24	2.46	10/16	0.30	14/16	6.10
PCB-187	17/24	0.39	23/24	1.92	11/16	0.57	14/16	3.43
PCB-189	11/24	0.25	21/24	0.18	11/16	0.10	13/16	0.24
PCB-195/208	19/24	0.23	23/24	0.89	12/16	0.10	15/16	0.98
PCB-201/157/173	19/24	0.27	23/24	0.38	14/16	0.15	13/16	0.36
PCB-206	17/24	0.43	23/24	1.66	14/16	0.12	13/16	1.09
PCB-209	22/23	0.44	23/24	0.80	15/16	0.18	12/16	0.52
PCB-28	19/24	0.81	22/24	0.94	13/16	0.32	11/16	0.43
PCB-44	20/24	0.75	23/24	0.39	13/16	0.16	14/16	0.29
PCB-52	21/24	1.23	24/24	0.83	14/16	1.46	15/16	0.30
PCB-66	14/24	0.48	23/24	0.55	15/16	0.16	15/16	0.17
PCB-77	13/24	0.12	17/24	0.13	9/16	0.03	7/16	0.12
PCB-8/5	16/24	0.67	23/24	0.56	14/16	0.39	15/16	0.39
PCB-81	12/23	0.15	16/24	0.12	8/14	0.04	9/16	0.10
PENTACHLOROANISOLE	12/24	0.08	14/24	0.07	8/16	0.09	7/16	0.04

TABLE 4-11

SUMMARY OF REFERENCE AND MONITORING STATION ANALYTICAL DATA FOR SEDIMENT IN EELGRASS AND SALTMARSH HABITATS
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	Eelgrass Bed				Saltmarsh			
	Reference Stations		Monitoring Stations		Reference Stations		Monitoring Stations	
Parameter	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration	Frequency of Detection	Mean Concentration
PENTACHLOROBENZENE	9/24	0.19	17/24	0.06	9/16	0.08	10/16	0.09
TRANS-NONACHLOR	14/24	0.18	22/24	0.11	14/16	0.13	13/16	0.15
Inorganics (MG/KG)								
ALUMINUM	24/24	1.0	24/24	1.0	16/16	1.0	16/16	1.0
ARSENIC	24/24	0.000136	24/24	0.000199	16/16	0.000193	16/16	0.000280
CADMIUM	18/24	0.000004	20/24	0.000006	13/16	0.000006	13/16	0.000006
CHROMIUM	24/24	0.000981	24/24	0.001523	16/16	0.001305	16/16	0.001851
COPPER	22/24	0.000191	24/24	0.000852	16/16	0.000329	16/16	0.001698
IRON	24/24	0.295562	24/24	0.420309	16/16	0.398913	16/16	0.483118
LEAD	24/24	0.000729	24/24	0.001504	16/16	0.001261	16/16	0.001839
MANGANESE	24/24	0.008724	24/24	0.006931	16/16	0.008752	16/16	0.011562
MERCURY	20/24	0.000003	24/24	0.000005	15/16	0.000003	14/16	0.000006
NICKEL	22/24	0.000293	24/24	0.000462	16/16	0.000426	16/16	0.000800
SILVER	22/24	0.000016	24/24	0.000023	14/16	0.000017	16/16	0.000025
ZINC	23/24	0.000894	24/24	0.002607	16/16	0.001370	16/16	0.001718

Footnotes:
The mean concentrations were calculated using 1/2 the detection limit for nondetects and the average of duplicate samples.
Normalized concentrations were determined by dividing sediment concentration by percent TOC.
Metal concentrations are normalized to aluminum.
Source data located in Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).

TABLE 4-12

RATIOS OF ANALYTICAL DATA FOR SEDIMENT
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Parameter	Intertidal RS vs Subtidal RS	Intertidal MS vs Subtidal MS	Eelgrass RS vs Salt Marsh RS	Eelgrass MS vs Salt Marsh MS	Intertidal RS vs Salt Marsh RS	Interidal MS vs Salt Marsh MS	Subtidal RS vs Eelgrass RS	Subtidal MS vs Eelgrass MS
Dioxins								
1,2,3,4,6,7,8,9-OCDD	1.35	1.65	1.40		2.00		1.06	1.02
1,2,3,4,6,7,8,9-OCDF	1.30	1.71	1.78		2.26		0.98	0.98
1,2,3,4,6,7,8-HPCDD	1.46	1.58	1.51		2.09		0.95	1.00
1,2,3,4,6,7,8-HPCDF	1.37	3.72	1.50		1.99		0.97	1.04
1,2,3,4,7,8,9-HPCDF	0.61	4.75	3.70		2.33		1.04	0.94
1,2,3,4,7,8-HXCDD	0.75	2.34	3.28		2.47		1.01	0.93
1,2,3,4,7,8-HXCDF	0.63	5.24	3.36		2.10		0.99	0.90
1,2,3,6,7,8-HXCDD	1.18	2.26	1.79		2.17		1.02	1.02
1,2,3,6,7,8-HXCDF	0.63	10.93	3.21		2.10		1.04	1.05
1,2,3,7,8,9-HXCDD	0.79	2.69	2.37		1.87		1.00	1.04
1,2,3,7,8,9-HXCDF	0.53	2.15	3.72		2.06		1.04	0.86
1,2,3,7,8-PECDD	0.53	1.75	3.51		1.96		1.06	0.95
1,2,3,7,8-PECDF	0.61	7.75	3.56		2.36		1.09	0.93
2,3,4,6,7,8-HXCDF	0.64	11.83	2.93		1.95		1.04	1.03
2,3,4,7,8-PECDF	0.56	12.62	3.94		2.19		0.99	1.13
2,3,7,8-TCDD	0.63	2.05	2.77		1.80		1.04	1.02
2,3,7,8-TCDF	1.15	7.41	1.64		1.81		0.96	1.08
TOTAL DIOXINS	1.61	2.10	1.17		2.06		1.10	1.03
TOTAL FURANS	1.52	6.42	1.29		1.92		0.98	1.06
TOTAL HPCDD	1.33	1.60	1.79		2.29		0.96	0.96
TOTAL HPCDF	1.40	3.38	1.53		2.05		0.96	1.01
TOTAL HXCDD	1.74	2.24	1.51		2.73		1.04	1.00
TOTAL HXCDF	1.93	6.67	1.01		1.90		0.97	1.06
TOTAL PECDD	1.72	3.25	3.93		6.59		0.97	1.33
TOTAL PECDF	1.72	19.90	0.96		1.75		1.07	1.18
TOTAL TCDD	0.60	3.14	3.45		3.17		1.53	0.84
TOTAL TCDF	1.53	24.45	1.07		1.62		0.99	1.57
Semi-Volatile Organics								
1,1-BIPHENYL	0.70	0.81	2.50	4.89	1.81	3.95	1.04	1.00
1-METHYLNAPHTHALENE	0.70	0.91	2.04	6.90	1.41	5.57	0.99	0.89
1-METHYLPHENANTHRENE	0.59	0.66	3.16	5.48	1.61	3.99	0.86	1.11
2,3,5-TRIMETHYLNAPHTHALENE	0.49	0.69	3.26	5.82	1.40	3.88	0.89	0.97
2,6-DIMETHYLNAPHTHALENE	0.55	0.89	3.07	5.36	1.68	4.82	0.99	1.01
2-METHYLNAPHTHALENE	0.67	1.07	2.01	5.58	1.40	5.50	1.04	0.92
ACENAPHTHENE	0.58	0.82	3.26	22.22	1.61	13.97	0.86	0.77
ACENAPHTHYLENE	0.83	0.83	1.79	3.33	1.44	2.94	0.97	1.06
ANTHRACENE	0.44	0.82	3.95	8.35	1.49	5.27	0.86	0.77

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Parameter	Intertidal RS vs Subtidal RS	Intertidal MS vs Subtidal MS	Eelgrass RS vs Salt Marsh RS	Eelgrass MS vs Salt Marsh MS	Intertidal RS vs Salt Marsh RS	Interidal MS vs Salt Marsh MS	Subtidal RS vs Eelgrass RS	Subtidal MS vs Eelgrass MS
BENZO(A)ANTHRACENE	0.60	0.94	2.58	5.01	1.37	3.55	0.89	0.75
BENZO(A)PYRENE	0.63	1.01	2.61	4.95	1.48	3.75	0.89	0.75
BENZO(B)FLUORANTHENE	0.74	1.08	1.95	3.95	1.35	3.25	0.93	0.76
BENZO(E)PYRENE	0.75	1.01	1.88	3.60	1.32	3.05	0.93	0.84
BENZO(G,H,I)PERYLENE	0.77	1.10	1.91	3.35	1.35	2.86	0.92	0.78
BENZO(K)FLUORANTHENE	0.75	1.02	1.91	4.09	1.31	3.04	0.91	0.73
C1-CHRYSENES	0.59	0.77	2.33	4.69	1.28	3.42	0.93	0.95
C1-DIBENZOTHIOPHENES	0.54	0.85	2.33	4.87	1.15	3.60	0.92	0.87
C1-FLUORANTHENES/PYRENES	0.53	0.72	2.93	5.01	1.39	3.62	0.90	1.01
C1-FLUORENES	0.44	0.58	3.27	8.94	1.25	4.96	0.87	0.96
C1-NAPHTHALENES	0.69	1.02	2.00	6.11	1.39	5.59	1.01	0.90
C1-PHENANTHRENES/ANTHRACENES	0.48	0.73	3.88	6.02	1.62	4.02	0.86	0.92
C2-CHRYSENES	0.65	0.79	2.16	4.43	1.28	3.51	0.91	1.01
C2-DIBENZOTHIOPHENES	0.76	0.84	1.42	2.90	1.06	2.59	0.98	1.07
C2-FLUORENES	0.55	0.68	2.47	4.56	1.22	3.38	0.90	1.09
C2-NAPHTHALENES	0.51	0.91	2.91	6.55	1.40	5.16	0.94	0.87
C2-PHENANTHRENES/ANTHRACENES	0.75	0.63	3.23	4.90	2.12	3.42	0.88	1.11
C3-CHRYSENES	0.83	1.41	2.49	2.51	1.86	3.28	0.90	0.92
C3-DIBENZOTHIOPHENES	0.94	0.73	1.06	2.37	1.06	2.22	1.07	1.28
C3-FLUORENES	0.77	0.65	1.53	4.64	1.14	3.53	0.97	1.16
C3-NAPHTHALENES	0.49	0.88	2.79	4.72	1.20	3.64	0.88	0.88
C3-PHENANTHRENES/ANTHRACENES	1.09	0.59	2.61	3.74	2.55	2.77	0.90	1.25
C4-CHRYSENES	1.02	1.51	1.45	2.44	1.39	3.10	0.94	0.84
C4-NAPHTHALENES	0.97	0.84	0.96	1.98	0.81	1.87	0.87	1.12
C4-PHENANTHRENES/ANTHRACENES	1.82	0.61	2.13	3.23	3.52	2.61	0.91	1.33
CHRYSENE	0.71	1.03	2.24	4.40	1.46	3.56	0.91	0.79
DIBENZO(A,H)ANTHRACENE	0.75	1.15	1.96	3.76	1.35	3.15	0.93	0.73
DIBENZOTHIOPHENE	0.56	0.88	2.83	9.15	1.41	6.02	0.90	0.75
FLUORANTHENE	0.66	0.96	2.56	5.57	1.49	4.08	0.89	0.76
FLUORENE	0.50	0.69	3.54	16.50	1.58	9.15	0.89	0.81
INDENO(1,2,3-CD)PYRENE	0.76	1.09	1.99	3.67	1.39	2.84	0.92	0.71
NAPHTHALENE	0.60	0.94	2.60	7.27	1.58	5.26	1.02	0.77
PERYLENE	0.58	0.97	2.77	3.81	1.50	2.68	0.93	0.72
PHENANTHRENE	0.57	0.91	3.15	10.47	1.56	6.93	0.86	0.73
PYRENE	0.61	0.87	2.77	5.33	1.51	3.85	0.89	0.83
Pesticides/PCB's								
1,2,3,4-TETRACHLOROBENZENE	1.14	2.72	1.86	0.31	2.21	1.29	1.05	1.52
1,2,4,5-TETRACHLOROBENZENE	1.00	1.58	1.99	0.77	1.86	1.40	0.93	1.15

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2,4'-DDD	0.74	3.89	2.27	0.38	1.48	1.67	0.88	1.13
2,4'-DDE	0.39	5.48	5.60	0.08	2.52	0.53	1.16	1.24
2,4'-DDT	0.32	27.33	3.81	0.02	1.06	0.80	0.86	1.50
4,4'-DDD	0.78	6.54	2.16	0.12	1.51	1.69	0.90	2.22
4,4'-DDE	1.18	14.76	1.05	0.02	1.17	0.34	0.94	1.47
4,4'-DDT	1.18	3.28	1.63	0.02	1.81	0.86	0.94	12.49
ALDRIN	1.04	1.04	1.57	4.71	1.59	3.34	0.98	0.68
ALPHA-BHC	0.59	1.08	3.21	1.37	1.76	1.53	0.93	1.03
ALPHA-CHLORDANE	0.87	3.91	1.14	1.51	1.11	10.74	1.13	1.82
BETA-BHC	0.67	0.69	2.40	2.31	1.70	1.66	1.06	1.05
CHLORPYRIFOS	0.89	1.99	3.28	0.46	2.71	0.89	0.93	0.98
CIS-NONACHLOR	1.41	3.03	0.58	0.37	0.81	1.40	0.99	1.27
DELTA-BHC	0.64	0.98	2.96	1.27	1.84	1.53	0.97	1.23
DIELDRIN	0.73	6.21	2.08	0.38	1.36	8.70	0.89	3.66
ENDOSULFAN II	0.99	0.99	1.30	2.46	1.30	2.52	1.00	1.03
ENDRIN	0.54	1.46	3.67	0.95	2.07	1.50	1.05	1.08
GAMMA-BHC (LINDANE)	0.74	1.13	2.19	1.14	1.65	1.36	1.02	1.05
GAMMA-CHLORDANE	0.83	6.80	1.47	0.77	1.29	20.65	1.06	3.95
HEPTACHLOR	0.56	3.60	3.04	0.79	1.69	3.37	1.00	1.18
HEPTACHLOR EPOXIDE	0.45	1.66	5.61	0.63	2.34	1.04	0.93	0.99
HEXACHLOROBENZENE	10.59	1.70	3.49	3.61	45.64	4.00	1.23	0.65
MIREX	0.59	2.18	2.35	1.74	1.36	2.50	0.98	0.66
OXYCHLORDANE	0.21	1.04	7.82	1.42	1.30	1.66	0.80	1.13
PCB-101/90	0.43	3.84	3.04	1.47	1.10	5.00	0.85	0.89
PCB-105	0.43	3.26	3.53	0.64	1.21	2.03	0.79	0.96
PCB-114	0.54	1.22	3.82	1.01	2.21	1.27	1.07	1.04
PCB-118	0.43	2.64	3.27	1.61	1.14	3.69	0.80	0.87
PCB-126	0.77	3.39	2.65	0.57	2.19	2.45	1.07	1.28
PCB-128	0.75	2.74	1.68	0.68	1.03	1.76	0.82	0.94
PCB-138/160	0.59	4.48	2.05	0.50	1.03	1.89	0.84	0.84
PCB-149/123	0.65	4.64	1.99	0.51	1.18	1.90	0.92	0.80
PCB-153/132	0.57	4.10	2.51	0.58	1.28	1.90	0.89	0.80
PCB-156	1.13	1.90	1.04	1.26	1.15	2.18	0.98	0.91
PCB-167	0.81	0.84	2.61	1.81	2.01	1.68	0.95	1.11
PCB-169	0.56	1.47	3.84	0.68	2.33	1.25	1.08	1.25
PCB-170/190	1.22	1.31	1.74	1.97	2.18	2.15	1.02	0.83
PCB-18/17	0.73	1.36	1.42	1.04	1.06	1.79	1.03	1.27
PCB-180	0.62	5.85	2.25	0.40	1.34	1.70	0.95	0.72

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PCB-187	1.59	5.43	0.68	0.56	1.11	2.42	1.02	0.80
PCB-189	0.62	1.24	2.62	0.75	1.74	1.31	1.06	1.40
PCB-195/208	0.79	4.47	2.30	0.91	1.61	2.99	0.89	0.74
PCB-201/157/173	0.79	2.79	1.83	1.07	1.42	3.17	0.98	1.06
PCB-206	0.75	4.59	3.63	1.52	2.34	5.19	0.86	0.74
PCB-209	0.75	2.83	2.49	1.55	1.83	3.72	0.98	0.85
PCB-28	0.58	1.06	2.57	2.21	1.47	1.94	0.98	0.83
PCB-44	0.33	2.42	4.56	1.33	1.24	2.79	0.83	0.87
PCB-52	1.01	2.71	0.84	2.76	0.74	6.49	0.87	0.87
PCB-66	0.43	1.76	2.92	3.21	1.15	4.73	0.93	0.84
PCB-77	0.55	1.80	3.40	1.14	1.84	1.62	0.98	0.79
PCB-8/5	0.61	1.09	1.74	1.43	1.01	1.34	0.95	0.86
PCB-81	0.58	5.57	3.95	1.29	2.42	5.52	1.05	0.77
PENTACHLOROANISOLE	0.90	2.04	0.94	1.59	0.86	2.99	1.02	0.93
PENTACHLOROBENZENE	1.20	2.51	2.35	0.64	2.89	1.98	1.02	1.24
TRANS-NONACHLOR	0.63	5.34	1.37	0.76	0.87	7.25	1.00	1.79
Inorganics								
ALUMINUM	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ARSENIC	1.32	1.22	0.71	0.71	0.89	0.96	0.95	1.11
CADMIUM	1.34	1.24	0.66	1.01	0.85	1.38	0.96	1.10
CHROMIUM	1.25	1.29	0.75	0.82	0.94	1.12	0.99	1.06
COPPER	1.46	19.45	0.58	0.50	0.86	10.70	1.02	1.10
IRON	1.21	1.52	0.74	0.87	0.90	1.43	1.00	1.09
LEAD	1.50	5.65	0.58	0.82	0.86	4.50	0.99	0.97
MANGANESE	0.97	1.54	1.00	0.60	0.96	0.96	0.99	1.03
MERCURY	0.96	2.26	0.97	0.91	0.88	1.96	0.95	0.95
NICKEL	1.24	5.88	0.69	0.58	0.87	3.39	1.02	1.00
SILVER	1.02	1.58	0.96	0.90	0.97	1.46	0.99	1.02
ZINC	1.38	4.21	0.65	1.52	0.88	5.73	0.97	0.90

Footnotes:
Shaded values indicate ratios greater than 3.0.
Values in this table are unitless and were calculated by dividing the mean concentrations between the two areas listed in the column.
The source data for these ratios can be found in Tables 4-10 and 4-11.
Salt marshes were not located within any of the monitoring stations where dioxins were analyzed.

TABLE 4-13

SUMMARY OF GRAIN SIZE AND TOTAL ORGANIC CARBON FOR INTERTIDAL HABITAT
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Sample Number	Parameter			
	% CLAY	% SAND	% SILT	TOTAL ORGANIC CARBON
Monitoring Stations				
OU4-SD-M01-200A	0.3	97.4	2.4	0.58
OU4-SD-M01-200B	0.85	97.11	2.04	1.89
OU4-SD-M01-201B	1.4	96.2	2.4	0.63
OU4-SD-M01-299A	2.93	96.84	0.23	1.54
OU4-SD-M02-200A	5.4	86.9	7.7	2.72
OU4-SD-M02-200B	4.79	89.15	6.06	4.54
OU4-SD-M02-201B	3.2	90.2	6.6	2.2
OU4-SD-M02-299A	4.88	88.72	6.4	2.89
OU4-SD-M02-300A	17.9	30	52.1	3.99
OU4-SD-M02-300B	24.38	26.86	48.76	2.91
OU4-SD-M02-301B	15.1	37.1	47.9	3.56
OU4-SD-M02-399A	29.27	24.39	46.34	7.25
OU4-SD-M03-100A	47.9	29.4	22.8	2.5
OU4-SD-M03-100B	26.66	30.43	42.91	3.12
OU4-SD-M03-101B	19.9	37	43.1	2.21
OU4-SD-M03-199A-AVG	29.485	20.28	50.235	2.63
OU4-SD-M03-200A	9.3	77.6	13.1	0.64
OU4-SD-M03-200B	15.41	57.46	27.13	2.09
OU4-SD-M03-201B	8.7	75.5	15.7	0.93
OU4-SD-M03-299A	15.98	56.18	27.84	1.7
OU4-SD-M04-100A	1.8	96	2.2	1.84
OU4-SD-M04-100B	1.41	89.41	9.18	1.13
OU4-SD-M04-101B-AVG	3.1	90.4	6.5	2.975
OU4-SD-M04-199A	22.19	39.1	38.71	1.46
OU4-SD-M04-300A	2.7	92.4	4.9	0.62
OU4-SD-M04-300B	0.37	97.07	2.56	0.69
OU4-SD-M04-301B	0.8	94.9	4.2	0.37
OU4-SD-M04-399A	1.43	93.56	5.01	0.48
OU4-SD-M05-100A-AVG	30.75	18.8	50.45	2.52
OU4-SD-M05-100B-AVG	22.65	25.055	52.295	2.005
OU4-SD-M05-101B	21.1	31.9	47	2.63
OU4-SD-M05-199A	22.94	41.37	35.69	2.34
OU4-SD-M05-300A	15.7	76.2	8.1	0.57
OU4-SD-M05-300B	6.96	78.13	14.91	0.7
OU4-SD-M05-301B	4.7	88.3	7.1	0.6
OU4-SD-M05-399A	10.25	74.19	15.56	0.96
OU4-SD-M06-100A	4.1	86.3	9.7	0.53
OU4-SD-M06-100B	4.79	85.63	9.58	0.47
OU4-SD-M06-101B	5.5	87.4	7.1	0.59
OU4-SD-M06-199A	10.66	76.91	12.43	0.78
OU4-SD-M06-300A	3.4	81.6	15	0.36

TABLE 4-13

SUMMARY OF GRAIN SIZE AND TOTAL ORGANIC CARBON FOR INTERTIDAL HABITAT
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 3

Sample Number	Parameter			
	% CLAY	% SAND	% SILT	TOTAL ORGANIC CARBON
OU4-SD-M06-300B	2.35	84.51	13.14	0.52
OU4-SD-M06-301B	1.6	94.1	4.3	1.26
OU4-SD-M06-399A	7.2	78	14.8	0.9
OU4-SD-M07-100A	5.4	80.4	14.2	0.77
OU4-SD-M07-100B	7.44	73.79	18.77	0.98
OU4-SD-M07-101B	6.3	79.9	13.8	0.88
OU4-SD-M07-199A	10.73	75.59	13.68	0.95
OU4-SD-M08-100A-AVG	7.1	80.2	12.7	0.875
OU4-SD-M08-100B	7.07	78.55	14.38	1.04
OU4-SD-M08-101B-AVG	7.4	77.1	15.55	0.85
OU4-SD-M08-199A	8.37	83.98	7.65	0.75
OU4-SD-M08-300A	0	99.7	0.3	0.2
OU4-SD-M08-300B-AVG	0.085	99.345	0.57	0.545
OU4-SD-M08-301B	0.9	98.8	0.3	0.29
OU4-SD-M08-399A	1.78	97.78	0.44	0.49
OU4-SD-M09-100A	0.6	98.1	1.2	1.03
OU4-SD-M09-100B	0.51	98.65	0.84	0.28
OU4-SD-M09-101B	6.2	76.1	17.7	1.21
OU4-SD-M09-199A	2.05	97.79	0.16	0.91
OU4-SD-M09-200A	8.2	76.9	14.8	1.48
OU4-SD-M09-200B	0.41	98.77	0.82	0.54
OU4-SD-M09-201B	1.9	97.1	1	2.52
OU4-SD-M09-299A	5.14	92.99	1.87	0.46
OU4-SD-M10-100A-AVG	1.85	97.4	0.8	0.76
OU4-SD-M10-100B-AVG	0.215	98.605	1.18	1.73
OU4-SD-M10-101B-AVG	1.55	97.35	1.15	0.775
OU4-SD-M10-199A	1.19	97.43	1.38	0.69
OU4-SD-M11-299A	4.83	93.36	1.81	0.72
OU4-SD-M11-300A	2.3	96.4	1.3	0.26
OU4-SD-M11-300B	4.15	92.7	3.15	1.34
OU4-SD-M11-301B	1.3	96.7	2	0.69
OU4-SD-M11-399A	3.48	95.36	1.16	0.43
OU4-SD-M12-100A	13.3	55.8	30.9	1.38
OU4-SD-M12-100B	9.08	73.69	17.23	1.4
OU4-SD-M12-101B	7.2	75.3	17.5	1.33
OU4-SD-M12-199A	19.13	57.81	23.06	2.29
OU4-SD-M14-100A	15	32.7	52.4	4.64
OU4-SD-M14-100B	17.57	35.57	46.86	3.31
OU4-SD-M14-101B	13.8	50.6	35.6	6.08
OU4-SD-M14-199A	1.97	78.28	19.75	2.85

TABLE 4-13

SUMMARY OF GRAIN SIZE AND TOTAL ORGANIC CARBON FOR INTERTIDAL HABITAT
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Sample Number	Parameter			
	% CLAY	% SAND	% SILT	TOTAL ORGANIC CARBON
Reference Stations				
OU4-SD-R01-100A	2.6	23.6	73.8	3.24
OU4-SD-R01-100B	17.76	47.9	34.34	3.91
OU4-SD-R01-101B	18.8	45.3	35.9	4.35
OU4-SD-R01-199A	7.11	67.51	25.38	2.35
OU4-SD-R01-400A	5.3	86	8.7	0.64
OU4-SD-R01-400B	11.19	76.69	12.12	0.84
OU4-SD-R01-401B	7.6	78.1	14.2	0.8
OU4-SD-R01-499A	3.71	82.59	13.7	0.92
OU4-SD-R02-100A	1.7	95.3	3	0.88
OU4-SD-R02-100B	4.72	89.24	6.04	2.19
OU4-SD-R02-101B	2.4	90.9	6.7	1.72
OU4-SD-R02-199A	5.24	88.21	6.55	1.97
OU4-SD-R02-400A	22.7	32.6	44.7	2
OU4-SD-R02-400B	14.06	62.01	23.93	1.07
OU4-SD-R02-401B	17	51.5	31.6	2.09
OU4-SD-R02-499A	20.07	72.18	7.75	1.53
OU4-SD-R03-100A	49	26.5	24.5	5.69
OU4-SD-R03-100B	8.4	69.47	22.13	3.17
OU4-SD-R03-101B	12.9	45.9	41.2	4.96
OU4-SD-R03-199A	4.89	41.29	53.82	4.14
OU4-SD-R03-400A	10.7	74.8	14.5	0.84
OU4-SD-R03-400B	4.18	88.65	7.17	0.69
OU4-SD-R03-401B	7.1	78.8	14.1	0.73
OU4-SD-R03-499A	4.48	80.96	14.56	0.78
OU4-SD-R04-100A	12.2	73.4	14.4	1.82
OU4-SD-R04-100B	9.71	70.13	20.16	1.98
OU4-SD-R04-101B	5.7	80.3	14	1.56
OU4-SD-R04-199A	1.33	92.01	6.66	2.03
OU4-SD-R04-400A	3.5	96	0.5	0.15
OU4-SD-R04-400B	2.16	96.12	1.72	0.29
OU4-SD-R04-401B	2.5	93.9	3.6	0.25
OU4-SD-R04-499A	2.2	94.66	3.14	0.22

Notes:
Source data are located in Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).
99A - Round 1, September 1999
00B - Round 2, May 2000
00A - Round 3, August 2000
01B - Round 4, May 2001

TABLE 4-14

SUMMARY OF GRAIN SIZES AND TOTAL ORGANIC CARBON FROM SUBTIDAL HABITAT
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Sample Number	Parameter			
	% CLAY	% SAND	% SILT	% Total Organic Carbon
Monitoring Stations				
OU4-SD-M01-100A	11.1	80.8	8.2	1.13
OU4-SD-M01-100B	10.47	78.14	11.39	1.73
OU4-SD-M01-101B	9.2	76.6	14.2	0.97
OU4-SD-M01-199A	11.77	74.41	13.82	1.01
OU4-SD-M01-300A-AVG	17.4	55.9	26.7	1.725
OU4-SD-M01-300B-AVG	11.83	74.9	13.27	2.255
OU4-SD-M01-301B-AVG	10	78.55	11.5	1.865
OU4-SD-M01-399A	18.07	49.88	32.05	1.5
OU4-SD-M02-100A	21.7	53.1	25.2	0.41
OU4-SD-M02-100B	13.42	66.25	20.33	2.15
OU4-SD-M02-101B	12.8	46	41.2	1.88
OU4-SD-M02-199A	20.12	48.59	31.29	1.63
OU4-SD-M03-300A	13.3	63.9	22.7	1.31
OU4-SD-M03-300B	14.8	57.05	28.15	1.81
OU4-SD-M03-301B	10.7	65.1	24.2	1.25
OU4-SD-M03-399A	11.51	61.07	27.42	1.36
OU4-SD-M04-200A	15.4	51.6	33	1.83
OU4-SD-M04-200B	16.01	56.9	27.09	1.92
OU4-SD-M04-201B	14	58.5	27.5	1.89
OU4-SD-M04-299A	14.58	53.14	32.28	1.62
OU4-SD-M05-200A	31	29.3	39.7	2.59
OU4-SD-M05-200B	22.64	33.92	43.44	2.36
OU4-SD-M05-201B	20.5	43.3	36.3	2.85
OU4-SD-M05-299A	30.07	27.1	42.83	2.51
OU4-SD-M06-200A	28.7	29.5	41.8	2.27
OU4-SD-M06-200B	19.4	46.66	33.94	2.09
OU4-SD-M06-201B	13.7	66	20.3	1.57
OU4-SD-M06-299A-AVG	21.895	44.71	33.395	1.79
OU4-SD-M07-200A	18.6	34.3	47.1	2.09
OU4-SD-M07-200B	28.85	20.89	50.26	1.97
OU4-SD-M07-201B	24.6	29.4	46	1.93
OU4-SD-M07-299A	35.35	14.9	49.75	2.3
OU4-SD-M07-300A	17	45	38	1.67
OU4-SD-M07-300B	23.13	41.21	35.66	1.48
OU4-SD-M07-301B	21.2	42.8	36.1	2
OU4-SD-M07-399A	22.43	40.66	36.91	2
OU4-SD-M08-200A	11.5	49.7	38.8	2.01
OU4-SD-M08-200B	14.73	43.71	41.56	1.63
OU4-SD-M08-201B	19.3	46.3	34.4	2.53
OU4-SD-M08-299A	26.25	29.45	44.3	2.37
OU4-SD-M09-300A-AVG	29	13.95	57.1	2.785

TABLE 4-14

SUMMARY OF GRAIN SIZES AND TOTAL ORGANIC CARBON FROM SUBTIDAL HABITAT
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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	Parameter			
Sample Number	% CLAY	% SAND	% SILT	% Total Organic Carbon
OU4-SD-M09-300B	31.01	12.98	56.01	2.14
OU4-SD-M09-301B-AVG	23.55	23.4	53.1	2.68
OU4-SD-M09-399A	33.95	15.13	50.92	2.49
OU4-SD-M10-200A	8.8	79.8	11.5	0.87
OU4-SD-M10-200B	7.68	78.18	14.14	1.15
OU4-SD-M10-201B	6.5	88.7	4.8	1.22
OU4-SD-M10-299A	13.02	72.92	14.06	1.8
OU4-SD-M10-300A	24.5	28.7	46.8	1.92
OU4-SD-M10-300B	26.37	31.58	42.05	1.75
OU4-SD-M10-301B	20.9	46.1	33.1	3.11
OU4-SD-M10-399A	24.78	27.91	47.31	2.37
OU4-SD-M12-200A-AVG	9.25	72.05	18.7	1.195
OU4-SD-M12-200B-AVG	8.395	75.93	15.675	1.14
OU4-SD-M12-201B-AVG	10.2	70.25	19.55	2.165
OU4-SD-M12-299A	14.55	64.87	20.58	1.4
OU4-SD-M12-300A	20.7	46.3	33.1	1.42
OU4-SD-M12-300B-AVG	17.17	54.135	28.695	1.74
OU4-SD-M12-301B	11.3	50.8	37.9	1.57
OU4-SD-M12-399A-AVG	14.87	45.405	39.725	1.785
OU4-SD-M13-100A	34.6	19.8	45.6	2.18
OU4-SD-M13-100B	0	20.18	79.82	1.95
OU4-SD-M13-101B	27	27.2	45.8	2.31
OU4-SD-M13-199A	21.8	18.46	59.74	1.39
OU4-SD-M13-200A	31.9	31.9	36.2	1.73
OU4-SD-M13-200B	27.76	32.82	39.42	2.23
OU4-SD-M13-201B	21.1	42	36.8	2.49
OU4-SD-M13-299A	23.01	26.38	50.61	1.93
OU4-SD-M13-300A	34.7	29	36.3	2.13
OU4-SD-M13-300B	22.64	32.08	45.28	2.4
OU4-SD-M13-301B	15.5	55.6	28.9	2.83
OU4-SD-M13-399A	24.4	21.73	53.87	1.48
OU4-SD-M14-200A	12.3	64.3	23.4	1.61
OU4-SD-M14-200B	13.15	64.45	22.4	2.18
OU4-SD-M14-201B	14.3	61.3	24.4	1.77
OU4-SD-M14-299A	11.91	63.72	24.37	2.24
OU4-SD-M14-300A	22.4	39.1	38.5	2.1
OU4-SD-M14-300B	20.58	48.77	30.65	2.4
OU4-SD-M14-301B	20	42.9	37.1	1.92
OU4-SD-M14-399A	16.81	45.72	37.47	1.55
Reference Stations				
OU4-SD-R01-200A	2.5	94.7	2.8	0.22
OU4-SD-R01-200B	1.79	95.4	2.81	0.45

TABLE 4-14

SUMMARY OF GRAIN SIZES AND TOTAL ORGANIC CARBON FROM SUBTIDAL HABITAT
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Sample Number	Parameter			
	% CLAY	% SAND	% SILT	% Total Organic Carbon
OU4-SD-R01-201B	3.2	91.6	5.2	0.43
OU4-SD-R01-299A-AVG	1.05	93.41	5.54	0.475
OU4-SD-R01-300A	2.4	96.9	0.6	0.2
OU4-SD-R01-300B	4.5	95.05	0.45	0.35
OU4-SD-R01-301B	0.9	98.4	0.7	0.17
OU4-SD-R01-399A	0	97.98	2.02	0.45
OU4-SD-R02-200A	5.2	92.2	2.6	0.48
OU4-SD-R02-200B	4.57	91.07	4.36	0.56
OU4-SD-R02-201B	3.7	91.6	4.6	0.53
OU4-SD-R02-299A	1.51	93.97	4.52	0.53
OU4-SD-R02-300A	17.2	67.9	14.9	1.54
OU4-SD-R02-300B	5.08	88.92	6	0.6
OU4-SD-R02-301B	4.6	88.4	7	0.48
OU4-SD-R02-399A-AVG	9.045	76.63	14.325	1.42
OU4-SD-R03-200A	12.1	67.1	20.8	1.17
OU4-SD-R03-200B	14.2	65.82	19.98	2.16
OU4-SD-R03-201B	9.9	74.3	15.9	1.71
OU4-SD-R03-299A	8.78	76.75	14.47	1.54
OU4-SD-R03-300A	9.9	71.2	18.9	0.99
OU4-SD-R03-300B	12	68.01	19.99	2.02
OU4-SD-R03-301B	10.8	72.8	16.5	1.85
OU4-SD-R03-399A	11.49	72.42	16.09	1.36
OU4-SD-R04-200A	2	96.8	1.2	0.21
OU4-SD-R04-200B	1.73	98.1	0.17	0.3
OU4-SD-R04-201B	1	97.3	1.7	0.28
OU4-SD-R04-299A	0.3	98.8	0.9	0.24
OU4-SD-R04-300A	3.3	95.3	1.4	0.19
OU4-SD-R04-300B	0.42	96.01	3.57	0.26
OU4-SD-R04-301B	1.8	96.9	1.3	0.25
OU4-SD-R04-399A-AVG	3.165	95.505	1.33	0.265

Notes:
Source data are located in Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).
99A - Round 1, September 1999
00B - Round 2, May 2000
00A - Round 3, August 2000
01B - Round 4, May 2001

TABLE 4-15

SUMMARY OF GRAIN SIZE AND TOTAL ORGANIC CARBON FOR EELGRASS HABITAT
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Sample Number	Parameter			
	% CLAY	% SAND	% SILT	TOTAL ORGANIC CARBON
Monitoring Stations				
OU4-SD-M05-200A	31	29.3	39.7	2.59
OU4-SD-M05-200B	22.64	33.92	43.44	2.36
OU4-SD-M05-201B	20.5	43.3	36.3	2.85
OU4-SD-M05-299A	30.07	27.1	42.83	2.51
OU4-SD-M06-200A	28.7	29.5	41.8	2.27
OU4-SD-M06-200B	19.4	46.66	33.94	2.09
OU4-SD-M06-201B	13.7	66	20.3	1.57
OU4-SD-M06-299A-AVG	21.895	44.71	33.395	1.79
OU4-SD-M07-300A	17	45	38	1.67
OU4-SD-M07-300B	23.13	41.21	35.66	1.48
OU4-SD-M07-301B	21.2	42.8	36.1	2
OU4-SD-M07-399A	22.43	40.66	36.91	2
OU4-SD-M10-200A	8.8	79.8	11.5	0.87
OU4-SD-M10-200B	7.68	78.18	14.14	1.15
OU4-SD-M10-201B	6.5	88.7	4.8	1.22
OU4-SD-M10-299A	13.02	72.92	14.06	1.8
OU4-SD-M12-200A-AVG	9.25	72.05	18.7	1.195
OU4-SD-M12-200B-AVG	8.395	75.93	15.675	1.14
OU4-SD-M12-201B-AVG	10.2	70.25	19.55	2.165
OU4-SD-M12-299A	14.55	64.87	20.58	1.4
OU4-SD-M12-300A	20.7	46.3	33.1	1.42
OU4-SD-M12-300B-AVG	17.17	54.135	28.695	1.74
OU4-SD-M12-301B	11.3	50.8	37.9	1.57
OU4-SD-M12-399A-AVG	14.87	45.405	39.725	1.785
Reference Stations				
OU4-SD-R01-200A	2.5	94.7	2.8	0.22
OU4-SD-R01-200B	1.79	95.4	2.81	0.45
OU4-SD-R01-201B	3.2	91.6	5.2	0.43
OU4-SD-R01-299A-AVG	1.05	93.41	5.54	0.475
OU4-SD-R01-300A	2.4	96.9	0.6	0.2
OU4-SD-R01-300B	4.5	95.05	0.45	0.35
OU4-SD-R01-301B	0.9	98.4	0.7	0.17
OU4-SD-R01-399A	0	97.98	2.02	0.45
OU4-SD-R02-200A	5.2	92.2	2.6	0.48
OU4-SD-R02-200B	4.57	91.07	4.36	0.56
OU4-SD-R02-201B	3.7	91.6	4.6	0.53
OU4-SD-R02-299A	1.51	93.97	4.52	0.53
OU4-SD-R03-200A	12.1	67.1	20.8	1.17
OU4-SD-R03-200B	14.2	65.82	19.98	2.16
OU4-SD-R03-201B	9.9	74.3	15.9	1.71
OU4-SD-R03-299A	8.78	76.75	14.47	1.54

TABLE 4-15

SUMMARY OF GRAIN SIZE AND TOTAL ORGANIC CARBON FOR EELGRASS HABITAT
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 2

Sample Number	Parameter			
	% CLAY	% SAND	% SILT	TOTAL ORGANIC CARBON
OU4-SD-R03-300A	9.9	71.2	18.9	0.99
OU4-SD-R03-300B	12	68.01	19.99	2.02
OU4-SD-R03-301B	10.8	72.8	16.5	1.85
OU4-SD-R03-399A	11.49	72.42	16.09	1.36
OU4-SD-R04-200A	2	96.8	1.2	0.21
OU4-SD-R04-200B	1.73	98.1	0.17	0.3
OU4-SD-R04-201B	1	97.3	1.7	0.28
OU4-SD-R04-299A	0.3	98.8	0.9	0.24

Notes:
Source data are located in Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).
99A - Round 1, September 1999
00B - Round 2, May 2000
00A - Round 3, August 2000
01B - Round 4, May 2001

TABLE 4-16

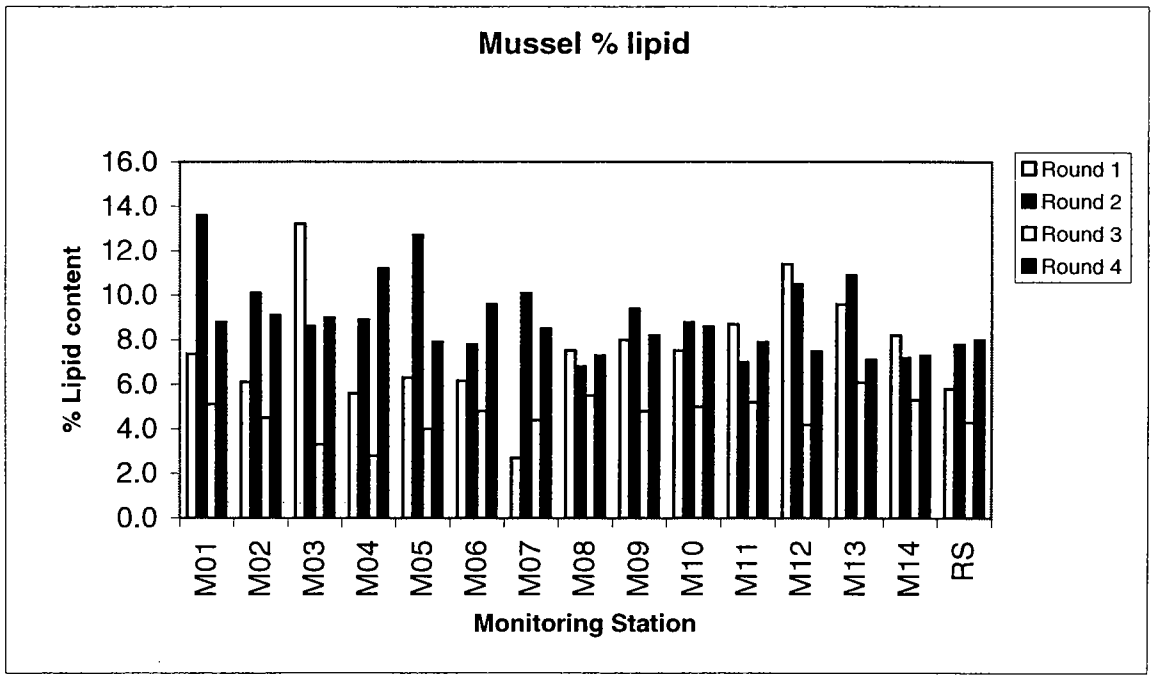
SUMMARY OF GRAIN SIZES AND TOTAL ORGANIC CARBON FROM SALTMARSH HABITAT BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

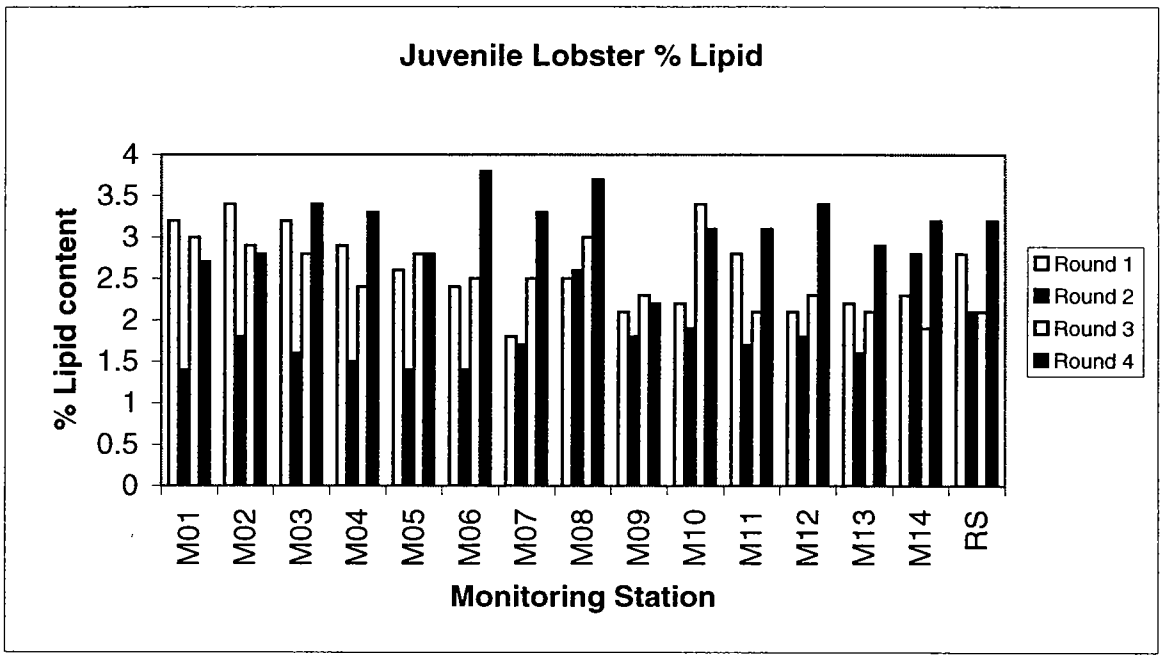
	Parameter			
Sample Number	% CLAY	% SAND	% SILT	TOTAL ORGANIC CARBON
Monitoring Stations				
OU4-SD-M02-300A	17.9	30	52.1	3.99
OU4-SD-M02-300B	24.38	26.86	48.76	2.91
OU4-SD-M02-301B	15.1	37.1	47.9	3.56
OU4-SD-M02-399A	29.27	24.39	46.34	7.25
OU4-SD-M04-300A	2.7	92.4	4.9	0.62
OU4-SD-M04-300B	0.37	97.07	2.56	0.69
OU4-SD-M04-301B	0.8	94.9	4.2	0.37
OU4-SD-M04-399A	1.43	93.56	5.01	0.48
OU4-SD-M06-300A	3.4	81.6	15	0.36
OU4-SD-M06-300B	2.35	84.51	13.14	0.52
OU4-SD-M06-301B	1.6	94.1	4.3	1.26
OU4-SD-M06-399A	7.2	78	14.8	0.9
OU4-SD-M14-100A	15	32.7	52.4	4.64
OU4-SD-M14-100B	17.57	35.57	46.86	3.31
OU4-SD-M14-101B	13.8	50.6	35.6	6.08
OU4-SD-M14-199A	1.97	78.28	19.75	2.85
Reference Stations				
OU4-SD-R01-100A	2.6	23.6	73.8	3.24
OU4-SD-R01-100B	17.76	47.9	34.34	3.91
OU4-SD-R01-101B	18.8	45.3	35.9	4.35
OU4-SD-R01-199A	7.11	67.51	25.38	2.35
OU4-SD-R02-100A	1.7	95.3	3	0.88
OU4-SD-R02-100B	4.72	89.24	6.04	2.19
OU4-SD-R02-101B	2.4	90.9	6.7	1.72
OU4-SD-R02-199A	5.24	88.21	6.55	1.97
OU4-SD-R03-100A	49	26.5	24.5	5.69
OU4-SD-R03-100B	8.4	69.47	22.13	3.17
OU4-SD-R03-101B	12.9	45.9	41.2	4.96
OU4-SD-R03-199A	4.89	41.29	53.82	4.14
OU4-SD-R04-100A	12.2	73.4	14.4	1.82
OU4-SD-R04-100B	9.71	70.13	20.16	1.98
OU4-SD-R04-101B	5.7	80.3	14	1.56
OU4-SD-R04-199A	1.33	92.01	6.66	2.03

Notes:
Source data are located in Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, September 2001).
99A - Round 1, September 1999
00B - Round 2, May 2000
00A - Round 3, August 2000
01B - Round 4, May 2001

FIGURE 4-1

PERCENT LIPIDS VALUES IN MUSSELS AND JUVENILE LOBSTERS
ACROSS ALL MONITORING STATIONS AND ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE





- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; RS - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within all four reference stations

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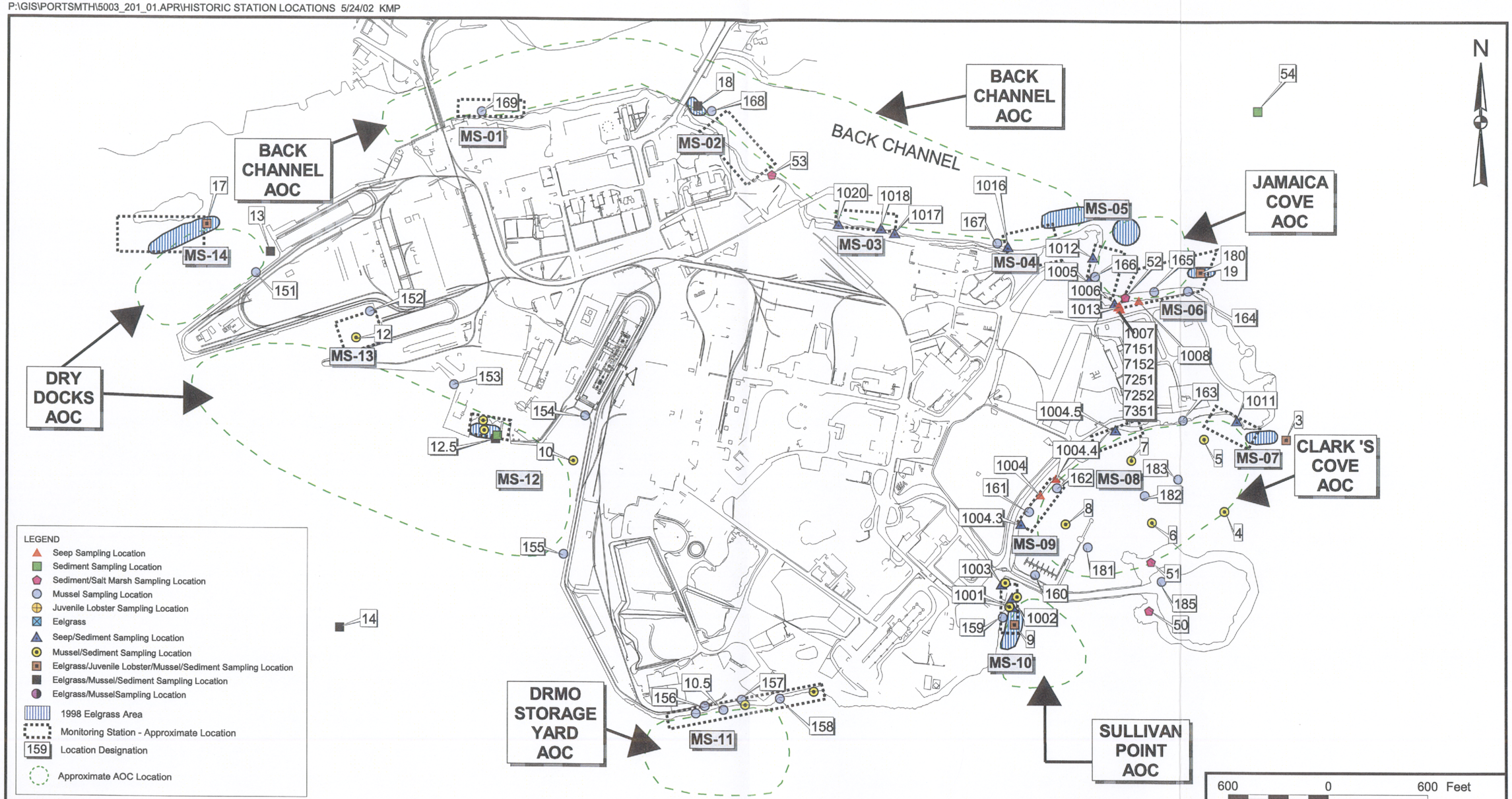
P:\GIS\PORTSMTH\5003_201_01.APR\HISTORIC STATION LOCATIONS 5/24/02 KMP



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY K. PEILA DATE 12/17/01
CHECKED BY ____ DATE ____
COST/SCHEDULE-AREA
SCALE AS NOTED

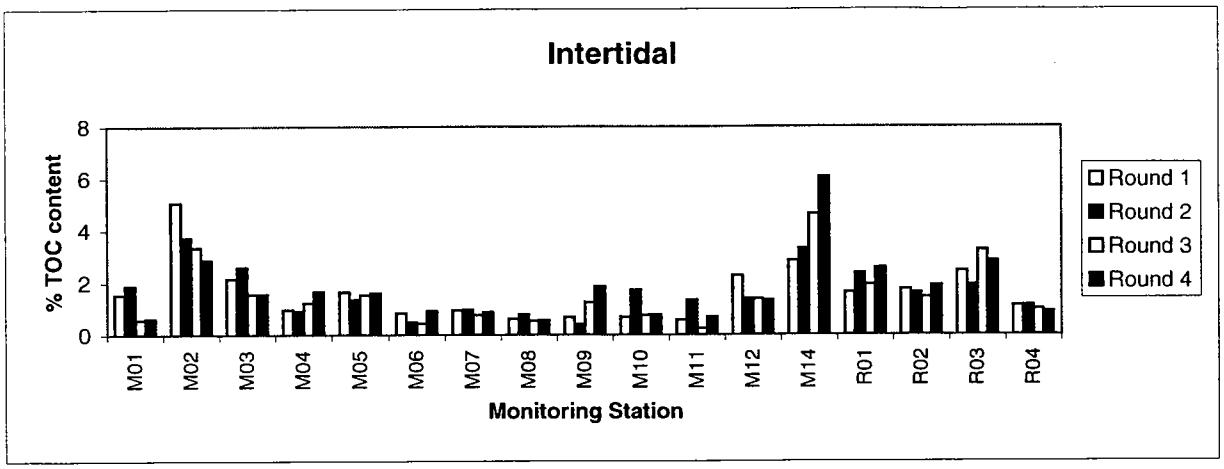
Tetra Tech NUS, Inc.

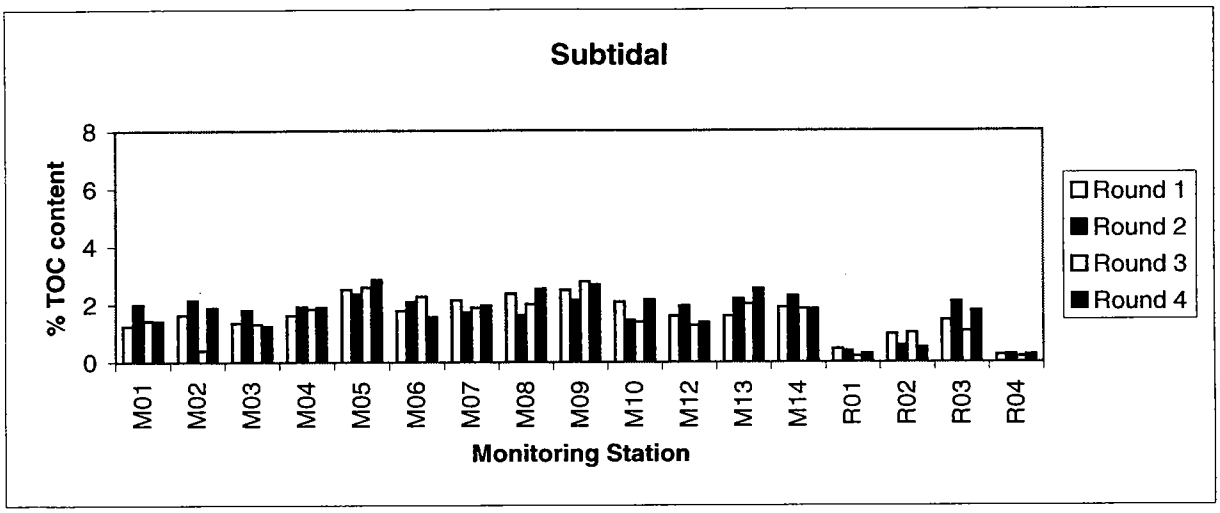
HISTORIC STATION LOCATIONS
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

CONTRACT NUMBER 5003
OWNER NUMBER 0201
APPROVED BY — DATE —
APPROVED BY — DATE —
DRAWING NO. FIGURE 4 - 2
REV 0

FIGURE 4-3

PERCENT TOC CONTENT OF SEDIMENT IN INTERTIDAL AND SUTIDAL ZONES ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

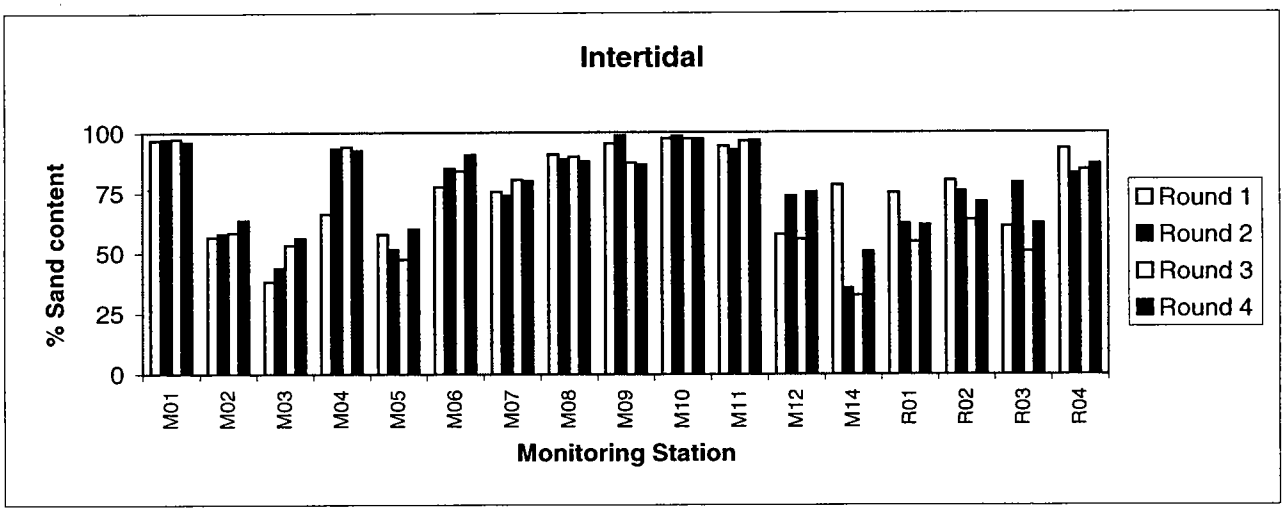


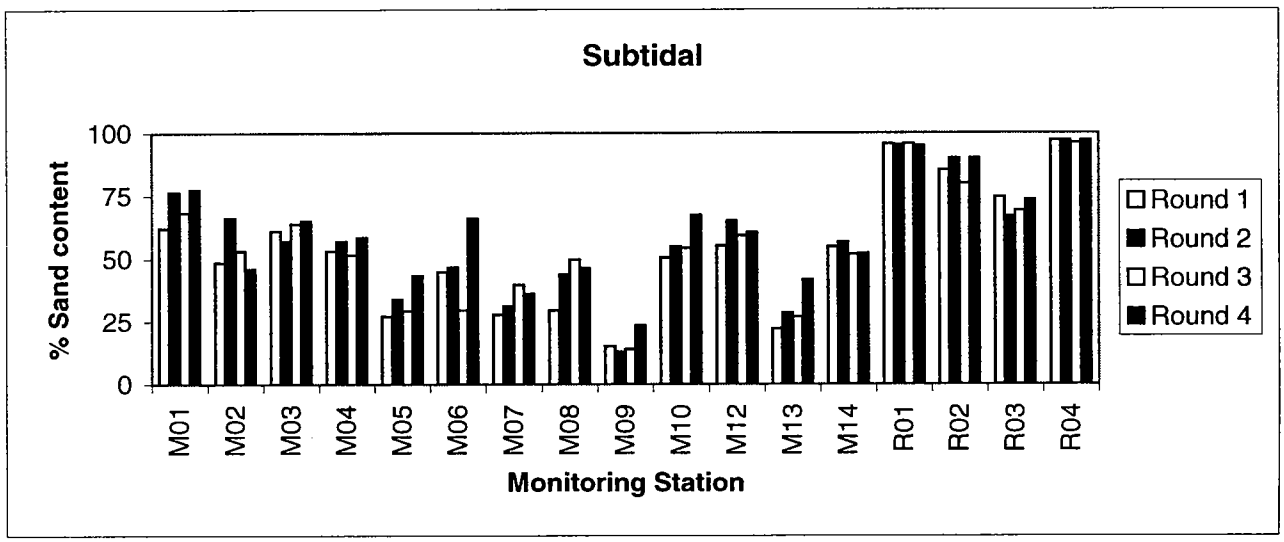


- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-4

PERCENT SAND CONTENT OF SEDIMENT IN INTERTIDAL AND SUTIDAL ZONES ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

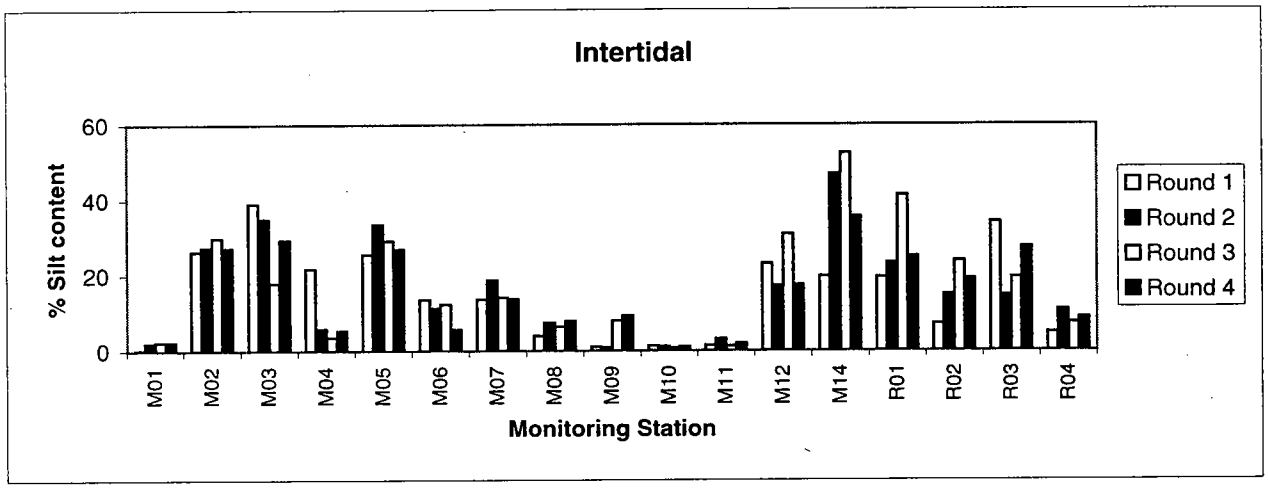


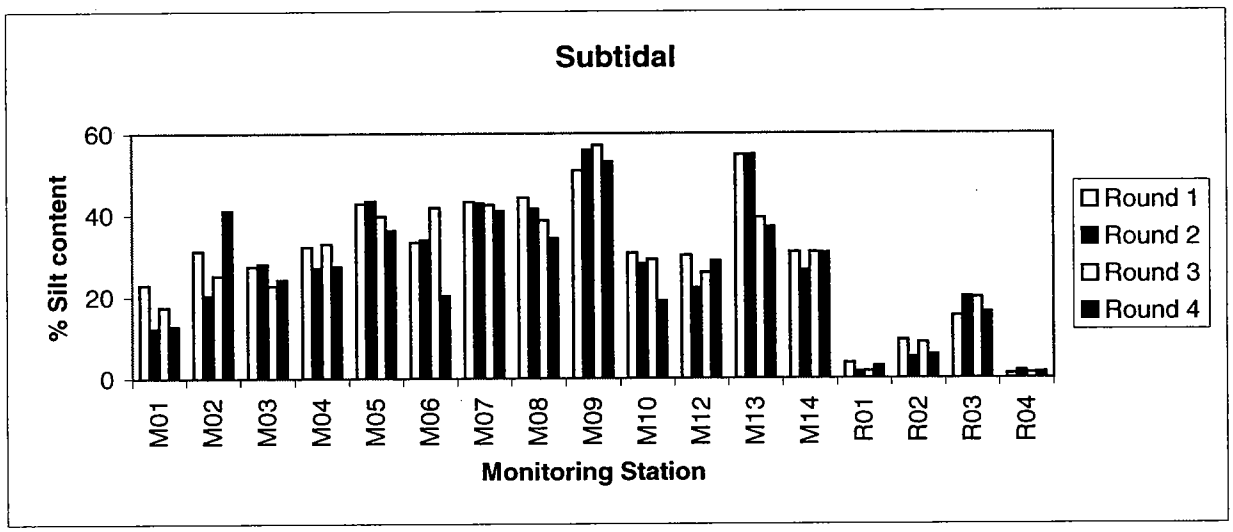


- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-5

PERCENT SILT CONTENT OF SEDIMENT IN INTERTIDAL AND SUTIDAL ZONES ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

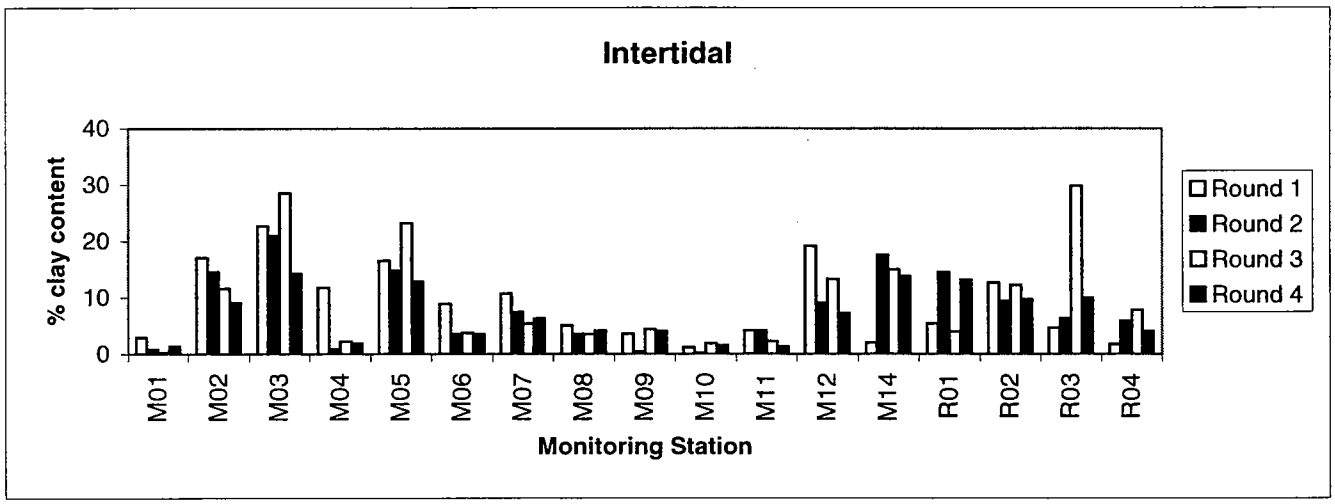


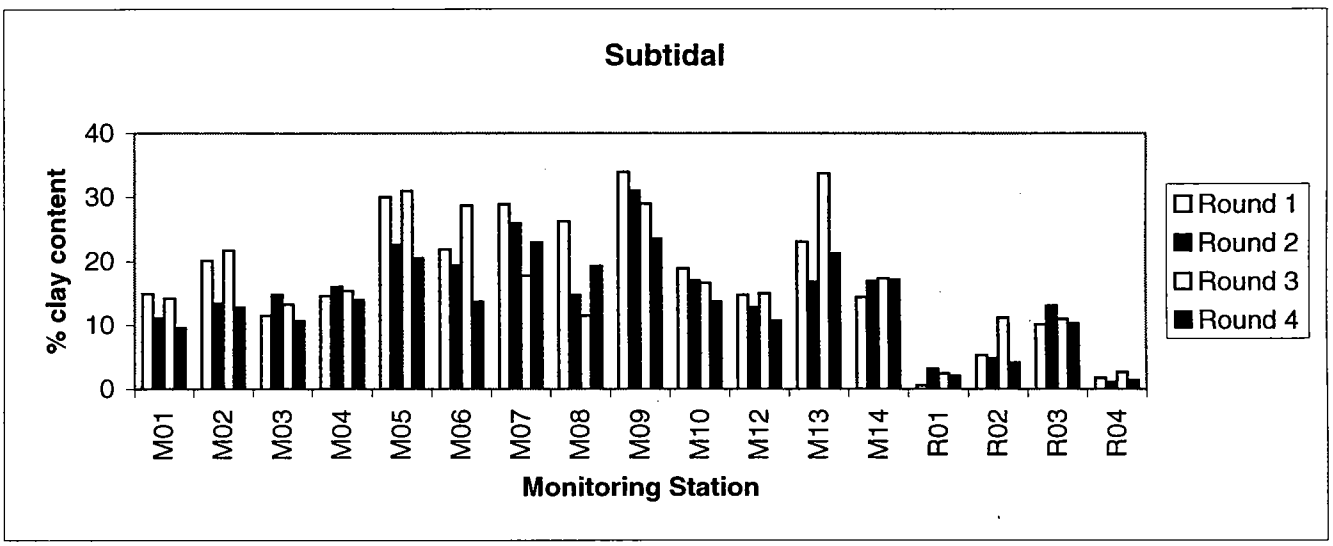


- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-6

PERCENT CLAY CONTENT OF SEDIMENT IN INTERTIDAL AND SUTIDAL ZONES ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

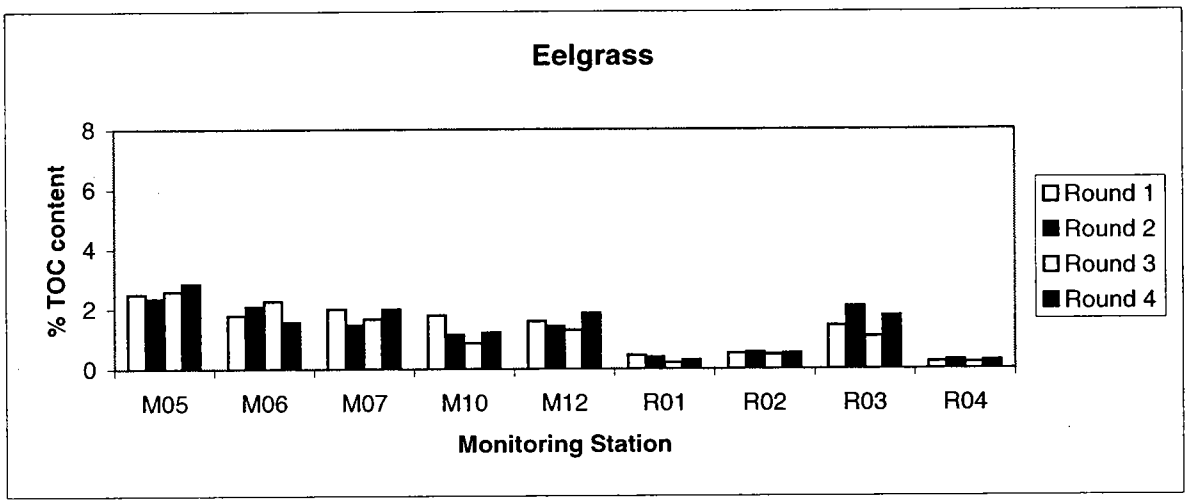


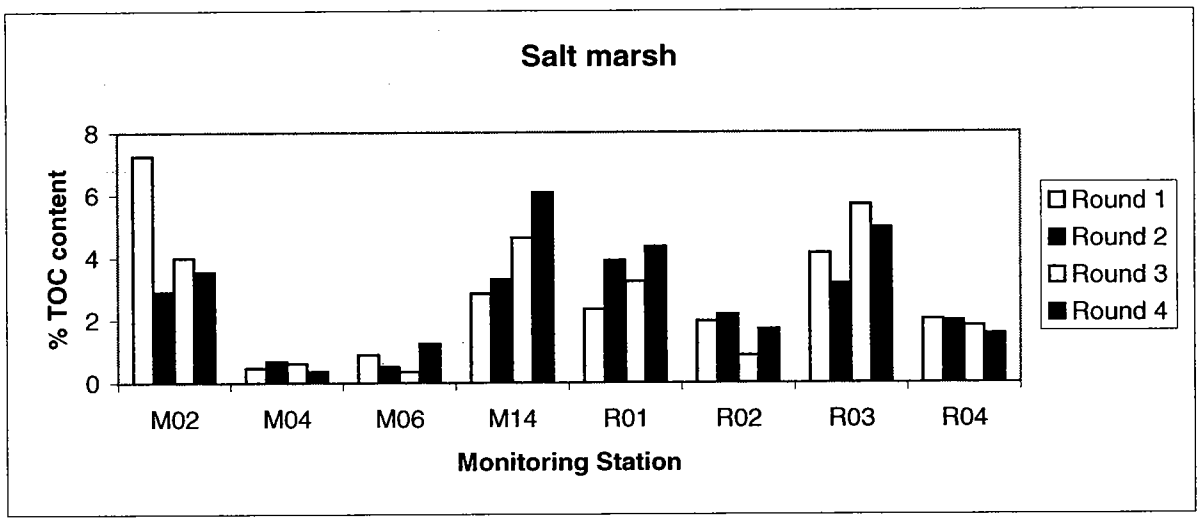


- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-7

PERCENT TOC CONTENT OF SEDIMENT IN EELGRASS AND SALT MARSH HABITATS ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

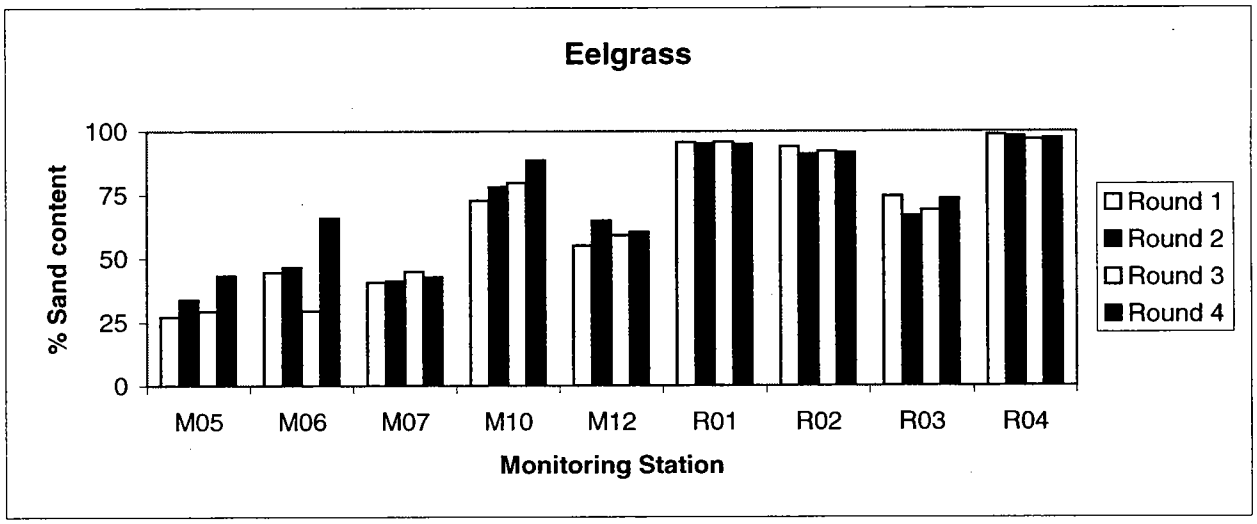


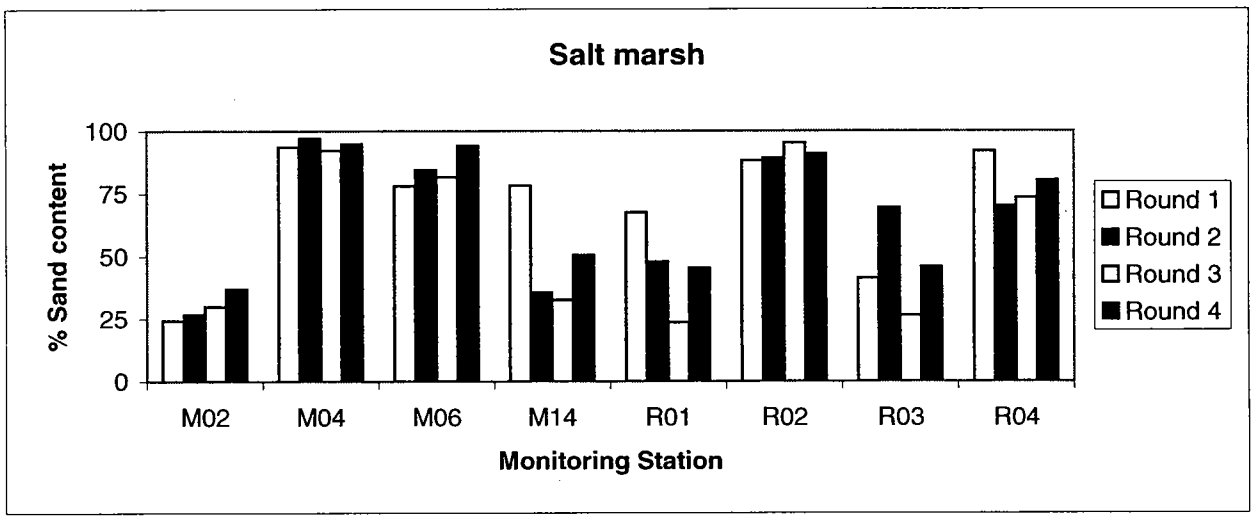


- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-8

PERCENT SAND CONTENT OF SEDIMENT IN EELGRASS AND SALT MARSH HABITATS ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

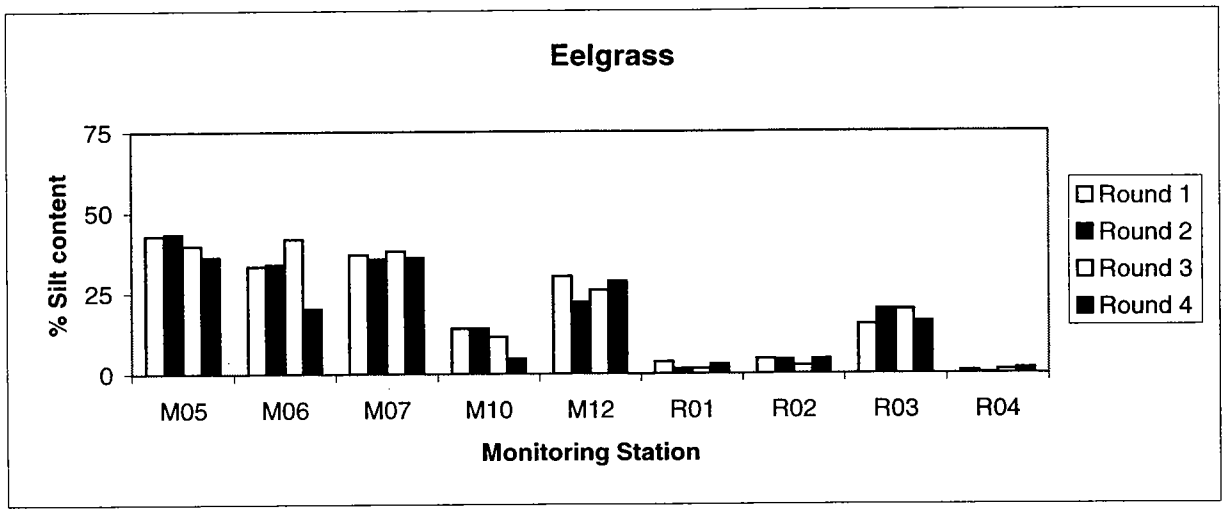


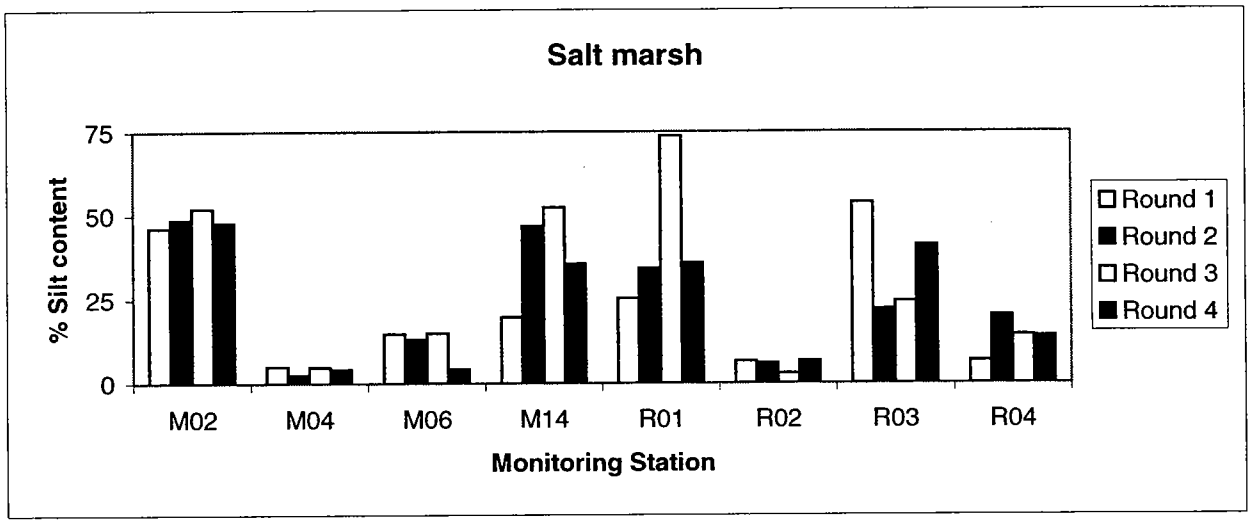


- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-9

PERCENT SILT CONTENT OF SEDIMENT IN EELGRASS AND SALT MARSH HABITATS ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

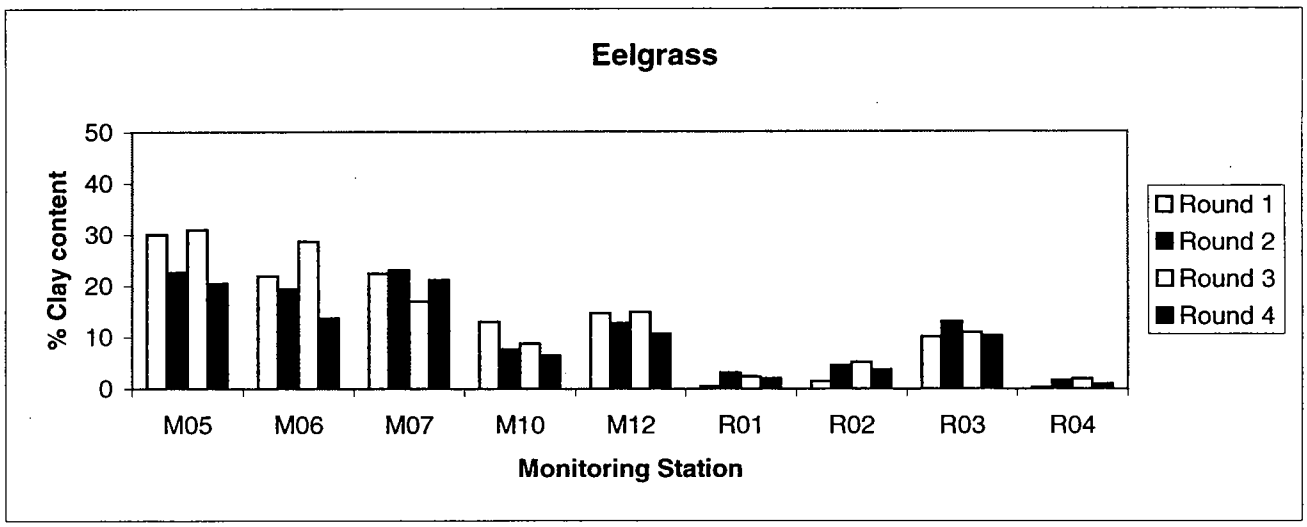


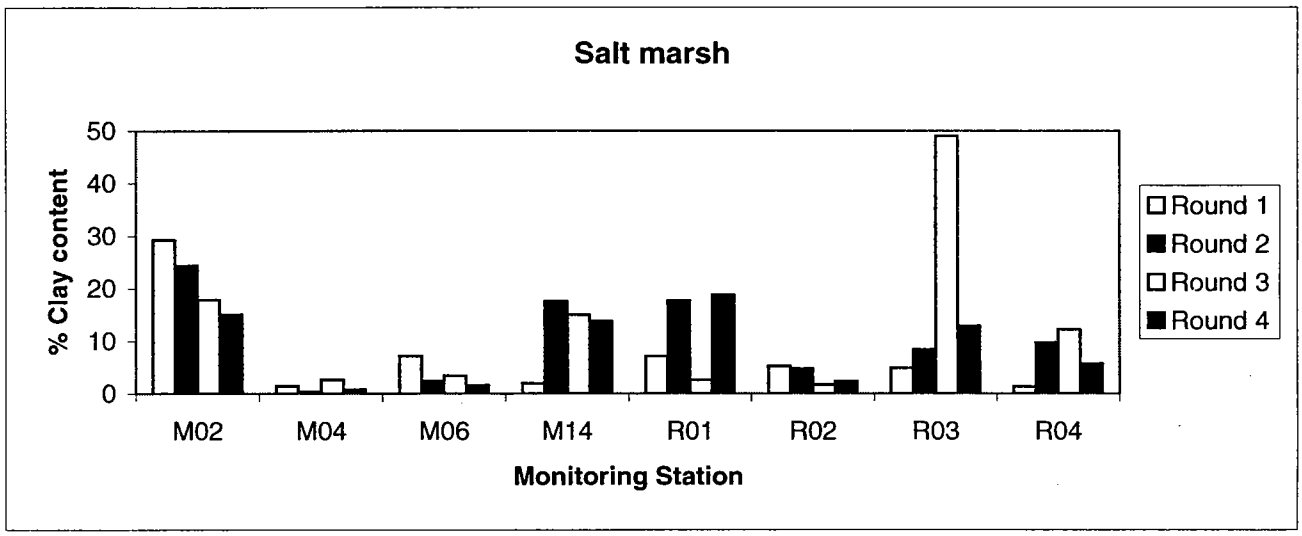


- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-10

PERCENT CLAY CONTENT OF SEDIMENT IN EELGRASS AND SALT MARSH HABITATS ACROSS ALL MONITORING AND REFERENCE STATIONS AND ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

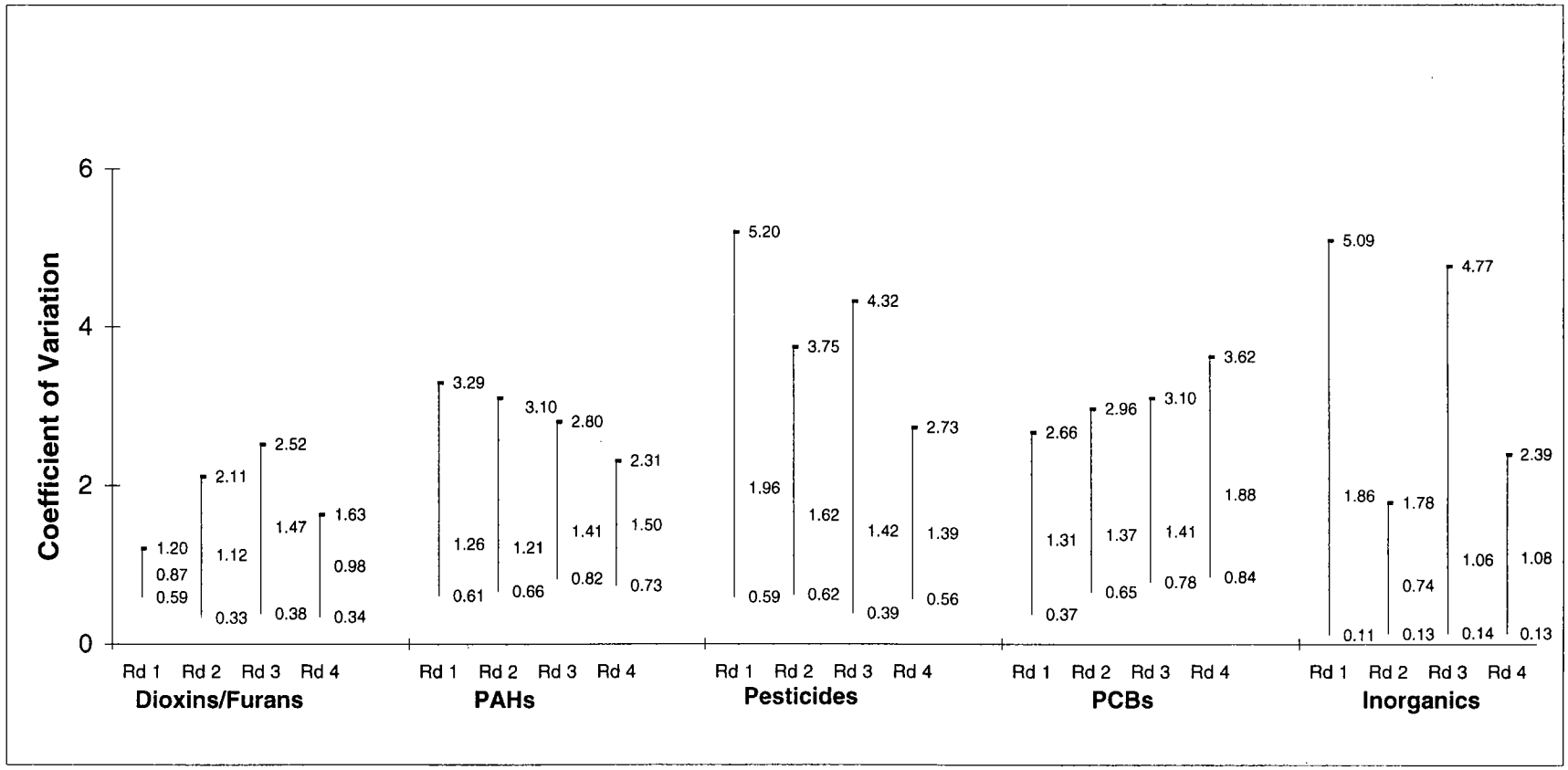




- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 4-11

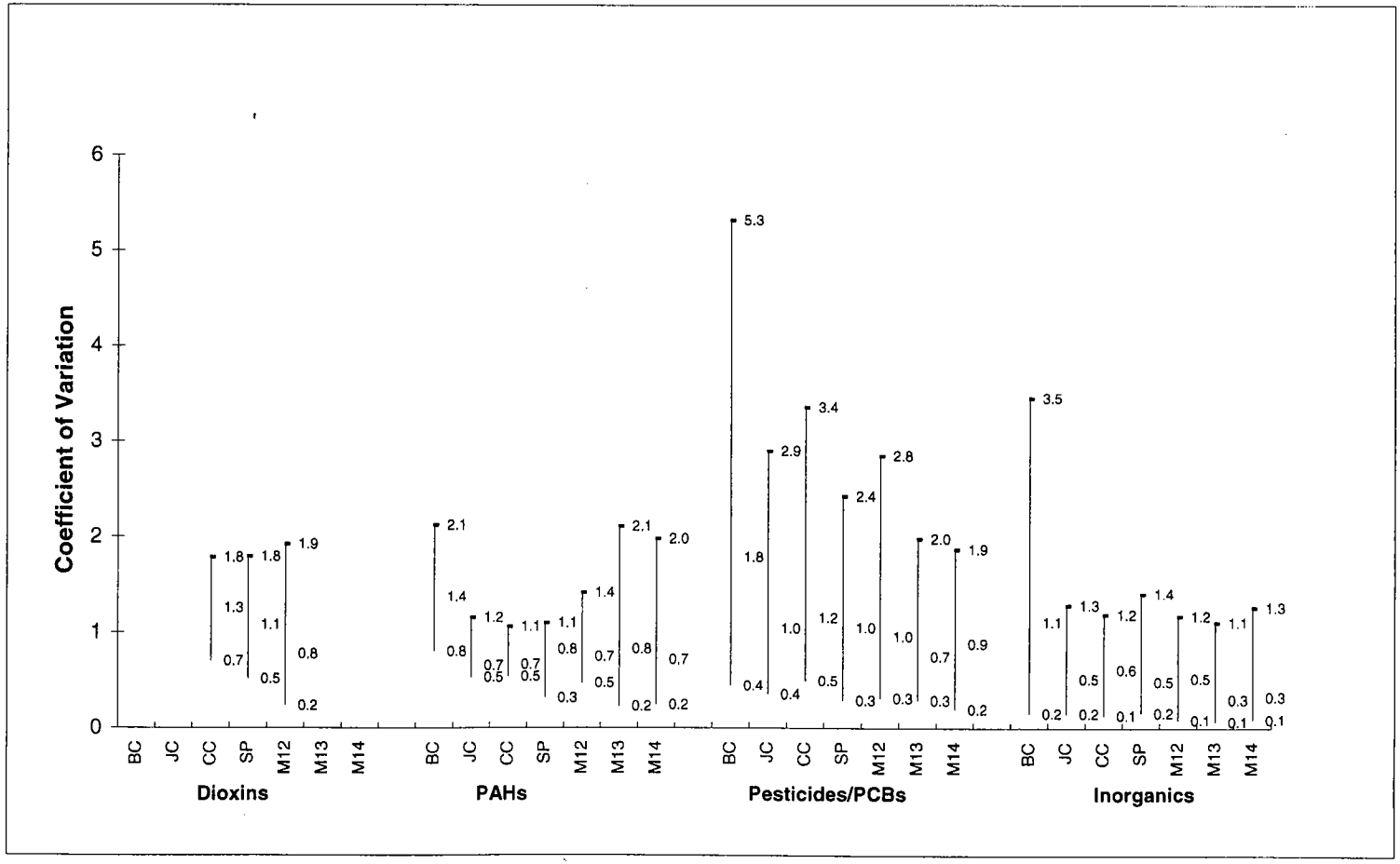
COEFFICIENT OF VARIATION FOR SEDIMENT AVERAGED ACROSS ROUND
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



The numbers on the graph from top to bottom represent the maximum, average, and minimum coefficients of variation, respectively.

FIGURE 4-12

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES COLLECTED DURING ROUNDS 1 THROUGH 4 BY AOC
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

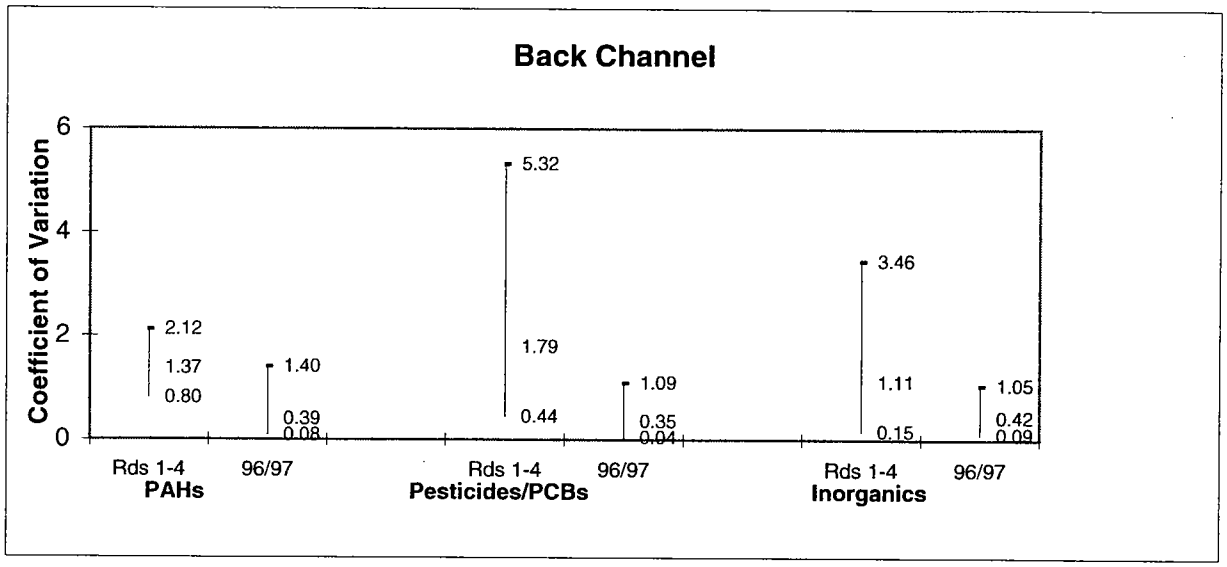


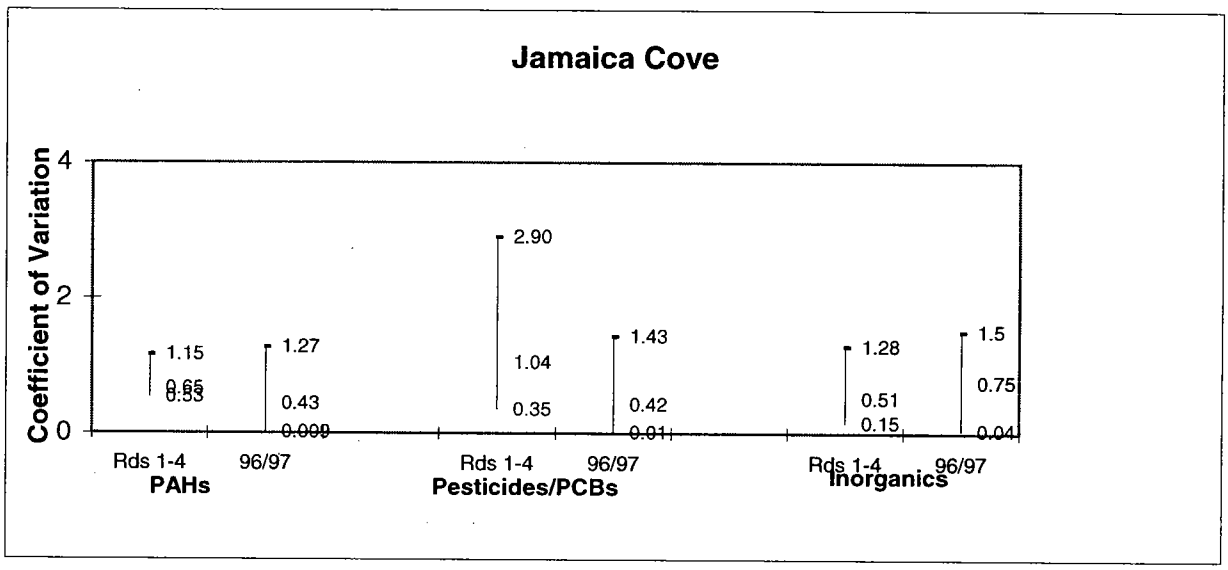
The numbers on the graph from top to bottom represent the maximum, average, and minimum coefficients of variation, respectively.

BC - Back Channel
JC - Jamaica Cove
CC - Clarks Cove
SP - Sullivan Point
M - Monitoring Station

FIGURE 4-13

COMPARISON OF 1996 TO 1997 SEEP SEDIMENT AND ROUNDS 1 THROUGH 4 COEFFICIENT OF VARIATION DATA BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE PAGE 1 OF 2

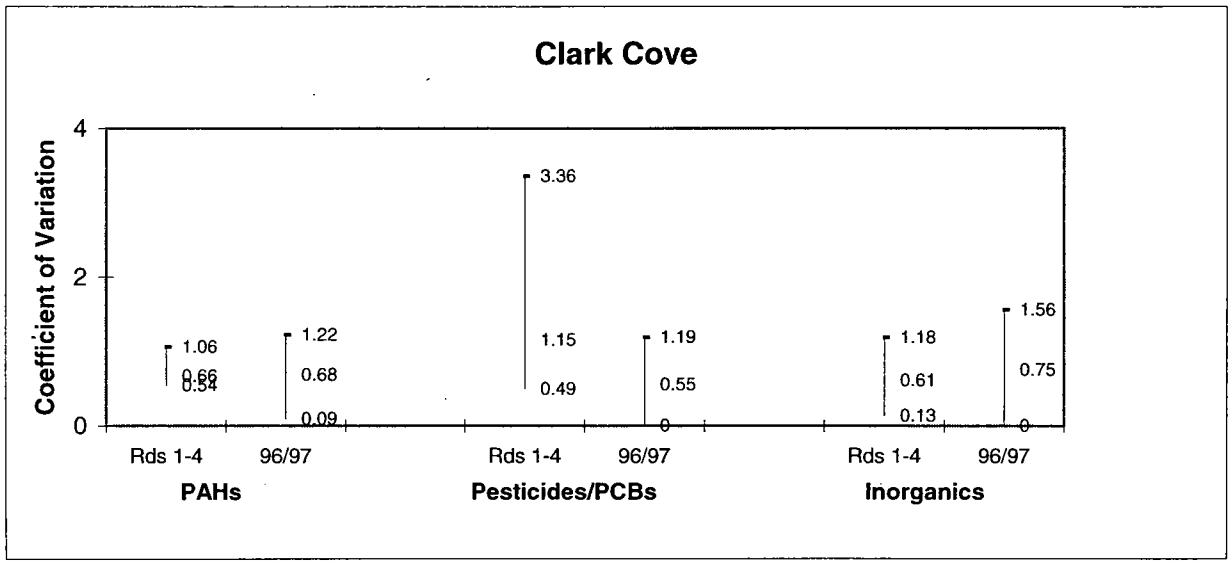


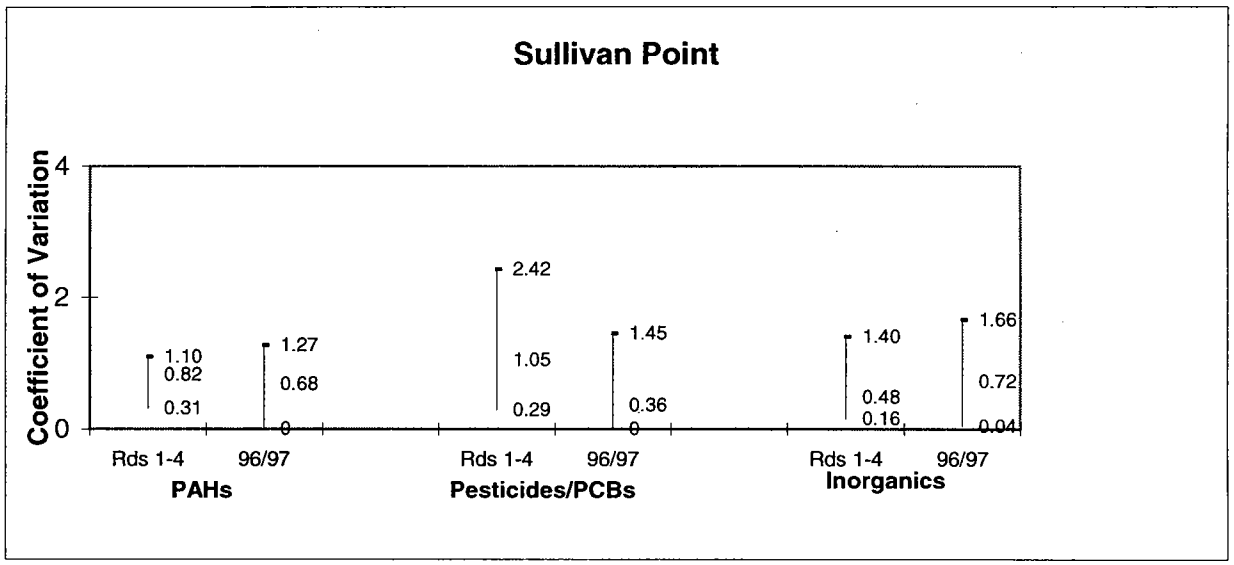


The numbers on the graph from top to bottom represent the maximum, average, and minimum coefficients of variation, respectively.

FIGURE 4-13

COMPARISON OF 1996 TO 1997 SEEP SEDIMENT AND ROUNDS 1 THROUGH 4
COEFFICIENT OF VARIATION DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 2





The numbers on the graph from top to bottom represent the maximum, average, and minimum coefficients of variation, respectively.

5.0 EVALUATION OF CHEMICALS WITH INTERIM REMEDIATION GOALS

This section of the report first describes the development of the Preliminary Remediation Goals (PRGs) and IRGs and then presents a comparison of the chemical concentrations in the sediment to the IRGs. The remaining portion of this section presents various data evaluations that were only conducted on the chemicals that are used as IRGs.

5.1 COMPARISON OF SEDIMENT CONCENTRATIONS TO IRGS

5.1.1 Objective

The objective of this section is to present the comparison of the sediment concentrations to the IRGs for the offshore area for PNS to determine whether exposure concentrations are at acceptable levels.

5.1.2 Background

The Interim Offshore Monitoring Program, initiated in accordance with the Interim ROD for OU4 (Navy, 1999), required the development of PRGs. As discussed in the Interim Offshore Monitoring Plan (TtNUS, October 1999), only sediment-based ecological PRGs were developed for OU4. The PRGs that were developed for OU4 are used as the IRGs for OU4, as outlined in the Interim Offshore Monitoring Plan.

Science Applications International Corporation (SAIC) developed the PRGs using the process outlined in the PRG proposal that was presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999; Appendix A), and the results are presented in the document Preliminary Remediation Goals for Operable Unit 4 (TtNUS, November 2001). PRGs were developed for chemicals that were identified as limiting COCs (i.e., chemicals that are responsible for much of the baseline risk). The PRGs developed for OU4 were used as the IRGs for the following chemicals for evaluation of the interim offshore monitoring data:

Parameter	IRG (dry-weight)
Copper	486 mg/kg
Nickel	124 mg/kg
Acenaphthylene	210 µg/kg
Anthracene	1,236 µg/kg
Fluorene	500 µg/kg
HMW PAHs	13,057 µg/kg

Although pesticides were not identified as COCs for OU4, the PRG development process included pesticide data for OU4; PRGs were developed for endosulfan II (3.95 µg/kg), trans-nonachlor (3.99 µg/kg), and 4,4'-DDT (66.4 µg/kg). The PRGs developed for pesticides were not used as IRGs because they were not identified as COCs for OU4.

The average sediment concentration from each station from each sampling round was compared to the IRGs. Sediment concentrations at individual locations within a monitoring station were not compared to the IRGs with the exception of the estimated chemical concentrations in sediment at M11. The estimated chemical concentrations in sediment at M11 were not combined with the actual chemical concentrations in the sediment samples that were collected at M11 so that the results could be evaluated separately.

Finally, correlation plots (mussel concentrations versus sediment concentrations) were generated for copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs (see Appendix E). The HMW PAHs consist of the following chemicals: benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,b)anthracene, fluoranthene, and pyrene. Appendix E describes the procedures used to create the plots for mussels and lobsters (as presented in Section 7.0). The appendix also includes a table that presents each data pair used in the analyses. These plots were used to determine how well the mussel concentrations correlated with the sediment concentrations.

5.1.3 Results

5.1.3.1 Sediment Concentrations Compared to IRGs

Figures 5-1 through 5-6 present the non-normalized sediment concentrations compared to the IRGs. Table B-8 in Appendix B presents the chemical concentrations in each sample for the chemicals with IRGs based on the comment resolution in Appendix L. This table is not discussed in this report for reasons presented in Appendix L. As shown on Figure 5-1, acenaphthylene concentrations at M01 exceeded the IRG in all but the first round. Fluorene and HMW PAH concentrations (see Figures 5-3 and 5-4, respectively) exceeded the IRG in the fourth round only at M01.

As shown on Figure 5-5, copper concentrations at M04 exceeded the IRG in all but the first round. Nickel concentrations (see Figure 5-6) slightly exceeded the IRG at M04 during Round 1. Anthracene concentrations (see Figure 5-2) exceeded the IRG at M04 in the fourth round only, and the concentrations for the first three rounds were similar to each other and more than four times less than the IRG.

As shown on Figure 5-5, copper concentrations at M11 exceeded the IRG in all four sampling rounds. Nickel concentrations (see Figure 5-6) at M11 only exceeded the IRG in the first round.

As shown on Figure 5-3, fluorene concentrations exceeded or were similar to (but less than) the IRG at M12 in all four rounds. Anthracene concentrations (see Figure 5-2) at M12 exceeded or were similar to (but less than) the IRG in the first, third and fourth rounds. As shown on Figure 5-4, HMW PAH concentrations at M12 exceeded IRGs in the first, third, and fourth rounds.

Two other stations (M03 and M13) had exceedances of only one chemical in one or two rounds (copper at M03 in two rounds and fluorene at M13 in one round). As shown on Figure 5-5, copper concentrations in sediment at M03 in the first three rounds were greater than or similar to (but less than) the IRG, and less than the IRG in the fourth round. Fluorene concentrations (see Figure 5-3) at M13 in the first, third, and fourth round were below the IRG, whereas the concentration in the second round exceeded the IRG.

The following table summarizes the stations that have chemical concentrations greater than the IRGs:

Stations Exceeding IRGs	Parameter	Round No. Exceeding IRGs
M01	Acenaphthlyene	2,3,4
	Fluorene	4
	HMW PAHs	4
M03	Copper	1,3
M04	Copper	2,3,4
	Nickel	1
	Anthracene	4
M11	Copper	1,2,3,4
	Nickel	1
M12	Anthracene	4
	Fluorene	1,3,4
	HMW PAHs	1,3,4
M13	Fluorene	2

5.1.3.2 Predicted Sediment Concentrations Compared to IRGs

The mussel to sediment correlation plots for copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs are presented in Appendix E. Based on these plots, the correlations between the chemical concentrations in the mussel and sediment were low. This may indicate that the mussels were not accumulating the chemicals from the sediment to any significant degree. This was supported by the low BSAFs for the PAHs (<0.07 for acenaphthylene, anthracene and fluorene), and the low BAFs for copper (0.19) and nickel (0.06). For example, on Figure E-7, the anthracene concentrations in the mussels did not change much over the range of sediment concentrations with the exception of a few sporadic samples that were elevated.

There were two locations at monitoring station M11 where sediment was not visible. At these locations, the chemical concentrations in the mussels (normalized concentrations for organic chemicals) were used to estimate sediment concentrations using mean BAFs and BSAFs as presented in the Monitoring Plan (TtNUS, October 1999). Even though there was little correlation between the mussel concentrations and the sediment concentrations, the mean BSAFs were similar to those found in the literature. The sediment concentrations were calculated for each chemical by dividing the mussel concentration by the mean BAF or BSAF for that chemical across all monitoring stations and across all rounds. For the organic chemicals, the BSAFs were multiplied by the average TOC value across all of the monitoring stations (1.7 percent). This value should be conservative because the portion of the Piscataqua River adjacent to M11 moves very quickly when the tide changes so that the sediment is likely to be sandy with little TOC. Table 5-1 presents the results of this calculation for all of the chemicals that were detected in the mussel samples.

Table 5-2 presents the estimated sediment stations at M11 compared to the IRGs. These values were not averaged with the other sediment concentrations from M11 that are presented in Figures 5-1 through 5-6. As can be seen from the table, none of the estimated sediment concentrations at M11 exceeded the IRGs. If these results were averaged with the sediment samples that were collected from M11, the IRGs would not be exceeded for some rounds at M11.

5.1.4 Conclusions

Per the Interim Offshore Monitoring Plan, no decisions concerning whether a concentration trends exists at any station will be made until monitoring year five. The decision making was planned for the 5-year review to prevent inappropriate conclusions being made on the basis of too few data points. Therefore, any apparent trends may only give the reader an initial impression of site conditions and identify chemicals and stations that could warrant additional scrutiny in future data reviews.

Six monitoring stations exceeded an IRG in at least one sample. Four of the six stations had consistent exceedances (in three or four rounds) for one or more chemicals:

- M01 – Acenaphthylene (three rounds)
- M04 – Copper (three rounds)
- M11 – Copper (four rounds)
- M12 – Fluorene and HMW PAHs (three rounds each)

Based on the four baseline rounds, PAH concentrations at M01 exceeded IRGs. Station M01 is located in the Back Channel AOC offshore of Site 34.

Foundry slag has been identified in the intertidal areas of M03 and M04 and may be the source of the metals. M03 and M04 are located in the Back Channel AOC offshore of Site 32.

Erosion of metals contaminated soil at M11 by the DRMO (Site 6) was identified in 1999 and emergency removal action was conducted to prevent further erosion of contaminants.

M12 indicates PAH exceedances of IRGs; M12 is located in the Dry Docks AOC offshore of Sites 5, 10, 26, and 27. The elevated levels of PAHs at those locations may be caused by a combination of sources that may or may not be related to PNS including; potential migration or transport from IR sites, discharges from barges/boats, storm water outfalls located in the vicinity of the shipyard, and dock-side activities, to name a few.

5.2 OUTLIER ANALYSIS

5.2.1 Objective

The primary objective of this section is to describe the results of the outlier analysis that was conducted on the reference station data. The secondary objective of this section of the baseline report is to present the results of the analysis conducted to determine if the TOC and grain size for each AOC were similar.

5.2.2 Background

In accordance with the Interim Offshore Monitoring Plan (TtNUS, October 1999), before the average parameter concentrations for the reference station samples were calculated, statistical data outliers were evaluated to determine whether they truly represented outliers. Outliers with an assignable cause may be omitted from certain analyses because they do not belong to the data set being evaluated. Outlier tests on the reference station data were conducted for the following chemicals: copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs. These chemicals were selected because they were identified as limiting COCs in the PRG document and were selected as IRGs for the Interim Offshore Monitoring Program (TtNUS, November 2001).

Statistical outlier analysis was performed on the reference station data to identify any values that did not represent the underlying distribution. The Shapiro-Wilk W test was used to determine whether the reference station data were best represented by a normal or lognormal distribution function. The data tested for the lognormal underlying distribution were first transformed by computing the natural logarithm

of each value. Data points that fell outside a 95 percent confidence ellipse around the data when plotted in a probability diagram were then tested to determine whether the data points were statistical outliers. Appendix H describes the statistical tests that were conducted.

Based on regulator comments on the PRG document regarding the applicability of developing a basewide PRG number, the Navy agreed to evaluate the TOC concentrations in each of the AOCs (Back Channel, Jamaica Cove, Clarks Cove, Sullivan Point, DRMO, and Dry Docks) to determine whether they were similar. The evaluation was also conducted for the percent sand, silt, and clay in each sample. Although this evaluation is not a true outlier analysis, this is the most appropriate section of the report for this evaluation to be presented. The statistical tests used for this evaluation are described in Appendix F.

5.2.3 Results

5.2.3.1 Reference Station Outlier Analysis

This section presents the results of the outlier analysis conducted for copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs. Table 5-3 summarizes the results of the outlier analysis. Section 3.2.3 discusses the removal of one reference mussel sample based on the outlier analysis conducted and presented in the Draft Interim Offshore Monitoring Report (TtNUS, December 2001). See the attachment to the April 2, 2000 conference call minutes in Appendix L for more details.

For sediment, nickel at OU4-SD-R03-100B (Round 2) was identified as a statistical outlier. The sample concentration (38.2 mg/kg) was less than twice the maximum concentration in many of the sediment samples at other reference stations during all four rounds. Also, other metal concentrations in that sediment sample did not appear to be elevated. Therefore, the removal of the nickel value from the data set does not appear to be warranted without further evidence that the datum is not representative of contaminants in the area of this sample.

Copper at OU4-MU-R04-400A (Round 3) was identified as a statistical outlier for mussels. The copper concentration in this sample was between three and four times greater than the copper concentration in most of the other mussel samples from the reference stations and less than two times the copper concentrations in several of the other mussel samples from the reference stations. Other metals in this sample were not elevated. The elevated copper concentration at OU4-MU-R04-400A does not warrant its removal from the data set as an outlier without further evidence that the datum is not representative of contaminants in the area of this sample.

No chemicals in the juvenile lobster data set from the reference stations were identified as statistical outliers.

5.2.3.2 Evaluation of TOC and Grain Size Data

Figures F-1 through F-16 in Appendix F present the results of the outlier analysis for the TOC and grain size (percent silt, percent sand, and percent clay). The results of the analyses indicate that the TOC concentrations and grain size values are statistically similar across the AOCs.

5.2.4 Conclusions

The results of the initial outlier analysis on the reference station data indicate that PAHs in one mussel sample (OU4-MU-R02-400A) were statistical outliers that warranted removal from the data set (see Section 3.2.3). Other chemicals identified as statistical outliers in the sediment, mussels, and juvenile lobsters data sets were not detected at levels that warranted removal of the samples or parameters from the data set. Also, as more data are collected for trending, the effects of a single outlier on the trend will be limited even if the outlier is not removed from the data set. Finally, TOC levels and grain size distributions were similar, so PRGs do not need to be calculated for each AOC.

5.3 DESCRIPTIVE STATISTICS ACROSS ROUNDS

5.3.1 Objective

The objective of this section of the baseline report is to present the results of the analytical data collected during the first four rounds of the interim offshore monitoring program and to list general observations about the data across the rounds.

5.3.2 Background

As presented in Sections 2.0 and 3.0 of this report, sediment, mussels, and juvenile lobster samples were collected from monitoring and reference stations and analyzed for various chemical constituents. The analytical results are presented and described in the following sections. The data in this section were normalized and/or averaged in accordance to the procedures presented in Section 3.0.

5.3.3 Results

The tables in the DQA reports in Appendix A present the average normalized chemical concentrations in sediment, mussel, and juvenile lobster samples at each station. Those tables were compiled per sampling round and were used to identify trends in the data across the stations. Those observations were presented in the DQA reports.

Tables G-1, G-2, and G-3 in Appendix G present the average normalized chemical concentrations for sediments, mussel, and juvenile lobster at each station across all sampling rounds. These tables were used to identify whether certain sampling rounds consistently had greater chemical concentrations at a given station. Tables G-1, G-2, and G-3 also display the mean reference station concentration (from all four rounds combined) for comparison purposes. The shaded values on the tables identify the round with the greatest detected analyte concentration for that station. Sediment concentration plots (non-normalized data) are provided for the six chemicals identified as IRGs to evaluate the data (Figures 5-1 through 5-6). Tables for the other chemicals analyzed were provided as backup in Appendix G and were not specifically evaluated in this baseline report.

OU4 samples were analyzed for about 150 chemicals to obtain a comprehensive data set on potential chemical contaminants. It is not practical to discuss all 150 or so contaminants in this data evaluation; therefore, only the six chemicals for which IRGs are developed (copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs) are discussed below with the understanding that these six chemicals represent the majority of risk concerns. As presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999), trending for the 5-Year Report will only be conducted for the limiting COCs that have IRGs.

Figures 5-7 through 5-10 show the average normalized chemical concentrations for acenaphthylene, anthracene, fluorene, and HMW PAHs in sediment, mussel, and juvenile lobster for each round and across all the monitoring stations. Figures 5-11 and 5-12 show the average normalized (for sediment) and non-normalized (for mussel and juvenile lobster) chemical concentrations for copper and nickel in sediment, mussel, and juvenile lobster for each sampling round across all of the monitoring stations. The figures also present the average reference concentrations.

Figures G-1 through G-4 in Appendix G show the average non-normalized chemical concentrations for mussels and juvenile lobsters for acenaphthylene, anthracene, fluorene, and HMW PAHs. These figures were presented to determine if there were any seasonal differences in chemical concentrations for the organic chemicals prior to normalizing the data to lipids.

For each monitoring station, chemical concentrations were calculated by averaging the chemical concentrations from all the sediment locations within the station for each round. The reference station concentrations plotted on the figures are the average reference concentrations across the four reference stations for each sampling round. In addition, the reference concentrations were averaged across all four sampling rounds and plotted as a line across the plots. A statistical comparison of monitoring station concentrations to reference station concentrations is presented in Section 5.4 of this report. When applicable, duplicate sample results were averaged and one-half of the detection limit was used for non-

detected chemicals. If all sites within a station were less than detection limits for a COC, the average concentration was reported as a zero in the figures. The following generalizations were made from the figures:

- Monitoring stations M01 and M12 consistently had the greatest normalized PAH concentrations (for the limiting COCs) for sediment, and M12 and M13 consistently had the greatest PAH concentration for mussels (see Figures 5-7 through 5-10). Other stations had elevated levels of PAHs concentrations, but no consistent patterns were apparent. The only consistent pattern for juvenile lobsters were HMW PAHs at M13. The majority of the stations had acenaphthylene, anthracene, fluorene, and HMW PAHs concentrations within the range of the reference station concentrations in all media. These patterns were representative of the other PAHs detected for sediment, mussel, and juvenile lobster, but a few additional stations had sporadic high concentrations, as presented in the DQA reports.

- For mussels, the non-normalized chemical concentrations of the PAHs were greater in the spring rounds (Rounds 2 and 4) than the late summer rounds at most stations, with the most notable exceptions being monitoring stations M12 and M13 (see Figures G-1 through G-4 in Appendix G). The opposite trend was observed at these stations. No distinct trend in chemical concentrations between the seasons was observed for the juvenile lobster data.

- Monitoring stations M03, M04, M08, M09, and M11 had elevated copper concentrations in sediment (see Figure 5-11). Of these locations, M03 and M04 had elevated copper concentrations in mussel for some of the rounds, and other stations had elevated copper concentrations in mussels during one round. No pattern is evident for copper in juvenile lobsters.

- Monitoring stations M04, M08, M09, and M11 had elevated nickel concentrations in sediment (see Figure 5-12). M03, M04, M08, and M09 appeared to have slightly elevated nickel concentrations in mussels. No pattern was evident for nickel in juvenile lobsters, because nickel was not detected in most of the lobster samples.

5.3.4 Conclusions

The following bullets present the general conclusions from the review of the descriptive statistics:

- Monitoring stations M01, M12, and M13 consistently had the greatest PAH concentrations for sediment, M12 and M13 consistently had the greatest PAH levels for mussels, and M13 had the greatest HMW PAH concentrations in juvenile lobsters. Also as presented in Section 5.1, these three

monitoring stations, along with anthracene at M04 during Round 1, were the only stations where PAHs exceeded the IRGs. The majority of the stations had acenaphthylene, anthracene, fluorene, and HMW PAHs concentrations within the range of the reference station concentrations. The elevated levels of PAHs at M12 and M13 may be caused by a combination of sources that may or may not be related to PNS including; potential migration or transport from IR sites, discharges from barges/boats, storm water outfalls located in the vicinity of the shipyard, and dock-side activities, to name a few. The PAHs at M01 may be caused by the activities related to Site 34.

- The concentrations of PAHs were generally greater in the mussels collected in the spring rounds than late summer rounds. No seasonal trend was observed for the juvenile lobster data.

- Monitoring stations M03, M04, M08, M09, and M11 had elevated copper concentrations in sediment, while only M03 and M04 had consistently elevated copper concentrations in mussels. Other stations had elevated copper concentrations in mussels during one round; however, there is no pattern evident for copper in juvenile lobsters. The IRG for copper was only exceeded at M03, M04, and M11, so the slightly elevated copper levels at M08 and M09 were within acceptable risk levels. The source of the copper in the intertidal locations at M03 and M04 at Site 32 will be evaluated as part of the investigation for Site 32, but elevated levels are believed to be related to slag found in the vicinity of these locations. The source of the copper at M11 may be past erosion of soils from DRMO (see Section 5.1.4).

- Monitoring stations M04, M08, M09, and M11 had elevated nickel concentrations in sediment, while M03, M04, M08, and M09 appeared to have slightly elevated nickel concentrations in mussels. Nickel was not detected in most of the juvenile lobster samples. The IRG for nickel was only exceeded at M04 (slightly during one round) and M11 (during one round), so the slightly elevated nickel levels at M08 and M09 were within acceptable risk levels. The source of the nickel in the intertidal locations at M03 and M04 at Site 32 will be evaluated as part of the investigation for Site 32, but elevated levels are believed to be related to slag found in the vicinity of these locations. The source of the nickel at M11 may be past erosion of soils from DRMO (see Section 5.1.4).

5.4 REFERENCE STATION COMPARISON

5.4.1 Objective

The objective of this section is to present the statistical comparison of the chemical concentrations at the sediment, mussel, and juvenile lobster samples in the monitoring stations to the samples at the reference stations.

5.4.2 Background

As presented in the Monitoring Plan (TtNUS, October 1999), four reference stations were selected to provide data on regional concentrations of chemicals in the Piscataqua River. The stations were at locations with similar sediment type as PNS but are not influenced directly by PNS. The analytical data from the reference location was used to determine if the contaminant concentrations in the sediment, mussel, and/or juvenile lobsters from the monitoring stations were statistically elevated above reference concentrations in those same media. These statistical evaluations were conducted for the following chemicals - copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs.

Two statistical evaluations were used to compare the data from the monitoring stations to the reference stations. First, the entire data set from the monitoring stations (combined across all monitoring stations and all rounds) was compared to the data set from the reference stations (combined across all reference stations and all rounds) to determine if any of the chemicals in any of the monitoring stations were elevated compared to the reference stations. Next, a second statistical evaluation was performed to determine which monitoring stations had elevated chemical concentrations. This was done for all chemicals previously listed (not only that were elevated in the entire data set). Therefore, the second evaluation identified any individual stations that had elevated concentrations of certain chemicals. See Appendix H for a description of the statistical tests that were performed.

5.4.3 Results

Table 5-4 summarizes the results of the statistical comparison of the entire monitoring station data set versus the entire reference station data set for chemicals in the sediment, mussels, and juvenile lobsters. Table H-1 in Appendix H shows the results of the Shaprio-Wilk test that is used to determine whether the non-parametric or parametric ANOVA should be conducted, and Table H-2 presents the results (and backup information) of the statistical comparison between the data sets. Based on the comparison between the data sets, for the sediment, all six parameters that were evaluated (copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs) were statistically elevated in the monitoring station data set versus the reference station data set. For the mussels and juvenile lobsters, none of the chemicals were elevated.

Table 5-5 summarizes the results of the statistical comparison of the each monitoring station (combined across the rounds) versus the entire reference station data set (combined across all reference stations and across all rounds) for the chemicals in the sediment, mussels, and juvenile lobsters. Tables H-3 through H-11 in Appendix H present the backup supporting information for the statistical comparisons. As observed in Table 5-5, at least two chemicals were statistically elevated in the sediment of each monitoring station compared to the reference stations. At several stations (M01, M08, M12, M13), all of

the chemicals that were evaluated were statistically elevated in the sediment of each monitoring station compared to the reference stations. For mussels, the elevations were much more sporadic; however, M02, M05, M10 and M14 were the only stations that did not have any chemicals that were elevated compared to the reference station data. Finally, no chemicals were elevated in the juvenile lobsters.

5.4.4 Conclusions

The evaluation of the combined monitoring station data set, showed that overall levels of copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs in sediment were elevated in the monitoring stations versus the reference stations. However, only the overall levels of copper and nickel in mussels, and no chemicals in juvenile lobsters were elevated in the monitoring stations versus the reference stations.

The evaluation at each monitoring station was then conducted to determine which monitoring stations had elevated levels of chemicals. Although copper and nickel concentrations in the sediment were statistically elevated at all of the monitoring stations, the concentrations of copper and nickel only exceeded the IRGs at three and two monitoring stations, respectively. Therefore, the elevated levels of copper and nickel at the other stations were within acceptable risk levels. The PAHs were statistically elevated in the sediment at M01, M08, M10, M12 and M13. Of these stations, only the PAHs from M01, 12, and M13 exceeded the IRGs. Anthracene at M04 also exceeded the IRG, but no PAHs (including anthracene) from M04 were statistically elevated at that station. This is because the anthracene exceedance was only in one round and the detections in the other rounds were much lower.

In summary, the results of the evaluation in this section indicate that monitoring of chemical concentrations in sediment as the primary indicator of contamination is appropriate. The chemical concentrations in sediment were more often elevated in the monitoring stations versus the reference stations, compared to chemical concentrations in mussels or lobsters. Therefore, it is important to monitor the sediments to determine if the levels of chemicals in the sediment are causing an unacceptable risk. The evaluation also showed that monitoring the chemicals in mussels as a secondary indicator provides valuable information on the bioavailability of the chemicals. Many chemicals in the mussels were elevated at select monitoring stations compared to the reference stations. The evaluation indicated that the monitoring juvenile lobsters as a third indicator is not providing useful information for monitoring. None of the chemicals for which there are IRGs were detected at statistically elevated concentrations in the juvenile lobsters at the monitoring stations. Therefore, monitoring juvenile lobsters is only monitoring background levels of chemicals. The need for continued juvenile lobster sampling in future rounds is discussed in Section 7.0 of this report.

TABLE 5-1

ESTIMATED SEDIMENT CONCENTRATIONS AT M11 THAT WERE CALCULATED FROM MUSSEL BAFS AND BSAFS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Parameter	Average BAF/BSAF	Estimated SD-M11-199A	Estimated SD-M11-299A	Estimated SD-M11-100B	Estimated SD-M11-200B-AVG	Estimated SD-M11-100A	Estimated SD-M11-200A-AVG	Estimated SD-M11-101B	Estimated SD-M11-201B
Dioxins (ng/kg)									
1,2,3,4,6,7,8,9-OCDD	0.10	118.7	119.2 UJ	431.0 J	337.9	372.8 U	320.5 J	296.3 J	305.6 J
1,2,3,4,6,7,8,9-OCDF	0.28	5.9 J	50.2 U	26.1 UJ	6.3 J	129.5 U	71.2 U	35.6 UJ	49.3 UJ
1,2,3,4,6,7,8-HPCDD	0.17	27.4 U	16.5 UJ	39.1 J	33.0 J	105.8 UR	58.1 UR	28.0 J	40.3 UJ
1,2,3,4,6,7,8-HPCDF	0.09	50.0 U	74.9 U	22.0 J	17.4 J	193.5 U	106.2 U	53.1 UJ	73.6 UJ
1,2,3,4,7,8,9-HPCDF	NC	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	0.38	0.4 J	18.6 U	0.4 J	15.8 U	48.0 U	26.3 U	13.2 UJ	18.3 UJ
1,2,3,4,7,8-HXCDF	1.62	2.9 U	4.3 U	2.3 UJ	3.7 U	11.2 U	6.2 U	3.1 UJ	4.3 UJ
1,2,3,6,7,8-HXCDD	0.11	1.7 J	61.9 U	32.3 UJ	52.5 U	159.8 U	87.7 U	43.9 UJ	60.8 UJ
1,2,3,6,7,8-HXCDF	NC	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	0.08	2.2 J	85.8 U	44.8 UJ	72.8 U	221.7 U	121.7 U	60.9 UJ	84.3 UJ
1,2,3,7,8,9-HXCDF	0.94	5.0 U	7.5 U	3.9 UJ	6.4 U	19.4 U	10.6 U	5.3 UJ	7.4 UJ
1,2,3,7,8-PECDD	0.19	25.3 U	37.9 U	19.8 UJ	32.2 UJ	98.0 U	53.8 U	26.9 UJ	37.3 UJ
1,2,3,7,8-PECDF	0.32	14.9 U	22.3 U	9.3 J	3.6 J	57.6 U	31.6 U	15.8 UJ	21.9 UJ
2,3,4,6,7,8-HXCDF	2.00	2.4 U	3.5 U	1.8 UJ	3.0 U	9.1 U	5.0 U	2.5 UJ	3.5 UJ
2,3,4,7,8-PECDF	3.82	1.2 U	1.8 U	0.4 J	0.5 J	4.8 U	2.6 U	1.3 UJ	1.8 UJ
2,3,7,8-TCDD	NC	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	2.22	1.0 U	0.7 U	1.5 J	1.2	1.6 U	0.8 J	0.4 UJ	0.6 UJ
TOTAL DIOXINS	0.10	NA	NA	618.6 J	459.5	101.5 J	332.3 J	382.9 J	363.2 J
TOTAL FURANS	0.37	NA	NA	60.8 J	21.6 J	119.1 J	17.2 J	11.9 J	37.2 UJ
TOTAL HPCDD	0.11	42.5 U	25.6 U	144.3 J	98.9	164.2 U	90.1 U	43.4 J	62.5 UJ
TOTAL HPCDF	0.11	42.9 U	64.2 U	18.8 J	15.0	165.9 U	91.0 U	45.6 UJ	63.1 UJ
TOTAL HXCDD	0.31	1.6 J	22.4 U	7.8 J	6.8	57.9 U	11.9 J	15.9 UJ	22.0 UJ
TOTAL HXCDF	2.12	2.2 U	3.3 U	1.7 UJ	0.8	8.3 J	2.7 J	2.4 UJ	3.3 UJ
TOTAL PECDD	0.19	25.3 U	37.9 U	19.8 UJ	32.2 UJ	98.0 U	53.8 U	26.9 UJ	37.3 UJ
TOTAL PECDF	0.20	23.7 U	35.5 U	23.1 J	15.0 J	82.8 J	50.3 U	25.1 UJ	34.8 UJ
TOTAL TCDD	2.19	2.6 U	3.3 U	0.0 J	0.5 UJ	4.5 J	3.6 J	1.7 J	2.6 J
TOTAL TCDF	10.26	0.9 U	0.5 U	1.6 J	0.5 J	1.0 J	0.4 J	0.1 UJ	0.1 UJ
Semivolatile Organics (ug/kg)									
1,1-BIPHENYL	0.14	6.5 U	6.5 U	5.8	7.7	9.4 J	4.9 J	7.8 U	22.3 U
1-METHYLNAPHTHALENE	0.11	7.7 U	15.4 U	13.0	16.3	24.5 J	15.2 J	9.7 U	13.9 U
1-METHYLPHENANTHRENE	0.04	23.2	29.9	54.7	40.9	37.9 J	25.4 J	26.2 J	25.8 J
2,3,5-TRIMETHYLNAPHTHALENE	0.09	4.9 J	6.0 J	13.4	11.4 J	12.1 J	8.9 J	8.1 J	9.2 J
2,6-DIMETHYLNAPHTHALENE	0.09	7.5	11.1	11.2	12.1	14.5 J	9.1 J	8.7 J	12.3 J
2-METHYLNAPHTHALENE	0.11	10.5 U	21.4 U	19.7	22.9	32.5 J	20.7 J	14.9 U	21.1 U
ACENAPHTHENE	0.11	8.1	54.0	15.0 J	25.2 J	25.6 J	18.1 J	12.3 J	8.3 J
ACENAPHTHYLENE	0.06	34.4	36.9 J	47.7	52.3	63.5 J	64.4 J	35.0 J	39.0 J
ANTHRACENE	0.05	85.8	110.3	110.2	132.8	102.5 J	115.2 J	77.4 J	78.8 J
BENZO(A)ANTHRACENE	0.03	76.0	136.8 J	85.7	138.8	118.8 J	166.6 J	64.7	86.1
BENZO(A)PYRENE	0.03	46.3	71.1 J	75.8	96.1 J	76.8	101.3	68.7 U	90.4 U
BENZO(B)FLUORANTHENE	0.03	84.9	145.2 J	172.5	202.9	154.1 J	223.1 J	93.9 J	114.7 J
BENZO(E)PYRENE	0.04	55.5	83.1	99.5	123.1	149.3 J	183.7 J	81.9 J	107.4 J
BENZO(G,H,I)PERYLENE	0.02	40.2 J	66.7 J	89.8	97.2	80.2	129.9	51.4 J	62.1 J
BENZO(K)FLUORANTHENE	0.03	20.7 J	46.0	42.5	63.0	78.2 J	90.1 J	58.4	79.0

TABLE 5-1

ESTIMATED SEDIMENT CONCENTRATIONS AT M11 THAT WERE CALCULATED FROM MUSSEL BAFS AND BSAFS
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Parameter	Average BAF/BSAF	Estimated SD-M11-199A	Estimated SD-M11-299A	Estimated SD-M11-100B	Estimated SD-M11-200B-AVG	Estimated SD-M11-100A	Estimated SD-M11-200A-AVG	Estimated SD-M11-101B	Estimated SD-M11-201B
C1-CHRYSENES	0.03	60.8	98.7	95.2	117.4	106.5 J	158.7 J	61.7 J	82.7 J
C1-DIBENZOTHIOPHENES	0.05	22.4	26.8	32.4	21.3	13.2 J	12.0 J	13.2 J	12.2 J
C1-FLUORANTHENES/PYRENES	0.03	152.8	175.6	153.9	171.1	180.6	199.6	125.1	145.1
C1-FLUORENES	0.18	26.5	12.3 J	23.7	26.0	31.9 J	27.7	17.5 J	54.9
C1-NAPHTHALENES	0.11	18.3 U	37.4 U	32.9	39.6	57.8	36.4 J	24.9 U	35.5 U
C1-PHENANTHRENES/ANTHRACENES	0.05	109.8	174.4	146.3	129.3	78.5	85.5	94.4	112.4
C2-CHRYSENES	0.05	81.2	78.4	29.3	45.4 J	2.6 J	24.5 J	25.5 J	29.9 J
C2-DIBENZOTHIOPHENES	0.09	31.4	17.9	48.6	33.0 J	13.9 J	11.0 J	15.4	14.6 J
C2-FLUORENES	0.13	39.4	32.5	70.6	35.2 J	25.3 J	31.9 J	27.9	43.9
C2-NAPHTHALENES	0.08	43.8	65.8 U	32.4	41.4	77.3	47.7 J	31.3 J	31.3 J
C2-PHENANTHRENES/ANTHRACENES	0.07	77.4	91.3	149.1	108.7 J	119.1	86.1 J	59.7	56.8
C3-CHRYSENES	0.04	7.2 J	28.8 J	8.8 J	5.3 J	4.6 J	1.4 J	63.6 U	0.7 J
C3-DIBENZOTHIOPHENES	0.12	16.7	22.2	36.9	18.4 J	17.7	14.5 J	14.7	11.0 J
C3-FLUORENES	0.22	41.8	31.5	18.2	18.0 J	29.3	32.6 J	13.4 J	10.7 J
C3-NAPHTHALENES	0.09	35.7	48.1	57.8	57.4	75.8	50.0 J	29.6	31.8 J
C3-PHENANTHRENES/ANTHRACENES	0.11	44.5	42.9	86.3	91.8 J	46.3	42.1 J	26.9	34.8
C4-CHRYSENES	0.06	3.4 J	4.9 J	4.1 J	4.3 J	0.1 J	0.6 J	0.3 J	0.4 J
C4-NAPHTHALENES	0.16	21.7	25.0	7.4 J	20.4 J	40.6	27.2 J	17.4	14.9 J
C4-PHENANTHRENES/ANTHRACENES	0.14	21.0	16.8	37.8	25.1 J	22.5 J	23.6 J	10.2 J	16.1 J
CHRYSENE	0.04	103.6	134.8	137.1	187.1	154.2 J	177.4 J	161.9	193.1
DIBENZO(A,H)ANTHRACENE	0.02	6.4 J	23.1 J	19.7 J	24.0 J	20.0 J	17.6 J	6.4 J	2.6 J
DIBENZOTHIOPHENE	0.03	4.6 U	375.2 U	11.9	16.4	12.0 J	6.0 J	8.3 J	8.5 J
FLUORANTHENE	0.04	156.3	258.7	219.5	407.4	238.3	274.7	268.1	264.7
FLUORENE	0.06	13.5	17.1 J	34.3 J	57.2 J	44.8 J	30.3 J	37.1 J	45.7 J
INDENO(1,2,3-CD)PYRENE	0.02	31.4 J	62.4 J	89.7 J	93.2 J	58.7 J	94.5 J	37.4 J	28.9 J
NAPHTHALENE	0.07	27.6 U	54.0 U	41.8	57.9	78.8 J	46.1 J	27.0 U	43.8 U
PERYLENE	0.05	19.8 J	34.8 J	43.0	43.8 J	133.7 J	86.9 J	26.7	30.1
PHENANTHRENE	0.04	58.1 U	130.8 U	126.2	239.0	69.6	68.3	146.3	126.7
PYRENE	0.03	156.0	235.6	218.2	343.7	267.0	288.6	192.2	191.7
HMW PAHs	0.18	102.3	159.6	141.6	226.5	163.2	189.9	146.7	158.2
Pesticides/PCBs (ug/kg)									
1,2,3,4-TETRACHLOROBENZENE	7.47	0.01 U	0.01 U	0.02	0.03	0.01 U	0.01 J	0.02 J	0.04
1,2,4,5-TETRACHLOROBENZENE	1.09	0.26 U	0.71 U	0.53 U	0.02 J	0.16 U	0.59 U	0.31	0.54
2,4'-DDD	0.32	1.52	1.66	1.42	0.42 J	1.54 J	2.08	1.36 J	2.05
2,4'-DDE	1.15	0.03 U	0.05 U	0.14	0.10 J	0.04 J	0.11 J	0.28 J	0.90 J
2,4'-DDT	1.96	0.01 J	0.06	0.12	0.07 J	0.07	0.37	0.19	0.49 J
4,4'-DDD	0.42	2.87	3.97	1.14	1.11 J	2.16 J	1.93	1.17	2.74
4,4'-DDE	1.06	1.60	1.96	1.22	1.19	1.57	2.30	1.34	1.42
4,4'-DDT	0.41	1.19 U	2.05 U	0.47 J	0.26 J	0.83 J	0.88 J	2.67 J	0.77 J
ALDRIN	2.35	0.02 U	0.03 U	0.04	0.05	0.06 U	0.02 J	0.02 U	0.03 U
ALPHA-BHC	2.36	0.02	0.04	0.08	0.08 J	0.04 J	0.05	0.12	0.03 U
ALPHA-CHLORDANE	1.53	0.29	0.65	0.24	0.22 J	0.18 J	0.23	0.01 U	0.01 U
BETA-BHC	9.75	0.00 U	0.10	0.00 U	0.07 J	0.01 U	0.15 J	0.02	0.09
CHLORPYRIFOS	29.77	0.00 J	0.01 U	0.03 U	0.03 U	0.03 U	0.03 U	0.00 U	0.00 U

TABLE 5-1

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Parameter	Average BAF/BSAF	Estimated SD-M11-199A	Estimated SD-M11-299A	Estimated SD-M11-100B	Estimated SD-M11-200B-AVG	Estimated SD-M11-100A	Estimated SD-M11-200A-AVG	Estimated SD-M11-101B	Estimated SD-M11-201B
CIS-NONACHLOR	1.48	0.33	0.51	0.44	0.35 J	0.24 J	0.59	0.06	0.42
DELTA-BHC	7.40	0.02	0.04	0.00 U	0.00 U	0.01 U	0.01 J	0.01	0.02
DIELDRIN	2.74	0.12	0.13	0.05	0.08	0.09 J	0.13 J	0.10	0.09
ENDOSULFAN II	0.33	0.42	1.59	0.13	0.49	0.32 J	0.82	0.11 U	0.18 U
ENDRIN	2.24	0.07	0.03 J	0.04 U	0.05 U	0.14 U	0.12 U	0.02 U	0.03 U
GAMMA-BHC (LINDANE)	1.51	0.11 U	0.09 U	0.32	0.11	0.06 U	0.03 J	0.04 J	0.06 J
GAMMA-CHLORDANE	1.42	0.02 U	0.09	0.27	0.26 J	0.07 J	0.11	0.30	0.47
HEPTACHLOR	2.36	0.09	0.12	0.01 J	0.01 J	0.07 U	0.02 J	0.12	0.45
HEPTACHLOR EPOXIDE	7.74	0.00 U	0.01 U	0.00	0.01 J	0.02 U	0.01 U	0.03 U	0.05 U
HEXACHLOROBENZENE	1.89	0.03	0.04	0.07	0.06 J	0.02 J	0.05 J	0.12	0.18
MIREX	6.44	0.01 J	0.02	0.01 U	0.02 U	0.04 U	0.04 U	0.01 U	0.02 U
OXYCHLORDANE	1.82	0.08	0.21	0.02 U	0.03 U	0.07 UJ	0.06 U	0.04 U	0.06 U
PCB-101/90	1.58	2.04	3.41	1.74	1.25 J	2.04 J	5.68	1.61	3.27
PCB-105	1.46	1.43	2.84	0.52	0.44	0.97 J	2.00 J	0.77	0.89
PCB-114	NC	NA	NA	NA	NA	NA	NA	NA	NA
PCB-118	1.35	3.24	4.15	1.53	0.90 J	2.43 J	6.15	1.51	1.83
PCB-126	1.78	0.01 J	0.01 J	0.00 J	0.04 J	0.23 UJ	0.20 UJ	0.01 J	0.01 J
PCB-128	0.91	1.63	2.97	1.01	0.72 J	0.91 J	2.71	0.58	1.39
PCB-138/160	1.18	4.84	8.11	4.30	3.13	3.88 J	9.80	2.46	4.61
PCB-149/123	1.04	2.19	4.18	1.72	1.29	2.47 J	5.27	1.21	2.84
PCB-153/132	1.45	3.14 U	5.42	3.80	1.89	3.71 J	7.83	2.11	3.73
PCB-156	0.38	0.74	1.08	1.61	0.90 J	0.99 J	2.88 J	0.30 J	0.29 J
PCB-167	0.53	0.89	1.59	1.08	0.62 J	0.54 J	1.58	0.45	0.97
PCB-169	0.96	0.00 J	0.00 J	0.00 J	0.01 J	0.08 U	0.23 U	0.42 U	0.69 U
PCB-170/190	0.07	2.38 U	4.62 U	7.03 U	4.98 U	1.96 U	3.40 U	1.23 U	3.77 U
PCB-18/17	2.30	0.38	0.52	0.23	0.42 J	0.47 UJ	0.41 U	0.41 J	0.21 J
PCB-180	1.11	1.51 U	2.06 U	2.49	1.52	2.10 J	1.67 J	1.12 J	1.22 J
PCB-187	1.25	1.28 U	2.00 U	0.81	0.50	1.27 J	1.65	0.72	1.07
PCB-189	0.23	0.50 U	0.76 U	0.61	0.67 U	1.74 U	1.57 U	0.10 J	0.19 J
PCB-195/208	0.16	0.59 U	0.91 U	3.23	0.49 J	2.08 U	1.80 U	0.08 U	0.13 U
PCB-201/157/173	0.81	0.21	0.39	0.73	0.64	0.10 J	0.34	0.14 J	0.27 UJ
PCB-206	0.10	0.96 U	1.47 U	0.11 J	1.28 U	3.37 U	3.09 U	0.54 U	0.85 U
PCB-209	0.23	0.56 U	0.86 U	0.44 J	0.30 J	1.94 U	1.74 U	0.16 U	0.25 U
PCB-28	0.88	0.26	0.52	0.65	0.87	0.31 J	0.26 J	0.19 J	0.17 J
PCB-44	2.99	0.13	0.15	0.31	0.32	0.09 U	0.18 U	0.07	0.26
PCB-52	1.83	0.37	0.77	0.63	0.56 J	0.45 U	0.79	0.19	0.12 U
PCB-66	0.85	0.43	0.44	0.09 J	0.33	0.46 J	0.56 J	0.06 U	0.10 U
PCB-77	2.94	0.01 J	0.01 J	0.02 J	0.05 U	0.09 J	0.11 J	0.00 J	0.00 J
PCB-8/5	3.44	0.04 J	0.03 J	0.13	0.09 J	0.27 J	0.33 J	0.11 U	0.06 U
PCB-81	2.10	0.01 J	0.01 J	0.04 J	0.03 J	0.19 U	0.10 J	0.00 J	0.31 U
PENTACHLOROANISOLE	2.61	0.04	0.04	0.12	0.10	0.14 U	0.14 U	0.07 U	0.15
PENTACHLOROBENZENE	7.31	0.17	0.15	0.01 U	0.04	0.04 U	0.07 U	0.02	0.03
TRANS-NONACHLOR	3.04	0.22	0.18	0.13	0.11	0.11 J	0.12	0.08	0.19
Inorganics (mg/kg)									

TABLE 5-1

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Parameter	Average BAF/BSAF	Estimated SD-M11-199A	Estimated SD-M11-299A	Estimated SD-M11-100B	Estimated SD-M11-200B-AVG	Estimated SD-M11-100A	Estimated SD-M11-200A-AVG	Estimated SD-M11-101B	Estimated SD-M11-201B
ALUMINUM	0.01	25461 J	27653 J	44177 J	46201 J	29339	41564	45464 J	27053 J
ARSENIC	0.69	11.7 J	10.7 J	9.8	10.2	8.5	9.0	13.5	12.7
CADMIUM	5.58	0.4 J	0.4 J	0.3	0.3	0.4	0.3	0.2	0.3
CHROMIUM	0.03	38.2	47.1	47.1	67.6	83.8	78.8	95.6	107.6
COPPER	0.19	43.5 J	129.5 J	44.1	46.2	37.0	42.1	47.6	50.4
IRON	0.02	10394 J	14808 J	21074	21453	14239	18867	19108	14798
LEAD	0.07	206.3 J	2683.8 J	102.5	300.1	149.7 J	461.9 J	106.7	489.8
MANGANESE	0.04	309.4	290.3	512.1	461.4	312.2	416.2	433.7	404.4
MERCURY	1.42	0.1	0.3	0.1	0.2	0.2	0.2	0.1	0.4
NICKEL	0.06	17.9	32.5	29.2	28.4	64.3 U	32.2 U	24.8 U	26.9 U
SILVER	1.75	0.029 J	0.011 J	0.029 J	0.017 J	0.372 U	0.189 U	0.040 J	0.034 U
ZINC	0.21	460.5 J	589.6 J	570.1	567.6	359.6	550.6	445.2	423.7

Footnotes:
-NA - Not applicable
-NC - Not calculated because parameter was not detected in any of the mussel samples from the monitoring stations.
-Mean Monitoring Station BAF/BSAF for each parameter were used (see Table 4-7).
-Estimated sediment concentrations for the organic chemicals were calculated by dividing the mussel concentration (Appendix B) by the mean BSAF for the monitoring stations (see Table 4-7) . and multiplying by the average percent total organic carbon value across all the monitoring stations (TOC = 1.7 percent).
-Estimated sediment concentrations for the inorganic chemicals were calculated by dividing the mussel concentration (Appendix B) by the mean mussel BAF for the monitoring stations (Table 4-7).
-Duplicates samples were averaged in this table.
-Normalized concentrations were used for organics chemicals; non-normalized concentrations were used for inorganic chemicals.

TABLE 5-2

COMPARISON OF ESTIMATED SEDIMENT CONCENTRATIONS AT M11 TO IRG
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Parameter	IRG[1] dry weight	Estimated SD-M11-199A	Estimated SD-M11-299A	Estimated SD-M11-100B	Estimated SD-M11-200B	Estimated SD-M11-100A	Estimated SD-M11-200A	Estimated SD-M11-101B	Estimated SD-M11-201B
ACENAPHTHYLENE (ug/kg)	210	34.4	36.9	47.7	52.3	63.5	64.4	35.0	39.0
ANTHRACENE (ug/kg)	1236	86	110	110	133	103	115	77.4	78.8
FLUORENE(ug/kg)	500	13.5	17.1	34.3	57.2	44.8	30.3	37.1	45.7
HMW PAHs (ug/kg)	13057	102	160	142	227	163	190	147	158
COPPER (mg/kg)	486	43.5	129.5	44.1	46.2	37.0	42.1	47.6	50.4
NICKEL (mg/kg)	124	17.9	32.5	29.2	28.4	ND	ND	ND	ND

Footnotes:
ND - Not Detected in the mussel sample.
Estimated sediment concentrations were calculated as presented in Table 5-1.
1 - Source of the IRGs is TTNUS (November 2001).

TABLE 5-3

OUTLIER ANALYSIS FOR THE REFERENCE STATIONS
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	Sediment (Discordance Test) [1]				
Parameter	Distribution	Value	Test Result	Sample with Statistical Outlier	Sample Status
Copper	Lognormal	3.62	Pass	---	---
Nickel	**Normal**	**38.2**	**Outlier**	**OU4-SD-R03-100B**	**Retained[2]**
Acenaphthylene	Lognormal	0.438	Pass	---	---
Anthracene	Lognormal	0.815	Pass	---	---
Fluorene	Lognormal	-0.511	Pass	---	---
HMW PAH's	Lognormal	3.15	Pass	---	---

	Mussel (Disocordance Test) [1]				
Parameter	Distribution	Value	Test Result	Sample with Statistical Outlier	Sample Status
Copper	**Lognormal**	**3.50**	**Outlier**	**OU4-MU-R04-400A**	**Retained [2]**
Nickel	Lognormal	1.18	Pass	---	---
Acenaphthylene	Normal	26.4	Pass	---	---
Anthracene	Normal	50.8	Pass	---	---
Fluorene	Normal	20.2	Pass	---	---
HMW PAH's	Normal	232	Pass	---	---

	Mussel (Rosner's Test) [1]				
Parameter	Distribution	Value	Test Result	Sample with Statistical Outlier	Sample Status
Copper	Lognormal	3.50	NA	NA	NA
Nickel	Lognormal	1.18	Pass	---	---
Acenaphthylene	Normal	26.4	Pass	---	---
Anthracene	Normal	50.8	Pass	---	---
Fluorene	Normal	20.2	Pass	---	---
HMW PAH's	Normal	232	Pass	---	---

	Lobster (Rosner's Test) [1]				
Parameter	Distribution	Value	Test Result	Sample with Statistical Outlier	Sample Status
Copper	Normal	75.1	Pass	---	---
Nickel	Normal	1.06	Pass	---	---
Acenaphthylene	Lognormal	0.531	Pass	---	---
Anthracene	Lognormal	3.23	Pass	---	---
Fluorene	Lognormal	2.22	Pass	---	---
HMW PAH's	Lognormal	6.45	Pass	---	---

NA - The values were borderline so no determination could be made for this parameter.
Bolded parameters are statistical outliers.
This outlier analysis was conducted after the reference mussel sample (OU4-MU-R02-400A) was removed from the dataset as discussed in Section 5.2 of the report.
1 - The statistical tests are described in Appendix H.
2 - This samples was retained in the dataset.

TABLE 5-4

COMPARISON OF CHEMICAL CONCENTRATIONS BETWEEN THE MONITORING STATIONS AND THE REFERENCE STATIONS BASELINE INTERIM OFFSHORE MONITORING REPORT PORSTMOUTH NAVAL SHIPYARD, KITTERY MAINE

PARAMETERS	Monitoring Stations above Reference Stations?[1]
Sediment	
COPPER	YES
NICKEL	YES
ACENAPHTHYLENE	YES
ANTHRACENE	YES
FLUORENE	YES
HMW PAHs	YES
Mussel	
COPPER	NO
NICKEL	NO
ACENAPHTHYLENE	NO
ANTHRACENE	NO
FLUORENE	NO
HMW PAHs	NO
Juvenile Lobster	
COPPER	NO
NICKEL	NO
ACENAPHTHYLENE	NO
ANTHRACENE	NO
FLUORENE	NO
HMW PAHs	NO

Notes:
Results came from statistical tests in Appendix H.
1 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples.

TABLE 5-5

COMPARISON OF SEDIMENT, MUSSEL, AND JUVENILE LOBSTER CONCENTRATIONS AT EACH MONITORING STATION TO THE REFERENCE STATIONS
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PARAMETERS	Monitoring Stations above Reference Stations?(1)		
	Sediment	Mussel	Juvenile Lobster
Monitoring Station 01			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	YES	YES	NO
ANTHRACENE	YES	NO	NO
FLUORENE	YES	NO	NO
HMW PAHs	YES	YES	NO
Monitoring Station 02			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	NO	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO
Monitoring Station 03			
COPPER	YES	YES	NO
NICKEL	YES	YES	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	NO	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO
Monitoring Station 04			
COPPER	YES	YES	NO
NICKEL	YES	YES	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	NO	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO
Monitoring Station 05			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	NO	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO
Monitoring Station 06			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	YES	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO

TABLE 5-5

COMPARISON OF SEDIMENT, MUSSEL, AND JUVENILE LOBSTER CONCENTRATIONS AT EACH MONITORING STATION TO THE REFERENCE STATIONS
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PARAMETERS	Monitoring Stations above Reference Stations?[1]		
	Sediment	Mussel	Juvenile Lobster
Monitoring Station 07			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	NO	YES	NO
ANTHRACENE	NO	YES	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO
Monitoring Station 08			
COPPER	YES	NO	NO
NICKEL	YES	YES	NO
ACENAPHTHYLENE	YES	NO	NO
ANTHRACENE	YES	NO	NO
FLUORENE	YES	NO	NO
HMW PAHs	YES	NO	NO
Monitoring Station 09			
COPPER	YES	NO	NO
NICKEL	YES	YES	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	NO	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO
Monitoring Station 10			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	YES	NO	NO
FLUORENE	YES	NO	NO
HMW PAHs	YES	NO	NO
Monitoring Station 11			
COPPER	YES	YES	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	NO	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO
Monitoring Station 12			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	YES	YES	NO
ANTHRACENE	YES	YES	NO
FLUORENE	YES	YES	NO
HMW PAHs	YES	YES	NO

TABLE 5-5

COMPARISON OF SEDIMENT, MUSSEL, AND JUVENILE LOBSTER CONCENTRATIONS AT EACH MONITORING STATION TO THE REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORSTMOUTH NAVAL SHIPYARD, KITTERY MAINE
PAGE 3 OF 3

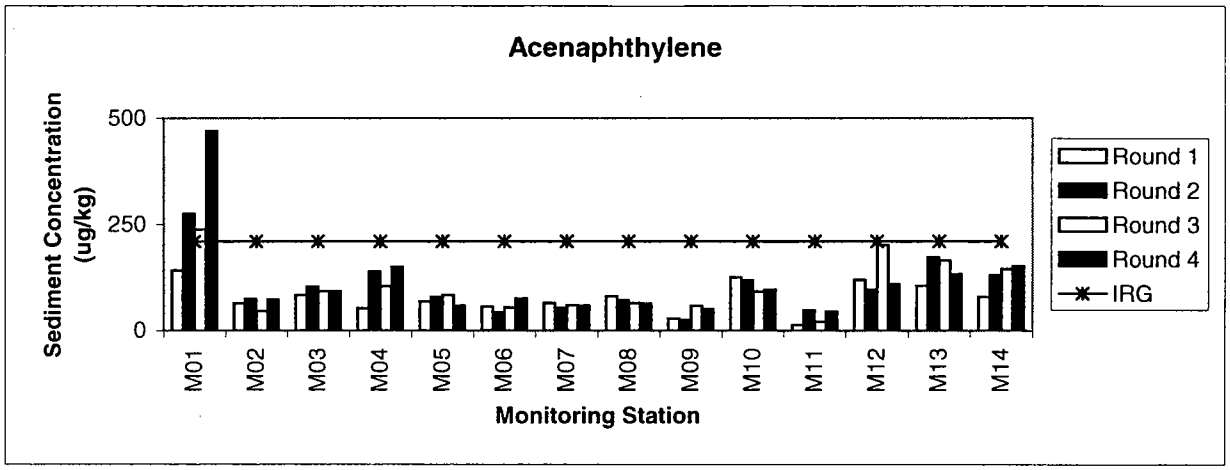
PARAMETERS	Monitoring Stations above Reference Stations?(1)		
	Sediment	Mussel	Juvenile Lobster
Monitoring Station 13			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	YES	YES	NO
ANTHRACENE	YES	YES	NO
FLUORENE	YES	YES	NO
HMW PAHs	YES	YES	NO
Monitoring Station 14			
COPPER	YES	NO	NO
NICKEL	YES	NO	NO
ACENAPHTHYLENE	NO	NO	NO
ANTHRACENE	NO	NO	NO
FLUORENE	NO	NO	NO
HMW PAHs	NO	NO	NO

Notes:
Results came from statistical tests in Appendix H.

1 - The result in these columns indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples.

FIGURE 5-1

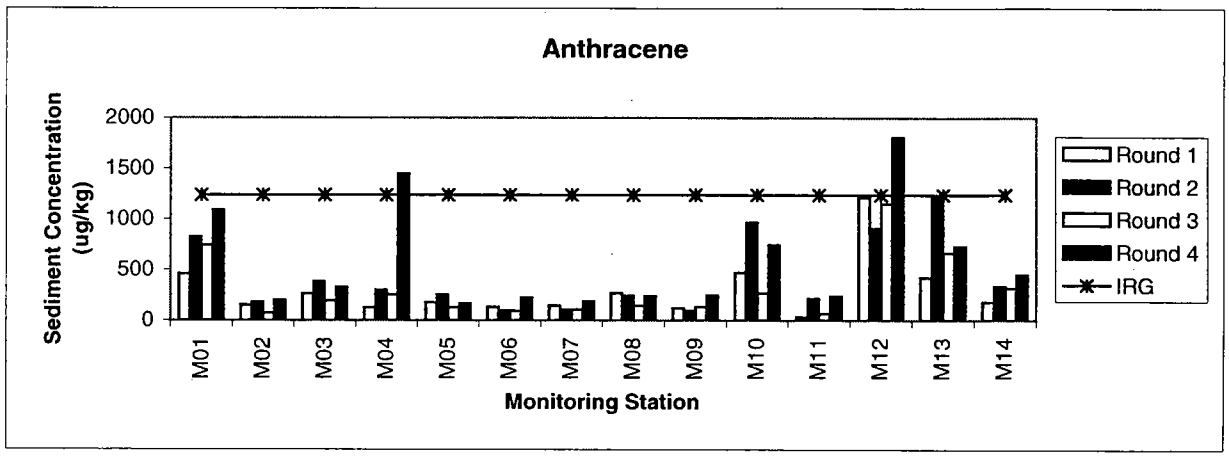
**ACENAPHTHYLENE SEDIMENT CONCENTRATIONS COMPARED TO IRG
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**



- The bars for each station are in order from Rounds 1 through 4.
- IRG - Interim Remediation Goal
- M - Monitoring Station
- Monitoring Station values were averaged for all locations within each monitoring station
- The values are not normalized

FIGURE 5-2

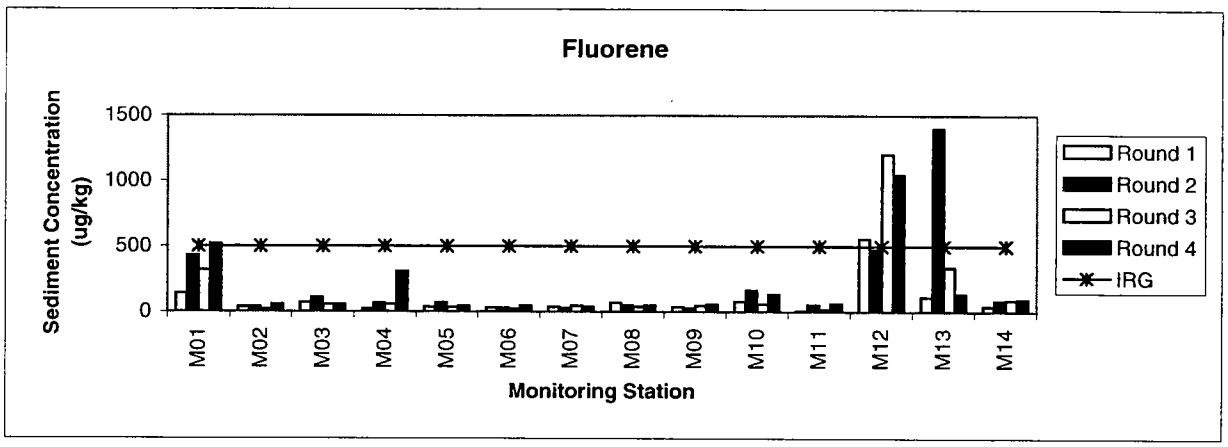
**ANTHRACENE SEDIMENT CONCENTRATIONS COMPARED TO IRG
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**



- The bars for each station are in order from Rounds 1 through 4.
- IRG - Interim Remediation Goal
- M - Monitoring Station
- Monitoring Station values were averaged for all locations within each monitoring station
- The values are not normalized

FIGURE 5-3

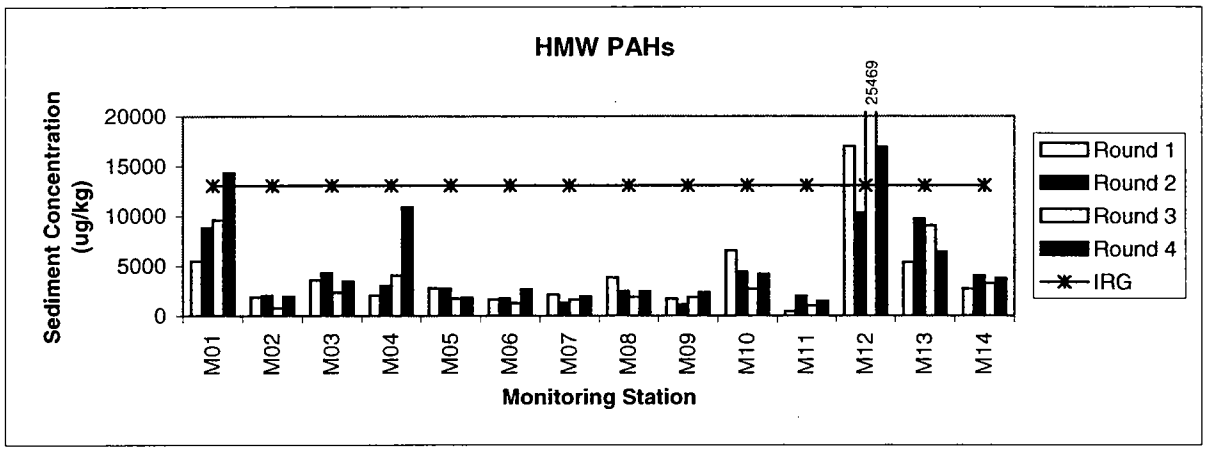
**FLUORENE SEDIMENT CONCENTRATIONS COMPARED TO IRG
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**



- The bars for each station are in order from Rounds 1 through 4.
- IRG - Interim Remediation Goal
- M - Monitoring Station
- Monitoring Station values were averaged for all locations within each monitoring station
- The values are not normalized

FIGURE 5-4

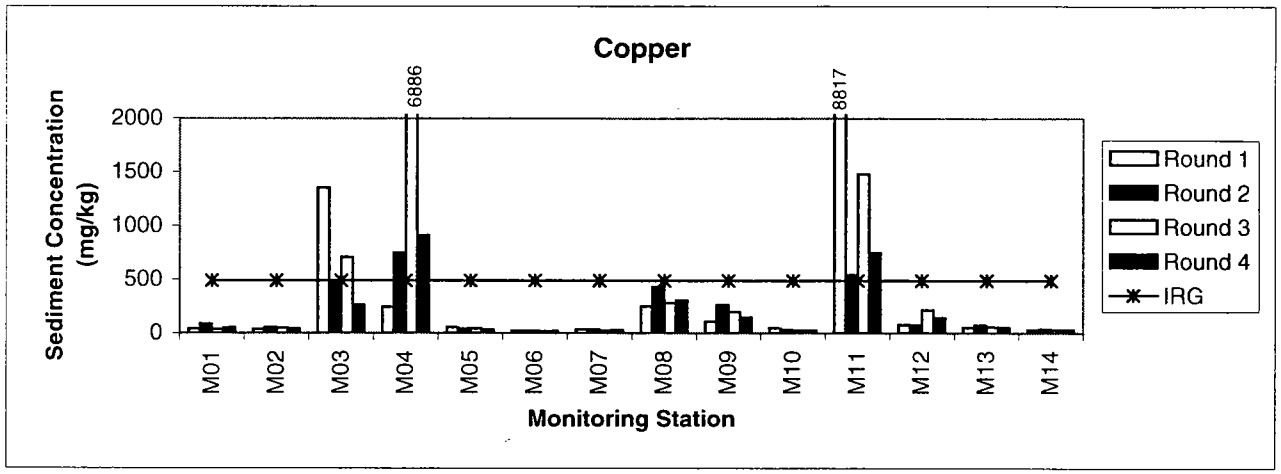
HMW PAH SEDIMENT CONCENTRATIONS COMPARED TO IRG
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The bars for each station are in order from Rounds 1 through 4.
- IRG - Interim Remediation Goal
- M - Monitoring Station
- Monitoring Station values were averaged for all locations within each monitoring station
- The values are not normalized

FIGURE 5-5

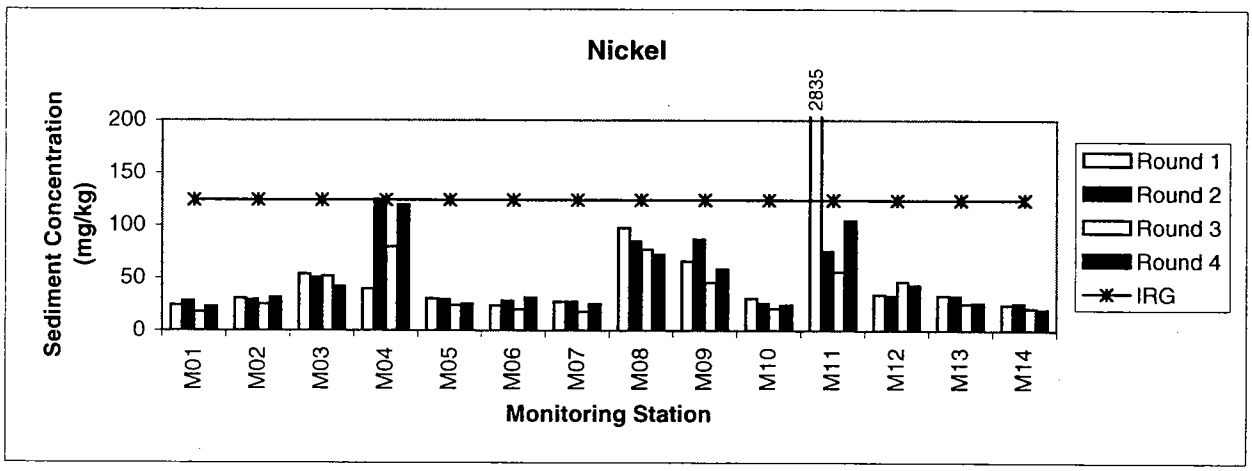
**COPPER SEDIMENT CONCENTRATIONS COMPARED TO IRG
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**



- The bars for each station are in order from Rounds 1 through 4.
- IRG - Interim Remediation Goal
- M - Monitoring Station
- Monitoring Station values were averaged for all locations within each monitoring station
- The values are not normalized

FIGURE 5-6

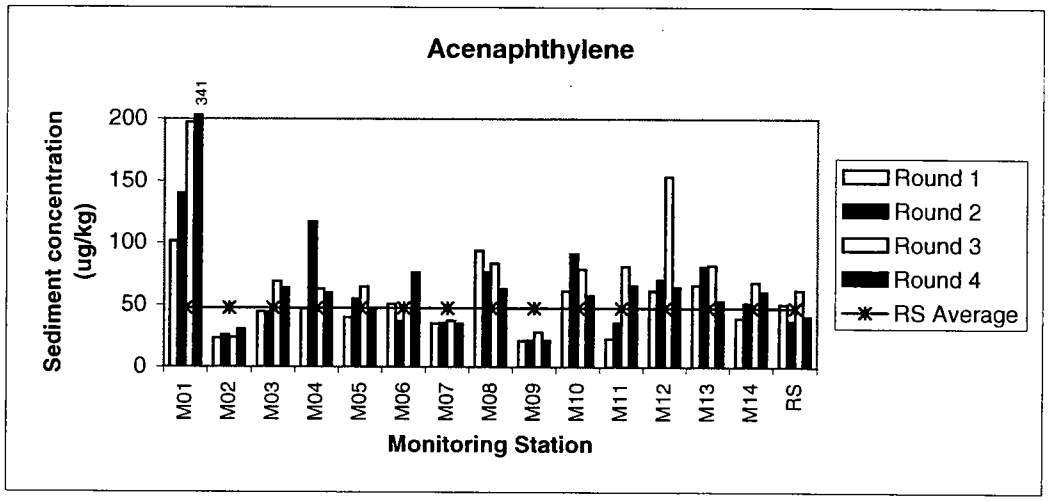
**NICKEL SEDIMENT CONCENTRATIONS COMPARED TO IRG
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

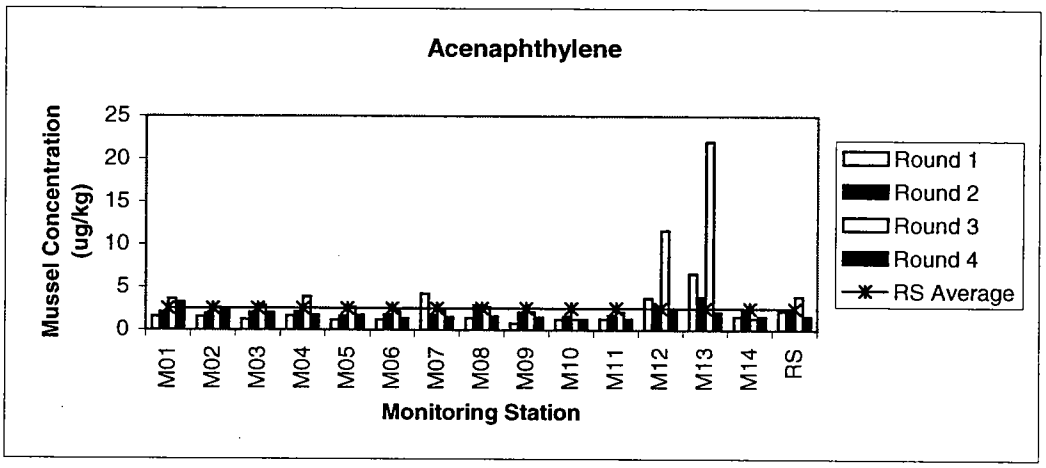


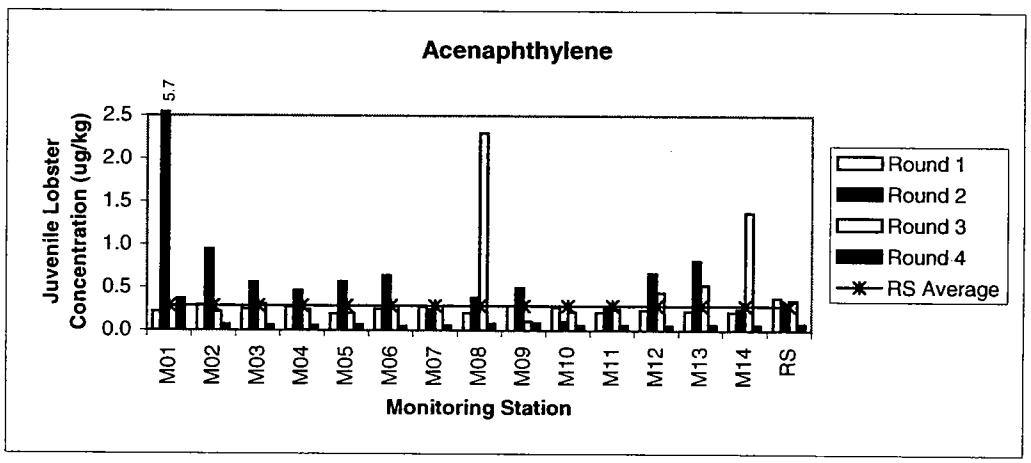
- The bars for each station are in order from Rounds 1 through 4.
- IRG - Interim Remediation Goal
- M - Monitoring Station
- Monitoring Station values were averaged for all locations within each monitoring station
- The values are not normalized

FIGURE 5-7

NORMALIZED SEDIMENT, MUSSEL, AND JUVENILE LOBSTER MONITORING STATION CONCENTRATIONS FOR ROUNDS 1 THROUGH 4 VERSUS AVERAGE REFERENCE CONCENTRATION - ACENAPTHYLENE BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



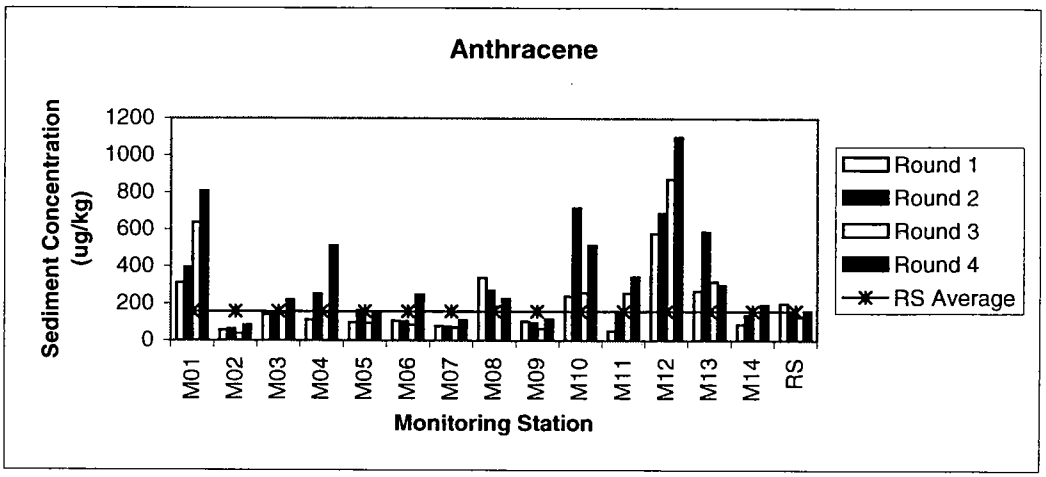


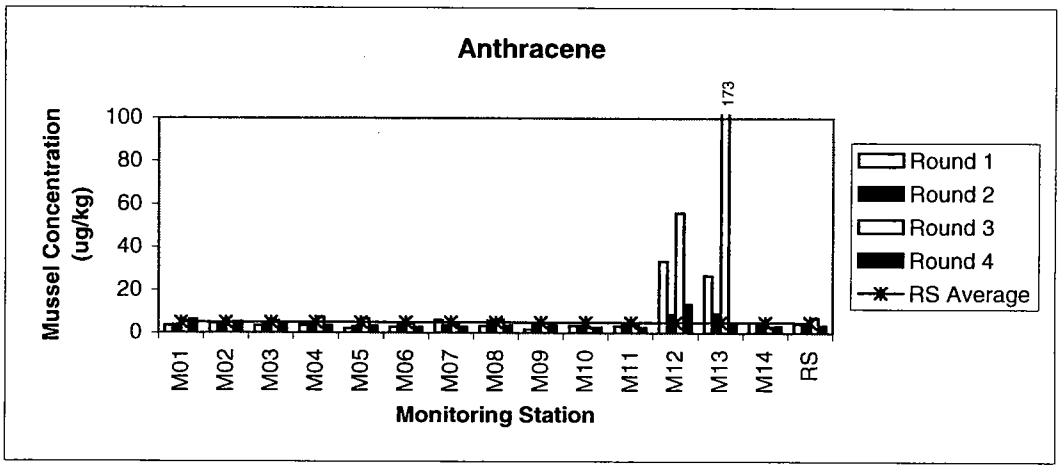


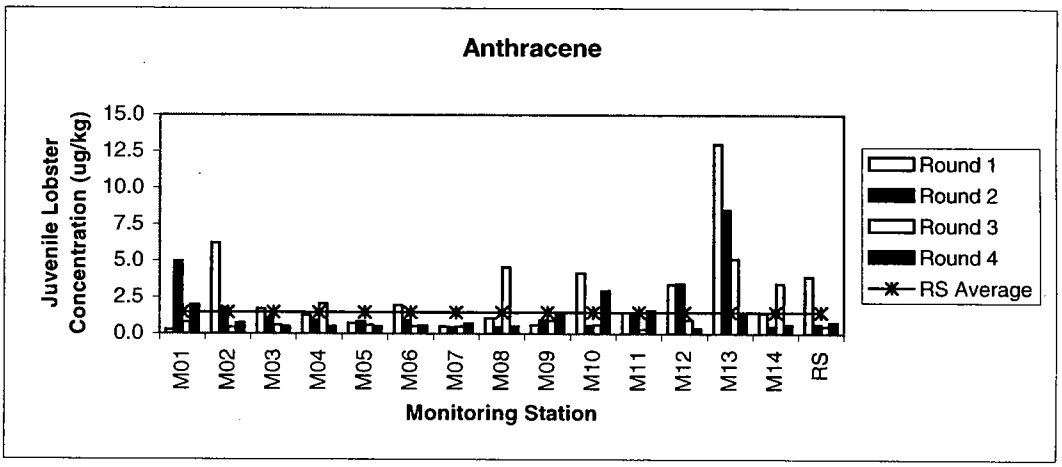
- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; RS - Reference Station
- Normalized concentrations were determined by dividing sediment concentrations by %TOC and tissue concentrations by %lipid.
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within all four reference stations

FIGURE 5-8

NORMALIZED SEDIMENT, MUSSEL, AND JUVENILE LOBSTER MONITORING STATION CONCENTRATIONS FOR ROUNDS 1 THROUGH 4 VERSUS AVERAGE REFERENCE CONCENTRATION - ANTHRACENE BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



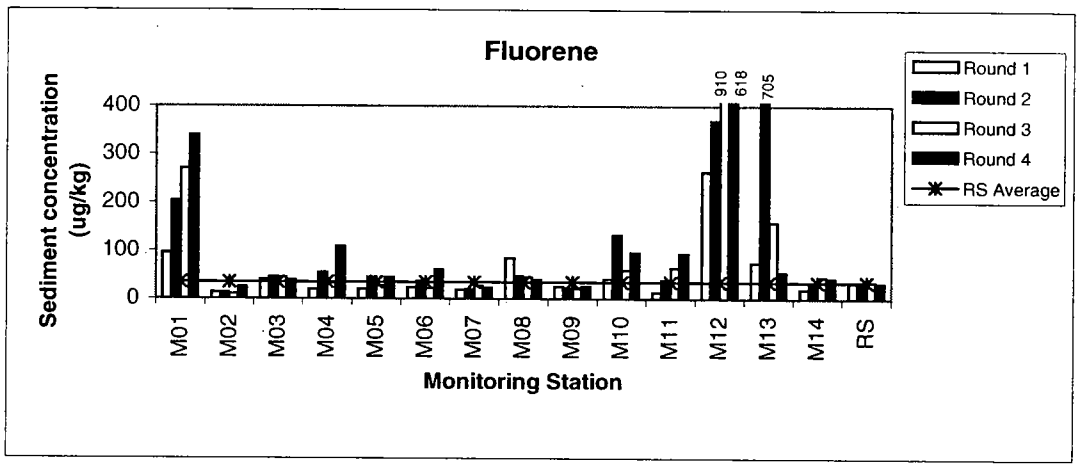


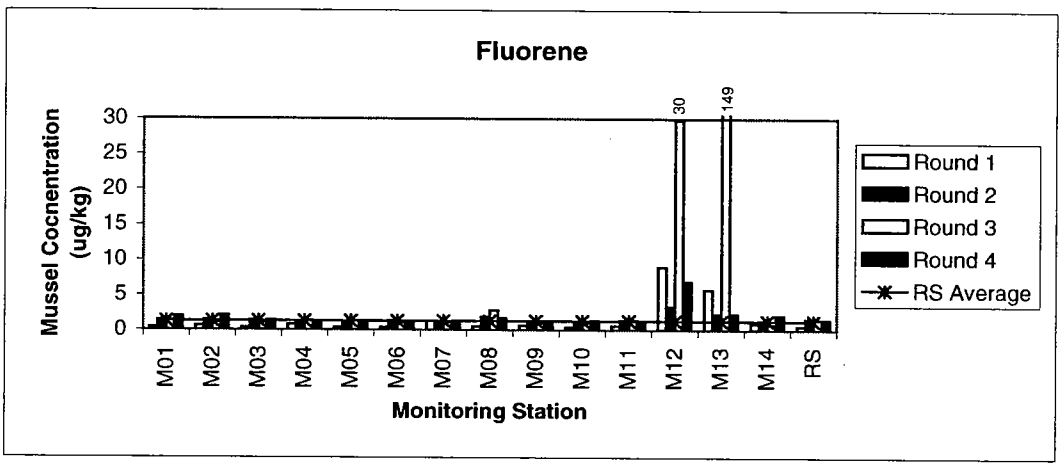


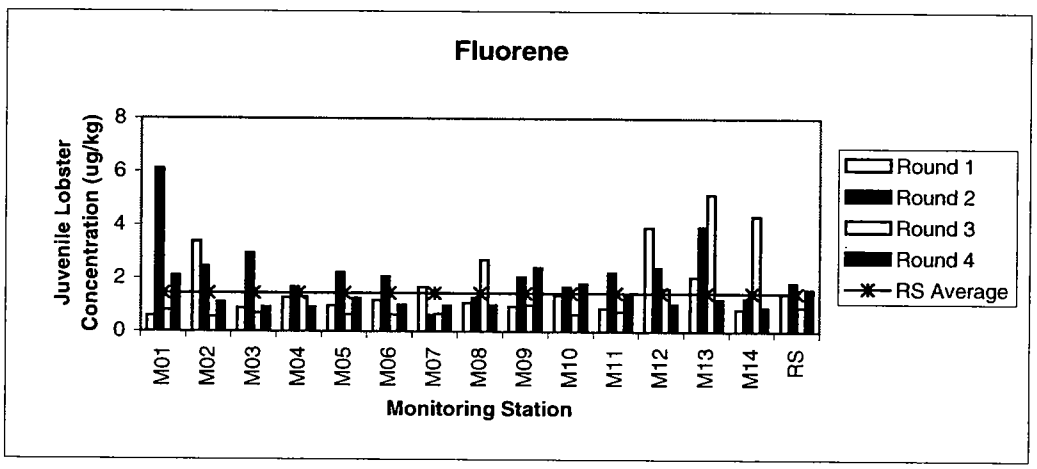
- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; RS - Reference Station
- Normalized concentrations were determined by dividing sediment concentrations by %TOC and tissue concentrations by %lipid.
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within all four reference stations

FIGURE 5-9

NORMALIZED SEDIMENT, MUSSEL, AND JUVENILE LOBSTER MONITORING STATION CONCENTRATIONS FOR ROUNDS 1 THROUGH 4 VERSUS AVERAGE REFERENCE CONCENTRATION - FLUORENE BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



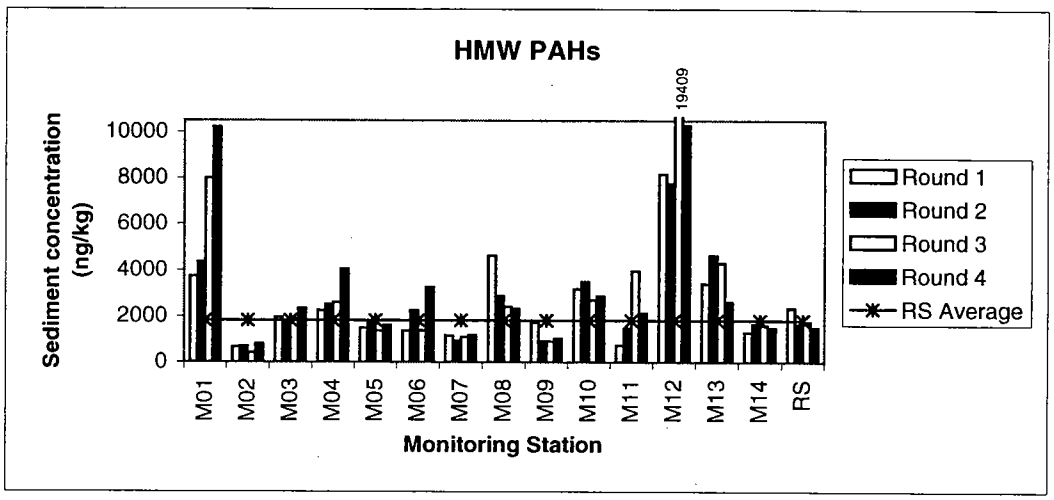


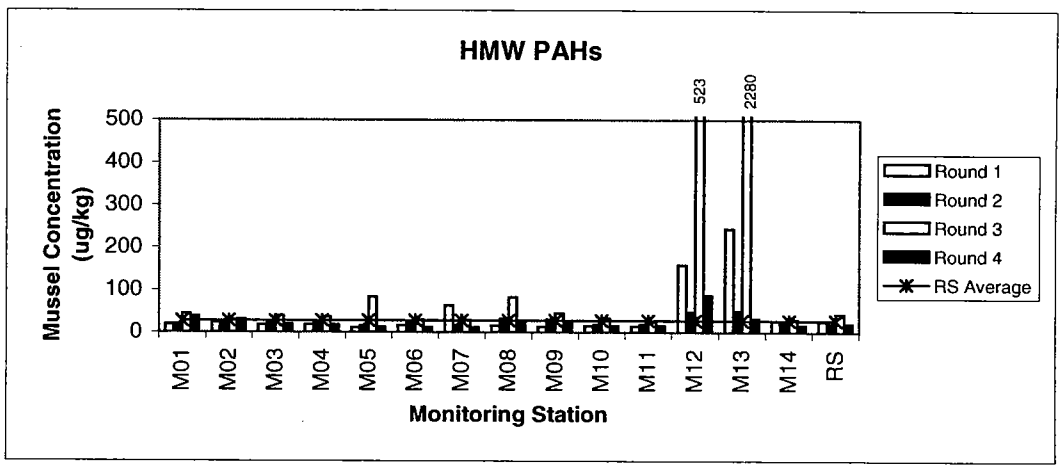


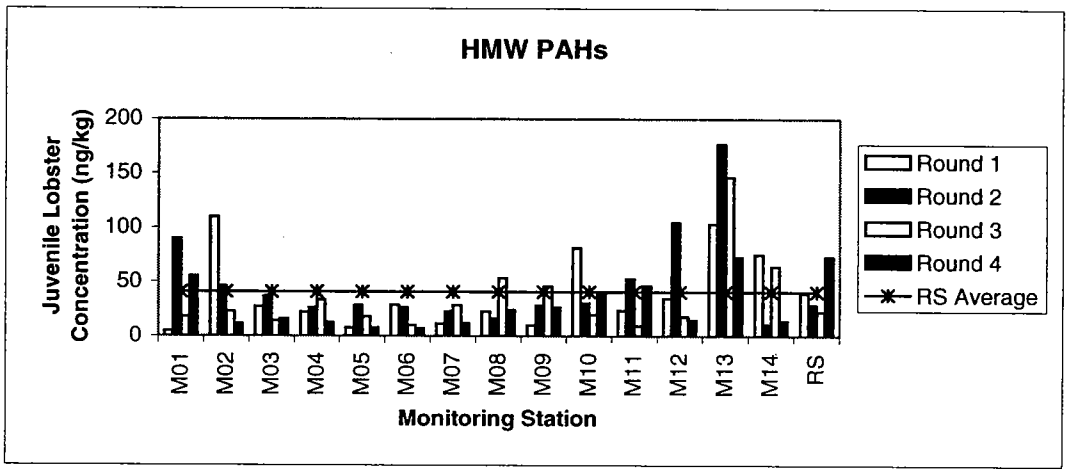
- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; RS - Reference Station
- Normalized concentrations were determined by dividing sediment concentrations by %TOC and tissue concentrations by %lipid.
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within all four reference stations

FIGURE 5-10

NORMALIZED SEDIMENT, MUSSEL, AND JUVENILE LOBSTER MONITORING STATION CONCENTRATIONS FOR ROUNDS 1 THROUGH 4 VERSUS AVERAGE REFERENCE CONCENTRATION - HMW PAHS BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



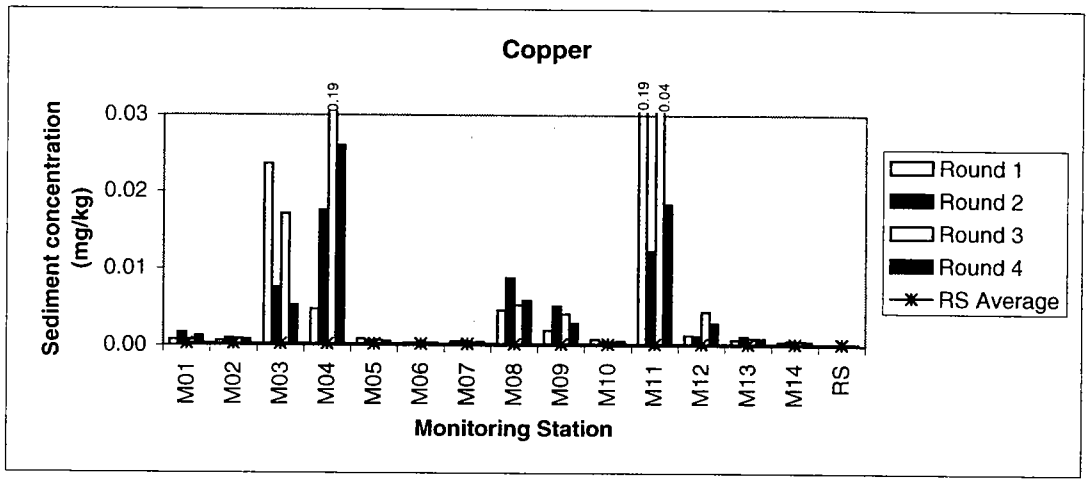


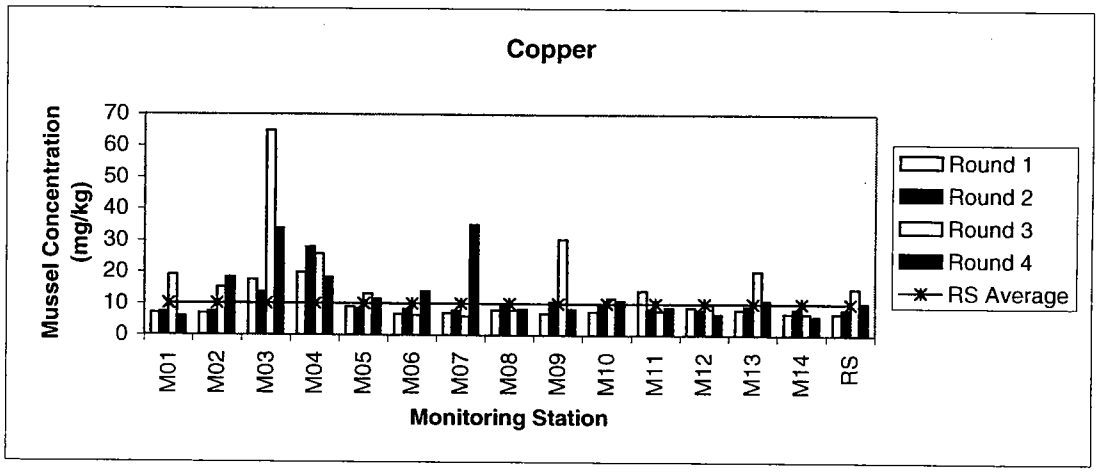


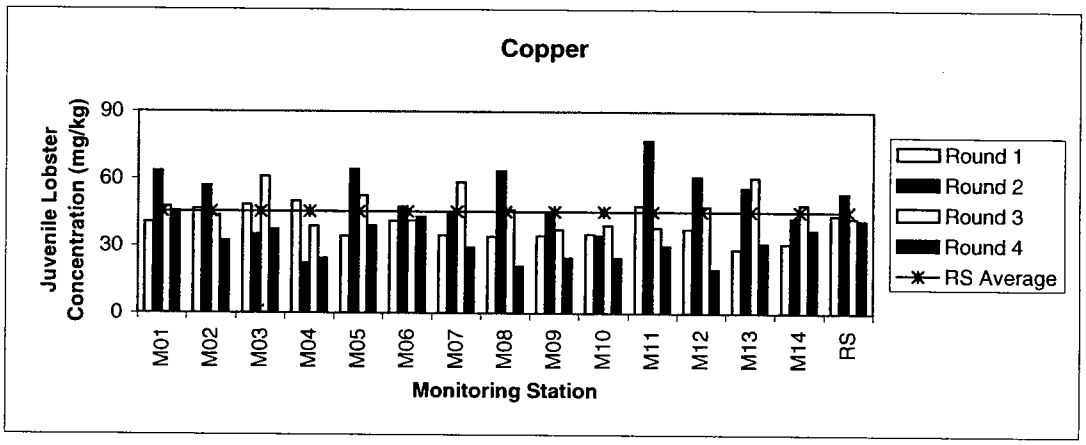
- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; RS - Reference Station
- Normalized concentrations were determined by dividing sediment concentrations by %TOC and tissue concentrations by %lipid.
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within all four reference stations

FIGURE 5-11

NORMALIZED SEDIMENT AND NON-NORMALIZED MUSSEL AND JUVENILE LOBSTER MONITORING STATION CONCENTRATIONS FOR ROUNDS 1 THROUGH 4 VERSUS AVERAGE REFERENCE CONCENTRATION - COPPER BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



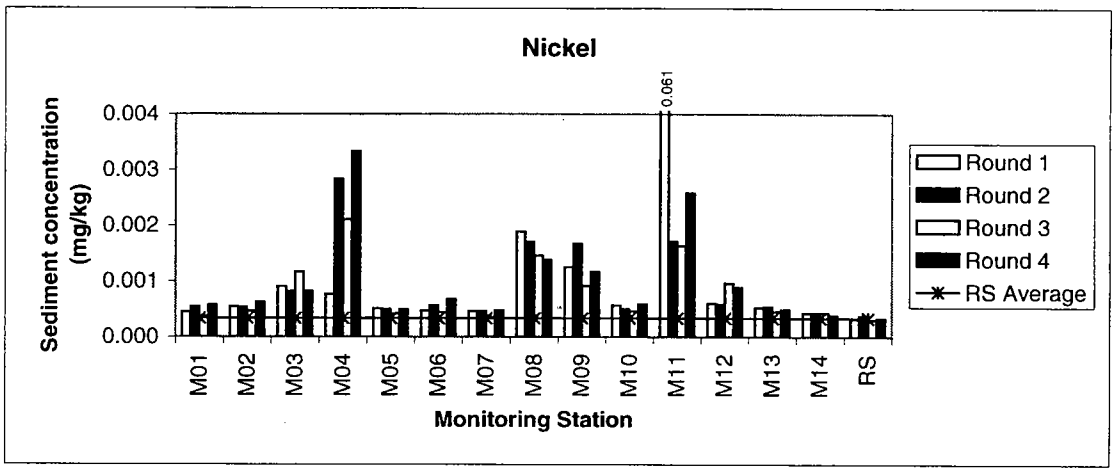


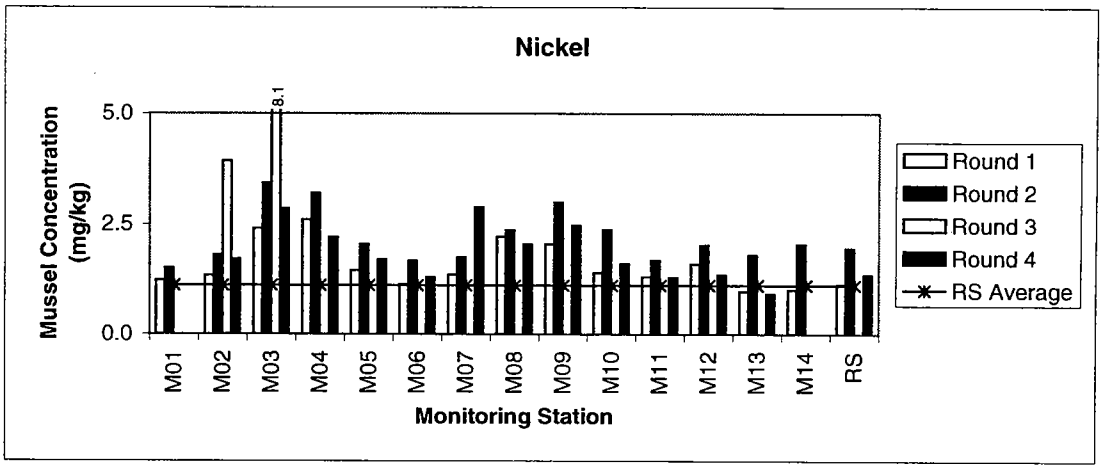


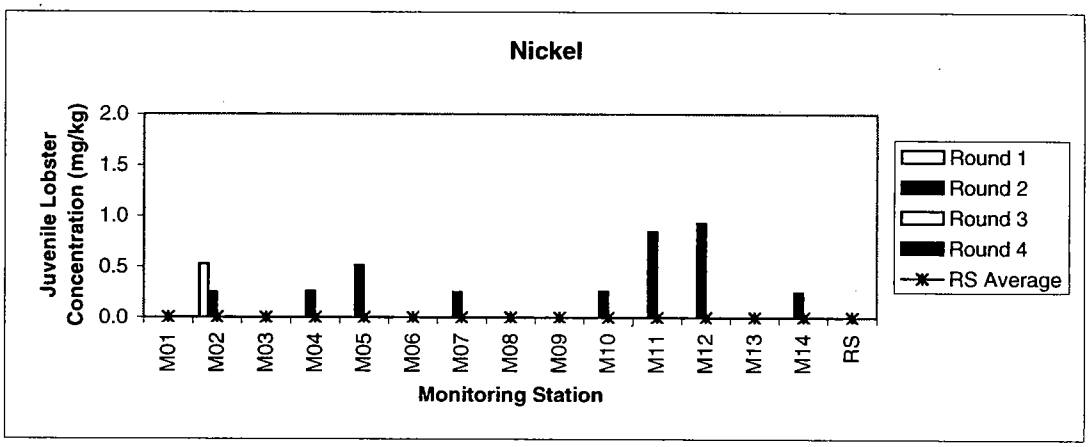
- The bars for each station are in order of Rounds 1 through 4
- M - Monitoring Station; RS - Reference Station
- Normalized concentrations were determined by dividing sediment concentrations by aluminum concentrations. Tissue concentrations were not normalized.
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within all four reference stations

FIGURE 5-12

NORMALIZED SEDIMENT AND NON-NORMALIZED MUSSEL AND JUVENILE LOBSTER MONITORING STATION CONCENTRATIONS FOR ROUNDS 1 THROUGH 4 VERSUS AVERAGE REFERENCE CONCENTRATION - NICKEL
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE







- The bars for each station are in order of Rounds 1 through 4; RS - Reference Stations
- M - Monitoring Station; RS - Reference Station
- For juvenile lobsters, if all concentrations at a station were non-detected for a sampling round, a value of zero was assigned to that particular station.
- Normalized concentrations were determined by dividing sediment concentrations by aluminum concentrations. Tissue concentrations were not normalized.
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within all four reference stations

6.0 RECOMMENDATION FOR PROPOSED SAMPLING SEASON

6.1 OBJECTIVE

The objective of this section of the baseline report is to identify the appropriate season for monitoring in subsequent rounds of the monitoring program. Samples were collected twice a year during the first four rounds of the interim offshore monitoring program. Two sets of samples were collected in early May (Rounds 2 and 4) and two rounds were collected in late August or early September (Rounds 1 and 3). Only one set of samples per year will be collected in subsequent rounds of the monitoring program. As presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999), the following evaluation was conducted to determine the appropriate season for monitoring:

- Determine whether there is a seasonal variation in the acid volatile sulfide (AVS) and simultaneously extracted metals (SEM) data from the first four rounds of the monitoring program. Also, use the results of the sediment data collected in 1996 - 1997 to further support this evaluation.

- Consider the magnitude and number of SEM-AVS concentrations that are greater than 5 µmol/g.

- Consider the availability and visibility of biota and habitat during the season, the peak biological productivity, and prevalence of sensitive stages of marine life such as larval and/or juvenile forms, and logistical constraints from weather and daylight.

During the first four rounds of the monitoring program, AVS samples were collected from 0 to 10 cm and 0 to 2 cm at each sediment location. This was done because sediment in the 0 to 2 cm range may be more oxygenated and therefore may have lower AVS concentrations than sediment from 0 to 10 cm. AVS samples collected in the 0 to 10 cm range may result in potential overestimation of the bioavailability of metals in the sediment, because the sediment may become oxygenated during homogenization of the sediment sample, which would result in lower AVS concentrations. This section of the baseline report includes an evaluation of the two sets of AVS data to determine whether there are any impacts to the monitoring program.

6.2 BACKGROUND

AVS was identified as a significant factor controlling the bioavailability of trace metals in sediment. Analyses of SEM and AVS have been proposed to account for the relative bioavailability of trace metals in anaerobic sediments (DiToro et al, 1990). In laboratory experiments, AVS has been shown to control the pore water concentrations and bioavailability of cadmium and nickel (DiToro et al., 1990; Di Toro et

al., 1992). From these studies, it was concluded that divalent metals in sediments would not be predicted to cause toxicity or bioaccumulation when the SEM concentrations are lower than the AVS concentrations. Criteria based on SEM are expressed on a molar basis for summed concentrations of cadmium, copper, nickel, lead, and zinc normalized to molar concentrations of AVS. The SEM minus AVS concentrations were intended to predict an absence of toxicity attributable to metals (Ankley et al., 1996; Hansen et al., 1996). Hansen et al. (1996) concluded that this approach was very useful when identifying sediments of concern. Additionally, Berry et al. (1996) concluded that, by normalizing AVS data, toxicity predictions involving sediments contaminated with cadmium, copper, nickel, lead, or zinc can be made across a wide range of sediment types.

AVS concentrations may vary with depth and time of year. Data from marine sediments collected in Rhode Island indicate that AVS concentrations increase as depth increases (Boothman and Helmstetter, 1992). This study also concluded that seasonal variation exists; subsurface maxima in summer are generally higher and occur closer to the surface than in winter (Boothman and Helmstetter, 1992). AVS is mediated by sulfate-reducing bacteria that convert sulfate to sulfide. At low temperatures, the bacteria do not produce as much sulfide. Based on the variability of AVS concentration, it is possible to have variability in trace metal bioavailability. For example, trace metals may be bound to sulfide during periods of high AVS concentration and may be bioavailable during periods of low AVS concentration.

The selection of 5 µmol/g as the criteria for the SEM-AVS value is presented in USEPA (September 1997) and in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

6.3 RESULTS/DATA INTERPRETATION

6.3.1 AVS and SEM Evaluation

As part of this evaluation, several sets of tables and figures were generated to make the trends in the data easier to observe. The following paragraphs summarize the observations from the tables and figures.

Figure 6-1 presents a series of graphs that have the 0 to 10 cm and 0 to 2 cm AVS concentrations plotted for each round at each station. The y-axis for all the plots (except M10 and M13) is 0 to 40 µmol/g for ease of comparison. The AVS data from each station were averaged in those plots. The AVS results from the individual samples are presented in Appendix I-1. The following bullets list the results of the comparison:

- Rounds 1 and 2 had higher AVS concentrations than Rounds 3 and 4. At many sampling stations, AVS concentrations from Round 1 were the highest and those from Round 3 were the lowest.

- The AVS concentrations were generally higher for Round 4 compared to Round 3.

- The AVS concentrations in the 0 to 2 cm samples were mostly, but not always lower than the AVS concentrations in the 0 to 10 cm samples.

- The absence of data at some locations at M11 is because little sediment present was present at the station.

The overall conclusion from these plots is that few, if any, differences in seasonal variation in the AVS data are apparent. Although Round 1 in late summer generally had the highest AVS concentrations, Round 3, also in late summer generally had the lowest AVS concentrations. Figure 6-2 presents the AVS values for the sediment samples collected in 1996-1997 and as part of the seep/sediment investigation (TtNUS, May 2000). The data used to construct Figure 6-2 are presented in Appendix I-2. Based on this figure and the discussion in the Seep/Sediment Summary Report, no seasonal difference in the AVS concentrations could be discerned from the data.

Figure 6-3 presents SEM concentrations plotted for each round at each station. The data used to construct Figure 6-3 are presented in Appendix I-3. Overall, there was no indication of a seasonal difference in the SEM concentrations. However, two stations (M04 and M11) had much higher SEM concentrations than the remaining stations. These high SEM concentrations correspond with the high metals concentrations observed at these stations, as presented in the DQA reports (see Appendix A). It has been determined that metal slag present at M04 and erosion at Site 6 (onshore from M11) are the causes for the high metal concentrations at those stations.

Figure 6-4 presents the SEM values for the sediment samples collected in 1996-1997 as part of the seep/sediment investigation (TtNUS, May 2000). The data used to construct that figure are presented in Appendix I-4. Based on this figure and the discussion in the Seep/Sediment Summary Report, no seasonal difference in the SEM concentrations could be discerned from the data.

Table 6-1 presents the SEM minus AVS concentrations for each sample for each round. The table shows the 0 to 2 cm and 0 to 10 cm SEM minus AVS concentrations side-by-side. The SEM samples used in both sets of calculations were collected from 0 to 10 cm. The cells in this table are shaded if the SEM

minus AVS concentration is greater than 5 µmol/g. The following table summarizes the number of SEM minus AVS concentrations that are greater than 5 µmol/g and the range of the values:

Depth	Round 1	Round 2	Round 3	Round 4
0 to 2 cm	2 samples (5.8-7.9 µmol/g)	2 samples (5.1-5.2 µmol/g)	4 samples (7.0-164 µmol/g)	5 samples (6.6-51.5 µmol/g)
0 to 10 cm	2 samples (7.9-128 µmol/g)	None	4 samples (7.0-168 µmol/g)	6 samples (12.3-51.5 µmol/g)

Based on the above table, there does not appear to be a significant differences in SEM minus AVS concentrations between seasons or between the 0 to 2 cm and 0 to 10 cm samples (see Section 9.9 for a discussion on the uncertainties regarding comparison of the 0 to 2 cm and 0 to 10 cm AVS data). The high SEM minus AVS values in Rounds 1 and 3 are caused by single samples, and the rest of the samples were within the range of the other SEM minus AVS values. A similar trend was observed in the SEM minus AVS samples collected in 1996 and 1997 (see Table 6-2).

Table 6-3 presents a summary of the reduction/oxidation discontinuity for each sample for Rounds 1 through 4 of the monitoring program. The sediment redox discontinuity is defined as the depth from the surface of the sediment where a visual color change (from brown to black) in the sediment was observed. This color change is a crude indication of the location where the sediment begins to become reduced. No redox zone was observed in most of the salt marsh samples, which is caused by the aeration from the roots. The table indicates that the sediment samples collected in May (Rounds 2 and 4) have a slightly deeper redox zone than the samples in the August-September timeframe. Therefore, a slightly larger portion of the metals in the sediment may be more bioavailable in May.

A few additional figures were generated to further present the AVS and SEM data for informational purposes. These figures were not used to evaluate seasonal trends in the AVS and SEM data. Figures 6-5 and 6-6 present the AVS concentrations across all the stations in the 0 to 2 cm and 0 to 10 cm, respectively divided between the intertidal and subtidal areas. From these figures, it is obvious that the subtidal samples have higher AVS concentrations than the intertidal samples. There are probably two reasons for this. As presented in Section 4.4, the subtidal sediment samples generally have a higher percent silt than the intertidal samples, and fine-grained sediment typically have higher AVS concentrations than coarse-grained sediment (Horowitz, 1984). Also, the intertidal sediments are aerated when the tide is out.

Figure 6-7 presents the AVS concentrations (0 to 2 cm and 0 to 10 cm) across all the stations. One monitoring station, M13, had AVS concentrations significantly higher in Rounds 1 and 2 at both depths. This was expected because all three locations within station M13 were subtidal, which typically have

highest AVS concentrations compared to the intertidal locations (see above discussion). Monitoring stations M03, M05, and M10 also had relatively high AVS concentrations in Rounds 1 and 2.

6.3.2 Bioavailability of Chemicals

As was evaluated in Section 4.2, and presented on Figure 4-1, the percent lipids for mussels were higher in the spring rounds (Rounds 2 and 4) compared to the summer rounds (Rounds 1 and 3), with a few exceptions. From the juvenile lobster plot, the percent lipids were highest during Round 4 at most stations but lowest during Round 2. Therefore, there is a seasonal trend in percent lipids for mussels; the percent lipids were higher in the spring rounds. There is no apparent seasonal trend in percent lipids for the juvenile lobsters. The lack of seasonal differences in percent lipids for the juvenile lobster is likely caused by the smaller percentage of lipids in the juvenile lobster meat, compared to the larger percentage of lipids in the mussel tissue.

As part of the Gulfwatch monitoring program, mussels in Maine are collected in the fall, after they have spawned, because changes in their fat content and biochemistry caused by spawning can skew test results (Fried, 1999). The large difference in percent lipids for the mussels between rounds is because mussels collected in May probably have not yet spawned for the year. Most of the water temperature measurements during the spring rounds were less than 10°C, while the minimum temperature for spawning for blue mussels ranges from 12°C (Rutherford, R.J., 1994) to 14°C (Sea-Ex, undated).

The higher percent lipids in the mussels in the spring rounds indicates that the mussels may have higher concentrations of organic chemicals in the spring rounds, solely because of the increased amount of lipids in the mussels during those rounds. The differences in percent lipids are taken into account when the results are normalized by dividing the concentrations of organic chemicals in the tissue samples by the percent lipids.

6.3.3 Sampling Logistics

Logistically, the only significant difference between the sampling rounds was the availability of juvenile lobsters at some of the stations (see Section 2.0). This was expected and was one reason the sampling was moved from early April to early May. Although juvenile lobster sampling will be discontinued in future rounds (see Section 7.0), it is possible that juvenile lobsters will be sampled in the future if the data are necessary. Therefore, the preferred season to sample juvenile lobsters is in the late summer round. There was no seasonal difference collecting the mussels.

Although the weather was not an issue in collecting the samples, the weather was slightly better during the late summer rounds than during the spring rounds.

6.4 CONCLUSIONS AND RECOMMENDATIONS

In summary, it appears that there are no significant differences in the data collected during the spring or summer rounds that would change the outcome of the data evaluations. Little, if any seasonal differences were observed in the AVS or SEM data collected during the four rounds of the interim offshore monitoring program or in the sediment samples collected in 1996-1997. Although the qualitative redox discontinuity indicates that the metals may be more bioavailable in the spring, this is not supported by the SEM minus AVS results. The number or magnitude of SEM minus AVS concentrations greater than 5 µmol/g also did not vary seasonally. The percent lipids in the mussels did vary seasonally; however, this will be accounted for in the trending analysis when the samples are normalized. Based on the weather and the collection of juvenile lobsters, there is slight preference toward collecting future rounds of data in the summer. The fifth round of sampling was conducted during the summer round because the outcome of the evaluation of seasonal differences was not known at the time.

Therefore, for the reasons listed above and because samples for Round 5 were collected in the late summer timeframe, the Navy recommended continuing to collect the future rounds of samples in the late summer in the Draft Baseline Interim Offshore Monitoring Report (TtNUS, December 2001). This was agreed to by the regulators as per the comments on the Draft Baseline Interim Offshore Monitoring Report and documented in a letter from the Navy (see Appendix L).

The Navy also recommends discontinuing the 0 to 2 cm AVS measurements because there was little difference in the SEM minus AVS values. Based on the comment resolution conference call on April 2, 2002, the Navy will discontinue all AVS and SEM measurements in future rounds (see Appendix L). The AVS and SEM measurements had already been collected for Round 5 at the time of this resolution, and these data will be used in future evaluations, if necessary.

TABLE 6-1

SUMMARY OF SEM-AVS CONCENTRATIONS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Round 1 SEM-AVS Value(1)		Round 2 SEM-AVS Value(1)		Round 3 SEM-AVS Value(1)		Round 4 SEM-AVS Value(1)	
Sample Number	0 to 10cm (umol/g)	0 to 2cm (umol/g)	0 to 10cm (umol/g)	0 to 2cm (umol/g)	0 to 10cm (umol/g)	0 to 2cm (umol/g)	0 to 10cm (umol/g)	0 to 2cm (umol/g)
Monitoring Stations								
OU4-SD-M01-1	-30.5	-0.9	-23.9	-0.6	-6.5	1.2	1.6	-7.7
OU4-SD-M01-2	1.2	1.3	1.2	1.2	1.0	1.0	1.9	-5.4
OU4-SD-M01-3	-56.3	-10.8	-34.4	-13.6	-6.4	-6.9	2.7	-7.2
OU4-SD-M02-1	-50.0	-9.7	-26.0	-29.4	-2.8	-1.6	2.3	-7.9
OU4-SD-M02-2	-1.6	-0.5	-1.4	-12.9	-1.5	-3.3	1.6	-9.9
OU4-SD-M02-3	-18.8	-16.1	-1.0	0.8	1.7	1.8	1.5	1.3
OU4-SD-M03-1	-40.5	-39.5	-50.3	-65.0	-5.0	-8.7	4.6	-10.3
OU4-SD-M03-2	-35.3	-7.0	-15.9	-28.2	11.8	7.9	12.3	-3.5
OU4-SD-M03-3	-16.6	-8.0	-18.0	-19.0	-3.0	164.3	1.4	-4.7
OU4-SD-M04-1	-20.7	-20.1	-0.5	5.2	168.0	-1.6	51.7	51.7
OU4-SD-M04-2	-24.0	-2.6	-10.9	-12.2	0.7	7.0	1.5	-11.5
OU4-SD-M04-3	1.6	1.6	1.2	1.2	7.0	-10.0	2.1	2.1
OU4-SD-M05-1	-46.5	-34.8	-56.8	-23.2	-5.9	-8.0	2.6	-36.0
OU4-SD-M05-2	-63.0	-71.1	-51.1	-63.9	-7.6	-10.7	1.7	-17.2
OU4-SD-M05-3	-2.2	-3.6	-1.2	-2.8	-3.9	0.5	0.8	-1.0
OU4-SD-M06-1	-3.5	-6.3	-2.8	-6.9	0.1	-0.6	2.1	0.6
OU4-SD-M06-2	-28.0	-37.0	-36.3	-12.4	-9.9	-10.8	1.9	-2.4
OU4-SD-M06-3	-1.9	-2.0	0.2	-0.6	0.1	0.2	0.7	-0.2
OU4-SD-M07-1	-9.5	-10.6	-9.3	-15.7	-4.7	-3.9	1.3	-7.4
OU4-SD-M07-2	-34.1	-25.9	-36.3	-15.6	-8.2	-1.0	2.0	-18.4
OU4-SD-M07-3	-27.7	-36.3	-37.2	-5.4	-6.9	-6.8	2.2	-1.3
OU4-SD-M08-1	-9.6	5.8	-17.1	-11.9	3.0	3.5	16.0	6.6
OU4-SD-M08-2	-35.4	-1.1	-36.5	-14.8	-6.3	-6.8	3.9	-11.0
OU4-SD-M08-3	7.9	7.9	5.0	4.8	11.2	11.2	18.5	18.5
OU4-SD-M09-1	1.5	-3.9	1.5	1.5	3.2	3.1	2.4	2.3
OU4-SD-M09-2	-12.4	-0.9	-0.5	0.5	-5.5	-2.2	1.6	-8.4
OU4-SD-M09-3	-64.1	-56.8	-47.4	-14.7	-7.1	-8.2	1.7	-19.6
OU4-SD-M10-1	0.7	0.7	-0.1	-0.4	-3.7	-1.0	0.8	-4.6
OU4-SD-M10-2	-42.1	-30.9	-28.6	-13.8	-4.2	-5.7	1.2	-2.9
OU4-SD-M10-3	-73.6	-89.0	-98.7	-40.6	-5.2	-8.8	1.5	-18.6
OU4-SD-M11-2	128.4							
OU4-SD-M11-3	5.0	4.7	-2.5	5.1	4.9	4.9	38.4	34.1
OU4-SD-M12-1	-28.4	-3.0	-7.3	-6.9	2.0	2.2	24.9	18.0
OU4-SD-M12-2	-12.8	-5.9	-1.3	-2.1	-2.1	-1.5	3.8	-7.4
OU4-SD-M12-3	-39.5	-36.5	-56.7	-6.7	-7.3	-8.1	3.6	-8.2
OU4-SD-M13-1	-112.1	-108.0	-110.0	-52.6	-9.4	-12.7	1.0	-19.1
OU4-SD-M13-2	-109.2	-60.2	-94.5	-16.5	-7.8	-8.3	1.2	-14.5
OU4-SD-M13-3	-139.6	-145.5	-173.1	-89.9	-2.0	-9.5	1.3	-21.1
OU4-SD-M14-1	-5.0	-14.7	-1.5	-2.1	-0.1	0.3	1.1	-15.2
OU4-SD-M14-2	-20.0	-30.3	-15.9	-5.8	-5.7	-6.5	1.0	-7.8
OU4-SD-M14-3	-71.0	-10.2	-27.0	-18.3	-6.7	-8.1	1.2	-17.4
Reference Stations								
OU4-SD-R01-1	-7.1	-5.7	-2.4	-6.3	0.9	1.2	0.9	0.0
OU4-SD-R01-2	-4.0	-1.3	-3.6	0.0	-0.3	0.1	0.3	-0.9
OU4-SD-R01-3	-6.6	-0.4	-1.5	-0.7	0.022	-0.1	0.2	0.1
OU4-SD-R01-4	-11.9	-3.9	-4.7	-0.8	-3.6	0.4	0.5	-0.7
OU4-SD-R02-1	-3.0	-2.3	-0.4	-0.3	0.6	0.6	0.4	0.3
OU4-SD-R02-2	-11.0	-4.5	-8.4	-2.7	-1.8	0.1	0.3	-0.8
OU4-SD-R02-3	-23.0	-11.6	-4.3	-5.9	-8.8	0.2	0.6	-0.5
OU4-SD-R02-4	-34.6	-6.0	-8.2	-2.6	-0.5	-3.3	1.5	-1.1
OU4-SD-R03-1	-1.7	-5.2	0.0	-4.3	1.5	1.4	0.7	-0.9
OU4-SD-R03-2	-23.8	-7.3	-12.3	-10.4	-5.4	-6.5	0.7	-9.5
OU4-SD-R03-3	-25.5	-8.2	-12.5	-4.9	-7.9	-4.6	0.8	-6.9
OU4-SD-R03-4	-10.6	-0.2	-1.5	-1.4	-3.2	-4.9	0.7	-2.1
OU4-SD-R04-1	-1.4	-0.4	0.2	0.0	-3.4	0.6	0.3	0.2
OU4-SD-R04-2	-3.4	-2.1	-3.4	-0.4	-0.7	-1.5	0.3	-0.3
OU4-SD-R04-3	-3.3	-1.3	-3.9	-4.6	-0.2	-3.6	0.6	0.2
OU4-SD-R04-4	-2.1	-0.9	-6.5	-2.6	0.0	0.0	0.2	-0.9

Notes:
AVS - Acid volatile sulfides (umol/g).
SEM - Simultaneously extracted metals (umol/g).
1 - SEM - AVS value is the AVS (0 to 10 cm) concentration subtracted from the SEM concentration.
1/2 the detection limit for non-detects was used in this table.
Duplicates were averaged in samples.
Shading indicates exceedance of 5 µmol/g criteria (USEPA, 1997).

TABLE 6-2

SEM-AVS VALUES FOR 1996-1997 SEDIMENT DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	SEM - AVS Value[1]							
	Sampled 12/96		Sampled 04/97		Sampled 08/97		Sampled 11/97	
Sample Number	Replicate #1	Replicate #2	Replicate #1	Replicate #2	Replicate #1	Replicate #2	Replicate #1	Replicate #2
BC-1005-SD	-19.91	-21.84	-3.71	-0.94	-18.62	-18.05	-1.36	-1.78
BC-1006-SD	-4.22	-3.72	-15.97	-17.31	-44.53	-53.87	-0.38	-0.39
BC-1012-SD	-24.35	-25.81	-37.07	-39.92	-35.99	-38.79	-2.77	-3.24
BC-1016-SD	3.64	4.13	6.05	5.86	1.98	1.63	2.14	2.79
BC-1017-SD	-31.17	-18.93	-48.33	-48.63	-2.93	-2.51	0.74	0.64
BC-1018-SD	-7.14	-6.47	-102.27	-103.85	-13.65	-14.77	-81.68	-83.59
BC-1020-SD	-6.35	-6.80	9.21	9.16	-12.54	-13.84	-6.57	-7.72
C-1004.3-SD	-1.37	-1.12	-24.45	-24.11	-4.89	-5.83	-0.92	-0.78
C-1004.5-SD	6.85	6.65	0.92	1.61	-2.97	-2.98	5.78	6.21
CC-1011-SD	-7.98	-8.15	-11.98	-13.16	-0.76	-1.11	-4.32	-4.12
SP-1001-SD	0.71	0.59	0.45	0.34	0.64	0.64	-2.14	-2.30
SP-1002-SD	1.16	1.16	0.16	0.06	-0.21	-0.24	1.95	1.93
SP-1003-SD	-19.61	-19.61	-15.20	-13.46	16.34	16.34	-7.57	-10.71

Notes:
AVS - Acid volatile sulfides (umol/g).
SEM - Simultaneously extracted metals (umol/g).
1 - SEM - AVS value is the AVS concentration subtracted from the SEM concentration .
- Source of data is Seep/Sediment Summary Report (TtNUS, May 2000).
- Shaded cells are SEM-AVS concentrations greater than 5 umol/g.

TABLE 6-3

SUMMARY OF SEDIMENT REDOX DISCONTINUITY FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 1 OF 2

Station	Redox Discontinuity (cm)[1]			
	Round 1	Round 2	Round 3	Round 4
OU4-SD-M01-1	0.5-1	1	1-2	0.5-2
OU4-SD-M01-2	0.3	12	>7	9
OU4-SD-M01-3	0.5-1	4-6	2	5-10
OU4-SD-M02-1	3-4	1	2.5	0-3
OU4-SD-M02-2	1.2	0.5	0.2	0-5
OU4-SD-M02-3	9	none observed	>10	none observed
OU4-SD-M03-1	0.7	0.1	0.2	0.5-10
OU4-SD-M03-2	1	1.5	0.1	0-2
OU4-SD-M03-3	0.5-1	1-2	2-3	1.5-2
OU4-SD-M04-1	0.3	4	>10	none observed
OU4-SD-M04-2	3	2-3.5	2.5-3	2-5
OU4-SD-M04-3	none observed	none observed	>6	none observed
OU4-SD-M05-1	0.2	0.2-0.5	1	1-10
OU4-SD-M05-2	0.8	4	0.8-1.4	3-11
OU4-SD-M05-3	0.3	1	1	1
OU4-SD-M06-1	0.5	1.5	0.1	4
OU4-SD-M06-2	1.5	1-3	0.1	2-3
OU4-SD-M06-3	0.2	none observed	>10	1-6
OU4-SD-M07-1	0.1	0.2	1	1
OU4-SD-M07-2	0.1-0.4	2-3	0.6-1	1
OU4-SD-M07-3	0.5	4-5	3	3
OU4-SD-M08-1	none observed	none observed	1	0.5-2
OU4-SD-M08-2	0.2-0.3	1.5	0.3-0.7	2.0
OU4-SD-M08-3	none observed	none observed	none observed	none observed
OU4-SD-M09-1	0.1	none observed	>5	0.5
OU4-SD-M09-2	0.1-0.3	5	0.4	0.5
OU4-SD-M09-3	0.2-0.3	1	0.6	3-6
OU4-SD-M10-1	none observed	none observed	4	2
OU4-SD-M10-2	1	1-2	1-2	2.0
OU4-SD-M10-3	0.1	1	2	2-6
OU4-SD-M11-1	not sampled	not sampled	not sampled	not sampled
OU4-SD-M11-2	none observed	not sampled	not sampled	not sampled
OU4-SD-M11-3	none observed	5-8	4	2
OU4-SD-M12-1	none observed	2	5	2
OU4-SD-M12-2	0.3-1.5	none observed	0.3	2
OU4-SD-M12-3	2.5	4-5	0.5-1	0.1
OU4-SD-M13-1	0.1	1.5-2	1.5-3	3
OU4-SD-M13-2	3	0-3	1-2	2.5
OU4-SD-M13-3	2	0-1.5	1-2	1
OU4-SD-M14-1	1	none observed	none observed	none observed
OU4-SD-M14-2	1-2	0-1.5	0.5-1	1-6
OU4-SD-M14-3	2-3	0-3	0.7-1.5	3.7

TABLE 6-3

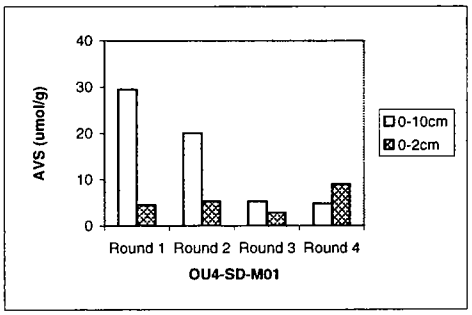
SUMMARY OF SEDIMENT REDOX DISCONTINUITY FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 2

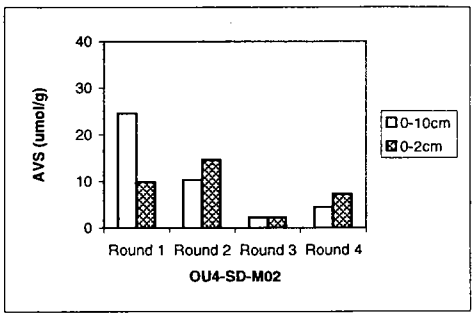
Station	Redox Discontinuity (cm)[1]			
	Round 1	Round 2	Round 3	Round 4
OU4-SD-R01-1	1.5	none observed	1	none observed
OU4-SD-R01-2	2-7	0-2	none observed	0.5
OU4-SD-R01-3	1-2.5	none observed	0.5	0-3
OU4-SD-R01-4	1	<1	1.5-2	3
OU4-SD-R02-1	none observed	none observed	1	5
OU4-SD-R02-2	3-5	2-4	4	2-3
OU4-SD-R02-3	0.5-3	1.5	1-2	0-5
OU4-SD-R02-4	0.5	2-4	0.5	1-10
OU4-SD-R03-1	none observed	4-8	>10	none observed
OU4-SD-R03-2	0.3-2	2-4	1-2	3
OU4-SD-R03-3	0.5	1-2	0.5	6
OU4-SD-R03-4	0.5-0.7	2	0.5	0.5
OU4-SD-R04-1	none observed	none observed	>10	none observed
OU4-SD-R04-2	1-4	2.5-3.0	1-1.5	1-5
OU4-SD-R04-3	2-3	3-4.5	4	1-5
OU4-SD-R04-4	2	2-4	>10	none observed

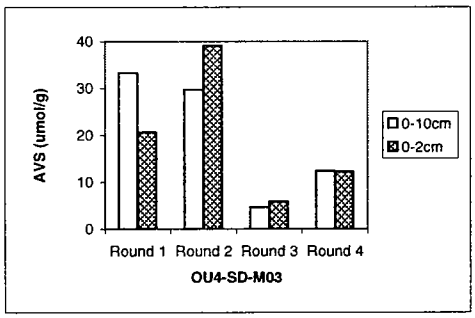
1 Redox discontinuity is based on a visual observation of where the sediment color changes from brown to black.

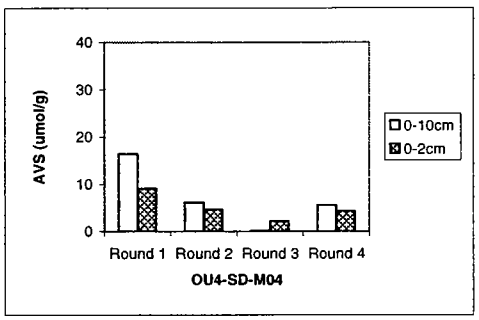
FIGURE 6-1

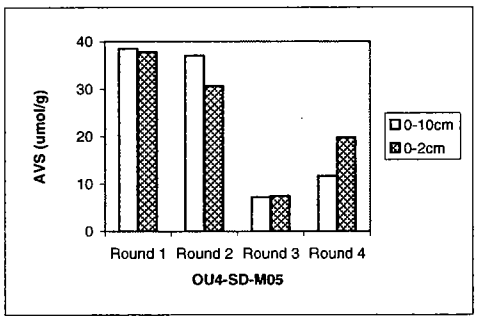
AVS DATA AT EACH STATION FOR ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 1 OF 3

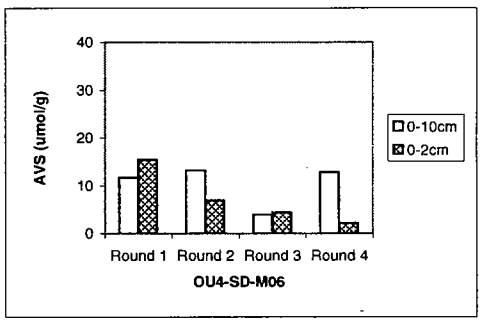


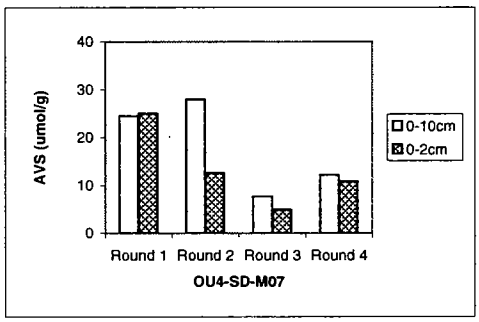












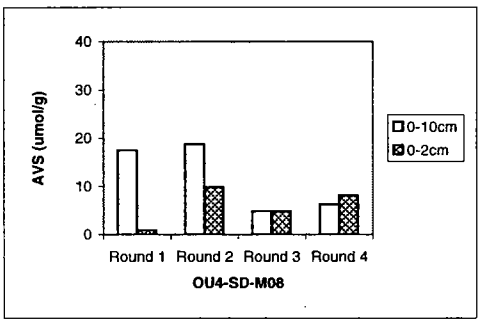
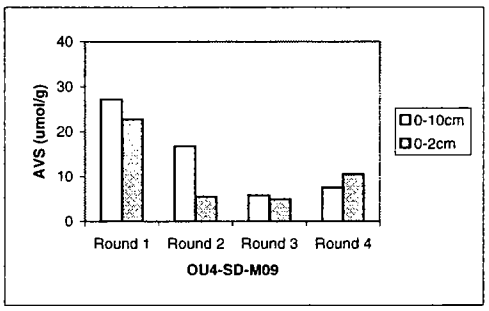
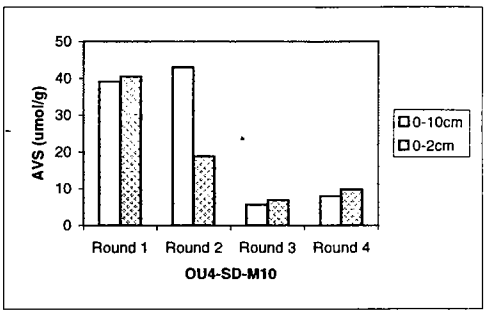
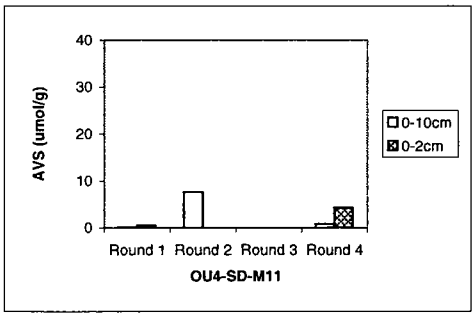


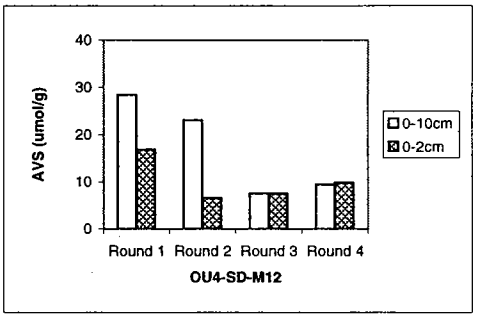
FIGURE 6-1

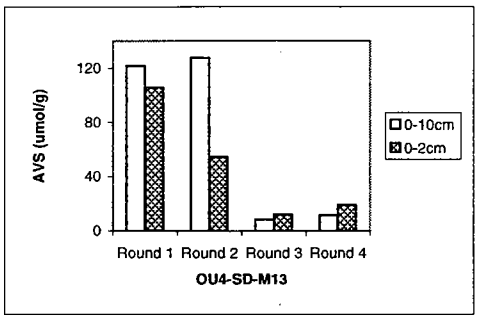
AVS DATA AT EACH STATION FOR ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 3

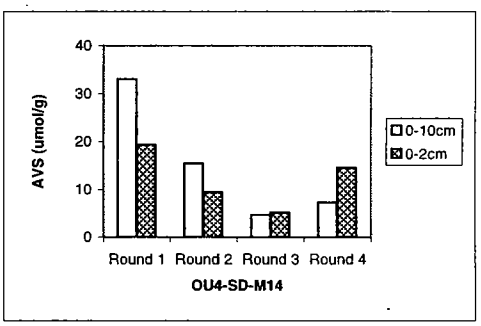


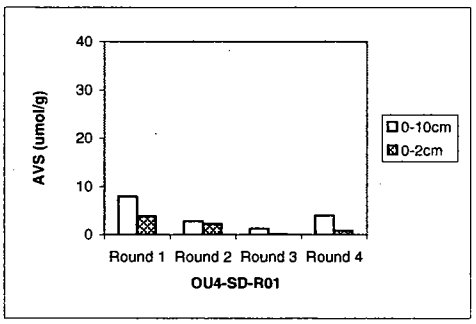












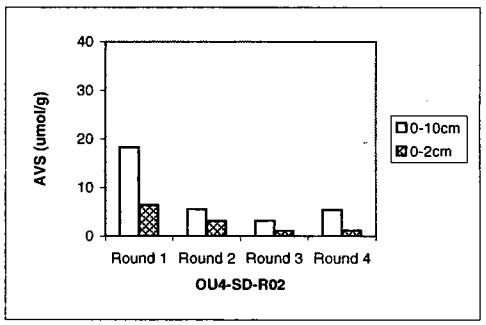
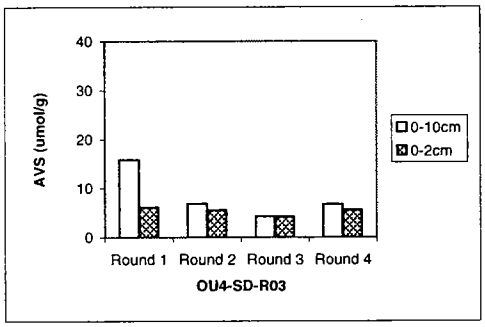
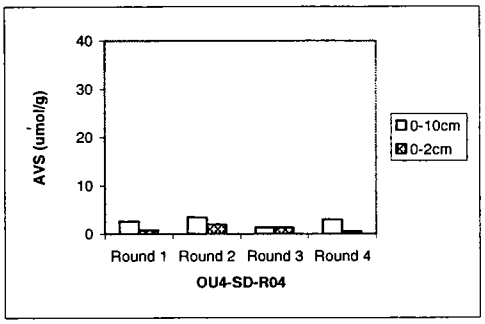


FIGURE 6-1

AVS DATA AT EACH STATION FOR ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 3 OF 3

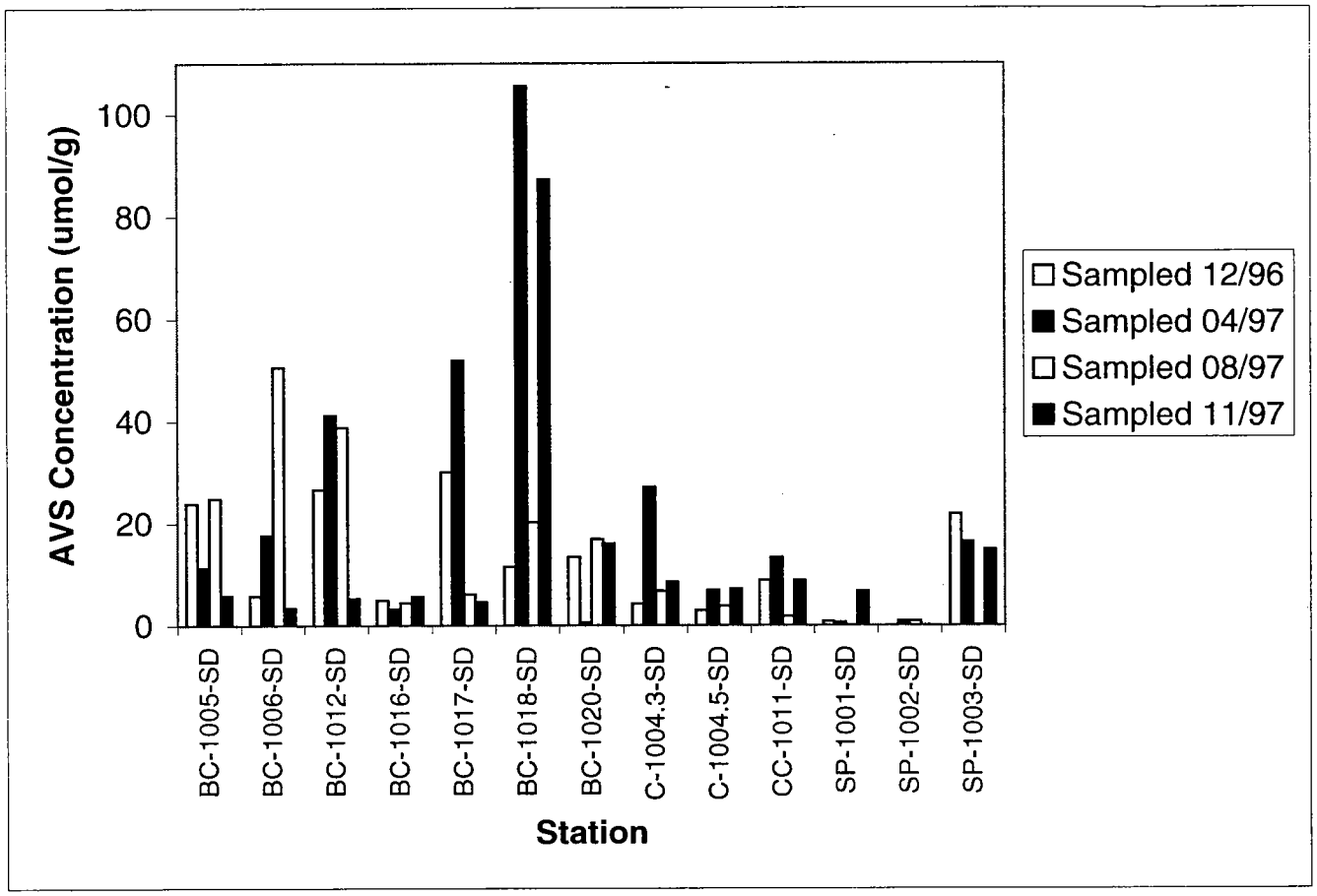




- Rounds 1 and 3 were collected in September/August and Rounds 2 and 4 were collected in May

FIGURE 6-2

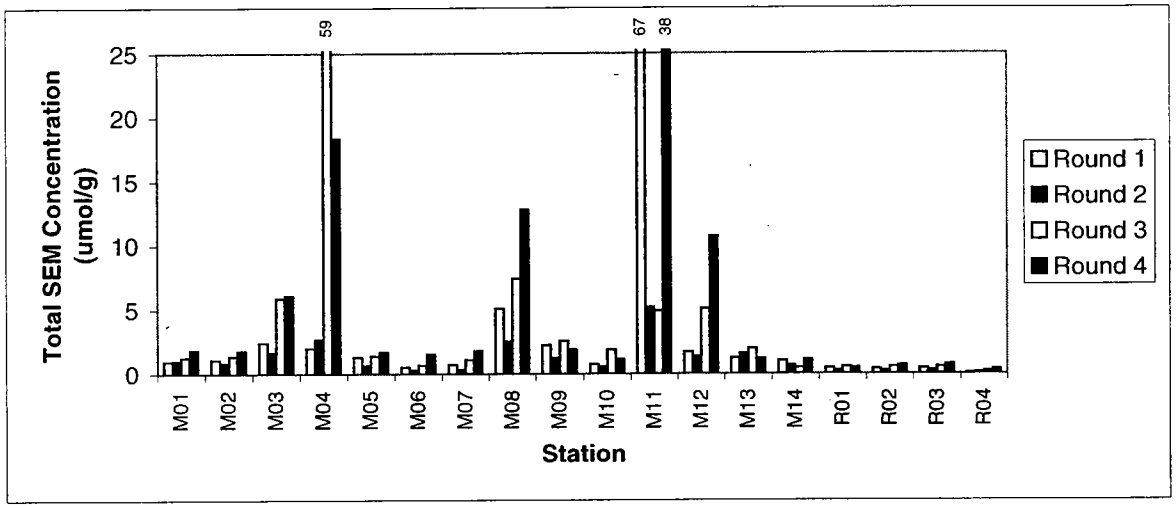
AVS CONCENTRATIONS FROM THE 1996/1997 SEDIMENT INVESTIGATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The bars for each station are in order of Sampled 12/96, 04/97, 08/97, 11/97
- Sampled 12/96 - Samples collected in December 1996
- Sampled 04/97 - Samples collected in April 1997
- Sampled 08/97 - Samples collected in August 1997
- Sampled 11/97 - Samples collected in November 1997

FIGURE 6-3

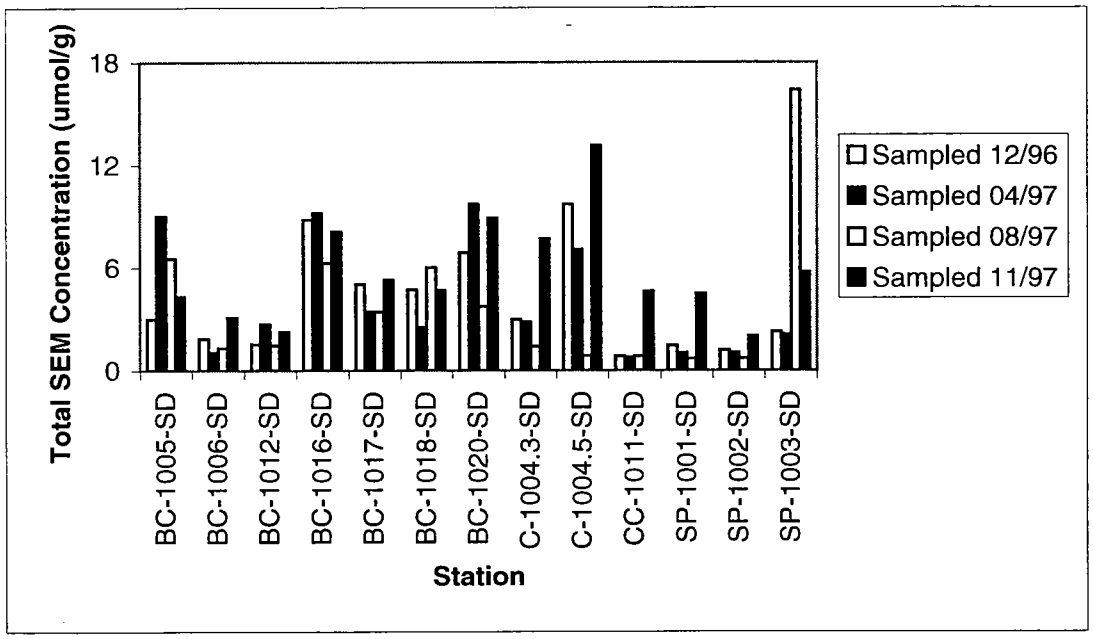
SEM DATA ACROSS ALL STATIONS FOR ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The bars for each station are in order of Rounds 1 through 4
- Rounds 1 and 3 were collected in September/August and Rounds 2 and 4 were collected in May
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

FIGURE 6-4

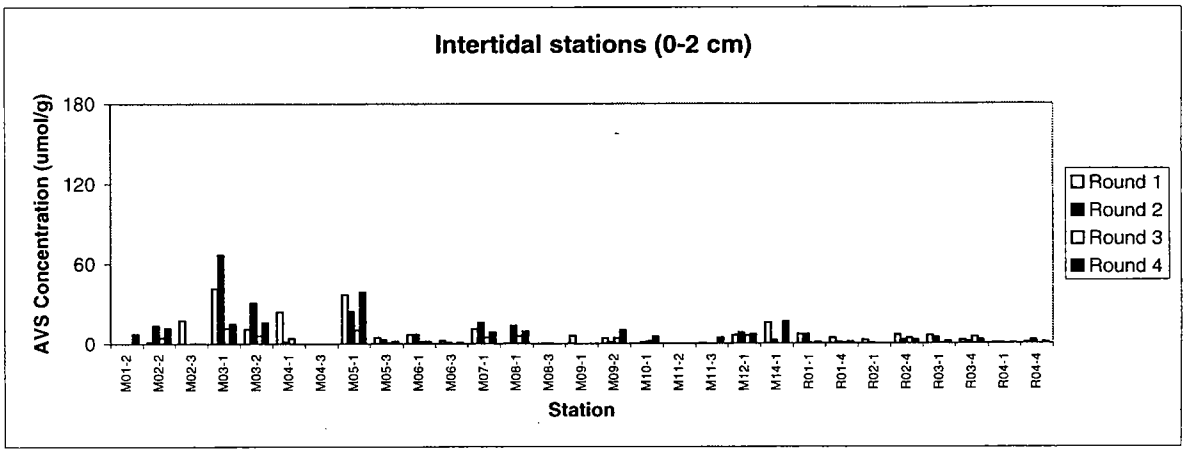
**SEM CONCENTRATIONS FROM THE 1996-1997 SEDIMENT INVESTIGATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

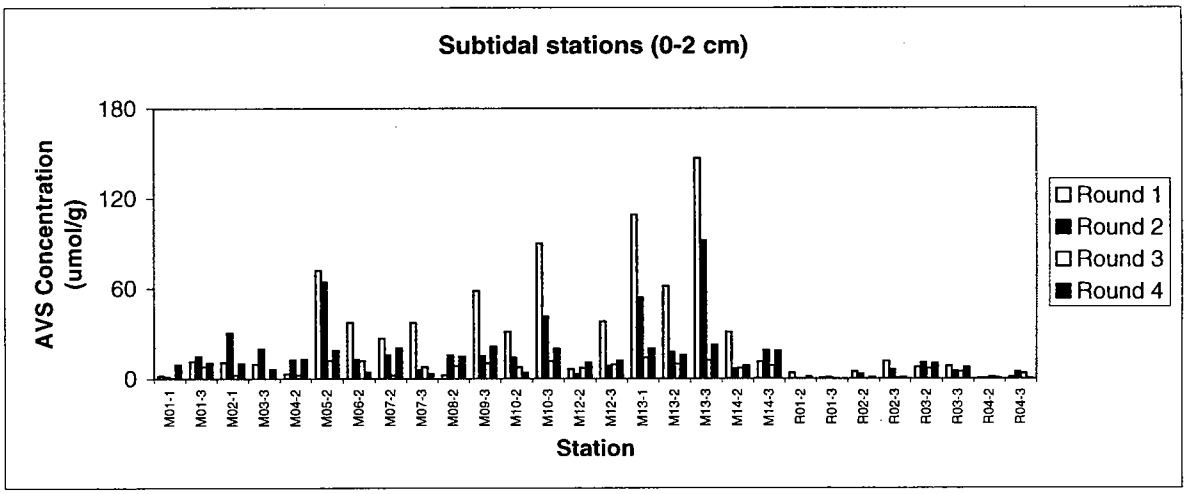


- The bars for each station are in order of Sampled 12/96, 04/97, 08/97, 11/97
- Sampled 12/96 - Samples collected in December 1996
- Sampled 04/97 - Samples collected in April 1997
- Sampled 08/97 - Samples collected in August 1997
- Sampled 11/97 - Samples collected in November 1997

FIGURE 6-5

INTERTIDAL VS SUBTIDAL AVS (O-2 CM) CONCENTRATIONS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

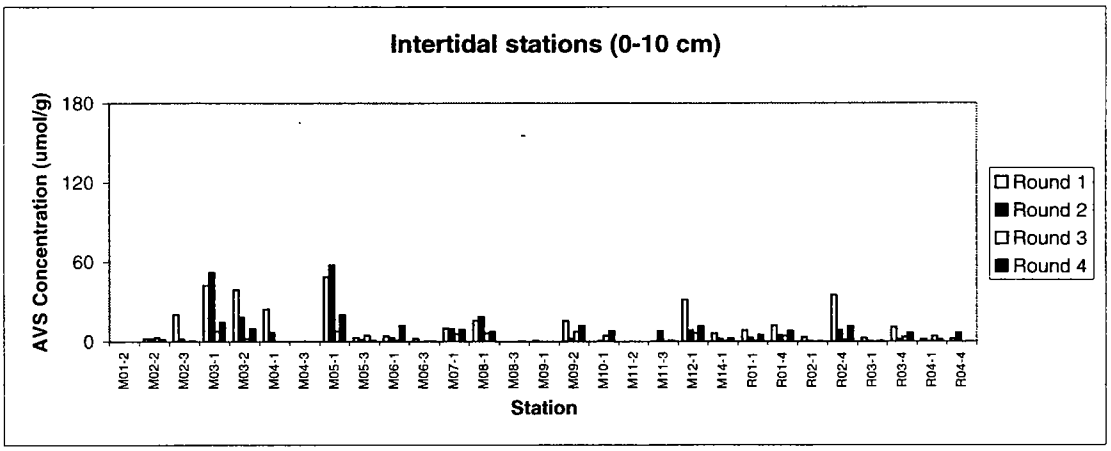


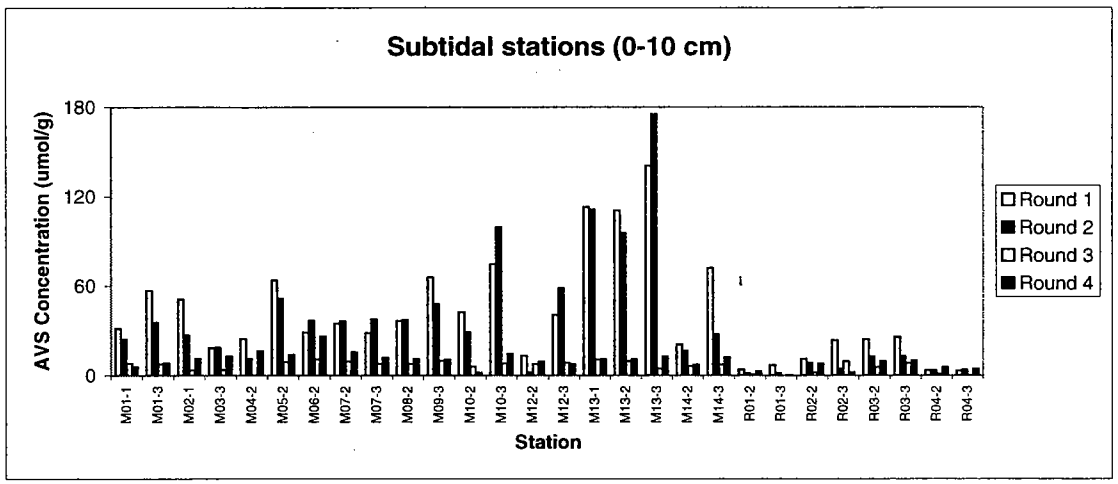


- The bars for each station are in order of Rounds 1 through 4
- Rounds 1 and 3 were collected in September/August and Rounds 2 and 4 were collected in May
- M - Monitoring Station; R - Reference Station

FIGURE 6-6

INTERTIDAL VS SUBTIDAL AVS (O-10 CM) CONCENTRATIONS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

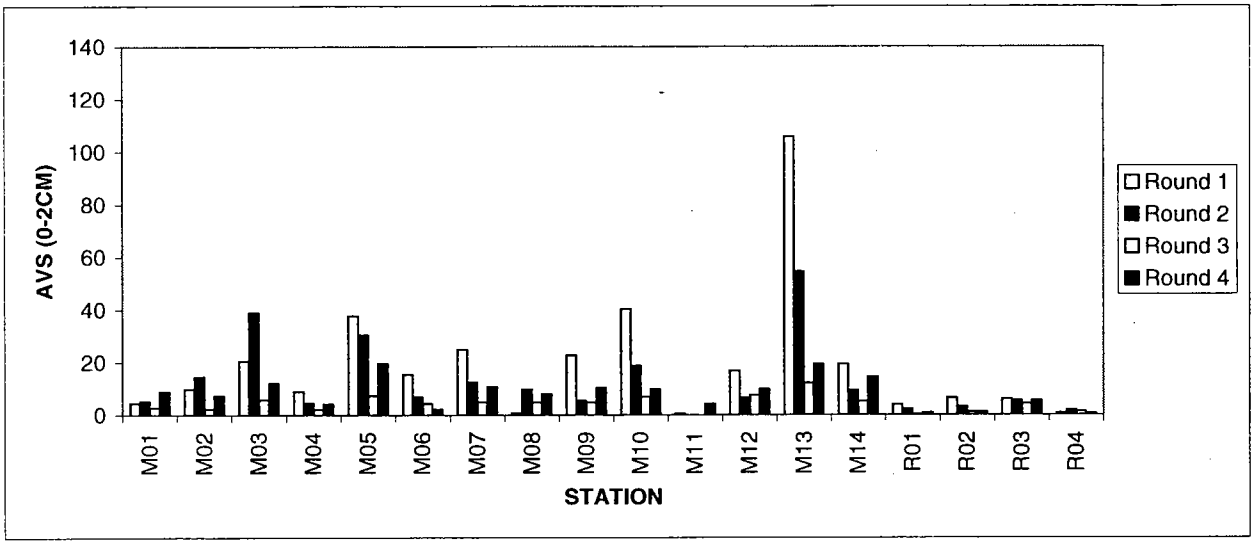


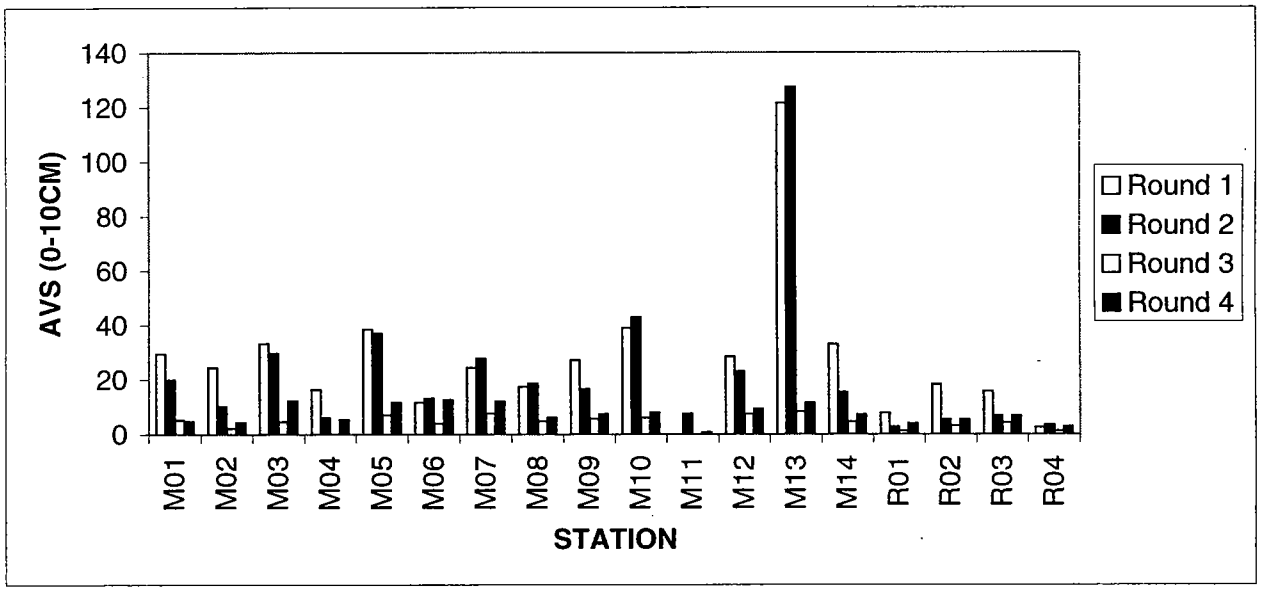


- The bars for each station are in order of Rounds 1 through 4
- Rounds 1 and 3 were collected in September/August and Rounds 2 and 4 were collected in May
- M - Monitoring Station; R - Reference Station

FIGURE 6-7

AVS DATA ACROSS ALL STATIONS FOR ALL ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE





- The bars for each station are in order of Rounds 1 through 4
- Rounds 1 and 3 were collected in September/August and Rounds 2 and 4 were collected in May
- M - Monitoring Station; R - Reference Station
- Monitoring Station values were averaged for all locations within each monitoring station
- Reference Station values were averaged for all locations within each reference station

7.0 RECOMMENDATION FOR CONTINUED LOBSTER SAMPLING

7.1 OBJECTIVE

The primary objective of this section of the baseline report is to evaluate whether lobster sampling should be continued in subsequent sampling rounds.

7.2 BACKGROUND

As presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999), juvenile lobster tissue data were to be used to determine the comparability between lobster tissue concentrations and sediment concentrations. When the comparability is known (through the calculation of BAFs and BSAFs), in the absence of juvenile lobster tissue data, sediment concentrations can be used to predict the tissue concentrations. Therefore, when comparable BAFs and BSAFs are determined, the lobster sampling can be discontinued.

To determine these comparable values, juvenile lobster BAFs and BSAFs were calculated across all the monitoring stations for the first four rounds of monitoring, using the procedures presented in Section 4.2.2. Correlation plots (lobster concentrations versus sediment concentrations) also were generated for copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs. The plots were developed to determine whether the contaminant concentrations were comparable to sediment concentrations.

7.3 RESULTS

Tables J-1 through J-8 (Appendix J) present the summary statistics (i.e., minimum, maximum, average, etc.) for the juvenile lobster BAFs and BSAFs for individual chemicals for each round for the monitoring stations and reference stations. Table 7-1 presents a summary of the minimum, maximum, and average BSAF value for each chemical class (i.e., dioxins, PAHs, pesticides, and PCBs) for the monitoring stations and the reference stations. The minimum, maximum, and average BSAFs were based on the mean BSAFs for all of the individual parameters within each chemical class for each round. Because metals are typically not grouped into chemical class summaries like organic chemicals, the average BAFs for copper and nickel are shown and are used as the mean BAF for each round.

The average BSAFs for each of the chemical classes (except PCBs) in the monitoring stations vary by less than a factor of 10 across the rounds. The average BSAF for PCBs varies by a factor of 11 in the monitoring stations and 13.5 for the reference stations.

In general, the BSAFs and BAFs were greater for the reference stations than the monitoring stations except for HMW PAHs. This may indicate that, although some of the chemical concentrations in the monitoring station sediment samples are greater than the concentrations in the reference station samples, all the chemicals may not be bioavailable.

Figures 7-1 through 7-12 present the correlation plots of juvenile lobster concentrations versus sediment concentrations for monitoring and reference stations for the following parameters: copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs. From the plots, it is apparent that the correlations between chemical concentrations in juvenile lobsters and sediment are very low. Therefore, the juvenile lobster concentrations cannot be accurately predicted from the sediment concentrations at a particular station.

Figure 7-13 presents the average BSAFs for PAHs at the monitoring stations and reference stations across all four rounds. Figure 7-14 presents the average BAFs for copper and nickel at the monitoring stations and reference stations across all four rounds. As can be seen from these figures, the average BAFs and BSAFs for each round were similar across all the monitoring stations. The BAF for copper varies by less than a factor of 2 across the rounds, the BSAFs of three of the PAHs (anthracene, fluorene, and HMW PAHs) vary by less than a factor of 4, and the BSAFs for acenaphthylene vary by a factor of 10.

Finally, based on the concentration plots in Section 5.3 (Figures 5-7 through 5-12), chemical concentrations in juvenile lobsters do not appear to correlate to sediment concentrations, except in a few isolated instances. Also, chemical concentrations in juvenile lobsters were not consistently elevated (i.e., within reference concentrations or within concentrations at other stations) at most stations (see Section 5.3). For example, fluorene is elevated in juvenile lobsters at M12 during Round 1 but did not appear to be elevated at that station during previous rounds, while fluorene in mussels from that station was elevated during all four rounds. From the statistical comparison between the chemicals in the juvenile lobsters from the monitoring stations and the reference stations, none of the chemicals that were used as IRGs were elevated in the monitoring station samples (see Section 5.4). The concentrations of the chemicals in mussels were consistently elevated at certain stations across the rounds, indicating that mussels were better monitors of chemicals than juvenile lobsters.

7.4 CONCLUSIONS/RECOMMENDATIONS

The following primary conclusions are drawn based on the results presented in Section 7.3:

- Juvenile lobster concentrations cannot be accurately calculated from sediment concentrations at a particular station because the correlation between sediment concentrations and juvenile lobster concentrations was low.

- Average BAFs and BSAFs across all of the stations do not vary substantially across the rounds.

- The chemical concentrations in most of the juvenile lobster samples were within the concentrations in the reference station juvenile lobsters. Also, the chemical concentrations in the juvenile lobsters were similar across the stations, with a few exceptions.

Based on the above conclusions, continued sampling of juvenile lobsters is not warranted at the site for several reasons. First, continued monitoring of juvenile lobsters is not expected to increase the correlation between the sediment concentrations and juvenile lobster concentrations, so if juvenile lobster concentrations are needed for a particular station in the future, they will need to be collected at that time. The average BAFs and BSAF across all of the monitoring stations are fairly similar. Finally, as observed from the concentration plots in Sections 5-7 through 5-12, mussels appear to be a better monitor of contaminant concentrations at each station across the rounds. This is further supported by the conclusion in Section 5.4 that most of the chemicals in the juvenile lobsters at most of the monitoring stations were detected at background levels. This indicates that the lobsters are not assimilating chemicals associated with PNS to any large degree, except in a few instances.

In conclusion, the Navy recommended that juvenile lobsters sampling be discontinued in subsequent monitoring rounds in the Draft Baseline Interim Offshore Monitoring Report (TtNUS, December 2001). This was agreed to by the regulators as per the comments on the Draft Baseline Interim Offshore Monitoring Report and documented in a letter from the Navy (see Appendix L). Juvenile lobsters were collected during Round 5 and the data from that round will be used to provide additional BAF and BSAF data.

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TABLE 7-1

SUMMARY OF BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL MONITORING STATIONS FOR EACH ROUND BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

		Monitoring Stations[1,2]			Reference Stations[1,2]		
Round	Parameter	Minimum	Maximum	Average	Minimum	Maximum	Average
1	Dioxins	0.05	1.603	0.430	0.049	10	3.7
2		0.011	9.4	1.9	0.054	10	4.0
3		0.014	0.88	0.22	0.010	5.2	1.1
4		0.019	8.0	2.2	0.11	2.2	1.3
1	PAHs	0.0062	0.53	0.10	0.0025	1.2	0.16
2		0.008	0.28	0.059	0.0090	0.75	0.15
3		0.0040	0.13	0.032	0.0020	0.45	0.071
4		0.0014	0.41	0.036	0.0016	0.22	0.040
1	Pesticides	0.030	31	4.7	0.034	60	8.2
2		0.11	29	5.5	0.12	28	5.3
3		0.0025	31	3.3	0.32	20	5.0
4		0.036	101	11	0.16	25	6.5
1	PCBs	0.035	5.2	0.51	0.045	69	4.6
2		0.12	27	2.6	0.19	8.1	1.9
3		0.0025	31	2.8	0.23	11	2.0
4		0.018	0.85	0.26	0.038	1.2	0.34
1	Copper	NA	NA	0.69	NA	NA	5.5
2		NA	NA	0.81	NA	NA	6.1
3		NA	NA	0.93	NA	NA	5.1
4		NA	NA	0.69	NA	NA	3.9
1	Nickel	NA	NA	0.01	NA	NA	0.04
2		NA	NA	0.02	NA	NA	0.03
3		NA	NA	ND	NA	NA	ND
4		NA	NA	ND	NA	NA	ND

1 - Minimum, maximum, and average BSAFs are based on the mean BSAFs for all of the individual paramaters within each chemical class (i.e., dioxins, PAHs, pesticides, and PCBs) across all four rounds.
2 - For the inorganics, the average concentration is the mean BAF across all four rounds.
NA - Not applicable.
ND - Not detected in either sediment or lobster sample.

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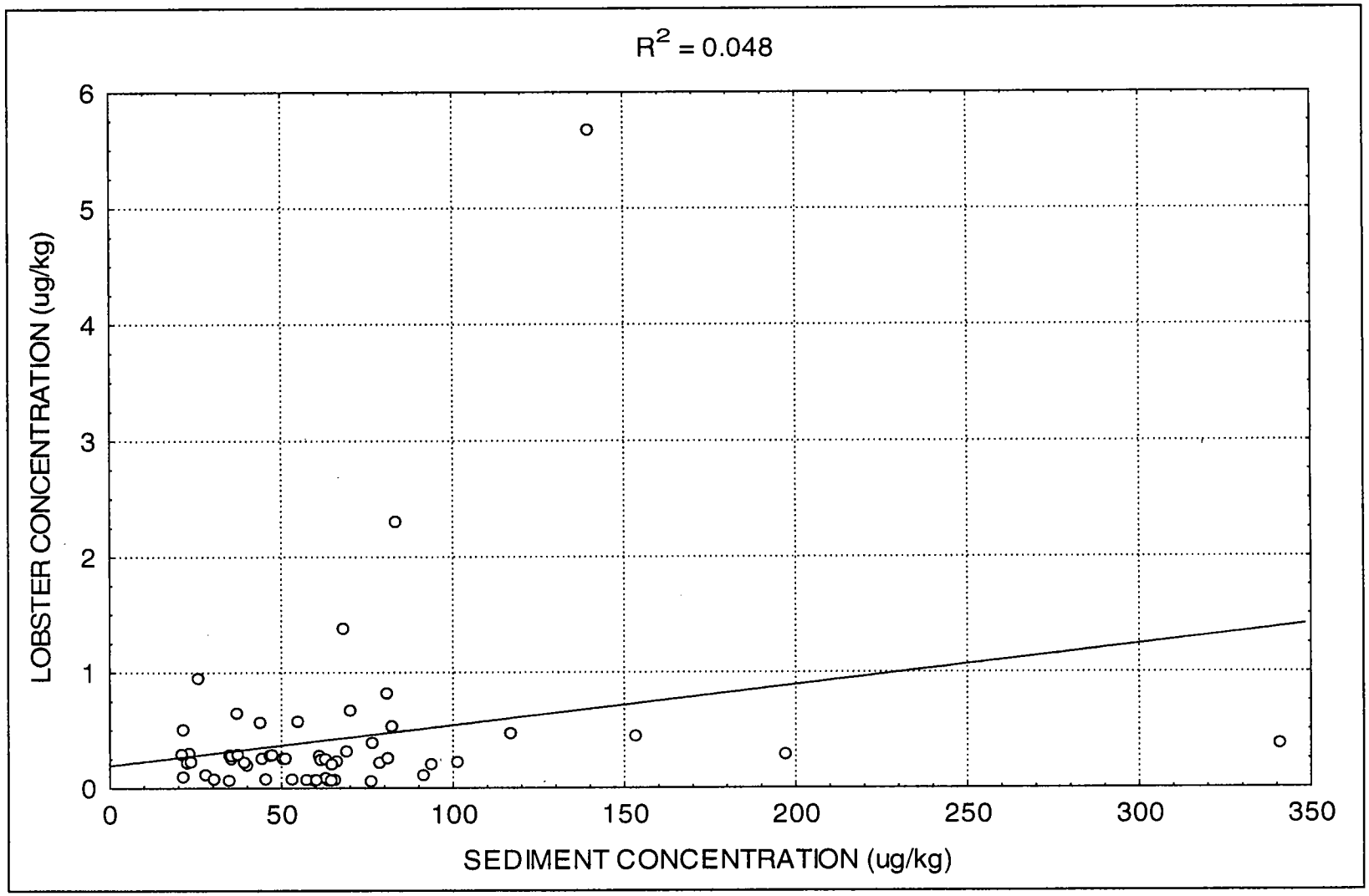
FIGURE 7 - 1

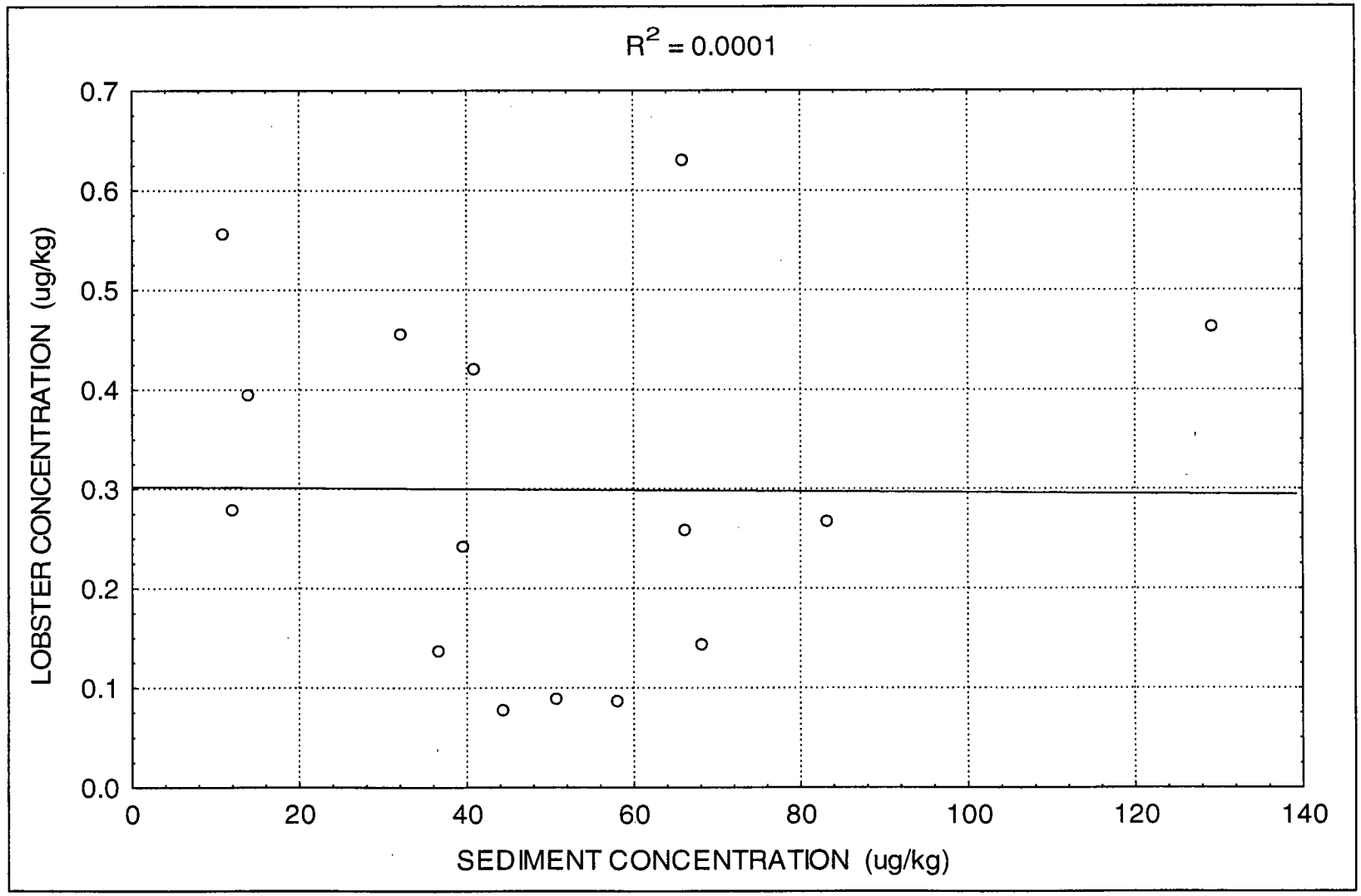
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS IN MONITORING STATIONS - ACENAPHTHYLENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 2

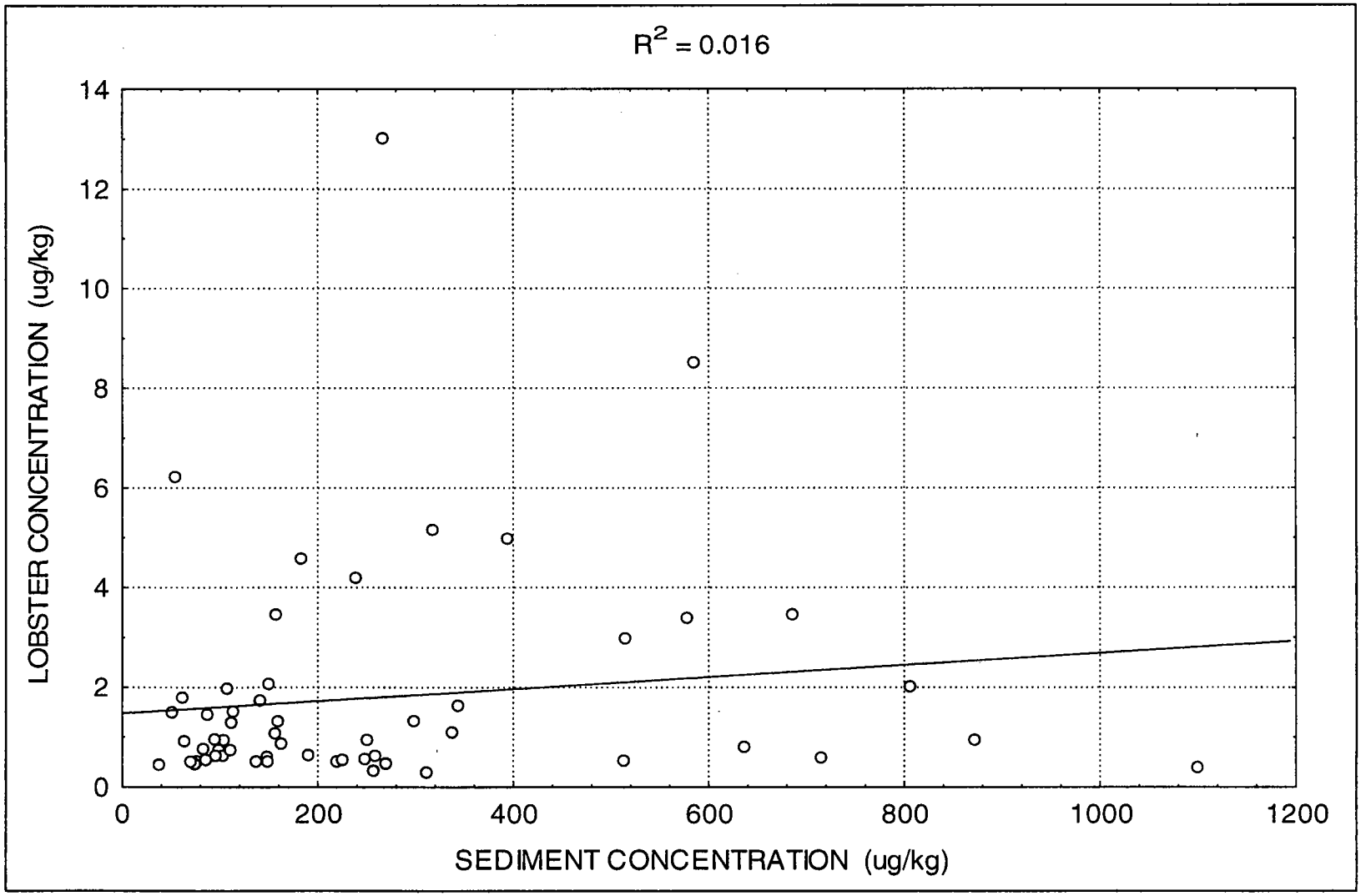
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS IN REFERENCE STATIONS - ACENAPHTHYLENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 3

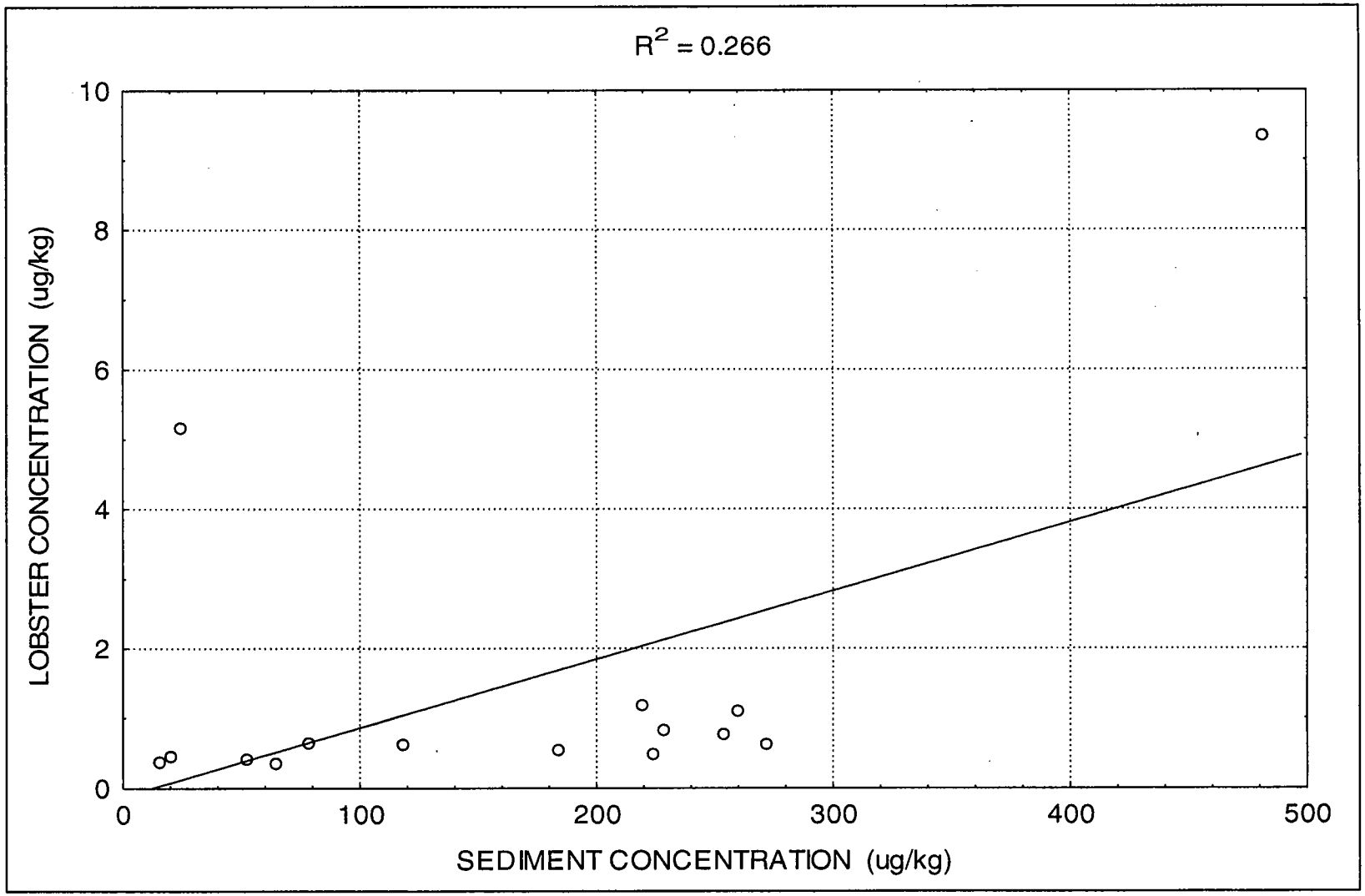
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS IN MONITORING STATIONS - ANTHRACENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 4

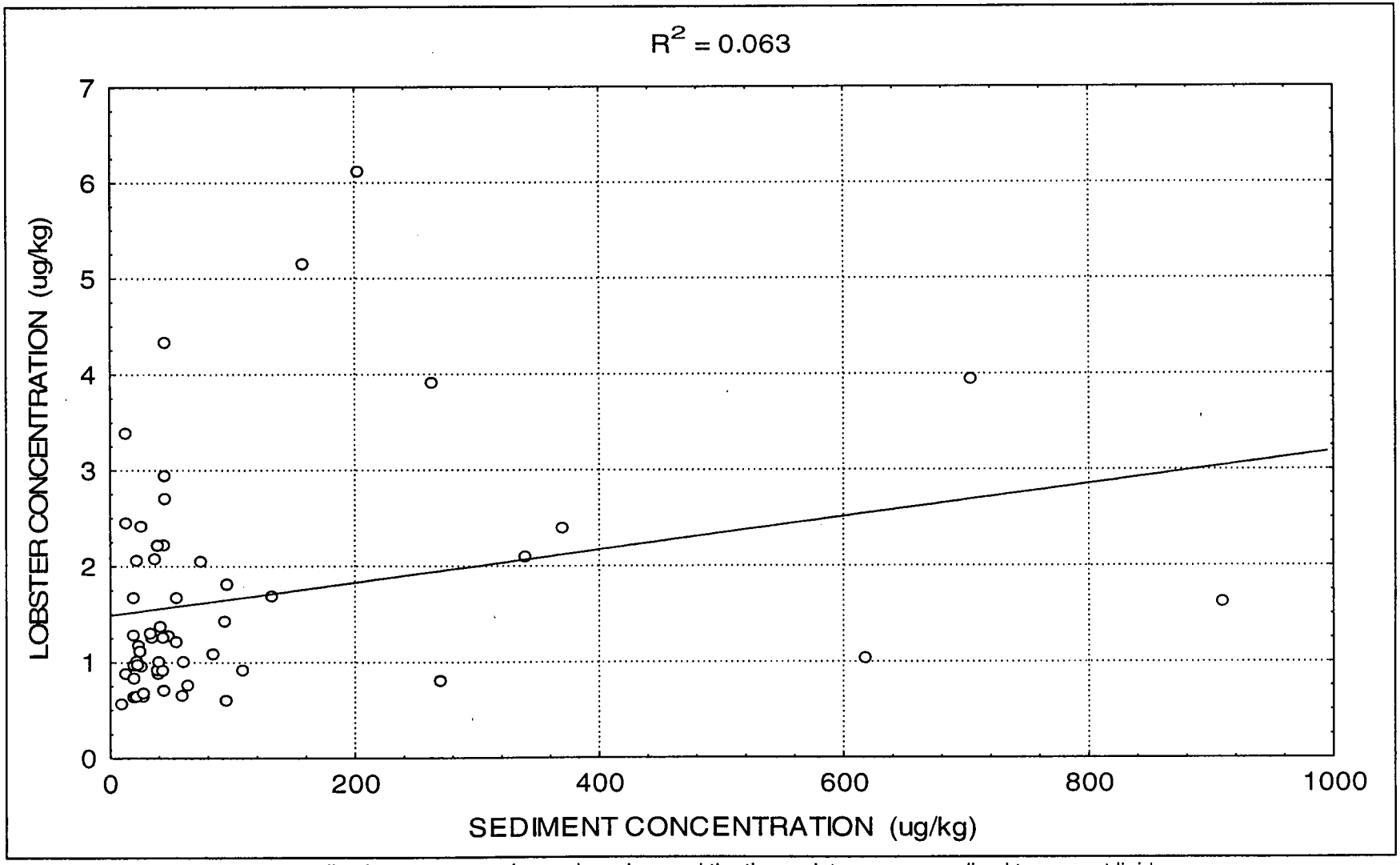
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN REFERENCE STATIONS - ANTHRACENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 5

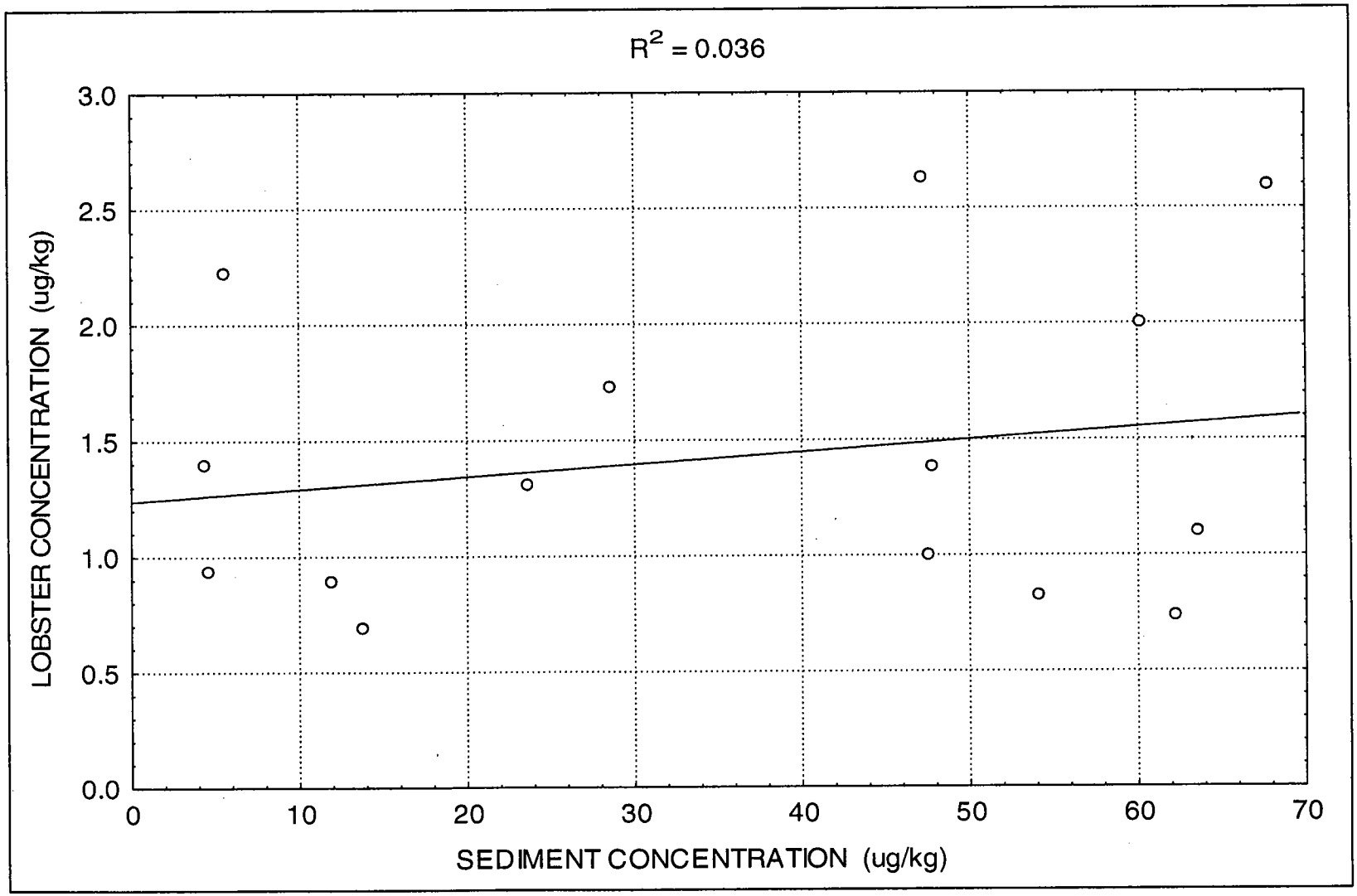
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN MONITORING STATIONS - FLUORENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 6

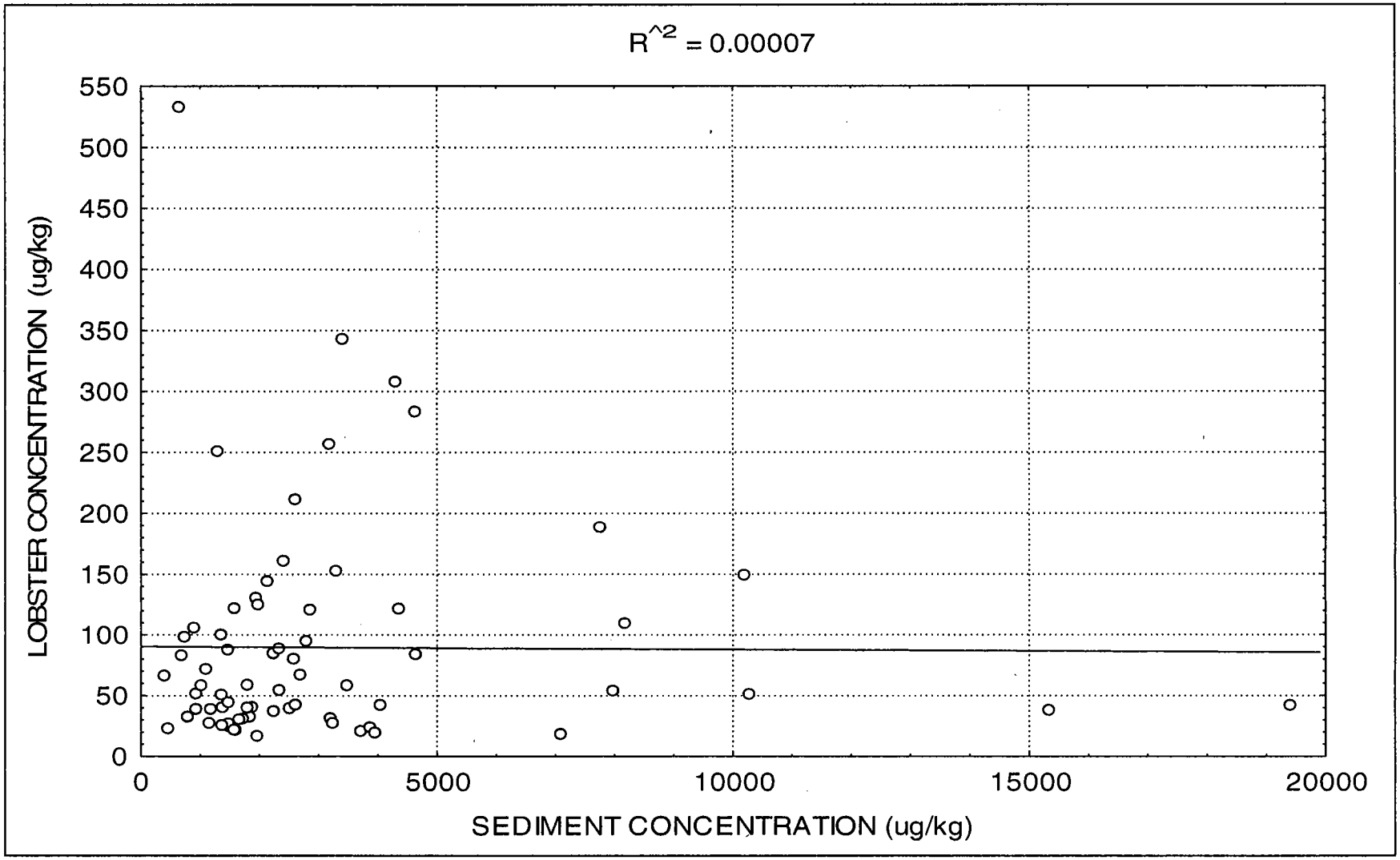
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN REFERENCE STATIONS - FLUORENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 7

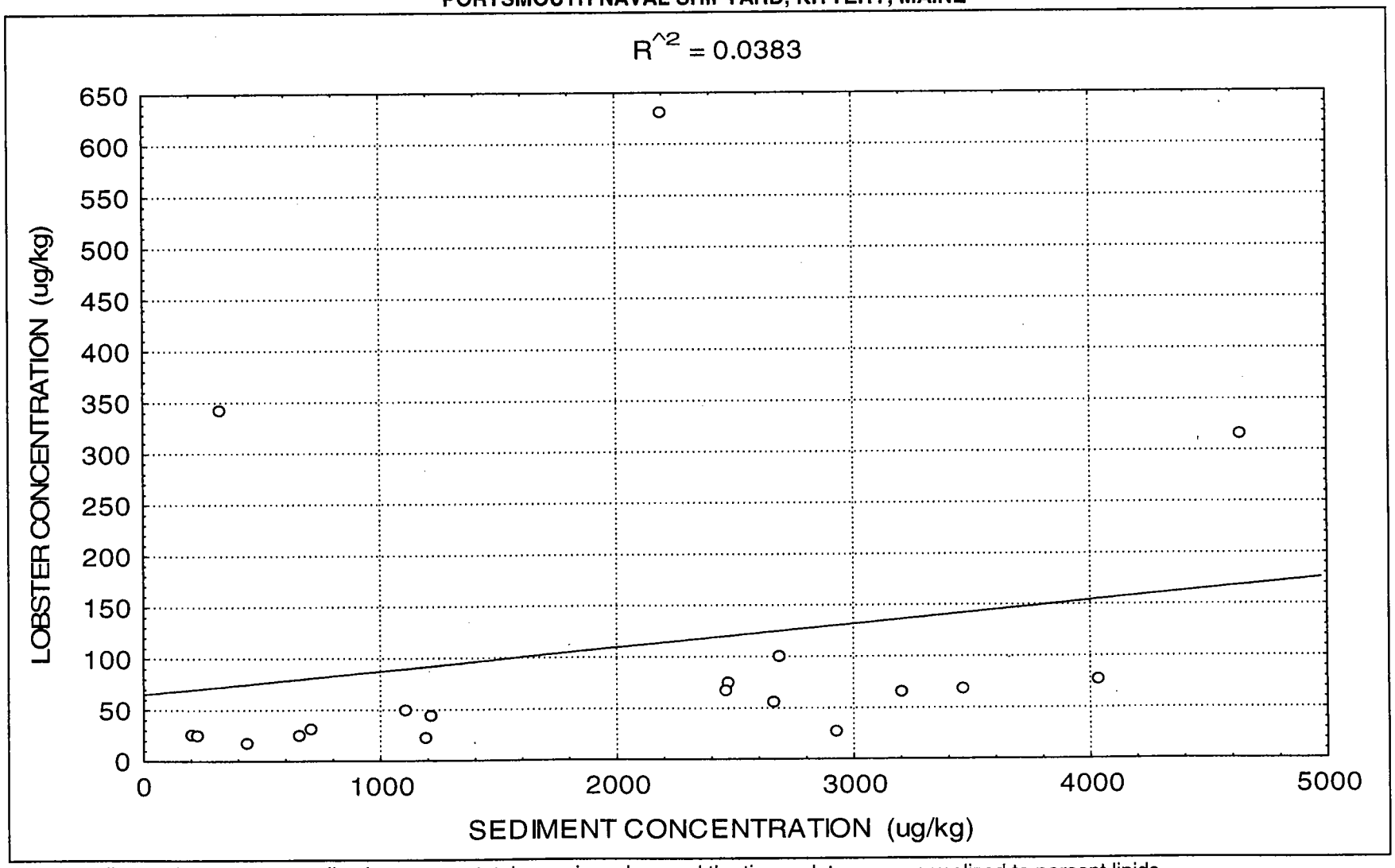
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS AT THE MONITORING STATIONS - HMW PAHS - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 8

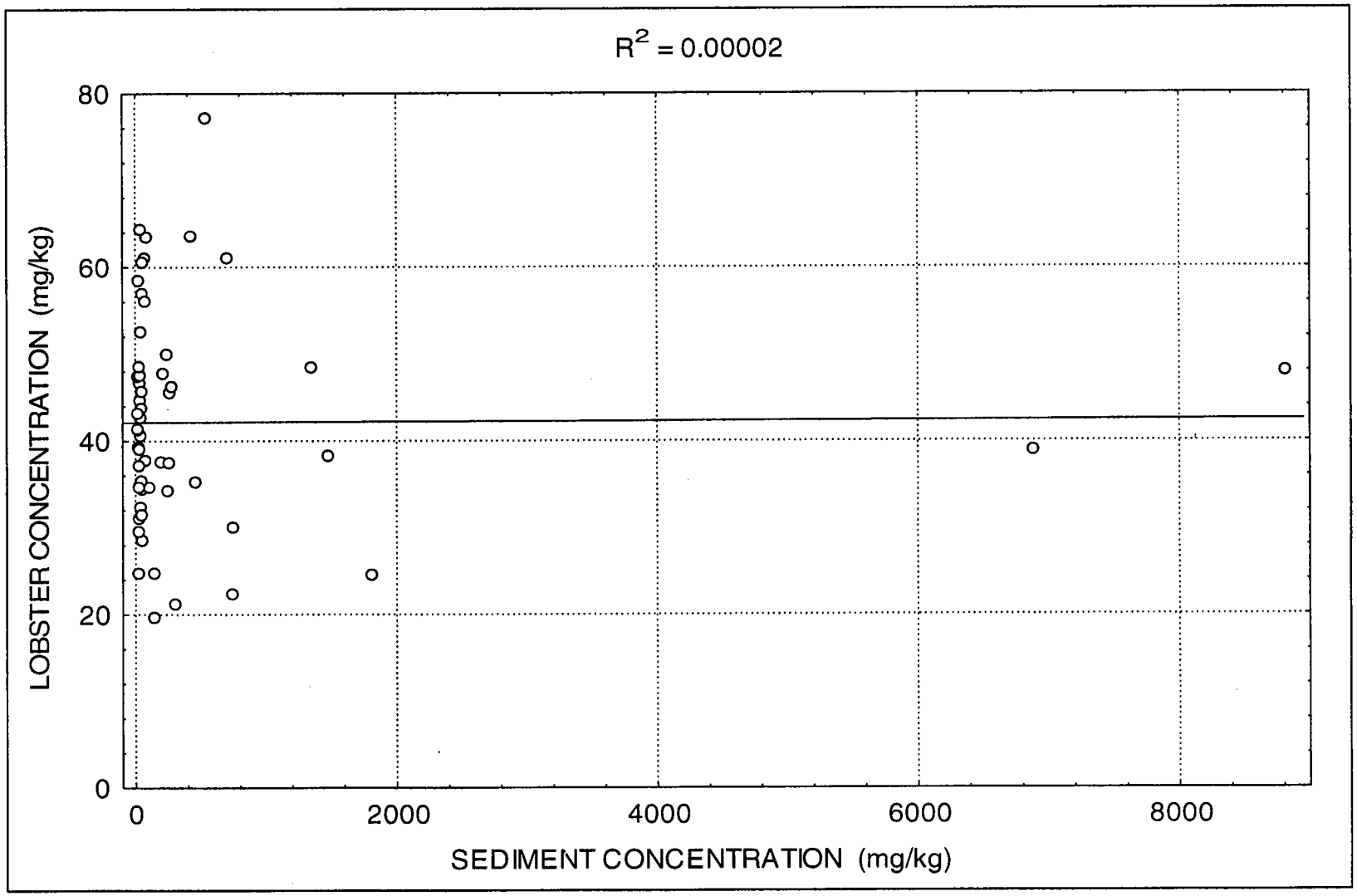
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE REFERENCE STATIONS - HMW PAHS - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE 7 - 9

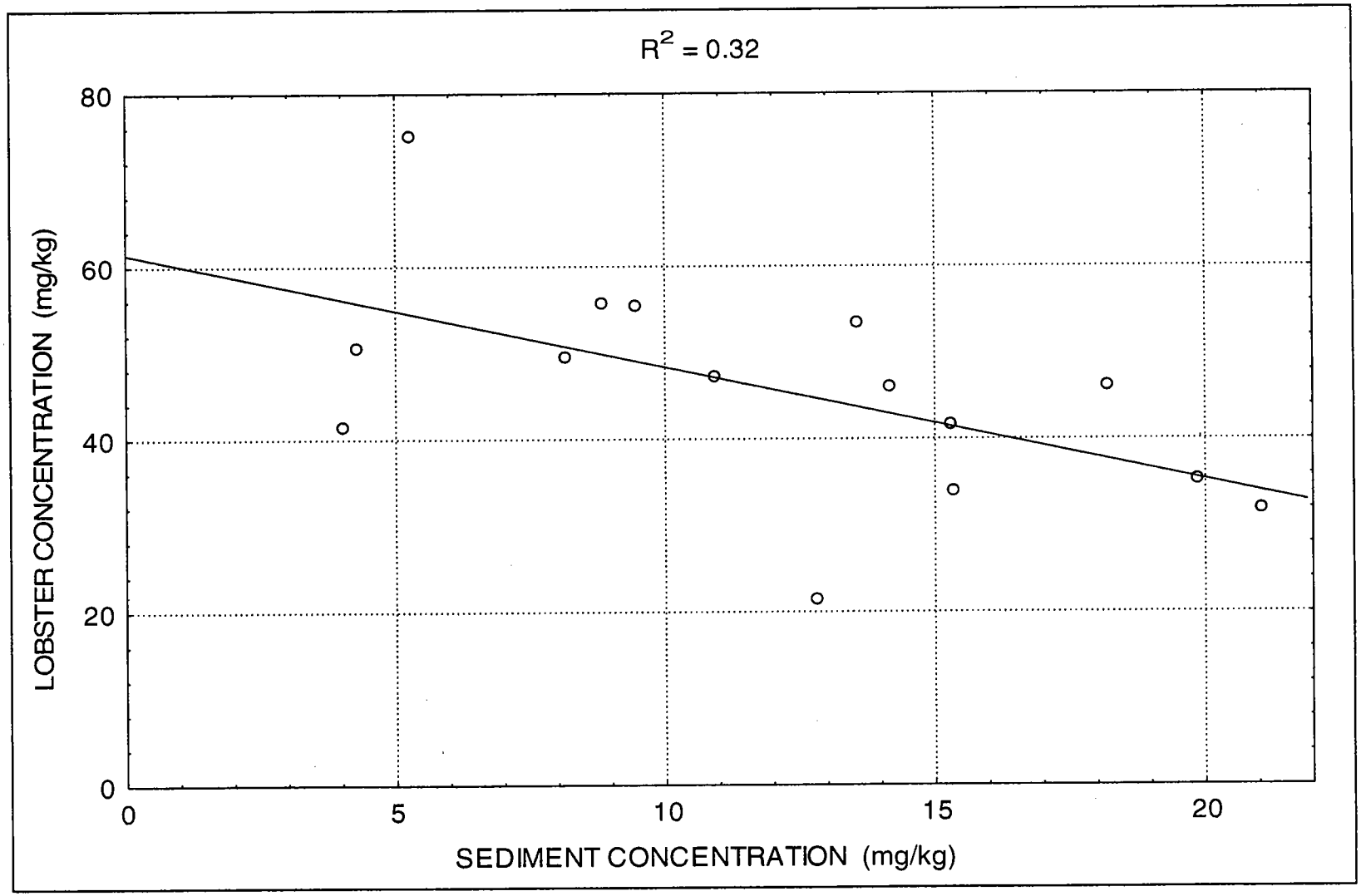
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN MONITORING STATIONS - COPPER - NON-NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- Neither the sediment or tissue data were normalized.

FIGURE 7 - 10

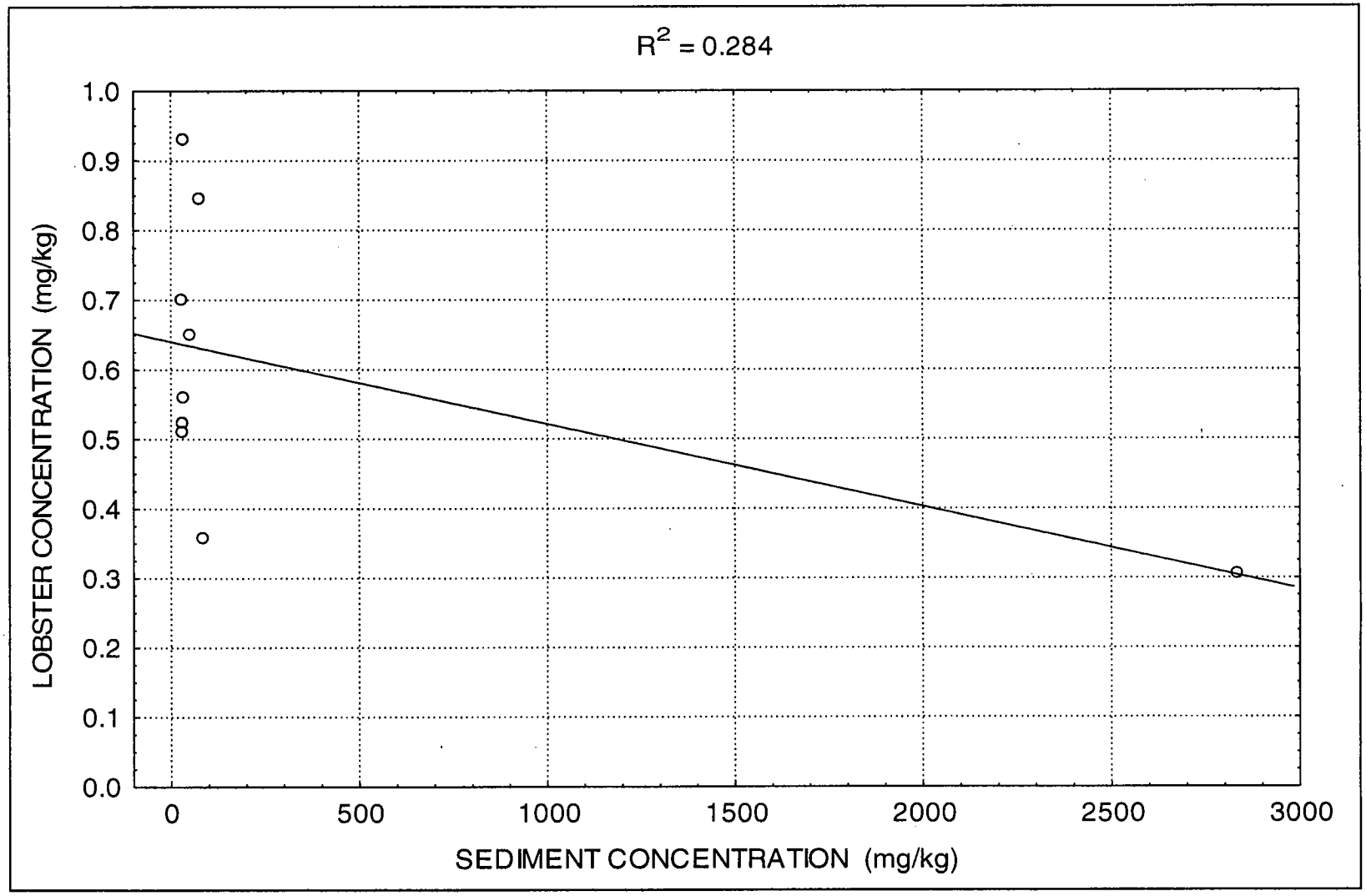
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS IN REFERENCE STATIONS - COPPER - NON-NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- Neither the sediment or tissue data were normalized.

FIGURE 7 - 11

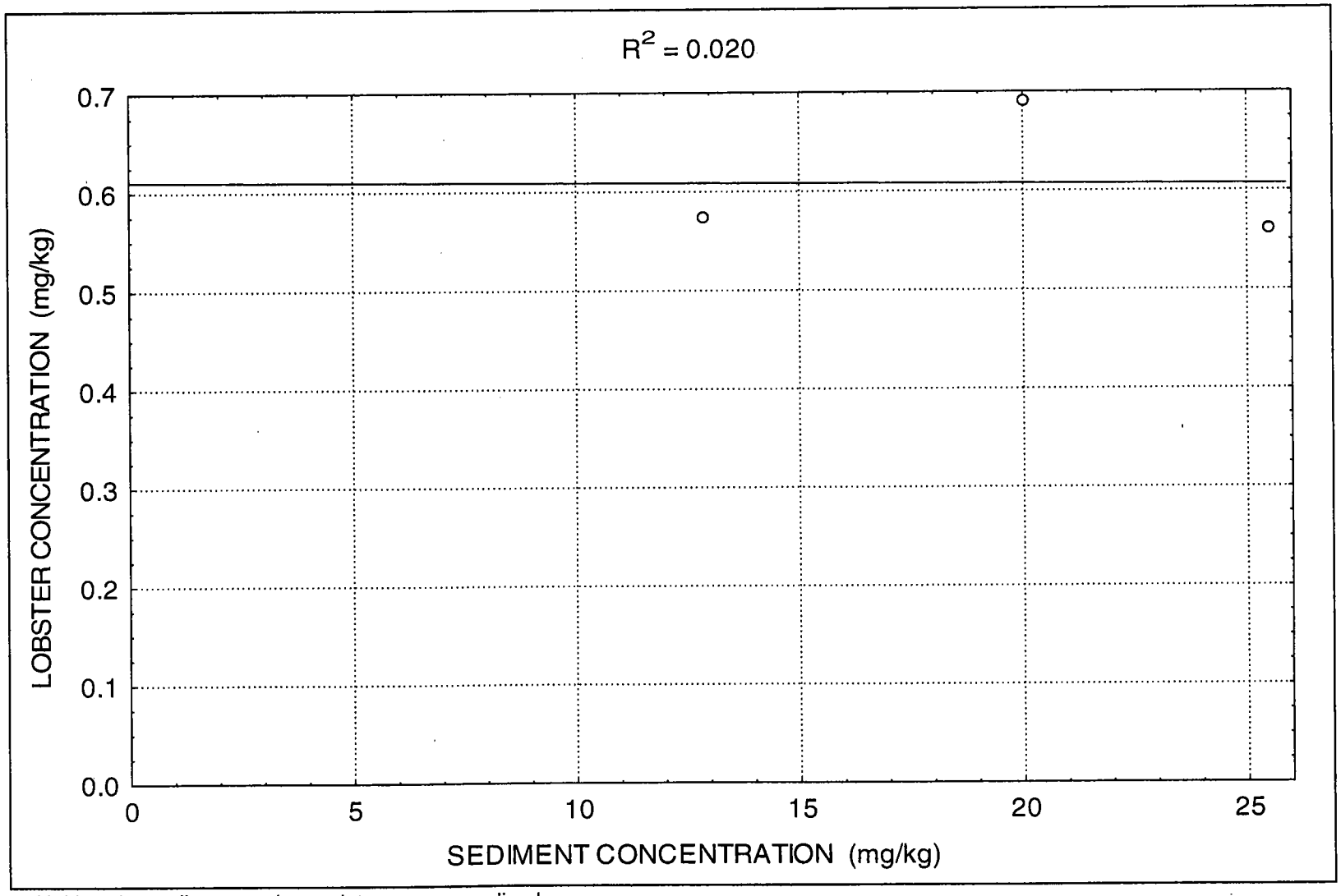
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN MONITORING STATIONS - NICKEL - NON-NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- Neither the sediment or tissue data were normalized.

FIGURE 7 - 12

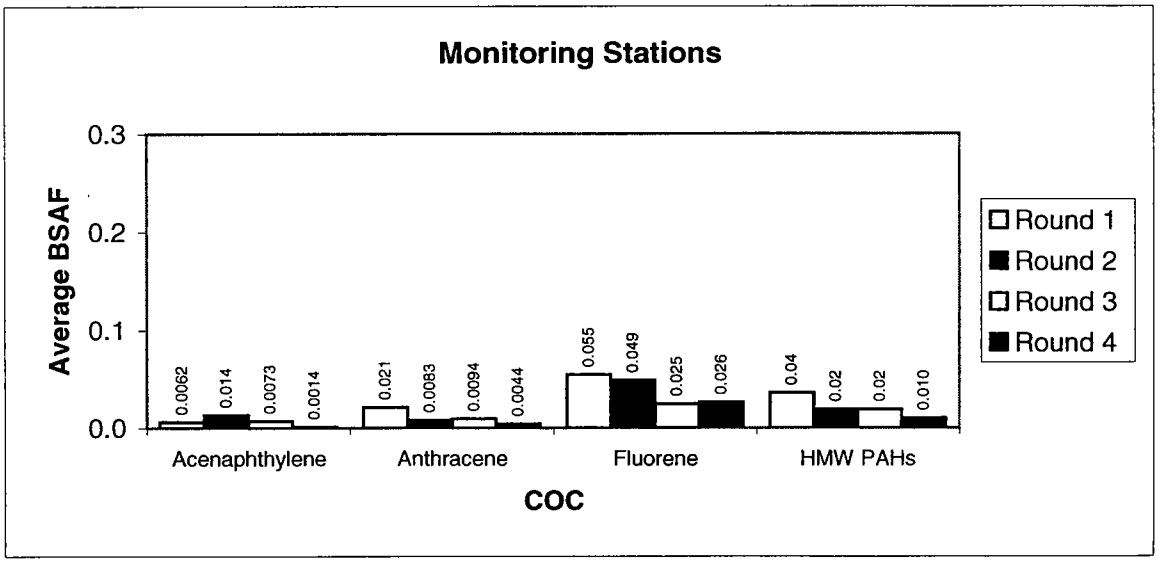
CORRELATION PLOT OF JUVENILE LOBSTER CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN REFERENCE STATIONS - NICKEL - NON-NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

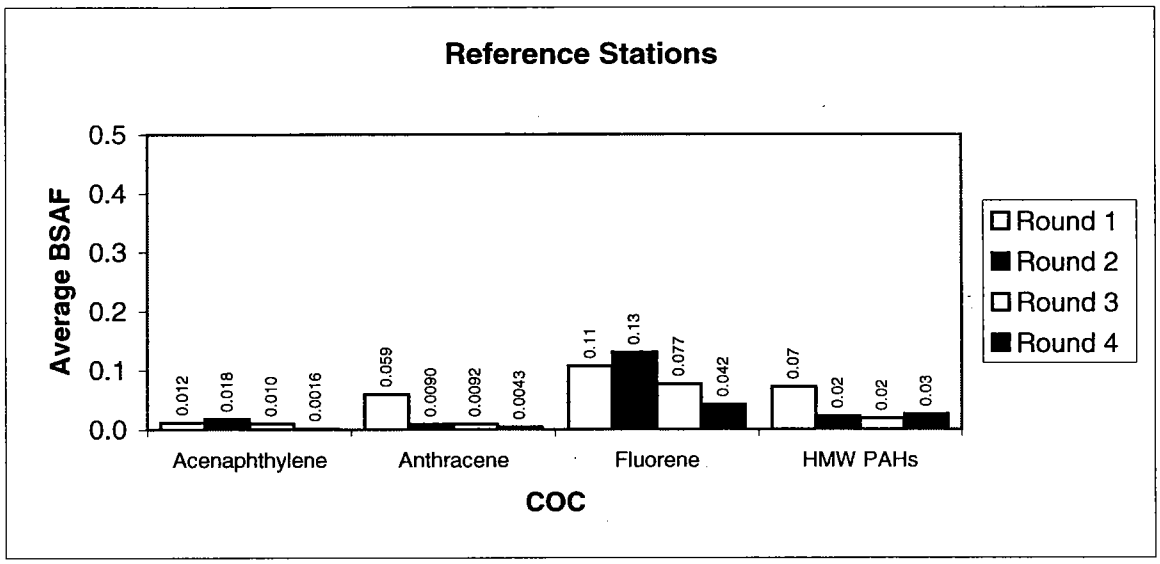


- Neither the sediment or tissue data were normalized.

FIGURE 7-13

AVERAGE PAH BSAFS FOR JUVENILE LOBSTERS ACROSS ALL THE MONITORING AND REFERENCE STATIONS ACROSS EACH ROUND BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

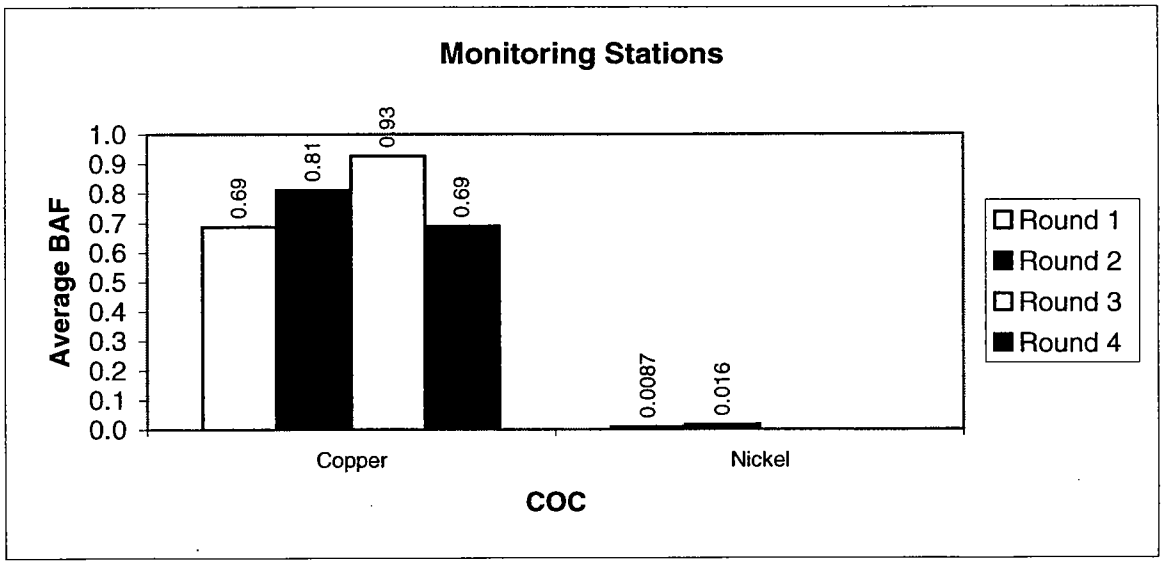


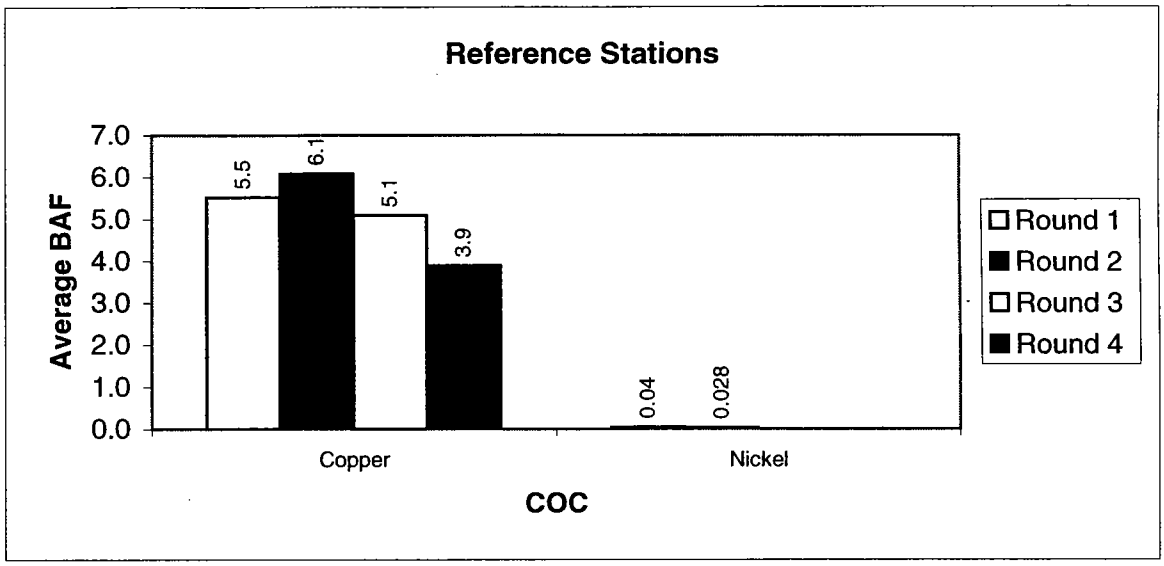


- The bars for each station are in order of Rounds 1 through 4

FIGURE 7-14

AVERAGE COPPER AND NICKEL BAFS FOR JUVENILE LOBSTERS ACROSS ALL THE MONITORING AND REFERENCE STATIONS ACROSS EACH ROUND
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE





- The bars for each station are in order of Rounds 1 through 4

8.0 DIOXIN RISK EVALUATION

8.1 OBJECTIVE

The primary objective for this section of the baseline report is to evaluate dioxin risks for humans and ecological receptors.

8.2 BACKGROUND

Historic sediment samples that were collected in the PNS offshore area were not analyzed for dioxins, so the previous human health and ecological risk assessments for the offshore area did not include dioxins. For this monitoring program, sediment, mussel, and juvenile lobster samples from six monitoring stations and all of the reference stations were analyzed for dioxins. The monitoring stations were selected for dioxin analysis based on locations potentially impacted by IRP sites where dioxins may be a potential COC (Site 29 and Site 8). The selected stations for dioxin analysis were M07, M08, and M09 (near Site 8, where ash from Site 29 was reportedly disposed) and M10, M11, and M12 (locations downgradient, near, and upgradient, respectively, of Site 29, where an incinerator site was located) (see Table 3-1).

The dioxin and furan concentrations detected in sediment, mussel, and, juvenile lobster samples collected for OU4 were presented in the data packages for Rounds 1 through 4 (TtNUS, February 2000, October 2000, January 2001, and September 2001). Because many individual dioxin compounds were analyzed and the toxicity of these compounds are different, the results were converted to toxic equivalent concentrations (TEQs) of 2,3,7,8-tetrachlordibenzo-p-dioxin (2,3,7,8-TCDD) (see Table 8-1). As suggested by USEPA Region I, the TEQs of 2,3,7,8-TCDD were calculated using the toxic equivalency factors (TEFs) presented in Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife (Van den Berg et al., 1998). A copy of this reference and an example of the TEQ calculation are included in Appendix K. The TEFs relate the toxicity of each dioxin/furan congener to that of 2,3,7,8-TCDD and are used to convert each dioxin/furan congener concentration to a TEQ of 2,3,7,8-TCDD. TEQs for the individual congeners are summed to represent the total TEQ for a sample.

The TEQs of 2,3,7,8-TCDD in the sediment, mussel, and juvenile lobster samples collected over four rounds of sampling are presented in Table 8-1. These TEQs represent the average wet weight concentration for each round of biota samples and the average dry weight concentration for each round of sediment samples. As recommended by the Exposure Factors Handbook (USEPA, August 1997), the wet weight concentration for the biota samples was calculated using the percent moisture value reported for each sample by the analytical laboratory. An example calculation is presented in Appendix K. The

TEQs for 2,3,7,8-TCDD for the sediments and the biota were calculated two ways: using positive detections only and assuming one-half the sample quantitation limit (SQL) for non-detect results. Analytical laboratories typically only consider the positive detection when calculating TEQs of 2,3,7,8-TCDD. However, the second approach (i.e., assuming one-half the SQL for non-detect results) is often used to calculate the exposure point concentration for baseline risk assessments. Both sets of calculations are presented in Appendix K. The results presented in Table 8-1 are those calculated using the positive detections only because the TEQ concentrations for biota are significantly affected (biased high) by the inclusion of one-half the SQLs. The SQLs for many of the tissue samples were greater than those were for the sediment samples because the laboratory uses a smaller sample aliquot for the tissues because of interferences from the tissue matrix (see Appendix L). The greater SQL values caused the TEQs to be biased high. The TEQ calculations for the sediments are not significantly affected by either the inclusion or exclusion of non-detect results.

8.3 ESTABLISHMENT OF RISK SCREENING LEVELS

Human health and ecological dioxin screening levels for sediment, mussels, and/or juvenile lobsters were developed from the literature. The following sections summarize the methods used to develop the risk criteria and presents the risk screening levels that were used in the risk evaluation.

8.3.1 Human Health Screening Level

This section presents the methodology used to develop human health screening levels for 2,3,7,8-TCDD in sediment, mussels, and juvenile lobsters. The screening levels for the juvenile lobsters and mussels were based on exposure assumptions suggested by the Maine Bureau of Health (MBH), the Maine Department of Environmental Protection (MEDEP), the Maine Department of Agriculture, Food, and Rural Resources (MEDFARR), and data presented in the 1997 USEPA Exposure Factors Handbook. Risks to humans from consuming juvenile lobsters were calculated (conservatively), even though juvenile lobsters cannot be legally consumed. The assessment is conservative in that even though adult lobsters may accumulate greater concentrations of chemicals than juvenile lobsters, the home range of juvenile lobsters is smaller so they are more likely to accumulate chemicals from PNS than the adult lobsters. The following tables summarize ingestion rates for humans suggested by these agencies:

Ingestion Rate	Source	Comment
16 grams/day	MEDFARR, 1994	High end exposure (lobsters)
2 grams/day	MEDFARR, 1994	Central tendency exposure (lobsters)
55 grams/day	MEDEP, 1994	High end exposure (mussels)
32.4 grams/day	MEDEP, 1994	Central tendency exposure (mussels)

Ingestion Rate	Source	Comment
32 grams/day	MBH, 2001	Fish consumption rate assumed for State Action Levels (Assumes one meal per week)
5.6 grams/day	USEPA, August, 1997	Recommended mean intake rate for recreational marine anglers (Table 10-83, page 10-79)

The ingestion rates presented for the high-end exposures and the fish consumption rate for the State of Maine action levels assume one meal per week (e.g., one lobster per week). The fish consumption rate suggested by the MBH (32 grams per day) and the 5.6 grams per day ingestion rates were selected as high-end and central tendency ingestion rates for purposes of calculating screening levels. These values were selected because they are from the most recent references listed above. Other assumptions used to calculate the screening levels included:

- An exposure frequency of 350 days per year for both the high-end [or reasonable maximum exposure (RME) case] and central tendency exposure (CTE) case.
- An exposure duration of 30 years and 9 years for the RME and CTE case, respectively.
- An adult receptor body weight of 70 kg.
- A $1x10^{-5}$ target cancer risk level [the MBH has historically based consumption advisories on a $1x10^{-5}$ cancer risk level (i.e., a one-in-one-hundred-thousand excess chance of developing cancer)].
- A cancer slope factor of $1.5x10^{5}$ $(mg/kg/day)^{-1}$.
- A 50 percent fraction ingestion or intake from the areas of concern (i.e., although a human receptor may consume a meal of lobsters or mussels once a week, it is assumed that only 50 percent of these animals come from the area of concern).

The following screening levels for biota were based on these assumptions and were calculated as shown in Appendix K:

- RME case - 0.7 ng/kg
- CTE case - 14 ng/kg

The screening levels developed for 2,3,7,8-TCDD in sediments were 500 ng/kg and 9,000 ng/kg for the RME and CTE cases, respectively. The following assumptions were used to calculate the screening levels, with example calculations provided in Appendix K:

- An exposure frequency of 7 days per year for the RME case and 4 days per year for the CTE case. These exposure frequencies are low primarily because the sediment sampling locations are underwater (not accessible) all the time (subtidal stations) or most of the time (intertidal stations). Also, the shipyard is not a public area and many of the sampling locations are relatively inaccessible or off-limits to the public.

- A sediment adherence rate of 1 mg/cm^2 and 0.2 mg/cm^2 for the RME and CTE case, respectively. Studies of dermal exposure to sediments (and the corresponding appropriate adherence factors for sediments) are very limited. Consequently, the uncertainty attached to adherence factors for sediments is very high.

- A chemical-specific dermal absorption factor of 0.03 as recommended by Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) (USEPA, September 2001).

- A receptor skin surface area of 1,960 cm^2 available for contact with sediments (hands and feet of an adult receptor as suggested by McLaren/Hart, 1994).

- A sediment ingestion rate of 100 mg/day and 50 mg/day for the RME and CTE case, respectively.

- An exposure duration of 30 years and 9 years for the RME and CTE case, respectively.

- An adult receptor body weight of 70 kg.

- A $1x10^{-6}$ target cancer risk level (i.e., a one-in-one-million excess chance of developing cancer).

- A cancer slope factor of $1.5x10^5$ $(mg/kg/day)^{-1}$.

8.3.2 Ecological Screening Levels

Ecological screening levels were only located for sediment data. No screening levels were located to evaluate risks to mussels and juvenile lobsters from dioxin concentrations in their tissue. Table 5-1 in the Interim Report on Data and Methods for Assessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin Risks to Aquatic Life and Associated Wildlife (USEPA, March 1993) lists dioxin concentrations in sediment associated with risks to aquatic life and associated wildlife. The sediment concentrations were developed to protect fish from accumulation of toxic levels in their tissues (60 ng/kg), and to protect mammals and

birds that consume fish (2.5 ng/kg and 21 ng/kg, respectively). Although fish have different sensitivities to dioxins than mussels or lobsters available toxicity information indicates that aquatic invertebrates are substantially less sensitive to TCDD than fish (USEPA, March 1993). However, this is only based on a limited amount of data. The EERA (NCCOSC, 2000) did not include mammals as potential ecological receptors. Therefore, the sediment concentration established to protect mammals was not selected as the screening level for the evaluation in this report. Although, it is unlikely that avian wildlife will obtain a significant portion of their food only from the offshore stations that had sediment samples analyzed for dioxins, the sediment concentration established to protect birds (21 ng/kg) was selected as the screening level for the evaluation in this report to be conservative; it is lower than the sediment concentration established to protect fish (60 ng/kg).

8.4 COMPARISON TO SCREENING LEVELS

Table 8-1 presents the wet weight juvenile lobster and mussel concentrations and the dry weight sediment concentrations for each sample compared to the human health screening levels. TEQs calculated for mussel samples from seven monitoring stations were greater than the RME-based screening level. Six of the samples were collected in Round 2 and one sample was collected in Round 1. No monitoring station mussel samples or reference station mussel samples had TEQs that were greater than the CTE-based screening level.

TEQs calculated for the juvenile lobster samples from reference station R01 (Rounds 1 and 2) were greater than the RME-based screening level. None of the TEQs calculated for the juvenile lobster samples from the monitoring stations exceeded the risk-based screening level. None of the sediment samples had TEQs that were greater than the human health screening level that was developed.

Table 8-2 presents the dry weight sediment concentrations for each sample for each round compared to the avian sediment screening level (21 ng/kg). One sediment sample across all the rounds had a TEQ that exceeded the avian screening level, but none of the sediment samples had TEQs that exceeded the sediment concentration established to protect fish (60 ng/kg). The one sediment sample that exceeded the avian screening level was collected from monitoring station M11 during Round 3. This station is in the main channel of the Piscataqua River. The exceedance of the screening level in one sample will not result in a risk to birds, because these receptors will obtain their food over a large area, not only from monitoring station M11. Therefore, no risks to ecological receptors are expected from the concentrations of dioxins in the sediment.

8.5 CONCLUSIONS

Based on the comparison of TEQ concentrations in biota and sediment, there does not appear to be an unacceptable dioxin risk to humans consuming mussels or juvenile lobsters collected in the offshore area adjacent to PNS. Although a few of the TEQs calculated for the mussel samples from the monitoring stations exceeded the RME screening level, none of the TEQs in the mussel samples collected at the monitoring stations were greater than the CTE screening level. The exceedances of the RME screening level are marginal and the average dioxin concentration in the mussel tissue samples would be less than RME screening level. Given the accessibility issues described below and the low frequency of detection of TEQs exceeding the RME screening level, the CTE screening level may be the more relevant screening level for assessing potential risk. This is because the RME screening level assumes that a human receptor is consuming one-meal a week of biota taken from an area under investigation and that the duration of exposure is 30 years. The CTE screening level was calculated assuming a lower consumption rate and exposure duration (i.e., more reflective of average conditions).

The maximum TEQ in the mussels was reported during Round 2 from monitoring stations M09, M10, M11, and M12. Station M12 is located in the dry dock area, which has restricted access. Monitoring stations M09 and M11 are also not easily accessible because the banks are steep and covered with rip-rap. Monitoring station M10 is easier to access than the other three stations, but the TEQs were marginally greater than the RME screening level. Overall, humans cannot easily collect and consume significant numbers of mussels from these areas, with the possible exception of M10.

Of the 60 mussel samples that were analyzed for dioxins at the monitoring stations, TEQs reported for nine samples were greater than the screening level. TEQs reported for samples from Rounds 3 or 4 did not exceed the screening level, and only one station in Round 1 had a TEQ that exceeded the screening level. Also, the TEQs in mussels that exceeded the screening levels in Round 2 were significantly lower in Rounds 1, 3, and 4. Therefore, the average TEQ value for all the mussel samples across all of the rounds is less than the RME screening level.

The only TEQs that exceeded the RME screening level for the juvenile lobsters were for Rounds 1 and 2 samples from reference station R01. None of the TEQs calculated for the lobster samples from the monitoring stations exceeded the RME screening level. Finally, the maximum sediment TEQ detection was well below the human health RME screening level, and no risks to ecological receptors are expected from the concentrations of dioxins in the sediment.

In conclusion, dioxin concentrations in sediment, mussel, and juvenile lobster collected from the monitoring stations do not appear to be at levels that would result in unacceptable risks to human or

ecological receptors. Therefore, the Navy will evaluate whether to discontinue dioxin analysis for future rounds after the results of Rounds 5 and 6 are reviewed as part of the 5-Year Review Report.

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TABLE 8-1

COMPARISON OF DIOXIN TEQS IN JUVENILE LOBSTERS, MUSSELS AND SEDIMENT TO HUMAN HEALTH SCREENING LEVELS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 1 OF 2

Station	Tissue Screening Level[1]	Juvenile Lobster (wet wt TEQs) ng/kg				Mussel (wet wt TEQs) ng/kg				Sediment Screening Level[2]	Sediment (dry wt TEQs) ng/kg			
		Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4		Round 1	Round 2	Round 3	Round 4
M07-1	0.7/14	ND	ND	0.046	ND	0.00063	0.47	0.092	0.001	500/9000	1.5	1.9	3.5	0.73
M07-2	0.7/14									500/9000	0.15	1.1	0.50	0.10
M07-3	0.7/14					0.11	0.002	0.07	ND	500/9000	0.60	1.3	0.38	0.02
M08-1	0.7/14	0.0005	ND	0.073	ND	0.36	0.57	0.03	0.03	500/9000	1.5	5.5	5.2	0.21
M08-2	0.7/14					0.12	0.19	0.02	ND	500/9000	4.6	0.58	0.56	0.14
M08-3	0.7/14					0.046	0.96	0.001	ND	500/9000	0.43	1.0	0.22	0.05
M08-4	0.7/14									500/9000		0.41		
M09-1	0.7/14	ND	ND	0.009	ND	0.00034	0.97	0.16	0.14	500/9000	1.5	11.2	6.1	0.38
M09-2	0.7/14					0.04	1.11	0.23	0.023	500/9000	0.78	1.4	7.7	0.02
M09-3	0.7/14									500/9000	0.321	13.8	13.5	2.74
M09-4	0.7/14									500/9000		0.85		
M10-1	0.7/14	ND	0.041	0.0002	ND	0.74	0.36	0.11	ND	500/9000	0.3	0.9	0.66	1.23
M10-2	0.7/14					0.0018	0.08	0.0013	ND	500/9000	1.71	3.42	ND	0.03
M10-3	0.7/14					0.0006	0.79	0.0013	ND	500/9000	6.54	0.79	0.070	1.75
M11-1	0.7/14	ND	0.387	0.0001	ND	0.036	1.11	ND	0.047	500/9000				
M11-2	0.7/14					ND	0.69	0.071	ND	500/9000	0.60			
M11-3	0.7/14					0.00061	0.19	ND	ND	500/9000	1.32	13.04	32.57	2.32
M12-1	0.7/14	ND	0.349	ND	ND	0.00078	0.11	0.08	0.00012	500/9000	3.56	4.65	7.41	3.24
M12-2	0.7/14					ND	3.20	0.0016	0.0034	500/9000	2.27	1.38	3.25	4.03
M12-3	0.7/14									500/9000	4.22	3.75	0.13	0.18
R01-1	0.7/14	3.148	4.037	0.040	0.077					500/9000	2.41	2.44	0.80	4.02
R01-2	0.7/14									500/9000	0.64	0.32	0.10	0.77
R01-3	0.7/14					ND	0.42	0.11	ND	500/9000	0.38	0.34	0.06	0.13
R01-4	0.7/14					ND	0.35	0.025	ND	500/9000	1.15	1.57	2.14	2.95
R02-1	0.7/14	ND	0.046	0.062	ND					500/9000	0.54	1.76	0.06	1.72
R02-2	0.7/14									500/9000	0.64	1.63	0.12	0.0080
R02-3	0.7/14					0.032	0.04	ND	0.01	500/9000	0.76	1.21	1.20	0.59
R02-4	0.7/14					0.25	0.0015		ND	500/9000	2.60	3.06	ND	7.13
R03-1	0.7/14	ND	ND	0.079	ND					500/9000	0.19	1.06	10.75	0.72
R03-2	0.7/14									500/9000	1.43	2.14	ND	4.23
R03-3	0.7/14					0.10	0.17	0.11	ND	500/9000	0.06	1.32	1.01	0.83
R03-4	0.7/14					0.60	0.049	ND	0.05	500/9000	0.55	1.13	3.02	3.54

TABLE 8-1

COMPARISON OF DIOXIN TEQS IN JUVENILE LOBSTERS, MUSSELS AND SEDIMENT TO HUMAN HEALTH SCREENING LEVELS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Station	Tissue Screening Level(1)	Juvenile Lobster (wet wt TEQs) ng/kg				Mussel (wet wt TEQs) ng/kg				Sediment Screening Level(2)	Sediment (dry wt TEQs) ng/kg			
		Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4		Round 1	Round 2	Round 3	Round 4
R04-1	0.7/14	ND	0.066	ND						500/9000	0.22	2.70	3.52	2.16
R04-2	0.7/14									500/9000	ND	0.32	ND	0.12
R04-3	0.7/14					ND	0.075	0.00093	0.011	500/9000	0.10	0.31	0.020	0.047
R04-4	0.7/14					ND	0.081	0.059	0.039	500/9000	0.29	0.52	ND	0.028

- Duplicates samples were averaged in this table.
- Shaded cells are concentrations that exceed the lowest screening level.
- The wet-weight concentrations were calculated by multiplying the dry weight concentrations by the sample-specific percent solids (see Appendix K).

1 - Tissue screening levels are based on a carcinogenic risk of 10^{-5}. See Appendix K for an example calculation.
  - 0.7 ng/kg is the reasonable maximum exposure screening level.
  - 14 ng/kg is the central tendency exposure screening level.

2 - Sediment screening levels are based on a carcinogenic risk of 10^{-6}. See Appendix K for example calculation.
  - 500 ng/kg is the reasonable maximum exposure screening level.
  - 9000 ng/kg is the central tendency exposure screening level.

ND - Not detected.
TEQ - Toxic equivelent concentrations

TABLE 8-2

COMPARISON OF DIOXIN TEQS IN SEDIMENT TO ECOLOGICAL SEDIMENT SCREENING LEVELS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Station	Sediment Screening Level (dry wt TEQs) ng/kg[1]	Sediment (dry wt TEQs) ng/kg			
		Round 1	Round 2	Round 3	Round 4
M07-1	21	1.5	1.9	3.5	0.73
M07-2	21	0.15	1.1	0.50	0.10
M07-3	21	0.60	1.3	0.38	0.02
M08-1	21	1.5	5.5	5.2	0.21
M08-2	21	4.6	0.58	0.56	0.14
M08-3	21	0.43	1.0	0.22	0.05
M08-4	21		0.41		
M09-1	21	1.5	11	6.1	0.38
M09-2	21	0.78	1.4	7.7	0.020
M09-3	21	0.32	14	14	2.7
M09-4	21		0.85		
M10-1	21	0.34	0.88	0.66	1.2
M10-2	21	1.7	3.4	ND	0.030
M10-3	21	6.5	0.79	0.070	1.7
M11-1	21				
M11-2	21	0.60			
M11-3	21	1.3	13	33	2.3
M12-1	21	3.6	4.6	7.4	3.2
M12-2	21	2.3	1.4	3.2	4.0
M12-3	21	4.2	3.8	0.13	0.18
R01-1	21	2.4	2.4	0.80	4.0
R01-2	21	0.64	0.32	0.10	0.77
R01-3	21	0.38	0.34	0.06	0.13
R01-4	21	1.1	1.6	2.1	2.9
R02-1	21	0.54	1.8	0.06	1.7
R02-2	21	0.64	1.6	0.12	0.01
R02-3	21	0.76	1.2	1.2	0.59
R02-4	21	2.6	3.1	ND	7.1
R03-1	21	0.19	1.1	11	0.72
R03-2	21	1.4	2.1	ND	4.2
R03-3	21	0.058	1.3	1.0	0.83
R03-4	21	0.55	1.1	3.0	3.5
R04-1	21	0.22	2.7	3.5	2.2
R04-2	21	ND	0.32	ND	0.12
R04-3	21	0.10	0.31	0.020	0.047
R04-4	21	0.29	0.52	ND	0.028

- Duplicates samples were averaged in this table.
- Shaded cells are sediment concentrations that exceed the screening level.

1 - Sediment screening level is based on risks to birds (USEPA, 1993).
See Section 8.3.2 of the Baseline Report for a discussion of the screening level.

ND - Not detected.

TEQ - Toxic equivelent concentration.

9.0 UNCERTAINTY ANALYSIS

9.1 OBJECTIVE

The primary objective for this section of the Baseline Report is to summarize some of the uncertainties that are associated with various sections of the report and monitoring program.

9.2 SAMPLING UNCERTAINTIES

Some of the uncertainties involved with the sampling effort include the depth of the samples, the sample locations, and the size of the mussels and lobsters collected for chemical analysis. The following paragraphs discuss each of these uncertainties.

The sediment samples were collected from 0 to 10 cm to be consistent from round to round. Although care was taken to ensure that the sediment samples for chemical analysis were taken from 0-10 cm, the actual depth may have varied slightly (within a cm or two). Also, it was easy to collect the intertidal sediment samples within a few feet of each other between rounds because of the permanent markers, and because the GPS could be used to guide the sampler to the exact spot (within <1 meter). The river currents made it more difficult to return to the exact subtidal location for some locations, but the samples were likely within five to 10 meters of each other between rounds. The objective of the monitoring program is to determine the trends of the chemical concentrations within the monitoring station. Therefore, because the samples collected are still representative of the monitoring station, the uncertainty with the samples not being collected at the exact same location or exact same depth between rounds is not significant

Mussels that were 5 to 6 cm in length were preferentially collected for chemical analysis, when available, as stated in Appendix B.5 of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Some samples had a few larger or smaller mussels, depending upon availability. However, primarily larger mussels (6 to 9 cm) were collected at several locations throughout the rounds because inadequate numbers of mussels in the preferred size range were available. Subtidal mussels are typically larger than intertidal mussels because subtidal mussels spend a larger portion of their time feeding; intertidal mussels close and do not feed when the tide it out. The following table lists the samples with the larger mussels during each round:

Round 1	Round 2	Round 3	Round 4
OU4-MU-M01-399A	OU4-MU-M01-300B	OU4-MU-M01-300A	OU4-MU-M01-301B
OU4-MU-M10-299A	OU4-MU-M02-200B	OU4-MU-M10-200A	OU4-MU-M02-101B
OU4-MU-M10-399A	OU4-MU-M07-300B	OU4-MU-M10-300A	OU4-MU-M06-201B
OU4-MU-R01-399A	OU4-MU-M08-200B	OU4-MU-M14-200A	OU4-MU-M08-201B
OU4-MU-R01-499A	OU4-MU-M10-200B	OU4-MU-R01-300A	OU4-MU-M10-201B
OU4-MU-R03-399A		OU4-MU-R03-300A	OU4-MU-M10-301B
		OU4-MU-R04-300A	OU4-MU-M13-301B
			OU4-MU-R03-301B

Five lobsters (in the preferred size range) from each station were composited into a single tissue sample and analyzed by the laboratory, at most stations during most rounds. Adequate numbers of juvenile lobsters were collected in the preferred size range (5 to 6 cm carapace length) at most of the monitoring stations. However, during some rounds, lobsters that were slightly smaller or slightly larger were collected and analyzed because adequate numbers of lobsters in the preferred size range were not collected. Also, during some rounds, less than five lobsters were collected at each station.

Larger/older animals may have greater concentrations of certain chemicals because they have been accumulating chemicals over a longer time period. The slightly smaller or larger lobsters typically only account for one or two of the five lobsters in those few samples affected, which should not significantly change the results. However, there is some uncertainty in comparing the chemical concentrations between smaller animals and larger animals.

9.3 ANALYTICAL DATA

There are many factors that influence the chemical concentrations in the sediment and tissue samples across the stations. For example, chemical concentrations of organic chemicals may be related to TOC in the sediment and percent lipids in tissue, while chemical concentrations of inorganic chemicals may be related to aluminum concentrations in the sediment. These factors are taken into account when the data are normalized. However, other factors that may influence chemical concentrations in media, and/or the bioavailability of these chemicals are not quantitatively evaluated. For example grain size, although related to TOC, may influence chemical concentrations in sediment, since chemicals tend to bind more to the finer particulates. Also, although chemical concentrations are measured in the sediment and tissue, they may be more or less bioavailable in certain samples because of factors such as pH, AVS, and TOC, which are not directly taken into account.

The chemical concentrations in some of the duplicate sediment samples vary significantly at some locations. For example, the concentrations of PAHs at monitoring station M01-3 during Round 2 were greater in original samples versus the duplicate (see Table B-2 in Appendix B). The likely reason for this is that the sediment is heterogeneous at some locations, which may add to the uncertainty in the analytical data. For this monitoring program, these uncertainties are taken into account by the multiple sampling rounds, which will tend to neutralize the effects that heterogeneous samples have on the overall data set.

9.4 BIOACCUMULATION FACTORS

Section 4.2 presents the calculations of the BAFs and BSAFs for mussels and lobsters. There are many assumptions that are inherent in these calculations, and add to the uncertainty of the values.

Mussels are filter feeders, and accumulate chemicals from the sediment when the sediment is suspended in the water. During the monitoring program, sediment samples are collected from the top 10 cm. However, only a small portion of the top 10 cm would likely be resuspended during a normal tidal cycle. Therefore, changes in the very shallow surficial layer of the sediment may not be observed in the sediment samples, but may be observed in the mussel that accumulated the chemicals from that surficial layer. This may explain some of the low correlations between chemical concentrations in sediment and mussels at the same locations as seen from the correlation plots in Appendix E. This also may explain the large variation in BSAFs and BAFs within the parameter groups as presented in Tables 4-7 and 4-8. The uncertainties associated with the BAFs and BSAFs are not expected to significantly impact the monitoring program, because they are only being used to predict sediment concentrations at M11 where sediment is not present. The usefulness of predicting sediment concentrations at monitoring station M11 may need to be reevaluated in the 5-Year Review Report.

Low correlations were also observed between chemical concentrations in sediment and lobsters at the same locations as seen from Figures 7-1 through 7-12. There also were large variations in BSAFs and BAFs within the parameter groups as presented in Table 7-1 and Appendix J. There may be several reasons for the low correlations and high variations in the BAFs and BSAFs. Although juvenile lobsters were selected for collection and analysis because they have a small home range, their home range is larger than one monitoring station. Therefore, the lobsters will obtain their food and be exposed to sediment in areas other than the monitoring station. Also, juvenile lobsters are omnivorous, with their diet consisting of invertebrates, crabs, sea urchins, mussels, polychaetes, periwinkles, and sea stars, as well as fish and plants (U.S. FWS, 1985). Several of their prey food items (e.g., crabs) also may not spend large amounts of time within an individual monitoring station so they may not be accumulating chemicals from the same monitoring station which the lobsters were collected. These reasons may explain why very few lobster samples had elevated chemical concentrations across the monitoring stations.

9.5 HISTORICAL DATA COMPARSION

The comparison of the data collected during the interim offshore monitoring program to the historical data collected during the EERA and the 1996/1997 seep and sediment investigation was done to make some general observations. The samples were not collected at the same locations between the different sampling investigations, however. For example, the EERA samples were mostly subtidal, while the seep/sediment samples were all intertidal. Although there are inherent uncertainties in the comparison, the comparison did yield useful information, including the development of the conclusion that chemical concentrations at the stations in the sediment and mussels samples were similar between the sampling events.

9.6 HABITAT COMPARISON

The comparison of chemical concentrations between the different habitats (i.e., subtidal vs. intertidal and saltmarsh vs. eelgrass) illustrated that there are some differences in chemical concentrations between the areas. Therefore, there are some inherent uncertainties in averaging the chemical concentrations from the different areas within a monitoring station. The need (and methods, if necessary) for weighting the chemical concentrations in the different habitats will be evaluated by the Navy, regulators, and SAPL prior to the preparation of the 5-Year Review Report.

9.7 COEFFICIENT OF VARIATION

The number of sediment locations at each monitoring station was selected based on the CVs in the historic data. Some of the CVs calculated with the interim offshore monitoring data were greater than the CVs in the historic data in some areas around the shipyard (i.e., Back Channel). Therefore, there are uncertainties associated with the number of sediment locations at each monitoring station. The need for additional sediment samples at select monitoring stations will be evaluated in the Five-Year Review Report using additional rounds of data.

9.8 COMPARISON TO IRGS

The primary objective of the interim offshore monitoring data is to determine if average chemical concentrations in the sediment samples are exceeding, or have the potential to trend towards exceeding IRGs (within designated time-frames). There are uncertainties in the IRGs themselves, many of which are discussed in the Preliminary Remediation Goals for OU4 Report (TtNUS, November 2001). For example, ammonia may have caused some of the observed toxicity in the toxicity test samples used to develop the PRGs, because there were elevated ammonia concentrations in some of the toxicity test samples. Also, the large grain size in several samples may have contributed to toxicity as well. These

uncertainties could tend to lower the PRGs because the toxicity in those samples is assumed to be from the chemicals, when in fact the toxicity may be caused by confounding factors.

Also, as indicated in Section 9.4, because of the uncertainties with the sediment to mussel BAFs and BSAFs, there is some inherent uncertainty involved in using the mussel concentrations from monitoring station M11 to estimate sediment concentrations at that station, which are then compared to IRGs.

9.9 RECOMMENDATION OF SAMPLING SEASON

Several evaluations were conducted to determine the appropriate season for monitoring in future rounds. The primary uncertainties with this evaluation centered on the AVS/SEM data and focuses on how the data were collected. The AVS samples from 0 to 10 cm were transferred to the sample containers after the sediment was homogenized, which would cause the sediment to become aerated and thus reduce the AVS concentrations. Lower AVS concentrations indicate that the metals would be more bioavailable to aquatic receptors, therefore, the results may overpredict the bioavailability of metals.

The comparison of the AVS results from the 0 to 2 cm and the 0 to 10 cm ranges has several uncertainties. One assumption in making this comparison was that the SEM results collected from the 0 to 10 cm range are similar to the SEM results in the 0 to 2 cm range because of bioturbation. There is uncertainty in this assumption because the SEM concentrations in the 0 to 2 cm range were not measured. Also, there is uncertainty in comparing the AVS results from the two depths because the samples were handled differently. The 0 to 2 cm samples were placed directly into the sample containers while the 0 to 10 cm samples were first homogenized and then placed into the sample containers. As discussed in the above paragraph, homogenizing the sediment samples will cause some AVS to be released, leading to a lower AVS concentration in the 0 to 10 cm interval. The uncertainties in the AVS and SEM data are not expected to impact the monitoring program because the AVS and SEM data were not providing information that could be used to evaluate the monitoring stations. In fact, for that reason, the Navy, regulators, and SAPL agreed to discontinue analyzing the sediment samples for AVS and SEM in future sampling rounds (see the April 2, 2002 conference call meeting minutes in Appendix L).

9.10 DISCONTINUING LOBSTER SAMPLING

As presented in Section 7.0 of this report, a recommendation was made by the Navy to discontinue the lobster sampling in future rounds because the lobsters were not assimilating chemicals associated with PNS to any large degree, except in a few instances. Also, mussels were shown to be better accumulators of chemicals at PNS, probably because they are less mobile. There are some uncertainties associated with not having lobster data for future rounds since lobsters are different receptors than

mussels. The impact of the uncertainties on the monitoring program is not significant because the lobsters were not providing useful data for the monitoring program.

9.11 DIOXIN RISK EVALUATION

Samples collected from six of the monitoring stations and all four of the reference stations were analyzed for dioxins to evaluate risks to humans and ecological receptors. There were several uncertainties with the dioxin data as discussed below. Some of the samples had elevated detection limits during some of the rounds. This was especially true for the tissue data, which had much greater TEQs using one-half of the detection limits for non-detects versus using only positive detections to calculate the TEQs. The risk evaluation was conducted using only positive detections because of the elevated detection limits, however, the TEQs calculated using one-half the detection limits for non-detects was presented in Appendix K. Therefore, because of the elevated detection limits, there are uncertainties in using only positive detections.

9.12 SUMMARY OF UNCERTAINTIES

In summary, there are many sources of uncertainty in the monitoring program as discussed above, which are similar to the uncertainties in other site investigations and monitoring programs. Attempts have been made to reduce the uncertainties, where possible, by doing things such as normalizing the data to TOC and percent lipids. None of the uncertainties are deemed significant enough to change the monitoring program at this point. However, some of the uncertainties will be evaluated further prior to the 5-Year Review Report to determine if certain changes will need to be made to the monitoring program (i.e., collect additional sediment samples at select locations).

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Baseline Interim Offshore Monitoring Report For Operable Unit 4

Volume II - Appendices

Portsmouth Naval Shipyard

Kittery, Maine

Engineering Field Activity Northeast
Naval Facilities Engineering Command

Contract Number N62467-94-D-0888

Contract Task Order 0815

July 2002

APPENDIX A

DATA QUALITY ASSESSMENT REPORTS

APPENDIX A.1

DATA QUALITY ASSESSMENT REPORT FOR ROUND 1

Interim Offshore Monitoring Round 1 Data Quality Assessment
Portsmouth Naval Shipyard, Kittery, Maine
November 16, 2001

This memorandum presents the data quality assessment (DQA) for Round 1 of the Interim Offshore Monitoring Program. The detailed data quality evaluation is provided in Attachment A.1-1. This DQA document consists of data review for the following:

- Gross errors in chemical analyses, toxicology assessments, or data reporting.
- Gross inconsistencies among monitoring stations, reference stations, or sampling locations within monitoring stations or reference stations.
- Gross differences between observed coefficients of variation in the sediment data and expectations based on past data analyses.

1.0 GROSS ERRORS IN CHEMICAL ANALYSES, TOXICOLOGY ASSESSMENTS, OR DATA REPORTING

1.1 Detection Limits

Minimum and maximum detection limits achieved during laboratory analysis are compared to target method detection limits (MDLs) contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Because MDLs in Table 6-5i (Dioxins) are presented on a wet weight basis, target MDLs were recalculated accounting for the percent moisture to facilitate these comparisons (multiplied by 2 for sediment and 5 for tissue to obtain dry weight values). Tables 1-5 and 1-6 in Attachment A.1-1 list the minimum and maximum non-detected values for each matrix. Exceedance of the target MDL for some chemicals did affect the usability of the sample data for monitoring purposes. As presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999), trending of chemicals will be conducted for chemicals of concern (COCs) with interim remediation goals (IRGs) in sediment. Based on Table 1-5 and 1-6, the chemicals with IRGs were either detected in all of the sediment samples or the MDL did not exceed the target MDL.

1.2 Analytical Methods

Comparability of laboratory measurements is assessed primarily through the use and documentation of similar sampling and analytical methods. Results are reported in units that ensure comparability with previous data and with currents state and federal standards and guidelines. Comparability of field data is satisfied by ensuring that the field sampling plan is followed and that proper sampling techniques are used. Comparability of laboratory measurements is assessed primarily through the use of certified reference materials, spike recoveries, and relative percent difference (RPD) values, as well as by using proven analytical methods of comparable performance characteristics such as accuracy, precision, and sensitivity. Failure to achieve comparability results in corrective action.

Field data were generated using the methodologies and units as specified in the Interim Offshore Monitoring Plan.

1.3 Sampling Methods

Sampling was conducted by the University of Rhode Island (URI) under the supervision of Tetra Tech NUS (TtNUS). URI collected the samples in accordance with the standard operating procedures that were developed for this project as specified in the plan. Deviations in the sampling plan were documented in the Interim Offshore Monitoring Program Round 1 Data Package (TtNUS, February 2000). Based on the deviations, two of the sample locations were repositioned for Round 2 and subsequent sampling rounds. These changes are expected to improve the monitoring program by moving the sampling locations into eelgrass beds, as was the intent of the monitoring plan. In addition to the deviations presented in the Round 1 data package, the following modifications were made in the sampling procedures based on the availability of mussels and juvenile lobsters:

- Mussels that were 5 to 6 cm in length were preferentially collected for chemical analysis, when available as stated in Appendix B.5 of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Some of the samples had a few larger or smaller mussels, depending upon availability. However, primarily larger mussels (6 to 9 cm) were collected at several locations because inadequate numbers of mussels in the preferred size range were available. These samples are listed below. All those samples were collected from subtidal areas except OU4-MU-R01-499A, and that station is underwater except at very low tide. Subtidal mussels are typically larger than intertidal mussels because subtidal mussels spend a greater portion of

their time feeding, since they are covered with water all of the time. Mussels from OU4-MU-M08-399A were slightly smaller than the preferred size range (4 to 5 cm). The reason for the smaller mussels at this location is likely due to the sampler selecting the incorrect size of organism rather than because larger size mussels were not available. Subsequently, the sampler was instructed to more carefully select the preferred size range.

Samples with Larger Mussels

- OU4-MU-M01-399A
- OU4-MU-M10-299A
- OU4-MU-M10-399A
- OU4-MU-R01-399A
- OU4-MU-R01-499A
- OU4-MU-R03-399A

- Adequate numbers of juvenile lobsters were collected in the preferred size range (5 to 6 cm carapace length) at each of the monitoring stations. Five lobsters (in the preferred size range) from each station were composited into a single tissue sample and analyzed by the laboratory. After it was determined that the intestines were not removed from the lobster tail prior to chemical analysis, as was done for the lobsters collected during the Estuarine Ecological Risk Assessment (EERA) (NCCOSC, 2000), a subset of the remaining lobsters from each sample were selected for compositing and analysis. However, the majority of the remaining lobsters were either slightly larger (up to 6.3 cm) or slightly smaller (down to 4.2 cm) than the preferred size range. The collected sizes of juvenile lobsters fall within the size range specified in the monitoring plan so there is no anticipated adverse impact to the project. See the Round 1 Data Package (TtNUS, February 2000) for a more detailed explanation.

1.4 Data Validation

Attachment 1 presents a detailed data quality evaluation. Part of that evaluation includes a section on data validation. The following bullets present the most significant issues noted during the data validation:

- Many samples have elevated detection limits greater than the Target MDLs (see Tables 1-5 and 1-6). This is not an issue for reason discussed in Section 1.1.

- Many of the dioxin results in several samples are rejected because of internal standard recovery noncompliance. Therefore, the toxic equivalent (TEQs) that were calculated may be biased low.
- Many of the dioxin results in several samples are qualified as nondetected, U, because of noncompliances with the standard operating procedures. Therefore, the toxic equivalent (TEQs) that were calculated may be biased low.

2.0 CONSISTENCY AMONG MONITORING STATIONS, REFERENCE STATIONS, OR SAMPLING LOCATIONS WITHIN MONITORING STATIONS OR REFERENCE STATIONS

The Round 1 data package presents descriptive statistics for sediment (Tables 3-4a and 3-4b), mussel (Tables 3-8a and 3-8b), and juvenile lobsters (Tables 3-9a and 3-9b). The data in those tables are not normalized (see below). Those tables are included as an attachment to this DQA report for ease of review. The tables were not renumbered for this report. The following general observations were made after reviewing the tables:

- More dioxins were detected in the mussel samples than in the sediment or juvenile lobster samples. Maximum dioxin concentrations are generally noted at M10 (sediment and mussel) for the monitoring stations, and R02 (sediment and mussel) for the reference stations. No locations stood out as having the greatest number of maximum detections for dioxins for juvenile lobster.

- Most of the PAHs were detected in every sediment, mussel, and lobster sample. In general, the greatest PAH concentrations at the monitoring stations are in samples from M12 (sediment), M12 and M13 (mussel), and M02 (juvenile lobster). In general, the greatest PAH concentrations at the reference stations are observed in samples from R03 (sediment), R02 (mussel), and R03 and R04 (juvenile lobster).

- Most of the pesticides and PCBs were detected in the majority of the sediment, mussel, and juvenile lobster samples. No locations stood out as having the greatest number of the maximum detections for pesticides and PCBs for sediment, mussel, or juvenile lobster in the monitoring stations or in the reference stations, except for R02 in sediment (pesticides) and R02 and R04 for juvenile lobster (PCBs).

- Metals are detected in most if not all of the sediment, mussel, and juvenile lobster samples. The maximum concentrations of several metals in sediment at M11-2 (e.g., copper, lead, nickel, and zinc) are more than 20 times the mean concentrations. It was determined that the sediment at this location was soil that had eroded from the adjacent DRMO, and had accumulated in a small pile behind some mussels. The mussel sample collected by this sediment location has a lead concentration approximately 15 times the mean mussel tissue concentration across monitoring stations. The concentrations of metals in the juvenile lobster sample at M11 also do not appear to be elevated compared to the mean concentrations. Rip-rap was subsequently placed along the slope to prevent further erosion of the soil. Therefore, sediment/soil is no longer exposed at this location. Maximum metals concentrations tend to be observed in the sediment samples from M11, the mussel samples from R02, and the juvenile lobster sample from R01. No clear trends are identified for the locations of the maximum detections for metals in sediment at the reference stations, mussel at the monitoring stations, or juvenile lobster at the monitoring stations.

Analytical data were also normalized using the following procedures:

- Organic chemical concentrations in the sediment samples are divided by the percent of Total Organic Carbon (TOC) in the sediment, because organic chemicals tend to bind to organic carbon. The degree of binding is roughly proportional to the concentration of organic binding material in the sediment. Therefore, under similar situations, sediment samples with higher TOC concentrations would tend to have higher organic chemical concentrations versus samples with low TOC concentrations. By normalizing the organic chemical concentrations, any observed differences in chemicals concentrations that are caused solely by different TOC concentrations are taken into account.

- Organic chemical concentrations in the tissue samples are divided by the percent of lipids in the tissue, because organic chemicals tend to bind to lipids in tissue. The degree of binding is proportional to the lipid concentration. Therefore, under similar situations, tissue samples with higher lipid concentrations would tend to have higher organic chemical concentrations versus samples with low lipid concentrations. By normalizing the samples, any observed differences in organic chemical concentrations that are caused solely by different percent lipids are taken into account.

- Metal concentrations in the sediment samples are divided by the concentration of aluminum in the sediment. Aluminum is a naturally occurring crustal element and its presence in

sediments is not thought to be related to site activities. Therefore, all other factors being equal, sediment samples with higher aluminum concentrations would tend to have higher concentrations of other metals, if those metals are naturally occurring. By normalizing the sediment metal concentrations to aluminum, intrinsic variations in sediment metal concentrations are minimized to facilitate the detection of site-related (or other offshore) contaminants.

- Metals in the tissue samples are not normalized.

Tables A.1-1, A.1-2, and A.1-3 present the normalized sediment (organics and metals), mussel (organics), and juvenile lobster (organics) results, respectively, at each monitoring station. The non-normalized metals results for mussels and juvenile lobsters are also included in the appropriate tables. The results for the individual sample locations from each station are averaged, as presented in the Monitoring Plan (TtNUS, October 1999). The results for the individual samples are provided in Appendix B. The average reference station concentration (the average results from all four reference stations), along with the range of the average reference station concentrations also are included on Tables A.1-1, A.1-2, and A.1-3. Various values on the tables are shaded based on how high the numerical value was compared to the average reference concentration. The footnotes on the tables indicate the number of times greater than the reference concentration a sample had to be in order to be shaded. There is no significance in the number of times greater than the reference concentration a sample had to be to become shaded except that the factors used were selected to identify monitoring stations that had chemical concentrations that were the most elevated compared to the reference stations in the data.

The following bullets summarize the results of this evaluation using the normalized data.

- No monitoring stations stood out as having elevated dioxin levels for sediment, mussels, or juvenile lobsters.

- Concentrations of several PAHs in the monitoring station samples were greater than two times the average reference station concentrations. Monitoring stations M01, M08, and M12 had the greatest sediment PAH concentrations, whereas monitoring stations M07, M12, and M13 had the greatest mussel PAH concentrations. Monitoring stations M02, M10, and M13 had the greatest juvenile lobster PAH concentrations. No monitoring station had elevated PAHs levels in all three media, but M12 had elevated levels of PAHs in sediment and mussels, and M13 had elevated levels of PAHs in mussels and juvenile lobsters.

- Several pesticides in the monitoring station samples were at concentrations greater than ten times the average reference station sediment concentrations and 2 times the average reference station mussel and juvenile lobster concentration. Monitoring stations M01, M04, M08, and M10 had the greatest pesticide concentrations in the sediment, whereas Monitoring stations M07 and M10 have the greatest pesticide concentrations in the mussels. With the exception of a few sporadic detections, no monitoring stations had elevated pesticide concentrations in the juvenile lobsters. No station has elevated pesticide levels in all three media, but M10 has elevated levels of pesticides in sediment and mussel.

- Several PCBs in the monitoring station samples are at concentrations greater than ten times the average reference station sediment concentrations and two times the average reference station mussel and juvenile lobster concentrations. Monitoring stations M03, M04, M08, and M11 have the greatest pesticide concentrations in the sediment, whereas monitoring stations M03, M04, M07, M11, and M12 have the greatest PCB concentrations in the mussels. Monitoring stations M02, M07, M09, and M11, have slightly high PCB concentrations in the juvenile lobsters. Monitoring station M11 was the only station that had elevated levels of PCBs in all three media, but several stations have elevated PCB concentrations in sediment and mussel.

- Normalized metal concentrations were greatest in the sediment at monitoring stations M03, M08, and M11. Metal concentrations in the mussel and juvenile lobster samples were not normalized. Non-normalized metal concentrations were greatest in the mussels at monitoring stations M03, M04, and M11. Monitoring stations M03 and M11 have elevated levels of metals in sediment and mussels.

3.0 EVALUATION OF COEFFICIENTS OF VARIATION FOR SEDIMENT DATA FOR THE MONITORING STATIONS

Table A.1-4 presents the coefficients of variation (CVs) for each of the parameters that were detected in the sediment samples at the monitoring stations. The table also presents the minimum, maximum, and mean concentrations, and the average, minimum and maximum CVs for each analyte fraction (e.g., dioxins, PAHs, PCBs, pesticides, and metals). The average CVs ranged from 0.87 for dioxins, to 1.96 for pesticides. Most of the CVs for the individual chemicals were less than 1.5, and many were less than 1.0. The CVs were slightly greater than the CVs that were presented in Appendix B.3 of the Interim Offshore Monitoring Plan for OU4 (TtNUS, October 1999). The following bullets list the potential reasons why this occurred:

- The CVs in the Monitoring Plan were calculated for each area of concern (AOC) (e.g., Back Channel, Clark Cove), whereas the CVs in Table A.1-4 represent the larger offshore area.
- Because a greater number of samples were used to calculate the CVs for these Interim Offshore Monitoring samples, greater variation in these sample results was expected.

- Elevated detections of a few parameters in a few samples from this sampling round were skewed some of the CVs high.

- The historic samples were either all subtidal (EERA) or intertidal (seep/sediment sampling) whereas the samples in Table A.1-4 consist of both intertidal and subtidal samples. The Baseline Report evaluates whether there are differences in chemical concentrations between the subtidal and intertidal samples.

In summary, although the CVs for the Round 1 Interim Offshore Monitoring Program are slightly greater than the CVs previously identified, the fact that most of them are less than 1.5 supports the assumption that there is relatively low variation in sample results across the stations, with a few exceptions. Some of these exceptions are discussed in more detail in the baseline report.

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	17/17	10.5	467	110	OU4-SD-M10-399A	126	1.15
1,2,3,4,7,8-HXCDD	16/16	0.19	3.41	1.41	OU4-SD-M08-299A	1.02	0.73
1,2,3,6,7,8-HXCDD	16/16	0.81	15.5	5.42	OU4-SD-M10-399A	4.59	0.85
1,2,3,7,8,9-HXCDF	13/16	0.9	4.22	1.72	OU4-SD-M09-199A	1.01	0.59
1,2,3,7,8,9-HXCDF	13/16	0.9	4.22	1.72	OU4-SD-M09-199A	1.01	0.59
TOTAL HPCDD	17/17	22.3	1290	295	OU4-SD-M10-399A	355	1.20
TOTAL TCDD	13/17	0.46	16.2	4.34	OU4-SD-M10-399A	4.28	0.99
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	41/42	1.83	49	14.0	OU4-SD-M12-199A	10.3	0.74
1-METHYLNAPHTHALENE	5/42	12.2	198	16.9	OU4-SD-M12-199A	32.2	1.91
1-METHYLPHENANTHRENE	42/42	4.35	658	72.9	OU4-SD-M12-199A	104	1.43
2,6-DIMETHYLNAPHTHALENE	41/42	1.7	103	18.0	OU4-SD-M12-199A	16.2	0.90
2-METHYLNAPHTHALENE	5/42	23.6	245	24.0	OU4-SD-M12-199A	39.6	1.65
ACENAPHTHENE	41/42	1.06	1866	86.7	OU4-SD-M12-199A	285	3.29
ACENAPHTHYLENE	42/42	3.22	217	80.0	OU4-SD-M10-399A, OU4-SD-M12-199A	52.5	0.66
ANTHRACENE	42/42	13.1	2880	303	OU4-SD-M12-199A	449	1.48
BENZO(A)ANTHRACENE	42/42	27.4	4938	576	OU4-SD-M12-199A	786	1.36
BENZO(A)PYRENE	42/42	34.1	5396	688	OU4-SD-M12-199A	844	1.23
BENZO(B)FLUORANTHENE	42/42	42.6	6312	739	OU4-SD-M12-199A	985	1.33
BENZO(E)PYRENE	42/42	25	2913	379	OU4-SD-M12-199A	458	1.21
BENZO(G,H,I)PERYLENE	42/42	27	2172	365	OU4-SD-M12-199A	356	0.98
BENZO(K)FLUORANTHENE	42/42	12.5	1866	239	OU4-SD-M12-199A	299	1.25
BIPHENYL	4/42	13	63.4	6.05	OU4-SD-M12-199A	10.0	1.66
C1-CHRYSENES	42/42	14.3	1833	321	OU4-SD-M12-199A	316	0.98
C1-DIBENZOTHIOPHENES	42/42	4.25	184	32.0	OU4-SD-M12-199A	29.2	0.91
C1-FLUORANTHENES/PYRENES	42/42	25.8	4814	626	OU4-SD-M12-199A	771	1.23
C1-FLUORENES	28/42	5.79	317	44.6	OU4-SD-M12-199A	54.7	1.23
C1-NAPHTHALENES	6/42	17.6	443	41.2	OU4-SD-M12-199A	71.9	1.75
C1-PHENANTHRENES/ANTHRACENES	42/42	25.9	2452	310	OU4-SD-M12-199A	385	1.24
C2-CHRYSENES	42/42	10.5	508	131	OU4-SD-M12-199A	101	0.77
C2-DIBENZOTHIOPHENES	42/42	5.51	122	39.8	OU4-SD-M02-399A	27.7	0.70
C2-FLUORENES	38/42	12.4	187	49.6	OU4-SD-M12-199A	37.1	0.75
C2-NAPHTHALENES	10/42	31.8	281	48.0	OU4-SD-M12-199A	60.1	1.25
C2-PHENANTHRENES/ANTHRACENES	42/42	16.7	991	203	OU4-SD-M12-199A	182	0.89
C3-CHRYSENES	42/42	0.79	20.3	7.74	OU4-SD-M01-299A	4.69	0.61
C3-DIBENZOTHIOPHENES	42/42	3.97	125	35.2	OU4-SD-M02-399A	27.0	0.77
C3-FLUORENES	42/42	4.34	144	39.3	OU4-SD-M03-199A	32.2	0.82
C3-NAPHTHALENES	42/42	11.6	285	77.5	OU4-SD-M10-299A	53.9	0.70
C3-PHENANTHRENES/ANTHRACENES	42/42	8.12	460	124	OU4-SD-M12-199A	97.0	0.79
C4-CHRYSENES	42/42	1	94.3	24.2	OU4-SD-M10-399A	22.9	0.95
C4-NAPHTHALENES	42/42	5.26	240	44.7	OU4-SD-M02-399A	39.9	0.89

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C4-PHENANTHRENES/ANTHRACENES	42/42	6.61	126	46.0	OU4-SD-M12-199A	32.3	0.70
CHRYSENE	42/42	0.4	5741	617	OU4-SD-M12-199A	897	1.45
DIBENZO(A,H)ANTHRACENE	42/42	6.66	684	105	OU4-SD-M12-199A	115	1.10
DIBENZOTHIOPHENE	42/42	3.16	512	43.2	OU4-SD-M12-199A	77.6	1.80
FLUORANTHENE	41/42	54.5	12106	1153	OU4-SD-M12-199A	1,876	1.63
FLUORENE	42/42	3.78	1393	92.6	OU4-SD-M12-199A	212	2.29
INDENO(1,2,3-CD)PYRENE	42/42	25.4	2602	381	OU4-SD-M12-199A	402	1.06
NAPHTHALENE	3/42	97.1	451	40.6	OU4-SD-M12-199A	74.9	1.84
PERYLENE	42/42	9.19	918	114	OU4-SD-M12-199A	142	1.24
PHENANTHRENE	42/42	42.3	10224	673	OU4-SD-M12-199A	1,555	2.31
PYRENE	42/42	0.3	10714	1018	OU4-SD-M12-199A	1,646	1.62
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	37/42	0.01	0.84	0.17	OU4-SD-M09-399A	0.19	1.12
1,2,4,5-TETRACHLOROBENZENE	38/42	0.088	4.7	0.77	OU4-SD-M09-399A	0.79	1.02
2,4'-DDD	42/42	0.35	48	6.42	OU4-SD-M08-399A	8.99	1.40
2,4'-DDE	41/42	0.057	3.3	0.46	OU4-SD-M04-399A	0.59	1.29
2,4'-DDT	35/42	0.037	37	3.60	OU4-SD-M08-399A	8.11	2.25
4,4'-DDD	42/42	0.45	135	16.9	OU4-SD-M08-399A	30.6	1.81
4,4'-DDE	42/42	0.48	48	6.09	OU4-SD-M02-399A	10.2	1.68
4,4'-DDT	42/42	0.11	1113	40.2	OU4-SD-M01-399A	172	4.28
ALDRIN	24/42	0.47	77	4.11	OU4-SD-M12-199A	11.9	2.90
ALPHA-BHC	4/42	0.036	0.2	0.051	OU4-SD-M14-199A	0.04	0.86
ALPHA-CHLORDANE	41/42	0.056	45	2.13	OU4-SD-M10-199A	7.12	3.34
BETA-BHC	22/42	0.008	3.6	0.19	OU4-SD-M09-399A	0.54	2.89
CHLORPYRIFOS	28/42	0.006	1.1	0.15	OU4-SD-M05-199A	0.18	1.23
CIS-NONACHLOR	42/42	0.06	3.8	0.49	OU4-SD-M10-199A	0.61	1.25
DELTA-BHC	35/42	0.004	0.46	0.086	OU4-SD-M12-199A	0.09	0.98
DIELDRIN	31/42	0.025	26	0.77	OU4-SD-M01-299A	3.99	5.20
ENDOSULFAN II	27/42	0.11	7	0.86	OU4-SD-M01-399A	1.22	1.42
ENDRIN	15/42	0.02	0.85	0.12	OU4-SD-M01-299A	0.13	1.11
GAMMA-BHC (LINDANE)	1/42	0.69	0.69	0.29	OU4-SD-M01-399A	0.17	0.59
GAMMA-CHLORDANE	38/42	0.026	61	2.32	OU4-SD-M10-199A	9.61	4.14
HEPTACHLOR	37/42	0.031	3	0.37	OU4-SD-M03-199A-D	0.57	1.54
HEPTACHLOR EPOXIDE	18/42	0.007	0.42	0.10	OU4-SD-M06-399A	0.12	1.14
HEXACHLOROBENZENE	7/42	0.11	5.6	0.31	OU4-SD-M09-399A	0.95	3.02
MIREX	23/42	0.005	1.7	0.13	OU4-SD-M12-199A	0.27	2.08
OXYCHLORDANE	22/42	0.015	0.72	0.12	OU4-SD-M10-199A	0.17	1.45
PCB-101/90	42/42	0.42	29	4.00	OU4-SD-M03-199A	5.63	1.41
PCB-105	42/42	0.088	11	1.69	OU4-SD-M11-299A	2.21	1.31
PCB-114	1/42	0.32	0.32	0.12	OU4-SD-M10-399A	0.04	0.37
PCB-118	42/42	0.22	18	2.42	OU4-SD-M11-299A	2.98	1.23
PCB-	25/42	0.005	0.2	0.22	OU4-SD-M05-199A	0.22	0.99

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-128	42/42	0.31	7.7	1.42	OU4-SD-M11-299A	1.47	1.04
PCB-138 /160	40/42	1.3	73	7.93	OU4-SD-M03-199A	12.9	1.62
PCB-149/123	42/42	0.39	41	4.39	OU4-SD-M03-199A	7.56	1.72
PCB-153/132	42/42	0.65	65	7.42	OU4-SD-M03-199A	11.7	1.57
PCB-156	38/42	0.06	6.52	1.58	OU4-SD-M11-299A	1.46	0.93
PCB-167	42/42	0.074	17	1.96	OU4-SD-M03-199A	2.74	1.39
PCB-169	11/42	0.005	0.11	0.25	OU4-SD-M12-299A	0.22	0.88
PCB-170/190	41/42	0.084	47	8.98	OU4-SD-M10-399A	11.2	1.24
PCB-18/17	26/42	0.011	9.1	0.60	OU4-SD-M09-399A	1.48	2.46
PCB-180	42/42	0.3	53	6.38	OU4-SD-M03-199A	10.4	1.64
PCB-187	42/42	0.31	44	5.79	OU4-SD-M12-199A	9.62	1.66
PCB-189	27/42	0.011	1.2	0.29	OU4-SD-M03-199A-D	0.30	1.02
PCB-189	27/42	0.011	1.2	0.29	OU4-SD-M12-199A	0.30	1.02
PCB-195/208	42/42	0.041	11	1.91	OU4-SD-M03-199A-D	2.30	1.21
PCB-201/157/173	38/42	0.05	3.47	0.56	OU4-SD-M03-199A-D	0.68	1.20
PCB-206	42/42	0.12	21	3.27	OU4-SD-M03-199A-D.	4.07	1.25
PCB-209	42/42	0.061	7	1.49	OU4-SD-M04-199A	1.52	1.02
PCB-28	35/42	0.097	11	1.08	OU4-SD-M12-199A	1.85	1.71
PCB-28	35/42	0.097	11	1.08	OU4-SD-M12-199A	1.85	1.71
PCB-44	40/42	0.042	6.2	0.63	OU4-SD-M12-199A	1.07	1.70
PCB-52	41/42	0.21	11	1.56	OU4-SD-M12-199A	1.91	1.23
PCB-66	41/42	0.13	2.1	0.75	OU4-SD-M11-299A	0.43	0.57
PCB-77	38/42	0.009	0.32	0.11	OU4-SD-M08-299A	0.08	0.73
PCB-8/5	41/42	0.086	1.3	0.45	OU4-SD-M13-399A	0.31	0.69
PCB-81	39/42	0.007	4.8	0.31	OU4-SD-M03-199A	0.84	2.66
PENTACHLOROANISOLE	38/42	0.032	0.59	0.14	OU4-SD-M09-399A	0.11	0.74
PENTACHLOROBENZENE	40/42	0.009	0.64	0.14	OU4-SD-M09-399A	0.11	0.81
TRANS-NONACHLOR	42/42	0.025	21	0.97	OU4-SD-M10-199A	3.30	3.40
Inorganics (mg/kg)							
ALUMINUM	42/42	44689	67478	56913	OU4-SD-M07-299A	6,328	0.11
ARSENIC	42/42	5.3	30	11.4	OU4-SD-M11-299A	4.31	0.38
CADMIUM	42/42	0.05	1.3	0.40	OU4-SD-M11-299A	0.25	0.62
CHROMIUM	42/42	46.4	224	98.4	OU4-SD-M11-299A	36.7	0.37
COPPER	42/42	9.8	17495	592	OU4-SD-M11-299A	2,732	4.62
IRON	42/42	15856	92784	29274	OU4-SD-M11-299A	14,194	0.48
LEAD	42/42	19.1	16250	490	OU4-SD-M11-299A	2,492	5.09
MANGANESE	42/42	317	1298	493	OU4-SD-M06-399A	185	0.38
MERCURY	42/42	0.03	3.2	0.46	OU4-SD-M11-299A	0.57	1.24
NICKEL	42/42	19.3	5601	173	OU4-SD-M11-299A	858	4.97
SILVER	42/42	0.05	3.1	0.56	OU4-SD-M04-199A	0.60	1.08
ZINC	42/42	40.1	8524	439	OU4-SD-M11-299A	1,332	3.03

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Total Organic Carbon (%)							
TOTAL ORGANIC CARBON	42/42	0.43	7.25	1.73	OU4-SD-M02-399A	1.13	0.65

Notes:
- Duplicate samples were averaged in this table.
- 1/2 the detection limits for non-detects were used.
- The frequency of detects count a sample and its duplicate as one sample
- This table includes the following monitoring station samples:
  - OU4-SD-(M01 through M14)-(199A through 399A)
  - OU4-FD-(001 through 003)-099A
- Source data located in the Round 1 data package (TtNUS, February 2000).

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	14/16	5.79	159	49.7	OU4-SD-R02-499A	46.43	0.93
1,2,3,4,7,8-HXCDD	10/16	0.071	1.85	0.77	OU4-SD-R02-499A	0.45	0.58
1,2,3,6,7,8-HXCDD	9/16	1.06	8.25	2.59	OU4-SD-R02-499A	2.67	1.03
TOTAL HPCDD	15/16	5.79	375	105	OU4-SD-R02-499A	116.13	1.10
TOTAL TCDD	5/16	0.84	5.29	1.10	OU4-SD-R02-499A	1.64	1.50
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	16/16	0.19	52.6	15.4	OU4-SD-R03-199A	17.7	1.15
1-METHYLPHENANTHRENE	16/16	0.54	169	46.4	OU4-SD-R03-299A	48.6	1.05
2,6-DIMETHYLNAPHTHALENE	16/16	1.095	32.7	11.5	OU4-SD-R03-299A	10.5	0.92
2-METHYLNAPHTHALENE	2/16	3.48	24.5	8.62	OU4-SD-R02-399A-AVG	7.64	0.89
ACENAPHTHENE	16/16	0.19	79.8	15.6	OU4-SD-R03-299A	20.8	1.33
ACENAPHTHYLENE	16/16	1.69	206	57.5	OU4-SD-R03-299A	55.0	0.96
ANTHRACENE	16/16	2.26	1392	247	OU4-SD-R03-299A	395	1.60
BENZO(A)ANTHRACENE	16/16	3.05	1949	415	OU4-SD-R03-299A	497	1.20
BENZO(A)PYRENE	16/16	5.21	2515	507	OU4-SD-R03-299A	624	1.23
BENZO(B)FLUORANTHENE	16/16	5.81	2138	479	OU4-SD-R03-299A	531	1.11
BENZO(E)PYRENE	16/16	2.99	990	231	OU4-SD-R03-299A	247	1.07
BENZO(G,H,I)PERYLENE	16/16	3.36	1026	241	OU4-SD-R03-299A	254	1.05
BENZO(K)FLUORANTHENE	16/16	2.41	620	154	OU4-SD-R03-299A	164	1.06
BIPHENYL	2/16	7.62	14.1	3.43	OU4-SD-R03-499A	3.46	1.01
C1-CHRYSENES	16/16	2.27	1047	230	OU4-SD-R03-299A	267	1.16
C1-DIBENZOTHIOPHENES	16/16	0.65	191	40.8	OU4-SD-R03-199A	52.0	1.28
C1-FLUORANTHENES/PYRENES	16/16	4.06	1813	461	OU4-SD-R03-299A	510	1.11
C1-FLUORENES	9/16	23.9	167	49.1	OU4-SD-R03-199A	58.0	1.18
C1-PHENANTHRENES/ANTHRACENES	16/16	2.7	1112	262	OU4-SD-R03-299A	332	1.27
C2-CHRYSENES	16/16	0.99	417	96.1	OU4-SD-R03-299A	106	1.10
C2-DIBENZOTHIOPHENES	16/16	0.85	529	66.8	OU4-SD-R03-199A	128	1.92
C2-FLUORENES	13/16	1.72	506	71.0	OU4-SD-R03-199A	124	1.74
C2-NAPHTHALENES	1/16	158	158	25.7	OU4-SD-R03-399A	39.0	1.51
C2-PHENANTHRENES/ANTHRACENES	16/16	2.44	816	223	OU4-SD-R03-299A	256	1.15
C3-CHRYSENES	16/16	0.09	23.4	5.51	OU4-SD-R03-299A	6.03	1.10
C3-DIBENZOTHIOPHENES	16/16	0.93	420	50.0	OU4-SD-R03-199A	101	2.03
C3-FLUORENES	16/16	0.98	763	69.8	OU4-SD-R03-199A	186	2.66
C3-NAPHTHALENES	16/16	2.56	460	89.6	OU4-SD-R03-199A	134	1.49
C3-PHENANTHRENES/ANTHRACENES	16/16	1.53	515	142	OU4-SD-R03-299A	164	1.15

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C4-CHRYSENES	16/16	0.39	60.3	13.54	OU4-SD-R03-299A	15.7	1.16
C4-NAPHTHALENES	16/16	1.33	1490	122	OU4-SD-R03-199A	367	3.00
C4-PHENANTHRENES/ANTHRACENES	16/16	1.09	235	62.5	OU4-SD-R03-399A	77.8	1.24
CHRYSENE	15/16	7.8425	1702	384	OU4-SD-R03-299A	429	1.12
DIBENZO(A,H)ANTHRACENE	16/16	0.82	262	61.3	OU4-SD-R03-299A	67.4	1.10
DIBENZOTHIOPHENE	16/16	0.38	104	25.9	OU4-SD-R03-299A	28.5	1.10
FLUORANTHENE	16/16	6.49	3324	783	OU4-SD-R03-299A	932	1.19
FLUORENE	16/16	0.6	167	38.0	OU4-SD-R03-299A	47.3	1.24
INDENO(1,2,3-CD)PYRENE	16/16	3.59	1164	273	OU4-SD-R03-299A	290	1.06
PERYLENE	16/16	1.67	352	73.7	OU4-SD-R03-299A	93.9	1.27
PHENANTHRENE	16/16	3.05	1583	331	OU4-SD-R03-299A	449	1.36
PYRENE	16/16	5.84	2921	666	OU4-SD-R03-299A	791	1.19
Pesticides/PCBs (ug/kg)							
2,4'-DDD	14/16	0.07	5.6	1.68	OU4-SD-R03-299A	1.73	1.02
2,4'-DDE	11/16	0.033	0.77	0.15	OU4-SD-R03-399A	0.21	1.37
2,4'-DDT	5/16	0.019	0.11	0.026	OU4-SD-R04-199A	0.03	1.04
4,4'-DDD	15/16	0.041	2.4	0.67	OU4-SD-R04-199A	0.75	1.11
4,4'-DDE	15/16	0.049	1.9	0.63	OU4-SD-R04-199A	0.50	0.79
4,4'-DDT	7/16	0.022	0.7	0.22	OU4-SD-R01-199A	0.21	0.95
ALDRIN	10/16	0.019	4.3	0.99	OU4-SD-R02-199A	1.44	1.45
ALPHA-BHC	15/16	0.0255	0.29	0.083	OU4-SD-R03-199A	0.06	0.73
ALPHA-CHLORDANE	14/16	0.025	0.42	0.16	OU4-SD-R03-399A	0.13	0.82
BETA-BHC	5/16	0.047	0.24	0.11	OU4-SD-R03-199A	0.05	0.44
CHLORPYRIFOS	15/16	0.014	0.71	0.14	OU4-SD-R03-199A	0.18	1.24
CIS-NONACHLOR	13/16	0.007	0.22	0.083	OU4-SD-R03-499A	0.08	0.94
DELTA-BHC	12/16	0.007	0.3	0.084	OU4-SD-R03-399A	0.09	1.04
DIELDRIN	2/16	0.061	0.11	0.059	OU4-SD-R02-199A	0.04	0.72
ENDOSULFAN II	12/16	0.042	2.05	0.79	OU4-SD-R02-399A-AVG	0.73	0.93
ENDRIN	3/16	0.023	0.16	0.079	OU4-SD-R02-299A	0.03	0.42
GAMMA-CHLORDANE	14/16	0.026	0.36	0.12	OU4-SD-R03-299A	0.09	0.71
HEPTACHLOR	13/16	0.007	0.35	0.13	OU4-SD-R03-399A	0.10	0.72
HEPTACHLOR EPOXIDE	6/16	0.036	0.13	0.073	OU4-SD-R02-399A-AVG	0.05	0.67
HEXACHLOROBENZENE	7/16	0.006	71	4.68	OU4-SD-R02-499A	17.7	3.78
MIREX	7/16	0.047	0.235	0.065	OU4-SD-R02-399A-AVG	0.07	1.15
OXYCHLORDANE	4/16	0.025	0.16	0.022	OU4-SD-R03-299A	0.04	1.71
PCB-101/90	8/16	0.105	1.2	0.46	OU4-SD-R02-499A	0.48	1.06

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-105	16/16	0.015	1.9	0.32	OU4-SD-R04-199A	0.46	1.43
PCB-118	8/16	0.034	1.1	0.36	OU4-SD-R02-499A	0.43	1.20
PCB-126	9/16	0.006	0.387	0.17	OU4-SD-R02-399A-AVG	0.20	1.13
PCB-128	15/16	0.0205	2.2	0.65	OU4-SD-R03-199A	0.64	0.99
PCB-138 /160	8/16	0.32	2.7	0.92	OU4-SD-R02-499A	0.71	0.77
PCB-149/123	8/16	0.09	0.92	0.34	OU4-SD-R02-499A	0.28	0.82
PCB-153/132	6/16	0.35	1.4	0.46	OU4-SD-R02-499A	0.40	0.88
PCB-156	10/16	0.03	1.46	0.41	OU4-SD-R02-499A	0.48	1.16
PCB-167	15/16	0.023	4.4	1.16	OU4-SD-R03-299A	1.14	0.99
PCB-169	5/16	0.005	0.014	0.15	OU4-SD-R03-399A	0.14	0.97
PCB-170/190	11/16	0.72	11.7	4.71	OU4-SD-R02-399A-AVG	4.38	0.93
PCB-18/17	5/16	0.046	0.21	0.094	OU4-SD-R02-499A	0.09	0.96
PCB-180	8/16	0.11	0.88	0.31	OU4-SD-R02-499A	0.26	0.82
PCB-187	8/16	0.046	2.7	0.47	OU4-SD-R02-199A	0.82	1.74
PCB-189	6/16	0.031	0.2	0.095	OU4-SD-R03-499A	0.05	0.48
PCB-195/208	12/16	0.004	0.32	0.089	OU4-SD-R03-399A	0.08	0.94
PCB-201/157/173	14/16	0.01	0.38	0.18	OU4-SD-R04-199A	0.14	0.78
PCB-206	16/16	0.041	0.95	0.36	OU4-SD-R03-399A	0.32	0.89
PCB-209	15/16	0.042	0.52	0.19	OU4-SD-R03-399A	0.15	0.79
PCB-28	16/16	0.074	1.2	0.54	OU4-SD-R03-499A	0.39	0.73
PCB-44	8/16	0.02025	0.2	0.097	OU4-SD-R02-499A	0.11	1.18
PCB-52	15/16	0.043	2.6	0.5175	OU4-SD-R04-199A	0.81	1.56
PCB-66	12/16	0.033	1.2	0.34	OU4-SD-R03-299A	0.37	1.07
PCB-77	12/16	0.036	0.25	0.080	OU4-SD-R01-399A	0.06	0.79
PCB-8/5	13/16	0.16	1.2	0.42	OU4-SD-R03-499A	0.33	0.78
PCB-81	14/16	0.006	0.073	0.049	OU4-SD-R03-299A	0.08	1.66
PENTACHLOROANISOLE	10/16	0.01	0.27	0.068	OU4-SD-R03-199A	0.08	1.17
PENTACHLOROBENZENE	13/16	0.013	0.19	0.10	OU4-SD-R02-499A	0.06	0.62
TRANS-NONACHLOR	6/16	0.0105	0.32	0.057	OU4-SD-R04-199A	0.08	1.43
Inorganics (mg/kg)							
ALUMINUM	16/16	43053	55307	49912	OU4-SD-R01-199A	4,281	0.09
ARSENIC	15/16	1.7	8.8	5.32	OU4-SD-R03-199A	2.39	0.45
CADMIUM	16/16	0.04	0.39	0.18	OU4-SD-R01-499A	0.11	0.63
CHROMIUM	16/16	22.9	70.4	46.7	OU4-SD-R01-199A	15.7	0.34
COPPER	16/16	3	37.25	12.1	OU4-SD-R02-399A-AVG	9.05	0.75
IRON	16/16	8596	21359	14202	OU4-SD-R01-199A	4,174	0.29

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 1 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
LEAD	16/16	17.55	94.85	42.0	OU4-SD-R02-399A-AVG	22.6	0.54
MANGANESE	16/16	316	843	435	OU4-SD-R02-199A	129	0.30
MERCURY	16/16	0.015	1.5	0.20	OU4-SD-R03-299A	0.36	1.81
NICKEL	16/16	9.45	24.5	16.2	OU4-SD-R03-199A	4.34	0.27
SILVER	16/16	0.02	0.385	0.12	OU4-SD-R02-399A-AVG	0.09	0.77
ZINC	16/16	20	93.4	50.7	OU4-SD-R01-199A	23.5	0.46
Total Organic Carbon (%)							
TOTAL ORGANIC CARBON	16/16	0.22	4.14	1.26	OU4-SD-R03-199A	1.03	0.82

Notes:
- Duplicate samples were averaged in this table.
- 1/2 the detection limits for non-detects were used.
- The frequency of detects count a sample and its duplicate as one sample.
- This table includes the following reference station samples:
  - OU4-SD-(R01 through R04)-(199A through 499A)
  - OU4-FD-(004 through 006)-099A
- Source data located in the Round 1 data package (TtNUS, February 2000).

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,7,8,9-HPCDF	4/12	0.53	31.31	14.9	OU4-MU-M10-199A-AVG	17.48	1.18
1,2,3,4,7,8-HXCDD	5/12	0.65	6.995	11.5	OU4-MU-M10-199A-AVG	18.13	1.57
1,2,3,4,7,8-HXCDF	5/13	0.9	6.515	11.7	OU4-MU-M10-199A-AVG	18.08	1.54
1,2,3,6,7,8-HXCDD	6/12	0.82	2.64	10.1	OU4-MU-M08-199A-AVG	18.81	1.85
1,2,3,6,7,8-HXCDF	5/13	1.05	4.74	11.7	OU4-MU-M10-199A-AVG	18.21	1.56
1,2,3,6,7,8-HXCDF	5/13	1.05	4.74	11.7	OU4-MU-M10-199A-AVG	18.21	1.56
1,2,3,7,8,9-HXCDD	4/12	0.97	4	12.2	OU4-MU-M10-199A-AVG	17.78	1.46
1,2,3,7,8,9-HXCDF	4/13	1.64	13.24	13.0	OU4-MU-M10-199A-AVG	17.43	1.34
2,3,4,6,7,8-HXCDF	5/13	0.64	8.725	11.9	OU4-MU-M10-199A-AVG	17.97	1.51
OCDD	12/14	28.8	196	74.5	OU4-MU-M12-199A	54.12	0.73
OCDF	7/12	3.5	36.7	24.6	OU4-MU-M08-299A-AVG	35.20	1.43
TOTAL HPCDD	3/13	4.6	26.1	16.1	OU4-MU-M12-199A	15.60	0.97
TOTAL HPCDF	4/12	0.53	32.95	15.9	OU4-MU-M10-199A-AVG	17.22	1.08
TOTAL HXCDD	7/12	0.9	13.35	11.6	OU4-MU-M10-199A-AVG	18.02	1.55
TOTAL HXCDF	5/13	2.6	33.25	15.6	OU4-MU-M10-199A-AVG	16.99	1.09
TOTAL PECDD	3/15	1.1	3	18.0	OU4-MU-M10-199A-AVG	17.52	0.97
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	32/32	0.85	13.4	2.99	OU4-MU-M12-299A	2.39	0.80
1-METHYLPHENANTHRENE	32/32	1.65	44.4	6.97	OU4-MU-M13-199A	10.19	1.46
2,6-DIMETHYLNAPHTHALENE	32/32	2.22	26.2	5.34	OU4-MU-M12-299A	4.79	0.90
ACENAPHTHENE	32/32	0.49	258	22.5	OU4-MU-M12-299A	46.70	2.08
ACENAPHTHYLENE	32/32	4.67	73	15.1	OU4-MU-M13-199A	14.86	0.98
ANTHRACENE	28/32	18.4	485	60.0	OU4-MU-M12-299A	109.96	1.83
BENZO(A)ANTHRACENE	32/32	4.76	528	43.0	OU4-MU-M13-199A	104.72	2.43
BENZO(A)PYRENE	32/32	3.2	299	24.5	OU4-MU-M13-199A	57.90	2.36
BENZO(B)FLUORANTHENE	32/32	7.1	599	47.8	OU4-MU-M13-199A	113.52	2.38
BENZO(E)PYRENE	32/32	7.09	268	30.6	OU4-MU-M13-199A	51.01	1.67
BENZO(G,H,I)PERYLENE	32/32	3.23	56.7	10.0	OU4-MU-M13-199A	11.71	1.17
BENZO(K)FLUORANTHENE	32/32	1.86	128	13.7	OU4-MU-M13-199A	26.78	1.95
BIPHENYL	1/32	29.7	29.7	3.62	OU4-MU-M09-199A	5.24	1.45
C1-CHRYSENES	32/32	5.75	256	23.9	OU4-MU-M13-199A	47.52	1.99
C1-DIBENZOTHIOPHENES	32/32	1.09	21.6	4.57	OU4-MU-M13-199A	4.45	0.97
C1-FLUORANTHENES/PYRENES	32/32	11.9	586	65.1	OU4-MU-M13-199A	113.08	1.74
C1-FLUORENES	32/32	8.5	80	26.4	OU4-MU-M12-299A	16.57	0.63
C1-PHENANTHRENES/ANTHRACENES	32/32	9.26	275	45.7	OU4-MU-M13-199A	63.62	1.39
C2-CHRYSENES	32/32	6.22	110	29.7	OU4-MU-M14-199A	31.18	1.05
C2-DIBENZOTHIOPHENES	32/32	3.56	26.5	9.97	OU4-MU-M13-199A	5.46	0.55
C2-FLUORENES	32/32	9.53	56	27.7	OU4-MU-M12-299A	14.00	0.51
C2-NAPHTHALENES	2/32	31.6	92.6	12.7	OU4-MU-M12-299A	16.10	1.27

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C2-PHENANTHRENES/ANTHRACENES	32/32	15.5	192	41.4	OU4-MU-M13-199A	37.86	0.91
C3-CHRYSENES	32/32	0.2	5.06	1.75	OU4-MU-M11-299A	1.18	0.67
C3-DIBENZOTHIOPHENES	32/32	3.07	30.8	12.3	OU4-MU-M12-299A	6.61	0.54
C3-FLUORENES	32/32	6.73	137	45.1	OU4-MU-M14-299A	30.27	0.67
C3-NAPHTHALENES	32/32	8.74	75.9	22.9	OU4-MU-M12-299A	12.92	0.56
C3-PHENANTHRENES/ANTHRACENES	32/32	10.6	110	31.1	OU4-MU-M13-199A	21.85	0.70
C4-CHRYSENES	32/32	0.01	3.81	1.05	OU4-MU-M13-199A	0.75	0.71
C4-NAPHTHALENES	32/32	7.7	41.9	19.7	OU4-MU-M12-299A	7.99	0.41
C4-PHENANTHRENES/ANTHRACENES	32/32	5.61	58.4	18.6	OU4-MU-M13-199A	12.77	0.69
CHRYSENE	32/32	10.1	516	56.7	OU4-MU-M13-199A	106.29	1.87
DIBENZO(A,H)ANTHRACENE	32/32	0.48	14.2	1.95	OU4-MU-M13-199A	2.81	1.44
DIBENZOTHIOPHENE	3/32	18.8	48.7	3.67	OU4-MU-M12-299A	9.91	2.70
FLUORANTHENE	32/32	18	1135	134	OU4-MU-M13-199A	275.43	2.06
FLUORENE	32/32	2.11	152	12.9	OU4-MU-M12-299A	31.43	2.44
INDENO(1,2,3-CD)PYRENE	32/32	1.64	54.1	8.02	OU4-MU-M13-199A	11.71	1.46
PERYLENE	32/32	1.94	78.8	10.8	OU4-MU-M13-199A	15.48	1.44
PHENANTHRENE	5/32	43.9	693	56.3	OU4-MU-M12-299A	151.30	2.69
PYRENE	32/32	14.8	815	100	OU4-MU-M13-199A	185.45	1.85
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	11/32	0.795	3.8	0.96	OU4-MU-M10-299A	1.06	1.10
1,2,4,5-TETRACHLOROBENZENE	1/32	1.9	1.9	1.42	OU4-MU-M08-199A-AVG	0.90	0.63
2,4'-DDD	32/32	0.65	80	6.33	OU4-MU-M10-199A-AVG	16.18	2.55
2,4'-DDE	24/32	0.11	9.15	0.76	OU4-MU-M10-199A-AVG	1.67	2.20
2,4'-DDT	29/32	0.084	391	14.9	OU4-MU-M10-199A-AVG	73.39	4.93
4,4'-DDD	32/32	2.8	104	13.3	OU4-MU-M10-199A-AVG	22.22	1.67
4,4'-DDE	32/32	4.6	99	12.7	OU4-MU-M10-199A-AVG	19.05	1.50
4,4'-DDT	8/32	2.85	596	21.4	OU4-MU-M10-199A-AVG	112.08	5.23
ALDRIN	8/32	0.039	1.3	0.247	OU4-MU-M14-299A	0.31	1.24
ALPHA-BHC	32/32	0.28	2.6	0.70	OU4-MU-M12-299A	0.53	0.75
ALPHA-CHLORDANE	32/32	1.3	32.5	4.5	OU4-MU-M10-199A-AVG	6.01	1.33
BETA-BHC	6/32	0.235	7.3	0.73	OU4-MU-M07-399A	1.88	2.59
CHLORPYRIFOS	8/32	0.08	2	0.95	OU4-MU-M12-299A	0.87	0.91
CIS-NONACHLOR	32/32	0.45	5.4	2.14	OU4-MU-M03-299A	1.44	0.67
DELTA-BHC	17/32	0.42	3.7	0.85	OU4-MU-M03-299A	0.93	1.10
DIELDRIN	23/32	0.06	3.1	1.41	OU4-MU-M07-399A	0.94	0.67
ENDOSULFAN II	24/32	0.15	2.8	0.84	OU4-MU-M03-299A	0.72	0.86
ENDRIN	15/32	0.29	2.7	0.76	OU4-MU-M14-299A	0.82	1.07
GAMMA-CHLORDANE	31/32	0.22	31.5	2.09	OU4-MU-M10-199A-AVG	6.39	3.05
HEPTACHLOR	22/32	0.24	4.9	1.23	OU4-MU-M03-299A	1.20	0.97
HEPTACHLOR EPOXIDE	19/32	0.074	21	1.96	OU4-MU-M14-199A	4.60	2.35

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
HEXACHLOROBENZENE	32/32	0.11	17	1.81	OU4-MU-M12-199A	3.90	2.16
MIREX	20/32	0.033	2.9	0.79	OU4-MU-M07-399A	0.77	0.97
OXYCHLORDANE	14/32	0.46	2.4	0.61	OU4-MU-M10-399A-AVG	0.58	0.94
PCB-101/90	30/32	7	32	12.5	OU4-MU-M03-299A	7.65	0.61
PCB-105	32/32	2.3	20	7.47	OU4-MU-M11-299A	4.79	0.64
PCB-118	27/32	5.7	27	10.6	OU4-MU-M11-299A	7.44	0.70
PCB-126	32/32	0.009	1.2	0.25	OU4-MU-M12-199A	0.28	1.12
PCB-128	31/32	1.3	13	3.84	OU4-MU-M11-299A	2.67	0.69
PCB-138 /160	7/32	17.25	62	15.6	OU4-MU-M03-299A	16.65	1.07
PCB-149/123	15/32	8.5	36	9.81	OU4-MU-M03-299A	9.54	0.97
PCB-153/132	9/32	26	75	19.0	OU4-MU-M03-299A	21.56	1.13
PCB-156	23/32	0.31	6.7	1.41	OU4-MU-M03-299A	1.41	1.00
PCB-167	32/32	0.64	6.5	2.03	OU4-MU-M03-299A	1.37	0.68
PCB-169	30/32	0.011	0.67	0.16	OU4-MU-M07-199A	0.19	1.14
PCB-170/190	5/32	0.21	8.7	1.04	OU4-MU-M13-199A	1.72	1.66
PCB-18/17	13/32	1.6	8.5	2.98	OU4-MU-M03-299A	2.47	0.83
PCB-180	6/32	7.1	32	6.41	OU4-MU-M03-299A	6.93	1.08
PCB-187	10/32	6	54	9.73	OU4-MU-M03-299A	12.81	1.32
PCB-189	8/32	0.08	4.8	0.55	OU4-MU-M10-199A-AVG	0.93	1.69
PCB-195/208	14/32	0.087	0.55	0.29	OU4-MU-M09-199A	0.11	0.38
PCB-201/157/173	22/32	0.05	5.7	1.27	OU4-MU-M12-199A	1.45	1.14
PCB-206	11/32	0.015	0.92	0.31	OU4-MU-M07-399A	0.30	0.96
PCB-209	5/32	0.32	1	0.50	OU4-MU-M14-199A	0.38	0.76
PCB-28	32/32	1.1	8.3	2.97	OU4-MU-M03-299A	2.22	0.75
PCB-28	32/32	1.1	8.3	2.97	OU4-MU-M03-299A	2.22	0.75
PCB-44	22/32	0.96	9.9	2.66	OU4-MU-M14-199A	2.37	0.89
PCB-52	32/32	2.8	15	5.98	OU4-MU-M12-199A	3.05	0.51
PCB-66	32/32	0.95	8.1	2.02	OU4-MU-M12-199A	1.92	0.95
PCB-77	32/32	0.094	5.6	1.03	OU4-MU-M09-199A	1.32	1.28
PCB-8/5	32/32	0.086	4.8	1.31	OU4-MU-M09-199A	1.15	0.88
PCB-81	32/32	0.016	2.9	0.45	OU4-MU-M09-199A	0.70	1.57
PENTACHLOROANISOLE	32/32	0.086	2.8	0.83	OU4-MU-M12-299A	0.65	0.79
PENTACHLOROBENZENE	31/32	0.45	6.4	2.78	OU4-MU-M11-199A	1.94	0.70
TRANS-NONACHLOR	32/32	0.54	22	3.03	OU4-MU-M10-199A-AVG	4.38	1.45
Inorganics (mg/kg)							
ALUMINUM	32/32	59.5	345	159	OU4-MU-M12-299A	63.79	0.40
ARSENIC	32/32	5.7	10.5	7.26	OU4-MU-M10-299A	1.39	0.19
CADMIUM	32/32	1.4	2.95	1.98	OU4-MU-M10-399A-AVG	0.44	0.22
CHROMIUM	32/32	1.2	3	1.82	OU4-MU-M03-299A	0.48	0.26
COPPER	32/32	6.1	24.4	9.13	OU4-MU-M11-299A	5.47	0.60

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
IRON	32/32	186	620	368	OU4-MU-M02-399A	114.40	0.31
LEAD	32/32	2.1	199	12.3	OU4-MU-M11-299A	38.29	3.10
MANGANESE	32/32	5.3	14.4	9.05	OU4-MU-M11-399A-AVG	2.34	0.26
MERCURY	32/32	0.17	0.55	0.28	OU4-MU-M05-199A	0.10	0.37
NICKEL	32/32	0.82	3.5	1.53	OU4-MU-M08-399A	0.70	0.46
SILVER	32/32	0.02	0.34	0.07	OU4-MU-M03-299A	0.09	1.32
ZINC	32/32	75.7	192	104	OU4-MU-M03-299A	23.82	0.23
Percent Lipids (%)							
LIPID	32/32	0.27	19.3	7.5	OU4-MU-M03-299A	3.29	0.44

Notes:
- All results are presented on a dry weight basis.
- Duplicate samples were averaged in this table.
- 1/2 the detection limits for non-detects were used.
- The frequency of detects count a sample and its duplicate as one sample.
- This table includes the following monitoring station samples:
  - OU4-MU-(M01 through M14)-(199A through 399A)
  - OU4-MU-M01-299A-FD
  - OU4-MU-M03-199A-FD
  - OU4-MU-M06-299A-FD
  - OU4-MU-M08-199A-FD
  - OU4-MU-M08-299A-FD
  - OU4-MU-M10-199A-FD
  - OU4-MU-M10-399A-FD
  - OU4-MU-M11-399A-FD
- Source data located in the Round 1 data package (TtNUS, February 2000).

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,7,8,9-HPCDF	1/5	7.46	7.46	10.3	OU4-MU-R02-499A-AVG	1.81	0.18
1,2,3,4,7,8-HXCDD	1/5	3.07	3.07	9.71	OU4-MU-R03-399A	3.27	0.34
1,2,3,4,7,8-HXCDF	1/5	2.41	2.41	9.31	OU4-MU-R02-499A-AVG	3.38	0.36
1,2,3,6,7,8-HXCDD	2/5	2.51	3.72	7.79	OU4-MU-R03-399A	4.01	0.51
1,2,3,6,7,8-HXCDF	1/5	1.63	1.63	9.16	OU4-MU-R02-499A-AVG	3.63	0.40
1,2,3,7,8,9-HXCDD	1/5	0.88	0.88	9.28	OU4-MU-R03-399A	3.99	0.43
1,2,3,7,8,9-HXCDF	1/5	11.6	11.6	11.2	OU4-MU-R02-499A-AVG	1.19	0.11
2,3,4,6,7,8-HXCDF	1/5	3.52	3.52	9.53	OU4-MU-R02-499A-AVG	3.01	0.32
OCDD	2/5	69.2	78.2	38.5	OU4-MU-R03-399A	26.01	0.68
OCDF	2/5	8.76	36.475	19.4	OU4-MU-R02-499A-AVG	8.45	0.44
TOTAL HPCDD	2/6	13	25.7	14.3	OU4-MU-R01-499A	5.05	0.35
TOTAL HPCDF	2/5	5.84	7.46	9.16	OU4-MU-R02-499A-AVG	2.49	0.27
TOTAL HXCDD	2/5	12.2	21.5	13.3	OU4-MU-R02-399A	4.06	0.31
TOTAL HXCDF	1/5	19.2	19.2	12.7	OU4-MU-R02-499A-AVG	3.02	0.24
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	8/8	1.41	2.02	1.67	OU4-MU-R03-399A	0.22	0.13
1-METHYLPHENANTHRENE	8/8	1.59	4.37	2.52	OU4-MU-R02-499A-AVG	0.93	0.37
2,6-DIMETHYLNAPHTHALENE	8/8	2.14	3.75	3.12	OU4-MU-R02-399A	0.59	0.19
ACENAPHTHENE	8/8	0.69	2.52	1.44	OU4-MU-R02-499A-AVG	0.62	0.43
ACENAPHTHYLENE	8/8	5.64	20.2	11.2	OU4-MU-R02-399A	4.94	0.44
ANTHRACENE	6/8	22.8	40.05	23.0	OU4-MU-R02-499A-AVG	11.35	0.49
BENZO(A)ANTHRACENE	8/8	7.44	25.1	15.1	OU4-MU-R02-499A-AVG	5.90	0.39
BENZO(A)PYRENE	8/8	7.62	24.4	14.6	OU4-MU-R02-499A-AVG	5.53	0.38
BENZO(B)FLUORANTHENE	8/8	12.5	37.6	22.3	OU4-MU-R02-499A-AVG	9.36	0.42
BENZO(E)PYRENE	8/8	8.8	28.4	18.7	OU4-MU-R02-499A-AVG	7.33	0.39
BENZO(G,H,I)PERYLENE	8/8	3.98	11.8	6.92	OU4-MU-R02-499A-AVG	2.51	0.36
BENZO(K)FLUORANTHENE	8/8	2.95	8.56	5.48	OU4-MU-R02-499A-AVG	2.18	0.40
C1-CHRYSENES	8/8	7.16	22.75	15.0	OU4-MU-R02-499A-AVG	6.13	0.41
C1-DIBENZOTHIOPHENES	8/8	1.96	4.015	2.73	OU4-MU-R02-499A-AVG	0.67	0.25
C1-FLUORANTHENES/PYRENES	8/8	21.6	56.55	39.9	OU4-MU-R02-499A-AVG	12.90	0.32
C1-FLUORENES	8/8	6.15	11.5	9.44	OU4-MU-R04-499A	1.98	0.21
C1-PHENANTHRENES/ANTHRACE	8/8	13.2	25.9	18.0	OU4-MU-R02-499A-AVG	3.99	0.22
C2-CHRYSENES	8/8	16	41	26.9	OU4-MU-R02-499A-AVG	9.61	0.36
C2-DIBENZOTHIOPHENES	8/8	5.64	11.2	8.44	OU4-MU-R02-499A-AVG	1.88	0.22
C2-FLUORENES	8/8	8.9	16.3	12.0	OU4-MU-R01-499A	2.72	0.23

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C2-PHENANTHRENES/ANTHRACE	8/8	24.8	38.3	31.3	OU4-MU-R02-499A-AVG	5.09	0.16
C3-CHRYSENES	8/8	0.2	2.305	0.62	OU4-MU-R02-499A-AVG	0.75	1.21
C3-DIBENZOTHIOPHENES	8/8	7.95	13.85	10.9	OU4-MU-R02-499A-AVG	2.06	0.19
C3-FLUORENES	8/8	15	29	19.9	OU4-MU-R03-399A	5.00	0.25
C3-NAPHTHALENES	8/8	13.1	23.8	17.5	OU4-MU-R03-399A	3.95	0.23
C3-PHENANTHRENES/ANTHRACE	8/8	23.6	43.1	32.3	OU4-MU-R01-499A	6.67	0.21
C4-CHRYSENES	8/8	0.2	0.985	0.56	OU4-MU-R02-499A-AVG	0.28	0.51
C4-NAPHTHALENES	8/8	12.7	21	16.4	OU4-MU-R03-399A	2.86	0.17
C4-PHENANTHRENES/ANTHRACE	8/8	16.7	30.3	23.4	OU4-MU-R01-399A	4.87	0.21
CHRYSENE	8/8	13.6	42.55	26.1	OU4-MU-R02-499A-AVG	9.54	0.37
DIBENZO(A,H)ANTHRACENE	8/8	0.46	1.81	0.94	OU4-MU-R02-499A-AVG	0.45	0.49
FLUORANTHENE	8/8	22.9	70.1	41.0	OU4-MU-R02-499A-AVG	15.38	0.38
FLUORENE	8/8	1.87	4.255	2.76	OU4-MU-R02-499A-AVG	0.80	0.29
INDENO(1,2,3-CD)PYRENE	8/8	2.03	7.125	3.79	OU4-MU-R02-499A-AVG	1.66	0.44
PERYLENE	8/8	3.8	14.8	8.22	OU4-MU-R01-399A	4.22	0.51
PYRENE	8/8	18.7	67.8	40.5	OU4-MU-R02-499A-AVG	17.34	0.43
Pesticides/PCBs (ug/kg)							
2,4'-DDD	8/8	2.1	3.1	2.5	OU4-MU-R02-499A-AVG	0.38	0.15
2,4'-DDE	8/8	0.3	0.69	0.53	OU4-MU-R04-499A	0.13	0.25
2,4'-DDT	8/8	1.3	6.6	2.16	OU4-MU-R02-499A-AVG	2.09	0.97
4,4'-DDD	8/8	4.4	6.65	5.19	OU4-MU-R02-499A-AVG	0.78	0.15
4,4'-DDE	8/8	5.4	8.4	6.88	OU4-MU-R01-399A	1.15	0.17
4,4'-DDT	6/8	7	12	6.93	OU4-MU-R03-399A	3.27	0.47
ALDRIN	4/8	0.061	0.43	0.15	OU4-MU-R01-499A	0.12	0.79
ALPHA-BHC	8/8	0.45	0.62	0.53	OU4-MU-R01-499A	0.07	0.13
ALPHA-CHLORDANE	8/8	1.8	2.6	2.19	OU4-MU-R02-499A-AVG	0.30	0.14
CHLORPYRIFOS	6/8	0.034	1.1	0.74	J4-MU-R03-399A, OU4-MU-R04-49	0.37	0.50
CIS-NONACHLOR	8/8	0.59	1.3	0.90	OU4-MU-R02-499A-AVG	0.22	0.24
DIELDRIN	8/8	1.4	2.5	1.95	OU4-MU-R02-399A	0.45	0.23
ENDOSULFAN II	8/8	0.33	0.94	0.55	OU4-MU-R02-399A	0.19	0.35
ENDRIN	8/8	0.37	0.88	0.59	OU4-MU-R02-399A	0.18	0.30
GAMMA-CHLORDANE	8/8	0.36	1.3	0.75	OU4-MU-R02-399A	0.39	0.52
HEPTACHLOR EPOXIDE	8/8	0.14	1.2	0.60	OU4-MU-R03-399A	0.30	0.50
HEXACHLOROBENZENE	8/8	0.13	0.555	0.32	OU4-MU-R02-499A-AVG	0.13	0.42
MIREX	8/8	1.6	2.95	1.94	OU4-MU-R02-499A-AVG	0.47	0.24
OXYCHLORDANE	2/8	0.077	0.52	0.15	OU4-MU-R03-399A	0.19	1.31

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-101/90	8/8	6.8	11.5	9.14	OU4-MU-R02-499A-AVG	1.79	0.20
PCB-105	8/8	2.6	5.2	3.76	OU4-MU-R02-499A-AVG	0.89	0.24
PCB-118	6/8	6.1	8.9	5.84	OU4-MU-R01-399A	2.50	0.43
PCB-126	8/8	0.061	0.53	0.28	OU4-MU-R04-499A	0.15	0.53
PCB-128	8/8	0.53	3.2	1.95	OU4-MU-R02-499A-AVG	0.81	0.42
PCB-156	7/8	0.37	1.06	0.7	OU4-MU-R01-499A	0.30	0.43
PCB-167	8/8	0.65	2	1.27	OU4-MU-R02-499A-AVG	0.48	0.38
PCB-169	7/8	0.024	0.42	0.14	OU4-MU-R04-399A	0.13	0.94
PCB-189	1/8	0.044	0.044	0.27	OU4-MU-R01-499A	0.10	0.38
PCB-195/208	5/8	0.079	0.12	0.16	OU4-MU-R02-499A-AVG	0.09	0.54
PCB-201/157/173	7/8	0.26	0.47	0.36	OU4-MU-R02-399A	0.09	0.26
PCB-206	1/8	0.034	0.034	0.23	OU4-MU-R01-499A	0.09	0.38
PCB-209	1/8	0.064	0.064	0.30	OU4-MU-R03-399A	0.10	0.34
PCB-28	8/8	1.4	2.15	1.63	OU4-MU-R02-499A-AVG	0.35	0.21
PCB-44	4/8	2.6	3.45	1.84	OU4-MU-R02-499A-AVG	1.26	0.69
PCB-52	8/8	1.5	5.95	3.51	OU4-MU-R02-499A-AVG	1.51	0.43
PCB-66	8/8	1.5	2.3	1.74	OU4-MU-R02-499A-AVG	0.31	0.18
PCB-77	8/8	0.13	1.5	1.10	OU4-MU-R01-399A	0.46	0.42
PCB-8/5	8/8	0.087	1.2	0.62	OU4-MU-R03-399A	0.40	0.64
PCB-81	8/8	0.2	1.1	0.70	OU4-MU-R01-399A	0.30	0.43
PENTACHLOROANISOLE	8/8	0.15	0.76	0.42	OU4-MU-R03-499A	0.19	0.46
PENTACHLOROBENZENE	8/8	0.54	0.75	0.63	OU4-MU-R02-399A	0.08	0.12
TRANS-NONACHLOR	8/8	1.6	3.15	2.27	OU4-MU-R02-499A-AVG	0.54	0.24
Inorganics (mg/kg)							
ALUMINUM	8/8	131	260	195	OU4-MU-R03-399A	51.25	0.26
ARSENIC	8/8	6	7.8	6.96	OU4-MU-R02-499A-AVG	0.59	0.08
CADMIUM	8/8	1.2	2.1	1.68	OU4-MU-R04-399A	0.34	0.20
CHROMIUM	8/8	1.6	3	2.08	OU4-MU-R02-499A-AVG	0.58	0.28
COPPER	8/8	6.3	7.5	6.94	OU4-MU-R04-399A	0.43	0.06
IRON	8/8	287	603	404	OU4-MU-R02-499A-AVG	111.63	0.28
LEAD	8/8	1.9	6.9	3.44	OU4-MU-R02-499A-AVG	1.57	0.46
MANGANESE	8/8	6.4	17.5	10.2	OU4-MU-R02-399A	3.44	0.34
MERCURY	8/8	0.27	0.392	0.30	OU4-MU-R02-499A-AVG	0.05	0.15
NICKEL	8/8	1	1.4	1.13	OU4-MU-R02-499A-AVG	0.17	0.15
SILVER	8/8	0.04	0.07	0.059	OU4-MU-R01-399A	0.01	0.22
SILVER	8/8	0.04	0.07	0.059	OU4-MU-R01-499A	0.01	0.22

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 1 MUSSEL DATA FOR REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
ZINC	8/8	90	117	106	OU4-MU-R04-499A	9.08	0.09
Percent Lipids (%)							
LIPID	8/8	3.87	9.12	5.8	OU4-MU-R03-399A	2.05	0.35

Notes:
- All results are presented on a dry weight basis.
- Duplicate samples were averaged in this table.
- 1/2 the detection limits for non-detects were used.
- The frequency of detects count a sample and its duplicate as one sample.
- This table includes the following reference station samples:
  - OU4-MU-(R01 through R04)-(199A through 499A)
  - OU4-MU-R02-499A-FD
- Source data located in the Round 1 data package (TtNUS, February 2000).

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 1 JUVENILE LOBSTER DATA
FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration[2,3]	Sample with Maximum Concentration	Standard Deviation[3]	Coefficient of Variation
Dioxins/Furans (ng/kg)							
OCDD	1/6	26.3	26.3	37.67	OU4-LJ-M08-199AM	6.36	0.17
TOTAL HPCDD	1/6	12.6	12.6	18.94	OU4-LJ-M12-199AM	3.40	0.18
TOTAL HXCDD	2/6	4.4	9.5	15.97	OU4-LJ-M10-199AM	7.28	0.46
TOTAL PECDF	2/6	8	11	15.84	OU4-LJ-M07-199AM	5.02	0.32
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	14/14	2.4	5.2	3.93	OU4-LJ-M07-199AM	0.75	0.19
1-METHYLNAPHTHALENE	14/14	5.3	11	7.93	OU4-LJ-M03-199AM	1.62	0.20
1-METHYLPHENANTHRENE	14/14	2.7	14.7	7.05	OU4-LJ-M02-199AM	2.72	0.39
2,6-DIMETHYLNAPHTHALENE	14/14	2.2	7.5	3.51	OU4-LJ-M04-199AM	1.47	0.42
2-METHYLNAPHTHALENE	14/14	6.9	14.8	10.24	OU4-LJ-M03-199AM	2.50	0.24
ACENAPHTHENE	14/14	0.4	6.5	1.51	OU4-LJ-M02-199AM	2.41	1.59
ACENAPHTHYLENE	14/14	0.5	1	0.62	OU4-LJ-M02-199AM	0.19	0.31
ANTHRACENE	14/14	0.9	28.6	6.79	OU4-LJ-M13-199AM	8.29	1.22
BENZO(A)ANTHRACENE	14/14	1.2	67.5	16.80	OU4-LJ-M02-199AM	19.51	1.16
BENZO(A)PYRENE	14/14	1.3	70.9	18.81	OU4-LJ-M02-199AM	20.81	1.11
BENZO(B)FLUORANTHENE	14/14	1.2	34.6	11.63	OU4-LJ-M02-199AM	11.18	0.96
BENZO(E)PYRENE	14/14	1.8	32.7	8.91	OU4-LJ-M02-199AM	8.11	0.91
BENZO(G,H,I)PERYLENE	14/14	0.4	20.8	5.53	OU4-LJ-M02-199AM	5.59	1.01
BENZO(K)FLUORANTHENE	14/14	1.1	44.7	12.66	OU4-LJ-M02-199AM	13.27	1.05
BIPHENYL	14/14	1	2.6	1.63	OU4-LJ-M02-199AM	0.53	0.33
CHRYSENE	14/14	4.8	87.3	24.69	OU4-LJ-M02-199AM	23.48	0.95
DIBENZO(A,H)ANTHRACENE	14/14	0.1	7.9	1.34	OU4-LJ-M02-199AM	2.66	1.99
DIBENZOTHIOPHENE	14/14	0.5	5.8	1.48	OU4-LJ-M02-199AM	1.50	1.01
FLUORANTHENE	14/14	6.9	171	50.01	OU4-LJ-M02-199AM	48.20	0.96
FLUORENE	14/14	1.9	11.5	3.78	OU4-LJ-M02-199AM	3.02	0.80
INDENO(1,2,3-CD)PYRENE	14/14	0.1	26.9	6.30	OU4-LJ-M02-199AM	8.23	1.31
NAPHTHALENE	14/14	13	22.7	15.56	OU4-LJ-M12-199AM	2.87	0.18
PERYLENE	14/14	0.4	17.6	4.33	OU4-LJ-M02-199AM	4.91	1.13
PHENANTHRENE	14/14	4.5	85.2	17.57	OU4-LJ-M02-199AM	21.77	1.24
PYRENE	14/14	5.3	128	37.76	OU4-LJ-M02-199AM	35.00	0.93
Pesticides /PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	14/14	2.43	48.77	13.61	OU4-LJ-M02-199AM	12.14	0.89
1,2,4,5-TETRACHLOROBENZENE	12/14	0.16	1.16	0.51	OU4-LJ-M01-199AM	0.28	0.54
2,4'-DDT	3/14	0.22	0.39	0.18	OU4-LJ-M09-199AM	0.09	0.50
4,4'-DDD	3/14	0.15	0.38	0.17	OU4-LJ-M11-199AM-AVG	0.08	0.50
4,4'-DDE	14/14	1.16	13.02	3.45	OU4-LJ-M07-199AM	3.13	0.90

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 1 JUVENILE LOBSTER DATA
FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration[2,3]	Sample with Maximum Concentration	Standard Deviation[3]	Coefficient of Variation
ALPHA-BHC	14/14	0.16	0.47	0.35	OU4-LJ-M09-199AM	0.09	0.27
ALPHA-CHLORDANE	12/14	0.8	25.97	6.15	OU4-LJ-M11-199AM-AVG	7.92	1.29
BETA-BHC	2/14	1.16	1.16	0.27	OU4-LJ-M10-199AM, OU4-LJ-M11-199AM-AVG	0.39	1.46
CHLORPYRIFOS	2/14	0.6	2.865	1.29	OU4-LJ-M11-199AM-AVG	0.49	0.38
CIS-NONACHLOR	2/14	0.03	0.17	0.12	OU4-LJ-M01-199AM	0.04	0.30
DIELDRIN	14/14	1.05	1.85	1.46	OU4-LJ-M01-199AM, OU4-LJ-M07-199AM	0.26	0.18
GAMMA-BHC (LINDANE)	10/14	0.19	0.93	0.40	OU4-LJ-M11-199AM-AVG	0.25	0.63
HEPTACHLOR	1/14	0.81	0.81	0.26	OU4-LJ-M14-199AM	0.19	0.73
HEXACHLOROBENZENE	13/14	0.27	1.885	0.68	OU4-LJ-M11-199AM-AVG	0.52	0.75
OXYCHLORDANE	10/14	0.31	3.83	0.87	OU4-LJ-M07-199AM	0.98	1.12
PCB-101/90	12/14	0.45	3.1	1.49	OU4-LJ-M03-199AM	0.93	0.62
PCB-105	14/14	0.32	4.905	1.10	OU4-LJ-M11-199AM-AVG	1.19	1.08
PCB-118	14/14	0.93	15.87	3.77	OU4-LJ-M11-199AM-AVG	4.15	1.10
PCB-126	12/14	0.04	0.31	0.42	OU4-LJ-M07-199AM	0.73	1.72
PCB-128	10/14	0.14	1.245	0.51	OU4-LJ-M11-199AM-AVG	0.37	0.71
PCB-138 /160	14/14	1.54	11.71	4.26	OU4-LJ-M07-199AM	3.43	0.80
PCB-149/123	2/14	0.24	0.54	0.50	OU4-LJ-M07-199AM	0.09	0.17
PCB-153/132	14/14	1.88	18.32	5.87	OU4-LJ-M07-199AM	4.98	0.85
PCB-156	6/14	0.06	2.02	0.69	OU4-LJ-M13-199AM	0.58	0.83
PCB-167	5/14	0.37	1.72	0.62	OU4-LJ-M07-199AM	0.34	0.55
PCB-169	6/14	0.02	0.16	1.19	OU4-LJ-M06-199AM	0.98	0.83
PCB-170/190	5/14	0.23	4.68	1.10	OU4-LJ-M02-199AM	1.25	1.13
PCB-18/17	11/14	0.27	10.14	2.79	OU4-LJ-M13-199AM	2.83	1.01
PCB-180	14/14	0.65	9.14	2.14	OU4-LJ-M02-199AM	2.59	1.21
PCB-187	14/14	0.47	6.2	1.72	OU4-LJ-M07-199AM	1.79	1.04
PCB-189	3/14	0.05	0.12	0.42	OU4-LJ-M09-199AM	0.18	0.43
PCB-195/208	4/14	0.12	0.78	0.43	OU4-LJ-M02-199AM	0.16	0.37
PCB-201/157/173	1/14	0.16	0.16	0.38	OU4-LJ-M02-199AM	0.08	0.21
PCB-206	2/14	0.49	0.68	0.46	OU4-LJ-M07-199AM	0.08	0.18
PCB-209	10/14	0.08	0.91	0.44	OU4-LJ-M03-199AM	0.24	0.54
PCB-28	5/14	0.09	2.87	0.54	OU4-LJ-M07-199AM	0.68	1.26
PCB-52	6/14	0.23	2.185	0.56	OU4-LJ-M11-199AM-AVG	0.52	0.94
PCB-66	8/14	0.2	1.86	0.57	OU4-LJ-M07-199AM	0.46	0.82
PCB-8/5	5/14	0.6	1.18	0.88	OU4-LJ-M13-199AM	0.17	0.19
PCB-81	2/14	0.38	0.8	1.87	OU4-LJ-M03-199AM	0.59	0.31
PENTACHLOROANISOLE	14/14	0.29	0.5	0.37	OU4-LJ-M07-199AM	0.07	0.20
PENTACHLOROBENZENE	13/14	0.15	2.05	1.00	OU4-LJ-M13-199AM	0.72	0.73

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 1 JUVENILE LOBSTER DATA
FOR THE MONITORING STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration[2,3]	Sample with Maximum Concentration	Standard Deviation[3]	Coefficient of Variation
TRANS-NONACHLOR	4/14	0.135	0.92	0.19	OU4-LJ-M02-199AM	0.27	1.47
Metals (mg/kg)							
ALUMINUM	14/14	3.48	21.2	8.51	OU4-LJ-M09-199AM	4.89	0.57
ARSENIC	14/14	9.38	16.7	11.16	OU4-LJ-M05-199AM	1.94	0.17
CADMIUM	12/14	0.0355	0.744	0.11	OU4-LJ-M07-199AM	0.20	1.75
COPPER	14/14	28.5	49.9	38.93	OU4-LJ-M04-199AM	6.92	0.18
IRON	14/14	5.99	32.7	13.38	OU4-LJ-M09-199AM	6.86	0.51
LEAD	11/14	0.121	0.312	0.16	OU4-LJ-M12-199AM	0.09	0.55
MANGANESE	14/14	1.69	4.595	2.63	OU4-LJ-M11-199AM-AVG	0.91	0.35
MERCURY	14/14	0.413	0.945	0.56	OU4-LJ-M12-199AM	0.16	0.30
NICKEL	2/14	0.305	0.523	0.15	OU4-LJ-M02-199AM	0.13	0.89
SILVER	14/14	0.754	1.39	1.03	OU4-LJ-M04-199AM, OU4-LJ-M12-199AM	0.20	0.19
ZINC	14/14	75	139.5	99.05	OU4-LJ-M11-199AM-AVG	16.54	0.17

Notes:
- All results are presented on a dry weight basis.
- Duplicate samples were averaged in this table.
- 1/2 the detection limits for non-detects were used.
- This table will include the following monitoring station samples:
  - OU4-LJ-(M01 through M14)-199AM
  - OU4-LJ-M11-199AM-FD

1 - This table includes the lobster muscle (tail and claw) without the intestines.
2 - The mean concentration may be greater than the maximum concentration when the estimated maximum concentration is below the detection limit and there is a low frequency of detection.
3 - The mean concentrations and the standard deviations were calculated using the detected values and 1/2 the detection limit for non detects.

- Source data located in the Round 1 data package (TtNUS, February 2000).

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 1 JUVENILE LOBSTER DATA
FOR THE REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration[2,3]	Sample with Maximum Concentration	Standard Deviation[3]	Coefficient of Variation
Dioxins/Furans (ng/kg)							
2,3,4,7,8-PECDF	1/4	37.7	37.7	24.04	OU4-LJ-R01-199AM	9.17	0.38
TOTAL HXCDD	1/4	7.9	7.9	16.59	OU4-LJ-R01-199AM	5.89	0.35
TOTAL PECDF	2/4	5.4	7.3	13.14	OU4-LJ-R04-199AM	7.92	0.60
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	4/4	3.5	6	4.68	OU4-LJ-R04-199AM	1.08	0.23
1-METHYLNAPHTHALENE	4/4	6	13.7	8.90	OU4-LJ-R04-199AM	3.35	0.38
1-METHYLPHENANTHRENE	4/4	6	11.3	8.35	OU4-LJ-R04-199AM	2.78	0.33
2,6-DIMETHYLNAPHTHALENE	4/4	2.4	4.2	3.44	OU4-LJ-R04-199AM	0.77	0.22
2-METHYLNAPHTHALENE	4/4	7.4	18.5	11.39	OU4-LJ-R04-199AM	4.88	0.43
ACENAPHTHENE	4/4	0.4	1.6	1.04	OU4-LJ-R03-199AM	0.50	0.48
ACENAPHTHYLENE	4/4	0.6	1.7	1.08	OU4-LJ-R03-199AM	0.52	0.48
ANTHRACENE	4/4	1	25.2	11.26	OU4-LJ-R03-199AM	11.85	1.05
BENZO(A)ANTHRACENE	4/4	1.1	47.6	21.59	OU4-LJ-R03-199AM	22.42	1.04
BENZO(A)PYRENE	4/4	0.5	26.3	14.45	OU4-LJ-R03-199AM, OU4-LJ-R04-199AM	13.84	0.96
BENZO(B)FLUORANTHENE	4/4	1.1	29.5	12.80	OU4-LJ-R04-199AM	12.98	1.01
BENZO(E)PYRENE	4/4	2.3	15	8.50	OU4-LJ-R03-199AM	6.07	0.71
BENZO(G,H,I)PERYLENE	4/4	0.9	9.4	4.76	OU4-LJ-R03-199AM	3.80	0.80
BENZO(K)FLUORANTHENE	4/4	1	28.1	11.36	OU4-LJ-R03-199AM	12.31	1.08
BIPHENYL	4/4	1.1	1.6	1.34	OU4-LJ-R04-199AM	0.21	0.15
CHRYSENE	4/4	5.3	47.4	26.83	OU4-LJ-R04-199AM	21.40	0.80
DIBENZO(A,H)ANTHRACENE	4/4	0.1	0.3	0.19	OU4-LJ-R03-199AM	0.09	0.46
DIBENZOTHIOPHENE	4/4	0.6	5.5	2.80	OU4-LJ-R04-199AM	2.52	0.90
FLUORANTHENE	4/4	8.5	145.2	75.35	OU4-LJ-R04-199AM	66.91	0.89
FLUORENE	4/4	2	7	3.96	OU4-LJ-R03-199AM	2.34	0.59
INDENO(1,2,3-CD)PYRENE	4/4	0.2	9.2	4.83	OU4-LJ-R03-199AM	4.44	0.92
NAPHTHALENE	4/4	12	21.6	15.35	OU4-LJ-R04-199AM	4.29	0.28
PERYLENE	4/4	1	10.4	4.84	OU4-LJ-R03-199AM	4.40	0.91
PHENANTHRENE	4/4	3.1	63.6	31.56	OU4-LJ-R03-199AM	31.76	1.01
PYRENE	4/4	6.5	89.7	47.58	OU4-LJ-R04-199AM	42.93	0.90
Pesticides /PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	4/4	5.49	14.91	8.81	OU4-LJ-R03-199AM	4.18	0.47
1,2,4,5-TETRACHLOROBENZENE	4/4	0.09	0.92	0.35	OU4-LJ-R01-199AM	0.39	1.11
4,4'-DDD	1/4	0.09	0.09	0.13	OU4-LJ-R02-199AM-AVG	0.03	0.22
4,4'-DDE	4/4	2.38	4.21	3.17	OU4-LJ-R04-199AM	0.83	0.26
4,4'-DDT	1/4	0.09	0.09	0.19	OU4-LJ-R03-199AM	0.07	0.35
ALDRIN	1/4	0.18	0.18	0.18	OU4-LJ-R04-199AM	0.01	0.04
ALPHA-BHC	4/4	0.29	0.92	0.51	OU4-LJ-R01-199AM	0.29	0.57
ALPHA-CHLORDANE	3/4	1.82	33.67	9.51	OU4-LJ-R02-199AM-AVG	16.14	1.70
BETA-BHC	2/4	0.26	0.9075	0.35	OU4-LJ-R02-199AM-AVG	0.37	1.06

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 1 JUVENILE LOBSTER DATA
FOR THE REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration[2,3]	Sample with Maximum Concentration	Standard Deviation[3]	Coefficient of Variation
CIS-NONACHLOR	1/4	0.15	0.15	0.13	OU4-LJ-R04-199AM	0.01	0.11
DIELDRIN	3/4	1.13	1.585	1.26	OU4-LJ-R02-199AM-AVG	0.39	0.31
ENDRIN	1/4	0.97	0.97	0.53	OU4-LJ-R02-199AM-AVG	0.29	0.55
GAMMA-BHC (LINDANE)	3/4	0.73	1.67	0.82	OU4-LJ-R01-199AM	0.64	0.78
HEXACHLOROBENZENE	4/4	0.35	0.8125	0.55	OU4-LJ-R02-199AM-AVG	0.21	0.39
OXYCHLORDANE	4/4	0.31	1.96	0.92	OU4-LJ-R03-199AM	0.72	0.78
PCB-101/90	4/4	0.71	3.38	1.75	OU4-LJ-R04-199AM	1.24	0.71
PCB-105	4/4	0.69	1.25	0.93	OU4-LJ-R04-199AM	0.25	0.27
PCB-118	4/4	1.33	3.25	2.19	OU4-LJ-R02-199AM-AVG	0.93	0.43
PCB-126	4/4	0.02	0.17	0.09	OU4-LJ-R03-199AM	0.06	0.72
PCB-128	1/4	0.4125	0.4125	0.40	OU4-LJ-R02-199AM-AVG	0.03	0.07
PCB-138 /160	4/4	1.78	4.04	2.83	OU4-LJ-R04-199AM	0.93	0.33
PCB-153/132	4/4	2.69	5.6	3.59	OU4-LJ-R04-199AM	1.35	0.38
PCB-156	1/4	4.255	4.255	1.46	OU4-LJ-R02-199AM-AVG	1.87	1.28
PCB-167	3/4	0.2	0.45	0.35	OU4-LJ-R02-199AM-AVG	0.16	0.46
PCB-169	2/4	0.02	0.04	1.01	OU4-LJ-R02-199AM-AVG	1.13	1.12
PCB-170/190	1/4	1.42	1.42	0.74	OU4-LJ-R04-199AM	0.46	0.62
PCB-18/17	2/4	0.36	23.68	6.72	OU4-LJ-R02-199AM-AVG	11.32	1.69
PCB-180	4/4	0.53	1.57	1.07	OU4-LJ-R04-199AM	0.49	0.46
PCB-187	4/4	0.45	1.31	0.86	OU4-LJ-R04-199AM	0.37	0.43
PCB-195/208	2/4	0.03	0.1	0.24	OU4-LJ-R04-199AM	0.21	0.85
PCB-209	2/4	0.06	0.43	0.43	OU4-LJ-R01-199AM	0.26	0.61
PCB-52	1/4	0.6725	0.6725	0.43	OU4-LJ-R02-199AM-AVG	0.16	0.37
PCB-66	4/4	0.14	0.3	0.21	OU4-LJ-R04-199AM	0.07	0.35
PCB-77	1/4	0.37	0.37	1.65	OU4-LJ-R02-199AM-AVG	0.87	0.52
PCB-8/5	4/4	1.07	4.48	2.54	OU4-LJ-R01-199AM	1.49	0.59
PENTACHLOROANISOLE	4/4	0.33	0.54	0.39	OU4-LJ-R02-199AM-AVG	0.12	0.30
PENTACHLOROBENZENE	4/4	0.23	1.805	0.98	OU4-LJ-R02-199AM-AVG	0.65	0.66
TRANS-NONACHLOR	3/4	0.12	0.21	0.15	OU4-LJ-R03-199AM	0.06	0.39
Metals (mg/kg)							
ALUMINUM	4/4	3.12	8.73	6.41	OU4-LJ-R02-199AM-AVG	2.77	0.43
ARSENIC	4/4	7.065	19.9	10.98	OU4-LJ-R03-199AM	6.02	0.55
CADMIUM	3/4	0.0404	0.0468	0.04	OU4-LJ-R01-199AM	0.01	0.36
CHROMIUM	1/4	0.503	0.503	0.20	OU4-LJ-R01-199AM	0.20	1.00
COPPER	4/4	33.9	55.7	43.85	OU4-LJ-R01-199AM	10.95	0.25
IRON	4/4	6.52	16.1	10.19	OU4-LJ-R01-199AM	4.29	0.42
LEAD	3/4	0.182	0.545	0.30	OU4-LJ-R02-199AM-AVG	0.23	0.76
MANGANESE	4/4	2.2	4.46	3.06	OU4-LJ-R01-199AM	0.98	0.32
MERCURY	3/4	0.504	0.8385	0.48	OU4-LJ-R02-199AM-AVG	0.34	0.71
NICKEL	1/4	0.573	0.573	0.40	OU4-LJ-R01-199AM	0.36	0.89

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 1 JUVENILE LOBSTER DATA
FOR THE REFERENCE STATIONS
ROUND 1 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration[2,3]	Sample with Maximum Concentration	Standard Deviation[3]	Coefficient of Variation
SILVER	4/4	1.0195	1.72	1.34	OU4-LJ-R01-199AM	0.33	0.25
ZINC	4/4	90.7	120	103.98	OU4-LJ-R01-199AM	12.38	0.12

Notes:
- All results are presented on a dry weight basis.
- Duplicate samples were averaged in this table
- 1/2 the detection limits for non-detects were used.

- This table includes the following reference station samples:
  - OU4-LJ-(R01 through R04)-199AM
  - OU4-LJ-R02-199AM-FD

1 - This table includes the lobster muscle (tail and claw) without the intestines.
2 - The mean concentration may be greater than the maximum concentration when the estimated maximum concentration is below the detection limit and there is a low frequency of detection.
3 - The mean concentrations and the standard deviations were calculated using the detected values and 1/2 the detection limit for non detects.

- Source data located in the Round 1 data package (TtNUS, February 2000).

TABLE A.1-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
OCDD	181.0 - 532.4	243.7 U							159.5 U	331.2 U	125.3 U	344.0 U	248.7 U	494.3 U		
OCDF	9.6 - 20.4	12.1 U							9.3 U	20.8 U	11.4 U	16.6 U	19.1 U	21.1 U		
1,2,3,4,6,7,8-HPCDD	30.9 - 142.1	53.0							37.1	91.2	40.5	89.6	77.9	112.5		
1,2,3,4,6,7,8-HPCDF	5.6 - 19.5	7.5 U							4.9 U	13.1 U	27.4 U	9.7 U	26.1 U	10.0 U		
1,2,3,4,7,8,9-HPCDF	0.5 - 1.7	0.9 U							0.6 U	1.1 U	1.4 U	0.7 U	1.7 U	4.4 U		
1,2,3,4,7,8-HXCDD	0.5 - 1.7	0.9							0.8	1.1	1.6	0.7	2.3	1.1		
1,2,3,4,7,8-HXCDF	0.5 - 1.7	1.0 U							0.6 U	1.6 U	5.6 U	0.9 U	7.6 U	1.0 U		
1,2,3,6,7,8-HXCDD	1.7 - 7.0	2.5							2.1	4.5	3.4	3.4	6.6	4.9		
1,2,3,6,7,8-HXCDF	0.5 - 1.7	0.9 U							0.6 U	1.2 U	5.0 U	0.7 U	6.3 U	0.7 U		
1,2,3,7,8,9-HXCDD	0.9 - 2.0	1.2 U							0.9 U	1.7 U	1.2 U	1.2 U	2.4 U	1.1 U		
1,2,3,7,8,9-HXCDF	0.5 - 1.7	0.9 U							0.7	1.6	2.7	1.1	2.7	1.2		
1,2,3,7,8-PECDD	0.5 - 1.7	0.9 U							0.5 U	0.4 U	1.0 U	0.4 U	1.4 U	0.4 U		
1,2,3,7,8-PECDF	0.5 - 1.7	0.9 U							0.5 U	0.9 U	2.3 U	0.5 U	5.3 U	0.6 U		
2,3,4,6,7,8-HXCDF	0.6 - 1.7	1.0 U							0.6 U	1.6 U	5.8 U	0.8 U	7.2 U	0.8 U		
2,3,4,7,8-PECDF	0.5 - 1.7	0.9 U							0.5 U	1.2 U	5.1 U	0.7 U	10.0 U	0.5 U		
2,3,7,8-TCDD	0.1 - 0.3	0.2 U							0.1 U	0.2 U	0.2 U	0.1 U	0.4 U	0.1 U		
2,3,7,8-TCDF	0.3 - 1.3	0.4 U							0.5 U	1.3 U	2.4 U	0.8 U	7.9 U	0.6 U		
TOTAL HPCDD	30.9 - 361.1	110.3							86.6	242.0	100.8	236.7	178.6	323.3		
TOTAL HPCDF	12.8 - 45.8	17.8 U							11.4 U	30.9 U	40.6 U	26.4 U	45.4 U	35.7 U		
TOTAL HXCDD	5.4 - 55.2	17.1 U							8.6 U	22.0 U	20.0 U	24.2 U	36.6 U	22.3 U		
TOTAL HXCDF	1.0 - 3.4	1.4 U							1.1 U	4.2 U	17.4 U	2.0 U	22.4 U	2.7 U		
TOTAL PECDD	0.8 - 5.5	2.0 U							1.0 U	1.6 U	6.6 U	1.0 U	7.4 U	0.9 U		
TOTAL PECDF	0.5 - 4.5	1.5 U							0.6 U	7.7 U	31.6 U	2.7 U	86.2 U	3.8 U		
TOTAL TCDD	0.8 - 3.2	1.4							0.1	3.2	4.4	3.6	8.6	3.5		
TOTAL TCDF	0.3 - 5.4	1.3 U							1.3 U	6.1 U	40.1 U	3.2 U	79.3 U	3.6 U		
Semi-Volatile Organics (ug/kg)																
BIPHENYL	1.7 - 22.1	3.7	9.7	1.2 U	2.8 U	2.4 U	1.7 U	2.4 U	1.7 U	4.5 U	2.0 U	1.9 U	3.9 U	11.5	3.3 U	2.9
1-METHYLNAPHTHALENE	1.4 - 7.7	4.6 U	27.1	3.6 U	6.9 U	5.7 U	3.8 U	6.0 U	4.2 U	13.2 U	5.2 U	5.7 U	16.7	41.7	7.2 U	3.1 U
1-METHYLPHENANTHRENE	5.8 - 71.6	37.7	109.1	18.1	40.2	31.0	22.9	22.8	20.5	41.4	25.0	38.4	25.9	139.5	57.7	24.0
1,6,7-TRIMETHYLNAPHTHALENE	4.2 - 16.1	10.5	13.6	4.8	8.6	6.9	6.0	6.4	5.3	13.3	4.2	10.5	6.5	12.6	17.1	6.8
2,6-DIMETHYLNAPHTHALENE	2.2 - 10.3	9.7	19.1	7.3	12.1	9.5	6.5	8.0	5.9	17.3	10.1	9.3	11.5	22.8	16.0	6.2
2-METHYLNAPHTHALENE	1.5 - 31.7	7.0	41.6	6.1 U	11.8 U	9.5 U	5.9 U	9.9 U	6.5 U	20.1 U	7.7 U	7.5 U	33.5	47.5	11.2 U	5.5 U
ACENAPHTHENE	13.9 - 83.2	13.7	69.4	5.8	26.0	13.3	13.2	9.7	13.2	58.0	34.0	12.5	7.5	340.9	65.1	7.9
ACENAPHTHYLENE	24.6 - 481.9	51	101.4	23.3	44.5	46.9	40.1	50.5	35.0	93.8	21.2	61.2	22.8	61.6	66.2	39.4
ANTHRACENE	45.3 - 694.8	200	311.6	54.7	141.6	112.1	99.3	107.7	77.3	337.7	103.4	239.1	51.3	578.2	267.0	87.4
BENZO(A)ANTHRACENE	67.2 - 861.2	341	625.7	88.5	266.8	330.3	218.2	188.5	161.2	665.8	208.7	494.3	97.9	999.7	435.1	187.7
BENZO(A)PYRENE	66.7 - 758.4	414	745.7	112.2	304.0	444.6	327.4	309.8	242.6	805.7	245.0	508.0	109.1	1144.3	435.0	267.9
BENZO(B)FLUORANTHENE	34.4 - 352.9	394	690.5	122.4	370.4	480.5	315.0	301.4	214.2	829.7	266.2	589.6	127.3	1291.1	513.1	252.6
BENZO(E)PYRENE	35.7 - 366.8	190	438.2	72.3	191.0	258.7	150.7	149.0	118.0	420.9	120.6	280.0	81.1	619.6	254.2	145.3
BENZO(G,H,I)PERYLENE	25.9 - 246.6	201	459.0	73.8	195.6	287.9	177.0	169.8	129.2	467.9	124.0	230.1	82.0	487.5	231.5	163.1
BENZO(K)FLUORANTHENE	1.5 - 6.5	126.6	221.5	38.2	118.6	162.8	81.1	100.3	77.1	292.2	81.4	205.2	40.0	416.3	158.0	74.8
C1-CHRYSENES	30.8 - 361.1	184	448.4	64.7	171.8	159.0	152.1	136.9	110.1	291.3	101.7	228.6	79.8	394.9	249.9	151.5
C1-DIBENZOTHIOPHENES	5.0 - 54.8	27.4	28.0	9.8	17.3	14.0	15.4	15.7	10.9	26.2	15.0	22.5	15.5	41.0	32.7	13.5
C1-FLUORANTHENES/PYRENES	53.8 - 718.7	380	741.5	112.8	299.6	258.6	252.2	251.5	202.9	534.6	215.2	491.2	90.6	1022.8	533.5	245.8
C1-FLUORENES	2.5 - 70.5	34.4	54.4	10.6	24.6	11.5	11.1	19.5	11.7	33.6	10.9	34.1	6.4 U	67.6	50.6	17.8
C1-NAPHTHALENES	3.5 - 17.9	10.9 U	64.0	9.7 U	18.7 U	15.1 U	9.7 U	27.6	13.8	33.3 U	12.9 U	21.0	29.4 U	80.8	18.3 U	8.6 U
C1-PHENANTHRENES/ANTHRACENES	31.1 - 452.1	208	397.2	73.6	160.0	119.3	121.7	125.2	94.0	245.2	124.9	211.9	90.0	524.2	247.9	107.4
C2-CHRYSENES	17.1 - 137.4	76.6	184.0	33.6	68.0	62.2	66.8	67.0	47.7	107.2	40.7	88.9	43.1	132.9	109.3	79.8
C2-DIBENZOTHIOPHENES	7.8 - 75.8	36.4	36.7	15.6	23.6	18.3	21.5	22.5	14.8	30.4	16.2	24.0	19.6	31.1	44.3	19.5
C2-FLUORENES	6.6 - 88.1	40.1	57.4	20.1	25.7	27.2	27.1	25.5	19.5	37.5	14.0	31.9	32.1	48.5	46.8	17.9
C2-NAPHTHALENES	5.6 - 48.3	20.4	70.5	9.5 U	16.4 U	14.3 U	30.5	22.5 U	21.1	62.4	20.1	47.3	35.3 U	54.8	23.1 U	8.6 U
C2-PHENANTHRENES/ANTHRACENES	31.6 - 352.6	164	293.3	59.8	101.2	83.3	99.7	92.6	75.6	145.6	74.0	149.7	60.5	239.2	168.2	89.5
C3-CHRYSENES	1.6 - 7.4	4.2	8.1	2.8	5.4	4.0	4.6	3.9	3.2	10.7	4.2	9.8	2.5	4.7	5.6	2.9
C3-DIBENZOTHIOPHENES	6.3 - 53.2	26.6	31.7	13.7	31.2	14.8	17.1	18.3	14.5	25.7	11.5	15.2	13.3	22.9	43.2	19.2
C3-FLUORENES	8.9 - 71.9	33.8	45.7	14.3	32.7	19.9	16.1	18.2	12.6	35.2	14.6	23.4	21.5	20.1	51.9	18.7
C3-NAPHTHALENES	12.4 - 143.4	55.8	85.3	27.8	44.1	40.9	34.9	47.8	29.6	83.3	31.1	69.7	92.9	61.9	72.7	22.3
C3-PHENANTHRENES/ANTHRACENES	25.1 - 241.2	103.5	183.2	43.9	74.1	52.6	55.7	52.5	49.9	81.6	37.4	73.1	46.5	112.4	115.1	64.4
C4-CHRYSENES	3.5 - 24.3	11.4	25.5	4.2	11.7	12.1	15.4	16.0	10.1	51.3	12.8	35.7	3.4	16.9	10.0	5.7
C4-NAPHTHALENES	8.2 - 137.5	47.0	47.1	22.0	30.2	45.8	15.5	17.2	14.8	33.2	11.2	18.3	58.9	28.1	59.5	15.4
C4-PHENANTHRENES/ANTHRACENES	16.8 - 117.7	46.2	54.8	11.3	28.4	22.4	19.8	23.3	23.7	37.6	15.1	32.2	15.0	34.4	45.1	23.7
CHRYSENE	45.8 - 605.3	316	511.7	111.3	314.5	345.5	214.1	200.4	175.7	685.6	224.6	495.9	137.5	1179.3	447.7	184.4
DIBENZO(A,H)ANTHRACENE	8.9 - 106.1	50.8	129.7	18.3	54.8	76.9	52.4	46.9	34.9	151.3	35.1	83.7	26.8	144.0	57.4	33.8

TABLE A.1-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
DIBENZOTHIOPHENE	2.9 - 41.1	20.6	39.3	9.2	21.3	13.1	11.1	11.9	9.8	40.4	18.1	19.9	15.0	101.0	43.6	12.5
FLUORANTHENE	86.1 - 1289.5	660	928.9	167.3	525.9	557.2	352.3	308.4	280.9	1255.4	542.6	898.1	200.9	2513.1	1135.9	310.6
FLUORENE	4.4 - 67.8	33.4	95.2	13.3	39.9	19.5	20.0	23.5	19.4	84.7	26.1	41.4	13.3	263.4	74.5	20.1
INDENO(1,2,3-CD)PYRENE	41.6 - 433.9	227	242.4	72.0	210.4	323.4	196.9	191.5	138.6	534.3	139.7	278.5	77.3	574.9	266.5	162.7
NAPHTHALENE	5.2 - 25.0	13.5 U	66.8	7.0 U	15.1 U	12.0 U	10.8 U	17.0 U	10.7 U	38.7 U	20.4	18.0 U	16.3 U	80.9	19.6 U	10.8 U
PERYLENE	14.4 - 134.0	60.9	122.6	23.8	56.3	83.5	63.4	50.8	39.0	146.2	40.6	71.4	26.0	188.2	74.0	33.3
PHENANTHRENE	31.9 - 619.0	272	706.1	101.7	306.4	197.4	150.9	147.3	133.1	669.4	304.5	265.3	156.8	2002.9	361.3	141.1
PYRENE	75.0 - 1082.0	560	779.8	154.9	486.4	492.1	321.5	309.1	268.2	1077.9	471.6	708.9	169.9	2200.9	898.6	317.4
LMH PAH		590	1392.1	211.9	585.3	410.6	340.2	365.6	295.1	1302.4	517.4	644.9	301.4	3375.4	864.9	312.2
HMW PAH		2342	3721.5	652.6	1952.5	2246.8	1485.8	1363.1	1163.5	4641.7	1727.5	3188.9	742.1	8181.3	3409.8	1301.8
TOTAL PAH		2932	5113.6	864.5	2537.8	2657.4	1826.0	1728.7	1458.7	5944.1	2244.9	3833.8	1043.5	11556.7	4274.7	1614.0
Pesticides/PCBs (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	0.03 - 0.15	0.08 U	0.0	0.07	0.17	0.21	0.07	0.06	0.08	0.13	0.21	0.12	0.26	0.07	0.05	0.03 U
1,2,4,5-TETRACHLOROBENZENE	0.10 - 0.46	0.23 U	0.4	0.28	0.64	0.96	0.32	0.36	0.55	0.40	1.22	0.45	0.90	0.29	0.29	0.13 U
2,4'-DDD	0.23 - 2.58	1.36	8.6	1.98	2.90	7.33	1.12	1.00	1.49	45.82	1.39	11.40	1.50	2.28	2.73	0.84
2,4'-DDE	0.06 - 0.37	0.17	0.3	0.15	0.18	2.55	0.21	0.12	0.14	1.57	0.21	0.45	0.71	0.10	0.10	0.04
2,4'-DDT	0.02 - 0.04	0.03	6.5	0.79	0.41	15.43	0.34	0.04	0.51	30.91	0.89	11.22	3.48	0.08	0.03	0.03
4,4'-DDD	0.22 - 1.17	0.60	38.6	4.23	5.77	13.77	1.25	1.14	2.44	130.51	2.61	46.60	3.94	1.37	1.20	0.52
4,4'-DDE	0.44 - 0.77	0.57	9.9	3.33	1.96	27.53	1.24	1.58	1.60	21.31	1.68	6.73	3.50	0.54	0.99	0.44
4,4'-DDT	0.09 - 0.23	0.17	286.1	3.41	2.38	63.06	0.98	0.44	1.63	110.85	2.28	23.68	6.63	0.64	0.32	0.30
ALDRIN	0.03 - 2.27	0.78	2.6	0.01 U	0.02 U	0.46	2.24	2.59	1.35	6.37	3.76	2.59	0.05 U	11.22	0.34	1.17
ALPHA-BHC	0.05 - 0.15	0.09	0.0 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.03 U	0.03 U	0.04 U	0.03 U	0.03 U	0.05 U	0.07	0.05
ALPHA-CHLORDANE	0.09 - 0.19	0.15	4.6	0.31	0.57	0.44	0.18	0.12	0.21	2.20	0.60	21.84	1.47	0.29	0.47	0.06
BETA-BHC	0.09 - 0.25	0.14	0.1	0.05	0.08 U	0.06	0.04	0.03	0.05	0.18	0.51	0.10	0.17 U	0.07 U	0.09	0.07 U
CHLORPYRIFOS	0.07 - 0.18	0.12	0.1	0.06	0.04	0.10	0.20	0.09	0.07	0.13	0.19	0.10	0.17	0.05	0.09	0.05
CIS-NONACHLOR	0.03 - 0.13	0.08	0.4	0.14	0.36	0.41	0.12	0.13	0.10	1.02	0.24	1.93	0.74	0.20	0.18	0.22
DELTA-BHC	0.02 - 0.15	0.09	0.1	0.02	0.07	0.03	0.03	0.04	0.04	0.11	0.06	0.06	0.06	0.10	0.07	0.04
DIELDRIN	0.05 - 0.09	0.06	5.7	0.03	0.05	0.05	0.11	0.12	0.06	0.43	0.15	0.36	0.26	0.02	0.13	0.06
ENDOSULFAN II	0.17 - 0.95	0.58	2.2	0.49	1.02	0.59	0.11	0.06	0.19	0.05 U	0.05 U	0.07	0.74	0.84	0.97	0.33
ENDRIN	0.06 - 0.20	0.12	0.3	0.02	0.06	0.08	0.05 U	0.07 U	0.04	0.07 U	0.08 U	0.06 U	0.10	0.11	0.14	0.05 U
GAMMA-BHC (LINDANE)	0.16 - 0.49	0.33 U	0.3	0.09 U	0.19 U	0.14 U	0.20 U	0.18 U	0.18 U	0.24 U	0.27 U	0.21 U	0.26 U	0.19 U	0.23 U	0.10 U
GAMMA-CHLORDANE	0.10 - 0.29	0.17	5.0	0.22	0.09	0.13	0.10	0.08	0.14	2.56	0.37	29.54	0.18	0.07	0.07	0.08
HEPTACHLOR	0.07 - 0.24	0.16	0.4	0.03	0.46	0.29	0.18	0.13	0.07	0.43	0.21	0.53	0.61	0.06	0.08	0.06
HEPTACHLOR EPOXIDE	0.04 - 0.14	0.10	0.0	0.02	0.01 U	0.06	0.07	0.17	0.04	0.21	0.33	0.09 U	0.02	0.01 U	0.07 U	0.11 U
HEXACHLOROBENZENE	0.02 - 11.93	3.12	0.0 U	0.01 U	0.04 U	0.05 U	0.66	0.07 U	0.04 U	0.07 U	0.86	0.14	0.26	0.01 U	0.12 U	0.17 U
MIREX	0.04 - 0.09	0.06	0.0 U	0.05	0.08	0.03	0.06	0.02	0.06	0.08	0.03	0.06	0.31	0.33	0.02 U	0.01
OXYCHLORDANE	0.01 - 0.04	0.02	0.3	0.07	0.07	0.12	0.01 U	0.02	0.03	0.02	0.01 U	0.35	0.10	0.13	0.08	0.01
PCB-101/90	0.29 - 0.56	0.41	1.1	0.83	4.83	2.64	0.75	1.31	0.94	5.09	3.06	1.40	22.14	2.23	1.66	0.43
PCB-105	0.16 - 0.34	0.25	0.5	0.47	1.72	2.11	0.21	0.27	0.41	2.41	0.99	0.24	11.59	1.10	0.82	0.24
PCB-114	0.08 - 0.26	0.14 U	0.1 U	0.04 U	0.07 U	0.10 U	0.09 U	0.09 U	0.07 U	0.10 U	0.10 U	0.10	0.15 U	0.06 U	0.10 U	0.06 U
PCB-118	0.13 - 0.60	0.31	1.1	0.84	1.57	1.53	0.54	0.76	0.70	2.17	1.52	1.25	18.08	2.17	1.51	0.34
PCB-126	0.05 - 0.36	0.21	0.2	0.13	0.27 U	0.34	0.04	0.06	0.15	0.07	0.06	0.02	0.41	0.02	0.27	0.24 U
PCB-128	0.14 - 0.80	0.43	1.1	0.42	1.28	1.33	0.39	0.61	0.41	1.80	0.84	0.60	7.67	0.80	0.62	0.23
PCB-138/160	0.62 - 1.11	0.82	1.9	1.54	11.84	11.91	1.23	1.90	1.40	11.42	3.72	2.54	38.03	2.78	2.39	1.05
PCB-149/123	0.19 - 0.55	0.31	0.9	0.63	7.05	6.77	0.87	1.45	0.76	8.43	2.37	1.43	11.48	1.73	1.25	0.36
PCB-153/132	0.28 - 0.64	0.42	1.4	1.17	11.19	12.10	1.33	2.71	1.36	12.83	3.98	1.71	25.16	3.69	2.13	0.60
PCB-156	0.08 - 0.86	0.37	2.1	0.21	1.24	0.95	0.69	0.61	0.37	2.20	0.71	0.91	5.81	1.18	1.32	0.44
PCB-167	0.24 - 1.59	0.93	2.0	0.45	2.78	1.62	0.61	0.68	0.50	0.89	0.21	1.07	2.20	1.38	1.29	0.69
PCB-169	0.05 - 0.31	0.19	0.2 U	0.16 U	0.19	0.34 U	0.07 U	0.05	0.17 U	0.06	0.06	0.02	0.24	0.17	0.32	0.24 U
PCB-170/190	0.61 - 6.80	4.01	7.0	2.90	12.10	12.28	0.21	0.56	2.99	2.92	0.70	7.68	8.88	10.54	7.43	2.36
PCB-18/17	0.04 - 0.21	0.11	0.3	0.11	0.06	0.24	0.17	0.04	0.37	0.60	1.86	0.38	0.88	0.58	0.18	0.03 U
PCB-180	0.18 - 0.53	0.29	1.2	0.76	10.44	13.89	1.01	2.01	0.93	11.43	2.94	1.09	14.50	4.19	1.53	0.46
PCB-187	0.08 - 1.10	0.35	1.1	0.49	7.99	7.95	1.19	1.70	0.85	9.41	2.96	1.82	13.33	7.66	0.89	0.47
PCB-189	0.07 - 0.25	0.14	0.3	0.09	0.30	0.47	0.07 U	0.08	0.07	0.41	0.08	0.16	0.48	0.32	0.13	0.06
PCB-195/208	0.07 - 0.12	0.09	0.6	0.94	2.05	2.89	0.55	0.64	0.40	2.82	2.41	0.29	3.44	2.31	0.37	0.08
PCB-201/157/173	0.08 - 0.29	0.15	0.3	0.16	0.77	0.86	0.12	0.10	0.12	1.08	0.68	0.03	1.44	0.34	0.27	0.09
PCB-206	0.17 - 0.46	0.31	1.4	2.23	3.54	3.63	1.20	1.39	0.89	4.69	5.91	0.25	5.99	2.71	0.52	0.30
PCB-209	0.14 - 0.23	0.20	0.8	1.00	1.15	2.71	1.22	0.68	0.40	1.34	1.11	0.21	2.11	1.63	0.73	0.13
PCB-28	0.29 - 0.99	0.63	0.2	0.05 U	0.34	0.18	0.36	0.26	0.45	0.81	0.68	0.71	0.72	2.38	2.02	0.37
PCB-44	0.06 - 0.13	0.09	0.1	0.08	0.55	0.23	0.08	0.19	0.17	0.94	0.81	0.38	1.88	1.25	0.30	0.06
PCB-52	0.15 - 0.90	0.43	0.5	0.35	1.27	1.49	0.36	0.37	0.38	2.10	1.01	0.90	5.34	2.25	0.61	0.30
PCB-66	0.08 - 0.43	0.27	0.5	0.25	0.34	0.43	0.30	0.38	0.45	1.20	0.73	0.34	2.26	0.57	0.50	0.19
PCB-77	0.07 - 0.17	0.12	0.1	0.02	0.03	0.03	0.07	0.13	0.06	0.30	0.12	0.16	0.26	0.04	0.09	0.01 U
PCB-8/5	0.32 - 0.67	0.48	0.3	0.29	0.25	0.28	0.19	0.20	0.27	0.28	0.29	0.33	0.46	0.30	0.65	0.24
PCB-81	0.03 - 0.10	0.06	0.0	0.04	0.64	0.25	0.04	0.08	0.03	0.05	0.03	0.03	3.10	0.13	0.02	0.02
PENTACHLOROANISOLE	0.03 - 0.10	0.06	0.1	0.04	0.07	0.07	0.07	0.08	0.08	0.24	0.18	0.23	0.18	0.05	0.09	0.09 U
PENTACHLOROBENZENE	0.05 - 0.24	0.13	0.1	0.04	0.08	0.17	0.10	0.05	0.08	0.13	0.18	0.07	0.32	0.05	0.07	0.07
TRANS-NONACHLOR	0.02 - 0.08	0.05	1.8	0.15	0.13	0.09	0.09	0.06	0.12	1.56	0.58	10.24	0.26	0.07	0.08	0.07

TABLE A.1-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Inorganics (mg/kg)																
ALUMINUM	1.0 - 1.0	1.00	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000053 - 0.000135	0.00	0.00019	0.00022	0.00028	0.00023	0.00016	0.00019	0.00016	0.00021	0.00017	0.00016	0.00041	0.00015	0.00019	0.00017
CADMIUM	0.000001 - 0.000006	0.0	0.00001	0.00001	0.00001	0.00000	0.00001	0.00000	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001
CHROMIUM	0.000793 - 0.001145	0.0	0.00147	0.00209	0.00179	0.00152	0.00144	0.00130	0.00149	0.00258	0.00189	0.00132	0.00357	0.00140	0.00164	0.00139
COPPER	0.000090 - 0.000390	0.0002	0.00074	0.00062	0.02363	0.00472	0.00088	0.00039	0.00052	0.00461	0.00202	0.00082	0.18945	0.00138	0.00081	0.00053
IRON	0.220460 - 0.329820	0.281013	0.44017	0.45785	0.55059	0.45919	0.39729	0.40844	0.40235	0.95616	0.61765	0.44137	1.25106	0.37475	0.48201	0.37425
LEAD	0.000478 - 0.001240	0.0008	0.00235	0.00204	0.00231	0.00144	0.00160	0.00092	0.00092	0.00438	0.00228	0.00132	0.17658	0.00192	0.00097	0.00105
MANGANESE	0.007848 - 0.010238	0.0088	0.00869	0.00718	0.00770	0.00928	0.00748	0.01523	0.00659	0.00993	0.01201	0.00762	0.01537	0.00780	0.00685	0.00702
MERCURY	0.000001 - 0.000009	0.0000	0.00000	0.00001	0.00001	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00004	0.00001	0.00000	0.00001
NICKEL	0.000260 - 0.000380	0.0003	0.00045	0.00054	0.00091	0.00077	0.00051	0.00047	0.00046	0.00189	0.00125	0.00056	0.06084	0.00060	0.00053	0.00043
SILVER	0.000001 - 0.000004	0.0000	0.00000	0.00001	0.00003	0.00002	0.00001	0.00000	0.00000	0.00001	0.00001	0.00000	0.00002	0.00001	0.00001	0.00001
ZINC	0.000538 - 0.001340	0.000995	0.00249	0.00223	0.01575	0.00379	0.00222	0.00138	0.00170	0.01067	0.00525	0.00248	0.09314	0.00448	0.00221	0.00178

Footnotes:
Shaded values indicate concentrations that are five times greater than concentrations at the reference stations for dioxins and metals; two times greater for semivolatiles; 10 times greater for pesticides/PCBs.
Metal concentrations are normalized by dividing the parameter concentration by the aluminum concentration.
Normalized concentrations were determined by dividing sediment concentration by percent TOC.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.1-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
1,2,3,4,6,7,8-HPCDD	1.5 - 3.4	2.2 U							2.8 U	1.6 U	1.6 U	2.1 U	1.5 U	2.6 U		
1,2,3,4,6,7,8-HPCDF	1.5 - 3.3	2.2 U							2.8 U	1.6 U	1.6 U	1.6 U	1.9 U	4.0 U		
1,2,3,4,7,8,9-HPCDF	1.0 - 2.6	2.0							2.8 U	0.9	1.6 U	1.9	1.9 U	4.0 U		
1,2,3,4,7,8-HXCDD	1.0 - 3.3	2.1							2.8 U	0.8	0.1	1.5	1.5	4.0 U		
1,2,3,4,7,8-HXCDF	1.1 - 2.0	1.9							2.3	0.3	1.6 U	1.4	1.9 U	4.0 U		
1,2,3,6,7,8-HXCDD	1.1 - 1.9	1.8							2.8 U	0.2	0.1	1.3	1.5	4.0 U		
1,2,3,6,7,8-HXCDF	0.9 - 1.9	1.9							2.6	0.3	1.6 U	1.4	1.9 U	4.0 U		
1,2,3,7,8,9-HXCDD	0.9 - 3.3	2.1							2.8 U	1.3	0.2	1.4	1.5	4.0 U		
1,2,3,7,8,9-HXCDF	1.5 - 3.1	2.2							2.6	0.8	1.6 U	1.7	1.9 U	4.0 U		
1,2,3,7,8-PECDD	1.5 - 3.3	2.2 U							8.2 U	1.4 U	5.0 U	1.6 U	1.9 U	3.3 U		
1,2,3,7,8-PECDF	1.5 - 3.3	2.2 U							8.2 U	1.6 U	5.0 U	1.8 U	1.9 U	3.3 U		
2,3,4,6,7,8-HXCDF	1.5 - 2.1	1.9							2.8	0.2	1.6 U	1.5	1.9 U	4.0 U		
2,3,4,7,8-PECDF	0.3 - 3.3	2.2 U							8.2 U	1.6 U	5.0 U	1.6 U	1.6 U	3.3 U		
2,3,7,8-TCDD	0.3 - 0.5	0.4 U							1.6 U	0.6 U	1.0 U	0.3 U	0.4 U	0.7 U		
2,3,7,8-TCDF	0.4 - 0.9	0.6 U							2.4 U	0.6 U	1.0 U	0.6 U	0.6 U	0.8 U		
OCDD	2.4 - 9.4	5.9							26.2	8.8	5.3	12.8	6.2	19.9		
OCDF	1.5 - 5.7	4.1							2.3	3.8	0.5	2.0	3.2	7.9 U		
TOTAL HPCDD	1.2 - 3.4	2.5							2.8 U	2.1	0.6	2.1 U	1.5 U	2.6		
TOTAL HPCDF	1.2 - 2.6	2.0							2.8 U	1.3	1.6 U	2.0	1.9 U	4.0 U		
TOTAL HXCDD	1.5 - 4.4	2.5							2.8 U	0.5	0.4	1.5	1.5	4.0 U		
TOTAL HXCDF	1.5 - 4.0	2.4							6.1	0.9	1.6 U	2.5	1.9 U	4.0 U		
TOTAL PECDD	1.5 - 3.3	2.2 U							8.2 U	1.0	4.3	1.3	1.9 U	3.3 U		
TOTAL PECDF	1.5 - 3.0	2.1 U							8.2 U	1.6 U	5.0 U	2.2 U	1.9 U	3.3 U		
TOTAL TCDD	0.8 - 4.0	2.9 U							2.5 U	1.4 U	1.4 U	1.4 U	2.5 U	2.0 U		
TOTAL TCDF	0.8 - 1.7	1.2 U							6.1 U	1.4 U	2.3 U	3.2 U	1.6 U	1.4 U		
Semi-Volatile Organics (ug/kg)																
1,6,7-TRIMETHYLNAPHTHALENE	0.2 - 0.5	0.3	0.3	0.3	0.3	0.6	0.3	0.3	0.6	0.3	0.3	0.3	0.4	0.8	0.6	0.3
1-METHYLNAPHTHALENE	0.3 - 0.7	0.5 U	0.4 U	0.5 U	0.3 U	1.0 U	0.4 U	0.4 U	2.0 U	0.4 U	0.6 U	0.3 U	0.4 U	1.0 U	0.7 U	0.4 U
1-METHYLPHENANTHRENE	0.2 - 1.0	0.5	0.7	0.7	0.5	0.9	0.5	0.6	1.2	0.3	0.4	0.4	0.6	2.5	3.2	0.5
2,6-DIMETHYLNAPHTHALENE	0.4 - 0.9	0.6	0.6	0.6	0.4	1.0	0.4	0.5	1.6	0.4	0.7	0.4	0.6	1.6	1.3	0.6
2-METHYLNAPHTHALENE	0.5 - 1.2	0.8 U	0.7 U	0.9 U	0.5 U	1.2 U	0.5 U	0.5 U	3.2 U	0.6 U	1.0 U	0.3 U	0.6 U	1.2 U	1.0 U	0.5 U
ACENAPHTHENE	0.2 - 0.6	0.3	1.9	3.7	2.2	4.0	2.1	1.1	0.4	0.3	0.3	0.9	1.5	13.2	5.4	1.0
ACENAPHTHYLENE	1.3 - 4.6	2.2	1.6	1.6	1.2	1.6	1.2	1.2	4.2	1.4	0.8	1.2	1.3	3.7	6.6	1.6
ANTHRACENE	1.5 - 8.3	4.3	3.4	4.5	3.5	3.6	2.2	2.6	6.0	3.1	1.6	3.4	3.1	33.5	26.8	5.0
BENZO(A)ANTHRACENE	1.7 - 5.5	2.9	2.1	2.5	1.4	1.9	1.0	1.4	8.1	1.4	1.1	1.6	1.7	15.5	38.4	2.8
BENZO(A)PYRENE	1.7 - 5.4	2.8	1.2	1.7	0.6	1.6	0.7	1.1	9.4	1.3	0.7	0.8	0.9	8.6	20.5	1.3
BENZO(B)FLUORANTHENE	2.6 - 8.4	4.3	2.6	3.6	2.0	2.8	1.4	2.3	12.5	2.3	1.5	2.0	2.0	11.7	44.6	3.0
BENZO(E)PYRENE	2.1 - 6.3	3.6	2.9	2.8	2.0	2.5	1.5	2.0	7.5	1.8	1.3	1.8	1.8	8.2	20.7	2.8
BENZO(G,H,I)PERYLENE	0.9 - 2.6	1.4	1.1	1.4	0.7	1.1	0.7	0.9	4.2	0.7	0.5	0.7	0.8	2.7	4.3	1.0
BENZO(K)FLUORANTHENE	0.6 - 2.0	1.1	0.6	0.9	0.4	0.7	0.4	0.7	3.7	0.5	0.4	0.5	0.7	5.7	9.7	1.3
BIPHENYL	0.2 - 0.9	0.5 U	0.2 U	0.2 U	0.1 U	0.5 U	0.2 U	0.3 U	0.7 U	0.5 U	2.0	0.2 U	0.4 U	0.8 U	0.7 U	0.4 U
C1-CHRYSENES	1.6 - 5.2	2.9	2.2	1.9	1.3	1.9	1.1	1.3	6.9	1.4	1.5	1.4	1.3	5.2	18.9	1.7
C1-DIBENZOTHIOPHENES	0.3 - 0.9	0.5	0.4	0.5	0.5	0.7	0.3	0.3	1.4	0.3	0.3	0.6	0.6	1.1	1.6	0.5
C1-FLUORANTHENES/PYRENES	4.9 - 11.8	7.4	6.2	4.4	3.6	3.7	2.5	3.1	21.2	3.9	2.9	4.4	3.5	20.2	44.8	5.2
C1-FLUORENES	1.0 - 2.8	1.8	4.4	4.8	3.3	8.0	3.9	3.8	5.3	1.9	4.2	3.2	2.1	5.4	3.2	2.0
C1-NAPHTHALENES	0.8 - 1.9	1.2 U	1.1 U	1.3 U	0.8 U	2.2 U	0.8 U	0.9 U	5.2 U	1.0 U	1.6 U	0.6 U	1.0 U	2.2 U	1.7 U	0.9 U
C1-PHENANTHRENES/ANTHRACENE	2.5 - 5.8	3.4	3.5	3.7	2.3	4.1	2.3	2.3	11.9	2.4	3.0	7.2	3.8	16.9	20.0	3.8
C2-CHRYSENES	3.2 - 8.2	5.0	1.8	2.0	1.1	3.6	1.4	1.5	10.5	3.0	1.3	2.5	4.2	7.8	5.6	13.5
C2-DIBENZOTHIOPHENES	1.3 - 2.4	1.6	1.3	1.1	1.0	1.4	0.8	0.8	4.9	1.0	0.7	1.4	1.1	1.6	2.4	1.7
C2-FLUORENES	1.7 - 3.0	2.2	3.3	5.3	3.7	9.9	6.0	4.6	6.8	2.1	3.3	3.7	2.8	3.8	3.0	1.8
C2-NAPHTHALENES	0.9 - 2.4	1.6 U	1.2 U	1.4 U	0.9 U	2.3 U	1.0 U	1.1 U	4.4 U	1.2 U	1.6 U	1.0 U	1.1 U	4.3	4.5	1.0 U

TABLE A.1-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
C2-PHENANTHRENES/ANTHRACENE	4.4 - 8.8	5.9	4.8	4.6	3.4	4.5	3.6	3.4	17.2	3.7	3.4	3.9	3.5	9.9	15.1	5.6
C3-CHRYSENES	0.0 - 0.3	0.1	0.2	0.4	0.3	0.3	0.3	0.4	0.3	0.1	0.1	0.3	0.3	0.1	0.1	0.2
C3-DIBENZOTHIOPHENES	1.6 - 3.3	2.1	1.5	1.6	1.2	1.8	1.0	1.0	4.0	1.4	0.9	1.6	1.3	2.3	2.6	2.4
C3-FLUORENES	3.1 - 4.5	3.6	4.5	5.7	6.8	18.3	8.5	6.6	21.8	2.9	2.1	6.4	4.6	5.9	3.2	12.3
C3-NAPHTHALENES	2.0 - 5.0	3.3	2.4	3.1	2.2	5.1	2.6	2.5	9.9	2.2	3.4	2.1	2.3	4.8	4.2	3.0
C3-PHENANTHRENES/ANTHRACENE	4.6 - 8.3	5.9	3.4	3.4	2.7	3.4	2.6	2.2	11.7	4.0	2.7	3.2	3.1	5.5	10.2	5.1
C4-CHRYSENES	0.1 - 0.2	0.11	0.1	0.2	0.1	0.2	0.1	0.1	0.5	0.1	0.1	0.2	0.1	0.1	0.3	0.1
C4-NAPHTHALENES	2.2 - 4.5	3.1	1.4	3.4	1.7	4.1	1.6	2.2	10.3	2.8	2.8	1.6	2.1	2.9	3.8	2.9
C4-PHENANTHRENES/ANTHRACENE	3.2 - 6.2	4.4	1.9	1.9	1.4	2.0	1.4	1.2	9.4	2.7	1.8	2.4	1.7	2.4	6.3	3.2
CHRYSENE	3.1 - 9.2	5.0	3.4	4.3	3.0	3.5	2.1	3.1	12.8	2.9	2.7	2.7	2.2	21.1	39.8	4.3
DIBENZO(A,H)ANTHRACENE	0.1 - 0.4	0.19	0.2	0.3	0.1	0.3	0.1	0.2	0.8	0.1	0.1	0.1	0.2	0.4	1.0	0.2
DIBENZOTHIOPHENE	0.1 - 0.2	0.10 U	0.1 U	0.2 U	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.4 U	2.8	1.7	0.2 U
FLUORANTHENE	4.9 - 14.4	7.9	5.4	8.5	7.3	5.6	4.4	6.1	17.0	5.4	4.5	5.2	5.2	67.7	83.4	10.2
FLUORENE	0.3 - 0.9	0.5	0.4	0.6	0.3	0.8	0.4	0.4	1.3	0.5	0.6	0.4	0.6	8.9	5.7	0.9
INDENO(1,2,3-CD)PYRENE	0.5 - 1.5	0.8	0.7	1.2	0.5	0.8	0.4	0.7	3.2	0.4	0.2	0.5	0.6	2.7	3.9	0.7
NAPHTHALENE	0.7 - 2.0	1.2 U	1.3 U	1.6 U	0.8 U	1.9 U	0.8 U	0.9 U	4.1 U	1.2 U	2.2 U	0.6 U	0.9 U	2.3 U	2.0 U	0.8 U
PERYLENE	0.8 - 2.2	1.5	0.9	1.2	0.6	0.9	0.5	0.8	2.6	0.6	0.5	0.8	0.9	3.2	5.9	1.1
PHENANTHRENE	0.7 - 2.3	1.1 U	0.9 U	1.9 U	0.7 U	0.9 U	0.8 U	0.9 U	2.4 U	1.1 U	1.2 U	0.8 U	1.0 U	40.6	34.7	3.7
PYRENE	4.0 - 14.1	7.7	6.6	6.9	5.6	5.3	3.5	5.0	15.2	4.9	3.9	4.4	4.5	45.5	61.1	8.1
LMH PAH		10.5	10.2	14.7	9.1	14.0	7.8	7.6	21.7	8.1	7.8	7.7	8.9	103.6	82.1	13.6
HMW PAH		26.5	18.9	24.2	18.0	18.2	11.6	16.9	63.3	16.0	13.0	14.8	14.6	158.8	244.3	26.9
TOTAL PAH		37.0	29.1	38.9	27.1	32.2	19.4	24.5	85.0	24.1	20.9	22.5	23.5	262.4	326.4	40.4
Pesticides/PCBs (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	0.02 - 0.06	0.04 U	0.1	0.1 U	0.2	0.2	0.5	0.1	0.2 U	0.1	0.0 U	0.3	0.0 U	0.0 U	0.0 U	0.2
1,2,4,5-TETRACHLOROBENZENE	0.15 - 0.33	0.2 U	0.2 U	0.3 U	0.1 U	0.2 U	0.2 U	0.2 U	0.8 U	0.1	0.2 U	0.1 U	0.2 U	0.3 U	0.1 U	0.2 U
2,4'-DDD	0.35 - 0.75	0.5	0.5	0.4	0.4	0.6	0.4	0.3	1.0	1.8	0.3	3.5	0.3	0.2	0.7	0.2
2,4'-DDE	0.06 - 0.15	0.10	0.1	0.1	0.1	0.0 U	0.1	0.1	0.1	0.0	0.0	0.4	0.0 U	0.1 U	0.0	0.1
2,4'-DDT	0.20 - 1.03	0.5	0.6	0.6	0.6	1.2	0.4	0.3	1.4	0.4	0.3	15.0	0.0	0.1 U	0.2	0.5
4,4'-DDD	0.74 - 1.48	1.0	1.4	1.1	1.3	1.5	0.8	0.6	3.1	4.3	0.8	5.3	0.9	1.0	0.6	0.8
4,4'-DDE	0.96 - 1.86	1.3	2.1	1.7	1.1	1.7	1.2	1.0	3.9	1.9	0.7	5.2	1.1	1.0	0.8	0.9
4,4'-DDT	0.60 - 1.50	1.2	0.4 U	0.2 U	0.2 U	0.3 U	0.1 U	0.2 U	4.9	0.3	0.2 U	23.5	0.1 U	0.1 U	0.9	0.2 U
ALDRIN	0.01 - 0.04	0.03	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.1 U	0.0	0.0 U	0.0 U	0.0	0.1	0.0	0.1
ALPHA-BHC	0.08 - 0.15	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.2
ALPHA-CHLORDANE	0.29 - 0.62	0.4	0.8	0.9	0.5	0.9	0.6	0.5	0.8	0.3	0.2	1.6	0.4	0.5	0.2	0.2
BETA-BHC	0.01 - 0.02	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.1	3.3	0.0	0.0 U	0.0 U	0.2	0.1 U	0.0 U	0.2
CHLORPYRIFOS	0.02 - 0.22	0.1	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.1 U	0.5	0.1	0.3	0.1 U	0.1	0.1	0.1 U	0.1
CIS-NONACHLOR	0.12 - 0.27	0.2	0.3	0.4	0.3	0.6	0.3	0.2	0.7	0.1	0.1	0.4	0.3	0.4	0.1	0.3
DELTA-BHC	0.01 - 0.04	0.01 U	0.1	0.2	0.2	0.5	0.3	0.1	0.0 U	0.0 U	0.0 U	0.2	0.1	0.1 U	0.0 U	0.1 U
DIELDRIN	0.24 - 0.56	0.4	0.3	0.2	0.1	0.2	0.1 U	0.2	1.7	0.3	0.2	0.2	0.1	0.0 U	0.2	0.1
ENDOSULFAN II	0.07 - 0.18	0.10	0.0	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2 U	0.1	0.1 U
ENDRIN	0.07 - 0.19	0.12	0.0 U	0.1 U	0.1	0.1 U	0.0 U	0.1	0.3	0.1	0.1	0.0 U	0.1	0.2	0.1	0.2
GAMMA-BHC (LINDANE)	0.01 - 0.02	0.02 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3 U	0.0 U	0.0 U	0.1 U	0.0 U	0.0 U	0.0 U	0.2 U
GAMMA-CHLORDANE	0.07 - 0.26	0.14	0.2	0.1	0.1	0.1	0.1	0.1	0.6	0.2	0.1	1.4	0.1	0.2	0.1	0.2
HEPTACHLOR	0.02 - 0.03	0.02 U	0.1	0.4	0.2	0.3	0.1	0.1	0.1 U	0.0 U	0.1 U	0.2	0.2	0.2	0.0 U	0.2
HEPTACHLOR EPOXIDE	0.06 - 0.17	0.11	0.0 U	0.0 U	0.0	0.0 U	0.0	0.0	0.1	0.2	0.1	0.1	0.4	0.8	0.1	1.6
HEXACHLOROBENZENE	0.05 - 0.09	0.06	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.0	0.1	0.4	1.2	0.0	0.7
MIREX	0.23 - 0.60	0.38	0.1	0.0 U	0.0	0.1	0.0	0.1	1.5	0.2	0.1	0.0	0.0	0.0	0.2	0.0 U
OXYCHLORDANE	0.01 - 0.04	0.02	0.1	0.1	0.0 U	0.1	0.1	0.1	0.1 U	0.1	0.0 U	0.2	0.1	0.1 U	0.0 U	0.1 U
PCB-101/90	1.27 - 2.73	1.7	1.3	1.8	2.2	2.8	1.3	1.0	2.3	1.6	1.0	1.9	2.2	2.2	1.0	1.1
PCB-105	0.51 - 1.18	0.7	0.7	1.0	1.3	1.7	0.7	0.6	2.7	0.8	0.6	1.1	1.6	1.4	0.6	0.6
PCB-114	0.04 - 0.08	0.06 U	0.1 U	0.1 U	0.0 U	0.1 U	0.1 U	0.1 U	0.2 U	0.0 U	0.1 U	0.0 U	0.0 U	0.1 U	0.0 U	0.0 U
PCB-118	0.44 - 1.67	1.1	1.1	1.6	1.4	2.1	1.2	0.9	1.9	0.6	0.5	1.8	2.6	2.1	0.7	1.1

TABLE A.1-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-126	0.03 - 0.10	0.06	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0
PCB-128	0.29 - 0.47	0.4	0.3	0.6	0.6	0.7	0.3	0.3	1.6	0.4	0.2	0.5	1.0	0.6	0.3	0.3
PCB-138/160	0.98 - 1.80	1.2 U	1.0 U	1.5 U	4.7	6.0	1.0 U	1.0 U	3.6 U	1.3	1.1 U	1.2 U	3.4	2.9	0.9 U	1.2 U
PCB-149/123	0.40 - 1.00	0.6 U	0.3 U	0.6 U	2.9	3.2	0.4 U	0.4 U	1.7 U	2.0	1.3	0.7	1.7	2.2	1.0	0.3 U
PCB-153/132	1.13 - 2.15	1.4 U	1.1 U	1.6 U	5.7	7.8	1.2 U	1.1 U	4.1 U	3.0	1.2 U	1.1 U	3.0	5.1	1.0 U	1.3 U
PCB-156	0.07 - 0.17	0.13	0.2	0.3	0.5	0.7	0.2	0.1	0.6	0.1	0.1 U	0.2	0.2	0.1 U	0.1	0.0 U
PCB-167	0.18 - 0.40	0.24	0.2	0.3	0.4	0.5	0.2	0.2	0.9	0.2	0.1	0.2	0.3	0.3	0.3	0.1
PCB-169	0.01 - 0.06	0.03	0.0	0.0	0.0	0.1 U	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PCB-170/190	0.04 - 0.08	0.06 U	0.1 U	0.1 U	0.2	0.2 U	0.0 U	0.1 U	0.2 U	0.0	0.1 U	0.1 U	0.1	0.2	0.6	0.0 U
PCB-18/17	0.09 - 0.25	0.2 U	0.5	0.7	0.5	0.3 U	0.6	0.3 U	2.2	0.2	0.2 U	0.4	0.4	0.1 U	0.1 U	0.8
PCB-180	0.39 - 0.79	0.5 U	0.5 U	0.6 U	2.2	1.3 U	0.5 U	0.5 U	1.4 U	0.6	0.5 U	0.5 U	0.9	1.7	0.4 U	0.4 U
PCB-187	0.46 - 0.98	0.7 U	0.5 U	0.7 U	3.4	4.4	0.5 U	0.5 U	2.1 U	1.4	1.1	0.5 U	0.8	2.8	0.5 U	0.6
PCB-189	0.03 - 0.08	0.05	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.2 U	0.0	0.1 U	0.2	0.0	0.0	0.0 U	0.0 U
PCB-195/208	0.02 - 0.05	0.03	0.0 U	0.1 U	0.0	0.1 U	0.1 U	0.0	0.2	0.0	0.0	0.0 U	0.0	0.0 U	0.0	0.0
PCB-201/157/173	0.04 - 0.12	0.07	0.1 U	0.1 U	0.2	0.2 U	0.1 U	0.1	1.5	0.1	0.0	0.2	0.1	0.5	0.0	0.1
PCB-206	0.02 - 0.07	0.05	0.0 U	0.1 U	0.0	0.1 U	0.1 U	0.0 U	0.4	0.0	0.1	0.0	0.0	0.0	0.0 U	0.0
PCB-209	0.03 - 0.09	0.06	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2	0.0 U	0.1 U	0.0 U	0.1	0.1	0.0 U	0.1
PCB-28	0.21 - 0.45	0.3	0.3	0.4	0.4	0.6	0.5	0.3	1.7	0.2	0.3	0.3	0.2	0.5	0.2	0.9
PCB-44	0.11 - 0.83	0.4	0.2	0.1 U	0.2	0.1 U	0.3	0.1 U	2.0	0.2	0.5	0.4	0.3	0.6	0.3	0.9
PCB-52	0.34 - 1.23	0.7	0.7	0.8	0.6	0.9	1.0	0.6	2.9	0.6	0.4	0.9	0.8	1.2	0.3	1.2
PCB-66	0.25 - 0.51	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.9	0.3	0.2	0.2	0.2	0.7	0.2	0.4
PCB-77	0.10 - 0.36	0.22	0.0	0.0	0.0	0.1	0.3	0.1	0.4	0.1	0.4	0.0	0.1	0.3	0.1	0.1
PCB-8/5	0.02 - 0.17	0.12	0.1	0.2	0.1	0.1	0.2	0.2	0.4	0.1	0.3	0.4	0.1	0.3	0.1	0.1
PCB-81	0.07 - 0.21	0.14	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.1	0.2	0.1	0.1
PENTACHLOROANISOLE	0.03 - 0.12	0.08	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.1	0.1	0.2	0.1	0.2
PENTACHLOROBENZENE	0.08 - 0.18	0.12	0.6	0.6	0.3	0.4	0.8	0.5	0.4	0.1	0.1	0.7	0.5	0.2	0.1	0.2
TRANS-NONACHLOR	0.28 - 0.65	0.44	0.4	0.2	0.2	0.2	0.3	0.2	0.6	0.3	0.1	1.3	0.4	0.6	0.1	0.3
Inorganics (mg/kg)																
ALUMINUM	133 - 230	195	171.0	209.7	141.0	195.0	204.0	125.7	139.5	84.9	82.1	159.8	169.7	273.5	88.0	217.0
ARSENIC	6.4 - 7.3	7.0	6.3	7.1	6.2	7.5	7.3	6.6	7.0	7.7	6.5	9.3	7.5	8.9	6.0	7.2
CADMIUM	1.4 - 1.9	1.7	2.2	1.9	2.2	2.4	2.2	2.0	1.9	1.8	2.0	2.5	1.9	1.7	1.8	1.6
CHROMIUM	1.8 - 2.5	2.1	1.9	1.9	2.4	2.2	2.1	1.5	1.7	1.6	2.0	1.8	1.5	2.3	1.3	1.9
COPPER	6.8 - 7.3	6.9	7.1	6.9	17.6	19.8	9.0	6.7	7.0	8.0	6.9	7.6	14.1	8.7	8.0	7.0
IRON	296 - 512	404	361.3	514.0	366.5	465.0	541.5	362.3	341.5	319.7	216.0	290.7	274.3	438.5	258.0	485.0
LEAD	2.0 - 5.5	3.4	4.2	5.2	9.3	7.6	28.7	3.2	2.9	4.4	3.1	5.6	72.3	4.3	2.2	3.3
MANGANESE	6.7 - 13.5	10.2	9.8	7.9	7.1	8.6	9.2	7.0	8.0	7.2	8.5	8.8	12.1	11.1	13.0	9.5
MERCURY	0.3 - 0.3	0.30	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3
NICKEL	1.1 - 1.2	1.1	1.2	1.3	2.4	2.6	1.5	1.1	1.4	2.2	2.1	1.4	1.3	1.6	1.0	1.0
SILVER	0.05 - 0.07	0.06	0.0	0.1	0.2	0.2	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1
ZINC	97.5 - ####	106	96.3	96.5	156.5	154.0	113.1	86.9	96.8	104.6	104.5	94.7	100.4	97.6	105.9	96.7

Footnotes:
Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.
Normalized concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.1-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (pg/g)																
1,2,3,4,6,7,8-HPCDD	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,4,6,7,8-HPCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,4,7,8,9-HPCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,4,7,8-HXCDD	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,4,7,8-HXCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,6,7,8-HXCDD	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,6,7,8-HXCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,7,8,9-HXCDD	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,7,8,9-HXCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,7,8-PECDD	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
1,2,3,7,8-PECDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
2,3,4,6,7,8-HXCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
2,3,4,7,8-PECDF	5.6 - 13.0	8.7							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
2,3,7,8-TCDD	1.1 - 1.9	1.4 U							2.5 U	1.6 U	2.0 U	1.7 U	1.3 U	1.8 U		
2,3,7,8-TCDF	1.1 - 1.9	1.4 U							2.5 U	1.6 U	2.0 U	1.7 U	1.3 U	1.8 U		
OCDD	11.3 - 18.6	14.2 U							24.8 U	10.5	20.2 U	17.3 U	13.3 U	17.7 U		
OCDF	11.3 - 18.6	14.2 U							24.8 U	15.8 U	20.2 U	17.3 U	13.3 U	17.7 U		
TOTAL HPCDD	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	6.0		
TOTAL HPCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
TOTAL HXCDD	2.7 - 9.3	6.2							12.4 U	7.9 U	10.1 U	4.3	1.6	8.8 U		
TOTAL HXCDF	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
TOTAL PECDD	5.6 - 9.3	7.1 U							12.4 U	7.9 U	10.1 U	8.7 U	6.7 U	8.8 U		
TOTAL PECDF	1.9 - 9.3	5.1							6.1	7.9 U	3.8	8.7 U	6.7 U	8.8 U		
TOTAL TCDD	1.1 - 1.9	1.4 U							2.5 U	1.6 U	2.0 U	1.7 U	1.3 U	1.8 U		
TOTAL TCDF	1.1 - 1.9	1.4 U							2.5 U	1.6 U	2.0 U	1.7 U	1.3 U	1.8 U		
Semi-Volatile Organics (ng/g)																
1,1'-BIPHENYL	0.4 - 0.6	0.5	0.7	0.8	0.6	0.7	0.7	0.5	1.2	0.6	0.7	0.6	0.4	0.5	0.5	0.4
1,6,7-TRIMETHYLNAPHTHALENE	1.2 - 1.9	1.7	0.8	1.4	1.2	1.2	1.7	1.8	2.9	1.4	1.8	2.2	1.6	1.7	1.5	1.5
1-METHYLNAPHTHALENE	2.2 - 4.2	3.2	2.2	3.0	3.4	2.8	2.8	4.0	5.0	3.0	3.0	3.4	2.9	3.5	2.4	2.8
1-METHYLPHENANTHRENE	2.1 - 3.7	3.0	0.8	4.3	2.2	1.9	2.4	3.4	4.1	2.3	2.5	4.4	2.2	2.9	3.6	2.9
2,6-DIMETHYLNAPHTHALENE	0.8 - 1.7	1.3	0.8	1.3	1.1	2.6	1.3	1.4	2.6	1.2	1.3	1.5	1.1	1.3	1.1	1.0
2-METHYLNAPHTHALENE	2.7 - 5.6	4.0	3.0	4.1	4.6	3.7	3.6	5.8	5.4	3.5	4.1	4.4	3.7	4.1	3.1	3.5
ACENAPHTHENE	0.1 - 0.6	0.38	0.2	1.9	0.2	0.6	0.2	0.4	0.2	0.4	0.2	0.3	0.3	2.8	0.2	0.2
ACENAPHTHYLENE	0.2 - 0.6	0.38	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2
ANTHRACENE	0.3 - 9.3	3.9	0.3	6.2	1.7	1.3	0.7	2.0	0.5	1.1	0.6	4.2	1.5	3.4	13.0	1.4
BENZO(A)ANTHRACENE	0.4 - 17.6	7.5	0.6	19.9	3.2	3.8	1.0	4.3	0.7	2.9	0.8	15.6	3.3	5.1	20.8	9.5
BENZO(A)PYRENE	0.2 - 9.7	5.0	0.5	20.9	3.6	4.5	0.8	4.6	0.8	3.2	0.6	18.0	4.9	4.3	18.0	17.7
BENZO(B)FLUORANTHENE	0.4 - 8.9	4.3	0.4	10.2	3.5	2.6	0.5	3.0	0.9	3.2	0.8	9.9	2.2	3.4	10.3	13.1
BENZO(E)PYRENE	0.8 - 5.6	3.0	0.9	9.6	3.6	2.4	0.7	3.4	1.2	1.6	1.4	6.1	2.3	2.4	6.5	5.4
BENZO(G,H,I)PERYLENE	0.3 - 3.5	1.7	0.6	6.1	2.1	1.2	0.2	2.1	0.3	1.2	0.2	5.1	1.4	1.0	3.7	4.0
BENZO(K)FLUORANTHENE	0.3 - 10.4	4.0	0.3	13.1	2.1	4.2	0.8	3.2	0.9	2.2	0.7	12.4	3.0	3.5	14.3	8.5
C1-CHRYSENES	0.8 - 3.8	2.4	0.7	6.9	2.6	2.4	0.8	3.3	1.9	1.5	1.2	5.5	1.9	2.0	6.1	3.7
C1-DIBENZOTHIOPHENES	0.4 - 1.1	0.8	0.4	1.6	0.6	0.5	0.6	1.2	1.1	0.6	0.7	0.8	0.7	0.7	1.0	0.9
C1-FLUORANTHENES/PYRENES	1.7 - 11.3	7.2	1.3	21.1	5.3	4.0	1.9	7.3	3.4	4.1	1.8	14.1	4.5	6.8	20.4	12.0
C1-FLUORENES	1.0 - 2.6	2.0	1.0	2.2	1.4	1.1	1.3	2.0	2.7	1.4	1.7	2.4	1.9	2.1	2.0	1.8
C1-NAPHTHALENES	5.0 - 9.8	7.2	5.3	7.1	8.1	6.5	6.4	9.8	10.4	6.5	7.2	7.8	6.6	7.6	5.6	6.3
C1-PHENANTHRENES/ANTHRACENES	3.0 - 12.5	8.5	2.2	14.7	5.1	4.0	3.7	8.5	5.3	4.7	4.7	12.0	7.3	7.3	11.8	7.1
C2-CHRYSENES	1.0 - 1.6	1.2	0.4	2.7	1.4	1.2	1.5	1.6	1.9	1.1	0.7	1.8	0.9	1.0	2.2	1.8
C2-DIBENZOTHIOPHENES	0.4 - 0.8	0.6	0.4	1.7	0.8	0.7	0.5	1.0	1.1	0.3	0.6	1.0	0.9	0.8	1.8	1.1
C2-FLUORENES	1.9 - 2.8	2.4	1.3	2.4	2.1	1.2	2.5	2.5	3.2	1.5	1.7	2.9	2.4	2.0	2.5	2.0
C2-NAPHTHALENES	3.0 - 5.3	4.3	2.9	3.7	3.3	3.2	4.0	4.5	7.7	3.6	4.4	4.2	4.0	4.6	3.4	3.8
C2-PHENANTHRENES/ANTHRACENES	3.7 - 12.0	6.9	1.7	8.1	4.1	3.4	3.4	5.5	6.2	3.8	4.1	8.6	9.1	4.7	7.4	5.7
C3-CHRYSENES	0.1 - 1.7	0.9	0.0	0.1	0.2	0.1	0.2	0.5	0.3	0.2	0.3	0.3	0.4	0.3	0.5	1.9 U
C3-DIBENZOTHIOPHENES	0.6 - 0.7	0.6	0.4	1.3	0.7	0.4	0.7	0.9	0.9	0.6	0.5	0.5	0.7	0.2	2.5	0.7
C3-FLUORENES	2.3 - 4.2	3.1	2.2	3.9	2.2	2.0	1.6	2.8	4.2	2.3	3.0	2.6	3.5	2.4	4.9	2.2
C3-NAPHTHALENES	4.2 - 5.7	5.0	3.0	4.3	3.6	3.8	5.3	5.5	8.7	4.6	5.9	6.3	4.8	6.3	5.4	4.3
C3-PHENANTHRENES/ANTHRACENES	2.3 - 3.2	2.7	0.6	3.9	2.1	2.3	2.5	2.8	4.7	2.5	2.7	4.6	3.1	3.2	5.4	3.7
C4-CHRYSENES	0.3 - 1.7	0.8	0.1	0.1	0.9	0.3	0.7	0.5	2.9 U	0.6	2.4 U	0.0	0.7	0.2	0.7	1.4
C4-NAPHTHALENES	2.4 - 7.0	3.9	2.7	2.1	6.1	3.2	3.9	3.7	7.7	3.8	4.9	4.7	4.1	3.1	4.6	5.6
C4-PHENANTHRENES/ANTHRACENES	1.0 - 2.6	1.9	0.6	3.2	1.7	1.3	1.7	2.0	2.4	1.9	1.6	2.6	1.9	2.1	2.9	2.7

TABLE A.1-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
CHRYSENE	1.8 - 15.9	9.3	1.5	25.7	7.5	6.1	2.1	7.3	3.8	4.9	2.6	17.9	6.0	8.5	25.2	15.3
DIBENZO(A,H)ANTHRACENE	0.0 - 0.1	0.07	0.0	2.3	0.1	0.1	0.0	0.1	0.2	0.1	0.0	1.5	0.1	0.0	1.3	1.1
DIBENZOTHIOPHENE	0.2 - 1.7	1.0	0.2	1.7	0.4	0.5	0.2	0.5	0.3	0.4	0.3	0.5	0.3	1.3	0.7	0.4
FLUORANTHENE	2.9 - 44.1	25.9	2.2	50.3	14.5	8.2	3.6	14.0	5.2	11.7	5.5	36.5	12.2	21.0	54.5	34.8
FLUORENE	0.7 - 2.6	1.4	0.6	3.4	0.9	1.3	1.0	1.2	1.7	1.1	1.0	1.4	0.9	3.9	2.0	0.8
INDENO(1,2,3-CD)PYRENE	0.1 - 3.4	1.7	0.0	7.9	0.9	1.1	0.0	1.5	0.1	0.8	0.0	6.3	1.6	1.2	5.7	6.7
NAPHTHALENE	4.4 - 6.5	5.5	4.2	4.1	5.7	5.2	5.5	8.1	8.4	5.2	6.7	7.6	5.1	10.8	5.9	6.3
PERYLENE	0.3 - 3.9	1.7	0.2	5.2	1.5	1.0	0.2	1.5	0.3	1.2	0.2	5.1	1.4	1.1	3.3	0.8
PHENANTHRENE	1.1 - 23.6	10.9	1.4	25.1	4.1	4.7	2.2	5.6	2.5	3.5	2.2	7.1	3.5	17.6	9.5	4.1
PYRENE	2.2 - 29.3	16.3	1.7	37.6	11.8	6.4	2.8	11.2	4.4	10.6	5.1	27.0	8.4	13.0	36.0	30.6
LMH PAH		26.4	9.9	45.1	17.5	17.0	13.3	23.2	19.0	15.0	15.1	25.2	15.2	42.9	34.0	16.7
HMW PAH		39.7	4.8	109.7	27.0	22.2	7.6	28.7	11.4	22.8	10.1	81.4	23.6	34.9	103.4	74.9
TOTAL PAH		66.1	14.7	154.9	44.5	39.1	20.8	51.9	30.4	37.8	25.2	106.6	38.8	77.7	137.4	91.6
Pesticides/PCBs (ng/g)																
1,2,3,4-TETRACHLOROBENZENE	1.89 - 5.52	3.3	6.3	14.3	2.9	4.5	3.4	4.2	14.7	1.6	4.2	8.1	3.8	3.5	1.4	1.1
1,2,4,5-TETRACHLOROBENZENE	0.03 - 0.32	0.13	0.4	0.1	0.1	0.1	0.1	0.4	0.3	0.2 U	0.2	0.2 U	0.1	0.1	0.3	0.2
2,4'-DDD	0.04 - 0.05	0.04 U	0.0 U	0.0 U	0.0 U	0.0 U	0.1 U	0.0 U	0.1 U	0.0 U	0.1 U	0.1 U	0.0 U	0.1 U	0.1 U	0.0 U
2,4'-DDE	0.05 - 0.07	0.06 U	0.1 U	0.0 U	0.0 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4'-DDT	0.05 - 0.07	0.06 U	0.0 U	0.0 U	0.0 U	0.0 U	0.1 U	0.1 U	0.2	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1
4,4'-DDD	0.04 - 0.05	0.05	0.0 U	0.0 U	0.0 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.88 - 1.54	1.15	1.3	1.4	0.4	0.5	0.8	0.7	7.2	1.2	2.6	0.8	0.7	1.7	1.3	0.6
4,4'-DDT	0.03 - 0.10	0.07	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ALDRIN	0.05 - 0.09	0.07	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ALPHA-BHC	0.11 - 0.32	0.18	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2
ALPHA-CHLORDANE	0.05 - 14.96	4.1	0.6	4.4 U	0.0	0.7	0.3	1.3	0.1 U	1.4	0.6	3.8	9.3	1.6	8.3	0.9
BETA-BHC	0.04 - 0.40	0.14	0.0 U	0.0 U	0.0 U	0.0 U	0.1 U	0.0 U	0.1 U	0.0 U	0.1 U	0.5	0.4	0.1 U	0.1 U	0.1 U
CHLORPYRIFOS	0.39 - 0.55	0.4 U	0.4 U	0.4 U	0.3 U	0.4 U	0.5 U	0.5 U	0.8 U	0.5 U	0.6 U	0.3	1.0	0.6 U	0.6 U	0.5 U
CIS-NONACHLOR	0.04 - 0.06	0.05	0.1	0.0 U	0.0 U	0.0 U	0.1 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U	0.1 U	0.1 U	0.1 U
DELTA-BHC	0.02 - 0.03	0.03 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U
DIELDRIN	0.27 - 0.70	0.5	0.6	0.3	0.4	0.4	0.6	0.6	1.0	0.6	0.9	0.6	0.5	0.7	0.5	0.7
ENDOSULFAN II	0.04 - 0.06	0.05 U	0.0 U	0.0 U	0.0 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN	0.12 - 0.43	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U
GAMMA-BHC (LINDANE)	0.04 - 0.58	0.3	0.2	0.2 U	0.0	0.2	0.1	0.2	0.4	0.0 U	0.1 U	0.2	0.3	0.1	0.2	0.2
GAMMA-CHLORDANE	0.05 - 0.07	0.05 U	0.0 U	0.0 U	0.0 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HEPTACHLOR	0.07 - 0.10	0.08 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.4
HEPTACHLOR EPOXIDE	0.05 - 0.07	0.05 U	0.0 U	0.0 U	0.1 U	0.0 U	0.2 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HEXACHLOROBENZENE	0.12 - 0.36	0.21	0.1	0.5	0.2	0.1	0.4	0.2	0.3	0.1	0.2	0.1 U	0.7	0.3	0.5	0.2
MIREX	0.11 - 0.15	0.13 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.1 U	0.2 U	0.2 U	0.1 U
OXYCHLORDANE	0.14 - 0.73	0.33	0.4	0.3 U	0.0	0.2	0.1	0.2	2.1	0.5	0.4	0.1 U	0.1	0.7	0.1 U	0.1 U
PCB-101/90	0.24 - 1.02	0.60	0.9	0.8	1.0	0.4	0.8	0.7	0.3	0.2	0.2 U	0.6	0.5	0.8	0.5	0.2 U
PCB-105	0.24 - 0.45	0.34	0.4	0.4	0.1	0.2	0.4	0.3	0.3	0.5	0.7	0.2	1.8	0.2	0.4	0.1
PCB-114	0.17 - 0.23	0.19 U	0.2 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
PCB-118	0.49 - 1.44	0.81	1.0	1.3	0.3	0.4	0.9	0.4	5.1	0.7	2.7	1.0	5.7	0.9	1.0	0.5
PCB-126	0.01 - 0.06	0.03	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.1	1.0 U	0.1	0.9 U
PCB-128	0.13 - 0.18	0.15	0.2	0.3 U	0.1	0.1	0.2	0.1	0.5	0.1	0.5	0.1	0.4	0.2 U	0.1	0.2 U
PCB-138/160	0.66 - 1.27	1.02	1.0	2.8	0.5	0.6	1.1	0.7 U	6.5	1.2	2.7	1.0	3.4	1.2	1.2	0.7
PCB-149/123	0.17 - 0.23	0.19 U	0.2 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2	0.3	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
PCB-153/132	1.00 - 1.70	1.3	1.7	3.9	0.6	0.9	1.6	1.1	10.2	2.0	4.9	1.3	2.8	1.7	1.1	0.8
PCB-156	0.17 - 1.89	0.61	0.2 U	0.2 U	0.1 U	0.2 U	0.0	0.1 U	0.9	0.2	0.3 U	0.2 U	0.5	0.2 U	0.9	0.2 U
PCB-167	0.06 - 0.20	0.13	0.2 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2	1.0	0.2 U	0.3	0.2 U	0.3	0.2 U	0.2	0.2 U
PCB-169	0.01 - 0.77	0.36	0.6 U	0.6	0.6 U	0.6 U	0.0	0.1 U	1.3 U	0.8 U	1.1 U	0.0	0.0	1.0 U	0.0	0.0
PCB-170/190	0.17 - 0.43	0.26	0.2 U	1.4 U	0.1 U	0.2 U	0.2 U	0.2	1.6	0.2 U	0.7	0.2 U	0.5	0.2 U	0.3 U	0.1
PCB-18/17	0.12 - 10.52	2.9	0.2	1.7 U	0.4	0.1	0.6	1.6	0.9 U	0.3	0.7	1.7	2.1	0.4	4.6	0.6
PCB-180	0.24 - 0.48	0.37	0.4	2.7	0.2	0.2	0.5	0.4	3.8	0.7	1.4	0.6	0.3	0.3	0.3	0.3
PCB-187	0.17 - 0.40	0.30	0.4	1.5	0.2	0.2	0.4	0.3 U	3.4	0.7	1.4	0.4	0.4	0.4	0.3	0.2
PCB-189	0.17 - 0.23	0.19 U	0.2 U	0.0 U	0.1 U	0.2 U	0.2 U	0.2 U	0.0	0.2 U	0.1	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
PCB-195/208	0.01 - 0.19	0.09	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.2 U	0.3	0.0	0.1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
PCB-201/157/173	0.13 - 0.18	0.15 U	0.1 U	0.0 U	0.1 U	0.1 U	0.2 U	0.2	0.3 U	0.2 U	0.2 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U
PCB-206	0.14 - 0.20	0.16 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2	0.4	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
PCB-209	0.03 - 0.22	0.15	0.0	0.1	0.3	0.2	0.0	0.1 U	0.3	0.2	0.3 U	0.3 U	0.2 U	0.1	0.2	0.2 U
PCB-28	0.13 - 0.18	0.15 U	0.1	0.1 U	0.1 U	0.1 U	0.2	0.0 U	1.6	0.2 U	0.2 U	0.2 U	0.1 U	0.2 U	0.3	0.2 U
PCB-44	0.10 - 0.14	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U

TABLE A.1-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-52	0.11 - 0.30	0.16	0.1 U	0.3 U	0.1	0.1	0.2 U	0.1 U	0.2 U	0.1 U	0.3	0.1	0.8	0.2 U	0.3	0.1 U
PCB-66	0.05 - 0.10	0.07	0.1	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	1.0	0.1	0.5	0.2 U	0.3	0.1	0.1	0.2 U
PCB-77	0.16 - 0.77	0.57	0.6 U	0.6 U	0.6 U	0.6 U	0.9 U	0.8 U	1.3 U	0.8 U	1.1 U	1.0 U	0.7 U	1.0 U	1.0 U	0.9 U
PCB-8/5	0.48 - 1.54	0.88	0.2	0.2 U	0.2 U	0.3 U	0.4 U	0.3	0.5 U	0.3 U	0.4 U	0.5	0.3	0.4 U	0.5	0.5
PCB-81	0.66 - 0.93	0.76 U	0.6 U	0.6	0.3 U	0.6 U	0.9 U	0.8 U	0.2	0.8 U	1.1 U	1.0 U	0.7 U	1.0 U	1.0 U	0.9 U
PENTACHLOROANISOLE	0.11 - 0.24	0.15	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2
PENTACHLOROBENZENE	0.09 - 0.80	0.37	0.1	0.0	0.1	0.5	0.1	0.8	0.2	0.7	0.2	0.4	0.6	0.2	0.9	0.8
TRANS-NONACHLOR	0.03 - 0.08	0.05	0.0 U	0.3	0.1 U	0.0 U	0.0	0.2	0.1 U	0.0 U	0.0 U	0.0 U	0.0	0.0 U	0.0 U	0.0 U
Inorganics (ug/g)																
ALUMINUM	3.1 - 8.7	6.4	5.0	11.9	9.0	5.1	13.2	3.7	12.5	6.6	21.2	9.5	6.4	3.5	7.4	4.3
ARSENIC	7.1 - 19.9	11.0	9.8	10.7	9.6	10.4	16.7	9.7	10.5	11.8	12.1	10.1	10.3	12.7	12.5	9.4
CADMIUM	0.02 - 0.05	0.036	0.0	0.0	0.0	0.3	0.0	0.0	0.7 U	0.0	0.1 U	0.0	0.1	0.0	0.0	0.1
CHROMIUM	0.1 - 0.5	0.20 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1
COPPER	33.9 - 55.7	43.9	40.5	46.6	48.4	49.9	34.4	41.2	34.8	34.2	34.6	35.3	47.9	37.7	28.5	31.0
IRON	6.5 - 16.1	10.2	10.9	17.0	9.2	8.2	18.6	6.0	16.8	10.3	32.7	13.5	16.0	6.8	12.4	8.9
LEAD	0.05 - 0.55	0.30	0.1	0.2	0.1	0.0 U	0.1	0.1	0.3	0.0	0.2	0.1	0.2	0.3	0.1 U	0.0
MANGANESE	2.2 - 4.5	3.1	2.5	4.2	2.1	2.9	1.9	2.0	1.9	1.7	3.4	2.4	4.6	3.2	1.9	2.2
MERCURY	0.02 - 0.84	0.5	0.5	0.6	0.4	0.5	0.4	0.5	0.6	0.5	0.4	0.4	0.9	0.9	0.7	0.5
NICKEL	0.1 - 0.8	0.40 U	0.1	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1
SILVER	1.0 - 1.7	1.3	0.8	1.2	1.0	1.4	0.8	1.2	0.9	1.0	0.8	1.0	1.2	1.4	0.8	1.0
ZINC	90.7 - 120.0	104	92.6	106.0	102.0	91.3	102.0	94.6	106.0	82.0	101.0	108.0	139.5	103.0	75.0	83.7

Footnotes:
Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.
Normalized concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.1-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 1 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
Dioxins/Furans (ng/kg)	
1,2,3,4,6,7,8-HPCDD	1.15
1,2,3,4,7,8-HXCDD	0.73
1,2,3,6,7,8-HXCDD	0.85
1,2,3,7,8,9-HXCDF	0.59
1,2,3,7,8,9-HXCDF	0.59
TOTAL HPCDD	1.20
TOTAL TCDD	0.99
Average Coefficient of Variation	**0.87**
Minimum Coefficient of Variation	**0.59**
Maximum Coefficient of Variation	**1.20**
Semi-Volatile Organics (ug/kg)	
1,6,7-TRIMETHYLNAPHTHALENE	0.74
1-METHYLNAPHTHALENE	1.91
1-METHYLPHENANTHRENE	1.43
2,6-DIMETHYLNAPHTHALENE	0.90
2-METHYLNAPHTHALENE	1.65
ACENAPHTHENE	3.29
ACENAPHTHYLENE	0.66
ANTHRACENE	1.48
BENZO(A)ANTHRACENE	1.36
BENZO(A)PYRENE	1.23
BENZO(B)FLUORANTHENE	1.33
BENZO(E)PYRENE	1.21
BENZO(G,H,I)PERYLENE	0.98
BENZO(K)FLUORANTHENE	1.25
BIPHENYL	1.66
C1-CHRYSENES	0.98
C1-DIBENZOTHIOPHENES	0.91
C1-FLUORANTHENES/PYRENES	1.23
C1-FLUORENES	1.23
C1-NAPHTHALENES	1.75
C1-PHENANTHRENES/ANTHRACENES	1.24
C2-CHRYSENES	0.77
C2-DIBENZOTHIOPHENES	0.70
C2-FLUORENES	0.75
C2-NAPHTHALENES	1.25
C2-PHENANTHRENES/ANTHRACENES	0.89
C3-CHRYSENES	0.61
C3-DIBENZOTHIOPHENES	0.77
C3-FLUORENES	0.82
C3-NAPHTHALENES	0.70
C3-PHENANTHRENES/ANTHRACENES	0.79
C4-CHRYSENES	0.95
C4-NAPHTHALENES	0.89
C4-PHENANTHRENES/ANTHRACENES	0.70
CHRYSENE	1.45
DIBENZO(A,H)ANTHRACENE	1.10
DIBENZOTHIOPHENE	1.80
FLUORANTHENE	1.63

TABLE A.1-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 1 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
FLUORENE	2.29
INDENO(1,2,3-CD)PYRENE	1.06
NAPHTHALENE	1.84
PERYLENE	1.24
PHENANTHRENE	2.31
PYRENE	1.62
Average Coefficient of Variation	**1.26**
Minimum Coefficient of Variation	**0.61**
Maximum Coefficient of Variation	**3.29**

Pesticides (ug/kg)	
1,2,3,4-TETRACHLOROBENZENE	1.12
1,2,4,5-TETRACHLOROBENZENE	1.02
2,4'-DDD	1.40
2,4'-DDE	1.29
2,4'-DDT	2.25
4,4'-DDD	1.81
4,4'-DDE	1.68
4,4'-DDT	4.28
ALDRIN	2.90
ALPHA-BHC	0.86
ALPHA-CHLORDANE	3.34
BETA-BHC	2.89
CHLORPYRIFOS	1.23
CIS-NONACHLOR	1.25
DELTA-BHC	0.98
DIELDRIN	5.20
ENDOSULFAN II	1.42
ENDRIN	1.11
GAMMA-BHC (LINDANE)	0.59
GAMMA-CHLORDANE	4.14
HEPTACHLOR	1.54
HEPTACHLOR EPOXIDE	1.14
HEXACHLOROBENZENE	3.02
MIREX	2.08
OXYCHLORDANE	1.45
PENTACHLOROANISOLE	0.74
PENTACHLOROBENZENE	0.81
TRANS-NONACHLOR	3.40
Average Coefficient of Variation	**1.96**
Minimum Coefficient of Variation	**0.59**
Maximum Coefficient of Variation	**5.20**
PCBs (ug/kg)	
PCB-101/90	1.41
PCB-105	1.31
PCB-114	0.37
PCB-118	1.23
PCB-126	0.99
PCB-128	1.04

TABLE A.1-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 1 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
PCB-138 /160	1.62
PCB-149/123	1.72
PCB-153/132	1.57
PCB-156	0.93
PCB-167	1.39
PCB-169	0.88
PCB-170/190	1.24
PCB-18/17	2.46
PCB-180	1.64
PCB-187	1.66
PCB-189	1.02
PCB-189	1.02
PCB-195/208	1.21
PCB-201/157/173	1.20
PCB-206	1.25
PCB-209	1.02
PCB-28	1.71
PCB-28	1.71
PCB-44	1.70
PCB-52	1.23
PCB-66	0.57
PCB-77	0.73
PCB-8/5	0.69
PCB-81	2.66
Average Coefficient of Variation	**1.31**
Minimum Coefficient of Variation	**0.37**
Maximum Coefficient of Variation	**2.66**

Inorganics (mg/kg)

ALUMINUM	0.11
ARSENIC	0.38
CADMIUM	0.62
CHROMIUM	0.37
COPPER	4.62
IRON	0.48
LEAD	5.09
MANGANESE	0.38
MERCURY	1.24
NICKEL	4.97
SILVER	1.08
ZINC	3.03
Average Coefficient of Variation	**1.86**
Minimum Coefficient of Variation	**0.11**
Maximum Coefficient of Variation	**5.09**

Total Organic Carbon (%)

TOTAL ORGANIC CARBON	0.65

Notes:
- Source data located in the Round 1 data package (TtNUS, February 2000).

ATTACHMENT A.1-1
DATA QUALITY REVIEW (DQR)
ROUND 1

Various data quality control measures were implemented during the field investigation performed for Portsmouth Naval Shipyard (PNS), Round 1 (September 1999). These quality measures were conducted to help ensure that the resultant data were suitable for their intended uses. A brief summary of the measures is provided in the next three sections. Section 1.0 contains a summary of the data quality indicators (DQIs). Field quality control samples are discussed in Section 2.0. A summary of the data validation procedures and the results of the data validation process appear in Section 3.0.

During Round 1, samples were collected and analyzed from the following media: mussels, juvenile lobsters, and sediment. Juvenile lobsters were dissected into muscle and hepatopancreas samples prior to extraction and analysis for Round 1. The intestines initially were not removed from the muscle samples prior to extraction for Round 1. However, after it was determined that the intestines were not removed from the lobster tail prior to chemical analysis, as was done for the lobsters collected during the Estuarine Ecological Risk Assessment (EERA) (NCCOSC, 2000), a subset of the remaining lobsters from each sample were selected for compositing and analysis.

1.0 DATA QUALITY INDICATORS

The Interim Offshore Monitoring Plan was prepared as required by the Interim Record of Decision (ROD) for Operable Unit (OU) 4. The monitoring program is designed to provide offshore monitoring in the interim period before completion of the offshore feasibility study (FS) and selection and implementation of the final remedy for OU4. The focus of the interim offshore monitoring program is to provide data to determine whether, over the course of the interim monitoring, current and future concentrations of chemicals of concern (metals, PCBs, and PAHs) in the offshore areas are at acceptable levels. When the FS is conducted, available data, including data collected as part of the interim monitoring, will be used for the identification and evaluation of final remedial options for OU4.

DQIs are parameters that are monitored to establish the quality of data generated during an investigation. Some of the DQIs are generated from analysis of field samples (e.g., from field duplicates), and others result from the analysis of laboratory samples (e.g., laboratory duplicates). Individually, field and laboratory DQIs provide measures of the performance of the respective investigative operations (field or laboratory). Taken together, the DQIs provide a measure of the overall project performance. An overall evaluation of DQIs may also be used to improve the investigative process by identifying where in the process major uncertainties or biases are occurring.

1.1 Precision

Precision is a measure of the degree to which two or more measurements are in agreement and describes the reproducibility of measurements of the same parameter for samples analyzed under similar conditions.

Precision is expressed as a relative percent difference (RPD), which is defined as the ratio of the range to the mean. RPDs, which are typically expressed as percentages, are used to evaluate both field and laboratory duplicate precision and are calculated as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where RPD = relative percent difference
V1, V2 = two results obtained by analyzing duplicate samples

Field precision is assessed by collecting and measuring field duplicates at a rate of one duplicate per 10 environmental samples. This precision estimate encompasses the combined uncertainty associated with sample collection, homogenization, splitting, handling, laboratory and field storage (as applicable), preparation for analysis, and analysis. In contrast, precision estimates obtained from analyzing duplicate laboratory samples incorporate only homogenization, subsampling, preparation for analysis, laboratory storage (if applicable), and analysis uncertainties.

Laboratory precision QC samples [i.e., laboratory duplicates for inorganic chemicals and matrix spike duplicates (MSDs) for organic chemicals] were analyzed with a minimum frequency of five percent (i.e., 1 QC sample per 20 environmental samples). Laboratory precision is measured by comparing RPD values to precision control limits specified in the applicable analytical standard operating procedures (SOPs).

The precision objectives for parameters are specified in the associated analytical protocols. General precision objectives such as ±50 percent for solid matrices and ±30 percent for aqueous matrices were employed for this project for both field and laboratory duplicates. In general, qualification due to imprecision was not a significant cause of data qualification and does not impact the usability of the data for monitoring purposes, as depicted in Table 1-1 below. A 0% qualification rate indicates that no data were qualified due to duplicate imprecision and reflects the best possible performance.

Table 1-1 - Rates of Qualification
Laboratory and Field Duplicate Precision

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Lab Duplicate Imprecision	0%	0%	0%	0%	0%
Field Duplicate Imprecision	0%	0%	0%	1%	1%
	Mussels				
Lab Duplicate Imprecision	0%	0%	0%	0%	0%
Field Duplicate Imprecision	0%	0%	0%	<1%	0%
	Sediment				
Lab Duplicate Imprecision	0%	0%	0%	0%	0%
Field Duplicate Imprecision	17%	25%	0%	0%	1%

Twelve field duplicates were collected for 125 sediment samples. Sixteen field duplicates were collected for 111 tissue samples. Therefore, the 10 percent minimum frequency criterion was achieved.

1.2 Accuracy

Accuracy is the degree of agreement between an observed value and an accepted reference value. This parameter is assessed by measuring spiked samples [e.g., surrogate spikes or matrix spikes (MSs)] or well-characterized samples of certified analyte concentrations (e.g., LCSs) and by measuring blanks. Accuracy measurements are designed to detect biases associated with sample handling and analysis.

Accuracy requirements for field measurements are typically ensured through control over the sample collection and handling and through routine instrument calibration. Accuracy is also typically monitored through the use of blanks to detect cross-contamination and by monitoring adherence to procedures that prevent sample contamination or degradation. Equipment rinsate

blanks were collected for this investigation to assess cross-contamination via sample collection equipment. Source water blanks were collected to monitor the purity of water used to decontaminate sampling equipment. Accuracy was also assured qualitatively through adherence to all sample handling, preservation, and holding time requirements.

Accuracy in the laboratory is measured through the comparison of a spiked sample or LCS result to a known or calculated value and is expressed as a percent recovery (%R). It is also assessed by monitoring the analytical recovery of select surrogate compounds added to samples that are analyzed by organic chromatographic methods. MS and surrogate compound analyses measure the combined accuracy effects of the sample matrix, sample preparation, and sample measurement. LCSs are used to assess the accuracy of laboratory operations with minimal sample matrix effects. Spiking concentrations were required to equal or approximate the default concentrations detailed in the applicable sample preparation or analysis SOPs. LCS and MS analyses were performed at a frequency no less than one per 20 associated samples of like matrix as required by the Interim Offshore Monitoring Plan. Laboratory accuracy is assessed by comparing calculated %R values to accuracy control limits specified in the applicable laboratory SOP.

Percent recovery is calculated using the following equation:

$$\%R = \frac{Ss - So}{S} \times 100$$

where %R = percent recovery
Ss = result of spiked sample
So = result of non-spiked sample
S = concentration of spiked amount.

In general, a percent recovery range of 75 to 125 defines the accuracy objective for the analytical data. It should be noted, however, that the analytical laboratory establishes analyte-specific percent recoveries.

Table 1-2 depicts the qualification rates for MS, LCS, surrogate, and internal standard recoveries. Failure to meet accuracy requirements resulted in a high rate of qualification of juvenile lobster and mussel tissues based on internal standard recoveries. The inclusion of the hepatopancreas data with this matrix may account for the high rate of rejection.

Table 1-2 - Rates of Qualification
Surrogate, Matrix Spike, Blank Spike, and Internal Standard Recoveries

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Matrix Spike Recovery	23%	0%	0%	0%	<1%
Blank Spike Recovery	1%	0%	0%	1%	4%
Surrogate Recovery	NA	NA	0%	0%	0%
Internal Standard Recovery	NA	NA	87%	0%	0%
	Mussels				
Matrix Spike Recovery	29%	0%	0%	0%	<1%
Blank Spike Recovery	2%	0%	0%	2%	1%
Surrogate Recovery	NA	NA	0%	<1%	0%
Internal Standard Recovery	NA	NA	50%	0%	0%
	Sediment				
Matrix Spike Recovery	8%	3%	0%	2%	<1%
Blank Spike Recovery	0%	<1%	0%	6%	6%
Surrogate Recovery	NA	NA	0%	<1%	3%
Internal Standard Recovery	NA	NA	9%	0%	0%

NA = Not applicable.

1.3 Completeness

Completeness is a measure of the amount of usable, valid analytical data obtained compared to the amount expected to be obtained. Completeness is expressed as a percentage.

Field completeness is a measure of the amount of valid field measurements obtained from all the field measurements taken in the project. A completeness criterion of 100 percent applies to these measurements.

Laboratory completeness is a measure of the amount of usable, valid laboratory measurements per matrix obtained for each target analyte. Usable, valid results are those that are judged, after data assessment, to represent the sampling populations and to have not been disqualified for use through data validation or data assessment. Completeness is typically expressed as a percentage and is determined using the following equation:

$$\%C = \frac{V}{T} \times 100$$

where %C = percent completeness
V = number of results determined to be valid
T = Total number of results

Under ideal conditions, the laboratory completeness objective would be 100 percent. However, samples can be rendered unusable during shipping and preparation (e.g., bottles broken or extracts accidentally destroyed) or analysis (e.g., loss of instrument sensitivity, strong matrix effects). Laboratory completeness objectives are 90 percent for sediment, 80 percent for mussel tissues, and 60 percent for juvenile lobster tissue. Completeness objectives for surface water and pore water samples were not specified. Table 1-3 compares the percent completeness for Round 1 for sediment and tissues.

Table 1-3 – Percent Completeness

	Tissues	Sediment
	Round 1	Round 1
Total Data Points	13,082	8,673
Rejected Data Points	230	10
% Completeness	98.2%	99.9%

The calculated percent completeness for laboratory analytical data collected during the field investigation is 98.2 percent for mussel tissues and juvenile lobster tissues (i.e., 230 laboratory analytical results out of a total of 13,082 data points were qualified as unusable). The calculated percent completeness for laboratory analytical data collected during the field investigation is 99.9 percent for sediments (i.e., 10 laboratory analytical results out of a total of 8,673 data points were qualified as unusable). Therefore, the data completeness objectives for the project were achieved. Table 1-4 lists the specific results that were rejected during Round 1.

Table 1-4 – Rejected Results

Samples	Rejected Parameters	Basis for Rejection
OU4-SD-M07-299A	1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, Total HXCDF, Total PECDD	Recovery standard 13C-123789-HXCDD < 10%
OU4-LJ-M07-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF, OCDF	Surrogate 13C-OCDD and Recovery standard 13C-123789-HXCDD < 10%
OU4-LJ-M08-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-LJ-M10-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, OCDD, OCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-LJ-M11-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, Total HXCDD, Total HXCDF, Total HPCDD, Total HPCDF, OCDD. OCDF	Surrogate 13C-OCDD and Recovery standard 13C-123789-HXCDD < 10%
OU4-LJ-M12-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 1,2,3,7,8-PECDD, 1,2,3,7,8-PECDF, 2,3,4,6,7,8-HXCDF, 2,3,4,7,8-PECDF, 2,3,7,8-TCDD, 2,3,7,8-TCDF, OCDD, OCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF, Total PECDD, Total PECDF, Total TCDD, Total TCDF	Recovery standards 13C-1234-TCDD and 13C-123789-HXCDD < 10%
OU4-LJ-R02-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, OCDD, OCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-LJ-R03-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 1,2,3,7,8-PECDD, 1,2,3,7,8-PECDF, 2,3,4,6.7,8-HXCDF, 2,3,4,7,8-PECDF, 2,3,7,8-TCDD, 2,3,7,8-TCDF, OCDD, OCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF, Total PECDD, Total PECDF, Total TCDD, Total TCDF	Recovery standards 13C-1234-TCDD and 13C-123789-HXCDD < 10%
OU4-LJ-R04-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, OCDD, OCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-MU-M07-399A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,6,7,8-HXCDD, 1,2,3,7,8,9-HXCDD, OCDF, Total HPCDD, Total HPCDF, Total HXCDD	Recovery standard 13C-123789-HXCDD < 10%

Samples	Rejected Parameters	Basis for Rejection
OU4-MU-M09-199A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, OCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-MU-M12-299A	1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, OCDD, OCDF, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-MU-R01-399A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, OCDD, OCDF, Total HPCDD, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-MU-R01-499A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, OCDD, OCDF, Total HPCDF, Total HXCDD, Total HXCDF	Recovery standard 13C-123789-HXCDD < 10%
OU4-MU-R04-399A	1,2,3,4,6,7,8-HPCDD, 1,2,3,4,6,7,8-HPCDF, 1,2,3,4,7,8,9-HPCDF, 1,2,3,4,7,8-HXCDD, 1,2,3,4,7,8-HXCDF, 1,2,3,6,7,8-HXCDD, 1,2,3,6,7,8-HXCDF, 1,2,3,7,8,9-HXCDD, 1,2,3,7,8,9-HXCDF, 2,3,4,6,7,8-HXCDF, Total HXCDF, Total PECDD, Total HPCDD, Total HPCDF, Total HXCDD, OCDD, OCDF	Surrogate 13C-OCDD and Recovery standard 13C-123789-HXCDD < 10%

Surrogate and recovery standard recoveries less than the quality control limit resulted in the estimation or rejection of analytical data in both sediment and tissue samples for dioxin analysis. In all, a total of 15 samples were affected, one sediment, eight juvenile lobster tissues, and six mussel tissues. Surrogates (sometimes referred to as internal standards) are added to the sample prior to extraction to monitor the extraction efficiency of the method. After extraction, a sample may be "cleaned-up" by additional manipulation to remove analytical interferences. A clean-up standard is added to the sample extract after extraction and immediately prior to undergoing cleanup. Cleanup standards monitor the efficiency of the cleanup step. Recovery standards are added to the sample extract after cleanup and immediately prior to sample analysis. Recovery standards are used to determine whether instrument response and sensitivity are stable and to determine whether the same amount of extract is injected into the instrument for each analytical run.

In 10 samples, nondetected results associated with the recovery standard 13C-123789-HXCDD were rejected due to responses less than 10 percent. All nondetected data were rejected in two samples due to recovery standards 13C-1234-TCDD and 13C-123789-HXCDD responses less than 10 percent. Nondetected data associated with the recovery standard 13C-123789-HXCDD and the surrogate standard 13C-OCDD were rejected in three samples. Recovery standards have a wide acceptance range of 25 percent to 400 percent. Failure to meet the acceptance criteria indicates a lack of control in one or more of the following areas: instrument performance, matrix effect, sample injection, or spiking. No qualifiers were assigned to dioxin data on the basis of calibration, indicating that the instrument was in control during the analysis. No qualifiers were assigned on the basis of recovery standard responses greater than the quality control limit, indicating that sample injection and spiking were in control. Because 14 of the 15 samples affected were tissues, matrix effects are the most likely cause of the noncompliant results. Table 1-4 presents the samples and analytes rejected due to recovery and/or surrogate standard noncompliances. These data are not acceptable for interim monitoring purposes because the poor recoveries indicate the potential for not detecting an analyte that is actually present in a sample (false negatives).

Additional clean-up procedures for the tissue samples may be needed in order to lower the number of rejected/useable results generated for this matrix.

1.4 Sensitivity

Minimum and maximum nondetected results achieved during laboratory analysis were compared to target method detection limits contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan. Because MDLs in Table 6-5i were presented on a wet weight basis for dioxins, the detection limits were adjusted for tissue by multiplying by 5 and for sediment by multiplying by 2 in order to be consistent with the other fractions and report them on a dry weight basis. Tables 1-5 and 1-6 (located at the end of the Round 1 DQR) compare the target MDLs to the minimum and maximum nondetects for each parameter, for each matrix. Exceedances of the target MDLs for sediment were noted for dioxins, semivolatile compounds, pesticides, and PCB congeners. Target MDL exceedances for mussel were noted for dioxins, semivolatile compounds, and PCB congeners. The lobster exceedances were noted for dioxins, several PCB congeners, mercury, and nickel.

1.5 Comparability

Comparability is defined as the confidence with which one data set can be compared with another (e.g., among sampling points; among sampling events). This is a key parameter because data will be compared among monitoring stations and reference locations and among sampling events (as part of trend analysis) to make interim decisions. Comparability is achieved by using standardized sampling and analysis methods, as well as data reporting formats. Additionally, consideration is given to seasonal conditions and other environmental variations that could exist to influence data results. Comparability of laboratory measurements will be assessed primarily through the use and documentation of similar sampling and analytical methods. Results will be reported in units to ensure comparability with previous data and with current state and federal standards and guidelines. Comparability of field data will be satisfied by ensuring the field sampling plan is followed and that proper sampling techniques are used. It also depends on recording field measurements using the correct units. Comparability of laboratory measurements will be assessed primarily through the use of certified reference materials, spike recoveries, and RPD values. Failure to achieve comparability will result in corrective action.

Field data were generated using the methodologies and units as specified in the Interim Offshore Monitoring Plan. Sampling techniques described in the plan and field sampling SOPs were followed.

1.6 Representativeness

Representativeness is an expression of the degree to which the data accurately and precisely depict the actual characteristics of a population or environmental condition existing at an individual sampling point and is contingent on a good design for the sampling program. The project planning documents (monitoring plan, field and laboratory SOPs) and use of standardized sampling, handling, analytical, and reporting procedures are designed so that the final data are accurate representations of actual site conditions. A number of conditions could arise that cause the representativeness of samples to be questioned. For example, data outliers or samples collected from a place different from the intended location could adversely impact representativeness of the data set.

Data were collected from the specified locations using sampling, sample handling, analytical, and reporting procedures as specified in the Interim Offshore Monitoring Plan. Therefore, no data representativeness concerns have been raised and the data are suitable for use as part of the monitoring program.

2.0 FIELD QUALITY CONTROL SAMPLES

The following field QC samples were collected during the sampling efforts and analyzed in accordance with requirements specified in the Interim Offshore Monitoring Plan:

Field duplicates for interim monitoring sediments were a single sample homogenized and split into two portions. Field duplicates were collected during a single act of sampling and analyzed for chemical constituents to measure the precision of the sampling and analysis program, as well as natural sample heterogeneity. As planned, mussel and juvenile lobster tissue sample duplicates were prepared by the laboratory in a manner similar to normal environmental media samples.

Source water blanks consist of sampling of source waters, used in decontamination, before use. The samples were obtained at the rate of one per source per sampling event. Source water is analyzed for all organic and inorganic constituents under investigation, as a means of determining whether the source water used in field procedures could potentially have introduced contaminants to the environmental samples collected. Source water blanks were evaluated in accordance with the planned data validation protocols to determine whether false positive results may exist. A false positive is a result that indicates the presence of an analyte when the analyte should have been classified as nondetected.

Equipment rinsate blanks were collected and analyzed to check the effectiveness of decontamination procedures. Samples were obtained under representative field conditions by collecting the rinse water generated by running analyte-free water through sample collection equipment after decontamination and before use. Rinsate blanks were obtained for each type of sampling equipment for each day that the sampling equipment was decontaminated. Where pre-cleaned, dedicated sampling equipment was used, one rinsate blank was collected as a "batch blank." Rinsate blanks were analyzed for the same chemical constituents as the associated environmental samples.

Temperature blanks were included in each cooler as a temperature indicator to assure that samples were received at the laboratory at the appropriate temperature.

Positive results in the field blanks were not used as a basis for data validation because field blank results were not included in the SDG with their associated samples. Therefore, false positives may exist particularly for sample data close to or less than the reporting limit. Table 2-1 presents the maximum contamination values reported in the field and rinsate blanks associated with the Round 1 sampling event.

Table 2-1 – Maximum Positive Concentrations in Field and Rinsate Blanks, µg/L

Parameter	Compounds	Maximum Rinsate Blank Contamination	Maximum Field Blank Contamination
Dioxin	1,2,3,4,6,7,8-HPCDD	8.09	12.7
	1,2,3,4,6,7,8-HPCDF	6.4	10.1
	1,2,3,4,7,8,9-HPCDF	2.71	4.32
	1,2,3,4,7,8-HXCDF	3.27	7.2
	1,2,3,6,7,8-HXCDF	4.71	3.42
	1,2,3,7,8,9-HXCDF	4.03	4.56
	1,2,3,7,8,9-HXCDF	3.61	ND
	1,2,3,7,8-PECDF	2.47	ND
	2,3,4,6,7,8-HXCDF	0.9	5.95
	2,3,4,7,8-PECDF	1.47	ND
	2,3,7,8-TCDD	3.17	ND
	2,3,7,8-TCDF	0.86	ND

Parameter	Compounds	Maximum Rinsate Blank Contamination	Maximum Field Blank Contamination
	OCDD	15.9	41.4
	OCDF	8.1	14.1
	Total HPCDD	8.1	12.7
	Total HPCDF	9.1	14.4
	Total HXCDD	4	ND
	Total HXCDF	8	21.1
	Total PECDD	1.3	ND
	Total PECDF	3.8	ND
	Total TCDD	3.2	ND
	Total TCDF	0.9	ND
PAH	1,6,7-Trimethylnaphthalene	1.31	0.39
	1-Methylnaphthalene	4.64	1.56
	1-Methylphenanthrene	0.8	0.65
	2,6-Dimethylnaphthalene	1.94	0.83
	2-Methylnaphthalene	9.93	3.13
	Acenaphthene	2.28	0.6
	Acenaphthylene	0.88	0.36
	Anthracene	1.21	0.25
	Benzo(a)anthracene	0.99	0.21
	Benzo(a)pyrene	0.43	0.54
	Benzo(b)fluoranthene	2.18	0.56
	Benzo(e)pyrene	0.85	0.35
	Benzo(g,h,i)perylene	0.73	0.01
	Benzo(k)fluoranthene	3.04	0.29
	C1-Chrysenes	0.21	0.54
	C1-Dibenzothiophenes	2.01	0.04
	C1-Fluoranthenes/Pyrenes	0.65	0.04
	C1-Fluorenes	2.61	1.2
	C1-Naphthalenes	14.6	4.69
	C1-Phenanthrenes/Anthracenes	4.06	2.85
	C2-Chrysenes	0.18	0.26
	C2-Dibenzothiophenes	1.53	0.04
	C2-Fluorenes	10.7	1.48
	C2-Naphthalenes	4.53	1.8
	C2-Phenanthrenes/Anthracenes	3.26	0.8
	C3-Chrysenes	0.15	0.21
	C3-Dibenzothiophenes	0.22	0.05
	C3-Fluorenes	10.7	7.13
	C3-Naphthalenes	14.6	9.87
	C3-Phenanthrenes/Anthracenes	0.34	1.52
	C4-Chrysenes	1.14	0.31
	C4-Naphthalenes	1.88	2.24
	C4-Phenanthrenes/Anthracenes	0.21	0.94
	Chrysene	1.54	0.52
	Dibenzo(a,h)anthracene	0.34	0.11
	Dibenzothiophene	3.17	0.29
	Fluoranthene	3.92	0.85

Parameter	Compounds	Maximum Rinsate Blank Contamination	Maximum Field Blank Contamination
	Fluorene	4.1	1.07
	Indeno(1,2,3-cd)pyrene	0.43	0.03
	Naphthalene	45	13.4
	Perylene	2.84	0.14
	Phenanthrene	15.3	1.55
	Pyrene	2.16	0.56
Pesticide/PCB	1,2,3,4-Tetrachlorobenzene	4.5	3.7
	1,2,4,5-Tetrachlorobenzene	1.8	0.75
	4,4'-DDT	0.96	0.08
	Aldrin	0.37	ND
	Alpha-BHC	0.44	0.29
	Biphenyl	2.24	1.68
	Dieldrin	0.19	0.27
	Gamma-BHC (Lindane)	1.4	ND
	Gamma-Chlordane	0.25	0.14
	Hexachlorobenzene	0.34	ND
	PCB-138 /160	3.2	ND
	PCB-149/123	0.7	ND
	PCB-153/132	0.66	0.62
	PCB-28	0.44	0.56
	PCB-44	0.53	0.61
	PCB-66	0.65	ND
	PCB-8/5	1.9	1.3
	Pentachloroanisole	0.33	0.22
	Pentachlorobenzene	0.16	ND
Metals	Arsenic	0.01	0.005
	Nickel	0.011	ND
	Zinc	0.01	ND

ND = Not detected.

3.0 DATA VALIDATION

Data validation is a systematic review of analytical chemical data packages with respect to sample receipt and handling, analytical methods, data reporting and deliverables, and document control. The quality of data generated by a laboratory is extremely important; it is an integral part of the investigation and must be clearly tied to the project goals. This section summarizes the various aspects of the data validation process.

3.1 General Data Validation Procedures

After receipt of analytical results, data validation was performed based upon USEPA Region I Tier II validation procedures (USEPA, 1996). The Tier II validation consists of a completeness audit defined as a Tier I review and a review of all quality control check results. The Tier II validation does not evaluate raw data and does not provide calculation confirmation of sample results.

After the data were validated, a list of non-conformities requiring data qualifiers, which are used to alert the data user to inaccurate or imprecise data, was developed. For situations in which several quality control criteria were out of specification, the data validator made professional judgments and/or comments on the validity of the overall data package. The reviewer then prepared a technical memorandum presenting qualification of the data, if necessary, and the rationale for making such qualifications.

The net result is a data package that has been carefully reviewed for its adherence to prescribed technical requirements. One hundred percent of the environmental samples were validated. Validators incorporated data qualifiers into the electronic database and submitted the information to the data management group.

3.2 Data Validation Qualifiers

As mentioned previously, analytical data were qualified during the validation process (i.e., application of U, J, UJ, UR, and R qualifiers) was conducted as required by the USEPA Functional Guidelines. The attachment of the data qualifiers to analytical results signifies the occurrence of QC noncompliances that were noted during the course of data validation. The various data qualifiers are defined, as follows:

U - Indicates that the chemical was not detected at the numerical detection limit (sample-specific quantitation limit) noted. Nondetected results from the laboratory are reported in this manner. This qualifier is also added to a positive result (reported by the laboratory) if the detected concentration is determined to be attributable to contamination introduced during field sampling or laboratory analysis.

UJ - Indicates that the chemical was not detected. However, the detection limit (sample-specific quantitation limit) is considered to be estimated based on problems encountered during laboratory analysis. The associated numerical detection limit is regarded as inaccurate or imprecise.

J - Indicates that the chemical was detected. However, the associated numerical result is not a precise representation of the amount that is actually present in the sample. The laboratory-reported concentration is considered to be an estimate of the true concentration.

UR - Indicates that the chemical may or may not be present. The nondetected analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies (i.e., holding times missed by a factor of two times the specified time limit, severe calibration noncompliances, and extremely low quality control recoveries).

R - Indicates that the chemical may or may not be present. The positive analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies.

The preceding data qualifiers may be categorized as indicative of major or minor problems. Major problems are defined as issues that result in the rejection of data, qualified with UR and R data validation qualifiers. These data are considered invalid and are not used for decision-making purposes unless they are used in a qualitative way and the use is justified and documented. Minor problems are defined as issues resulting in the estimation of data, qualified with U, J, and UJ data validation qualifiers. Estimated analytical results are considered to be suitable for decision-making purposes unless the data use requirements are very stringent and the qualifier indicates a deficiency that is incompatible with the intended data use. It is notable that a "U" qualifier does not necessarily indicate a data deficiency because all non-detect values are flagged with the "U" qualifier even when no deficiency exists.

3.3 Summary of Data Validation Results

A summary of the data validation results for the analytical data effort is provided in the remainder of this section. Because the methodologies used for extraction and analysis of the sediment and tissue samples were non-routine, the laboratory SOPs were used to establish acceptance limits for calibration, spike and LCS recoveries, compound identification, and quantitation.

Table 3-1 presents the percentages of data qualified as either estimated (J flag) or rejected (R flag) during Round 1 for each sample matrix. The percentage of qualified and unqualified data will not equal 100 percent because some data points are qualified for more than one technical noncompliance. Qualification for PARCC parameters (field and laboratory duplicates, surrogates, matrix spikes, blank spikes, and internal standards) was presented and discussed in Section 1.0. Unqualified data are data that did not require qualification for any technical noncompliances.

Table 3.1 - Rates of Qualification

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Unqualified Data	74%	100%	8%	21%	50%
<Reporting Limit	0%	0%	2%	56%	26%
Method Blank Contamination	2%	0%	5%	21%	21%
Calibration Noncompliance	0%	0%	0%	8%	0%
	Mussels				
Unqualified Data	69%	100%	16%	54%	69%
<Reporting Limit	<1%	0%	5%	21%	14%
Method Blank Contamination	0%	0%	29%	0%	0%
Hold Time Noncompliance	0%	0%	2%	0%	0%
Calibration Noncompliance	0%	0%	0%	5%	0%
	Sediment				
Unqualified Data	74%	61%	28%	72%	66%
<Reporting Limit	0%	0%	2%	2%	19%
Percent Solids	1%	<1%	0%	0%	0%
Method Blank Contamination	0%	13%	53%	14%	10%
Calibration Noncompliance	0%	0%	0%	5%	<1%
Other Technical Noncompliance	0%	0%	0%	0%	<1%
Field Blank Contamination	0%	0%	6%	0%	0%
Compound Identification	0%	0%	2%	0%	0%

Method and Field Blank Results

The laboratory reported all detected analytes with positive concentrations in the method blanks as positive results. The laboratory did not use a reporting limit or method detection limit to screen out false positives in the method blanks. This resulted in a high number of positive results reported in the method blanks, which in turn led to a high percentage of target compounds qualified per analytical fraction. With the exception of the dioxin fraction for SDG 99905, results for rinsate and field blanks were not included in the sediment and tissue SDGs. Therefore, except for dioxins in SDG 99905, positive results for rinsate blanks and field blanks were not used as a basis for data validation for organic or inorganic data. This means that results that reflect contamination of samples by samplers or laboratory analysts could have been reported as site contamination but there is no way to know for sure from the available data.

Dioxin results were qualified on the basis of method blank contamination in mussel tissues (29 percent), juvenile lobster tissues (5 percent), and sediment (53 percent). PAH results were qualified on the basis of method blank contamination in juvenile lobster tissues (21 percent) and sediment (14 percent). Pesticide and PCB results were qualified on the basis of method blank

contamination in juvenile lobster tissues (21 percent) and sediment (10 percent). Dioxin results (6 percent) were qualified on the basis of field blank contamination in SDG 99905.

Method blank contamination was noted for 13 of 25 dioxin compounds during the tissue analysis and 19 of 25 compounds during the sediment analysis (52 percent and 76 percent of the target compounds, respectively).

Method blank contamination was noted for nine of 44 PAH compounds during the tissue analysis and 13 of 44 compounds during the sediment analysis (20 percent and 30 percent of the target compounds, respectively). Only positive results greater than the reporting limit were used to establish blank action limits for the PAH fraction. Positive results in the method blanks that are less than the reporting limit were not used as a basis for qualification. Positive sample results that are less than the reporting limits may be false positives that were not eliminated during data validation.

Method blank contamination was noted for 19 of 56 pesticide and PCB compounds during the tissue analysis and 24 compounds of 56 compounds during the sediment analysis (34 percent and 43 percent of the target compounds, respectively). The compounds 1,2,4,5-tetrachlorobenzene, PCB-138/160, and PCB-180 were the most frequently qualified compounds in the tissue samples affecting, 54 percent of samples. Lindane (g-BHC) was qualified in 92 percent of sediment samples.

Method blank contamination associated with the sediment samples was noted for four of five SEM compounds: copper, lead, nickel, and zinc. Method blank contamination associated with the juvenile lobster tissue samples was noted for five of 12 metal compounds: cadmium, chromium, lead, mercury, and nickel.

The percentage of method blank contamination for the metals fraction was reasonable (i.e., less than 5 percent except for SEM, which was 28 percent) and should not adversely affect the usage of data for monitoring purposes.

Overall data quality was poorer than typically achievable. In particular, improvements in laboratory performance in the areas of dioxin internal standard recoveries and method blank contamination in PAH, dioxin, pesticides, PCBs, and metals analyses would enhance the usability of the data. The laboratory performance will be monitored closely in subsequent rounds of analyses.

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	17/17	0	0	10
1,2,3,4,6,7,8-HPCDF	0/17	1.5	87.1	10
1,2,3,4,7,8,9-HPCDF	0/16	1.1	53.5	10
1,2,3,4,7,8-HXCDD	16/16	0	0	10
1,2,3,4,7,8-HXCDF	0/16	1.1	18.1	10
1,2,3,6,7,8-HXCDD	16/16	0	0	10
1,2,3,6,7,8-HXCDF	0/16	1.1	15.8	10
1,2,3,7,8,9-HXCDD	0/16	1.1	9.71	10
1,2,3,7,8,9-HXCDF	13/16	1.1	2.8	10
1,2,3,7,8-PECDD	0/17	0.16	2.8	10
1,2,3,7,8-PECDF	0/17	0.47	7.95	10
2,3,4,6,7,8-HXCDF	0/16	1.1	17.9	10
2,3,4,7,8-PECDF	0/17	1.1	15	10
2,3,7,8-TCDD	0/17	0.14	0.6	2
2,3,7,8-TCDF	0/17	0.3	11.3	2
OCDD	0/17	70.8	3563	20
OCDF	0/17	3	147	20
TOTAL HPCDD	17/17	0	0	10
TOTAL HPCDF	0/17	4.87	203	10
TOTAL HXCDD	0/17	3.94	241	10
TOTAL HXCDF	0/16	1.76	56	10
TOTAL PECDD	0/16	0.9	25.9	10
TOTAL PECDF	0/17	1.1	131	10
TOTAL TCDD	13/17	0.2	5.02	2
TOTAL TCDF	0/17	0.75	123	2
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	41/42	5.41	5.41	20
1-METHYLNAPHTHALENE	5/42	1.65	39.2	20
1-METHYLPHENANTHRENE	42/42	0	0	20
2,6-DIMETHYLNAPHTHALENE	41/42	10.6	10.6	20
2-METHYLNAPHTHALENE	5/42	4.05	54.4	20
ACENAPHTHENE	41/42	11.4	11.4	20
ACENAPHTHYLENE	42/42	0	0	20
ANTHRACENE	42/42	0	0	20
BENZO(A)ANTHRACENE	42/42	0	0	20
BENZO(A)PYRENE	42/42	0	0	20
BENZO(B)FLUORANTHENE	42/42	0	0	20
BENZO(E)PYRENE	42/42	0	0	20
BENZO(G,H,I)PERYLENE	42/42	0	0	20
BENZO(K)FLUORANTHENE	42/42	0	0	20
BIPHENYL	4/42	1.23	13.2	20
C1-CHRYSENES	42/42	0	0	20
C1-DIBENZOTHIOPHENES	42/42	0	0	20
C1-FLUORANTHENES/PYRENES	42/42	0	0	20
C1-FLUORENES	28/42	3.38	38.1	20
C1-NAPHTHALENES	6/42	5.94	85.5	20
C1-PHENANTHRENES/ANTHRACENES	42/42	0	0	20
C2-CHRYSENES	42/42	0	0	20
C2-DIBENZOTHIOPHENES	42/42	0	0	20

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-FLUORENES	38/42	8.48	11.1	20
C2-NAPHTHALENES	10/42	9.2	114	20
C2-PHENANTHRENES/ANTHRACENES	42/42	0	0	20
C3-CHRYSENES	42/42	0	0	20
C3-DIBENZOTHIOPHENES	42/42	0	0	20
C3-FLUORENES	42/42	0	0	20
C3-NAPHTHALENES	42/42	0	0	20
C3-PHENANTHRENES/ANTHRACENES	42/42	0	0	20
C4-CHRYSENES	42/42	0	0	20
C4-NAPHTHALENES	42/42	0	0	20
C4-PHENANTHRENES/ANTHRACENES	42/42	0	0	20
CHRYSENE	42/42	0	0	20
DIBENZO(A,H)ANTHRACENE	42/42	0	0	20
DIBENZOTHIOPHENE	42/42	0	0	20
FLUORANTHENE	41/42	976	976	20
FLUORENE	42/42	0	0	20
INDENO(1,2,3-CD)PYRENE	42/42	0	0	20
NAPHTHALENE	3/42	5.92	125	20
PERYLENE	42/42	0	0	20
PHENANTHRENE	42/42	0	0	20
PYRENE	42/42	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	37/42	0.02	0.26	2
1,2,4,5-TETRACHLOROBENZENE	38/42	0.18	0.73	2
2,4'-DDD	42/42	0	0	2
2,4'-DDE	41/42	0.1	0.1	2
2,4'-DDT	35/42	0.021	0.04	2
4,4'-DDD	42/42	0	0	2
4,4'-DDE	42/42	0	0	2
4,4'-DDT	42/42	0	0	2
ALDRIN	24/42	0.049	0.13	2
ALPHA-BHC	4/42	0.029	0.33	2
ALPHA-CHLORDANE	41/42	0.074	0.074	2
BETA-BHC	22/42	0.18	0.39	2
CHLORPYRIFOS	28/42	0.2	0.61	2
CIS-NONACHLOR	42/42	0	0	2
DELTA-BHC	35/42	0.032	0.087	2
DIELDRIN	31/42	0.055	0.12	2
ENDOSULFAN II	27/42	0.064	0.16	2
ENDRIN	15/42	0.096	0.26	2
GAMMA-BHC (LINDANE)	1/42	0.2	1.8	2
GAMMA-CHLORDANE	38/42	0.083	0.12	2
HEPTACHLOR	37/42	0.19	0.33	2
HEPTACHLOR EPOXIDE	18/42	0.024	0.59	2
HEXACHLOROBENZENE	7/42	0.026	1	2
MIREX	23/42	0.024	0.058	2
OXYCHLORDANE	22/42	0.012	0.029	2
PCB-101/90	42/42	0	0	1
PCB-105	42/42	0	0	1
PCB-114	1/42	0.13	0.38	1
PCB-118	42/42	0	0	1

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	25/42	0.43	1.4	1
PCB-128	42/42	0	0	1
PCB-138 /160	40/42	0.96	1.3	1
PCB-149/123	42/42	0	0	1
PCB-153/132	42/42	0	0	1
PCB-156	38/42	0.17	0.38	1
PCB-167	42/42	0	0	1
PCB-169	11/42	0.15	1.5	1
PCB-170/190	41/42	1.1	1.1	1
PCB-18/17	26/42	0.092	0.16	1
PCB-180	42/42	0	0	1
PCB-187	42/42	0	0	1
PCB-189	27/42	0.15	0.35	1
PCB-195/208	42/42	0	0	1
PCB-201/157/173	38/42	0.02	0.04	1
PCB-206	42/42	0	0	1
PCB-209	42/42	0	0	1
PCB-28	35/42	0.18	0.43	1
PCB-44	40/42	0.13	0.19	1
PCB-52	41/42	0.14	0.14	1
PCB-66	41/42	0.12	0.12	1
PCB-77	38/42	0.03	0.21	1
PCB-8/5	41/42	0.36	0.36	1
PCB-81	39/42	0.18	0.94	1
PENTACHLOROANISOLE	38/42	0.06	0.72	2
PENTACHLOROBENZENE	40/42	0.076	0.14	2
TRANS-NONACHLOR	42/42	0	0	2
Inorganics (mg/kg)				
ALUMINUM	42/42	0	0	50
ARSENIC	42/42	0	0	5
CADMIUM	42/42	0	0	0.3
CHROMIUM	42/42	0	0	5
COPPER	42/42	0	0	5
IRON	42/42	0	0	50
LEAD	42/42	0	0	5
MANGANESE	42/42	0	0	5
MERCURY	42/42	0	0	0.2
NICKEL	42/42	0	0	5
SILVER	42/42	0	0	0.1
ZINC	42/42	0	0	15

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussel				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	0/13	13.7	66.4	25
1,2,3,4,6,7,8-HPCDF	0/12	20.95	77.7	25
1,2,3,4,7,8,9-HPCDF	4/12	23.9	77.7	25
1,2,3,4,7,8-HXCDD	5/12	22.4	77.7	25
1,2,3,4,7,8-HXCDF	5/13	22.4	77.7	25
1,2,3,6,7,8-HXCDD	6/12	22.4	77.7	25
1,2,3,6,7,8-HXCDF	5/13	22.4	77.7	25
1,2,3,7,8,9-HXCDD	4/12	22.4	77.7	25
1,2,3,7,8,9-HXCDF	4/13	22.4	77.7	25
1,2,3,7,8-PECDD	0/15	12.08	138	25
1,2,3,7,8-PECDF	0/15	21.05	138	25
2,3,4,6,7,8-HXCDF	5/13	22.4	77.7	25
2,3,4,7,8-PECDF	0/15	20.95	138	25
2,3,7,8-TCDD	0/15	4.4	27.6	5
2,3,7,8-TCDF	0/15	5.06	27.6	5
OCDD	12/14	56.1	86.2	50
OCDF	7/12	48.7	155	50
TOTAL HPCDD	3/13	13.7	66.4	25
TOTAL HPCDF	4/12	23.9	77.7	25
TOTAL HXCDD	7/12	23.9	77.7	25
TOTAL HXCDF	5/13	22.4	77.7	25
TOTAL PECDD	3/15	20.95	138	25
TOTAL PECDF	0/15	22.4	138	25
TOTAL TCDD	0/15	4.8	85.8	5
TOTAL TCDF	0/15	13.3	88.85	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	32/32	0	0	20
1-METHYLNAPHTHALENE	0/32	3.33	30.3	20
1-METHYLPHENANTHRENE	32/32	0	0	20
2,6-DIMETHYLNAPHTHALENE	32/32	0	0	20
2-METHYLNAPHTHALENE	0/32	4.46	38.2	20
ACENAPHTHENE	32/32	0	0	20
ACENAPHTHYLENE	32/32	0	0	20
ANTHRACENE	28/32	11.1	15.7	20
BENZO(A)ANTHRACENE	32/32	0	0	20
BENZO(A)PYRENE	32/32	0	0	20
BENZO(B)FLUORANTHENE	32/32	0	0	20
BENZO(E)PYRENE	32/32	0	0	20
BENZO(G,H,I)PERYLENE	32/32	0	0	20
BENZO(K)FLUORANTHENE	32/32	0	0	20
BIPHENYL	1/32	1.32	18.5	20
C1-CHRYSENES	32/32	0	0	20
C1-DIBENZOTHIOPHENES	32/32	0	0	20
C1-FLUORANTHENES/PYRENES	32/32	0	0	20
C1-FLUORENES	32/32	0	0	20
C1-NAPHTHALENES	0/32	7.81	68.5	20
C1-PHENANTHRENES/ANTHRACENES	32/32	0	0	20
C2-CHRYSENES	32/32	0	0	20
C2-DIBENZOTHIOPHENES	32/32	0	0	20

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RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-FLUORENES	32/32	0	0	20
C2-NAPHTHALENES	2/32	9.95	49.8	20
C2-PHENANTHRENES/ANTHRACENES	32/32	0	0	20
C3-CHRYSENES	32/32	0	0	20
C3-DIBENZOTHIOPHENES	32/32	0	0	20
C3-FLUORENES	32/32	0	0	20
C3-NAPHTHALENES	32/32	0	0	20
C3-PHENANTHRENES/ANTHRACENES	32/32	0	0	20
C4-CHRYSENES	32/32	0	0	20
C4-NAPHTHALENES	32/32	0	0	20
C4-PHENANTHRENES/ANTHRACENES	32/32	0	0	20
CHRYSENE	32/32	0	0	20
DIBENZO(A,H)ANTHRACENE	32/32	0	0	20
DIBENZOTHIOPHENE	3/32	0.68	4.89	20
FLUORANTHENE	32/32	0	0	20
FLUORENE	32/32	0	0	20
INDENO(1,2,3-CD)PYRENE	32/32	0	0	20
NAPHTHALENE	0/32	8.7	60.1	20
PERYLENE	32/32	0	0	20
PHENANTHRENE	5/32	8.51	44.7	20
PYRENE	32/32	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	11/32	0.23	1.1	10
1,2,4,5-TETRACHLOROBENZENE	1/32	0.8	6.5	10
2,4'-DDD	32/32	0	0	10
2,4'-DDE	24/32	0.19	1.7	10
2,4'-DDT	29/32	1.2	2.4	10
4,4'-DDD	32/32	0	0	10
4,4'-DDE	32/32	0	0	10
4,4'-DDT	8/32	0.815	6.3	10
ALDRIN	8/32	0.2	1.6	10
ALPHA-BHC	32/32	0	0	10
ALPHA-CHLORDANE	32/32	0	0	10
BETA-BHC	6/32	0.13	2.6	10
CHLORPYRIFOS	8/32	0.78	8.1	10
CIS-NONACHLOR	32/32	0	0	10
DELTA-BHC	17/32	0.0815	1.6	10
DIELDRIN	23/32	0.034	1.1	10
ENDOSULFAN II	24/32	0.17	4	10
ENDRIN	15/32	0.42	7.3	10
GAMMA-BHC (LINDANE)	0/32	0.048	3.6	10
GAMMA-CHLORDANE	31/32	0.17	0.17	10
HEPTACHLOR	22/32	0.235	1.4	10
HEPTACHLOR EPOXIDE	19/32	0.16	0.28	10
HEXACHLOROBENZENE	32/32	0	0	10
MIREX	20/32	0.38	2.3	10
OXYCHLORDANE	14/32	0.175	2.1	10
PCB-101/90	30/32	5	5.3	2
PCB-105	32/32	0	0	2
PCB-114	0/32	0.56	3.45	2
PCB-118	27/32	2.6	5.6	2

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RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	32/32	0	0	2
PCB-128	31/32	2.6	2.6	2
PCB-138 /160	7/32	8.2	41	2
PCB-149/123	15/32	4.4	8.5	2
PCB-153/132	9/32	11	24	2
PCB-156	23/32	0.58	3.45	2
PCB-167	32/32	0	0	2
PCB-169	30/32	0.6	0.93	2
PCB-170/190	5/32	0.071	3	2
PCB-18/17	13/32	0.79	4.4	2
PCB-180	6/32	3.8	15	2
PCB-187	10/32	5	12	2
PCB-189	8/32	0.57	3.5	2
PCB-195/208	14/32	0.47	0.98	2
PCB-201/157/173	22/32	0.82	2.5	2
PCB-206	11/32	0.49	3	2
PCB-209	5/32	0.64	3.9	2
PCB-28	32/32	0	0	2
PCB-44	22/32	0.79	1.9	2
PCB-52	32/32	0	0	2
PCB-66	32/32	0	0	2
PCB-77	32/32	0	0	2
PCB-8/5	32/32	0	0	2
PCB-81	32/32	0	0	2
PENTACHLOROANISOLE	32/32	0	0	10
PENTACHLOROBENZENE	31/32	0.57	0.57	10
TRANS-NONACHLOR	32/32	0	0	10
Inorganics (mg/kg)				
ALUMINUM	32/32	0	0	10
ARSENIC	32/32	0	0	0.35
CADMIUM	32/32	0	0	0.1
CHROMIUM	32/32	0	0	0.4
COPPER	32/32	0	0	0.1
IRON	32/32	0	0	15
LEAD	32/32	0	0	0.1
MANGANESE	32/32	0	0	1.7
MERCURY	32/32	0	0	0.01
NICKEL	32/32	0	0	0.14
SILVER	32/32	0	0	0.29
ZINC	32/32	0	0	5.7

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	0/7	35.8	44.6	25
1,2,3,4,6,7,8-HPCDF	0/7	35.8	44.6	25
1,2,3,4,7,8,9-HPCDF	0/7	35.8	44.6	25
1,2,3,4,7,8-HXCDD	0/7	35.8	44.6	25
1,2,3,4,7,8-HXCDF	0/7	35.8	44.6	25
1,2,3,6,7,8-HXCDD	0/7	35.8	44.6	25
1,2,3,6,7,8-HXCDF	0/7	35.8	44.6	25
1,2,3,7,8,9-HXCDD	0/7	35.8	44.6	25
1,2,3,7,8,9-HXCDF	0/7	35.8	44.6	25
1,2,3,7,8-PECDD	0/7	35.8	44.6	25
1,2,3,7,8-PECDF	0/7	35.8	44.6	25
2,3,4,6,7,8-HXCDF	0/7	35.8	44.6	25
2,3,4,7,8-PECDF	0/7	35.8	44.6	25
2,3,7,8-TCDD	0/7	7.2	8.9	5
2,3,7,8-TCDF	0/7	7.2	8.9	5
OCDD	1/7	71.6	89.3	50
OCDF	0/7	71.6	89.3	50
TOTAL HPCDD	1/7	35.8	44.6	25
TOTAL HPCDF	0/7	35.8	44.6	25
TOTAL HXCDD	2/7	37.1	44.6	25
TOTAL HXCDF	0/7	35.8	44.6	25
TOTAL PECDD	0/7	35.8	44.6	25
TOTAL PECDF	2/7	35.8	39.6	25
TOTAL TCDD	0/7	7.2	8.9	5
TOTAL TCDF	0/7	7.2	8.9	5
Semivolatile Organics (ug/kg)				
1,1'-BIPHENYL	15/15	0	0	20
1,6,7-TRIMETHYLNAPHTHALENE	15/15	0	0	20
1-METHYLNAPHTHALENE	15/15	0	0	20
1-METHYLPHENANTHRENE	15/15	0	0	20
2,6-DIMETHYLNAPHTHALENE	15/15	0	0	20
2-METHYLNAPHTHALENE	15/15	0	0	20
ACENAPHTHENE	15/15	0	0	20
ACENAPHTHYLENE	15/15	0	0	20
ANTHRACENE	15/15	0	0	20
BENZO(A)ANTHRACENE	15/15	0	0	20
BENZO(A)PYRENE	15/15	0	0	20
BENZO(B)FLUORANTHENE	15/15	0	0	20
BENZO(E)PYRENE	15/15	0	0	20
BENZO(G,H,I)PERYLENE	15/15	0	0	20
BENZO(K)FLUORANTHENE	15/15	0	0	20
C1-CHRYSENES	15/15	0	0	20
C1-DIBENZOTHIOPHENES	15/15	0	0	20
C1-FLUORANTHENES/PYRENES	15/15	0	0	20
C1-FLUORENES	15/15	0	0	20
C1-NAPHTHALENES	15/15	0	0	20
C1-PHENANTHRENES/ANTHRACENES	15/15	0	0	20
C2-CHRYSENES	15/15	0	0	20
C2-DIBENZOTHIOPHENES	15/15	0	0	20

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-FLUORENES	15/15	0	0	20
C2-NAPHTHALENES	15/15	0	0	20
C2-PHENANTHRENES/ANTHRACENES	15/15	0	0	20
C3-CHRYSENES	13/15	8.9	9.1	20
C3-DIBENZOTHIOPHENES	15/15	0	0	20
C3-FLUORENES	15/15	0	0	20
C3-NAPHTHALENES	15/15	0	0	20
C3-PHENANTHRENES/ANTHRACENES	15/15	0	0	20
C4-CHRYSENES	13/15	9.9	10.4	20
C4-NAPHTHALENES	15/15	0	0	20
C4-PHENANTHRENES/ANTHRACENES	15/15	0	0	20
CHRYSENE	15/15	0	0	20
DIBENZO(A,H)ANTHRACENE	15/15	0	0	20
DIBENZOTHIOPHENE	15/15	0	0	20
FLUORANTHENE	15/15	0	0	20
FLUORENE	15/15	0	0	20
INDENO(1,2,3-C,D)PYRENE	15/15	0	0	20
NAPHTHALENE	15/15	0	0	20
PERYLENE	15/15	0	0	20
PHENANTHRENE	15/15	0	0	20
PYRENE	15/15	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	15/15	0	0	10
1,2,4,5-TETRACHLOROBENZENE	13/15	0.97	1.02	10
2,4'-DDD	0/15	0.2	0.3	10
2,4'-DDE	0/15	0.28	0.37	10
2,4'-DDT	3/15	0.23	0.34	10
4,4'-DDD	4/15	0.24	0.32	10
4,4'-DDE	15/15	0	0	10
4,4'-DDT	0/15	0.37	0.49	10
ALDRIN	0/15	0.32	0.43	10
ALPHA-BHC	15/15	0	0	10
ALPHA-CHLORDANE	13/15	0.24	0.32	10
BETA-BHC	2/15	0.21	0.27	10
CHLORPYRIFOS	3/15	2.1	2.79	10
CIS-NONACHLOR	2/15	0.22	0.29	10
DELTA-BHC	0/15	0.13	0.17	10
DIELDRIN	14/15	0.29	0.29	10
ENDOSULFAN II	0/15	0.24	0.32	10
ENDRIN	0/15	0.66	0.88	10
GAMMA-BHC (LINDANE)	11/15	0.21	0.26	10
GAMMA-CHLORDANE	0/15	0.25	0.34	10
HEPTACHLOR	1/15	0.37	0.49	10
HEPTACHLOR EPOXIDE	0/15	0.26	1.24	10
HEXACHLOROBENZENE	14/15	0.38	0.38	10
MIREX	0/15	0.58	0.78	10
OXYCHLORDANE	10/15	0.27	0.35	10
PCB-101/90	12/15	0.86	0.96	2
PCB-105	15/15	0	0	2
PCB-114	0/15	0.89	1.19	2
PCB-118	15/15	0	0	2

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	13/15	4.01	4.08	2
PCB-128	10/15	0.68	0.91	2
PCB138 /160	15/15	0	0	2
PCB-149/123	2/15	0.89	1.19	2
PCB-153/132	15/15	0	0	2
PCB-156	6/15	0.89	1.12	2
PCB-167	6/15	0.89	1.19	2
PCB-169	6/15	3.56	4.67	2
PCB-170/190	6/15	0.89	1.19	2
PCB-18/17	12/15	2.33	3.1	2
PCB-180	15/15	0	0	2
PCB-187	15/15	0	0	2
PCB-189	3/15	0.89	1.19	2
PCB-195/208	4/15	0.74	0.99	2
PCB201/157/173	1/15	0.68	0.91	2
PCB-206	2/15	0.77	1.02	2
PCB-209	10/15	1.13	1.26	2
PCB-28	5/15	0.71	0.94	2
PCB-44	0/15	0.52	0.69	2
PCB-52	7/15	0.61	0.81	2
PCB-66	9/15	0.86	1.14	2
PCB-77	0/15	3.56	4.74	2
PCB-8/5	5/15	1.44	1.91	2
PCB-81	2/15	3.59	4.74	2
PENTACHLOROANISOLE	15/15	0	0	10
PENTACHLOROBENZENE	14/15	0.39	0.39	10
TRANS-NONACHLOR	4/15	0.16	0.2	10
Inorganics (mg/kg)				
ALUMINUM	15/15	0	0	10
ARSENIC	15/15	0	0	0.35
CADMIUM	13/15	0.0333	0.0337	0.1
CHROMIUM	0/15	0.162	0.223	0.4
COPPER	15/15	0	0	0.1
IRON	15/15	0	0	15
LEAD	12/15	0.0815	0.0911	0.1
MANGANESE	15/15	0	0	1.7
MERCURY	15/15	0	0	0.01
NICKEL	2/15	0.182	0.266	0.14
SILVER	15/15	0	0	0.29
ZINC	15/15	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	14/16	7.83	90.1	10
1,2,3,4,6,7,8-HPCDF	0/16	1.5	43.9	10
1,2,3,4,7,8,9-HPCDF	0/16	0.93	2.7	10
1,2,3,4,7,8-HXCDD	10/16	1	2.4	10
1,2,3,4,7,8-HXCDF	0/16	0.94	2.94	10
1,2,3,6,7,8-HXCDD	9/16	0.29	2.4	10
1,2,3,6,7,8-HXCDF	0/16	0.74	2.7	10
1,2,3,7,8,9-HXCDD	0/16	1	4.73	10
1,2,3,7,8,9-HXCDF	0/16	0.9	2.7	10
1,2,3,7,8-PECDD	0/16	0.735	2.7	10
1,2,3,7,8-PECDF	0/16	0.49	2.7	10
2,3,4,6,7,8-HXCDF	0/16	0.905	3.37	10
2,3,4,7,8-PECDF	0/16	0.26	2.7	10
2,3,7,8-TCDD	0/16	0.2	0.5	2
2,3,7,8-TCDF	0/16	0.2	2.64	2
OCDD	0/16	32.9	1378	20
OCDF	0/16	3.1	65.6	20
TOTAL HPCDD	15/16	90.1	90.1	10
TOTAL HPCDF	0/16	1.5	99.9	10
TOTAL HXCDD	0/16	1.05	95.9	10
TOTAL HXCDF	0/16	1	8.09	10
TOTAL PECDD	0/16	0.9	14.15	10
TOTAL PECDF	0/16	0.9	11.3	10
TOTAL TCDD	5/16	0.2	1	2
TOTAL TCDF	0/16	0.2	14	2
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	16/16	0	0	20
1-METHYLNAPHTHALENE	0/16	0.445	32.8	20
1-METHYLPHENANTHRENE	16/16	0	0	20
2,6-DIMETHYLNAPHTHALENE	16/16	0	0	20
2-METHYLNAPHTHALENE	2/16	0.74	44.8	20
ACENAPHTHENE	16/16	0	0	20
ACENAPHTHYLENE	16/16	0	0	20
ANTHRACENE	16/16	0	0	20
BENZO(A)ANTHRACENE	16/16	0	0	20
BENZO(A)PYRENE	16/16	0	0	20
BENZO(B)FLUORANTHENE	16/16	0	0	20
BENZO(E)PYRENE	16/16	0	0	20
BENZO(G,H,I)PERYLENE	16/16	0	0	20
BENZO(K)FLUORANTHENE	16/16	0	0	20
BIPHENYL	2/16	1.145	11.6	20
C1-CHRYSENES	16/16	0	0	20
C1-DIBENZOTHIOPHENES	16/16	0	0	20
C1-FLUORANTHENES/PYRENES	16/16	0	0	20
C1-FLUORENES	9/16	1.06	12.4	20
C1-NAPHTHALENES	0/16	1.185	77.6	20
C1-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C2-CHRYSENES	16/16	0	0	20
C2-DIBENZOTHIOPHENES	16/16	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-FLUORENES	13/16	2.07	10.7	20
C2-NAPHTHALENES	1/16	2.47	122	20
C2-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C3-CHRYSENES	16/16	0	0	20
C3-DIBENZOTHIOPHENES	16/16	0	0	20
C3-FLUORENES	16/16	0	0	20
C3-NAPHTHALENES	16/16	0	0	20
C3-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C4-CHRYSENES	16/16	0	0	20
C4-NAPHTHALENES	16/16	0	0	20
C4-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
CHRYSENE	15/16	3.91	3.91	20
DIBENZO(A,H)ANTHRACENE	16/16	0	0	20
DIBENZOTHIOPHENE	16/16	0	0	20
FLUORANTHENE	16/16	0	0	20
FLUORENE	16/16	0	0	20
INDENO(1,2,3-CD)PYRENE	16/16	0	0	20
NAPHTHALENE	0/16	1.51	123	20
PERYLENE	16/16	0	0	20
PHENANTHRENE	16/16	0	0	20
PYRENE	16/16	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	0/16	0.01	1.1	2
1,2,4,5-TETRACHLOROBENZENE	0/16	0.03	4.9	2
2,4'-DDD	14/16	0.049	0.0545	2
2,4'-DDE	11/16	0.072	0.083	2
2,4'-DDT	5/16	0.018	0.045	2
4,4'-DDD	15/16	0.84	0.84	2
4,4'-DDE	15/16	1.1	1.1	2
4,4'-DDT	7/16	0.013	0.82	2
ALDRIN	10/16	0.049	7.6	2
ALPHA-BHC	15/16	0.085	0.085	2
ALPHA-CHLORDANE	14/16	0.14	0.28	2
BETA-BHC	5/16	0.17	0.24	2
CHLORPYRIFOS	15/16	0.23	0.23	2
CIS-NONACHLOR	13/16	0.034	0.087	2
DELTA-BHC	12/16	0.041	0.081	2
DIELDRIN	2/16	0.0345	0.37	2
ENDOSULFAN II	12/16	0.079	1.5	2
ENDRIN	3/16	0.11	0.27	2
GAMMA-BHC (LINDANE)	0/16	0.15	1.5	2
GAMMA-CHLORDANE	14/16	0.055	0.08	2
HEPTACHLOR	13/16	0.15	0.31	2
HEPTACHLOR EPOXIDE	6/16	0.034	0.36	2
HEXACHLOROBENZENE	7/16	0.045	1	2
MIREX	7/16	0.025	0.054	2
OXYCHLORDANE	4/16	0.012	0.03	2
PCB-101/90	8/16	0.078	3.6	1
PCB-105	16/16	0	0	1
PCB-114	0/16	0.15	0.36	1
PCB-118	8/16	0.038	3.2	1

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	9/16	0.18	1.3	1
PCB-128	15/16	0.037	0.037	1
PCB-138 /160	8/16	0.135	4.1	1
PCB-149/123	8/16	0.021	1.3	1
PCB-153/132	6/16	0.11	2.4	1
PCB-156	10/16	0.15	0.36	1
PCB-167	15/16	0.15	0.15	1
PCB-169	5/16	0.15	0.8	1
PCB-170/190	11/16	0.14	3.8	1
PCB-18/17	5/16	0.074	0.78	1
PCB-180	8/16	0.07	1.1	1
PCB-187	8/16	0.0195	0.65	1
PCB-189	6/16	0.15	0.36	1
PCB-195/208	12/16	0.043	0.11	1
PCB-201/157/173	14/16	0.02	0.02	1
PCB-206	16/16	0	0	1
PCB-209	15/16	0.17	0.17	1
PCB-28	16/16	0	0	1
PCB-44	8/16	0.038	0.96	1
PCB-52	15/16	0.27	0.27	1
PCB-66	12/16	0.1	0.13	1
PCB-77	12/16	0.06	0.1	1
PCB-8/5	13/16	0.38	0.66	1
PCB-81	14/16	0.15	0.69	1
PENTACHLOROANISOLE	10/16	0.03	0.08	2
PENTACHLOROBENZENE	13/16	0.02	0.15	2
TRANS-NONACHLOR	6/16	0.031	0.076	2
Inorganics (mg/kg)				
ALUMINUM	16/16	0	0	50
ARSENIC	15/16	1.4	1.4	5
CADMIUM	16/16	0	0	0.3
CHROMIUM	16/16	0	0	5
COPPER	16/16	0	0	5
IRON	16/16	0	0	50
LEAD	16/16	0	0	5
MANGANESE	16/16	0	0	5
MERCURY	16/16	0	0	0.2
NICKEL	16/16	0	0	5
SILVER	16/16	0	0	0.1
ZINC	16/16	0	0	15

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussel				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	0/5	18	27.35	25
1,2,3,4,6,7,8-HPCDF	0/5	17.7	26	25
1,2,3,4,7,8,9-HPCDF	1/5	17.7	25.6	25
1,2,3,4,7,8-HXCDD	1/5	17.7	26	25
1,2,3,4,7,8-HXCDF	1/5	17.7	25.6	25
1,2,3,6,7,8-HXCDD	2/5	17.7	26	25
1,2,3,6,7,8-HXCDF	1/5	17.7	25.6	25
1,2,3,7,8,9-HXCDD	1/5	17.7	26	25
1,2,3,7,8,9-HXCDF	1/5	17.7	25.6	25
1,2,3,7,8-PECDD	0/8	17.7	26	25
1,2,3,7,8-PECDF	0/8	17.7	26	25
2,3,4,6,7,8-HXCDF	1/5	17.7	25.6	25
2,3,4,7,8-PECDF	0/8	17.7	26	25
2,3,7,8-TCDD	0/8	0.51	5.19	5
2,3,7,8-TCDF	0/8	4.3	8.2	5
OCDD	2/5	11.2	43.4	50
OCDF	2/5	24.5	43.4	50
TOTAL HPCDD	2/6	17.7	27.35	25
TOTAL HPCDF	2/5	17.7	25.6	25
TOTAL HXCDD	2/5	17.7	26	25
TOTAL HXCDF	1/5	17.7	25.6	25
TOTAL PECDD	0/7	17.7	26	25
TOTAL PECDF	0/8	17.7	25.6	25
TOTAL TCDD	0/8	4.5	52.3	5
TOTAL TCDF	0/8	6.1	30.7	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	8/8	0	0	20
1-METHYLNAPHTHALENE	0/8	2.81	6.45	20
1-METHYLPHENANTHRENE	8/8	0	0	20
2,6-DIMETHYLNAPHTHALENE	8/8	0	0	20
2-METHYLNAPHTHALENE	0/8	4.1	10.8	20
ACENAPHTHENE	8/8	0	0	20
ACENAPHTHYLENE	8/8	0	0	20
ANTHRACENE	6/8	13.3	14.3	20
BENZO(A)ANTHRACENE	8/8	0	0	20
BENZO(A)PYRENE	8/8	0	0	20
BENZO(B)FLUORANTHENE	8/8	0	0	20
BENZO(E)PYRENE	8/8	0	0	20
BENZO(G,H,I)PERYLENE	8/8	0	0	20
BENZO(K)FLUORANTHENE	8/8	0	0	20
BIPHENYL	0/8	2.2	7.66	20
C1-CHRYSENES	8/8	0	0	20
C1-DIBENZOTHIOPHENES	8/8	0	0	20
C1-FLUORANTHENES/PYRENES	8/8	0	0	20
C1-FLUORENES	8/8	0	0	20
C1-NAPHTHALENES	0/8	6.91	17.3	20
C1-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C2-CHRYSENES	8/8	0	0	20
C2-DIBENZOTHIOPHENES	8/8	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-FLUORENES	8/8	0	0	20
C2-NAPHTHALENES	0/8	12	21.1	20
C2-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C3-CHRYSENES	8/8	0	0	20
C3-DIBENZOTHIOPHENES	8/8	0	0	20
C3-FLUORENES	8/8	0	0	20
C3-NAPHTHALENES	8/8	0	0	20
C3-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C4-CHRYSENES	8/8	0	0	20
C4-NAPHTHALENES	8/8	0	0	20
C4-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
CHRYSENE	8/8	0	0	20
DIBENZO(A,H)ANTHRACENE	8/8	0	0	20
DIBENZOTHIOPHENE	0/8	0.62	2.04	20
FLUORANTHENE	8/8	0	0	20
FLUORENE	8/8	0	0	20
INDENO(1,2,3-CD)PYRENE	8/8	0	0	20
NAPHTHALENE	0/8	6.53	15.55	20
PERYLENE	8/8	0	0	20
PHENANTHRENE	0/8	6.51	22.65	20
PYRENE	8/8	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	0/8	0.25	0.81	10
1,2,4,5-TETRACHLOROBENZENE	0/8	2	3.1	10
2,4'-DDD	8/8	0	0	10
2,4'-DDE	8/8	0	0	10
2,4'-DDT	8/8	0	0	10
4,4'-DDD	8/8	0	0	10
4,4'-DDE	8/8	0	0	10
4,4'-DDT	6/8	3.5	5.9	10
ALDRIN	4/8	0.17	0.24	10
ALPHA-BHC	8/8	0	0	10
ALPHA-CHLORDANE	8/8	0	0	10
BETA-BHC	0/8	0.11	0.16	10
CHLORPYRIFOS	6/8	1.4	1.5	10
CIS-NONACHLOR	8/8	0	0	10
DELTA-BHC	0/8	0.068	0.528	10
DIELDRIN	8/8	0	0	10
ENDOSULFAN II	8/8	0	0	10
ENDRIN	8/8	0	0	10
GAMMA-BHC (LINDANE)	0/8	0.054	0.33	10
GAMMA-CHLORDANE	8/8	0	0	10
HEPTACHLOR	0/8	0.2	0.28	10
HEPTACHLOR EPOXIDE	8/8	0	0	10
HEXACHLOROBENZENE	8/8	0	0	10
MIREX	8/8	0	0	10
OXYCHLORDANE	2/8	0.18	0.21	2
PCB-101/90	8/8	0	0	2
PCB-105	8/8	0	0	2
PCB-114	0/8	0.48	0.67	2
PCB-118	6/8	3.9	4.3	2

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	8/8	0	0	2
PCB-128	8/8	0	0	2
PCB-138 /160	0/8	9.9	16.5	2
PCB-149/123	0/8	4.3	8.2	2
PCB-153/132	0/8	10	19	2
PCB-156	7/8	0.6	0.6	2
PCB-167	8/8	0	0	2
PCB-169	7/8	0.48	0.48	2
PCB-170/190	0/8	0.48	0.67	2
PCB-18/17	0/8	1.2	2.7	2
PCB-180	0/8	3.4	7.1	2
PCB-187	0/8	6	9.5	2
PCB-189	1/8	0.48	0.67	2
PCB-195/208	5/8	0.52	0.53	2
PCB-201/157/173	7/8	0.48	0.48	2
PCB-206	1/8	0.41	0.58	2
PCB-209	1/8	0.54	0.76	2
PCB-28	8/8	0	0	2
PCB-44	4/8	1.2	1.5	2
PCB-52	8/8	0	0	2
PCB-66	8/8	0	0	2
PCB-77	8/8	0	0	2
PCB-8/5	8/8	0	0	2
PCB-81	8/8	0	0	2
PENTACHLOROANISOLE	8/8	0	0	10
PENTACHLOROBENZENE	8/8	0	0	10
TRANS-NONACHLOR	8/8	0	0	10
Inorganics (mg/kg)				
ALUMINUM	8/8	0	0	10
ARSENIC	8/8	0	0	0.35
CADMIUM	8/8	0	0	0.1
CHROMIUM	8/8	0	0	0.4
COPPER	8/8	0	0	0.1
IRON	8/8	0	0	15
LEAD	8/8	0	0	0.1
MANGANESE	8/8	0	0	1.7
MERCURY	8/8	0	0	0.01
NICKEL	8/8	0	0	0.14
SILVER	8/8	0	0	0.29
ZINC	8/8	0	0	5.7

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	0/4	37.2	41.9	25
1,2,3,4,6,7,8-HPCDF	0/4	37.2	41.9	25
1,2,3,4,7,8,9-HPCDF	0/4	37.2	41.9	25
1,2,3,4,7,8-HXCDD	0/4	37.2	41.9	25
1,2,3,4,7,8-HXCDF	0/4	37.2	41.9	25
1,2,3,6,7,8-HXCDD	0/4	37.2	41.9	25
1,2,3,6,7,8-HXCDF	0/4	37.2	41.9	25
1,2,3,7,8,9-HXCDD	0/4	37.2	41.9	25
1,2,3,7,8,9-HXCDF	0/4	37.2	41.9	25
1,2,3,7,8-PECDD	0/4	37.2	41.9	25
1,2,3,7,8-PECDF	0/4	37.2	41.9	25
2,3,4,6,7,8-HXCDF	0/4	37.2	41.9	25
2,3,4,7,8-PECDF	1/4	37.2	41.9	25
2,3,7,8-TCDD	0/4	7.4	8.4	5
2,3,7,8-TCDF	0/4	7.4	8.4	5
OCDD	0/4	74.4	83.8	50
OCDF	0/4	74.4	83.8	50
TOTAL HPCDD	0/4	37.2	41.9	25
TOTAL HPCDF	0/4	37.2	41.9	25
TOTAL HXCDD	1/4	37.2	41.9	25
TOTAL HXCDF	0/4	37.2	41.9	25
TOTAL PECDD	0/4	37.2	41.9	25
TOTAL PECDF	2/4	37.8	41.9	25
TOTAL TCDD	0/4	7.4	8.4	5
TOTAL TCDF	0/4	7.4	8.4	5
Semivolatile Organics (ug/kg)				
1,1'-BIPHENYL	5/5	0	0	20
1,6,7-TRIMETHYLNAPHTHALENE	5/5	0	0	20
1-METHYLNAPHTHALENE	5/5	0	0	20
1-METHYLPHENANTHRENE	5/5	0	0	20
2,6-DIMETHYLNAPHTHALENE	5/5	0	0	20
2-METHYLNAPHTHALENE	5/5	0	0	20
ACENAPHTHENE	5/5	0	0	20
ACENAPHTHYLENE	5/5	0	0	20
ANTHRACENE	5/5	0	0	20
BENZO(A)ANTHRACENE	5/5	0	0	20
BENZO(A)PYRENE	5/5	0	0	20
BENZO(B)FLUORANTHENE	5/5	0	0	20
BENZO(E)PYRENE	5/5	0	0	20
BENZO(G,H,I)PERYLENE	5/5	0	0	20
BENZO(K)FLUORANTHENE	5/5	0	0	20
C1-CHRYSENES	5/5	0	0	20
C1-DIBENZOTHIOPHENES	5/5	0	0	20
C1-FLUORANTHENES/PYRENES	5/5	0	0	20
C1-FLUORENES	5/5	0	0	20
C1-NAPHTHALENES	5/5	0	0	20
C1-PHENANTHRENES/ANTHRACENES	5/5	0	0	20
C2-CHRYSENES	5/5	0	0	20
C2-DIBENZOTHIOPHENES	5/5	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-FLUORENES	5/5	0	0	20
C2-NAPHTHALENES	5/5	0	0	20
C2-PHENANTHRENES/ANTHRACENES	5/5	0	0	20
C3-CHRYSENES	2/5	9.2	10	20
C3-DIBENZOTHIOPHENES	5/5	0	0	20
C3-FLUORENES	5/5	0	0	20
C3-NAPHTHALENES	5/5	0	0	20
C3-PHENANTHRENES/ANTHRACENES	5/5	0	0	20
C4-CHRYSENES	4/5	9.2	9.2	20
C4-NAPHTHALENES	5/5	0	0	20
C4-PHENANTHRENES/ANTHRACENES	5/5	0	0	20
CHRYSENE	5/5	0	0	20
DIBENZO(A,H)ANTHRACENE	5/5	0	0	20
DIBENZOTHIOPHENE	5/5	0	0	20
FLUORANTHENE	5/5	0	0	20
FLUORENE	5/5	0	0	20
INDENO(1,2,3-C,D)PYRENE	5/5	0	0	20
NAPHTHALENE	5/5	0	0	20
PERYLENE	5/5	0	0	20
PHENANTHRENE	5/5	0	0	20
PYRENE	5/5	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	5/5	0	0	10
1,2,4,5-TETRACHLOROBENZENE	4/5	1.02	1.02	10
2,4'-DDD	0/5	0.21	0.25	10
2,4'-DDE	0/5	0.3	0.35	10
2,4'-DDT	0/5	0.28	0.33	10
4,4'-DDD	1/5	0.26	0.31	10
4,4'-DDE	5/5	0	0	10
4,4'-DDT	1/5	0.4	0.47	10
ALDRIN	1/5	0.35	0.39	10
ALPHA-BHC	5/5	0	0	10
ALPHA-CHLORDANE	4/5	0.28	0.28	10
BETA-BHC	2/5	0.24	0.26	10
CHLORPYRIFOS	0/5	2.25	2.65	10
CIS-NONACHLOR	1/5	0.23	0.26	10
DELTA-BHC	0/5	0.14	0.16	10
DIELDRIN	4/5	1.54	1.54	10
ENDOSULFAN II	0/5	0.26	0.31	10
ENDRIN	1/5	0.71	0.84	10
GAMMA-BHC (LINDANE)	4/5	0.23	0.23	10
GAMMA-CHLORDANE	0/5	0.27	0.32	10
HEPTACHLOR	0/5	0.39	0.46	10
HEPTACHLOR EPOXIDE	0/5	0.27	0.32	10
HEXACHLOROBENZENE	4/5	0.37	0.37	10
MIREX	0/5	0.63	0.74	10
OXYCHLORDANE	4/5	0.33	0.33	10
PCB-101/90	5/5	0	0	2
PCB-105	5/5	0	0	2
PCB-114	0/5	0.96	1.13	2
PCB-118	5/5	0	0	2

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 1 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	5/5	0	0	2
PCB-128	1/5	0.73	0.87	2
PCB138 /160	5/5	0	0	2
PCB-149/123	0/5	0.96	1.13	2
PCB-153/132	5/5	0	0	2
PCB-156	2/5	0.96	1.13	2
PCB-167	3/5	1.04	1.07	2
PCB-169	2/5	3.82	4.27	2
PCB-170/190	1/5	0.96	1.07	2
PCB-18/17	3/5	2.71	2.95	2
PCB-180	4/5	1.1	1.1	2
PCB-187	5/5	0	0	2
PCB-189	0/5	0.96	1.13	2
PCB-195/208	2/5	0.8	0.89	2
PCB201/157/173	0/5	0.73	0.87	2
PCB-206	0/5	0.83	0.97	2
PCB-209	2/5	1.17	1.27	2
PCB-28	0/5	0.76	0.89	2
PCB-44	0/5	0.56	0.66	2
PCB-52	1/5	0.65	0.77	2
PCB-66	4/5	0.99	0.99	2
PCB-77	1/5	3.82	4.51	2
PCB-8/5	5/5	0	0	2
PCB-81	0/5	3.82	4.51	2
PENTACHLOROANISOLE	5/5	0	0	10
PENTACHLOROBENZENE	5/5	0	0	10
TRANS-NONACHLOR	3/5	0.17	0.18	10
Inorganics (mg/kg)				
ALUMINUM	5/5	0	0	10
ARSENIC	5/5	0	0	0.35
CADMIUM	4/5	0.0344	0.0344	0.1
CHROMIUM	1/5	0.193	0.203	0.4
COPPER	5/5	0	0	0.1
IRON	5/5	0	0	15
LEAD	4/5	0.091	0.091	0.1
MANGANESE	5/5	0	0	1.7
MERCURY	4/5	0.0304	0.0304	0.01
NICKEL	1/5	0.193	0.252	0.14
SILVER	5/5	0	0	0.29
ZINC	5/5	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

APPENDIX A.2

DATA QUALITY ASSESSMENT REPORT FOR ROUND 2

Interim Offshore Monitoring Round 2 Data Quality Assessment
Portsmouth Naval Shipyard, Kittery, Maine
November 16, 2001

This memorandum presents the data quality assessment (DQA) for Round 2 of the Interim Offshore Monitoring Program. The detailed data quality evaluation is provided in Attachment A.2-1. This DQA document consists of reviewing the data for the following:

- Gross errors in chemical analyses, toxicology assessments, or data reporting.
- Gross inconsistencies among monitoring stations, reference stations, or sampling locations within monitoring stations or reference stations.
- Gross differences between observed coefficients of variation for the sediment data and expectations based on past data analyses.

1.0 GROSS ERRORS IN CHEMICAL ANALYSES, TOXICOLOGY ASSESSMENTS, OR DATA REPORTING

1.1 Detection Limits

Minimum and maximum detection limits achieved during laboratory analysis were compared to target method detection limits (MDL) contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Because MDLs in Table 6-5i (Dioxins) are presented on a wet weight basis, target MDLs were recalculated accounting for the percent moisture to facilitate these comparisons (multiplied by 2 for sediment and 5 for tissue to obtain dry weight values). Tables 1-5 and 1-6 in Attachment A.2-1 list the minimum and maximum non-detected values for each matrix. Exceedance of the target MDL for some chemicals did not affect the usability of the sample for monitoring purposes. As presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999), trending of chemicals will be conducted for lchemical of concerns (COCs) with interim remediation goals (IRG) in sediment. Based on Tables 1-5 and 1-6, the chemicals with IRGs were either detected in all of the sediment samples or the MDL did not exceed the target MDL.

1.2 Analytical Methods

Comparability of laboratory measurements is assessed primarily through the use and documentation of similar sampling and analytical methods. Results are reported in units that ensure comparability with previous data and with current state and federal standards and guidelines. Comparability of field data is satisfied by ensuring that the field sampling plan is followed and that proper sampling techniques are used. Comparability of laboratory measurements is assessed primarily through the use of certified reference materials, spike recoveries, and relative percent difference (RPD) values, as well as by using proven analytical methods of comparable performance characteristics such as accuracy, precision, and sensitivity. Failure to achieve comparability will result in corrective action.

Field data were generated using the methodologies and units specified in the Interim Offshore Monitoring Plan.

1.3 Sampling Methods

Sampling was conducted by the University of Rhode Island (URI) under the supervision of Tetra Tech NUS, Inc. (TtNUS). URI collected the samples in accordance with the standard operating procedures that were developed for this project, as specified in the plan. Deviations in the sampling plan were documented in the Interim Offshore Monitoring Program Round 2 Data Package (TtNUS, October 2000). Based on the deviations from Round 1, a few of the sample locations were repositioned for Round 2 and subsequent sampling rounds as described in Appendix A.1 of this report. In addition to the deviations presented in the Round 2 data package, the following modifications were made in the sampling procedures based on the availability of mussels and juvenile lobsters:

- Mussels that were 5 to 6 cm in length were preferentially collected for chemical analysis, when available as stated in Appendix B.5 of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Some of the samples had a few larger or smaller mussels, depending upon availability. However, primarily larger mussels (6 to 9 cm) were collected at several locations because inadequate numbers of mussels in the preferred size range were available. These samples are listed below. All of those samples were collected from subtidal areas except OU4-MU-M02-200B. Subtidal mussels are typically larger than intertidal mussels because subtidal mussels spend a greater portion of their time feeding, because they are covered with water all of the time.

Samples with Larger Mussels

- OU4-MU-M01-300B
- OU4-MU-M02-200B
- OU4-MU-M07-300B
- OU4-MU-M08-200B
- OU4-MU-M10-200B

- Adequate numbers of lobsters were collected in the preferred size range (5 to 6 cm carapace length) at each of the monitoring stations. Five lobsters (in the preferred size range) from each station were composited into a single tissue sample and analyzed by the laboratory, with the exception of samples OU4-LJ-M03-100B, OU4-LJ-M04-100B, OU4-LJ-M05-100B OU4-LJ-M06-100B, OU4-LJ-M11-100B, OU4-LJ-M12-100B, OU4-LJ-M14-100B, OU4-LJ-R01-100B, OU4-LJ-R02-100B, and OU4-LJ-R04-100B, which had sample sizes less than 5 cm. Also, the lobsters in some of these samples were either slightly smaller or slightly larger than the preferred size range, but most were within the size range specified in the monitoring plan; therefore, there is no anticipated impact to the project.

1.4 Data Validation

Attachment 1 presents a detailed data quality evaluation. Part of that evaluation includes a section on data validation. The following bullets present the most significant issues noted during the data validation:

- As in Round 1, the laboratory continued to report all positive detections in the method blanks. However, method blanks in Round 2 exhibited fewer instances of contamination or lower level of contamination, indicating improved laboratory performance.

- Holding time exceedances may indicate that the analytical laboratory exceeded its capacity.

- The percentage of data qualified due to method blank contamination dropped significantly from Round 1 to Round 2, with the exception of juvenile lobster dioxin analyses.

2.0 CONSISTENCY AMONG MONITORING STATIONS, REFERENCE STATIONS, OR SAMPLING LOCATIONS WITHIN MONITORING STATIONS OR REFERENCE STATIONS

The Round 2 data package presents the descriptive statistics for sediment (Tables 3-4a and 3-4b), mussel (Tables 3-8a and 3-8b), and juvenile lobsters (Tables 3-9a and 3-9b) (TtNUS, September 2000). The data in those tables are not normalized (see below). Those tables are included as an attachment to this DQA report for ease of review. The tables were not renumbered for this report. The following general observations were made after reviewing the tables:

- More dioxins were detected in the sediment and mussel samples than in the juvenile lobster samples and the frequency of dioxin detection was greater in sediment and mussel than juvenile lobster for the monitoring stations and the reference stations. The number of dioxins detected in juvenile lobsters was greater at the reference stations than the monitoring stations, but similar numbers of detections and frequencies of detection were observed for sediment and mussel at the monitoring stations and reference station. Maximum dioxin concentrations were generally more noted at M09 (sediment), M09, M10, or M12 (mussel), and M10 (juvenile lobster) for the monitoring stations and at R02 (sediment) and R01 (mussel and juvenile lobster).

- Most (if not all) of the PAHs were detected in every sediment, mussel, and juvenile lobster sample at both monitoring stations and reference stations. In general, the greatest PAH concentrations at the monitoring stations were in samples from M01 and M13 (sediment and juvenile lobster) and M13 (mussel). In general, the greatest PAH concentrations at the reference stations were in samples from R03 (sediment) and R01 and R03 (mussel and juvenile lobster).

- Most of the pesticides and PCBs were detected in the majority of the sediment, mussel, and juvenile lobster samples. The locations of maximum detections are spread over several monitoring stations in the sediment, mussel, and juvenile lobster. In general, the greatest pesticide concentrations at the reference stations were in samples from R02 and R03 (sediment) and R01 and R04 (mussel) and from R01 and R02 (juvenile lobster). In general, the greatest PCB concentrations at the monitoring stations were in samples from M03 (sediment), but no stations stood out as having the greatest number of maximum detections for PCBs in mussel and juvenile lobster. In general, the greatest PCB concentrations at the

reference stations were in samples from R02 (sediment) and R01 and R03 (mussel) and R02 (juvenile lobster).

- Metals were detected in most of the sediment, mussel, and juvenile lobster samples. In general, the greatest metals concentrations for sediment at the monitoring stations were in samples from M04 (sediment), but no stations stood out as having the greatest number of maximum detections for metals in mussel or juvenile lobster. In general, the greatest metals concentrations at the reference stations were in samples from R01 (sediment), R01 and R02 (mussel), and R02 (juvenile lobster). The maximum detection of several metals in sediment (e.g., copper, lead, nickel, and zinc) at M11-2 in Round 1 was elevated (more than 20 times the mean concentration). It was determined that the sediment at this location was soil that had eroded from the adjacent DRMO and had accumulated in a small pile behind some mussels. Rip-rap was subsequently placed along the slope to prevent further erosion of the soil. Therefore, sediment/soil is no longer exposed at this location and mussels are no longer present at this location; Round 2 metals data did not indicate elevated concentrations in M11 sediment.

Analytical data were also normalized using the procedures described in the DQA Report for Round 1 (see Attachment A.1).

Tables A.2-1, A.2-2, and A.2-3 present the normalized sediment (organics and metals), mussel (organics), and juvenile lobster (organics) results, respectively, at each monitoring station. The non-normalized metals results for mussels and juvenile lobsters are also included in the appropriate tables. The results for the individual sample locations from each station were averaged, as presented in the monitoring plan (TtNUS, October 1999). The results for the individual samples are provided in Appendix B. The average reference station concentration (the average results from all four reference stations), along with the range of the average reference station concentrations, also are included on Tables A.2-1, A.2-2, and A.2-3. Various values on the tables are shaded based on how high the numerical value was compared to the average reference concentration. The footnotes on the tables indicate the number of times greater than the reference concentration a sample had to be in order to be shaded. There is no significance in the number of times greater than the reference concentration a sample had to be to become shaded except that the factors used were selected to identify monitoring stations that had chemical concentrations that were the most elevated compared to the reference stations in the data.

The following bullets summarize the results of this evaluation using the normalized data.

- Monitoring stations M09 and M11 generally had the greatest dioxin concentrations in the sediment. No stations stood out as having elevated dioxin levels or mussels or juvenile lobsters at the monitoring or reference stations.

- Concentrations of several PAHs in the monitoring station samples were greater than two times the average reference station concentrations. Monitoring stations M01, M10, M12, and M13 had the greatest sediment PAH concentrations, and monitoring stations M12 and M13 had the greatest mussel PAH concentrations for HMW PAHs and Total PAHs. Monitoring stations M01, M12, and M13 had the greatest juvenile lobster PAH concentrations. Monitoring stations M12 and M13 had elevated PAHs levels in all three media, and M01 had elevated levels of PAHs in sediment and juvenile lobsters.

- Several pesticides in the monitoring station samples were at concentrations greater than ten times the average reference station sediment concentrations and two times the average reference station mussel and juvenile lobster concentrations. Monitoring stations M01, M04, and M08 had the greatest pesticide concentrations in the sediment, and monitoring stations M03, M08, and M10 had the greatest pesticide concentrations in the mussels. No monitoring stations stood out as having elevated pesticide levels for juvenile lobsters. No station had elevated pesticide levels in all three media, but M08 had elevated levels of pesticides in sediment and mussels.

- Several PCBs in the monitoring station samples were at concentrations greater than ten times the average reference station sediment concentrations and two times the average reference station mussel and juvenile lobster concentrations. Monitoring stations M03, M04, M08, M11, and M12 had the greatest pesticide concentrations in the sediment. No monitoring station had consistently great concentrations of PCBs in mussel samples. Monitoring stations M03 and M11 had slightly greater PCB concentrations in the juvenile lobsters. No monitoring stations had elevated levels of PCBs in all three media, but M03 and M11 had elevated concentrations in sediment and juvenile lobster.

- Normalized metal concentrations were greatest in the sediment at monitoring stations M04 and M11. Metal concentrations in the mussel and juvenile lobster samples were not normalized. Non-normalized metal concentrations were greatest in the mussels at monitoring stations M04 and M10. No monitoring station stood out as having elevated levels of metals

for juvenile lobsters. Monitoring station M04 had elevated levels of metals in sediment and mussel.

3.0 EVALUATION OF COEFFICIENTS OF VARIATION FOR SEDIMENT DATA FOR THE MONITORING STATIONS

Table A.2-4 presents the coefficients of variation (CVs) for each of the parameters that were detected in the sediment samples at the monitoring stations. The table also presents the minimum, maximum, and mean concentrations and the average, minimum and maximum CVs for each analyte fraction (e.g., dioxins, PAHs, pesticides/PCBs, and metals). The average CVs ranged from 0.74 for metals, to 1.62 for pesticides. Most of the CVs for the individual chemicals were less than 2.0, and many were less than 1.5. The CVs were slightly greater than the CVs that were presented in Appendix B.3 of the Interim Offshore Monitoring Plan for OU4 (TtNUS, October 1999). The following bullets list the potential reasons:

- The CVs in the monitoring plan were calculated for each area of concern (AOC) (e.g., Back Channel, Clark Cove), and the CVs in Table A.2-4 represent the larger offshore area.

- Because a greater number of samples were used to calculate the CVs for these Interim Offshore Monitoring samples, greater variation in these sample results was expected.

- Elevated detections of a few parameters in a few samples from this sampling round were skewed some of the CVs high.

- The historic samples were either all subtidal (EERA) or intertidal (seep/sediment sampling), and the samples in Table A.2-4 consist of both intertidal and subtidal samples. The baseline report evaluates whether there are differences in chemical concentrations between the subtidal and intertidal samples.

In summary, although the CVs for the Round 2 Interim Offshore Monitoring Program are greater than previously identified, the fact that most of them are less than 2.0 supports the assumption that there is relatively low variation in sample results across the stations, with a few exceptions. Some of the exceptions are discussed in more detail in the baseline report.

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	18/18	11	346	75	OU4-SD-M09-300B	82	1.1
1,2,3,4,6,7,8-HPCDF	17/18	6.1	122	31	OU4-SD-M09-300B	34	1.1
1,2,3,4,7,8,9-HPCDF	4/18	1.1	7.3	1.2	OU4-SD-M09-100B	1.8	1.4
1,2,3,4,7,8-HXCDD	11/18	0.10	3.3	1.0	OU4-SD-M09-300B	0.74	0.72
1,2,3,4,7,8-HXCDF	13/18	0.30	15	3.2	OU4-SD-M09-100B	4.2	1.3
1,2,3,6,7,8-HXCDD	15/18	0.90	14	3.4	OU4-SD-M09-300B	3.6	1.0
1,2,3,6,7,8-HXCDF	9/18	0.20	13	2.4	OU4-SD-M09-100B	3.7	1.5
1,2,3,7,8,9-HXCDD	8/18	0.20	9.6	1.9	OU4-SD-M09-300B	2.4	1.3
1,2,3,7,8,9-HXCDF	5/18	0.050	1.5	0.72	OU4-SD-M09-300B	0.42	0.58
1,2,3,7,8-PECDD	4/18	0.40	1.1	0.91	OU4-SD-M08-100B	0.30	0.33
1,2,3,7,8-PECDF	3/18	1.4	7.2	1.2	OU4-SD-M11-300B	1.6	1.3
2,3,4,6,7,8-HXCDF	11/18	0.50	16	3.3	OU4-SD-M09-100B	5.0	1.5
2,3,4,7,8-PECDF	10/18	0.10	12	2.1	OU4-SD-M11-300B	3.2	1.5
2,3,7,8-TCDD	5/18	0.10	0.30	0.19	OU4-SD-M08-100B, OU4-SD-M10-100B-D	0.062	0.34
2,3,7,8-TCDF	10/18	0.40	3.3	1.0	OU4-SD-M09-300B	0.86	0.84
OCDD	18/18	86	3172	619	OU4-SD-M09-300B	762	1.2
OCDF	18/18	5.7	178	37	OU4-SD-M09-300B	41	1.1
TOTAL HPCDD	18/18	26	784	193	OU4-SD-M09-300B	214	1.1
TOTAL HXCDD	16/18	0.50	197	38	OU4-SD-M09-300B	50	1.3
TOTAL PECDD	4/18	0.40	1.1	0.91	OU4-SD-M08-100B	0.30	0.33
TOTAL TCDD	13/18	0.30	10	2.5	OU4-SD-M11-300B	2.9	1.1
TOTAL DIOXINS	18/18	114	4152	853	OU4-SD-M09-300B	1017	1.2
TOTAL FURANS	18/18	22	619	151	OU4-SD-M09-300B	157	1.0
TOTAL HPCDF	18/18	10	260	61	OU4-SD-M09-300B	62	1.0
TOTAL HXCDF	17/18	4.1	124	31	OU4-SD-M09-300B	38	1.2
TOTAL PECDF	10/18	0.40	60	13	OU4-SD-M09-100B	20	1.5
TOTAL TCDF	13/18	0.40	81	10	OU4-SD-M11-300B	20	2.1
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-Trimethylnaphthalene	42/42	0.64	201	21	OU4-SD-M13-100B	31	1.5
1-Methylnaphthalene	42/42	1.1	282	28	OU4-SD-M01-300B	36	1.3
1-Methylphenanthrene	42/42	1.6	663	94	OU4-SD-M13-100B	121	1.3
2,6-Dimethylnaphthalene	42/42	1.2	383	28	OU4-SD-M13-100B	58	2.1
2-Methylnaphthalene	42/42	1.9	379	43	OU4-SD-M01-300B	53	1.2

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Acenaphthene	42/42	0.80	2682	138	OU4-SD-M13-100B	428	3.1
Acenaphthylene	42/42	4.6	544	103	OU4-SD-M01-300B	84	0.82
Anthracene	42/42	12	2650	440	OU4-SD-M01-300B	494	1.1
Benzo(a)anthracene	42/42	10	3120	634	OU4-SD-M01-300B	613	0.97
Benzo(a)pyrene	42/42	9.9	3840	704	OU4-SD-M01-300B	617	0.88
Benzo(b)fluoranthene	42/42	18	3080	680	OU4-SD-M01-300B	579	0.85
Benzo(e)pyrene	42/42	9.4	1820	372	OU4-SD-M01-300B	313	0.84
Benzo(g,h,i)perylene	42/42	6.9	1640	362	OU4-SD-M01-300B	314	0.87
Benzo(k)fluoranthene	42/42	6.3	1080	215	OU4-SD-M01-300B	181	0.84
Biphenyl	42/42	1.1	186	14	OU4-SD-M13-100B	29	2.0
C1-Chrysenes	42/42	7.7	2210	434	OU4-SD-M01-300B	389	0.90
C1-Dibenzothiophenes	42/42	0.63	176	29	OU4-SD-M13-100B	30	1.0
C1-Fluoranthenes/pyrenes	42/42	6.3	3820	615	OU4-SD-M01-300B	604	0.98
C1-Fluorenes	42/42	1.7	1019	96	OU4-SD-M13-100B	164	1.7
C1-Naphthalenes	42/42	3.0	660	71	OU4-SD-M01-300B	89	1.3
C1-Phenanthrenes/anthracenes	42/42	5.4	2221	352	OU4-SD-M13-100B	420	1.2
C2-Chrysenes	42/42	4.0	938	180	OU4-SD-M01-300B	161	0.90
C2-Dibenzothiophenes	42/42	0.81	119	34	OU4-SD-M01-300B	24	0.69
C2-Fluorenes	42/42	2.0	399	75	OU4-SD-M13-100B	76	1.0
C2-Naphthalenes	42/42	2.8	758	85	OU4-SD-M13-100B	125	1.5
C2-Phenanthrenes/anthracenes	42/42	3.7	1140	218	OU4-SD-M01-300B	207	0.95
C3-Chrysenes	42/42	0.27	27	10	OU4-SD-M01-300B	6.3	0.66
C3-Dibenzothiophenes	42/42	0.44	82	26	OU4-SD-M01-300B	17	0.68
C3-Fluorenes	42/42	1.9	258	57	OU4-SD-M01-300B-D	52	0.91
C3-Naphthalenes	42/42	2.5	517	73	OU4-SD-M13-100B	87	1.2
C3-Phenanthrenes/anthracenes	42/42	2.0	663	125	OU4-SD-M01-300B	108	0.87
C4-Chrysenes	42/42	0.090	166	5.6	OU4-SD-M01-300B	13	2.3
C4-Naphthalenes	42/42	0.40	96	23	OU4-SD-M13-100B	21	0.91
C4-Phenanthrenes/anthracenes	42/42	0.47	326	43	OU4-SD-M01-300B	50	1.2

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Chrysene	42/42	12	2820	616	OU4-SD-M01-300B	534	0.87
Dibenzo(a,h)anthracene	42/42	2.0	489	117	OU4-SD-M01-300B	108	0.93
Dibenzothiophene	42/42	0.48	420	41	OU4-SD-M13-100B	73	1.8
Fluoranthene	42/42	15	6550	1116	OU4-SD-M01-300B	1179	1.1
Fluorene	42/42	1.7	3752	217	OU4-SD-M13-100B	591	2.7
Indeno(1,2,3-cd)pyrene	42/42	7.4	1730	391	OU4-SD-M01-300B	361	0.92
Naphthalene	42/42	3.1	769	67	OU4-SD-M01-300B	87	1.3
Perylene	42/42	2.7	564	110	OU4-SD-M01-300B	76	0.69
Phenanthrene	42/42	7.4	5930	684	OU4-SD-M01-300B	1085	1.6
Pyrene	42/42	13	5690	1007	OU4-SD-M01-300B	948	0.94
Pesticides/PCBs (ug/kg)							
1,2,3,4-Tetrachlorobenzene	40/42	0.010	1.5	0.29	OU4-SD-M03-300B	0.28	0.99
1,2,4,5-Tetrachlorobenzene	42/42	0.060	4.2	0.87	OU4-SD-M14-100B	0.72	0.82
2,4'-DDD	34/42	0.11	58	6.5	OU4-SD-M01-200B	11	1.7
2,4'-DDE	38/42	0.050	3.4	0.48	OU4-SD-M04-300B	0.62	1.3
2,4'-DDT	30/42	0.040	37	2.9	OU4-SD-M08-300B-D	7.4	2.5
4,4'-DDD	32/42	0.28	153	15.0	OU4-SD-M01-200B	32	2.1
4,4'-DDE	36/42	0.20	138	8.1	OU4-SD-M04-300B	23	2.8
4,4'-DDT	30/42	0.16	285	20.5	OU4-SD-M08-100B	58	2.8
Aldrin	15/42	0.020	21	1.1	OU4-SD-M12-200B-D	2.4	2.2
alpha-BHC	41/42	0.020	0.58	0.16	OU4-SD-M03-200B	0.13	0.81
Alpha-Chlordane	42/42	0.040	25	1.4	OU4-SD-M10-100B-D	3.3	2.4
beta-BHC	33/42	0.10	3.1	1.0	OU4-SD-M03-100B, OU4-SD-M04-200B, OU4-SD-M05-200B	0.87	0.90
Chlorpyrifos	6/42	0.030	2.5	0.22	OU4-SD-M10-100B-D	0.22	0.98
cis-Nonachlor	42/42	0.070	2.5	0.50	OU4-SD-M02-300B	0.53	1.1
delta-BHC	22/42	0.010	0.32	0.066	OU4-SD-M04-200B	0.075	1.1
Dieldrin	38/42	0.0010	21	0.86	OU4-SD-M01-200B	3.2	3.7
Endosulfan II	42/42	0.11	4.4	1.2	OU4-SD-M01-100B	0.91	0.78
Endrin	5/42	0.070	0.89	0.11	OU4-SD-M01-200B	0.13	1.1
gamma-BHC (Lindane)	31/42	0.010	0.61	0.22	OU4-SD-M05-200B	0.13	0.62
Gamma-Chlordane	33/42	0.020	35	1.2	OU4-SD-M10-100B-D	4.0	3.3

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Heptachlor	27/42	0.020	3.2	0.26	OU4-SD-M11-300B	0.49	1.9
Heptachlor Epoxide	2/42	0.020	0.15	0.023	OU4-SD-M09-100B	0.021	0.91
Hexachlorobenzene	31/42	0.010	4.9	0.19	OU4-SD-M12-200B	0.47	2.5
Mirex	28/42	0.030	1.7	0.20	OU4-SD-M01-300B	0.27	1.4
Oxychlordane	31/42	0.040	1.5	0.24	OU4-SD-M13-100B	0.32	1.4
PCB-101/90	42/42	0.26	38	4.6	OU4-SD-M03-100B	7.3	1.6
PCB-105	42/42	0.26	9.5	1.9	OU4-SD-M03-100B	2.0	1.0
PCB-118	42/42	0.25	15	3.0	OU4-SD-M11-300B	2.6	0.87
PCB-126	42/42	0.010	9.8	0.69	OU4-SD-M03-100B	2.0	3.0
PCB-128	42/42	0.11	4.1	1.1	OU4-SD-M03-100B	0.91	0.84
PCB-138/160	34/42	1.1	89	8.2	OU4-SD-M03-100B	15	1.8
PCB-149/123	42/42	0.090	47	4.3	OU4-SD-M03-100B	8.1	1.9
PCB-153/132	38/42	0.93	97	8.7	OU4-SD-M03-100B	16	1.8
PCB-156	40/42	0.15	6.4	1.5	OU4-SD-M04-100B	1.6	1.1
PCB-167	41/42	0.080	3.0	0.86	OU4-SD-M01-300B-D	0.76	0.87
PCB-169	35/42	0.010	2.4	0.20	OU4-SD-M03-100B	0.36	1.8
PCB-170/190	36/42	0.27	63	14	OU4-SD-M12-100B	15	1.1
PCB-18/17	18/42	0.060	2.8	0.39	OU4-SD-M12-100B	0.59	1.5
PCB-180	34/42	0.57	45	5.9	OU4-SD-M03-100B	9.5	1.6
PCB-187	42/42	0.13	25	3.8	OU4-SD-M03-100B	5.9	1.5
PCB-189	41/42	0.050	1.1	0.34	OU4-SD-M12-200B-D	0.23	0.65
PCB-195/208	42/42	0.050	5.3	1.3	OU4-SD-M04-100B	1.3	1.0
PCB-201/157/173	40/42	0.020	2.6	0.68	OU4-SD-M03-100B	0.60	0.88
PCB-206	34/42	0.050	11	1.9	OU4-SD-M04-100B	2.6	1.3
PCB-209	32/42	0.070	13	1.2	OU4-SD-M04-100B	2.0	1.6
PCB-28	42/42	0.14	10	2.0	OU4-SD-M02-300B	1.9	0.98
PCB-44	42/42	0.090	3.3	1.0	OU4-SD-M12-100B	0.83	0.87
PCB-52	42/42	0.080	10	2.2	OU4-SD-M03-100B	2.2	1.0
PCB-66	40/42	0.060	5.0	0.80	OU4-SD-M12-100B	0.95	1.2
PCB-77	25/42	0.030	5.0	0.51	OU4-SD-M03-100B	0.78	1.6

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-8/5	42/42	0.010	8.3	1.2	OU4-SD-M13-100B	1.4	1.2
PCB-81	39/42	0.010	6.0	0.47	OU4-SD-M03-100B	1.1	2.3
Pentachloroanisole	42/42	0.040	0.68	0.16	OU4-SD-M01-200B	0.12	0.79
Pentachlorobenzene	38/42	0.030	1.2	0.23	OU4-SD-M09-100B	0.21	0.91
Trans-Nonachlor	39/42	0.020	11	0.64	OU4-SD-M10-100B-D	1.4	2.2
Inorganics (mg/kg)							
Aluminum	42/42	40900	69300	56021	OU4-SD-M09-400B	7005	0.13
Arsenic	42/42	6.7	20	12	OU4-SD-M04-100B	3.2	0.27
Cadmium	42/42	0.060	1.4	0.47	OU4-SD-M13-100B	0.26	0.56
Chromium	42/42	54	161	98	OU4-SD-M08-100B	28	0.29
Copper	42/42	15	1780	188	OU4-SD-M04-100B	335	1.8
Iron	42/42	15800	50200	27713	OU4-SD-M08-300B	8612	0.31
Lead	42/42	19	554	120	OU4-SD-M11-300B	98	0.82
Manganese	42/42	352	1260	535	OU4-SD-M01-200B	209	0.39
Mercury	42/42	0.020	3.6	0.42	OU4-SD-M04-100B	0.55	1.3
Nickel	42/42	20	193	48	OU4-SD-M04-100B	41	0.86
Silver	42/42	0.030	3.2	0.63	OU4-SD-M04-100B	0.63	1.0
Zinc	42/42	41	1510	241	OU4-SD-M04-100B	274	1.1
Total Organic Carbon (%)							
Total Organic Carbon	42/42	0.28	4.5	1.8	OU4-SD-M02-200B	0.85	0.48

Notes:
- Duplicate samples are averaged in this table
- 1/2 the detection limits for non- detects
- The frequency of detects count a sample and its duplicate as one sample
- This table includes the following monitoring station samples:
  - -OU4-SD-(M01 through M10 and M12 through M14)-(100B through 300B)
  - -OU4-SD-M08-400B and OU4-SD-M09-400B
  - -OU4-SD-M11-300B
  - -OU4-SD-M01-300B-D
  - -OU4-SD-M05-100B-D
  - -OU4-SD-M08-300B-D
  - -OU4-SD-M10-100B-D
  - -OU4-SD-M12-200B-D
  - -OU4-SD-M12-300B-D
- Source data located in the Round 2 Data Package (TtNUS, October 2000)

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	16/16	10	140	54	OU4-SD-R02-400B	43	0.79
1,2,3,4,6,7,8-HPCDF	15/16	3.3	43	15	OU4-SD-R04-100B	13	0.85
1,2,3,4,7,8,9-HPCDF	2/16	0.60	1.1	0.75	OU4-SD-R02-100B	0.43	0.58
1,2,3,4,7,8-HXCDD	7/16	0.20	0.70	0.61	OU4-SD-R04-100B	0.42	0.69
1,2,3,4,7,8-HXCDF	9/16	0.10	1.1	0.62	OU4-SD-R03-200B	0.32	0.52
1,2,3,6,7,8-HXCDD	13/16	0.20	6.5	2.2	OU4-SD-R02-400B	1.8	0.83
1,2,3,6,7,8-HXCDF	5/16	0.20	1.6	0.80	OU4-SD-R02-400B	0.49	0.61
1,2,3,7,8,9-HXCDD	7/16	0.90	2.1	1.1	OU4-SD-R02-200B	0.58	0.54
1,2,3,7,8,9-HXCDF	3/16	0.10	0.30	0.73	OU4-SD-R03-200B, OU4-SD-R02-100B	0.41	0.56
1,2,3,7,8-PECDD	7/16	0.10	0.70	0.65	OU4-SD-R02-100B	0.47	0.72
1,2,3,7,8-PECDF	3/16	0.30	2.0	0.65	OU4-SD-R02-400B	0.49	0.75
2,3,4,6,7,8-HXCDF	3/16	0.60	1.3	0.79	OU4-SD-R03-200B	0.40	0.51
2,3,4,7,8-PECDF	4/16	0.10	0.80	0.57	OU4-SD-R01-100B	0.25	0.45
2,3,7,8-TCDD	5/16	0.030	0.30	0.17	OU4-SD-R03-200B	0.083	0.49
2,3,7,8-TCDF	5/16	0.20	2.1	0.62	OU4-SD-R01-100B	0.71	1.1
OCDD	16/16	97	1323	535	OU4-SD-R03-100B	401	0.75
OCDF	16/16	2.8	70	21	OU4-SD-R04-100B	19	0.89
TOTAL DIOXINS	16/16	145	1610	644	OU4-SD-R02-400B	503	0.78
TOTAL FURANS	16/16	11	230	76	OU4-SD-R02-400B	65	0.86
TOTAL HPCDD	16/16	25	332	126	OU4-SD-R01-400B	104	0.83
TOTAL HPCDF	15/16	6.6	99	35	OU4-SD-R02-400B	30	0.86
TOTAL HXCDD	16/16	2.0	71	24	OU4-SD-R02-400B	22	0.92
TOTAL HXCDF	11/16	3.5	44	13	OU4-SD-R02-400B	12	0.97
TOTAL PECDD	7/16	0.10	4.8	1.0	OU4-SD-R02-100B	1.2	1.2
TOTAL PECDF	7/16	0.30	21	4.0	OU4-SD-R02-400B	5.5	1.4
TOTAL TCDD	12/16	0.10	5.7	1.7	OU4-SD-R04-300B	1.7	0.97

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
TOTAL TCDF	7/16	0.20	10	1.7	OU4-SD-R02-400B	2.6	1.5
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-Trimethylnaphthalene	16/16	0.40	58	11	OU4-SD-R03-300B	16	1.4
1-Methylnaphthalene	16/16	0.60	36	8.3	OU4-SD-R03-300B	9.1	1.1
1-Methylphenanthrene	16/16	1.2	368	61	OU4-SD-R03-300B	99	1.6
2,6-Dimethylnaphthalene	16/16	1.0	35	8.6	OU4-SD-R03-300B	8.9	1.0
2-Methylnaphthalene	16/16	0.90	39	11	OU4-SD-R03-300B	11	0.95
Acenaphthene	16/16	0.70	154	23	OU4-SD-R03-300B	39	1.7
Acenaphthylene	16/16	2.5	93	42	OU4-SD-R03-200B	36	0.85
Anthracene	16/16	4.7	989	198	OU4-SD-R03-200B	304	1.5
Benzo(a)anthracene	16/16	4.8	1421	305	OU4-SD-R03-200B	400	1.3
Benzo(a)pyrene	16/16	9.2	1588	372	OU4-SD-R03-200B	451	1.2
Benzo(b)fluoranthene	16/16	10	1352	339	OU4-SD-R03-200B	380	1.1
Benzo(e)pyrene	16/16	5.3	704	181	OU4-SD-R03-200B	202	1.1
Benzo(g,h,i)perylene	16/16	5.5	702	175	OU4-SD-R03-200B	204	1.2
Benzo(k)fluoranthene	16/16	3.0	449	119	OU4-SD-R03-200B	131	1.1
Biphenyl	16/16	0.70	9.2	3.6	OU4-SD-R01-100B	2.9	0.81
C1-Chrysenes	16/16	4.2	844	217	OU4-SD-R03-200B	249	1.1
C1-Dibenzothiophenes	16/16	0.70	76	19	OU4-SD-R03-300B	23	1.2
C1-Fluoranthenes/pyrenes	16/16	6.0	1263	296	OU4-SD-R03-300B	368	1.2
C1-Fluorenes	16/16	1.0	267	47	OU4-SD-R03-300B	72	1.5
C1-Naphthalenes	16/16	1.5	75	20	OU4-SD-R03-300B	20	1.0
C1-Phenanthrenes/anthracenes	16/16	8.0	1096	205	OU4-SD-R03-300B	304	1.5
C2-Chrysenes	16/16	2.6	360	96	OU4-SD-R03-200B	101	1.1
C2-Dibenzothiophenes	16/16	0.70	85	21	OU4-SD-R03-300B	22	1.0
C2-Fluorenes	16/16	2.2	223	47	OU4-SD-R03-300B	59	1.3
C2-Naphthalenes	16/16	1.8	186	32	OU4-SD-R03-300B	45	1.4
C2-Phenanthrenes/anthracenes	16/16	3.4	839	153	OU4-SD-R03-200B	235	1.5

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C3-Chrysenes	16/16	0.30	82	9.5	OU4-SD-R03-200B	20	2.1
C3-Dibenzothiophenes	16/16	0.50	47	15	OU4-SD-R03-300B	14	0.93
C3-Fluorenes	16/16	0.90	162	39	OU4-SD-R03-200B	44	1.1
C3-Naphthalenes	16/16	1.3	241	43	OU4-SD-R03-300B	66	1.5
C3-Phenanthrenes/anthracenes	16/16	2.7	349	64	OU4-SD-R03-300B	83	1.3
C4-Chrysenes	16/16	0.20	9.7	2.0	OU4-SD-R03-200B	2.5	1.3
C4-Naphthalenes	16/16	0.40	87	16	OU4-SD-R03-200B	24	1.5
C4-Phenanthrenes/anthracenes	16/16	0.40	83	23	OU4-SD-R03-200B	23	1.0
Chrysene	16/16	7.4	1120	287	OU4-SD-R03-200B	325	1.1
Dibenzo(a,h)anthracene	16/16	1.3	229	56	OU4-SD-R03-200B	67	1.2
Dibenzothiophene	16/16	0.40	70	16	OU4-SD-R03-300B	20	1.3
Fluoranthene	16/16	14	2160	562	OU4-SD-R03-200B	652	1.2
Fluorene	16/16	1.2	249	47	OU4-SD-R03-300B	67	1.4
Indeno(1,2,3-cd)pyrene	16/16	6.0	848	201	OU4-SD-R03-200B	242	1.2
Naphthalene	16/16	1.8	62	20	OU4-SD-R03-300B	20	0.96
Perylene	16/16	2.5	214	58	OU4-SD-R03-200B	64	1.1
Phenanthrene	16/16	5.1	1300	272	OU4-SD-R03-300B	376	1.4
Pyrene	16/16	12	1873	493	OU4-SD-R03-300B	582	1.2
Pesticides/PCBs (ug/kg)							
1,2,3,4-Tetrachlorobenzene	12/16	0.020	0.24	0.10	OU4-SD-R02-100B	0.062	0.60
1,2,4,5-Tetrachlorobenzene	16/16	0.010	0.57	0.26	OU4-SD-R03-400B	0.19	0.74
2,4'-DDD	14/16	0.020	5.5	1.1	OU4-SD-R03-200B	1.6	1.5
2,4'-DDE	10/16	0.080	0.59	0.17	OU4-SD-R01-100B	0.15	0.90
2,4'-DDT	10/16	0.020	0.98	0.11	OU4-SD-R02-200B	0.23	2.1
4,4'-DDD	15/16	0.080	4.2	1.0	OU4-SD-R02-400B	1.2	1.3
4,4'-DDE	16/16	0.060	1.5	0.53	OU4-SD-R04-100B	0.46	0.86
4,4'-DDT	16/16	0.030	12	1.1	OU4-SD-R02-400B	2.9	2.6
Aldrin	8/16	0.15	5.3	1.0	OU4-SD-R03-200B	1.8	1.8

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
alpha-BHC	16/16	0.020	0.28	0.10	OU4-SD-R03-200B	0.089	0.88
Alpha-Chlordane	15/16	0.040	0.44	0.15	OU4-SD-R02-100B	0.14	0.93
beta-BHC	8/16	0.090	0.39	0.17	OU4-SD-R03-400B	0.10	0.57
Chlorpyrifos	4/16	0.010	0.040	0.13	OU4-SD-R03-400B	0.084	0.64
cis-Nonachlor	16/16	0.020	1.3	0.28	OU4-SD-R02-100B	0.34	1.2
delta-BHC	4/16	0.020	0.10	0.032	OU4-SD-R03-400B	0.021	0.66
Dieldrin	8/16	0.030	0.68	0.16	OU4-SD-R02-100B	0.21	1.3
Endosulfan II	16/16	0.030	0.82	0.22	OU4-SD-R01-100B	0.23	1.0
gamma-BHC (Lindane)	10/16	0.010	0.25	0.11	OU4-SD-R03-200B	0.089	0.82
Gamma-Chlordane	11/16	0.010	0.21	0.060	OU4-SD-R01-100B	0.052	0.87
Heptachlor	7/16	0.020	0.19	0.080	OU4-SD-R02-300B	0.038	0.47
Hexachlorobenzene	4/16	0.020	12	0.78	OU4-SD-R02-400B	3.0	3.8
Mirex	2/16	0.52	0.63	0.086	OU4-SD-R03-200B	0.19	2.2
Oxychlordane	5/16	0.050	0.99	0.15	OU4-SD-R03-200B	0.27	1.8
PCB-101/90	15/16	0.19	21	1.9	OU4-SD-R02-200B	5.1	2.7
PCB-105	16/16	0.040	12	1.0	OU4-SD-R02-200B	2.9	2.8
PCB-118	16/16	0.080	22	2.1	OU4-SD-R02-200B	5.4	2.5
PCB-126	13/16	0.010	0.47	0.093	OU4-SD-R03-300B	0.12	1.3
PCB-128	12/16	0.030	5.0	0.57	OU4-SD-R02-200B	1.2	2.2
PCB-138/160	16/16	0.15	18	1.8	OU4-SD-R02-200B	4.4	2.4
PCB-149/123	16/16	0.010	4.6	0.56	OU4-SD-R02-200B	1.1	2.0
PCB-153/132	16/16	0.13	12	1.4	OU4-SD-R02-200B	2.9	2.0
PCB-156	12/16	0.020	1.4	0.27	OU4-SD-R02-200B	0.34	1.2
PCB-167	13/16	0.060	1.6	0.36	OU4-SD-R02-200B	0.51	1.4
PCB-169	4/16	0.020	0.090	0.082	OU4-SD-R01-100B	0.030	0.36
PCB-170/190	11/16	0.54	10	2.5	OU4-SD-R03-200B	3.3	1.3
PCB-18/17	6/16	0.11	0.77	0.21	OU4-SD-R03-400B	0.25	1.2
PCB-180	13/16	0.050	2.4	0.59	OU4-SD-R02-200B	0.62	1.0

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-187	16/16	0.040	0.70	0.29	OU4-SD-R02-400B, OU4-SD-R02-200B	0.23	0.80
PCB-189	11/16	0.010	0.31	0.15	OU4-SD-R02-100B, OU4-SD-R03-200B	0.10	0.65
PCB-195/208	15/16	0.010	0.66	0.18	OU4-SD-R03-200B	0.19	1.0
PCB-201/157/173	13/16	0.050	1.0	0.26	OU4-SD-R03-200B	0.27	1.0
PCB-206	9/16	0.050	0.68	0.16	OU4-SD-R02-400B	0.21	1.3
PCB-209	16/16	0.030	1.1	0.43	OU4-SD-R02-200B	0.34	0.78
PCB-28	16/16	0.12	2.9	1.0	OU4-SD-R01-100B	0.81	0.78
PCB-44	15/16	0.070	3.1	0.42	OU4-SD-R02-200B	0.77	1.8
PCB-52	13/16	0.090	7.8	1.4	OU4-SD-R02-200B	2.2	1.6
PCB-66	14/16	0.010	3.1	0.35	OU4-SD-R02-200B	0.74	2.1
PCB-77	11/16	0.010	0.33	0.080	OU4-SD-R01-100B	0.074	0.93
PCB-8/5	16/16	0.070	4.5	0.91	OU4-SD-R03-300B	1.3	1.4
PCB-81	7/16	0.010	0.11	0.072	OU4-SD-R02-300B	0.037	0.52
Pentachloroanisole	16/16	0.020	0.20	0.078	OU4-SD-R03-300B	0.055	0.70
Pentachlorobenzene	8/16	0.040	0.36	0.15	OU4-SD-R03-200B	0.087	0.58
Trans-Nonachlor	13/16	0.020	0.35	0.15	OU4-SD-R01-100B	0.12	0.83
Inorganics (mg/kg)							
Aluminum	16/16	41600	59600	48825	OU4-SD-R01-100B	5543	0.11
Arsenic	16/16	1.7	14	6.2	OU4-SD-R03-100B	3.4	0.55
Cadmium	16/16	0.080	0.47	0.22	OU4-SD-R01-100B	0.13	0.60
Chromium	16/16	22	96	53	OU4-SD-R01-100B	20	0.37
Copper	16/16	3.2	26	12	OU4-SD-R01-100B, OU4-SD-R03-100B	7.8	0.64
Iron	16/16	8300	29000	15988	OU4-SD-R01-100B	5854	0.37
Lead	16/16	13	88	36	OU4-SD-R02-400B	23	0.63
Manganese	16/16	327	1110	521	OU4-SD-R01-300B	253	0.49

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 2 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Mercury	16/16	0.030	0.40	0.13	OU4-SD-R01-100B	0.10	0.76
Nickel	16/16	9.2	38	19	OU4-SD-R03-100B	7.2	0.38
Silver	16/16	0.050	0.33	0.15	OU4-SD-R03-100B	0.090	0.59
Zinc	16/16	21	110	56	OU4-SD-R01-100B	28	0.51
Total Organic Carbon (%)							
Total Organic Carbon	16/16	0.26	3.9	1.3	OU4-SD-R01-100B	1.1	0.87

Notes:
- Duplicate samples are averaged in this table
- 1/2 the detection limits for non- detects
- The frequency of detects count a sample and its duplicate as one sample
- This table includes the following reference station samples:
  - OU4-SD-(R01 through R04)-(100B through 400B)
- Source data located in the Round 2 Data Package (TtNUS, October 2000)

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	13/15	19	57	31	OU4-MU-M09-100B	12	0.39
1,2,3,4,6,7,8-HPCDF	13/15	5.5	15	9.3	OU4-MU-M09-100B	3.3	0.36
1,2,3,4,7,8,9-HPCDF	1/15	5.5	5.5	13	OU4-MU-M08-100B	4.2	0.31
1,2,3,4,7,8-HXCDD	3/15	0.60	28	12	OU4-MU-M12-200B-D	5.5	0.46
1,2,3,4,7,8-HXCDF	2/15	1.8	59	13	OU4-MU-M12-200B-D	4.7	0.36
1,2,3,6,7,8-HXCDD	4/15	1.5	38	10	OU4-MU-M12-200B-D	5.8	0.56
1,2,3,7,8,9-HXCDD	5/15	0.60	48	10	OU4-MU-M12-200B-D	5.8	0.58
1,2,3,7,8-PECDD	4/15	0.60	1.7	10	OU4-MU-M08-100B	6.4	0.64
1,2,3,7,8-PECDF	11/15	1.9	16	9.9	OU4-MU-M09-100B	5.6	0.57
2,3,4,6,7,8-HXCDF	2/15	4.5	27	13	OU4-MU-M12-200B-D	3.8	0.31
2,3,4,7,8-PECDF	10/15	2.4	8.3	8.1	OU4-MU-M09-200B	4.1	0.51
2,3,7,8-TCDD	3/15	0.30	13	2.6	OU4-MU-M12-200B-D	1.0	0.37
2,3,7,8-TCDF	11/15	2.6	33	9.4	OU4-MU-M09-100B	9.0	0.96
OCDD	14/15	109	368	169	OU4-MU-M12-200B-D	68	0.40
OCDF	5/15	5.9	178	26	OU4-MU-M12-200B-D	11	0.40
TOTAL HPCDD	15/15	27	356	82	OU4-MU-M10-200B	80	0.97
TOTAL HXCDD	11/15	0.60	132	20	OU4-MU-M10-200B	32	1.6
TOTAL PECDD	5/15	0.60	6.1	9.2	OU4-MU-M07-100B	6.0	0.65
TOTAL TCDD	10/15	0.30	34	13	OU4-MU-M09-100B	11	0.90
TOTAL DIOXINS	15/15	33	1440	350	OU4-MU-M10-200B	314	0.90
TOTAL FURANS	15/15	4.0	616	93	OU4-MU-M12-200B-D	75	0.81
TOTAL HPCDF	15/15	5.5	48	18	OU4-MU-M10-200B	11	0.63
TOTAL HXCDF	6/15	4.5	13	13	OU4-MU-M10-200B	12	0.98
TOTAL PECDF	13/15	5.5	67	16	OU4-MU-M10-200B	16	0.97
TOTAL TCDF	14/15	4.0	75	30	OU4-MU-M08-300B	25	0.84
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-Trimethylnaphthalene	31/31	2.3	8.6	4.5	OU4-MU-M01-300B	1.3	0.30
1-Methylnaphthalene	31/31	5.2	18	7.4	OU4-MU-M12-200B-D	2.2	0.30
1-Methylphenanthrene	31/31	3.9	21	7.6	OU4-MU-M13-100B	3.9	0.52
2,6-Dimethylnaphthalene	31/31	3.1	10	5.3	OU4-MU-M01-300B	1.6	0.29

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
2-Methylnaphthalene	31/31	8.0	21	11	OU4-MU-M13-100B	3.1	0.27
Acenaphthene	31/31	6.7	31	13	OU4-MU-M13-100B	5.6	0.45
Acenaphthylene	31/31	9.1	55	20	OU4-MU-M13-100B	8.9	0.44
Anthracene	31/31	22	136	43	OU4-MU-M13-100B	23	0.55
Benzo(a)anthracene	31/31	8.7	61	19	OU4-MU-M13-100B	12	0.61
Benzo(a)pyrene	31/31	6.5	42	17	OU4-MU-M13-100B	8.1	0.49
Benzo(b)fluoranthene	31/31	16	94	33	OU4-MU-M13-100B	15	0.46
Benzo(e)pyrene	31/31	13	68	27	OU4-MU-M13-100B	10	0.39
Benzo(g,h,i)perylene	31/31	5.5	35	15	OU4-MU-M13-100B	5.8	0.38
Benzo(k)fluoranthene	31/31	4.2	25	10	OU4-MU-M13-100B	4.4	0.44
Biphenyl	31/31	2.3	7.8	3.6	OU4-MU-M12-200B	1.1	0.32
C1-Chrysenes	31/31	9.6	45	19	OU4-MU-M13-100B	7.0	0.38
C1-Dibenzothiophenes	31/31	0.40	9.6	5.4	OU4-MU-M01-300B	1.9	0.35
C1-Fluoranthenes/pyrenes	31/31	12	98	33	OU4-MU-M13-100B	17	0.51
C1-Fluorenes	31/31	13	63	23	OU4-MU-M12-200B-D	7.4	0.32
C1-Naphthalenes	31/31	13	38	19	OU4-MU-M12-200B-D	5.3	0.28
C1-Phenanthrenes/anthracenes	31/31	16	69	29	OU4-MU-M13-100B	12	0.40
C2-Chrysenes	31/31	3.6	33	11	OU4-MU-M09-100B	6.2	0.55
C2-Dibenzothiophenes	31/31	6.3	29	14	OU4-MU-M05-100B-D	4.8	0.35
C2-Fluorenes	31/31	7.2	39	17	OU4-MU-M11-100B	6.4	0.38
C2-Naphthalenes	31/31	11	43	17	OU4-MU-M12-200B-D	5.4	0.32
C2-Phenanthrenes/anthracenes	31/31	17	65	33	OU4-MU-M13-100B	11	0.34
C3-Chrysenes	31/31	0.10	2.5	0.91	OU4-MU-M10-100B	0.59	0.65
C3-Dibenzothiophenes	31/31	2.9	28	10	OU4-MU-M13-100B	5.1	0.49
C3-Fluorenes	31/31	5.6	41	16	OU4-MU-M13-100B	7.0	0.45
C3-Naphthalenes	31/31	14	84	24	OU4-MU-M12-200B-D	9.1	0.39
C3-Phenanthrenes/anthracenes	31/31	16	164	55	OU4-MU-M03-100B	36	0.66
C4-Chrysenes	31/31	0.10	3.0	1.0	OU4-MU-M10-100B-D	0.63	0.62
C4-Naphthalenes	31/31	4.4	55	13	OU4-MU-M12-200B-D	5.9	0.46
C4-Phenanthrenes/anthracenes	31/31	8.5	52	19	OU4-MU-M01-300B	9.1	0.47
Chrysene	31/31	22	107	40	OU4-MU-M13-100B	17	0.42
Dibenzo(a,h)anthracene	31/31	1.0	7.0	2.9	OU4-MU-M13-100B	1.3	0.44

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dibenzothiophene	31/31	1.5	7.0	2.6	OU4-MU-M12-100B	1.3	0.49
Fluoranthene	31/31	37	312	85	OU4-MU-M13-100B	58	0.69
Fluorene	31/31	7.8	37	14	OU4-MU-M12-100B	6.9	0.50
Indeno(1,2,3-cd)pyrene	31/31	4.3	31	13	OU4-MU-M13-100B	5.6	0.44
Naphthalene	31/31	9.5	42	14	OU4-MU-M12-200B-D	5.3	0.36
Perylene	31/31	4.6	32	14	OU4-MU-M13-100B	4.6	0.34
Phenanthrene	31/31	19	130	38	OU4-MU-M12-100B	25	0.66
Pyrene	31/31	33	217	65	OU4-MU-M13-100B	39	0.60
Pesticides/PCBs (ug/kg)							
1,2,3,4-Tetrachlorobenzene	31/31	0.29	4.5	1.5	OU4-MU-M10-100B-D	0.91	0.59
1,2,4,5-Tetrachlorobenzene	5/31	0.070	1.9	0.68	OU4-MU-M05-100B-D	0.46	0.68
2,4'-DDD	29/31	0.34	16	2.7	OU4-MU-M10-100B-D	3.3	1.2
2,4'-DDE	29/31	0.11	4.2	0.86	OU4-MU-M02-200B, OU4-MU-M12-200B-D	1.1	1.3
2,4'-DDT	30/31	0.33	5.6	2.0	OU4-MU-M10-100B	1.1	0.52
4,4'-DDD	31/31	0.94	29	5.3	OU4-MU-M08-100B	6.2	1.2
4,4'-DDE	31/31	3.7	30	9.1	OU4-MU-M01-200B	5.5	0.61
4,4'-DDT	31/31	0.11	3.4	1.0	OU4-MU-M08-300B	0.69	0.68
Aldrin	31/31	0.15	3.3	1.1	OU4-MU-M09-100B, OU4-MU-M10-300B	0.87	0.80
alpha-BHC	31/31	0.37	2.3	0.94	OU4-MU-M01-300B	0.43	0.46
Alpha-Chlordane	31/31	0.50	15	2.9	OU4-MU-M03-100B	3.0	1.0
beta-BHC	28/31	0.86	25	4.9	OU4-MU-M03-200B	5.0	1.0
Chlorpyrifos	3/31	6.2	11	1.8	OU4-MU-M12-200B-D	1.7	0.93
cis-Nonachlor	31/31	0.71	14	3.1	OU4-MU-M03-100B	2.6	0.83
delta-BHC	4/31	0.11	0.27	0.059	OU4-MU-M03-100B	0.045	0.77
Dieldrin	30/31	0.10	1.6	0.83	OU4-MU-M01-200B, OU4-MU-M13-100B	0.39	0.47
Endosulfan II	30/31	0.19	4.0	1.2	OU4-MU-M10-300B	0.83	0.69
Endrin	13/31	0.36	4.1	0.92	OU4-MU-M02-200B	1.1	1.2
gamma-BHC (Lindane)	28/31	0.21	2.7	0.90	OU4-MU-M13-100B	0.61	0.68

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Gamma-Chlordane	30/31	0.69	4.4	1.8	OU4-MU-M10-100B-D	0.69	0.39
Heptachlor	29/31	0.080	0.84	0.29	OU4-MU-M07-100B	0.20	0.69
Heptachlor Epoxide	24/31	0.050	3.3	0.63	OU4-MU-M02-200B	0.70	1.1
Hexachlorobenzene	31/31	0.20	1.3	0.68	OU4-MU-M03-200B	0.29	0.42
Mirex	7/31	0.12	1.9	0.31	OU4-MU-M01-300B	0.32	1.0
Oxychlordane	18/31	0.11	1.4	0.34	OU4-MU-M09-100B	0.32	0.95
PCB-101/90	14/31	3.9	13	5.5	OU4-MU-M05-100B-D	2.2	0.40
PCB-105	31/31	1.5	8.5	3.4	OU4-MU-M03-100B	1.4	0.41
PCB-118	30/31	2.2	11	5.9	OU4-MU-M05-100B-D	1.8	0.31
PCB-126	30/31	0.020	1.8	0.68	OU4-MU-M05-100B	0.51	0.75
PCB-128	30/31	0.67	4.4	2.5	OU4-MU-M07-300B	0.92	0.37
PCB-138/160	14/31	9.7	44	13	OU4-MU-M03-100B	7.7	0.61
PCB-149/123	14/31	2.4	21	5.0	OU4-MU-M03-100B	3.7	0.74
PCB-153/132	11/31	10	24	11	OU4-MU-M11-100B, OU4-MU-M13-100B	5.9	0.52
PCB-156	31/31	0.51	4.0	1.7	OU4-MU-M02-200B, OU4-MU-M13-100B	0.78	0.45
PCB-167	30/31	0.28	6.0	1.4	OU4-MU-M03-100B	1.1	0.79
PCB-169	27/31	0.010	1.7	0.60	OU4-MU-M06-300B	0.50	0.83
PCB-170/190	18/31	0.68	18	1.7	OU4-MU-M09-200B	3.1	1.8
PCB-18/17	24/31	0.55	5.8	2.5	OU4-MU-M01-300B	1.4	0.57
PCB-180	11/31	7.2	18	7.1	OU4-MU-M13-100B	3.1	0.43
PCB-187	11/31	1.2	7.7	3.6	OU4-MU-M12-200B	2.2	0.62
PCB-189	6/31	0.21	0.93	0.35	OU4-MU-M03-100B	0.13	0.37
PCB-195/208	13/31	0.080	2.3	0.49	OU4-MU-M11-100B	0.56	1.2
PCB-201/157/173	27/31	0.54	3.6	1.5	OU4-MU-M02-200B	0.88	0.60
PCB-206	3/31	0.050	0.32	0.26	OU4-MU-M12-200B	0.067	0.25
PCB-209	31/31	0.15	1.5	0.49	OU4-MU-M01-300B	0.27	0.56
PCB-28	31/31	0.26	4.5	2.4	OU4-MU-M05-100B-D	0.93	0.39
PCB-44	30/31	1.0	12	3.6	OU4-MU-M01-300B	2.4	0.66
PCB-52	31/31	2.7	13	7.5	OU4-MU-M01-300B, OU4-MU-M10-300B, OU4-MU-M13-100B	2.9	0.38

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-66	31/31	0.20	6.6	2.0	OU4-MU-M12-200B-D	1.5	0.72
PCB-77	22/31	0.060	1.9	0.52	OU4-MU-M05-300B	0.38	0.73
PCB-8/5	31/31	0.060	5.2	1.9	OU4-MU-M01-200B	1.1	0.60
PCB-81	30/31	0.090	2.6	1.2	OU4-MU-M06-300B	0.79	0.66
Pentachloroanisole	31/31	0.80	2.7	1.7	OU4-MU-M01-300B, OU4-MU-M05-300B, OU4-MU-M13-100B	0.51	0.30
Pentachlorobenzene	3/31	2.1	3.7	0.82	OU4-MU-M12-200B-D	0.59	0.72
Trans-Nonachlor	31/31	0.79	3.1	1.7	OU4-MU-M03-100B	0.58	0.35
Inorganics (mg/kg)							
Aluminum	31/31	241	532	359	OU4-MU-M08-300B	91	0.25
Arsenic	31/31	6.8	11	8.7	OU4-MU-M06-300B, OU4-MU-M07-100B	1.1	0.12
Cadmium	31/31	1.1	3.0	1.6	OU4-MU-M10-200B	0.37	0.23
Chromium	31/31	1.5	3.9	2.3	OU4-MU-M03-200B, OU4-MU-M03-200B-D	0.49	0.21
Copper	31/31	7.1	28	10	OU4-MU-M04-100B	3.9	0.41
Iron	31/31	395	956	623	OU4-MU-M03-200B-D	148	0.24
Lead	31/31	2.4	23	5.3	OU4-MU-M11-200B-D	4.0	0.77
Manganese	31/31	11	312	25	OU4-MU-M10-200B	53	2.1
Mercury	31/31	0.17	0.48	0.28	OU4-MU-M04-100B	0.065	0.23
Nickel	31/31	1.4	3.5	2.1	OU4-MU-M03-200B	0.63	0.30
Silver	31/31	0.030	0.55	0.087	OU4-MU-M10-200B	0.10	1.2
Zinc	31/31	80	404	110	OU4-MU-M10-200B	57	0.52
Percent Lipids (%)							
Percent Lipids	31/31	4.1	16	9.3	OU4-MU-M01-300B	2.5	0.27

Notes:
- All results are presented in dry weight
- Duplicate samples are averaged in this table
- 1/2 the detection limits for non- detects
- The frequency of detects count a sample and its duplicate as one sample
- This table includes the following monitoring station samples:
  - OU4-MU-M01-200B and 300B
  - OU4-MU-M02-200B and 300B
  - OU4-MU-M03-100B and 200B
  - OU4-MU-M04-100B
  - OU4-MU-M05-100B, 100B-FD, and 300B
  - OU4-MU-M06-100B, 200B, 300B, and 300B-FD
  - OU4-MU-M07-100B and 300B
  - OU4-MU-M08-100B, 200B, and 300B
  - OU4-MU-M09-100B and 200B
  - OU4-MU-M10-100B, 100B-FD, 200B, and 300B
  - OU4-MU-M11-100B, 200B, 200B-FD, and 300B
  - OU4-MU-M12-100B, 200B, and 200B-FD
  - OU4-MU-M13-100B and 300B
  - OU4-MU-M14-100B and 200B
- Source data located in the Round 2 Data Package (TtNUS, October 2000)

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	7/8	20	54	30	OU4-MU-R01-400B	14	0.47
1,2,3,4,6,7,8-HPCDF	5/8	3.4	9.3	8.5	OU4-MU-R01-400B	3.9	0.46
1,2,3,6,7,8-HXCDD	1/8	1.8	1.8	9.0	OU4-MU-R03-300B	4.8	0.54
1,2,3,6,7,8-HXCDF	1/8	0.65	0.65	11	OU4-MU-R03-400B	4.8	0.45
1,2,3,7,8,9-HXCDD	1/8	0.70	0.70	11	OU4-MU-R01-300B	4.8	0.43
1,2,3,7,8-PECDD	1/8	0.90	0.90	11	OU4-MU-R01-300B	4.7	0.42
1,2,3,7,8-PECDF	4/8	1.7	8.5	8.1	OU4-MU-R01-400B	4.9	0.61
2,3,4,6,7,8-HXCDF	1/8	0.90	0.90	10	OU4-MU-R01-400B	4.0	0.39
2,3,4,7,8-PECDF	3/8	0.30	1.5	7.9	OU4-MU-R01-400B	5.9	0.75
2,3,7,8-TCDF	3/8	2.9	6.6	3.2	OU4-MU-R01-400B	1.6	0.48
OCDD	8/8	87	232	156	OU4-MU-R01-400B	52	0.34
OCDF	3/8	15	20	21	OU4-MU-R01-400B	3.9	0.19
TOTAL HPCDD	8/8	24	117	73	OU4-MU-R01-400B, OU4-MU-R03-400B	39	0.54
TOTAL HXCDD	3/8	0.70	23	13	OU4-MU-R03-300B	6.7	0.51
TOTAL PECDD	1/8	0.90	0.90	11	OU4-MU-R01-300B	4.7	0.42
TOTAL TCDD	2/8	23	39	9.2	OU4-MU-R01-300B	14	1.5
TOTAL DIOXINS	7/8	117	392	237	OU4-MU-R03-400B	129	0.54
TOTAL FURANS	7/8	10	157	44	OU4-MU-R01-400B	50	1.1
TOTAL HPCDF	5/8	7.0	40	16	OU4-MU-R03-400B	12	0.73
TOTAL HXCDF	2/8	5.9	15	10	OU4-MU-R03-400B	4.5	0.45
TOTAL PECDF	4/8	2.0	20	11	OU4-MU-R04-400B	6.8	0.63
TOTAL TCDF	6/8	3.5	45	14	OU4-MU-R01-400B	15	1.0
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-Trimethylnaphthalene	8/8	3.4	7.3	4.7	OU4-MU-R03-400B	1.4	0.30
1-Methylnaphthalene	8/8	4.6	13	7.5	OU4-MU-R02-400B	2.8	0.37

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
1-Methylphenanthrene	8/8	3.4	16	9.1	OU4-MU-R03-300B	4.2	0.46
2,6-Dimethylnaphthalene	8/8	4.0	6.6	5.1	OU4-MU-R02-400B	0.88	0.17
2-Methylnaphthalene	8/8	6.5	25	12	OU4-MU-R02-400B	6.1	0.50
Acenaphthene	8/8	7.6	14	10	OU4-MU-R03-400B	2.1	0.21
Acenaphthylene	8/8	13	26	18	OU4-MU-R01-300B	4.7	0.26
Anthracene	8/8	25	51	37	OU4-MU-R01-300B	8.9	0.24
Benzo(a)anthracene	8/8	9.7	19	14	OU4-MU-R02-400B	3.4	0.24
Benzo(a)pyrene	8/8	8.7	20	13	OU4-MU-R01-300B	4.1	0.33
Benzo(b)fluoranthene	8/8	17	39	26	OU4-MU-R01-300B	7.7	0.30
Benzo(e)pyrene	8/8	16	32	22	OU4-MU-R01-300B	5.9	0.27
Benzo(g,h,i)perylene	8/8	8.2	18	13	OU4-MU-R02-400B	3.6	0.28
Benzo(k)fluoranthene	8/8	4.5	12	7.0	OU4-MU-R01-300B	2.6	0.37
Biphenyl	8/8	2.4	4.3	3.6	OU4-MU-R03-400B	0.60	0.17
C1-Chrysenes	8/8	11	26	16	OU4-MU-R01-300B	5.2	0.32
C1-Dibenzothiophenes	8/8	4.1	12	6.4	OU4-MU-R03-400B	3.2	0.49
C1-Fluoranthenes/pyrenes	8/8	22	38	27	OU4-MU-R01-300B	5.2	0.19
C1-Fluorenes	8/8	15	28	19	OU4-MU-R03-400B	4.0	0.21
C1-Naphthalenes	8/8	11	37	20	OU4-MU-R02-400B	8.8	0.45
C1-Phenanthrenes/anthrace	8/8	22	52	32	OU4-MU-R03-300B	12	0.37
C2-Chrysenes	8/8	7.9	17	10	OU4-MU-R02-400B	2.8	0.28
C2-Dibenzothiophenes	8/8	13	31	19	OU4-MU-R03-300B	5.9	0.32
C2-Fluorenes	8/8	10	58	27	OU4-MU-R03-300B	16	0.59
C2-Naphthalenes	8/8	10	26	18	OU4-MU-R03-400B	5.6	0.31
C2-Phenanthrenes/anthrace	8/8	25	77	45	OU4-MU-R03-300B	17	0.38
C3-Chrysenes	8/8	0.20	1.0	0.39	OU4-MU-R03-300B	0.27	0.70
C3-Dibenzothiophenes	8/8	7.2	23	14	OU4-MU-R03-300B	6.0	0.44
C3-Fluorenes	8/8	25	106	45	OU4-MU-R01-300B	27	0.59

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C3-Naphthalenes	8/8	21	34	26	OU4-MU-R03-400B	4.5	0.17
C3-Phenanthrenes/anthrace	8/8	41	120	71	OU4-MU-R01-300B	27	0.38
C4-Chrysenes	8/8	0.50	1.6	1.1	OU4-MU-R02-300B	0.41	0.38
C4-Naphthalenes	8/8	8.9	29	15	OU4-MU-R03-400B	6.7	0.44
C4-Phenanthrenes/anthrace	8/8	18	34	25	OU4-MU-R03-400B	6.2	0.25
Chrysene	8/8	23	41	30	OU4-MU-R02-400B	5.9	0.20
Dibenzo(a,h)anthracene	8/8	1.4	3.7	2.2	OU4-MU-R02-400B	0.79	0.36
Dibenzothiophene	8/8	1.7	4.0	2.3	OU4-MU-R03-400B	0.73	0.32
Fluoranthene	8/8	42	69	53	OU4-MU-R03-400B	9.8	0.18
Fluorene	8/8	8.7	20	12	OU4-MU-R03-400B	4.2	0.34
Indeno(1,2,3-cd)pyrene	8/8	6.3	15	10	OU4-MU-R01-300B	3.0	0.31
Naphthalene	8/8	8.8	20	14	OU4-MU-R02-400B	3.5	0.26
Perylene	8/8	6.7	19	12	OU4-MU-R01-300B	4.0	0.34
Phenanthrene	8/8	19	55	28	OU4-MU-R03-400B	11.2	0.40
Pyrene	8/8	32	62	46	OU4-MU-R01-300B	10.6	0.23
Pesticides/PCBs (ug/kg)							
1,2,3,4-Tetrachlorobenzene	8/8	0.39	4.0	1.1	OU4-MU-R02-400B	1.2	1.1
2,4'-DDD	8/8	0.41	2.2	1.3	OU4-MU-R04-400B	0.63	0.49
2,4'-DDE	7/8	0.33	0.73	0.45	OU4-MU-R01-400B	0.23	0.50
2,4'-DDT	8/8	0.80	2.2	1.4	OU4-MU-R02-400B	0.45	0.32
4,4'-DDD	8/8	2.3	3.4	2.9	OU4-MU-R01-300B, OU4-MU-R01-400B	0.45	0.15
4,4'-DDE	8/8	4.9	7.9	6.0	OU4-MU-R01-400B	1.2	0.20
4,4'-DDT	8/8	0.17	1.6	0.54	OU4-MU-R03-400B	0.45	0.83
Aldrin	8/8	0.15	0.94	0.63	OU4-MU-R04-300B	0.26	0.40
alpha-BHC	8/8	0.44	0.90	0.71	OU4-MU-R04-400B	0.17	0.25
Alpha-Chlordane	8/8	1.3	3.2	2.1	OU4-MU-R01-400B	0.72	0.35

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
beta-BHC	8/8	0.96	11	4.4	OU4-MU-R02-400B	3.3	0.75
cis-Nonachlor	8/8	1.1	4.3	2.1	OU4-MU-R04-400B	1.1	0.53
delta-BHC	1/8	0.040	0.040	0.039	OU4-MU-R01-300B	0.0058	0.15
Dieldrin	8/8	0.44	1.3	0.77	OU4-MU-R01-300B	0.32	0.42
Endosulfan II	8/8	0.64	1.6	1.1	OU4-MU-R01-400B	0.31	0.27
Endrin	8/8	0.47	1.5	0.95	OU4-MU-R04-400B	0.37	0.39
gamma-BHC (Lindane)	8/8	0.75	2.2	1.4	OU4-MU-R04-300B	0.52	0.36
Gamma-Chlordane	8/8	0.51	2.9	1.9	OU4-MU-R01-400B	0.72	0.38
Heptachlor	5/8	0.48	1.0	0.48	OU4-MU-R03-300B	0.34	0.72
Heptachlor Epoxide	8/8	0.21	1.0	0.55	OU4-MU-R03-400B	0.28	0.50
Hexachlorobenzene	8/8	0.42	1.5	0.72	OU4-MU-R04-300B	0.34	0.47
Oxychlordane	1/8	0.71	0.71	0.16	OU4-MU-R03-400B	0.22	1.4
PCB-101/90	8/8	4.2	8.4	5.7	OU4-MU-R01-300B	1.8	0.32
PCB-105	8/8	1.4	2.3	1.8	OU4-MU-R01-300B, OU4-MU-R01-400B	0.38	0.21
PCB-118	8/8	2.5	6.0	4.1	OU4-MU-R01-400B	1.2	0.29
PCB-126	8/8	0.040	0.26	0.15	OU4-MU-R04-300B	0.077	0.51
PCB-128	8/8	1.8	3.4	2.8	OU4-MU-R02-400B	0.54	0.20
PCB-138/160	8/8	9.3	15	12	OU4-MU-R01-400B	1.9	0.17
PCB-149/123	8/8	2.0	6.1	3.9	OU4-MU-R01-400B	1.4	0.35
PCB-153/132	8/8	9.0	15	12	OU4-MU-R01-400B	2.0	0.18
PCB-156	8/8	1.5	3.5	2.3	OU4-MU-R03-400B	0.64	0.27
PCB-167	8/8	1.0	2.2	1.7	OU4-MU-R02-400B, OU4-MU-R04-300B	0.47	0.28
PCB-169	4/8	0.020	0.040	0.14	OU4-MU-R01-400B	0.12	0.85
PCB-18/17	1/8	1.1	1.1	0.77	OU4-MU-R03-300B	0.16	0.21
PCB-180	8/8	7.0	12	10	OU4-MU-R01-300B	1.7	0.18

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-187	8/8	1.1	3.4	2.2	OU4-MU-R01-400B	0.77	0.36
PCB-189	3/8	0.24	0.88	0.39	OU4-MU-R04-300B	0.26	0.66
PCB-195/208	8/8	0.12	2.7	0.93	OU4-MU-R02-400B	0.84	0.91
PCB-201/157/173	6/8	1.3	2.6	1.4	OU4-MU-R03-300B	0.86	0.61
PCB-206	1/8	0.27	0.27	0.24	OU4-MU-R03-300B	0.033	0.14
PCB-209	8/8	0.14	0.61	0.42	OU4-MU-R03-300B	0.18	0.43
PCB-28	8/8	1.2	3.1	2.4	OU4-MU-R01-300B	0.65	0.27
PCB-44	8/8	0.74	4.7	2.8	OU4-MU-R03-400B	1.3	0.46
PCB-52	8/8	3.7	9.3	7.1	OU4-MU-R01-400B	1.8	0.25
PCB-66	8/8	0.60	1.8	1.0	OU4-MU-R02-400B	0.36	0.37
PCB-77	1/8	0.040	0.040	0.25	OU4-MU-R03-300B	0.090	0.37
PCB-8/5	8/8	0.74	2.8	1.5	OU4-MU-R02-400B	0.75	0.51
PCB-81	7/8	0.19	0.80	0.45	OU4-MU-R02-400B	0.22	0.50
Pentachloroanisole	8/8	1.1	1.9	1.6	OU4-MU-R01-300B	0.23	0.14
Trans-Nonachlor	7/8	1.2	3.3	1.7	OU4-MU-R01-400B	0.99	0.60
Inorganics (mg/kg)							
Aluminum	8/8	264	428	342	OU4-MU-R03-400B	57	0.17
Arsenic	8/8	7	11	8.6	OU4-MU-R02-400B	1.4	0.16
Cadmium	8/8	1.2	1.6	1.3	OU4-MU-R01-300B	0.12	0.09
Chromium	8/8	1.8	2.5	2.3	OU4-MU-R02-400B, OU4-MU-R03-400B	0.24	0.10
Copper	8/8	7.3	9.2	8.2	OU4-MU-R01-300B	0.60	0.073
Iron	8/8	493	940	624	OU4-MU-R02-400B	146	0.23
Lead	8/8	2.3	4.6	3.0	OU4-MU-R02-400B	0.74	0.24
Manganese	8/8	9.8	16	13	OU4-MU-R01-300B	2.0	0.16
Mercury	8/8	0.21	0.41	0.28	OU4-MU-R02-400B	0.065	0.23
Nickel	8/8	1.6	2.2	2.0	OU4-MU-R01-400B	0.19	0.10

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 2 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Silver	8/8	0.050	0.080	0.060	OU4-MU-R01-300B	0.011	0.18
Zinc	8/8	84	105	96	OU4-MU-R03-300B	6.6	0.069
Percent Lipids (%)							
Percent Lipids	8/8	7.0	8.9	7.8	OU4-MU-R02-400B	0.64	0.083

Notes:
- All results are presented in dry weight
- Duplicate samples are averaged in this table
- 1/2 the detection limits for non- detects
- The frequency of detects count a sample and its duplicate as one sample
- This table includes the following reference station samples:
  - OU4-MU-(R01 through R04)-(300B and 400B)
- Source data located in the Round 2 Data Package (TtNUS, October 2000)

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
2,3,4,6,7,8-HXCDF	2/6	2.0	16	8.8	OU4-LJ-M12-100B	4.7	0.53
2,3,7,8-TCDD	1/6	1.8	1.8	1.7	OU4-LJ-M11-100B-D	0.16	0.10
OCDD	3/6	5.4	9.1	12	OU4-LJ-M10-100B	5.7	0.48
OCDF	1/6	6.1	6.1	15	OU4-LJ-M10-100B	4.9	0.32
TOTAL HXCDD	2/6	5.0	8.2	8.0	OU4-LJ-M10-100B	1.7	0.22
TOTAL TCDD	2/6	1.8	2.1	1.8	OU4-LJ-M12-100B	0.23	0.13
TOTAL DIOXINS	3/6	7.6	21	15	OU4-LJ-M10-100B	4.5	0.30
TOTAL FURANS	3/6	1.1	20	14	OU4-LJ-M10-100B	6.4	0.45
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-Trimethylnaphthalene	14/14	0.50	1.9	1.0	OU4-LJ-M01-100B-D	0.29	0.28
1-Methylnaphthalene	14/14	2.0	22	5.4	OU4-LJ-M01-100B	5.1	0.93
1-Methylphenanthrene	14/14	1.1	5.6	1.7	OU4-LJ-M01-100B-D	0.81	0.47
2,6-Dimethylnaphthalene	14/14	0.47	10	1.5	OU4-LJ-M01-100B-D	1.3	0.91
2-Methylnaphthalene	14/14	2.6	12	5.6	OU4-LJ-M01-100B-D	2.3	0.41
Acenaphthene	14/14	1.1	4.6	2.4	OU4-LJ-M01-100B-D	1.0	0.41
Acenaphthylene	14/14	0.20	7.7	1.3	OU4-LJ-M01-100B-D	1.9	1.4
Anthracene	14/14	0.77	14	3.1	OU4-LJ-M13-100B	3.5	1.1
Benzo(a)anthracene	14/14	1.5	18	5.6	OU4-LJ-M13-100B	5.3	0.95
Benzo(a)pyrene	14/14	2.4	41	14	OU4-LJ-M13-100B	12	0.84
Benzo(b)fluoranthene	14/14	2.5	34	12	OU4-LJ-M13-100B	9.1	0.77
Benzo(e)pyrene	14/14	3.7	19	8.5	OU4-LJ-M01-100B-D	4.6	0.53
Benzo(g,h,i)perylene	14/14	3.7	17	7.7	OU4-LJ-M01-100B-D	4.2	0.54
Benzo(k)fluoranthene	14/14	1.0	12	4.6	OU4-LJ-M12-100B	3.2	0.70
Biphenyl	14/14	0.72	3.6	1.8	OU4-LJ-M01-100B-D	0.59	0.33
C1-Chrysenes	14/14	0.10	24	4.3	OU4-LJ-M01-100B-D	4.9	1.1
C1-Dibenzothiophenes	14/14	0.12	1.9	1.2	OU4-LJ-M01-100B-D	0.46	0.38
C1-Dibenzothiophenes	14/14	0.12	1.9	1.2	OU4-LJ-M12-100B	0.46	0.38

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C1-Fluoranthenes/pyrenes	14/14	4.3	39	11	OU4-LJ-M01-100B-D	8.5	0.77
C1-Fluorenes	14/14	3.5	9.8	5.9	OU4-LJ-M01-100B-D	1.7	0.29
C1-Naphthalenes	14/14	4.6	34	11	OU4-LJ-M01-100B-D	7.2	0.66
C1-Phenanthrenes/anthracenes	14/14	2.0	20	7.6	OU4-LJ-M01-100B-D	4.8	0.64
C2-Chrysenes	14/14	0.10	6.2	1.9	OU4-LJ-M02-100B	2.1	1.1
C2-Dibenzothiophenes	14/14	0.10	2.7	1.2	OU4-LJ-M11-100B, OU4-LJ-M13-100B	0.77	0.62
C2-Fluorenes	14/14	0.10	8.1	1.9	OU4-LJ-M01-100B-D	2.0	1.1
C2-Naphthalenes	14/14	2.2	20	7.8	OU4-LJ-M01-100B	3.9	0.50
C2-Phenanthrenes/anthracenes	14/14	2.1	17	6.0	OU4-LJ-M01-100B-D	3.3	0.55
C3-Chrysenes	14/14	0.10	0.90	0.35	OU4-LJ-M12-100B	0.23	0.67
C3-Dibenzothiophenes	14/14	0.010	2.5	0.49	OU4-LJ-M01-100B-D	0.55	1.1
C3-Fluorenes	14/14	0.10	7.8	3.3	OU4-LJ-M01-100B-D	2.8	0.84
C3-Naphthalenes	14/14	1.5	14	5.1	OU4-LJ-M01-100B-D	2.7	0.53
C3-Phenanthrenes/anthracenes	14/14	0.40	13	5.6	OU4-LJ-M01-100B-D	3.5	0.63
C4-Chrysenes	14/14	0.020	1.4	0.26	OU4-LJ-M01-100B	0.24	0.93
C4-Naphthalenes	14/14	0.020	4.2	0.46	OU4-LJ-M08-100B	1.1	2.3
C4-Phenanthrenes/anthracenes	14/14	0.020	2.2	0.52	OU4-LJ-M01-100B-D	0.56	1.1
Chrysene	14/14	5.3	37	13	OU4-LJ-M13-100B	9.5	0.74
Dibenzo(a,h)anthracene	14/14	0.20	1.2	0.68	OU4-LJ-M01-100B, OU4-LJ-M13-100B	0.31	0.46
Dibenzothiophene	14/14	0.44	1.4	0.77	OU4-LJ-M12-100B	0.26	0.34
Fluoranthene	14/14	8.0	111	27	OU4-LJ-M13-100B	28	1.0
Fluorene	14/14	1.1	9.2	3.9	OU4-LJ-M01-100B-D	1.7	0.44
Indeno(1,2,3-cd)pyrene	14/14	1.7	18	7.5	OU4-LJ-M13-100B	4.8	0.64
Naphthalene	14/14	4.7	24	13	OU4-LJ-M01-100B-D	4.1	0.32
Perylene	14/14	3.1	12	6.8	OU4-LJ-M12-100B, OU4-LJ-M13-100B	2.7	0.40

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Phenanthrene	14/14	4.0	23	10	OU4-LJ-M01-100B-D	5.8	0.58
Pyrene	14/14	7.0	76	23	OU4-LJ-M13-100B	19	0.82
Pesticides/PCBs (ug/kg)							
1,2,3,4-Tetrachlorobenzene	14/14	0.070	12	4.5	OU4-LJ-M02-100B	3.7	0.82
2,4'-DDD	9/14	0.0010	2.3	0.80	OU4-LJ-M02-100B	0.78	0.98
2,4'-DDE	7/14	0.15	1.9	0.45	OU4-LJ-M11-100B	0.43	0.96
2,4'-DDT	8/14	0.13	0.79	0.25	OU4-LJ-M14-100B	0.19	0.77
4,4'-DDD	9/14	0.19	0.63	0.26	OU4-LJ-M08-100B	0.16	0.62
4,4'-DDE	14/14	0.79	7.4	2.7	OU4-LJ-M14-100B	1.6	0.59
4,4'-DDT	12/14	1.5	7.6	2.8	OU4-LJ-M02-100B	2.1	0.75
Aldrin	4/14	0.17	0.29	0.21	OU4-LJ-M11-100B-D	0.039	0.19
alpha-BHC	10/14	0.080	0.56	0.22	OU4-LJ-M11-100B	0.12	0.54
beta-BHC	4/14	0.060	0.14	0.12	OU4-LJ-M01-100B	0.024	0.20
cis-Nonachlor	7/14	0.020	0.22	0.11	OU4-LJ-M14-100B	0.056	0.50
delta-BHC	1/14	0.22	0.22	0.088	OU4-LJ-M04-100B	0.039	0.44
Dieldrin	14/14	1.4	3.8	2.2	OU4-LJ-M11-100B-D	0.66	0.29
Endosulfan II	3/14	0.24	1.8	0.28	OU4-LJ-M04-100B	0.44	1.5
Endrin	1/14	1.8	1.8	0.50	OU4-LJ-M04-100B	0.38	0.75
gamma-BHC (Lindane)	14/14	0.33	1.5	0.86	OU4-LJ-M11-100B	0.29	0.34
Gamma-Chlordane	5/14	0.16	0.30	0.18	OU4-LJ-M13-100B	0.048	0.27
Heptachlor	1/14	11	11	1.0	OU4-LJ-M08-100B	2.9	2.9
Hexachlorobenzene	13/14	0.080	0.49	0.29	OU4-LJ-M13-100B, OU4-LJ-M14-100B	0.11	0.39
Mirex	7/14	0.13	1.2	0.40	OU4-LJ-M02-100B	0.27	0.68
Oxychlordane	14/14	0.38	1.7	1.0	OU4-LJ-M03-100B, OU4-LJ-M14-100B	0.45	0.46
PCB-101/90	10/14	0.25	3.2	1.0	OU4-LJ-M03-100B	0.76	0.78
PCB-105	14/14	0.22	1.6	0.78	OU4-LJ-M14-100B	0.41	0.52

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-118	14/14	0.98	7.9	3.4	OU4-LJ-M14-100B	1.8	0.53
PCB-126	14/14	0.17	5.1	0.90	OU4-LJ-M11-100B-D	0.73	0.81
PCB-128	14/14	0.20	1.3	0.64	OU4-LJ-M14-100B	0.29	0.45
PCB-138/160	14/14	1.4	10	4.9	OU4-LJ-M14-100B	2.5	0.51
PCB-149/123	12/14	0.060	4.9	0.77	OU4-LJ-M03-100B	1.2	1.6
PCB-156	6/14	0.16	1.0	0.50	OU4-LJ-M12-100B	0.20	0.40
PCB-167	11/14	0.10	0.69	0.39	OU4-LJ-M11-100B	0.18	0.47
PCB-169	9/14	0.090	5.1	0.50	OU4-LJ-M11-100B-D	0.71	1.4
PCB-18/17	12/14	0.25	1.7	0.85	OU4-LJ-M04-100B	0.50	0.59
PCB-180	14/14	0.52	9.1	2.9	OU4-LJ-M03-100B	2.6	0.92
PCB-187	14/14	0.65	6.0	2.4	OU4-LJ-M14-100B	1.7	0.70
PCB-189	2/14	0.080	0.14	0.48	OU4-LJ-M11-100B	0.16	0.34
PCB-195/208	11/14	0.12	2.2	0.45	OU4-LJ-M10-100B	0.54	1.2
PCB-201/157/173	6/14	0.21	1.2	0.55	OU4-LJ-M03-100B, OU4-LJ-M04-100B	0.33	0.61
PCB-206	12/14	0.080	5.4	0.60	OU4-LJ-M10-100B	1.4	2.3
PCB-209	6/14	0.080	0.65	0.46	OU4-LJ-M10-100B	0.21	0.45
PCB-28	9/14	0.18	3.0	0.83	OU4-LJ-M08-100B	0.73	0.87
PCB-44	7/14	0.10	0.20	0.23	OU4-LJ-M05-100B	0.10	0.43
PCB-52	10/14	0.25	2.0	0.75	OU4-LJ-M07-100B	0.48	0.65
PCB-66	14/14	0.26	2.2	0.73	OU4-LJ-M08-100B	0.51	0.70
PCB-77	5/14	0.21	2.0	0.55	OU4-LJ-M11-100B-D	0.25	0.46
PCB-8/5	5/14	0.11	1.7	0.77	OU4-LJ-M04-100B	0.37	0.48
PCB-81	13/14	0.46	4.7	1.1	OU4-LJ-M11-100B-D	0.57	0.52
Pentachloroanisole	14/14	0.24	0.69	0.40	OU4-LJ-M14-100B	0.12	0.31
Pentachlorobenzene	12/14	0.060	0.68	0.33	OU4-LJ-M13-100B, OU4-LJ-M14-100B	0.22	0.66
Trans-Nonachlor	8/14	0.030	2.0	0.45	OU4-LJ-M11-100B	0.60	1.3

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Inorganics (mg/kg)							
Aluminum	14/14	3.8	14	6.7	OU4-LJ-M04-100B	2.9	0.43
Arsenic	14/14	13	25	18	OU4-LJ-M08-100B-D	3.9	0.22
Cadmium	14/14	0.030	0.22	0.063	OU4-LJ-M14-100B	0.050	0.79
Copper	14/14	22	77	51	OU4-LJ-M11-100B	15	0.29
Iron	14/14	7.9	25	13	OU4-LJ-M04-100B	4.5	0.35
Lead	11/14	0.11	11	0.87	OU4-LJ-M01-100B-D	2.8	3.2
Manganese	14/14	2.5	7.8	3.9	OU4-LJ-M12-100B	1.6	0.41
Mercury	14/14	0.50	8.2	1.2	OU4-LJ-M02-100B	2.0	1.7
Nickel	7/14	0.51	1.1	0.45	OU4-LJ-M11-100B-D	0.25	0.55
Silver	14/14	0.13	0.35	0.25	OU4-LJ-M08-100B, OU4-LJ-M08-100B-D	0.059	0.24
Zinc	14/14	73	137	104	OU4-LJ-M01-100B	16	0.16
Percent Lipids (%)							
Percent Lipids	14/14	1.3	2.8	1.8	OU4-LJ-M14-100B	0.43	0.24

Notes:
- All results are presented in dry weight
- Duplicate samples are averaged in this table
- 1/2 the detection limits for non- detects
- The frequency of detects count a sample and its duplicate as one sample
- This table includes the following monitoring station samples:
  - OU4-LJ-(M01 through M14)-100B
  - OU4-LJ-M01-100B-FD
  - OU4-LJ-M08-100B-FD
  - OU4-LJ-M11-100B-FD
- Source data located in the Round 2 Data Package (TtNUS, October 2000)

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,7,8-HXCDD	1/4	29	29	17	OU4-LJ-R01-100B	10	0.58
1,2,3,4,7,8-HXCDF	1/4	28	28	17	OU4-LJ-R01-100B	9.7	0.57
1,2,3,6,7,8-HXCDD	1/4	28	28	17	OU4-LJ-R01-100B	9.4	0.56
1,2,3,7,8,9-HXCDD	1/4	24	24	16	OU4-LJ-R01-100B	8.1	0.51
2,3,4,6,7,8-HXCDF	1/4	20	20	15	OU4-LJ-R01-100B	7.0	0.47
2,3,7,8-TCDD	3/4	0.20	5.7	1.9	OU4-LJ-R01-100B	2.6	1.3
OCDD	1/4	80	80	30	OU4-LJ-R01-100B	34	1.1
OCDF	1/4	74	74	38	OU4-LJ-R01-100B	27	0.70
TOTAL HXCDD	2/4	9.0	81	27	OU4-LJ-R01-100B	36	1.3
TOTAL TCDD	3/4	0.20	5.7	1.9	OU4-LJ-R01-100B	2.6	1.3
Total Dioxins	3/4	0.20	223	63	OU4-LJ-R01-100B	107	1.7
Total Furans	3/4	1.3	261	77	OU4-LJ-R01-100B	124	1.6
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-Trimethylnaphthalene	4/4	1.0	3.3	1.9	OU4-LJ-R01-100B	1.0	0.53
1-Methylnaphthalene	4/4	3.4	8.9	5.2	OU4-LJ-R04-100B	2.5	0.49
1-Methylphenanthrene	4/4	0.80	3.0	1.8	OU4-LJ-R03-100B	1.1	0.62
2,6-Dimethylnaphthalene	4/4	1.3	3.9	2.2	OU4-LJ-R04-100B	1.2	0.57
2-Methylnaphthalene	4/4	3.7	10	6.1	OU4-LJ-R04-100B	2.9	0.48
Acenaphthene	4/4	1.6	2.4	2.0	OU4-LJ-R01-100B	0.37	0.19
Acenaphthylene	4/4	0.30	1.0	0.65	OU4-LJ-R03-100B, OU4-LJ-R04-100B	0.40	0.62
Anthracene	4/4	0.80	2.4	1.4	OU4-LJ-R03-100B	0.71	0.51
Benzo(a)anthracene	4/4	1.2	6.2	3.9	OU4-LJ-R02-100B	2.3	0.59
Benzo(a)pyrene	4/4	2.3	16	9.1	OU4-LJ-R03-100B	6.4	0.70
Benzo(b)fluoranthene	4/4	2.8	14	8.6	OU4-LJ-R03-100B	5.5	0.64
Benzo(e)pyrene	4/4	0.10	12	5.7	OU4-LJ-R03-100B	4.8	0.84
Benzo(g,h,i)perylene	4/4	1.2	9.6	5.1	OU4-LJ-R03-100B	3.6	0.70

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Benzo(k)fluoranthene	4/4	1.2	5.2	3.2	OU4-LJ-R02-100B	1.9	0.60
Biphenyl	4/4	1.6	6.3	3.3	OU4-LJ-R04-100B	2.2	0.68
C1-Chrysenes	4/4	1.6	10	5.8	OU4-LJ-R03-100B	3.6	0.63
C1-Dibenzothiophenes	4/4	0.90	4.1	2.3	OU4-LJ-R01-100B	1.4	0.63
C1-Fluoranthenes/pyrenes	4/4	3.1	15	9.4	OU4-LJ-R02-100B	5.0	0.53
C1-Fluorenes	4/4	6.9	12	9.0	OU4-LJ-R03-100B	2.1	0.23
C1-Naphthalenes	4/4	7.1	19	11	OU4-LJ-R04-100B	5.4	0.48
C1-Phenanthrenes/anthracenes	4/4	4.5	22	12	OU4-LJ-R01-100B	7.4	0.64
C2-Chrysenes	4/4	1.0	5.2	2.2	OU4-LJ-R03-100B	2.0	0.90
C2-Dibenzothiophenes	4/4	1.0	6.3	3.0	OU4-LJ-R01-100B	2.3	0.77
C2-Fluorenes	4/4	2.3	18	10	OU4-LJ-R03-100B	7.9	0.79
C2-Naphthalenes	4/4	6.9	13	10	OU4-LJ-R04-100B	2.8	0.29
C2-Phenanthrenes/anthracenes	4/4	3.2	25	12	OU4-LJ-R01-100B	9.4	0.78
C3-Chrysenes	4/4	0.20	0.60	0.43	OU4-LJ-R03-100B	0.17	0.40
C3-Dibenzothiophenes	4/4	0.90	4.4	2.2	OU4-LJ-R01-100B	1.6	0.72
C3-Fluorenes	4/4	1.2	12	5.6	OU4-LJ-R01-100B	5.0	0.89
C3-Naphthalenes	4/4	3.2	12	7.7	OU4-LJ-R01-100B	4.3	0.55
C3-Phenanthrenes/anthracenes	4/4	3.0	25	12	OU4-LJ-R01-100B	9.3	0.77
C4-Chrysenes	4/4	0.040	0.70	0.34	OU4-LJ-R04-100B	0.28	0.85
C4-Naphthalenes	4/4	0.10	5.7	2.8	OU4-LJ-R01-100B	2.4	0.86
C4-Phenanthrenes/anthracenes	4/4	0.10	5.8	2.9	OU4-LJ-R01-100B	3.0	1.0
Chrysene	4/4	3.3	16	9.3	OU4-LJ-R02-100B	5.1	0.54
Dibenzo(a,h)anthracene	4/4	0.40	1.3	0.68	OU4-LJ-R03-100B	0.42	0.62
Dibenzothiophene	4/4	0.50	1.0	0.75	OU4-LJ-R03-100B	0.24	0.32
Fluoranthene	4/4	9.5	33	19	OU4-LJ-R02-100B	10	0.54
Fluorene	4/4	2.9	4.4	3.8	OU4-LJ-R03-100B	0.63	0.17
Indeno(1,2,3-cd)pyrene	4/4	1.5	8.8	5.0	OU4-LJ-R03-100B	3.5	0.71
Naphthalene	4/4	10	25	15	OU4-LJ-R04-100B	6.9	0.45

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Perylene	4/4	2.5	26	11	OU4-LJ-R03-100B	11	1.0
Phenanthrene	4/4	6.1	9.2	7.7	OU4-LJ-R03-100B	1.5	0.19
Pyrene	4/4	7.8	31	18	OU4-LJ-R02-100B	10	0.56
Pesticides/PCBs (ug/kg)							
1,2,3,4-Tetrachlorobenzene	4/4	0.16	14	8.1	OU4-LJ-R02-100B	6.2	0.76
1,2,4,5-Tetrachlorobenzene	2/4	2.2	2.3	1.3	OU4-LJ-R03-100B	1.1	0.82
2,4'-DDD	2/4	1.4	1.4	0.76	OU4-LJ-R01-100B, OU4-LJ-R02-100B	0.74	0.97
2,4'-DDE	3/4	0.30	0.39	0.30	OU4-LJ-R01-100B	0.10	0.32
2,4'-DDT	3/4	0.21	0.39	0.29	OU4-LJ-R01-100B	0.12	0.41
4,4'-DDD	2/4	0.11	0.19	0.15	OU4-LJ-R02-100B	0.033	0.22
4,4'-DDE	4/4	2.0	3.4	3.0	OU4-LJ-R02-100B	0.66	0.22
4,4'-DDT	1/4	1.6	1.6	0.57	OU4-LJ-R01-100B	0.69	1.2
Aldrin	2/4	0.29	0.39	0.27	OU4-LJ-R02-100B	0.094	0.35
alpha-BHC	4/4	0.28	1.0	0.54	OU4-LJ-R02-100B	0.34	0.63
Alpha-Chlordane	2/4	3.2	3.4	1.7	OU4-LJ-R04-100B	1.8	1.1
beta-BHC	1/4	0.28	0.28	0.16	OU4-LJ-R02-100B	0.078	0.47
cis-Nonachlor	2/4	0.13	0.14	0.13	OU4-LJ-R01-100B	0.0048	0.036
delta-BHC	3/4	0.21	0.86	0.37	OU4-LJ-R03-100B	0.34	0.94
Dieldrin	4/4	0.73	3.2	2.2	OU4-LJ-R01-100B	1.1	0.52
gamma-BHC (Lindane)	2/4	0.82	0.98	0.78	OU4-LJ-R01-100B	0.18	0.23
Gamma-Chlordane	1/4	0.30	0.30	0.19	OU4-LJ-R01-100B	0.073	0.38
Hexachlorobenzene	3/4	0.34	0.52	0.37	OU4-LJ-R04-100B	0.14	0.38
Mirex	2/4	0.050	0.44	0.30	OU4-LJ-R01-100B	0.17	0.57
Oxychlordane	4/4	0.62	1.3	1.1	OU4-LJ-R01-100B	0.31	0.29
PCB-101/90	3/4	0.67	2.9	1.6	OU4-LJ-R04-100B	1.2	0.76
PCB-105	4/4	0.20	1.2	0.84	OU4-LJ-R03-100B	0.45	0.54
PCB-118	4/4	0.90	4.6	2.7	OU4-LJ-R02-100B	2.0	0.73

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-126	4/4	0.38	1.3	0.67	OU4-LJ-R02-100B	0.43	0.65
PCB-128	4/4	0.17	0.79	0.54	OU4-LJ-R02-100B	0.27	0.50
PCB-138/160	4/4	1.6	4.8	3.9	OU4-LJ-R02-100B, OU4-LJ-R03-100B	1.6	0.40
PCB-149/123	4/4	0.24	0.78	0.51	OU4-LJ-R02-100B	0.27	0.54
PCB-167	3/4	0.20	0.42	0.38	OU4-LJ-R01-100B	0.15	0.38
PCB-169	2/4	0.080	0.12	0.33	OU4-LJ-R02-100B	0.26	0.80
PCB-18/17	2/4	0.62	0.81	1.1	OU4-LJ-R01-100B	0.41	0.38
PCB-180	2/4	1.8	3.0	1.5	OU4-LJ-R02-100B	1.2	0.83
PCB-187	2/4	2.1	2.3	1.3	OU4-LJ-R02-100B	1.0	0.74
PCB-195/208	2/4	0.16	0.19	0.31	OU4-LJ-R02-100B	0.16	0.51
PCB-201/157/173	2/4	0.12	0.15	0.27	OU4-LJ-R01-100B	0.16	0.58
PCB-206	2/4	0.13	0.19	0.31	OU4-LJ-R01-100B	0.18	0.57
PCB-209	2/4	0.24	0.24	0.42	OU4-LJ-R01-100B, OU4-LJ-R02-100B	0.21	0.49
PCB-28	2/4	0.64	0.95	0.61	OU4-LJ-R02-100B	0.25	0.41
PCB-44	3/4	0.31	1.5	0.78	OU4-LJ-R03-100B	0.58	0.73
PCB-52	3/4	0.79	3.8	1.9	OU4-LJ-R03-100B	1.6	0.84
PCB-66	3/4	0.17	0.77	0.53	OU4-LJ-R01-100B	0.26	0.48
PCB-8/5	3/4	0.25	1.7	0.94	OU4-LJ-R04-100B	0.59	0.63
PCB-81	3/4	0.23	1.2	0.59	OU4-LJ-R02-100B	0.43	0.73
Pentachloroanisole	4/4	0.29	0.46	0.37	OU4-LJ-R01-100B	0.088	0.24
Pentachlorobenzene	2/4	0.51	0.53	0.71	OU4-LJ-R02-100B	0.22	0.31
Trans-Nonachlor	3/4	0.23	0.37	0.26	OU4-LJ-R02-100B	0.12	0.48
Inorganics (mg/kg)							
Aluminum	4/4	3.7	8.8	6.9	OU4-LJ-R02-100B, OU4-LJ-R03-100B	2.4	0.35
Arsenic	4/4	14	18	16	OU4-LJ-R03-100B	1.7	0.11

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 2 LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 2 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Cadmium	4/4	0.030	0.070	0.040	OU4-LJ-R01-100B	0.020	0.50
Copper	4/4	46	75	54	OU4-LJ-R04-100B	14	0.27
Iron	4/4	5.9	15	10	OU4-LJ-R02-100B	4.0	0.39
Lead	2/4	0.16	0.64	0.22	OU4-LJ-R02-100B	0.29	1.3
Manganese	4/4	2.6	7.4	4.9	OU4-LJ-R02-100B	2.1	0.43
Mercury	4/4	0.69	1.1	0.95	OU4-LJ-R01-100B	0.18	0.19
Nickel	2/4	0.56	0.69	0.44	OU4-LJ-R02-100B	0.22	0.50
Silver	4/4	0.17	0.47	0.30	OU4-LJ-R04-100B	0.12	0.41
Zinc	4/4	93	129	107	OU4-LJ-R02-100B	16	0.15
Percent Lipids (%)							
Percent Lipids	4/4	1.8	2.2	2.1	OU4-LJ-R01-100B, OU4-LJ-R03-100B	0.19	0.091

Notes:
- All results are presented in dry weight
- Duplicate samples are averaged in this table
- 1/2 the detection limits for non-detects
- The frequency of detects count a sample and its duplicate as one sample
- This table includes the following reference station samples:
  - OU4-LJ-(R01 through R04)-100B
- Source data located in the Round 2 Data Package (TtNUS, October 2000)

TABLE A.2-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Average Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
1,2,3,4,6,7,8-HPCDD	28.8 - 88.9	59.0							48.9	56.6	88.5	39.2	72.6	74.0 U		
1,2,3,4,6,7,8-HPCDF	7.7 - 26.0	16.8							13.5	17.3	149.0	15.7	44.5	19.0		
1,2,3,4,7,8,9-HPCDF	0.3 - 1.8	1.1							0.3 U	0.7 U	9.7	0.4	0.6 U	0.9 U		
1,2,3,4,7,8-HXCDD	0.3 - 1.3	0.8							0.6	0.6	2.0	0.6	0.6 U	1.1		
1,2,3,4,7,8-HXCDF	0.4 - 1.3	0.7							0.8	2.2	20.9	1.7	9.3	1.2		
1,2,3,6,7,8-HXCDD	1.1 - 4.2	2.3							2.3	3.1	5.4	1.8	6.2	2.6		
1,2,3,6,7,8-HXCDF	0.3 - 1.5	1.0							0.5	0.9 U	17.6	0.7	7.5	0.8		
1,2,3,7,8,9-HXCDD	0.6 - 1.8	1.3							0.7 U	1.8	3.3	0.8 U	4.6	1.2		
1,2,3,7,8,9-HXCDF	0.3 - 1.9	1.1							0.5 U	0.5	1.2	0.3	0.6 U	0.7 U		
1,2,3,7,8-PECDD	0.1 - 1.3	0.8							0.7 U	0.8	1.7	0.6 U	0.6 U	0.8		
1,2,3,7,8-PECDF	0.2 - 1.4	0.9							0.2 U	0.7 U	3.5 U	0.5 U	5.4	0.7		
2,3,4,6,7,8-HXCDF	0.4 - 1.4	1.0							0.5	2.1	22.8	0.5 U	11.8	1.2		
2,3,4,7,8-PECDF	0.2 - 1.3	0.9							0.4	0.9	11.7	0.4	8.7	0.8		
2,3,7,8-TCDD	0.1 - 0.4	0.2							0.1	0.2	0.3	0.1	0.1 U	0.1 U		
2,3,7,8-TCDF	0.4 - 0.6	0.5							0.4	0.9	3.1	0.7	0.1 U	1.0		
OCDD	460.4 - 791.8	579							416	460	673	360	274	650		
OCDF	12.1 - 35.0	23.5							24.4	24.9	72.1	21.3	26.5	33.8		
TOTAL DIOXINS	541 - 771	677							551	640	923	473	495	928		
TOTAL FURANS	42.0 - 133.2	79.0							65.4	85.8	580.2	74.5	256.0	105.7		
TOTAL HPCDD	69.2 - 197.1	142							110	148	201	91	159	245		
TOTAL HPCDF	17.6 - 60.2	37.7							33.7	37.9	202.3	32.1	65.5	48.7		
TOTAL HXCDD	9.6 - 45.1	29.1							23.7	29.2	44.0	20.0	54.4	29.4		
TOTAL HXCDF	7.1 - 24.6	12.2							6.2	22.5	162.1	15.5	63.2	15.8		
TOTAL PECDD	0.1 - 1.6	1.0							0.7 U	0.8	1.7	0.6 U	0.6 U	0.8		
TOTAL PECDF	1.0 - 9.7	3.4							0.4 U	9.6	91.6	4.0	40.4	3.0 U		
TOTAL TCDD	1.6 - 6.0	3.0							0.6	2.7	5.2	2.2	7.7	2.7		
TOTAL TCDF	0.4 - 3.7	1.4							0.4	5.8	50.4	1.5	60.5	1.8		
Semi-Volatile Organics (ug/kg)																
1,6,7-TRIMETHYLNAPHTHALENE	1.6 - 14.6	9.1	18.1	3.9	6.4	10.2	8.7	4.8	4.8	11.5	9.7	19.6	12.8	16.3	43.9	7.7
1-METHYLNAPHTHALENE	2.2 - 10.8	6.5	40.7	4.8	8.5	24.7	10.7	6.4	5.9	14.4	5.2	10.8	17.5	60.0	32.1	7.6
1-METHYLPHENANTHRENE	6.9 - 85.1	43.2	141.6	15.3	35.2	42.7	27.2	27.2	19.3	48.2	27.9	52.7	41.0	139.3	144.2	39.0
2,6-DIMETHYLNAPHTHALENE	4.0 - 10.7	7.6	25.5	4.5	7.5	17.0	10.6	7.0	6.1	12.5	6.7	18.6	20.0	24.1	73.9	7.7
2-METHYLNAPHTHALENE	3.4 - 15.7	9.3	54.2	7.8	13.5	42.0	16.5	10.9	9.0	24.3	8.5	16.2	37.0	81.8	50.7	13.0
ACENAPHTHENE	2.6 - 33.2	16.3	96.7	6.6	27.9	21.9	22.4	17.6	10.3	31.4	11.2	39.3	12.6	337.6	480.8	10.4
ACENAPHTHYLENE	10.9 - 68.2	37.0	139.9	25.9	44.0	117.0	55.0	37.2	35.6	76.6	21.6	91.5	35.6	70.2	80.9	51.4
ANTHRACENE	20.4 - 260.0	146	394.2	62.0	156.7	250.7	163.1	104.1	74.4	269.8	95.2	715.7	159.7	686.1	585.3	137.4
BENZO(A)ANTHRACENE	25.3 - 398.2	237	619.3	99.2	268.5	412.6	258.0	287.7	127.7	385.0	139.1	579.1	211.2	1240.2	678.1	284.6
BENZO(A)PYRENE	42.2 - 506.5	290	784.8	121.1	306.1	408.7	324.7	438.7	175.7	406.4	143.9	619.5	249.3	1289.7	560.2	384.2
BENZO(B)FLUORANTHENE	48.2 - 482.5	270	653.4	119.8	319.5	443.3	297.0	448.1	166.9	487.3	147.9	522.2	230.6	1357.4	591.0	315.0
BENZO(E)PYRENE	25.1 - 253.7	143	446.9	66.0	166.7	225.6	169.5	247.5	88.3	243.6	80.5	281.7	124.6	677.9	285.3	194.2
BENZO(G,H,I)PERYLENE	25.6 - 237.7	135	449.7	64.1	172.9	268.2	155.8	233.6	85.8	224.8	70.8	272.9	129.9	687.6	212.9	203.8
BENZO(K)FLUORANTHENE	14.1 - 172.2	96	207.4	38.6	109.2	107.8	105.2	145.2	51.3	147.3	52.1	202.4	76.9	378.2	184.9	99.2
BIPHENYL	2.2 - 4.7	3.2	16.5	2.1	3.7	6.9	4.5	3.8	2.6	5.6	3.3	8.0	10.3	14.4	35.8	4.1
C1-CHRYSENES	20.5 - 295.7	176	589.5	74.1	164.6	249.9	168.0	213.1	89.6	242.7	103.8	298.3	117.2	643.7	388.8	308.4
C1-DIBENZOTHIOPHENES	2.8 - 21.4	15.1	26.1	6.2	10.6	21.6	13.9	9.6	7.0	16.6	12.3	24.8	16.2	33.1	42.8	11.4
C1-FLUORANTHENES/PYRENES	30.7 - 362.8	236	825.3	102.8	224.7	313.7	259.6	263.0	130.1	362.9	162.9	465.9	205.2	836.4	736.5	318.8
C1-FLUORENES	4.9 - 63.3	36.8	121.2	12.7	25.3	73.2	31.0	23.2	17.1	34.1	34.0	84.9	31.7	101.8	204.0	33.4
C1-NAPHTHALENES	5.5 - 26.5	15.9	94.9	12.6	21.9	66.7	27.2	17.2	14.9	38.8	13.7	26.9	54.5	141.7	82.8	20.6
C1-PHENANTHRENES/ANTHRACENES	30.5 - 271.0	160	538.4	62.4	118.0	194.0	128.2	101.3	70.0	178.7	118.1	307.3	133.6	478.5	490.2	126.3
C2-CHRYSENES	10.6 - 121.1	76.6	277.5	33.9	64.2	114.2	74.7	80.0	45.1	104.6	58.9	172.0	55.8	187.8	123.8	146.7
C2-DIBENZOTHIOPHENES	3.4 - 27.4	18.2	32.0	9.5	14.1	28.3	20.0	14.7	9.3	24.6	13.0	22.7	23.2	31.0	40.0	15.9
C2-FLUORENES	8.1 - 56.9	40.0	97.4	23.6	25.0	40.3	33.3	26.5	16.7	46.0	31.0	58.7	26.4	61.7	104.5	40.8
C2-NAPHTHALENES	7.8 - 39.3	24.3	105.3	14.0	25.2	60.0	29.1	18.7	17.6	39.5	19.6	63.0	55.4	117.6	153.9	25.5
C2-PHENANTHRENES/ANTHRACENES	15.2 - 204.3	113	358.4	47.8	73.6	129.8	97.8	89.7	51.4	130.5	78.3	174.6	89.6	209.7	227.3	109.6
C3-CHRYSENES	1.5 - 14.0	5.7	11.4	2.8	5.4	7.2	4.2	5.0	1.9	7.2	5.1	5.6	5.4	9.9	8.0	3.4
C3-DIBENZOTHIOPHENES	2.4 - 20.4	12.4	25.3	7.5	12.2	17.3	16.0	14.9	7.1	14.7	9.5	14.4	14.9	16.1	25.7	16.4
C3-FLUORENES	12.0 - 41.7	30.9	71.8	14.2	19.6	31.3	26.4	31.6	10.6	32.3	19.4	34.7	21.6	45.3	63.1	40.4
C3-NAPHTHALENES	6.0 - 57.9	32.1	86.7	16.5	25.3	54.2	27.9	16.3	17.2	42.8	32.4	73.0	53.9	78.5	114.0	24.0
C3-PHENANTHRENES/ANTHRACENES	10.8 - 72.9	52.3	196.8	31.6	46.5	71.0	57.8	66.3	31.3	67.6	41.5	87.4	55.7	105.9	100.5	80.1
C4-CHRYSENES	1.0 - 1.8	1.5	14.4	1.5	1.7	4.5	1.3	2.0	1.1	5.2	1.1	2.8	1.1	2.5	1.6	2.7
C4-NAPHTHALENES	1.4 - 21.2	11.4	30.0	5.5	9.1	15.9	11.7	5.7	4.9	15.9	9.1	13.6	17.2	18.7	31.3	9.7
C4-PHENANTHRENES/ANTHRACENES	4.2 - 25.8	17.5	74.3	5.4	17.0	26.8	15.2	25.9	12.5	15.6	10.8	13.3	27.1	31.6	29.4	52.0
CHRYSENE	33.5 - 396.9	231	617.5	106.0	275.3	398.2	278.3	369.5	132.6	451.9	123.9	496.3	212.7	1132.5	630.5	254.1

TABLE A.2-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Parameter	Average Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
DIBENZO(A,H)ANTHRACENE	6.2 - 76.1	43.0	134.4	19.0	55.9	92.2	46.6	67.2	23.7	71.3	22.5	87.4	40.2	243.8	79.7	62.7
DIBENZOTHIOPHENE	1.9 - 19.4	12.5	42.0	4.8	12.3	15.8	11.5	12.8	5.7	15.3	6.6	34.0	14.2	85.1	83.8	8.8
FLUORANTHENE	64.1 - 696.0	455.6	1063.5	181.2	473.6	650.3	472.5	592.8	249.1	742.7	255.9	944.5	403.7	2123.7	1494.3	327.6
FLUORENE	5.6 - 60.2	35.5	203.3	13.4	45.0	54.8	44.3	36.8	19.8	48.2	22.2	132.7	39.3	370.3	704.5	34.5
INDENO(1,2,3-CD)PYRENE	27.9 - 271.6	153.3	423.2	50.8	189.4	302.2	169.7	252.0	92.9	244.6	75.9	333.5	138.1	830.0	254.2	202.2
NAPHTHALENE	6.7 - 26.1	16.4	94.4	12.4	22.3	55.6	25.0	18.6	16.5	31.2	13.3	42.1	48.4	168.3	31.1	24.6
PERYLENE	11.6 - 78.6	48.3	81.4	29.6	61.0	63.3	61.8	58.1	42.6	69.2	29.8	101.3	48.9	162.1	82.4	44.8
PHENANTHRENE	26.8 - 344.8	212.8	985.4	78.5	219.3	238.8	192.3	235.2	96.8	281.9	106.5	536.5	187.3	1404.2	1186.7	144.9
PYRENE	59.7 - 616.8	395.4	1140.4	167.7	423.8	557.9	426.9	495.7	228.2	819.3	226.3	761.8	360.4	1732.4	1192.2	355.9
LMH PAH		473.2	1968.1	206.7	528.7	780.8	518.6	460.4	262.4	763.4	278.5	1574.0	519.9	3118.5	3120.0	416.1
HMW PAH		1652.8	4359.8	694.3	1803.1	2519.8	1807.0	2251.7	937.0	2876.5	911.5	3488.7	1477.5	7762.3	4635.0	1669.1
TOTAL PAH		2126.0	6328.0	900.9	2331.8	3300.6	2325.6	2712.2	1199.4	3639.9	1190.0	5062.6	1997.5	10880.8	7755.0	2085.2
Pesticides/PCBs (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	0.11 - 0.15	0.1	0.1	0.1	0.5	0.3	0.2	0.2	0.1	0.3	0.8	0.1	0.5	0.1	0.1	0.1
1,2,4,5-TETRACHLOROBENZENE	0.11 - 0.63	0.3	0.2	0.3	0.6	0.6	0.6	0.5	0.9	0.8	1.4	0.3	1.2	0.3	0.4	0.6
2,4'-DDD	0.17 - 1.69	0.8	15.2	0.7	1.9	11.3	1.2	0.9	0.8	21.4	1.2	5.8	1.2	2.4	1.0	0.6
2,4'-DDE	0.11 - 0.74	0.3	0.5	0.2	0.0 U	2.0	0.2	0.4	0.2	0.9	0.2	0.2	0.5	0.2	0.1	0.1
2,4'-DDT	0.02 - 0.46	0.2	5.9	0.3	0.4	17.0	0.2	0.1	0.1 U	18.2	0.9	0.7	0.6	0.4	0.0	0.0
4,4'-DDD	0.24 - 2.80	1.0	36.9	1.2	3.8	24.9	1.3	0.7	1.0 U	62.8	1.7	16.5	2.0	1.3	0.7	0.4
4,4'-DDE	0.29 - 0.71	0.5	11.8	1.7	1.4	70.0	0.9	1.6	1.3	20.5	1.3	1.5	0.7	0.8	0.3	1.0
4,4'-DDT	0.16 - 3.17	1.0	39.3	1.1	1.1	84.8	0.9	0.7	0.5 U	148.3	2.4	1.8 U	8.2	1.4	0.4	0.3
ALDRIN	0.04 - 2.29	0.76	0.3	0.1	0.0 U	0.0 U	0.0	0.0 U	0.0	0.1	0.7	0.0	1.4	3.7	1.5	0.5
ALPHA-BHC	0.05 - 0.16	0.12	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
ALPHA-CHLORDANE	0.09 - 0.27	0.15	3.8	0.2	0.3	0.5	0.3	0.3	0.1	2.4	0.4	3.0	1.1	0.4	0.2	0.1
BETA-BHC	0.16 - 0.30	0.22	0.3	0.2	0.7	0.8	1.4	0.3	0.8	0.7	0.5	0.9	0.4	0.8	0.3	0.1
CHLORPYRIFOS	0.06 - 0.25	0.16	0.1 U	0.1	0.1 U	0.1 U	0.2	0.2 U	0.1 U	0.1 U	0.2 U	0.4	0.1 U	0.1 U	0.0	0.1
CIS-NONACHLOR	0.12 - 0.47	0.2	0.6	0.3	0.3	0.7	0.3	0.2	0.1	0.7	0.3	0.4	0.5	0.3	0.1	0.2
DELTA-BHC	0.03 - 0.08	0.05	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0 U	0.0 U	0.0 U	0.0 U
DIELDRIN	0.08 - 0.40	0.16	4.0	0.2	0.4	0.1	0.2	0.2	0.2	0.5	0.0	0.2	2.1	0.1	0.2	0.0
ENDOSULFAN II	0.14 - 0.37	0.21	1.7	0.5	0.7	0.7	0.8	0.8	0.4	1.7	0.7	0.5	0.6	1.6	0.2	0.3
ENDRIN	0.05 - 0.16	0.10 U	0.2	0.0 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.0 U	0.1 U	0.1 U	0.0
GAMMA-BHC (LINDANE)	0.07 - 0.19	0.11	0.2	0.1	0.2	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1 U	0.1
GAMMA-CHLORDANE	0.02 - 0.09	0.06	2.9	0.1	0.1	0.2	0.1	0.1	0.1	2.8	0.2	4.2	0.0 U	0.1	0.0	0.0
HEPTACHLOR	0.06 - 0.20	0.12	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	2.4	0.1	0.1 U	0.0 U
HEPTACHLOR EPOXIDE	0.01 - 0.03	0.02 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.0 U	0.2	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U
HEXACHLOROBENZENE	0.02 - 2.83	0.74	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.1	1.5	0.0	0.2	0.7	0.0	0.0
MIREX	0.02 - 0.14	0.06	0.4	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.3	0.0 U	0.2	0.0	0.0 U
OXYCHLORDANE	0.01 - 0.31	0.17	0.4	0.0	0.1	0.2	0.1	0.2	0.0	0.2	0.0 U	0.1	0.0 U	0.3	0.3	0.1
PCB-101/90	0.42 - 9.94	3.0	0.9	0.5	5.8	7.3	1.1	1.0	0.9	9.5	3.4	0.9	17.9	3.1	0.9	1.2
PCB-105	0.19 - 5.65	1.6	0.4	0.5	1.8	2.4	0.7	0.6	0.7	4.2	2.0	0.5	5.9	1.5	0.5	0.8
PCB-114	0.07 - 0.21	0.14 U	0.0 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
PCB-118	0.45 - 10.52	3.0	1.1	0.9	1.5	3.0	1.2	0.9	0.8	5.1	2.7	1.3	11.2	2.5	1.3	1.4
PCB-126	0.03 - 0.16	0.1	0.1	0.0	2.6	1.3	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0
PCB-128	0.06 - 2.33	0.7	0.8	0.4	1.0	1.2	0.3	0.3	0.2	2.3	1.0	0.2	2.5	1.0	0.2	0.4
PCB-138/160	0.47 - 8.78	2.6	1.2	0.7	14.4	14.0	1.4	0.8	1.0	22.6	4.6	0.7	22.4	6.8	1.3	1.3
PCB-149/123	0.16 - 2.29	0.7	0.6	0.7	7.3	9.0	1.1	0.9	0.4	12.9	2.2	0.5	5.4	4.4	0.5	0.5
PCB-153/132	0.44 - 6.14	1.9	1.0	1.0	14.8	14.1	2.0	0.8	2.6	27.9	3.7	1.5	12.7	8.3	1.2	1.1
PCB-156	0.16 - 0.76	0.3	0.8	0.5	1.4	2.9	0.7	0.5	0.6	3.5	0.2	0.7	0.6	2.3	0.5	0.1
PCB-167	0.13 - 0.80	0.4	0.4	0.2	0.6	0.4	0.6	0.6	0.1	1.3	0.6	0.2	0.9	1.2	0.4	0.4
PCB-169	0.07 - 0.21	0.1	0.1	0.0	0.4	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1 U	0.0
PCB-170/190	0.66 - 5.23	2.4	14.3	4.3	14.2	5.2	3.6	1.4	0.3	22.2	3.8	5.4	5.7	30.5	6.4	2.5
PCB-18/17	0.06 - 0.54	0.3	0.1	0.0 U	0.0 U	0.1	0.1	0.1	0.3	0.5	0.3	0.0 U	0.2	1.0	0.6	0.1
PCB-180	0.17 - 1.62	0.6	0.6	0.7	9.3	13.0	0.9	0.6	0.3 U	23.5	2.4	0.6	9.7	6.8	1.0	0.5
PCB-187	0.16 - 0.59	0.3	0.3	0.4	6.0	9.4	0.9	0.6	0.5	11.4	2.3	0.4	9.7	4.0	0.6	0.3
PCB-189	0.11 - 0.20	0.2	0.4	0.1	0.2	0.3	0.2	0.1	0.2	0.5	0.4	0.2	0.3	0.4	0.2	0.0
PCB-195/208	0.06 - 0.30	0.2	0.5	0.2	1.2	2.1	0.3	0.2	0.3	3.2	2.9	0.2	2.4	1.4	0.3	0.2
PCB-201/157/173	0.07 - 0.42	0.2	0.4	0.2	0.7	0.8	0.3	0.1	0.1	1.1	0.6	0.1	1.1	0.9	0.4	0.1
PCB-206	0.09 - 0.21	0.1	0.2	0.1	1.5	3.8	0.3	0.2	0.8	4.6	7.2	0.2	5.1	1.5	0.4	0.2
PCB-209	0.18 - 1.01	0.5	0.6	0.2	0.7	4.0	0.5	0.5	0.2 U	1.3	2.2	0.3	1.0	0.6	0.6	0.3
PCB-28	0.63 - 1.41	1.0	0.5	1.5	0.8	0.7	1.3	1.2	1.3	1.6	1.0	1.1	1.2	2.6	1.4	0.4
PCB-44	0.13 - 1.56	0.5	0.4	0.2	0.2	0.6	1.0	0.5	0.6	1.9	0.7	0.4	2.3	1.2	0.3	0.3
PCB-52	0.28 - 5.13	1.6	0.6	0.5	2.0	1.8	0.9	0.6	0.6	3.4	1.9	0.7	6.8	2.0	0.9	0.7
PCB-66	0.11 - 1.52	0.5	0.3	0.1	0.2	0.4	0.2	0.1	0.4	1.6	0.6	0.5	2.0	1.4	0.3	0.4
PCB-77	0.06 - 0.13	0.1	0.2	0.1	0.8	0.3	0.3	0.5	0.4 U	0.4 U	0.8	0.2 U	0.8	0.3	0.1	0.1
PCB-8/5	0.47 - 1.09	0.7	1.0	0.4	0.0	0.8	0.8	0.7	0.3	0.4	0.8	0.9	0.8	1.2	1.8	0.5
PCB-81	0.05 - 0.21	0.1	0.2	0.1	1.4	0.9	0.2	0.2	0.1	0.2	0.3	0.0	0.1 U	0.1	0.0	0.0
PENTACHLOROANISOLE	0.05 - 0.12	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0
PENTACHLOROBENZENE	0.11 - 0.20	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	1.6	0.0	0.5	0.1	0.1	0.1
TRANS-NONACHLOR	0.07 - 0.30	0.2	1.3	0.1	0.1	0.3	0.1	0.1	0.1	1.6	0.2	1.6	0.3	0.2	0.1	0.0

TABLE A.2-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Average Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Inorganics (mg/kg)																
ALUMINUM	1.0 - 1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.00007 - 0.00017	0.00012	0.00023	0.00022	0.00025	0.00031	0.00018	0.00023	0.00020	0.00021	0.00021	0.00019	0.00025	0.00016	0.00025	0.00017
CADMIUM	0.000002 - 0.000008	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001
CHROMIUM	0.00094 - 0.00127	0.00106	0.00153	0.00174	0.00195	0.00197	0.00159	0.00133	0.00158	0.00247	0.00205	0.00133	0.00299	0.00157	0.00185	0.00140
COPPER	0.00012 - 0.00034	0.00024	0.00167	0.00097	0.00755	0.01765	0.00066	0.00037	0.00062	0.00882	0.00518	0.00059	0.01227	0.00130	0.00124	0.00067
IRON	0.25776 - 0.37114	0.32004	0.49167	0.41513	0.50946	0.68047	0.39868	0.40031	0.38832	0.77209	0.66047	0.39235	0.79365	0.39200	0.53977	0.38466
LEAD	0.00040 - 0.00101	0.00071	0.00288	0.00281	0.00241	0.00387	0.00122	0.00065	0.00079	0.00340	0.00274	0.00109	0.01256	0.00171	0.00102	0.00158
MANGANESE	0.00892 - 0.01251	0.01086	0.01661	0.00820	0.00724	0.01212	0.00805	0.01152	0.00666	0.01230	0.01652	0.00829	0.01311	0.00800	0.00742	0.00669
MERCURY	0.000002 - 0.000004	0.000003	0.00000	0.00001	0.00001	0.00003	0.00001	0.00000	0.00001	0.00001	0.00001	0.00000	0.00002	0.00001	0.00001	0.00001
NICKEL	0.00030 - 0.00047	0.00038	0.00054	0.00053	0.00082	0.00283	0.00049	0.00056	0.00047	0.00170	0.00168	0.00050	0.00171	0.00059	0.00054	0.00043
SILVER	0.000002 - 0.000006	0.000003	0.00001	0.00002	0.00002	0.00003	0.00001	0.00000	0.00001	0.00001	0.00001	0.00001	0.00006	0.00001	0.00001	0.00001
ZINC	0.00063 - 0.00144	0.00110	0.00308	0.00372	0.00557	0.01374	0.00183	0.00124	0.00165	0.01187	0.00560	0.00190	0.01109	0.00376	0.00299	0.00179

Footnotes:
Shaded values indicate concentrations that are five times greater than concentrations at the reference stations for dioxins and metals; two times greater for semivolatiles; 10 times greater for pesticides/PCBs.
Metal concentrations are normalized by dividing the parameter concentration by the aluminum concentration.
Normalized concentrations were determined by dividing sediment concentration by percent TOC.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.2-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
1,2,3,4,6,7,8-HPCDD	2.8 - 5.7	3.9							1.7 U	6.5	4.1	3.6	3.3	2.8		
1,2,3,4,6,7,8-HPCDF	0.8 - 1.5	1.1							1.3	1.6	1.1	1.0	1.0	0.6		
1,2,3,4,7,8,9-HPCDF	1.5 - 1.7	1.6 U							1.7 U	1.6	1.5 U	1.7 U	1.4 U	1.7 U		
1,2,3,4,7,8-HXCDD	1.5 - 1.7	1.6 U							1.7 U	2.2 U	1.5 U	1.1	1.1	1.3 U		
1,2,3,4,7,8-HXCDF	1.5 - 1.7	1.6 U							1.7 U	2.2 U	1.5 U	1.1	1.4 U	1.7 U		
1,2,3,6,7,8-HXCDD	0.7 - 1.5	1.1							1.7 U	1.1	0.8	1.7 U	1.0	1.4 U		
1,2,3,6,7,8-HXCDF	0.8 - 1.7	1.4							1.7 U	2.2 U	1.5 U	1.7 U	1.4 U	1.7 U		
1,2,3,7,8,9-HXCDD	1.2 - 1.6	1.4							1.7 U	0.6	0.8	1.3	1.4 U	1.5 U		
1,2,3,7,8,9-HXCDF	1.5 - 1.7	1.6 U							1.7 U	2.2 U	1.5 U	1.7 U	1.4 U	1.7 U		
1,2,3,7,8-PECDD	1.2 - 1.6	1.4							1.7 U	0.5	1.5 U	1.1	1.4 U	0.9		
1,2,3,7,8-PECDF	0.8 - 1.5	1.0							1.7 U	1.8	1.1	0.6	1.1	0.8		
2,3,4,6,7,8-HXCDF	0.7 - 1.6	1.3							0.9	2.2 U	1.5 U	1.7 U	1.4 U	1.3 U		
2,3,4,7,8-PECDF	0.1 - 1.6	1.0							1.0	1.0	0.9	0.9	1.1 2	1.0		
2,3,7,8-TCDD	0.1 - 0.3	0.3 U							0.3 U	0.3	0.3 U	0.3 U	0.2	0.3 U		
2,3,7,8-TCDF	0.3 - 0.7	0.4							0.3	1.3	2.8	1.1	1.3	0.4		
OCDD	13.7 - 25.9	20.0							8.9	33.8	21.8	18.0	19.9	17.9		
OCDF	2.2 - 3.2	2.7							3.3 U	3.7	3.0 U	3.0	1.9	3.9 U		
TOTAL DIOXINS	17.1 - 46.6	31.0							24.6	47.9	39.0	66.2	27.9	28.8		
TOTAL FURANS	1.3 - 13.2	5.7							4.3	16.3	10.7	9.8	7.4	16.1		
TOTAL HPCDD	3.5 - 12.4	9.5							4.3	11.2	10.0	17.3	7.3	4.5		
TOTAL HPCDF	1.3 - 3.2	2.1							1.4	2.5	1.2	3.7	1.5	1.4		
TOTAL HXCDD	1.0 - 3.0	1.7							1.3	1.1	2.2	5.0	1.0	2.2 U		
TOTAL HXCDF	0.9 - 1.5	1.3							0.3	1.5	1.5 U	1.5	1.1	2.6		
TOTAL PECDD	1.2 - 1.6	1.4							1.0	0.5	1.5 U	1.1	1.4 U	0.9		
TOTAL PECDF	0.4 - 2.1	1.3							0.4	2.2	2.7	3.0	1.8	0.7		
TOTAL TCDD	0.3 - 2.6	1.2							1.6	1.6	3.4	1.0	0.2	1.4		
TOTAL TCDF	0.3 - 4.2	1.9							0.9	7.6	5.9	2.7	4.4	0.9		
Semi-Volatile Organics (ug/kg)																
1,6,7-TRIMETHYLNAPHTHALENE	0.5 - 0.9	0.6	0.51	0.42	0.51	0.43	0.41	0.45	0.37	0.68	0.38	0.41	0.67	0.59	0.57	0.52
1-METHYLNAPHTHALENE	0.7 - 1.2	1.0	0.62	0.80	0.92	0.62	0.62	0.75	0.54	0.99	0.65	0.73	0.92	1.16	1.05	1.07
1-METHYLPHENANTHRENE	0.8 - 2.1	1.2	0.75	0.74	0.61	0.63	0.54	0.67	0.47	0.85	0.90	0.65	0.92	1.60	1.52	0.87
2,6-DIMETHYLNAPHTHALENE	0.6 - 0.7	0.7	0.61	0.58	0.55	0.48	0.42	0.54	0.45	0.78	0.48	0.55	0.64	0.69	0.70	0.66
2-METHYLNAPHTHALENE	1.1 - 2.0	1.5	1.00	1.32	1.37	1.03	0.91	1.10	0.86	1.57	1.08	1.22	1.37	1.63	1.51	1.63
ACENAPHTHENE	1.1 - 1.5	1.3	1.07	1.18	1.30	0.85	0.98	1.50	1.09	1.83	1.27	1.00	1.17	2.69	2.01	1.38
ACENAPHTHYLENE	1.6 - 3.2	2.4	2.08	1.91	2.04	2.09	1.63	1.78	1.76	2.93	2.11	1.61	1.75	2.82	3.89	2.32
ANTHRACENE	3.1 - 6.1	4.7	3.73	3.91	4.41	4.28	3.04	3.65	3.37	5.79	4.90	3.39	3.64	8.61	9.06	4.34
BENZO(A)ANTHRACENE	1.2 - 2.1	1.8	1.82	1.83	1.76	1.81	1.13	1.93	1.19	2.41	2.49	1.42	1.52	4.23	4.34	2.21
BENZO(A)PYRENE	1.1 - 2.1	1.6	1.40	1.63	1.66	2.04	0.95	1.93	1.03	2.54	2.28	1.24	1.33	3.05	2.92	2.53
BENZO(B)FLUORANTHENE	2.1 - 4.4	3.4	3.03	3.02	3.84	3.85	2.12	3.83	2.24	4.64	4.12	2.71	2.94	5.32	6.32	3.54
BENZO(E)PYRENE	1.9 - 3.8	2.9	2.56	2.57	2.99	3.28	2.04	3.06	2.06	3.88	3.28	2.27	2.40	3.79	4.68	3.02
BENZO(G,H,I)PERYLENE	1.0 - 2.0	1.6	1.46	1.52	1.84	2.13	1.04	1.69	1.21	2.59	2.03	1.23	1.26	2.23	2.39	1.76
BENZO(K)FLUORANTHENE	0.6 - 1.3	0.9	0.70	1.14	0.94	1.36	0.76	1.18	0.87	1.66	1.28	0.95	0.75	1.46	1.69	0.96
BIPHENYL	0.4 - 0.5	0.5	0.35	0.36	0.43	0.30	0.27	0.43	0.25	0.44	0.27	0.32	0.51	0.61	0.54	0.53
C1-CHRYSENES	1.4 - 3.0	2.1	1.94	1.80	2.03	2.24	1.14	1.95	1.42	2.68	2.22	1.69	1.80	2.78	3.17	2.35
C1-DIBENZOTHIOPHENES	0.5 - 1.6	0.8	0.63	0.54	0.60	0.43	0.47	0.62	0.52	0.65	0.55	0.49	0.74	0.69	0.72	0.52
C1-FLUORANTHENES/PYRENES	2.7 - 4.3	3.6	3.15	3.26	3.35	3.49	2.30	3.33	1.99	4.42	4.01	2.40	3.02	6.08	6.45	3.90
C1-FLUORENES	2.1 - 3.4	2.5	2.28	2.30	3.37	1.89	1.89	3.21	1.89	3.07	2.25	2.31	2.55	3.75	2.52	2.69
C1-NAPHTHALENES	1.8 - 3.1	2.5	1.62	2.12	2.28	1.65	1.53	1.85	1.39	2.55	1.73	1.94	2.29	2.79	2.57	2.69
C1-PHENANTHRENES/ANTHRACENES	2.9 - 6.9	4.2	3.09	2.67	3.09	2.70	2.22	2.91	2.15	3.64	3.58	2.35	3.46	5.17	5.13	2.99
C2-CHRYSENES	1.1 - 1.5	1.3	1.11	1.14	1.40	0.81	0.67	1.25	1.10	1.15	2.67	0.68	1.06	1.50	1.76	1.51
C2-DIBENZOTHIOPHENES	1.6 - 3.6	2.5	1.62	1.75	1.46	1.30	1.48	1.52	1.12	1.54	1.37	1.26	1.73	1.33	1.62	1.86
C2-FLUORENES	1.7 - 6.9	3.5	1.81	1.53	1.86	1.67	1.37	1.75	1.57	2.27	1.51	1.30	3.22	1.88	1.91	1.60

TABLE A.2-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
C2-NAPHTHALENES	2.1 - 2.5	2.3	1.30	1.82	2.15	1.40	1.41	1.72	1.37	2.24	1.59	1.73	1.87	3.12	2.32	2.24
C2-PHENANTHRENES/ANTHRACENES	3.6 - 9.2	5.9	4.10	3.17	3.58	2.80	2.89	3.07	3.06	4.25	3.77	2.86	4.76	4.21	4.81	3.66
C3-CHRYSENES	0.0 - 0.1	0.1	0.12	0.09	0.14	0.07	0.06	0.22	0.06	0.05	0.07	0.14	0.12	0.08	0.06	0.05
C3-DIBENZOTHIOPHENES	1.2 - 3.0	1.8	1.17	1.04	0.86	1.26	0.93	1.08	0.86	1.14	0.98	1.00	1.55	1.26	1.73	1.14
C3-FLUORENES	3.3 - 10.3	5.9	1.02	1.50	2.67	2.09	1.23	1.90	1.46	1.40	0.88	1.46	2.33	1.81	1.95	2.79
C3-NAPHTHALENES	3.1 - 3.8	3.3	1.80	2.11	3.12	1.98	1.88	2.42	1.68	2.73	1.75	2.03	3.44	4.50	3.48	3.48
C3-PHENANTHRENES/ANTHRACENES	6.2 - 12.3	9.2	7.84	4.96	9.74	2.69	3.60	3.07	6.13	6.43	8.91	4.96	5.09	5.41	6.87	7.03
C4-CHRYSENES	0.1 - 0.2	0.14	0.08	0.16	0.12	0.11	0.04	0.10	0.09	0.05	0.08	0.18	0.15	0.15	0.16	0.10
C4-NAPHTHALENES	1.3 - 3.5	2.0	0.91	1.07	1.68	1.16	1.14	1.25	1.01	1.76	1.09	0.90	1.53	2.37	1.86	1.87
C4-PHENANTHRENES/ANTHRACENES	2.7 - 4.2	3.2	3.11	2.09	2.15	1.55	1.34	1.89	1.62	2.26	2.27	1.58	2.25	1.95	2.51	2.46
CHRYSENE	2.9 - 4.3	3.8	3.54	4.00	4.46	4.06	3.03	4.92	3.07	5.72	4.48	3.38	3.42	6.46	6.96	4.08
DIBENZO(A,H)ANTHRACENE	0.2 - 0.3	0.3	0.26	0.33	0.37	0.37	0.16	0.31	0.19	0.46	0.38	0.24	0.24	0.46	0.45	0.34
DIBENZOTHIOPHENE	0.2 - 0.4	0.3	0.24	0.26	0.24	0.19	0.19	0.29	0.20	0.34	0.28	0.20	0.27	0.58	0.45	0.22
FLUORANTHENE	5.2 - 7.9	6.9	6.34	7.69	8.48	7.07	5.57	9.89	5.69	10.47	11.41	5.96	6.44	20.25	19.79	6.55
FLUORENE	1.1 - 2.0	1.6	1.46	1.44	1.39	1.18	0.97	1.30	1.00	1.88	1.27	1.15	1.35	3.35	2.26	1.36
INDENO(1,2,3-CD)PYRENE	0.8 - 1.5	1.3	1.18	1.22	1.44	1.78	0.78	1.47	0.88	2.08	1.75	1.03	1.01	2.06	2.15	1.41
NAPHTHALENE	1.6 - 1.9	1.7	0.99	1.42	1.86	1.26	1.17	1.62	0.98	1.77	1.26	1.25	1.96	2.74	2.28	2.28
PERYLENE	0.9 - 2.2	1.6	1.13	1.46	1.35	2.03	1.11	1.70	1.24	2.03	1.66	1.19	1.22	1.72	2.19	1.60
PHENANTHRENE	2.5 - 5.4	3.7	3.12	3.77	3.37	2.82	2.40	3.93	2.57	4.42	4.95	2.76	3.47	10.50	7.94	2.88
PYRENE	4.0 - 7.4	6.0	5.57	6.10	6.69	6.27	4.24	7.02	4.32	8.40	8.70	4.75	5.21	13.91	14.04	5.93
LMH PAH		16.9	13.46	14.95	15.73	13.52	11.09	14.89	11.63	20.17	16.85	12.38	14.71	32.34	28.97	16.19
HMW PAH		21.4	19.86	22.46	24.49	23.02	15.72	27.17	16.17	31.62	31.11	17.78	18.92	48.36	50.20	22.72
TOTAL PAH		38.3	33.31	37.42	40.23	36.54	26.81	42.05	27.80	51.79	47.95	30.16	33.62	80.70	79.17	38.92
Pesticides/PCBs (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	0.06 - 0.25	0.13	0.12	0.09	0.28	0.11	0.13	0.26	0.15	0.21	0.13	0.40	0.08	0.11	0.10	0.17
1,2,4,5-TETRACHLOROBENZENE	0.10 - 0.37	0.20 U	0.02 U	0.09	0.13	0.05 U	0.09	0.09 U	0.03 U	0.06 U	0.04 U	0.04 U	0.08	0.09	0.09 U	0.16 U
2,4'-DDD	0.08 - 0.25	0.17	0.28	0.08	0.08	0.19	0.17	0.21	0.14	1.00	0.28	0.68	0.17	0.30	0.19	0.07
2,4'-DDE	0.05 - 0.06	0.06	0.29	0.20	0.04	0.01	0.09	0.06	0.05	0.06	0.05	0.04	0.08	0.14	0.02	0.08
2,4'-DDT	0.16 - 0.20	0.17	0.21	0.21	0.18	0.33	0.21	0.11	0.25	0.35	0.23	0.34	0.13	0.18	0.17	0.22
4,4'-DDD	0.34 - 0.44	0.4	0.44	0.24	0.44	0.36	0.31	0.40	0.36	2.52	0.45	1.09	0.31	0.32	0.35	0.36
4,4'-DDE	0.62 - 1.03	0.8	2.07	0.88	0.93	1.01	0.74	0.78	0.70	1.70	0.82	1.03	0.72	0.73	0.70	0.71
4,4'-DDT	0.05 - 0.13	0.07	0.08	0.05	0.10	0.12	0.08	0.09	0.13	0.37	0.11	0.16	0.06	0.06	0.13	0.04
ALDRIN	0.06 - 0.11	0.08	0.08	0.19	0.16	0.07	0.04	0.10	0.10	0.17	0.18	0.22	0.07	0.10	0.10	0.07
ALPHA-BHC	0.06 - 0.12	0.09	0.15	0.09	0.10	0.09	0.08	0.08	0.12	0.16	0.10	0.11	0.10	0.10	0.06	0.06
ALPHA-CHLORDANE	0.19 - 0.41	0.26	0.22	0.54	0.80	0.10	0.33	0.23	0.17	0.23	0.20	0.28	0.23	0.39	0.22	0.27
BETA-BHC	0.19 - 0.76	0.55	0.10	0.28	2.32	1.01	0.37	0.22	0.59	0.55	0.98	0.58	0.20	1.10	0.18	0.32
CHLORPYRIFOS	0.21 - 0.32	0.26 U	0.06 U	0.08 U	0.50	0.10 U	0.24	0.19 U	0.08 U	0.11 U	0.08 U	0.09 U	0.29 U	0.46	0.19 U	0.32 U
CIS-NONACHLOR	0.20 - 0.39	0.26	0.19	0.29	0.89	0.10	0.25	0.23	0.32	0.50	0.37	0.41	0.30	0.39	0.25	0.23
DELTA-BHC	0.00 - 0.01	0.01	0.00 U	0.00 U	0.02	0.01 U	0.01	0.01 U	0.00 U	0.01 U	0.01	0.01 U	0.01 U	0.01	0.00 U	0.01 U
DIELDRIN	0.07 - 0.16	0.10	0.10	0.06	0.05	0.08	0.09	0.09	0.09	0.15	0.13	0.11	0.10	0.07	0.06	0.05
ENDOSULFAN II	0.10 - 0.17	0.15	0.13	0.03	0.10	0.07	0.08	0.08	0.20	0.13	0.17	0.27	0.09	0.16	0.10	0.18
ENDRIN	0.08 - 0.18	0.12	0.02 U	0.20	0.20	0.03 U	0.02 U	0.03 U	0.02 U	0.10	0.08	0.07	0.14	0.23	0.11	0.16
GAMMA-BHC (LINDANE)	0.14 - 0.22	0.18	0.07	0.08	0.10	0.06	0.05	0.12	0.10	0.11	0.11	0.06	0.17	0.19	0.11	0.10
GAMMA-CHLORDANE	0.21 - 0.28	0.24	0.15	0.14	0.12	0.15	0.12	0.23	0.18	0.28	0.23	0.28	0.25	0.18	0.16	0.22
HEPTACHLOR	0.01 - 0.12	0.06	0.02	0.02	0.04	0.04	0.02	0.07	0.05	0.02	0.01	0.04	0.03	0.03	0.02	0.03
HEPTACHLOR EPOXIDE	0.04 - 0.12	0.07	0.11	0.17	0.10	0.01 U	0.03	0.04	0.07	0.08	0.07	0.09	0.03	0.01 U	0.03	0.04
HEXACHLOROBENZENE	0.07 - 0.13	0.09	0.06	0.06	0.12	0.04	0.06	0.12	0.10	0.08	0.06	0.07	0.08	0.09	0.04	0.07
MIREX	0.02 - 0.03	0.02 U	0.09	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U	0.04	0.04	0.02 U	0.02	0.02 U	0.04	0.02 U	0.03 U
OXYCHLORDANE	0.01 - 0.05	0.02	0.05	0.01	0.04	0.11	0.02	0.03	0.03	0.07	0.08	0.05	0.01 U	0.02	0.01 U	0.01 U
PCB-101/90	0.53 - 1.09	0.73	0.34 U	0.52	0.86	0.42 U	0.51	0.56	0.32 U	0.61 U	0.51 U	0.50 U	1.20	0.76	0.65	0.70
PCB-105	0.18 - 0.30	0.23	0.23	0.42	0.56	0.38	0.36	0.32	0.30	0.59	0.49	0.40	0.36	0.30	0.30	0.24
PCB-114	0.03 - 0.04	0.03 U	0.02 U	0.03 U	0.04 U	0.04 U	0.03 U	0.04 U	0.03 U	0.05 U	0.03 U	0.04 U	0.04 U	0.03 U	0.03 U	0.04 U
PCB-118	0.35 - 0.74	0.53	0.32	0.62	0.75	0.61	0.65	0.62	0.49	0.84	0.69	0.70	0.89	0.69	0.59	0.57
PCB-126	0.01 - 0.02	0.02	0.07	0.08	0.02	0.13	0.09	0.13	0.08	0.17	0.10	0.10	0.02	0.02	0.01	0.03
PCB-128	0.32 - 0.41	0.36	0.08	0.22	0.33	0.19	0.19	0.24	0.32	0.42	0.28	0.25	0.42	0.31	0.26	0.40
PCB-138/160	1.20 - 1.76	1.50	0.58 U	1.19	3.37	1.07 U	0.96	1.20	0.64 U	1.30 U	1.16 U	0.73 U	2.37	1.98	1.57	1.61
PCB-149/123	0.31 - 0.70	0.51	0.19 U	0.48	1.46	0.44 U	0.34	0.36	0.25 U	0.52 U	0.56 U	0.32 U	0.85	0.75	0.70	0.61
PCB-153/132	1.14 - 1.83	1.51	0.54 U	0.71 U	2.60	1.24 U	0.66 U	1.18	0.59 U	1.29 U	1.03 U	0.64 U	2.24	1.79	1.78	1.75
PCB-156	0.27 - 0.34	0.30	0.12	0.25	0.21	0.20	0.13	0.19	0.14	0.22	0.16	0.13	0.27	0.26	0.19	0.22

TABLE A.2-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2 BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-167	0.19 - 0.24	0.22	0.03	0.18	0.41	0.17	0.10	0.12	0.08	0.15	0.09	0.07	0.25	0.21	0.15	0.27
PCB-169	0.00 - 0.03	0.02	0.05	0.06	0.03	0.13	0.06	0.11	0.11	0.14	0.12	0.07	0.01	0.02	0.00	0.02
PCB-170/190	0.05 - 0.11	0.08 U	0.15	0.12	0.13 U	0.11	0.09	0.15	0.11	0.18	1.33	0.13	0.11 U	0.09 U	0.05 U	0.05 U
PCB-18/17	0.08 - 0.12	0.10	0.37	0.15	0.12	0.36	0.28	0.34	0.32	0.45	0.34	0.39	0.32	0.17	0.08 U	0.11
PCB-180	0.92 - 1.51	1.25	0.46 U	0.53 U	1.22	0.62 U	0.51 U	0.76	0.46 U	0.78 U	0.70 U	0.51 U	1.22	1.13	1.15	1.10
PCB-187	0.19 - 0.41	0.28	0.23 U	0.28 U	0.92	0.56 U	0.25 U	0.29	0.23 U	0.55 U	0.50 U	0.22 U	0.41	0.73	0.35	0.21
PCB-189	0.03 - 0.10	0.05	0.02 U	0.03 U	0.07	0.04 U	0.03 U	0.04 U	0.03 U	0.05 U	0.03 U	0.04 U	0.06	0.03	0.02	0.04 U
PCB-195/208	0.05 - 0.16	0.11	0.03	0.03 U	0.17	0.03 U	0.02 U	0.04	0.03 U	0.04 U	0.03 U	0.03 U	0.13	0.15	0.03	0.07
PCB-201/157/173	0.03 - 0.30	0.18	0.21	0.18	0.21	0.12	0.10	0.12	0.10	0.10	0.14	0.08	0.29	0.23	0.18	0.20
PCB-206	0.03 - 0.03	0.03	0.02 U	0.03 U	0.02	0.04 U	0.02 U	0.04 U	0.03 U	0.04 U	0.03 U	0.03 U	0.03	0.03	0.03 U	0.03 U
PCB-209	0.04 - 0.08	0.05	0.07	0.05	0.04	0.05	0.04	0.05	0.04	0.06	0.09	0.05	0.06	0.05	0.05	0.03
PCB-28	0.21 - 0.35	0.30	0.25	0.14	0.26	0.31	0.25	0.19	0.30	0.43	0.36	0.22	0.37	0.24	0.14	0.23
PCB-44	0.23 - 0.54	0.36	0.68	0.25	0.39	0.34	0.23	0.17	0.31	0.60	0.43	0.43	0.51	0.56	0.22	0.31
PCB-52	0.64 - 1.16	0.92	0.85	0.43	0.92	0.85	0.52	0.53	0.69	1.30	1.06	1.02	0.73	1.01	0.79	0.96
PCB-66	0.10 - 0.14	0.12	0.19	0.37	0.24	0.11	0.21	0.17	0.24	0.31	0.37	0.25	0.09	0.29	0.06	0.09
PCB-77	0.02 - 0.04	0.03	0.07	0.07	0.04 U	0.04	0.09	0.07	0.06	0.12	0.05	0.06	0.04	0.01	0.03 U	0.02
PCB-8/5	0.15 - 0.21	0.19	0.31	0.27	0.42	0.15	0.19	0.16	0.26	0.26	0.16	0.15	0.15	0.28	0.07	0.09
PCB-81	0.04 - 0.07	0.06	0.16	0.12	0.06	0.21	0.13	0.21	0.15	0.28	0.18	0.14	0.05	0.04	0.04	0.06
PENTACHLOROANISOLE	0.17 - 0.23	0.21	0.18	0.16	0.19	0.16	0.18	0.19	0.19	0.24	0.19	0.18	0.16	0.20	0.17	0.15
PENTACHLOROBENZENE	0.07 - 0.20	0.13 U	0.09 U	0.10 U	0.12 U	0.04 U	0.12	0.07 U	0.10 U	0.11 U	0.06 U	0.07 U	0.08	0.12	0.03 U	0.09 U
TRANS-NONACHLOR	0.17 - 0.25	0.21	0.15	0.16	0.20	0.11	0.18	0.17	0.13	0.21	0.19	0.17	0.19	0.16	0.19	0.29
Inorganics (mg/kg)																
ALUMINUM	282 - 408	342	287	331	463	348	276	413	303	473	399	382	259	328	334	379
ARSENIC	7.8 - 10.4	8.6	9.4	9.7	9.5	9.5	9.2	9.0	9.7	8.4	9.2	9.1	7.1	7.5	7.2	8.3
CADMIUM	1.3 - 1.5	1.3	1.5	1.5	1.6	1.9	2.1	1.5	1.6	1.3	1.7	2.3	1.5	1.2	1.7	1.3
CHROMIUM	2.2 - 2.5	2.3	1.8	2.2	3.4	2.5	2.2	2.4	2.0	2.7	2.4	2.3	1.8	2.1	2.1	2.4
COPPER	7.7 - 8.8	8.2	7.5	7.6	13.6	27.9	8.5	8.3	7.9	9.3	10.6	9.5	8.4	8.0	9.2	8.3
IRON	508 - 717	624	510	629	834	651	528	696	542	782	677	606	430	585	552	708
LEAD	2.3 - 3.6	3.0	3.7	4.2	4.8	7.6	9.3	3.6	3.8	4.6	3.7	7.0	10.8	3.4	2.9	2.9
MANGANESE	11.6 - 13.9	12.8	12.5	12.6	14.8	13.0	12.6	16.1	12.6	14.5	17.9	118.7	17.8	16.5	19.0	13.9
MERCURY	0.2 - 0.4	0.3	0.3	0.3	0.3	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3
NICKEL	1.9 - 2.0	2.0	1.5	1.8	3.4	3.2	2.1	1.7	1.8	2.4	3.0	2.4	1.7	2.0	1.8	2.1
SILVER	0.1 - 0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.1
ZINC	91.4 - 98.5	96	97	85	104	151	96	93	96	91	105	214	107	96	102	90

Footnotes:

Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.

Normalized concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.

Parameters where all samples were non-detects are designated with a "U".

1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.2-3

AVERAGED NORMAILZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
1,2,3,4,6,7,8-HPCDD	3.5 - 12.1	8.7 U							5.3 U	3.6 U	3.8 U	0.3 U	2.8 U	4.6 U		
1,2,3,4,6,7,8-HPCDF	3.5 - 12.1	7.1 U							5.3 U	3.6 U	3.8 U	4.5 U	5.7 U	0.3 U		
1,2,3,4,7,8,9-HPCDF	3.5 - 12.1	7.0 U							5.3 U	3.6 U	3.8 U	4.5 U	3.1 U	0.1 U		
1,2,3,4,7,8-HXCDD	3.5 - 13.2	8.4							5.3 U	3.6 U	3.8 U	4.5 U	5.7 U	4.6 U		
1,2,3,4,7,8-HXCDF	3.5 - 12.9	8.3							5.3 U	3.6 U	3.8 U	4.5 U	5.7 U	4.6 U		
1,2,3,6,7,8-HXCDD	3.5 - 12.5	8.2							5.3 U	3.6 U	3.8 U	4.5 U	5.7 U	4.6 U		
1,2,3,6,7,8-HXCDF	3.5 - 12.1	6.6 U							5.3 U	3.6 U	3.8 U	0.5 U	5.7 U	4.6 U		
1,2,3,7,8,9-HXCDD	3.5 - 12.1	7.8							5.3 U	3.6 U	3.8 U	4.5 U	5.7 U	4.6 U		
1,2,3,7,8,9-HXCDF	3.5 - 12.1	6.6 U							5.3 U	3.6 U	3.8 U	4.5 U	5.7 U	4.6 U		
1,2,3,7,8-PECDD	3.5 - 12.1	6.7 U							5.3 U	3.6 U	3.8 U	0.5 U	5.7 U	4.6 U		
1,2,3,7,8-PECDF	3.5 - 12.1	6.2 U							5.3 U	3.6 U	3.8 U	0.5 U	3.1 U	0.3 U		
2,3,4,6,7,8-HXCDF	3.5 - 12.1	7.4							5.3 U	3.6 U	3.8 U	1.1	5.7 U	9.1		
2,3,4,7,8-PECDF	3.5 - 12.1	6.3 U							5.3 U	3.6 U	3.8 U	0.4 U	0.3 U	0.3 U		
2,3,7,8-TCDD	0.1 - 2.6	0.9							1.1 U	0.7 U	0.8 U	0.9 U	1.1	0.9 U		
2,3,7,8-TCDF	0.5 - 2.4	1.3 U							1.1 U	0.7 U	0.8 U	0.7 U	1.1 U	0.5 U		
OCDD	2.4 - 36.3	13.9							10.7 U	7.2 U	7.6 U	4.8	4.2	3.0		
OCDF	6.9 - 33.6	18.6							10.7 U	7.2 U	7.6 U	3.2	11.4 U	9.1 U		
TOTAL DIOXINS	0.1 - 101.4	29.2							10.7 U	7.2 U	7.6 U	10.8	5.2	6.9		
TOTAL FURANS	0.6 - 118.6	36.3							10.7 U	7.2 U	7.6 U	10.5	2.0	5.7		
TOTAL HPCDD	1.6 - 6.3	4.1 U							5.3 U	3.6 U	3.8 U	0.3 U	2.8 U	4.6 U		
TOTAL HPCDF	3.5 - 12.1	7.3 U							5.3 U	3.6 U	3.8 U	4.5 U	3.1 U	0.4 U		
TOTAL HXCDD	3.5 - 36.6	12.5							5.3 U	3.6 U	3.8 U	4.3	5.7 U	2.8		
TOTAL HXCDF	3.5 - 22.7	10.8 U							5.3 U	3.6 U	3.8 U	1.1 U	5.7 U	1.1 U		
TOTAL PECDD	3.5 - 12.1	6.7 U							5.3 U	3.6 U	3.8 U	0.5 U	5.7 U	4.6 U		
TOTAL PECDF	3.5 - 12.1	7.4 U							5.3 U	3.6 U	3.8 U	1.5 U	1.0 U	0.6 U		
TOTAL TCDD	0.1 - 2.6	0.9							1.1 U	0.7 U	0.8 U	0.9 U	1.1	1.2		
TOTAL TCDF	0.3 - 2.4	1.4 U							1.1 U	0.7 U	0.8 U	1.1 U	1.1 U	0.8 U		
Semi-Volatile Organics (ug/kg)																
1,6,7-TRIMETHYLNAPHTHALENE	0.5 - 1.5	0.9	1.3	0.7	0.6	0.5	0.6	0.7	0.4	0.2	0.6	0.6	0.8	0.6	0.6	0.4
1-METHYLNAPHTHALENE	1.6 - 4.9	2.6	16.4	3.2	3.1	1.3	4.1	4.6	1.2	2.2	2.2	2.2	3.0	1.9	1.3	0.9
1-METHYLPHENANTHRENE	0.4 - 1.4	0.9	3.2	1.0	0.7	0.8	1.2	0.8	0.9	0.6	1.1	1.1	0.8	1.0	1.3	0.4
2,6-DIMETHYLNAPHTHALENE	0.6 - 2.2	1.1	4.4	0.5	0.8	0.5	0.6	0.6	0.3	0.6	0.6	0.7	0.9	0.7	0.8	0.6
2-METHYLNAPHTHALENE	1.8 - 5.7	3.0	8.9	3.8	3.6	2.3	4.8	5.0	1.5	2.4	2.6	2.5	2.9	2.7	2.2	1.7
ACENAPHTHENE	0.8 - 1.1	0.9	3.4	1.3	2.5	1.1	1.4	1.1	0.6	0.7	1.4	1.0	1.2	1.6	2.3	0.8
ACENAPHTHYLENE	0.1 - 0.6	0.3	5.7	0.9	0.6	0.5	0.6	0.6	0.2	0.4	0.5	0.1	0.3	0.7	0.8	0.3
ANTHRACENE	0.4 - 1.1	0.7	5.0	1.8	1.1	0.9	0.9	0.9	0.5	0.5	0.9	0.6	1.3	3.4	8.5	0.5
BENZO(A)ANTHRACENE	0.7 - 3.0	1.8	9.4	3.3	2.6	1.4	1.7	1.4	1.5	0.8	1.6	1.4	3.2	8.2	10.9	0.5
BENZO(A)PYRENE	1.3 - 7.1	4.3	22.6	6.8	5.0	3.5	4.6	5.1	4.9	2.8	4.8	5.8	9.9	19.1	25.3	0.9
BENZO(B)FLUORANTHENE	1.6 - 6.4	4.0	11.2	6.1	5.9	4.1	4.3	3.7	4.5	2.4	4.4	5.2	9.1	16.4	21.1	0.9
BENZO(E)PYRENE	0.1 - 5.3	2.6	12.6	5.4	4.1	4.5	3.8	2.6	3.3	2.3	3.5	3.9	4.9	9.2	9.9	1.6
BENZO(G,H,I)PERYLENE	0.7 - 4.4	2.4	11.7	4.6	3.6	4.9	3.5	2.6	2.9	1.8	3.1	3.2	4.1	8.3	9.1	1.6
BENZO(K)FLUORANTHENE	0.7 - 2.5	1.5	4.0	2.1	1.9	1.5	1.6	1.8	2.6	1.1	2.0	2.1	3.8	6.7	6.9	0.4
BIPHENYL	0.8 - 3.5	1.6	2.4	0.9	1.3	1.2	0.9	1.0	0.4	0.8	0.8	0.6	1.4	0.8	1.2	0.6
C1-CHRYSENES	0.9 - 4.7	2.7	13.6	3.4	1.4	1.9	1.8	0.1	0.3	0.3	1.7	1.9	1.5	5.1	4.8	0.0
C1-DIBENZOTHIOPHENES	0.5 - 1.9	1.1	1.3	0.9	0.8	0.6	0.8	0.6	0.1	0.5	0.4	0.6	0.9	1.1	1.1	0.4
C1-FLUORANTHENES/PYRENES	1.7 - 7.2	4.4	21.9	6.0	4.7	4.6	4.1	3.4	3.3	2.1	3.7	4.8	6.1	11.9	17.1	1.5
C1-FLUORENES	3.3 - 5.4	4.4	6.1	2.7	3.5	6.2	3.8	2.7	2.0	1.9	2.6	3.5	3.4	3.3	4.0	2.9
C1-NAPHTHALENES	3.4 - 10.7	5.6	25.3	7.1	6.8	3.6	8.9	9.7	2.7	4.7	4.8	4.6	5.9	4.6	3.5	2.5
C1-PHENANTHRENES/ANTHRACENES	2.5 - 9.9	5.4	13.3	4.6	2.6	4.1	2.5	3.7	1.2	2.2	1.6	3.6	6.7	7.7	8.6	1.6
C2-CHRYSENES	0.5 - 2.4	1.0	3.3	3.4	3.5	1.7	0.9	1.3	0.3	0.2	0.1	0.2	1.0	0.1	0.6	0.0
C2-DIBENZOTHIOPHENES	0.6 - 2.9	1.4	1.3	0.8	0.8	0.1	0.9	0.6	0.2	0.3	0.7	0.2	1.2	1.3	1.7	0.4
C2-FLUORENES	1.1 - 8.1	4.7	5.3	1.7	0.4	0.2	1.8	0.1	0.2	0.4	0.1	0.2	0.7	1.2	1.8	1.4
C2-NAPHTHALENES	3.3 - 7.3	4.7	14.5	4.7	3.6	3.1	6.0	6.7	1.3	3.6	3.4	4.1	5.3	3.9	3.9	2.2
C2-PHENANTHRENES/ANTHRACENES	1.8 - 11.4	5.6	10.4	3.2	3.1	2.2	2.4	1.9	1.2	1.5	2.5	3.8	4.6	5.7	5.7	2.0
C3-CHRYSENES	0.1 - 0.3	0.2	0.4	0.2	0.3	0.1	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.5	0.3	0.2
C3-DIBENZOTHIOPHENES	0.5 - 2.0	1.0	1.1	0.3	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.8	0.5
C3-FLUORENES	0.7 - 5.4	2.6	4.4	0.9	0.8	0.3	3.7	0.1	0.5	0.0	0.2	3.7	3.7	3.7	3.6	1.9
C3-NAPHTHALENES	1.5 - 5.3	3.7	8.3	4.3	2.8	1.5	2.2	2.9	0.9	2.8	3.3	4.3	2.5	1.4	2.8	1.5
C3-PHENANTHRENES/ANTHRACENES	1.7 - 11.3	5.6	7.6	4.6	2.4	0.3	5.1	1.8	0.3	2.3	4.0	3.3	2.5	5.3	6.8	0.6
C4-CHRYSENES	0.0 - 0.4	0.2	0.6	0.2	0.1	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.4	0.3	0.0
C4-NAPHTHALENES	0.0 - 2.6	1.3	0.1	0.3	0.1	0.3	0.1	0.1	0.1	1.6	0.1	0.1	0.2	0.1	0.1	0.0
C4-PHENANTHRENES/ANTHRACENES	0.0 - 2.6	1.3	1.3	0.7	0.6	0.2	0.5	0.0	0.0	0.0	0.1	0.4	0.0	0.1	0.6	0.0

TABLE A.2-3

AVERAGED NORMAILZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
CHRYSENE	1.8 - 7.4	4.4	13.6	8.1	5.7	5.0	4.6	3.8	4.9	2.6	4.3	5.5	7.2	16.4	23.3	2.4
DIBENZO(A,H)ANTHRACENE	0.2 - 0.6	0.3	0.8	0.4	0.3	0.7	0.4	0.4	0.5	0.2	0.3	0.3	0.2	0.6	0.8	0.1
DIBENZOTHIOPHENE	0.3 - 0.5	0.4	0.6	0.6	0.6	0.4	0.4	0.5	0.3	0.2	0.3	0.3	0.5	0.8	0.7	0.2
FLUORANTHENE	5.3 - 15.7	9.2	16.9	14.9	11.1	8.0	8.7	8.3	4.7	5.3	8.1	8.9	18.7	34.7	69.4	4.4
FLUORENE	1.4 - 2.2	1.8	6.1	2.4	2.9	1.7	2.2	2.1	0.6	1.3	2.1	1.7	2.2	2.4	3.9	1.3
INDENO(1,2,3-CD)PYRENE	0.8 - 4.0	2.3	7.7	3.9	3.3	3.5	3.0	2.9	3.7	1.7	2.9	3.7	5.0	9.5	11.4	0.6
NAPHTHALENE	4.7 - 14.0	7.6	16.1	7.6	7.7	5.3	10.6	12.1	2.8	6.1	5.8	6.5	7.9	7.4	6.7	3.5
PERYLENE	1.4 - 11.9	4.9	6.9	3.1	3.9	4.1	3.9	2.8	1.8	2.3	4.1	3.3	4.0	6.7	7.6	1.7
PHENANTHRENE	3.3 - 4.2	3.7	15.1	7.4	6.7	3.7	3.6	4.0	2.3	2.4	4.1	4.2	5.0	11.5	11.4	2.6
PYRENE	4.3 - 15.0	8.7	26.5	12.4	11.9	7.7	8.3	7.5	6.2	4.4	9.3	8.7	13.7	25.4	47.3	2.5
LMH PAH		25.5	71.0	37.7	33.2	21.9	30.6	32.1	12.6	17.7	23.4	23.7	37.3	62.1	101.3	13.6
HMW PAH		28.7	89.8	45.9	36.6	26.2	28.3	26.4	22.7	16.2	28.5	30.5	52.8	104.4	176.9	10.7
TOTAL PAH		54.2	160.8	83.7	69.8	48.1	58.9	58.5	35.3	33.8	51.9	54.3	90.1	166.6	278.1	24.4
Pesticides/PCBs (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	0.07 - 6.67	3.94	0.7	6.7	2.3	5.7	5.2	1.0	0.6	0.9	1.3	1.2	3.2	5.1	4.7	0.0
1,2,4,5-TETRACHLOROBENZENE	0.15 - 1.22	0.66	0.4 U	0.4 U	0.3 U	0.5 U	0.5 U	0.3 U	0.3 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.2 U
2,4'-DDD	0.05 - 0.67	0.36	0.1 U	1.3	0.0	0.1 U	0.9	0.1 U	0.1 U	0.0 U	0.5	0.3	0.4	1.0	1.3	0.3
2,4'-DDE	0.09 - 0.18	0.14	0.7	0.1 U	0.6	0.1 U	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.7	0.6	0.1	0.2	0.1 U
2,4'-DDT	0.09 - 0.18	0.14	0.1 U	0.1	0.4	0.2	0.1	0.1 U	0.1 U	0.1 U	0.1	0.1	0.2	0.1 U	0.1 U	0.3
4,4'-DDD	0.05 - 0.09	0.07	0.3	0.1	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.2	0.1 U	0.2	0.1	0.1	0.1	0.2
4,4'-DDE	1.11 - 1.62	1.42	1.4	2.0	1.5	1.9	1.1	0.6	0.7	1.5	1.1	1.5	1.7	1.3	1.6	2.6
4,4'-DDT	0.10 - 0.73	0.27	1.0	4.2	1.4	0.2 U	4.3	1.1	0.1 U	1.6	1.6	1.5	0.6	1.8	2.3	0.8
ALDRIN	0.09 - 0.19	0.13	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2	0.1	0.2	0.1
ALPHA-BHC	0.13 - 0.48	0.27	0.2	0.1 U	0.1 U	0.2	0.1	0.1	0.1 U	0.1	0.1	0.1 U	0.3	0.2	0.2	0.1
ALPHA-CHLORDANE	0.07 - 1.89	0.87	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BETA-BHC	0.05 - 0.13	0.08	0.1	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.0 U	0.1 U	0.1 U	0.0	0.0	0.1 U	0.0 U
CHLORPYRIFOS	0.57 - 9.55	3.78 U	3.8 U	2.1 U	1.5 U	1.8 U	2.2 U	2.2 U	1.9 U	1.7 U	1.7 U	1.8 U	6.2 U	0.7 U	6.9 U	6.1 U
CIS-NONACHLOR	0.06 - 0.08	0.06	0.1 U	0.0	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.0	0.0	0.1 U	0.0	0.0	0.1 U	0.1
DELTA-BHC	0.04 - 0.39	0.17	0.1 U	0.0 U	0.1 U	0.1	0.1 U	0.1 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.1 U	0.0 U
DIELDRIN	0.41 - 1.45	1.01	1.9	0.9	1.1	1.3	1.1	1.1	0.8	1.2	1.5	1.1	1.7	1.4	1.4	1.3
ENDOSULFAN II	0.07 - 0.08	0.07 U	0.1 U	0.1 U	0.1 U	1.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2	0.1	0.1 U	0.1 U	0.1 U
ENDRIN	0.18 - 0.23	0.20 U	0.3 U	0.2 U	0.3 U	1.2	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U	0.1 U
GAMMA-BHC (LINDANE)	0.31 - 0.45	0.37	0.7	0.6	0.6	0.2	0.7	0.5	0.2	0.2	0.3	0.4	0.7	0.7	0.8	0.4
GAMMA-CHLORDANE	0.07 - 0.14	0.09	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1	0.2	0.1
HEPTACHLOR	0.10 - 0.13	0.11 U	0.2 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	4.2	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U
HEPTACHLOR EPOXIDE	0.07 - 0.09	0.08 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HEXACHLOROBENZENE	0.09 - 0.29	0.18	0.2	0.2	0.1	0.1 U	0.2	0.2	0.0	0.1	0.2	0.1	0.2	0.1	0.3	0.2
MIREX	0.02 - 0.20	0.15	0.3 U	0.7	0.2 U	0.3 U	0.5	0.2 U	0.2 U	0.1 U	0.2 U	0.1	0.3	0.1	0.1	0.0
OXYCHLORDANE	0.34 - 0.59	0.51	0.7	0.5	1.1	0.9	0.5	0.3	0.9	0.5	0.3	0.2	0.6	0.3	0.5	0.6
PCB-101/90	0.22 - 1.61	0.81	0.9	0.5	2.0	0.3 U	0.9	0.5	0.4	0.3	1.0	0.3 U	0.5	0.3 U	0.3 U	0.1
PCB-105	0.11 - 0.55	0.39	0.4	0.4	0.3	0.6	0.3	0.2	0.3	0.3	0.3	0.4	0.5	0.7	0.9	0.6
PCB-114	0.25 - 0.31	0.27 U	0.4 U	0.3 U	0.3 U	0.4 U	0.4 U	0.4 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.4 U	0.2 U
PCB-118	0.50 - 2.19	1.29	1.8	1.7	1.6	2.3	1.3	0.7	1.1	1.2	1.3	2.0	2.3	2.8	3.3	2.8
PCB-126	0.17 - 0.62	0.32	1.5	0.4	0.1	0.6	0.7	0.6	0.2	0.2	0.3	0.5	1.8	0.1	0.6	0.3
PCB-128	0.09 - 0.38	0.28	0.3	0.4	0.6	0.4	0.3	0.1	0.2	0.2	0.3	0.4	0.5	0.4	0.6	0.5
PCB-138/160	0.89 - 2.29	1.85	2.3	2.1	6.1	2.7	2.9	1.0	1.3	2.4	2.2	2.2	3.9	2.5	3.0	3.6
PCB-149/123	0.11 - 0.37	0.24	0.3	0.1	3.1	0.1	0.5	0.4 U	0.0	0.1	0.4	0.3 U	0.8	0.1	0.1	0.3
PCB-153/132	0.53 - 1.71	1.24 U	1.4 U	1.7 U	4.4 U	2.1 U	1.6 U	0.8 U	0.9 U	0.9 U	1.4 U	1.2 U	2.7 U	1.8 U	2.1 U	2.9 U
PCB-156	0.25 - 0.31	0.27 U	0.4 U	0.2	0.3 U	0.4 U	0.2	0.4 U	0.3 U	0.1	0.2	0.3 U	0.1	0.6	0.4 U	0.2 U
PCB-167	0.09 - 0.31	0.19	0.1	0.1	0.3	0.3	0.1	0.4 U	0.3 U	0.2 U	0.1	0.1	0.3	0.2	0.4	0.2
PCB-169	0.04 - 0.31	0.16	0.4 U	0.1	0.3 U	0.1	0.2	0.4 U	0.1	0.0	0.1	0.3 U	1.7	0.3 U	0.2	0.1
PCB-170/190	0.30 - 0.45	0.36 U	0.9 U	0.6 U	1.3 U	0.9 U	0.7 U	0.4 U	0.4 U	0.3 U	0.6 U	0.5 U	1.5 U	0.6 U	0.6 U	0.7 U
PCB-18/17	0.30 - 0.81	0.52	0.5	0.3	0.7	1.1	0.3	0.9 U	0.3	0.2	0.3	0.6	0.8	0.1	1.0 U	0.1
PCB-180	0.15 - 1.43	0.69	0.8	0.9	5.7	1.3	1.5	0.4	0.5	0.5	1.1	0.9	4.2	1.2	1.3	2.3
PCB-187	0.16 - 1.10	0.63	0.7	0.9	3.6	1.3	1.3	0.5	0.6	0.6	0.9	1.5	2.2	0.9	1.1	2.1
PCB-189	0.25 - 0.31	0.27 U	0.4 U	0.3 U	0.1	0.4 U	0.4 U	0.4 U	0.3 U	0.2 U	0.3 U	0.3 U	0.1	0.3 U	0.4 U	0.2 U
PCB-195/208	0.07 - 0.25	0.15	0.3 U	0.1	0.4	0.1	0.1	0.3 U	0.3 U	0.1	0.1	1.2	0.4	0.1	0.1	0.2
PCB-201/157/173	0.06 - 0.23	0.13	0.3 U	0.1	0.7	0.8	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.5	0.1	0.2 U	0.3 U	0.2
PCB-206	0.06 - 0.26	0.15	0.3 U	0.1	0.1	0.1	0.1	0.3 U	0.0	0.1	0.0	2.8	0.2	0.1	0.1	0.2

TABLE A.2-3

AVERAGED NORMAILZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-209	0.11 - 0.33	0.21	0.2	0.3 U	0.4 U	0.5 U	0.1	0.4 U	0.3 U	0.2 U	0.3 U	0.3	0.1	0.3 U	0.1	0.1
PCB-28	0.19 - 0.45	0.29	0.3 U	0.5	0.3 U	1.1	0.7	0.3 U	0.2 U	1.2	0.2 U	0.6	0.4	0.2	0.1	0.3
PCB-44	0.15 - 0.88	0.38	0.1	0.2 U	0.2 U	0.2 U	0.1	0.2 U	0.2 U	0.1	0.2 U	0.2 U	0.1	0.1	0.1	0.0
PCB-52	0.17 - 1.73	0.94	0.5	0.5	0.2 U	0.2	0.6	0.6	1.2	0.5	0.5	0.2 U	0.3	0.2	0.3 U	0.1 U
PCB-66	0.08 - 0.35	0.26	0.3	0.4	0.3	0.7	0.4	0.2	0.3	0.8	0.3	0.3	0.3	0.4	0.5	0.5
PCB-77	0.25 - 0.31	0.27 U	0.4	0.3 U	0.2	0.4 U	0.4 U	0.4 U	0.3 U	0.2	0.1	0.3 U	0.8	0.3 U	0.4 U	0.2 U
PCB-8/5	0.11 - 0.94	0.48	0.6 U	0.5 U	0.6 U	1.1	0.6 U	0.6 U	0.5 U	0.3 U	0.4 U	0.5 U	0.1	0.3	0.3	0.1
PCB-81	0.10 - 0.57	0.28	0.5	0.8	0.4	0.7	0.4 U	0.9	0.6	0.3	0.3	0.5	1.6	0.5	1.1	0.4
PENTACHLOROANISOLE	0.13 - 0.21	0.18	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2
PENTACHLOROBENZENE	0.23 - 0.50	0.35	0.2	0.1	0.1 U	0.1	0.2	0.1	0.0	0.2	0.1	0.1 U	0.2	0.4	0.4	0.2
TRANS-NONACHLOR	0.05 - 0.18	0.12	0.1 U	0.1	0.1 U	0.1 U	0.0	0.1 U	0.7	0.0	0.0 U	1.0	0.6	0.0	0.1 U	0.4
Inorganics (mg/kg)																
ALUMINUM	3.7 - 8.8	6.9	5.7	5.9	4.6	13.8	7.8	6.1	11.8	5.8	4.2	4.5	3.9	7.0	7.1	5.4
ARSENIC	13.9 - 17.9	16.3	14.2	14.6	19.1	22.8	13.6	15.8	15.3	24.7	20.8	17.1	23.8	16.5	17.6	12.6
CADMIUM	0.0 - 0.1	0.04	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
CHROMIUM	0.3 - 0.3	0.26 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.3 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.3 U	0.2 U
COPPER	46.0 - 75.1	53.6	63.4	56.9	35.2	22.3	64.3	47.4	44.6	63.5	45.5	34.6	77.1	61.0	56.0	42.6
IRON	5.9 - 15.0	10.4	9.4	15.1	9.3	25.3	13.8	8.1	16.2	11.8	9.3	12.3	14.3	14.6	14.3	7.9
LEAD	0.0 - 0.6	0.22	10.5	0.2	0.2	0.1	0.3 U	0.0	0.2	0.1	0.1	0.2	0.1 U	0.0 U	0.0	0.1
MANGANESE	2.6 - 7.4	4.9	4.2	2.6	3.2	2.8	3.1	3.7	2.8	3.1	2.6	3.3	6.0	7.8	6.3	3.8
MERCURY	0.7 - 1.1	0.9	0.7	8.2	0.5	0.6	0.6	0.7	0.5	0.6	1.0	0.5	1.1	0.9	0.6	0.8
NICKEL	0.3 - 0.7	0.4 U	0.2 U	0.2	0.7 U	0.3	0.5	0.7 U	0.3	0.4 U	0.3 U	0.3	0.8	0.9	0.6 U	0.2
SILVER	0.2 - 0.5	0.3	0.3	0.3	0.2	0.1	0.3	0.3	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.2
ZINC	92.5 - 129.0	107	136.5	111.0	107.0	72.6	94.9	124.0	100.0	104.4	85.0	93.0	108.5	112.0	111.0	90.8

Footnotes:
Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.
Normalized concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.2-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
Dioxins/Furans (ng/kg)	
1,2,3,4,6,7,8-HPCDD	1.09
1,2,3,4,6,7,8-HPCDF	1.10
1,2,3,4,7,8,9-HPCDF	1.43
1,2,3,4,7,8-HXCDD	0.72
1,2,3,4,7,8-HXCDF	1.31
1,2,3,6,7,8-HXCDD	1.04
1,2,3,6,7,8-HXCDF	1.53
1,2,3,7,8,9-HXCDD	1.26
1,2,3,7,8,9-HXCDF	0.58
1,2,3,7,8-PECDD	0.33
1,2,3,7,8-PECDF	1.30
2,3,4,6,7,8-HXCDF	1.53
2,3,4,7,8-PECDF	1.54
2,3,7,8-TCDD	0.34
2,3,7,8-TCDF	0.84
OCDD	1.23
OCDF	1.09
TOTAL HPCDD	1.11
TOTAL HXCDD	1.30
TOTAL PECDD	0.33
TOTAL TCDD	1.14
TOTAL DIOXINS	1.19
TOTAL FURANS	1.05
TOTAL HPCDF	1.02
TOTAL HXCDF	1.22
TOTAL PECDF	1.51
TOTAL TCDF	2.11
Average Coefficient of Variation	**1.12**
Minimum Coefficient of Variation	**0.33**
Maximum Coefficient of Variation	**2.11**

Semi-Volatile Organics (ug/kg)	
1,6,7-Trimethylnaphthalene	1.5
1-Methylnaphthalene	1.3
1-Methylphenanthrene	1.3
2,6-Dimethylnaphthalene	2.1
2-Methylnaphthalene	1.2
Acenaphthene	3.1
Acenaphthylene	0.82
Anthracene	1.1
Benzo(a)anthracene	0.97
Benzo(a)pyrene	0.88
Benzo(b)fluoranthene	0.85
Benzo(e)pyrene	0.84
Benzo(g,h,i)perylene	0.87
Benzo(k)fluoranthene	0.84
Biphenyl	2.0

TABLE A.2-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
C1-Chrysenes	0.90
C1-Dibenzothiophenes	1.0
C1-Fluoranthenes/pyrenes	0.98
C1-Fluorenes	1.7
C1-Naphthalenes	1.3
C1-Phenanthrenes/anthracenes	1.2
C2-Chrysenes	0.90
C2-Dibenzothiophenes	0.69
C2-Fluorenes	1.0
C2-Naphthalenes	1.5
C2-Phenanthrenes/anthracenes	0.95
C3-Chrysenes	0.66
C3-Dibenzothiophenes	0.68
C3-Fluorenes	0.91
C3-Naphthalenes	1.2
C3-Phenanthrenes/anthracenes	0.87
C4-Chrysenes	2.3
C4-Naphthalenes	0.91
C4-Phenanthrenes/anthracenes	1.2
Chrysene	0.87
Dibenzo(a,h)anthracene	0.93
Dibenzothiophene	1.8
Fluoranthene	1.1
Fluorene	2.7
Indeno(1,2,3-cd)pyrene	0.92
Naphthalene	1.3
Perylene	0.69
Phenanthrene	1.6
Pyrene	0.94
Average Coefficient of Variation	**1.21**
Minimum Coefficient of Variation	**0.66**
Maximum Coefficient of Variation	**3.10**

Pesticides (ug/kg)	
1,2,3,4-Tetrachlorobenzene	0.99
1,2,4,5-Tetrachlorobenzene	0.82
2,4'-DDD	1.7
2,4'-DDE	1.3
2,4'-DDT	2.5
4,4'-DDD	2.1
4,4'-DDE	2.8
4,4'-DDT	2.8
Aldrin	2.2
alpha-BHC	0.81
Alpha-Chlordane	2.4
beta-BHC	0.90
Chlorpyrifos	0.98
cis-Nonachlor	1.1
delta-BHC	1.1
Dieldrin	3.7

TABLE A.2-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
Endosulfan II	0.78
Endrin	1.1
gamma-BHC (Lindane)	0.62
Gamma-Chlordane	3.3
Heptachlor	1.9
Heptachlor Epoxide	0.91
Hexachlorobenzene	2.5
Mirex	1.4
Oxychlordane	1.4
Pentachloroanisole	0.79
Pentachlorobenzene	0.91
Trans-Nonachlor	2.2
Average Coefficient of Variation	**1.64**
Minimum Coefficient of Variation	**0.62**
Maximum Coefficient of Variation	**3.75**

PCBs (ug/kg)	
PCB-101/90	1.6
PCB-105	1.0
PCB-118	0.87
PCB-126	3.0
PCB-128	0.84
PCB-138/160	1.8
PCB-149/123	1.9
PCB-153/132	1.8
PCB-156	1.1
PCB-167	0.87
PCB-169	1.8
PCB-170/190	1.1
PCB-18/17	1.5
PCB-180	1.6
PCB-187	1.5
PCB-189	0.65
PCB-195/208	1.0
PCB-201/157/173	0.88
PCB-206	1.3
PCB-209	1.6
PCB-28	0.98
PCB-44	0.87
PCB-52	1.0
PCB-66	1.2
PCB-77	1.6
PCB-8/5	1.2
PCB-81	2.3
Average Coefficient of Variation	**1.37**
Minimum Coefficient of Variation	**0.65**
Maximum Coefficient of Variation	**2.96**

TABLE A.2-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 2 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
Inorganics (mg/kg)	
Aluminum	0.13
Arsenic	0.27
Cadmium	0.56
Chromium	0.29
Copper	1.8
Iron	0.31
Lead	0.82
Manganese	0.39
Mercury	1.3
Nickel	0.86
Silver	1.0
Zinc	1.1
Average Coefficient of Variation	**0.74**
Minimum Coefficient of Variation	**0.13**
Maximum Coefficient of Variation	**1.78**
Total Organic Carbon (%)	
Total Organic Carbon	0.48

Notes:
- Source data located in the Round 2 data package (TtNUS, October 2000).

ATTACHMENT A.2-1
DATA QUALITY REVIEW (DQR)
ROUND 2

Various data quality control measures were implemented during the field investigation performed for Portsmouth Naval Shipyard (PNS), Round 2 (May 2000). These quality measures were conducted to help ensure that the resultant data were suitable for their intended uses. A brief summary of the measures is provided in the next three sections. Section 1.0 contains a summary of the data quality indicators (DQIs). Field quality control samples are discussed in Section 2.0. A summary of the data validation procedures and the results of the data validation process appear in Section 3.0.

During Round 2, samples were collected and analyzed from the following media: mussels, juvenile lobsters, sediment, sediment pore water, and surface water. During Rounds 1 and 2, juvenile lobsters were dissected into muscle and hepatopancreas samples. Hepatopancreas samples for Round 2 were frozen and preserved for future analysis, if necessary. The intestines were removed from the muscle samples prior to extraction for Round 2.

1.0 DATA QUALITY INDICATORS

The Interim Offshore Monitoring Plan was prepared as required by the Interim Record of Decision (ROD) for Operable Unit (OU) 4. The monitoring program is designed to provide offshore monitoring in the interim period before completion of the offshore feasibility study (FS) and selection and implementation of the final remedy for OU4. The focus of the interim offshore monitoring program is to provide data to determine whether, over the course of the interim monitoring, current and future concentrations of chemicals of concern (metals, PCBs, and PAHs) in the offshore areas are at acceptable levels. When the FS is conducted, available data, including data collected as part of the interim monitoring, will be used for the identification and evaluation of final remedial options for OU4.

DQIs are parameters that are monitored to establish the quality of data generated during an investigation. Some of the DQIs are generated from analysis of field samples (e.g., from field duplicates), and others result from the analysis of laboratory samples (e.g., laboratory duplicates). Individually, field and laboratory DQIs provide measures of the performance of the respective investigative operations (field or laboratory). Taken together, the DQIs provide a measure of the overall project performance. An overall evaluation of DQIs may also be used to improve the investigative process by identifying where in the process major uncertainties or biases are occurring.

1.1 Precision

Precision is a measure of the degree to which two or more measurements are in agreement and describes the reproducibility of measurements of the same parameter for samples analyzed under similar conditions.

Precision is expressed as a relative percent difference (RPD), which is defined as the ratio of the range to the mean. RPDs, which are typically expressed as percentages, are used to evaluate both field and laboratory duplicate precision and are calculated as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where RPD = relative percent difference
V1, V2 = two results obtained by analyzing duplicate samples

Field precision is assessed by collecting and measuring field duplicates at a rate of one duplicate per 10 environmental samples. This precision estimate encompasses the combined uncertainty associated with sample collection, homogenization, splitting, handling, laboratory and field storage (as applicable), preparation for analysis, and analysis. In contrast, precision estimates obtained from analyzing duplicate laboratory samples incorporate only homogenization, subsampling, preparation for analysis, laboratory storage (if applicable), and analysis uncertainties.

Laboratory precision QC samples [i.e., laboratory duplicates for inorganic chemicals and matrix spike duplicates (MSDs) for organic chemicals] were analyzed with a minimum frequency of five percent (i.e., 1 QC sample per 20 environmental samples). Laboratory precision is measured by comparing RPD values to precision control limits specified in the applicable analytical standard operating procedures (SOPs).

The precision objectives for parameters are specified in the associated analytical protocols. General precision objectives such as ±50 percent for solid matrices and ±30 percent for aqueous matrices were employed for this project for both field and laboratory duplicates. In general, qualification due to imprecision was not a significant cause of data qualification and does not impact the usability of the data for monitoring purposes, as depicted in Table 1-1 below. A 0% qualification rate indicates that no data were qualified due to duplicate imprecision and reflects the best possible performance.

Table 1-1 - Rates of Qualification
Laboratory and Field Duplicate Precision

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Lab Duplicate Imprecision	12%	0%	0%	0%	0%
Field Duplicate Imprecision	0%	0%	1%	6%	2%
	Mussels				
Lab Duplicate Imprecision	0%	0%	0%	0%	0%
Field Duplicate Imprecision	0%	0%	2%	3%	6%
	Pore Water				
Lab Duplicate Imprecision	0%	0%	NA	NA	NA
Field Duplicate Imprecision	0%	0%	NA	NA	NA
	Surface Water				
Lab Duplicate Imprecision	0%	NA	NA	0%	0%
Field Duplicate Imprecision	0%	NA	NA	0%	0%
	Sediment				
Lab Duplicate Imprecision	0%	11%	0%	<1%	<1%
Field Duplicate Imprecision	1%	2%	8%	10%	9%

Ten field duplicates were collected for 98 aqueous samples (surface water and pore water). Fourteen field duplicates were collected for 148 sediment samples. Nine field duplicates were collected for 68 tissue samples. Therefore, the 10 percent minimum frequency criterion was achieved.

1.2 Accuracy

Accuracy is the degree of agreement between an observed value and an accepted reference value. This parameter is assessed by measuring spiked samples [e.g., surrogate spikes or matrix spikes (MSs)] or well-characterized samples of certified analyte concentrations (e.g., LCSs) and by measuring blanks. Accuracy measurements are designed to detect biases associated with sample handling and analysis.

Accuracy requirements for field measurements are typically ensured through control over the sample collection and handling and through routine instrument calibration. Accuracy is also typically monitored through the use of blanks to detect cross-contamination and by monitoring adherence to procedures that prevent sample contamination or degradation. Equipment rinsate blanks were collected for this investigation to assess cross-contamination via sample collection equipment. Source water blanks were collected to monitor the purity of water used to decontaminate sampling equipment. Accuracy was also assured qualitatively through adherence to all sample handling, preservation, and holding time requirements.

Accuracy in the laboratory is measured through the comparison of a spiked sample or LCS result to a known or calculated value and is expressed as a percent recovery (%R). It is also assessed by monitoring the analytical recovery of select surrogate compounds added to samples that are analyzed by organic chromatographic methods. MS and surrogate compound analyses measure the combined accuracy effects of the sample matrix, sample preparation, and sample measurement. LCSs are used to assess the accuracy of laboratory operations with minimal sample matrix effects. Spiking concentrations were required to equal or approximate the default concentrations detailed in the applicable sample preparation or analysis SOPs. LCS and MS analyses were performed at a frequency no less than one per 20 associated samples of like matrix as required by the Interim Offshore Monitoring Plan. Laboratory accuracy is assessed by comparing calculated %R values to accuracy control limits specified in the applicable laboratory SOP.

Percent recovery is calculated using the following equation:

$$\%R = \frac{Ss - So}{S} \times 100$$

where %R = percent recovery
Ss = result of spiked sample
So = result of non-spiked sample
S = concentration of spiked amount.

In general, a percent recovery range of 75 to 125 defines the accuracy objective for the analytical data. It should be noted, however, that the analytical laboratory establishes analyte-specific percent recoveries.

Table 1-2 depicts the qualification rates for MS, LCS, surrogate, and internal standard recoveries. Failure to meet accuracy requirements resulted in a high rate of qualification of juvenile lobster and mussel tissue data based on internal standard recoveries. The sediment internal standard qualification rate was less than the tissue internal standard qualification rate. This, coupled with the knowledge that spike and internal standard recoveries are often poor in organic tissue samples, suggests that the poor recoveries are a result of matrix effects. No data were rejected on this basis during Round 2. By contrast, during Round 1, 52 percent of juvenile lobster results and 13 percent of mussel tissue results were rejected on this basis. The exclusion of the hepatopancreas data from Round 2 may account for the decreased rates of rejection and qualification from Round 1 to Round 2.

Table 1-2 - Rates of Qualification
Surrogate, Matrix Spike, Blank Spike, and Internal Standard Recoveries

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Matrix Spike Recovery	1%	0%	0%	0%	0%
Blank Spike Recovery	4%	0%	0%	1%	10%
Surrogate Recovery	NA	NA	0%	0%	0%
Internal Standard Recovery	NA	NA	57%	0%	0%
	Mussels				
Matrix Spike Recovery	16%	0%	0%	0%	<1%
Blank Spike Recovery	8%	0%	0%	1%	1%
Surrogate Recovery	NA	NA	0%	0%	2%
Internal Standard Recovery	NA	NA	57%	0%	0%
	Pore Water				
Matrix Spike Recovery	7%	0%	NA	NA	NA
Blank Spike Recovery	0%	29%	NA	NA	NA
Surrogate Recovery	NA	NA	NA	NA	NA
Internal Standard Recovery	NA	NA	NA	NA	NA
	Surface Water				
Matrix Spike Recovery	8%	NA	NA	0%	0%
Blank Spike Recovery	0%	NA	NA	7%	0%
Surrogate Recovery	NA	NA	NA	0%	0%
Internal Standard Recovery	NA	NA	NA	0%	0%
	Sediment				
Matrix Spike Recovery	0%	4%	0%	3%	<1%
Blank Spike Recovery	2%	0%	0%	4%	3%
Surrogate Recovery	NA	NA	0%	6%	2%
Internal Standard Recovery	NA	NA	21%	1%	0%

1.3 Completeness

Completeness is a measure of the amount of usable, valid analytical data obtained compared to the amount expected to be obtained. Completeness is expressed as a percentage.

Field completeness is a measure of the amount of valid field measurements obtained from all the field measurements taken in the project. A completeness criterion of 100 percent applies to these measurements.

Laboratory completeness is a measure of the amount of usable, valid laboratory measurements per matrix obtained for each target analyte. Usable, valid results are those that are judged, after data assessment, to represent the sampling populations and to have not been disqualified for use through data validation or data assessment. Completeness is typically expressed as a percentage and is determined using the following equation:

$$\%C = \frac{V}{T} \times 100$$

where %C = percent completeness
V = number of results determined to be valid
T = Total number of results

Under ideal conditions, the laboratory completeness objective would be 100 percent. However, samples can be rendered unusable during shipping and preparation (e.g., bottles broken or extracts accidentally destroyed) or analysis (e.g., loss of instrument sensitivity, strong matrix effects). Laboratory completeness objectives are 90 percent for sediment, 80 percent for mussel tissues, and 60 percent for juvenile lobster tissue. Completeness objectives for surface water and pore water samples were not specified. Table 1-3 compares the percent completeness between Rounds 1 and 2 for sediment and tissues. Pore water and surface water samples were collected during Round 2 only and, therefore, were not included in the comparison.

Table 1-3 – Percent Completeness

	Tissues		Sediment	
	Round 1	Round 2	Round 1	Round 2
Total Data Points	13,082	8,178	8,673	9,135
Rejected Data Points	230	0	10	0
% Completeness	98.2%	100%	99.9%	100

The calculated percent completeness for laboratory analytical data collected during the field investigation is 100 percent for mussel tissues and juvenile lobster tissues (i.e., zero laboratory analytical results out of a total of 8,178 data points were qualified as unusable). The calculated percent completeness for laboratory analytical data collected during the field investigation is 100 percent for sediments (i.e., zero laboratory analytical results out of a total of 9,135 data points were qualified as unusable). The calculated percent completeness for laboratory analytical data collected during the field investigation is 99.5 percent for surface and pore water (i.e., four laboratory analytical results out of a total of 786 data points were qualified as unusable). Therefore, the data completeness objectives for the project were achieved. Table 1-4 lists the specific results that were rejected during Round 2 (PW = pore water, SW = surface water).

Table 1-4 – Rejected Results

Samples	Rejected Parameter	Basis for Rejection
OU4-PW-R03-300B-D	Arsenic	MS Recovery < 30%
OU4-PW-R03-400B	Arsenic	MS Recovery < 30%
OU4-PW-R04-300B	Arsenic	MS Recovery < 30%
OU4-SW-M14-100B	Arsenic	MS Recovery < 30%

Rejected results are not suitable for use for the Interim Offshore Monitoring Program.

1.4 Sensitivity

Minimum and maximum nondetected results achieved during laboratory analysis were compared to target method detection limits contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan. Because MDLs in Table 6-5i were presented on a wet weight basis for dioxins, the detection limits were adjusted for tissue by multiplying by 5 and for sediment by multiplying by 2 in order to be consistent with the other fractions and report them on a dry weight basis. Tables 1-5 and 1-6 (located at the end of the Round 2 DQR) compare the Target MDLs to the minimum and maximum nondetects for each parameter, for each matrix. Exceedances of the Target MDLs for sediment were noted for dioxins, pesticides, and PCB congeners. Target MDL mussel exceedances were noted for dioxins and PCB congeners. Lobster target MDL exceedances were noted for dioxins, pesticides, PCB congeners, chromium, and nickel.

1.5 Comparability

Comparability is defined as the confidence with which one data set can be compared with another (e.g., among sampling points; among sampling events). This is a key parameter because data will

be compared among monitoring stations and reference locations and among sampling events (as part of trend analysis) to make interim decisions. Comparability is achieved by using standardized sampling and analysis methods, as well as data reporting formats. Additionally, consideration is given to seasonal conditions and other environmental variations that could exist to influence data results. Comparability of laboratory measurements will be assessed primarily through the use and documentation of similar sampling and analytical methods. Results will be reported in units to ensure comparability with previous data and with current state and federal standards and guidelines. Comparability of field data will be satisfied by ensuring the field sampling plan is followed and that proper sampling techniques are used. It also depends on recording field measurements using the correct units. Comparability of laboratory measurements will be assessed primarily through the use of certified reference materials, spike recoveries, and RPD values. Failure to achieve comparability will result in corrective action.

Field data were generated using the methodologies and units as specified in the Interim Offshore Monitoring Plan. Sampling techniques described in the plan and field sampling SOPs were followed.

1.6 Representativeness

Representativeness is an expression of the degree to which the data accurately and precisely depict the actual characteristics of a population or environmental condition existing at an individual sampling point and is contingent on a good design for the sampling program. The project planning documents (monitoring plan, field and laboratory SOPs) and use of standardized sampling, handling, analytical, and reporting procedures are designed so that the final data are accurate representations of actual site conditions. A number of conditions could arise that cause the representativeness of samples to be questioned. For example, data outliers or samples collected from a place different from the intended location could adversely impact representativeness of the data set.

Data were collected from the specified locations using sampling, sample handling, analytical, and reporting procedures as specified in the Interim Offshore Monitoring Plan. Therefore, no data representativeness concerns have been raised and the data are suitable for use as part of the monitoring program.

2.0 FIELD QUALITY CONTROL SAMPLES

The following field QC samples were collected during sampling efforts and analyzed in accordance with requirements specified in the Interim Offshore Monitoring Plan:

Field duplicates for interim monitoring sediments were a single sample homogenized and split into two portions. Field duplicates were collected during a single act of sampling and analyzed for chemical constituents to measure the precision of the sampling and analysis program, as well as natural sample heterogeneity. As planned, mussel and juvenile lobster tissue sample duplicates were prepared by the laboratory in a manner similar to normal environmental media samples.

Source water blanks consist of sampling of source waters, used in decontamination, before use. The samples were obtained at the rate of one per source per sampling event. Source water is analyzed for all organic and inorganic constituents under investigation, as a means of determining whether the source water used in field procedures could potentially have introduced contaminants to the environmental samples collected. Source water blanks were evaluated in accordance with the planned data validation protocols to determine whether false positive results may exist. A false positive result is a result that indicates the presence of an analyte when the analyte should have been classified as nondetected.

Equipment rinsate blanks were collected and analyzed to check the effectiveness of decontamination procedures. Samples were obtained under representative field conditions by collecting the rinse water generated by running analyte-free water through sample collection equipment after decontamination and before use. Rinsate blanks were obtained for each type of sampling equipment for each day that the sampling equipment was decontaminated. Where pre-cleaned, dedicated sampling equipment was used, one rinsate blank was collected as a "batch blank." Rinsate blanks were analyzed for the same chemical constituents as the associated environmental samples.

Temperature blanks were included in each cooler as a temperature indicator to assure that samples were received at the laboratory at the appropriate temperature.

Positive results in the field blanks were not used as a basis for data validation because field blank results were not included in the SDG with their associated samples. Therefore, false positives may exist, particularly for sample data close to or less than the reporting limit. Table 2-1 presents the maximum contamination values reported in the field and rinsate blanks associated with the Round 2 sampling event.

Table 2-1 – Maximum Positive Concentrations in Field and Rinsate Blanks, µg/L

Parameter	Compounds	Maximum Rinsate Blank Contamination	Maximum Field Blank Contamination
Dioxin	1,2,3,4,6,7,8-HPCDD	1.5	ND
	1,2,3,4,7,8,9-HPCDF	0.9	ND
	1,2,3,4,7,8-HXCDD	1.4	ND
	1,2,3,4,7,8-HXCDF	1.6	ND
	1,2,3,6,7,8-HXCDF	0.8	1.1
	1,2,3,7,8,9-HXCDD	0.8	ND
	1,2,3,7,8,9-HXCDF	0.9	ND
	1,2,3,7,8-PECDF	1.5	0.6
	2,3,4,7,8-PECDF	2.7	1.6
	2,3,7,8-TCDF	1.5	1.3
	OCDD	3.5	ND
	Total DIOXINS	4.5	1.7
	Total FURANS	7.7	6
	Total HPCDD	1.5	ND
	Total HPCDF	0.9	ND
	Total HXCDD	1.4	ND
	Total HXCDF	1	1.1
	Total PECDF	3.8	2.2
	Total TCDF	48.1	48.1
PAH	1,6,7-Trimethylnaphthalene	0.8	0.7
	1-Methylnaphthalene	4	2.9
	1-Methylphenanthrene	1	0.4
	2,6-Dimethylnaphthalene	1.8	1.5
	2-Methylnaphthalene	6.2	4.9
	Acenaphthene	3	1.6

Parameter	Compounds	Maximum Rinsate Blank Contamination	Maximum Field Blank Contamination
	Acenaphthylene	2.7	0.5
	Anthracene	4.2	0.4
	Benzo(A)Anthracene	6.1	0.4
	Benzo(A)Pyrene	5.9	0.5
	Benzo(B)Fluoranthene	8.4	0.6
	Benzo(E)Pyrene	5.5	0.5
	Benzo(G,H,I)Perylene	3.7	0.5
	Benzo(K)Fluoranthene	3.8	0.3
	Biphenyl	2.4	1.7
	C1-Chrysenes	3.5	0.5
	C1-Dibenzothiophenes	1.2	0.5
	C1-Fluoranthenes/Pyrenes	8.1	1.8
	C1-Fluorenes	3.3	1.4
	C1-Naphthalenes	10.1	7.7
	C1-Phenanthrenes/Anthracenes	3.2	1.9
	C2-Chrysenes	2	0.5
	C2-Dibenzothiophenes	1.3	0.9
	C2-Fluorenes	4	2.8
	C2-Naphthalenes	8	4.8
	C2-Phenanthrenes/Anthracenes	2.5	0.7
	C3-Chrysenes	0.5	0.3
	C3-Dibenzothiophenes	1.2	0.8
	C3-Fluorenes	3.5	2
	C3-Naphthalenes	8.6	7.9
	C3-Phenanthrenes/Anthracenes	2.2	1.3
	C4-Chrysenes	1	0.6
	C4-Naphthalenes	2.4	2.5
	C4-Phenanthrenes/Anthracenes	1.8	0.9
	Chrysene	9.3	0.7
	Dibenzo(A,H)Anthracene	1	0.1
	Dibenzothiophene	1	0.4
	Fluoranthene	16	1
	Fluorene	5.3	2
	Indeno(1,2,3-Cd)Pyrene	3.3	0.2
	Naphthalene	16.4	12.4
	Perylene	1.5	0.4
	Phenanthrene	12.6	2.9
	Pyrene	11.4	0.6
Pesticide/PCB	Aldrin	1.1	0.43
	Beta-BHC	0.3	0.13
	Gamma-BHC (Lindane)	0.12	0.1
	Gamma-Chlordane	0.27	ND
	Hexachlorobenzene	0.16	0.14
	Oxychlordane	0.41	ND
	PCB-18/17	4.1	1.7
	PCB-44	0.24	0.1
	PCB-52	1.6	0.43
	PCB-66	0.96	ND
	PCB-8/5	2.8	0.89
	Pentachloroanisole	0.19	0.14
	Pentachlorobenzene	0.12	ND
	Trans-Nonachlor	0.13	0.12

ND = Not detected

3.0 DATA VALIDATION

Data validation is a systematic review of analytical chemical data packages with respect to sample receipt and handling, analytical methods, data reporting and deliverables, and document control. The quality of data generated by a laboratory is extremely important; it is an integral part of the investigation and must be clearly tied to the project goals. This section summarizes the various aspects of the data validation process.

3.1 General Data Validation Procedures

After receipt of analytical results, data validation was performed based upon USEPA Region I Tier II validation procedures (USEPA, 1996). The Tier II validation consists of a completeness audit defined as a Tier I review and a review of all quality control check results. The Tier II validation does not evaluate raw data and does not provide calculation confirmation of sample results.

After the data were validated, a list of non-conformities requiring data qualifiers, which are used to alert the data user to inaccurate or imprecise data, was developed. For situations in which several quality control criteria were out of specification, the data validator made professional judgments and/or comments on the validity of the overall data package. The reviewer then prepared a technical memorandum presenting qualification of the data, if necessary, and the rationale for making such qualifications.

The net result is a data package that has been carefully reviewed for its adherence to prescribed technical requirements. One hundred percent of the environmental samples were validated. Validators incorporated data qualifiers into the electronic database and submitted the information to the data management group.

3.2 Data Validation Qualifiers

As mentioned previously, the analytical data were qualified during the validation process (i.e., application of U, J, UJ, UR, and R qualifiers) as required by the USEPA Functional Guidelines. The attachment of the data qualifiers to analytical results signifies the occurrence of QC noncompliances that were noted during the course of data validation. The various data qualifiers are defined, as follows:

U - Indicates that the chemical was not detected at the numerical detection limit (sample-specific quantitation limit) noted. Nondetected results from the laboratory are reported in this manner. This qualifier is also added to a positive result (reported by the laboratory) if the detected concentration is determined to be attributable to contamination introduced during field sampling or laboratory analysis.

UJ - Indicates that the chemical was not detected. However, the detection limit (sample-specific quantitation limit) is considered to be estimated based on problems encountered during laboratory analysis. The associated numerical detection limit is regarded as inaccurate or imprecise.

J - Indicates that the chemical was detected. However, the associated numerical result is not a precise representation of the amount that is actually present in the sample. The laboratory-reported concentration is considered to be an estimate of the true concentration.

UR - Indicates that the chemical may or may not be present. The nondetected analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies (i.e., holding times missed by a factor of two times the specified time limit, severe calibration noncompliances, and extremely low quality control recoveries).

R - Indicates that the chemical may or may not be present. The positive analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies.

The preceding data qualifiers may be categorized as indicative of major or minor problems. Major problems are defined as issues that result in the rejection of data, qualified with UR and R data validation qualifiers. These data are considered invalid and are not used for decision-making purposes unless they are used in a qualitative way and the use is justified and documented. Minor problems are defined as issues resulting in the estimation of data, qualified with U, J, and UJ data validation qualifiers. Estimated analytical results are considered to be suitable for decision-making purposes unless the data use requirements are very stringent and the qualifier indicates a deficiency that is incompatible with the intended data use. It is notable that a "U" qualifier does not necessarily indicate a data deficiency because all non-detect values are flagged with the "U" qualifier even when no deficiency exists.

3.3 Summary Of Data Validation Results

A summary of the data validation results for the analytical data effort is provided in the remainder of this section. Because the methodologies used for extraction and analysis of the sediment and tissue samples were non-routine, the laboratory SOPs were used to establish acceptance limits for calibration, spike and LCS recoveries, compound identification, and quantitation.

Table 3-1 presents the percentages of data qualified as estimated (J flag) or rejected (R flag) during Round 2 for each sample matrix. The percentage of qualified and unqualified data will not equal 100 percent because some data points are qualified for more than one technical noncompliance. Qualification for PARCC parameters (field and laboratory duplicates, surrogates, matrix spikes, blank spikes, and internal standards) was presented and discussed in Section 1.0. No tissue or sediment data were rejected during Round 2. Unqualified data are data that did not require qualification for any technical noncompliances.

Table 3.1 - Rates of Qualification

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Unqualified Data	84%	100%	27%	21%	56%
<Reporting Limit	0%	0%	10%	78%	28%
Method Blank Contamination	1%	0%	16%	0%	7%
Holding Time Noncompliance	0%	0%	57%	0%	0%
Calibration Noncompliance	0%	0%	0%	3%	0%
	Mussels				
Unqualified Data	84%	100%	33%	79%	74%
<Reporting Limit	0%	0%	19%	12%	8%
Method Blank Contamination	0%	0%	4%	0%	10%
Holding Time Noncompliance	0%	0%	2%	0%	0%
Calibration Noncompliance	0%	0%	0%	5%	0%
	Pore Water				
Unqualified Data	91%	29%	NA	NA	NA
<Reporting Limit	2%	0%	NA	NA	NA
Holding Time Noncompliance	0%	72%	NA	NA	NA

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Surface Water				
Unqualified Data	77%	NA	NA	2%	75%
<Reporting Limit	0%	NA	NA	12%	9%
Method Blank Contamination	8%	NA	NA	0%	16%
Holding Time Noncompliance	8%	NA	NA	0%	0%
	Sediment				
Unqualified Data	98%	75%	48%	66%	66%
<Reporting Limit	0%	0%	13%	3%	18%
Percent Solids	0%	1%	3%	1%	1%
Method Blank Contamination	0%	10%	13%	0%	4%
Calibration Noncompliance	0%	0%	0%	11%	<1%
Other Technical Noncompliance	0%	0%	0%	0%	<1%

Holding Time – 57 percent of juvenile lobster tissues were qualified on the basis of exceeding the holding time. Nine juvenile lobster samples in SDG 0459 were analyzed 52 days after sample extraction. The holding time criterion is that samples are to be analyzed within 40 days from the date of extraction. Seventy-two percent of porewater miscellaneous data were qualified on the basis of exceeding holding time. Thirty-five porewater samples were analyzed outside the 28-day holding time (from date of collection to date of analysis) for dissolved organic carbon. Degradation of analytes by chemical reaction is usually most rapid during the early part of the holding time, and degradation rates due to biochemical activity may increase over time. Holding time exceedances do not invalidate the data according to data validation rules unless the sample has been held for twice the holding period prior to analysis. The data are usable for purposes of the Interim Monitoring Program; however, the holding time exceedances may indicate that the analytical laboratory exceeded its capacity.

Method Blank Contamination – Positive results in the rinsate and field blanks were not used as a basis for data validation. Therefore, false positives may have been reported because the data were not screened for contamination occurring during sample collection activities. Field blanks and rinsate blanks were not qualified on the basis of method blank contamination. Table 2-1 in Section 2.0 depicts the maximum values detected in the rinsate and field blanks. Overall, the percentage of data qualified due to method blank contamination dropped significantly from Round 1 to Round 2 with the exception of juvenile lobster dioxin analyses (Round 1: 0 percent, Round 2: 16 percent) and mussel metals analyses (Round 1: 0 percent, Round 2: 1 percent). The increased qualification of dioxin data resulted from the same nine samples that were analyzed 52 days after sample extraction. The increase in metals qualification is within rounding error and is not considered significant. As noted in Round 1, the laboratory continued to report all positive detections in the method blanks. However, method blanks in Round 2 exhibited fewer instances of contamination or lower levels of contamination, indicating improved laboratory performance.

The remaining tables compare the percentage of qualification for tissue and sediment samples between Rounds 1 and 2. Only technical noncompliances are listed. Technical areas that were evaluated but did not result in qualification are not presented. Overall data quality was better in Round 2 versus Round 1. The percentage of data that was not qualified due to technical noncompliances was greater in Round 2 than Round 1. No tissue or sediment data were rejected during the Round 2 sampling event.

Table 3-2 Mussel Tissues, Dioxin Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	29%	4%
Hold Time Noncompliance	0%	2%
Field Duplicate Imprecision	0%	2%
Internal/Surrogate Recovery	50% (13% rejected)	57%
Compound Identification	2%	0%
Less than Reporting Limit	5%	19%
Data Not Qualified	16%	33%

Table 3-3 Mussel Tissues, PAH Qualification Rates

Basis for Qualification	Round 1	Round 2
Calibration Noncompliance	5%	5%
LCS Noncompliance	2%	1%
Field Duplicate Imprecision	<1%	3%
Surrogate Recovery	<1%	0%
Less than Reporting Limit	21%	12%
Data Not Qualified	54%	79%

Table 3-4 Mussel Tissues, Pesticides and PCBs Qualification Rates

Basis for Qualification	Round 1	Round 2
LCS Noncompliance	1%	1%
MS/MSD Noncompliance	<1%	<1%
Field Duplicate Imprecision	0%	6%
Surrogate Recovery	0%	2%
Less than Reporting Limit	14%	8%
Data Not Qualified	69%	74%

Table 3-5 Mussel Tissues, Metals Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	0%	1%
LCS Noncompliance	2%	8%
MS Noncompliance	29%	16%
Less than Reporting Limit	<1%	0%
Data Not Qualified	69%	84%

Table 3-6 Juvenile Lobster Tissues, Dioxins Qualification Rates

Basis for Qualification	Round 1	Round 2
Hold Time Noncompliance	0%	57%
Method Blank Contamination	5%	16%
Field Duplicate Imprecision	0%	1%
Internal/Surrogate Recovery	87% (52% rejected)	57%
Less than Reporting Limit	2%	10%
Data Not Qualified	8%	27%

Table3-7 Juvenile Lobster Tissues, PAH Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	21%	0%
Calibration Noncompliance	8%	3%
LCS Noncompliance	1%	1%
Field Duplicate Imprecision	1%	6%
Less than Reporting Limit	56%	78%
Data Not Qualified	8%	21%

Table 3-8 Juvenile Lobster Tissues, Pesticides and PCBs Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	21%	7%
LCS Noncompliance	4%	10%
MS/MSD Noncompliance	<1% (0.09% rejected)	0%
Field Duplicate Imprecision	1%	2%
Less than Reporting Limit	26%	28%
Data Not Qualified	50%	56%

Table 3-9 Juvenile Lobster Tissues, Metals Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	2%	1%
LCS Noncompliance	1%	4%
MS Noncompliance	23%	1%
Lab Duplicate Noncompliance	0%	12%
Less than Reporting Limit	0%	0%
Data Not Qualified	74%	84%

Table 3-10 Sediment, Dioxin Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	53%	13%
Field Blank Contamination	6%	0%
MS/MSD Noncompliance	0%	4%
Field Duplicate Imprecision	0%	8%
Internal/Surrogate Recovery	9% (1% rejected)	21%
Compound Identification	2%	0%
Less than Reporting Limit	2%	13%
Data Not Qualified	28%	48%

Table 3-11 Sediment, PAH Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	14%	0%
Calibration Noncompliance	5%	11%
LCS Noncompliance	6%	4%
MS/MSD Noncompliance	2%	3%
Field Duplicate Imprecision	0%	10%
Surrogate Recovery	<1%	6%
Less than Reporting Limit	2%	3%
Data Not Qualified	72%	66%

Table 3-12 Sediment, Pesticides and PCBs Qualification Rates

Basis for Qualification	Round 1	Round 2
Method Blank Contamination	10%	4%
Calibration Noncompliance	<1%	<1%
LCS Noncompliance	6%	3%
MS/MSD Noncompliance	<1%	<1%
Field Duplicate Imprecision	1%	9%
Surrogate Recovery	3%	2%
Less than Reporting Limit	19%	18%
Data Not Qualified	63%	66%

Table 3-13 Sediment, Metals Qualification Rates

Basis for Qualification	Round 1	Round 2
LCS Noncompliance	0%	2%
MS Noncompliance	8%	0%
Field Duplicate Noncompliance	17%	1%
Less than Reporting Limit	0%	0%
Data Not Qualified	74%	98%

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	26/26	0	0	10
1,2,3,4,6,7,8-HPCDF	24/26	3.8	4.6	10
1,2,3,4,7,8,9-HPCDF	5/26	0.03	2.4	10
1,2,3,4,7,8-HXCDD	14/26	1.1	2.5	10
1,2,3,4,7,8-HXCDF	16/26	1.1	2.6	10
1,2,3,6,7,8-HXCDD	19/26	1.3	2.4	10
1,2,3,6,7,8-HXCDF	12/26	0.3	2.9	10
1,2,3,7,8,9-HXCDD	11/26	0.5	3.1	10
1,2,3,7,8,9-HXCDF	6/26	0.1	2.5	10
1,2,3,7,8-PECDD	5/26	1.1	3.1	10
1,2,3,7,8-PECDF	4/26	0.3	4.7	10
2,3,4,6,7,8-HXCDF	15/26	0.4	2.4	10
2,3,4,7,8-PECDF	12/26	0.7	3	10
2,3,7,8-TCDD	6/26	0.2	0.6	2
2,3,7,8-TCDF	13/26	0.27	4.5	2
OCDD	26/26	0	0	20
OCDF	26/26	0	0	20
TOTAL DIOXINS	26/26	0	0	10
TOTAL FURANS	26/26	0	0	10
TOTAL HPCDD	26/26	0	0	10
TOTAL HPCDF	25/26	7.3	7.3	10
TOTAL HXCDD	22/26	1	2.7	10
TOTAL HXCDF	22/26	0.9	4.3	10
TOTAL PECDD	5/26	1.1	3.1	10
TOTAL PECDF	12/26	0.1	14.4	10
TOTAL TCDD	19/26	0.27	0.6	2
TOTAL TCDF	16/26	0.27	7.9	2
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	54/54	0	0	20
1-METHYLNAPHTHALENE	54/54	0	0	20
1-METHYLPHENANTHRENE	54/54	0	0	20
2,6-DIMETHYLNAPHTHALENE	54/54	0	0	20
2-METHYLNAPHTHALENE	54/54	0	0	20
ACENAPHTHENE	54/54	0	0	20
ACENAPHTHYLENE	54/54	0	0	20
ANTHRACENE	54/54	0	0	20
BENZO(A)ANTHRACENE	54/54	0	0	20
BENZO(A)PYRENE	54/54	0	0	20
BENZO(B)FLUORANTHENE	54/54	0	0	20
BENZO(E)PYRENE	54/54	0	0	20
BENZO(G,H,I)PERYLENE	54/54	0	0	20
BENZO(K)FLUORANTHENE	54/54	0	0	20
BIPHENYL	54/54	0	0	20
C1-CHRYSENES	54/54	0	0	20
C1-DIBENZOTHIOPHENES	54/54	0	0	20
C1-FLUORANTHENES/PYRENES	54/54	0	0	20
C1-FLUORENES	54/54	0	0	20
C1-NAPHTHALENES	54/54	0	0	20
C1-PHENANTHRENES/ANTHRACENES	54/54	0	0	20
C2-CHRYSENES	54/54	0	0	20

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	54/54	0	0	20
C2-FLUORENES	54/54	0	0	20
C2-NAPHTHALENES	54/54	0	0	20
C2-PHENANTHRENES/ANTHRACENES	54/54	0	0	20
C3-CHRYSENES	54/54	0	0	20
C3-DIBENZOTHIOPHENES	54/54	0	0	20
C3-FLUORENES	54/54	0	0	20
C3-NAPHTHALENES	54/54	0	0	20
C3-PHENANTHRENES/ANTHRACENES	54/54	0	0	20
C4-CHRYSENES	54/54	0	0	20
C4-NAPHTHALENES	54/54	0	0	20
C4-PHENANTHRENES/ANTHRACENES	54/54	0	0	20
CHRYSENE	54/54	0	0	20
DIBENZO(A,H)ANTHRACENE	54/54	0	0	20
DIBENZOTHIOPHENE	54/54	0	0	20
FLUORANTHENE	54/54	0	0	20
FLUORENE	54/54	0	0	20
INDENO(1,2,3-CD)PYRENE	54/54	0	0	20
NAPHTHALENE	54/54	0	0	20
PERYLENE	54/54	0	0	20
PHENANTHRENE	54/54	0	0	20
PYRENE	54/54	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	49/54	0.16	0.44	2
1,2,4,5-TETRACHLOROBENZENE	54/54	0	0	2
2,4'-DDD	45/54	0.15	2.8	2
2,4'-DDE	50/54	0.091	0.14	2
2,4'-DDT	40/54	0.01	0.38	2
4,4'-DDD	43/54	0.39	11	2
4,4'-DDE	48/54	0.15	1.3	2
4,4'-DDT	39/54	0.56	15	2
ALDRIN	20/54	0.045	0.11	2
ALPHA-BHC	53/54	0.065	0.065	2
ALPHA-CHLORDANE	54/54	0	0	2
BETA-BHC	43/54	0.15	0.39	2
CHLORPYRIFOS	8/54	0.21	0.59	2
CIS-NONACHLOR	54/54	0	0	2
DELTA-BHC	25/54	0.033	0.091	2
DIELDRIN	49/54	0.062	0.14	2
ENDOSULFAN II	54/54	0	0	2
ENDRIN	7/54	0.1	0.28	2
GAMMA-BHC (LINDANE)	40/54	0.19	0.5	2
GAMMA-CHLORDANE	44/54	0.061	0.14	2
HEPTACHLOR	34/54	0.13	0.35	2
HEPTACHLOR EPOXIDE	2/54	0.022	0.063	2
HEXACHLOROBENZENE	39/54	0.042	0.094	2
MIREX	36/54	0.023	0.061	2
OXYCHLORDANE	40/54	0.011	0.18	2
PCB-101/90	54/54	0	0	1
PCB-105	54/54	0	0	1
PCB-114	0/54	0.13	0.38	1
PCB-118	54/54	0	0	1

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	54/54	0	0	1
PCB-128	54/54	0	0	1
PCB-138/160	45/54	0.21	2.8	1
PCB-149/123	54/54	0	0	1
PCB-153/132	49/54	0.66	2.7	1
PCB-156	50/54	0.13	0.31	1
PCB-167	53/54	0.16	0.16	1
PCB-169	44/54	0.21	0.37	1
PCB-170/190	47/54	1.4	12	1
PCB-18/17	23/54	0.067	0.19	1
PCB-180	43/54	0.27	1.4	1
PCB-187	54/54	0	0	1
PCB-189	53/54	0.17	0.17	1
PCB-195/208	54/54	0	0	1
PCB-201/157/173	52/54	0.02	0.04	1
PCB-206	43/54	0.13	1.4	1
PCB-209	41/54	0.13	1.1	1
PCB-28	54/54	0	0	1
PCB-44	53/54	0.18	0.18	1
PCB-52	54/54	0	0	1
PCB-66	52/54	0.11	0.2	1
PCB-77	31/54	0.04	2.4	1
PCB-8/5	54/54	0	0	1
PCB-81	49/54	0.17	0.23	1
PENTACHLOROANISOLE	54/54	0	0	2
PENTACHLOROBENZENE	49/54	0.27	0.73	2
TRANS-NONACHLOR	51/54	0.035	0.058	2
Inorganics (mg/kg)				
ALUMINUM	54/54	0	0	50
ARSENIC	54/54	0	0	5
CADMIUM	54/54	0	0	0.3
CHROMIUM	54/54	0	0	5
COPPER	54/54	0	0	5
IRON	54/54	0	0	50
LEAD	54/54	0	0	5
MANGANESE	54/54	0	0	5
MERCURY	54/54	0	0	0.2
NICKEL	54/54	0	0	5
SILVER	54/54	0	0	0.1
ZINC	54/54	0	0	15

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussel				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	17/21	20	88.8	25
1,2,3,4,6,7,8-HPCDF	16/21	19.1	65.8	25
1,2,3,4,7,8,9-HPCDF	1/21	16	55.4	25
1,2,3,4,7,8-HXCDD	5/21	19.1	38.2	25
1,2,3,4,7,8-HXCDF	3/21	16	38.2	25
1,2,3,6,7,8-HXCDD	5/21	4.1	38.2	25
1,2,3,6,7,8-HXCDF	0/21	16	53	25
1,2,3,7,8,9-HXCDD	6/21	16	38.2	25
1,2,3,7,8,9-HXCDF	0/21	16	53.6	25
1,2,3,7,8-PECDD	5/21	16	62.1	25
1,2,3,7,8-PECDF	13/21	20	43.1	25
2,3,4,6,7,8-HXCDF	3/21	16	37.4	25
2,3,4,7,8-PECDF	13/21	19.1	55	25
2,3,7,8-TCDD	4/21	3.8	7.6	5
2,3,7,8-TCDF	13/21	4	11.1	5
OCDD	19/21	69.3	76.3	50
OCDF	8/21	6.2	76.3	50
TOTAL DIOXINS	21/21	0	0	25
TOTAL FURANS	21/21	0	0	25
TOTAL HPCDD	20/21	88.8	88.8	25
TOTAL HPCDF	18/21	20	121	25
TOTAL HXCDD	14/21	5.3	34.7	25
TOTAL HXCDF	7/21	4.5	193	25
TOTAL PECDD	6/21	16	62.1	25
TOTAL PECDF	16/21	5.9	98.1	25
TOTAL TCDD	13/21	4	7.6	5
TOTAL TCDF	18/21	2.6	25.7	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	41/41	0	0	20
1-METHYLNAPHTHALENE	41/41	0	0	20
1-METHYLPHENANTHRENE	41/41	0	0	20
2,6-DIMETHYLNAPHTHALENE	41/41	0	0	20
2-METHYLNAPHTHALENE	41/41	0	0	20
ACENAPHTHENE	41/41	0	0	20
ACENAPHTHYLENE	41/41	0	0	20
ANTHRACENE	41/41	0	0	20
BENZO(A)ANTHRACENE	41/41	0	0	20
BENZO(A)PYRENE	41/41	0	0	20
BENZO(B)FLUORANTHENE	41/41	0	0	20
BENZO(E)PYRENE	41/41	0	0	20
BENZO(G,H,I)PERYLENE	41/41	0	0	20
BENZO(K)FLUORANTHENE	41/41	0	0	20
BIPHENYL	41/41	0	0	20
C1-CHRYSENES	41/41	0	0	20
C1-DIBENZOTHIOPHENES	41/41	0	0	20
C1-FLUORANTHENES/PYRENES	41/41	0	0	20
C1-FLUORENES	41/41	0	0	20
C1-NAPHTHALENES	41/41	0	0	20
C1-PHENANTHRENES/ANTHRACENES	41/41	0	0	20
C2-CHRYSENES	41/41	0	0	20

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	41/41	0	0	20
C2-FLUORENES	41/41	0	0	20
C2-NAPHTHALENES	41/41	0	0	20
C2-PHENANTHRENES/ANTHRACENES	41/41	0	0	20
C3-CHRYSENES	41/41	0	0	20
C3-DIBENZOTHIOPHENES	41/41	0	0	20
C3-FLUORENES	41/41	0	0	20
C3-NAPHTHALENES	41/41	0	0	20
C3-PHENANTHRENES/ANTHRACENES	41/41	0	0	20
C4-CHRYSENES	41/41	0	0	20
C4-NAPHTHALENES	41/41	0	0	20
C4-PHENANTHRENES/ANTHRACENES	41/41	0	0	20
CHRYSENE	41/41	0	0	20
DIBENZO(A,H)ANTHRACENE	41/41	0	0	20
DIBENZOTHIOPHENE	41/41	0	0	20
FLUORANTHENE	41/41	0	0	20
FLUORENE	41/41	0	0	20
INDENO(1,2,3-CD)PYRENE	41/41	0	0	20
NAPHTHALENE	41/41	0	0	20
PERYLENE	41/41	0	0	20
PHENANTHRENE	41/41	0	0	20
PYRENE	41/41	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	41/41	0	0	10
1,2,4,5-TETRACHLOROBENZENE	8/41	0.42	3.8	10
2,4'-DDD	37/41	0.12	0.16	10
2,4'-DDE	39/41	0.18	0.2	10
2,4'-DDT	40/41	0.15	0.15	10
4,4'-DDD	41/41	0	0	10
4,4'-DDE	41/41	0	0	10
4,4'-DDT	41/41	0	0	10
ALDRIN	38/41	0.22	0.35	10
ALPHA-BHC	41/41	0	0	10
ALPHA-CHLORDANE	41/41	0	0	10
BETA-BHC	38/41	0.11	0.13	10
CHLORPYRIFOS	5/41	1.2	7.9	10
CIS-NONACHLOR	41/41	0	0	10
DELTA-BHC	6/41	0.07	0.13	10
DIELDRIN	40/41	0.16	0.16	10
ENDOSULFAN II	40/41	0.19	0.19	10
ENDRIN	17/41	0.36	0.72	10
GAMMA-BHC (LINDANE)	35/41	0.69	1.6	10
GAMMA-CHLORDANE	40/41	3.1	3.1	10
HEPTACHLOR	38/41	0.21	0.26	10
HEPTACHLOR EPOXIDE	31/41	0.15	0.28	10
HEXACHLOROBENZENE	41/41	0	0	10
MIREX	9/41	0.32	0.59	10
OXYCHLORDANE	24/41	0.15	0.23	10
PCB-101/90	20/41	5.4	12	2
PCB-105	41/41	0	0	2
PCB-114	0/41	0.49	0.97	2
PCB-118	40/41	5.4	5.4	2

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	40/41	1.6	1.6	2
PCB-128	40/41	1.4	1.4	2
PCB-138/160	20/41	7.4	31	2
PCB-149/123	20/41	3.3	19	2
PCB-153/132	14/41	8.8	51	2
PCB-156	41/41	0	0	2
PCB-167	40/41	0.69	0.69	2
PCB-169	35/41	0.52	0.61	2
PCB-170/190	22/41	0.23	3.7	2
PCB-18/17	34/41	1.5	1.8	2
PCB-180	14/41	5.8	22	2
PCB-187	14/41	3.3	22	2
PCB-189	8/41	0.5	0.97	2
PCB-195/208	16/41	0.41	0.81	2
PCB-201/157/173	33/41	0.44	0.69	2
PCB-206	5/41	0.43	0.84	2
PCB-209	41/41	0	0	2
PCB-28	41/41	0	0	2
PCB-44	40/41	0.33	0.33	2
PCB-52	41/41	0	0	2
PCB-66	41/41	0	0	2
PCB-77	26/41	0.52	1.3	2
PCB-8/5	41/41	0	0	2
PCB-81	40/41	0.63	0.63	2
PENTACHLOROANISOLE	41/41	0	0	10
PENTACHLOROBENZENE	6/41	0.16	4.7	10
TRANS-NONACHLOR	41/41	0	0	10
Inorganics (mg/kg)				
ALUMINUM	43/43	0	0	10
ARSENIC	43/43	0	0	0.35
CADMIUM	43/43	0	0	0.1
CHROMIUM	43/43	0	0	0.4
COPPER	43/43	0	0	0.1
IRON	43/43	0	0	15
LEAD	43/43	0	0	0.1
MANGANESE	43/43	0	0	1.7
MERCURY	43/43	0	0	0.01
NICKEL	43/43	0	0	0.14
SILVER	43/43	0	0	0.29
ZINC	43/43	0	0	5.7

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	0/9	1.2	18.7	25
1,2,3,4,6,7,8-HPCDF	0/9	1.1	19.9	25
1,2,3,4,7,8,9-HPCDF	0/9	0.3	19.9	25
1,2,3,4,7,8-HXCDD	0/9	13.8	19.9	25
1,2,3,4,7,8-HXCDF	0/9	13.8	19.9	25
1,2,3,6,7,8-HXCDD	0/9	13.8	19.9	25
1,2,3,6,7,8-HXCDF	0/9	2	19.9	25
1,2,3,7,8,9-HXCDD	0/9	13.8	19.9	25
1,2,3,7,8,9-HXCDF	0/9	13.8	19.9	25
1,2,3,7,8-PECDD	0/9	2	19.9	25
1,2,3,7,8-PECDF	0/9	0.5	19.9	25
2,3,4,6,7,8-HXCDF	2/9	13.8	19.9	25
2,3,4,7,8-PECDF	0/9	0.6	18.7	25
2,3,7,8-TCDD	2/9	2.8	4	5
2,3,7,8-TCDF	0/9	1.7	4	5
OCDD	5/9	27.5	37.4	50
OCDF	1/9	27.5	39.8	50
TOTAL DIOXINS	5/9	27.5	37.4	25
TOTAL FURANS	5/9	27.5	37.4	25
TOTAL HPCDD	0/9	1.2	18.7	25
TOTAL HPCDF	0/9	0.3	19.9	25
TOTAL HXCDD	2/9	13.8	19.9	25
TOTAL HXCDF	0/9	4	19.9	25
TOTAL PECDD	0/9	2	19.9	25
TOTAL PECDF	0/9	1.1	18.7	25
TOTAL TCDD	3/9	2.8	4	5
TOTAL TCDF	0/9	2.7	4	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	19/19	0	0	20
1-METHYLNAPHTHALENE	19/19	0	0	20
1-METHYLPHENANTHRENE	19/19	0	0	20
2,6-DIMETHYLNAPHTHALENE	19/19	0	0	20
2-METHYLNAPHTHALENE	19/19	0	0	20
ACENAPHTHENE	19/19	0	0	20
ACENAPHTHYLENE	19/19	0	0	20
ANTHRACENE	19/19	0	0	20
BENZO(A)ANTHRACENE	19/19	0	0	20
BENZO(A)PYRENE	19/19	0	0	20
BENZO(B)FLUORANTHENE	19/19	0	0	20
BENZO(E)PYRENE	19/19	0	0	20
BENZO(G,H,I)PERYLENE	19/19	0	0	20
BENZO(K)FLUORANTHENE	19/19	0	0	20
BIPHENYL	19/19	0	0	20
C1-CHRYSENES	19/19	0	0	20
C1-DIBENZOTHIOPHENES	19/19	0	0	20
C1-FLUORANTHENES/PYRENES	19/19	0	0	20
C1-FLUORENES	19/19	0	0	20
C1-NAPHTHALENES	19/19	0	0	20
C1-PHENANTHRENES/ANTHRACENES	19/19	0	0	20
C2-CHRYSENES	19/19	0	0	20

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	19/19	0	0	20
C2-FLUORENES	19/19	0	0	20
C2-NAPHTHALENES	19/19	0	0	20
C2-PHENANTHRENES/ANTHRACENES	19/19	0	0	20
C3-CHRYSENES	19/19	0	0	20
C3-DIBENZOTHIOPHENES	19/19	0	0	20
C3-FLUORENES	19/19	0	0	20
C3-NAPHTHALENES	19/19	0	0	20
C3-PHENANTHRENES/ANTHRACENES	19/19	0	0	20
C4-CHRYSENES	19/19	0	0	20
C4-NAPHTHALENES	19/19	0	0	20
C4-PHENANTHRENES/ANTHRACENES	19/19	0	0	20
CHRYSENE	19/19	0	0	20
DIBENZO(A,H)ANTHRACENE	19/19	0	0	20
DIBENZOTHIOPHENE	19/19	0	0	20
FLUORANTHENE	19/19	0	0	20
FLUORENE	19/19	0	0	20
INDENO(1,2,3-CD)PYRENE	19/19	0	0	20
NAPHTHALENE	19/19	0	0	20
PERYLENE	19/19	0	0	20
PHENANTHRENE	19/19	0	0	20
PYRENE	19/19	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	19/19	0	0	10
1,2,4,5-TETRACHLOROBENZENE	0/19	0.5	1.9	10
2,4'-DDD	11/19	0.22	0.27	10
2,4'-DDE	11/19	0.31	0.38	10
2,4'-DDT	9/19	0.28	0.36	10
4,4'-DDD	12/19	0.26	0.33	10
4,4'-DDE	19/19	0	0	10
4,4'-DDT	15/19	0.4	0.5	10
ALDRIN	5/19	0.35	0.43	10
ALPHA-BHC	14/19	0.25	0.3	10
ALPHA-CHLORDANE	0/19	0.26	0.34	10
BETA-BHC	6/19	0.22	0.29	10
CHLORPYRIFOS	0/19	2.5	34	10
CIS-NONACHLOR	9/19	0.24	0.31	10
DELTA-BHC	1/19	0.14	0.18	10
DIELDRIN	19/19	0	0	10
ENDOSULFAN II	4/19	0.26	0.34	10
ENDRIN	1/19	0.72	0.92	10
GAMMA-BHC (LINDANE)	19/19	0	0	10
GAMMA-CHLORDANE	6/19	0.28	0.35	10
HEPTACHLOR	2/19	0.39	0.5	10
HEPTACHLOR EPOXIDE	0/19	0.28	0.36	10
HEXACHLOROBENZENE	18/19	0.43	0.43	10
MIREX	8/19	0.63	0.79	10
OXYCHLORDANE	19/19	0	0	10
PCB-101/90	13/19	0.91	1.1	2
PCB-105	19/19	0	0	2
PCB-114	0/19	0.96	1.2	2
PCB-118	19/19	0	0	2

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	19/19	0	0	2
PCB-128	19/19	0	0	2
PCB-138/160	19/19	0	0	2
PCB-149/123	16/19	0.96	1.2	2
PCB-153/132	0/19	2.2	16	2
PCB-156	8/19	0.96	1.2	2
PCB-167	14/19	1	1.2	2
PCB-169	11/19	0.96	1.2	2
PCB-170/190	0/19	1.2	6.3	2
PCB-18/17	15/19	2.5	3.2	2
PCB-180	19/19	0	0	2
PCB-187	19/19	0	0	2
PCB-189	3/19	0.96	1.2	2
PCB-195/208	14/19	0.8	0.96	2
PCB-201/157/173	8/19	0.73	0.94	2
PCB-206	15/19	0.83	1	2
PCB-209	9/19	1.1	1.4	2
PCB-28	11/19	0.76	0.92	2
PCB-44	10/19	0.56	0.7	2
PCB-52	13/19	0.73	0.84	2
PCB-66	19/19	0	0	2
PCB-77	8/19	1	1.2	2
PCB-8/5	6/19	1.6	1.9	2
PCB-81	17/19	1	1.2	2
PENTACHLOROANISOLE	19/19	0	0	10
PENTACHLOROBENZENE	16/19	0.32	0.38	10
TRANS-NONACHLOR	10/19	0.17	0.22	10
Inorganics (mg/kg)				
ALUMINUM	20/20	0	0	10
ARSENIC	20/20	0	0	0.35
CADMIUM	20/20	0	0	0.1
CHROMIUM	0/20	0.14	0.55	0.4
COPPER	20/20	0	0	0.1
IRON	20/20	0	0	15
LEAD	15/20	0.04	0.08	0.1
MANGANESE	20/20	0	0	1.7
MERCURY	20/20	0	0	0.01
NICKEL	10/20	0.39	0.52	0.14
SILVER	20/20	0	0	0.29
ZINC	20/20	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	16/16	0	0	10
1,2,3,4,6,7,8-HPCDF	15/16	3.3	3.3	10
1,2,3,4,7,8,9-HPCDF	2/16	0.4	3.7	10
1,2,3,4,7,8-HXCDD	7/16	0.8	3.7	10
1,2,3,4,7,8-HXCDF	9/16	0.7	2.1	10
1,2,3,6,7,8-HXCDD	13/16	1.5	1.8	10
1,2,3,6,7,8-HXCDF	5/16	0.5	3.7	10
1,2,3,7,8,9-HXCDD	7/16	0.3	3.7	10
1,2,3,7,8,9-HXCDF	3/16	1	3.7	10
1,2,3,7,8-PECDD	7/16	1.2	3.7	10
1,2,3,7,8-PECDF	3/16	0.03	1.8	10
2,3,4,6,7,8-HXCDF	3/16	0.3	3.7	10
2,3,4,7,8-PECDF	4/16	0.4	1.9	10
2,3,7,8-TCDD	5/16	0.2	0.74	2
2,3,7,8-TCDF	5/16	0.25	3.1	2
OCDD	16/16	0	0	20
OCDF	16/16	0	0	20
TOTAL DIOXINS	16/16	0	0	10
TOTAL FURANS	16/16	0	0	10
TOTAL HPCDD	16/16	0	0	10
TOTAL HPCDF	15/16	3.3	3.3	10
TOTAL HXCDD	16/16	0	0	10
TOTAL HXCDF	11/16	0.1	4.8	10
TOTAL PECDD	7/16	1.2	3.7	10
TOTAL PECDF	7/16	0.03	10.5	10
TOTAL TCDD	12/16	0.2	0.5	2
TOTAL TCDF	7/16	0.27	9	2
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	16/16	0	0	20
1-METHYLNAPHTHALENE	16/16	0	0	20
1-METHYLPHENANTHRENE	16/16	0	0	20
2,6-DIMETHYLNAPHTHALENE	16/16	0	0	20
2-METHYLNAPHTHALENE	16/16	0	0	20
ACENAPHTHENE	16/16	0	0	20
ACENAPHTHYLENE	16/16	0	0	20
ANTHRACENE	16/16	0	0	20
BENZO(A)ANTHRACENE	16/16	0	0	20
BENZO(A)PYRENE	16/16	0	0	20
BENZO(B)FLUORANTHENE	16/16	0	0	20
BENZO(E)PYRENE	16/16	0	0	20
BENZO(G,H,I)PERYLENE	16/16	0	0	20
BENZO(K)FLUORANTHENE	16/16	0	0	20
BIPHENYL	16/16	0	0	20
C1-CHRYSENES	16/16	0	0	20
C1-DIBENZOTHIOPHENES	16/16	0	0	20
C1-FLUORANTHENES/PYRENES	16/16	0	0	20
C1-FLUORENES	16/16	0	0	20
C1-NAPHTHALENES	16/16	0	0	20
C1-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C2-CHRYSENES	16/16	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	16/16	0	0	20
C2-FLUORENES	16/16	0	0	20
C2-NAPHTHALENES	16/16	0	0	20
C2-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C3-CHRYSENES	16/16	0	0	20
C3-DIBENZOTHIOPHENES	16/16	0	0	20
C3-FLUORENES	16/16	0	0	20
C3-NAPHTHALENES	16/16	0	0	20
C3-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C4-CHRYSENES	16/16	0	0	20
C4-NAPHTHALENES	16/16	0	0	20
C4-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
CHRYSENE	16/16	0	0	20
DIBENZO(A,H)ANTHRACENE	16/16	0	0	20
DIBENZOTHIOPHENE	16/16	0	0	20
FLUORANTHENE	16/16	0	0	20
FLUORENE	16/16	0	0	20
INDENO(1,2,3-CD)PYRENE	16/16	0	0	20
NAPHTHALENE	16/16	0	0	20
PERYLENE	16/16	0	0	20
PHENANTHRENE	16/16	0	0	20
PYRENE	16/16	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	12/16	0.17	0.26	2
1,2,4,5-TETRACHLOROBENZENE	16/16	0	0	2
2,4'-DDD	14/16	0.051	0.071	2
2,4'-DDE	10/16	0.081	0.1	2
2,4'-DDT	10/16	0.02	0.061	2
4,4'-DDD	15/16	0.04	0.04	2
4,4'-DDE	16/16	0	0	2
4,4'-DDT	16/16	0	0	2
ALDRIN	8/16	0.051	0.15	2
ALPHA-BHC	16/16	0	0	2
ALPHA-CHLORDANE	15/16	0.061	0.061	2
BETA-BHC	8/16	0.17	0.52	2
CHLORPYRIFOS	4/16	0.24	0.72	2
CIS-NONACHLOR	16/16	0	0	2
DELTA-BHC	4/16	0.04	0.11	2
DIELDRIN	8/16	0.061	0.081	2
ENDOSULFAN II	16/16	0	0	2
ENDRIN	0/16	0.11	0.34	2
GAMMA-BHC (LINDANE)	10/16	0.21	0.61	2
GAMMA-CHLORDANE	11/16	0.061	0.091	2
HEPTACHLOR	7/16	0.14	0.23	2
HEPTACHLOR EPOXIDE	0/16	0.02	0.071	2
HEXACHLOROBENZENE	4/16	0.04	0.11	2
MIREX	2/16	0.02	0.071	2
OXYCHLORDANE	5/16	0.01	0.1	2
PCB-101/90	15/16	0.04	0.04	1
PCB-105	16/16	0	0	1
PCB-114	0/16	0.15	0.46	1
PCB-118	16/16	0	0	1

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	13/16	0.15	0.2	1
PCB-128	12/16	0.04	0.04	1
PCB-138/160	16/16	0	0	1
PCB-149/123	16/16	0	0	1
PCB-153/132	16/16	0	0	1
PCB-156	12/16	0.15	0.18	1
PCB-167	13/16	0.15	0.18	1
PCB-169	4/16	0.15	0.24	1
PCB-170/190	11/16	0.97	2.6	1
PCB-18/17	6/16	0.071	0.22	1
PCB-180	13/16	0.02	0.15	1
PCB-187	16/16	0	0	1
PCB-189	11/16	0.15	0.46	1
PCB-195/208	15/16	0.04	0.04	1
PCB-201/157/173	13/16	0.02	0.02	1
PCB-206	9/16	0.071	0.11	1
PCB-209	16/16	0	0	1
PCB-28	16/16	0	0	1
PCB-44	15/16	0.2	0.2	1
PCB-52	13/16	0.11	0.15	1
PCB-66	14/16	0.11	0.12	1
PCB-77	11/16	0.15	0.23	1
PCB-8/5	16/16	0	0	1
PCB-81	7/16	0.15	0.23	1
PENTACHLOROANISOLE	16/16	0	0	2
PENTACHLOROBENZENE	8/16	0.2	0.5	2
TRANS-NONACHLOR	13/16	0.03	0.04	2
Inorganics (mg/kg)				
ALUMINUM	16/16	0	0	50
ARSENIC	16/16	0	0	5
CADMIUM	16/16	0	0	0.3
CHROMIUM	16/16	0	0	5
COPPER	16/16	0	0	5
IRON	16/16	0	0	50
LEAD	16/16	0	0	5
MANGANESE	16/16	0	0	5
MERCURY	16/16	0	0	0.2
NICKEL	16/16	0	0	5
SILVER	16/16	0	0	0.1
ZINC	16/16	0	0	15

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussel				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	7/8	25.5	25.5	25
1,2,3,4,6,7,8-HPCDF	5/8	21.5	27.4	25
1,2,3,4,7,8,9-HPCDF	0/8	18.4	35	25
1,2,3,4,7,8-HXCDD	0/8	18.4	35	25
1,2,3,4,7,8-HXCDF	0/8	18.4	35	25
1,2,3,6,7,8-HXCDD	1/8	2.1	27.4	25
1,2,3,6,7,8-HXCDF	1/8	18.4	35	25
1,2,3,7,8,9-HXCDD	1/8	21.5	35	25
1,2,3,7,8,9-HXCDF	0/8	18.4	35	25
1,2,3,7,8-PECDD	1/8	21.5	35	25
1,2,3,7,8-PECDF	4/8	21.5	27.4	25
2,3,4,6,7,8-HXCDF	1/8	18.4	27.4	25
2,3,4,7,8-PECDF	3/8	21.5	27.4	25
2,3,7,8-TCDD	0/8	0.6	5.51	5
2,3,7,8-TCDF	3/8	4.3	5.51	5
OCDD	8/8	0	0	50
OCDF	3/8	43	51.1	50
TOTAL DIOXINS	7/8	43.1	43.1	25
TOTAL FURANS	7/8	7.33	7.33	25
TOTAL HPCDD	8/8	0	0	25
TOTAL HPCDF	5/8	21.5	27.4	25
TOTAL HXCDD	3/8	21.5	28.7	25
TOTAL HXCDF	2/8	2.99	28.3	25
TOTAL PECDD	1/8	21.5	35	25
TOTAL PECDF	4/8	21.5	35.5	25
TOTAL TCDD	2/8	0.6	5.51	5
TOTAL TCDF	6/8	4.31	5.1	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	8/8	0	0	20
1-METHYLNAPHTHALENE	8/8	0	0	20
1-METHYLPHENANTHRENE	8/8	0	0	20
2,6-DIMETHYLNAPHTHALENE	8/8	0	0	20
2-METHYLNAPHTHALENE	8/8	0	0	20
ACENAPHTHENE	8/8	0	0	20
ACENAPHTHYLENE	8/8	0	0	20
ANTHRACENE	8/8	0	0	20
BENZO(A)ANTHRACENE	8/8	0	0	20
BENZO(A)PYRENE	8/8	0	0	20
BENZO(B)FLUORANTHENE	8/8	0	0	20
BENZO(E)PYRENE	8/8	0	0	20
BENZO(G,H,I)PERYLENE	8/8	0	0	20
BENZO(K)FLUORANTHENE	8/8	0	0	20
BIPHENYL	8/8	0	0	20
C1-CHRYSENES	8/8	0	0	20
C1-DIBENZOTHIOPHENES	8/8	0	0	20
C1-FLUORANTHENES/PYRENES	8/8	0	0	20
C1-FLUORENES	8/8	0	0	20
C1-NAPHTHALENES	8/8	0	0	20
C1-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C2-CHRYSENES	8/8	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	8/8	0	0	20
C2-FLUORENES	8/8	0	0	20
C2-NAPHTHALENES	8/8	0	0	20
C2-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C3-CHRYSENES	8/8	0	0	20
C3-DIBENZOTHIOPHENES	8/8	0	0	20
C3-FLUORENES	8/8	0	0	20
C3-NAPHTHALENES	8/8	0	0	20
C3-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C4-CHRYSENES	8/8	0	0	20
C4-NAPHTHALENES	8/8	0	0	20
C4-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
CHRYSENE	8/8	0	0	20
DIBENZO(A,H)ANTHRACENE	8/8	0	0	20
DIBENZOTHIOPHENE	8/8	0	0	20
FLUORANTHENE	8/8	0	0	20
FLUORENE	8/8	0	0	20
INDENO(1,2,3-CD)PYRENE	8/8	0	0	20
NAPHTHALENE	8/8	0	0	20
PERYLENE	8/8	0	0	20
PHENANTHRENE	8/8	0	0	20
PYRENE	8/8	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	8/8	0	0	10
1,2,4,5-TETRACHLOROBENZENE	0/8	1.1	8.9	10
2,4'-DDD	8/8	0	0	10
2,4'-DDE	7/8	0.15	0.15	10
2,4'-DDT	8/8	0	0	10
4,4'-DDD	8/8	0	0	10
4,4'-DDE	8/8	0	0	10
4,4'-DDT	8/8	0	0	10
ALDRIN	8/8	0	0	10
ALPHA-BHC	8/8	0	0	10
ALPHA-CHLORDANE	8/8	0	0	10
BETA-BHC	8/8	0	0	10
CHLORPYRIFOS	0/8	2.1	5.2	10
CIS-NONACHLOR	8/8	0	0	10
DELTA-BHC	1/8	0.061	0.099	10
DIELDRIN	8/8	0	0	10
ENDOSULFAN II	8/8	0	0	10
ENDRIN	8/8	0	0	10
GAMMA-BHC (LINDANE)	8/8	0	0	10
GAMMA-CHLORDANE	8/8	0	0	10
HEPTACHLOR	5/8	0.19	0.22	10
HEPTACHLOR EPOXIDE	8/8	0	0	10
HEXACHLOROBENZENE	8/8	0	0	10
MIREX	0/8	0.28	0.45	10
OXYCHLORDANE	1/8	0.13	0.21	10
PCB-101/90	8/8	0	0	2
PCB-105	8/8	0	0	2
PCB-114	0/8	0.43	0.69	2
PCB-118	8/8	0	0	2

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	8/8	0	0	2
PCB-128	8/8	0	0	2
PCB-138/160	8/8	0	0	2
PCB-149/123	8/8	0	0	2
PCB-153/132	8/8	0	0	2
PCB-156	8/8	0	0	2
PCB-167	8/8	0	0	2
PCB-169	4/8	0.43	0.56	2
PCB-170/190	0/8	0.18	2.3	2
PCB-18/17	1/8	1.2	1.8	2
PCB-180	8/8	0	0	2
PCB-187	8/8	0	0	2
PCB-189	3/8	0.43	0.61	2
PCB-195/208	8/8	0	0	2
PCB-201/157/173	6/8	0.36	0.46	2
PCB-206	1/8	0.41	0.6	2
PCB-209	8/8	0	0	2
PCB-28	8/8	0	0	2
PCB-44	8/8	0	0	2
PCB-52	8/8	0	0	2
PCB-66	8/8	0	0	2
PCB-77	1/8	0.48	0.69	2
PCB-8/5	8/8	0	0	2
PCB-81	7/8	0.61	0.61	2
PENTACHLOROANISOLE	8/8	0	0	10
PENTACHLOROBENZENE	0/8	0.87	4.1	10
TRANS-NONACHLOR	7/8	0.084	0.084	10
Inorganics (mg/kg)				
ALUMINUM	8/8	0	0	10
ARSENIC	8/8	0	0	0.35
CADMIUM	8/8	0	0	0.1
CHROMIUM	8/8	0	0	0.4
COPPER	8/8	0	0	0.1
IRON	8/8	0	0	15
LEAD	8/8	0	0	0.1
MANGANESE	8/8	0	0	1.7
MERCURY	8/8	0	0	0.01
NICKEL	8/8	0	0	0.14
SILVER	8/8	0	0	0.29
ZINC	8/8	0	0	5.7

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	0/4	15.2	43.4	25
1,2,3,4,6,7,8-HPCDF	0/4	15.2	43.4	25
1,2,3,4,7,8,9-HPCDF	0/4	15.2	43.4	25
1,2,3,4,7,8-HXCDD	1/4	15.2	43.4	25
1,2,3,4,7,8-HXCDF	1/4	15.2	43.4	25
1,2,3,6,7,8-HXCDD	1/4	15.2	43.4	25
1,2,3,6,7,8-HXCDF	0/4	15.2	43.4	25
1,2,3,7,8,9-HXCDD	1/4	15.2	43.4	25
1,2,3,7,8,9-HXCDF	0/4	15.2	43.4	25
1,2,3,7,8-PECDD	0/4	15.2	43.4	25
1,2,3,7,8-PECDF	0/4	15.2	43.4	25
2,3,4,6,7,8-HXCDF	1/4	15.2	43.4	25
2,3,4,7,8-PECDF	0/4	15.2	43.4	25
2,3,7,8-TCDD	3/4	3	3	5
2,3,7,8-TCDF	0/4	2.3	8.7	5
OCDD	1/4	8.7	41.3	50
OCDF	1/4	30.4	86.8	50
TOTAL DIOXINS	3/4	30.4	30.4	25
TOTAL FURANS	3/4	86.8	86.8	25
TOTAL HPCDD	0/4	5.9	27.5	25
TOTAL HPCDF	0/4	15.2	43.4	25
TOTAL HXCDD	2/4	15.2	20.7	25
TOTAL HXCDF	0/4	15.2	99.7	25
TOTAL PECDD	0/4	15.2	43.4	25
TOTAL PECDF	0/4	15.2	43.4	25
TOTAL TCDD	3/4	3	3	5
TOTAL TCDF	0/4	1.3	8.9	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	4/4	0	0	20
1-METHYLNAPHTHALENE	4/4	0	0	20
1-METHYLPHENANTHRENE	4/4	0	0	20
2,6-DIMETHYLNAPHTHALENE	4/4	0	0	20
2-METHYLNAPHTHALENE	4/4	0	0	20
ACENAPHTHENE	4/4	0	0	20
ACENAPHTHYLENE	4/4	0	0	20
ANTHRACENE	4/4	0	0	20
BENZO(A)ANTHRACENE	4/4	0	0	20
BENZO(A)PYRENE	4/4	0	0	20
BENZO(B)FLUORANTHENE	4/4	0	0	20
BENZO(E)PYRENE	4/4	0	0	20
BENZO(G,H,I)PERYLENE	4/4	0	0	20
BENZO(K)FLUORANTHENE	4/4	0	0	20
BIPHENYL	4/4	0	0	20
C1-CHRYSENES	4/4	0	0	20
C1-DIBENZOTHIOPHENES	4/4	0	0	20
C1-FLUORANTHENES/PYRENES	4/4	0	0	20
C1-FLUORENES	4/4	0	0	20
C1-NAPHTHALENES	4/4	0	0	20
C1-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
C2-CHRYSENES	4/4	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	4/4	0	0	20
C2-FLUORENES	4/4	0	0	20
C2-NAPHTHALENES	4/4	0	0	20
C2-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
C3-CHRYSENES	4/4	0	0	20
C3-DIBENZOTHIOPHENES	4/4	0	0	20
C3-FLUORENES	4/4	0	0	20
C3-NAPHTHALENES	4/4	0	0	20
C3-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
C4-CHRYSENES	4/4	0	0	20
C4-NAPHTHALENES	4/4	0	0	20
C4-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
CHRYSENE	4/4	0	0	20
DIBENZO(A,H)ANTHRACENE	4/4	0	0	20
DIBENZOTHIOPHENE	4/4	0	0	20
FLUORANTHENE	4/4	0	0	20
FLUORENE	4/4	0	0	20
INDENO(1,2,3-CD)PYRENE	4/4	0	0	20
NAPHTHALENE	4/4	0	0	20
PERYLENE	4/4	0	0	20
PHENANTHRENE	4/4	0	0	20
PYRENE	4/4	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	4/4	0	0	10
1,2,4,5-TETRACHLOROBENZENE	2/4	0.66	0.87	10
2,4'-DDD	2/4	0.24	0.25	10
2,4'-DDE	3/4	0.34	0.34	10
2,4'-DDT	3/4	0.32	0.32	10
4,4'-DDD	2/4	0.29	0.3	10
4,4'-DDE	4/4	0	0	10
4,4'-DDT	1/4	0.44	0.46	10
ALDRIN	2/4	0.38	0.39	10
ALPHA-BHC	4/4	0	0	10
ALPHA-CHLORDANE	2/4	0.3	0.3	10
BETA-BHC	1/4	0.24	0.26	10
CHLORPYRIFOS	0/4	2.5	42	10
CIS-NONACHLOR	2/4	0.26	0.27	10
DELTA-BHC	3/4	0.16	0.16	10
DIELDRIN	4/4	0	0	10
ENDOSULFAN II	0/4	0.29	0.3	10
ENDRIN	0/4	0.78	0.83	10
GAMMA-BHC (LINDANE)	2/4	1.1	1.5	10
GAMMA-CHLORDANE	1/4	0.3	0.32	10
HEPTACHLOR	0/4	0.43	0.46	10
HEPTACHLOR EPOXIDE	0/4	0.3	0.32	10
HEXACHLOROBENZENE	3/4	0.38	0.38	10
MIREX	2/4	0.69	0.72	10
OXYCHLORDANE	4/4	0	0	10
PCB-101/90	3/4	0.96	0.96	2
PCB-105	4/4	0	0	2
PCB-114	0/4	1.1	1.1	2
PCB-118	4/4	0	0	2

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 2 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detections	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	4/4	0	0	2
PCB-128	4/4	0	0	2
PCB-138/160	4/4	0	0	2
PCB-149/123	4/4	0	0	2
PCB-153/132	0/4	1.9	7.2	2
PCB-156	0/4	1.1	1.1	2
PCB-167	3/4	1.1	1.1	2
PCB-169	2/4	1.1	1.1	2
PCB-170/190	0/4	1.3	1.9	2
PCB-18/17	2/4	2.7	2.9	2
PCB-180	2/4	0.55	1.5	2
PCB-187	2/4	0.59	1.4	2
PCB-189	0/4	1.1	1.1	2
PCB-195/208	2/4	0.87	0.91	2
PCB-201/157/173	2/4	0.8	0.83	2
PCB-206	2/4	0.91	0.95	2
PCB-209	2/4	1.2	1.2	2
PCB-28	2/4	0.83	0.87	2
PCB-44	3/4	0.65	0.65	2
PCB-52	3/4	0.76	0.76	2
PCB-66	3/4	1.1	1.1	2
PCB-77	0/4	1.1	1.1	2
PCB-8/5	3/4	1.8	1.8	2
PCB-81	3/4	1.1	1.1	2
PENTACHLOROANISOLE	4/4	0	0	10
PENTACHLOROBENZENE	2/4	1.8	1.8	10
TRANS-NONACHLOR	3/4	0.19	0.19	10
Inorganics (mg/kg)				
ALUMINUM	4/4	0	0	10
ARSENIC	4/4	0	0	0.35
CADMIUM	4/4	0	0	0.1
CHROMIUM	0/4	0.5	0.52	0.4
COPPER	4/4	0	0	0.1
IRON	4/4	0	0	15
LEAD	2/4	0.07	0.07	0.1
MANGANESE	4/4	0	0	1.7
MERCURY	4/4	0	0	0.01
NICKEL	2/4	0.5	0.51	0.14
SILVER	4/4	0	0	0.29
ZINC	4/4	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

APPENDIX A.3

DATA QUALITY ASSESSMENT REPORT FOR ROUND 3

Interim Offshore Monitoring Round 3 Data Quality Assessment
Portsmouth Naval Shipyard, Kittery, Maine
November 16, 2001

This memorandum presents the data quality assessment (DQA) for Round 3 of the Interim Offshore Monitoring Program. The detailed data quality evaluation is provided in Attachment A.3-1. This DQA document consists of reviewing the data for the following:

- Gross errors in chemical analyses, toxicology assessments, or data reporting.
- Gross inconsistencies among monitoring stations, reference stations, or sampling locations within monitoring stations or reference stations.
- Gross differences between observed coefficients of variation for the sediment data and expectations based on past data analyses.

1.0 GROSS ERRORS IN CHEMICAL ANALYSES, TOXICOLOGY ASSESSMENTS, OR DATA REPORTING

1.1 Detection Limits

Minimum and maximum detection limits achieved during laboratory analysis were compared to target method detection limits (MDLs) contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Because MDLs in Table 6-5i (Dioxins) were presented on a wet weight basis, target MDLs were recalculated accounting for the percent moisture to facilitate these comparisons (multiplied by 2 for sediment and 5 for tissue to obtain dry weight values). Tables 1-5 and 1-6 in Attachment A.3-1 list the minimum and maximum non-detected values for each matrix. Exceedance of the target MDL for some chemicals did not affect the usability of the sample data for monitoring purposes. As presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999), trending of chemicals will be conducted for chemicals of concern (COCs) with interim remediation goals (IRGs) in sediment. Based on Tables 1-5 and 1-6, the chemicals with IRGs were either detected in all of the sediment samples or the MDL did not exceed the target MDL.

1.2 Analytical Methods

Comparability of laboratory measurements is assessed primarily through the use and documentation of similar sampling and analytical methods. Results are reported in units that ensure comparability with previous data and with current state and federal standards and guidelines. Comparability of field data is satisfied by ensuring that the field sampling plan is followed and that proper sampling techniques are used. Comparability of laboratory measurements is assessed primarily through the use of certified reference materials, spike recoveries, and relative percent difference (RPD) values, as well as by using proven analytical methods of comparable performance characteristics such as accuracy, precision, and sensitivity. Failure to achieve comparability will result in corrective action.

Field data were generated using the methodologies and units specified in the Interim Offshore Monitoring Plan.

1.3 Sampling Methods

Sampling was conducted by the University of Rhode Island (URI) under the supervision of Tetra Tech NUS, Inc. (TtNUS). URI collected the samples in accordance with the standard operating procedures that were developed for this project, as specified in the plan. Deviations in the sampling plan were documented in the Interim Offshore Monitoring Program Round 3 data package (TtNUS, January 2001). In addition to the deviations presented in the Round 3 data package, the following modifications were made in the sampling procedures based on the availability of mussels and juvenile lobsters:

- Mussels that were 5 to 6 cm in length were preferentially collected for chemical analysis, when available as stated in Appendix B.5 of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Some of the samples had a few large or smaller mussels, depending upon availability. However, primarily larger mussels (6 to 8 cm) were collected at several locations because inadequate numbers of mussels in the preferred size range were available. These samples are listed below. All of those sampes were collected from subtidal areas. Subtidal mussels are typically larger than intertidal mussels because subtidal mussels spend a larger portion of their time feeding, because they are covered with water all of the time.

  Samples with Larger Mussels

- OU4-MU-M01-300A
- OU4-MU-M10-200A

- OU4-MU-M10-300A
- OU4-MU-M14-200A
- OU4-MU-R01-300A
- OU4-MU-R03-300A
- OU4-MU-R04-300A

- Adequate numbers of juvenile lobsters were collected in the preferred size range (5 to 6 cm carapace length) at each of the monitoring stations. Five lobsters (in the preferred size range) from each station were composited into a single tissue sample and analyzed by the laboratory. The collected sizes of juvenile lobster fell within the size range specified in the monitoring plan so there is no anticipated impact to the project.

1.4 Data Validation

Attachment 1 presents a detailed data quality evaluation. Part of that evaluation includes a section on data validation. The following bullets present the most significant issues noted during the data validation:

- No areas of concern were identified on the basis of qualification for tissue and sediment samples. Overall, Round 3 data were similar to Round 2.

- Many of the dioxin results in several samples were rejected because of internal standard recovery noncompliance that may be linked to instrument malfunction rather than an indication of poor laboratory performance. Therefore, the toxic equivalent quotients (TEQs) that were calculated may be biased low.

- Overall, method blanks in Round 3 were cleaner than Round 1, but slightly more contaminated than Round 2. Method blank contamination will continue to be an area of scrutiny in Round 4.

2.0 CONSISTENCY AMONG MONITORING STATIONS, REFERENCE STATIONS, OR SAMPLING LOCATIONS WITHIN MONITORING STATIONS OR REFERENCE STATIONS

The Round 3 data package presents the descriptive statistics for the sediment (Tables 3-4a and 3-4b), mussel (Tables 3-8a and 3-8b), and juvenile lobsters (Tables 3-9a and 3-9b) (TtNUS, January 2001). The data in these tables are not normalized. These tables are included as an

attachment to this DQA report for ease of review. The following general observations were made after reviewing the tables:

- More dioxins were detected in the sediment and mussel samples than in the juvenile lobster samples. Similar frequencies of detection for each dioxin were observed between the monitoring stations and reference stations for sediment and juvenile lobster; however, approximately twice as many dioxins were detected in mussel samples from the monitoring stations as compared to the reference stations. In general, the greatest dioxin concentrations at the monitoring stations were in samples from M09 and M11 (sediment), M09 (mussel), and M07 (juvenile lobster). In general, the greatest dioxin concentrations at the reference stations were in samples from R03 (sediment) and R01 (mussel). No location stood out as having the greatest number of maximum detections for juvenile lobster.

- Most of the PAHs were detected in every sediment, mussel, and juvenile lobster sample. In general, the greatest PAH concentrations at the monitoring stations were in samples from M12 (sediment), M13 (mussel), and M08 and M13 (juvenile lobster). In general, the greatest PAH concentrations at the reference stations were in samples from R02 and R03 (sediment), R03 (mussel), and R02 and R04 (juvenile lobster). The maximum detection of many of the PAHs in mussel at monitoring station M13, location 1 (M13-100A) was more than 20 times the mean concentration.

- Most of the pesticides and PCBs were detected in the majority of the sediment, mussel, and juvenile lobster samples; the frequency of detection was greater in sediment and mussel than juvenile lobster except for pesticides were detected in the reference lobster samples. In general, the greatest pesticide concentrations at the monitoring stations were in samples from M10 and M13 (mussel) and M08 (juvenile lobster), and the greatest PCB concentrations at the monitoring stations were in samples from M08 and M12 (sediment), M10 and M13 (mussel), and M08 (juvenile lobster). In general, the greatest pesticide concentrations at the reference stations were in samples from R03 (sediment), and R03 (mussel), and the greatest PCB concentrations at the reference stations were in samples from R03 (sediment), R01 and R03 (mussel) and R02 (juvenile lobster). No monitoring stations stood out as having the greatest number of maximum detections for juvenile lobster.

- Metals were detected in most if not all of the sediment, mussel, and juvenile lobster samples. In general, the greatest metal concentrations at the monitoring stations were in samples from M04 (sediment) and M09 (mussel). In general, the greatest metal concentrations at the reference stations were in samples from R02 (sediment), R04 (mussel), and R01 (juvenile

lobster). The maximum concentration of copper in sediment at the monitoring stations (M04-1) was more than 20 times greater than the mean copper concentration. This location is where foundry slag has been observed in the offshore area. No monitoring stations stood out as having the greatest number of maximum detections for metals for juvenile lobster.

Analytical data were also normalized using the proceduresdesribed in the DQA report for Round 1 (see Attachment A.1).

Tables A.3-1, A.3-2, and A.3-3 present the normalized sediment (organics and metals), mussel (organics), and juvenile lobster (organics) results, respectively, at each monitoring station. The non-normalized metals results for mussels and juvenile lobsters are also included in the appropriate tables. The results for the individual sample locations from each station were averaged, as presented in the monitoring plan (TtNUS, October 1999). The results for the individual samples are provided in Appendix B. The average reference station concentration (the average results from all four reference stations), along with the range of the reference station average concentrations, also are included on Tables A.3-1, A.3-2, and A.3-3. Various values on the tables are shaded based on how high the numerical value was compared to the average reference concentration. The footnotes on the tables indicate the number of times greater than the reference concentration a sample had to be in order to be shaded. There is no significance in the number of times greater than the reference concentration a sample had to be to become shaded except that value were selected to identify monitoring stations that had chemical concentrations that were the most elevated compared to reference stations in the data. The intent was to determine whether elevated chamical concentrations appear to be correlated across the sampled media (sediment, mussel tissue, and juvenile lobster tissue).

The following bullets summarize the results of this evaluation using the normalized data.

- Monitoring station M11 generally had the greatest dioxin concentrations in the sediment. No stations stood out as having elevated dioxin levels for mussels or juvenile lobster at the monitoring stations.

- Concentrations of several PAHs in the monitoring station samples were greater than two times the average reference station concentrations. Monitoring Stations M01, M11, M12, M13, and M14 had the greatest sediment PAH concentrations; M12 and M13 had the greatest mussel PAH concentrations. Monitoring stations M08, M13, and M14 had the greatest juvenile lobster PAH concentrations. Therefore, monitoring station M13 had elevated levels of PAHs in sediment, mussel, and juvenile lobster, and M14 had elevated

levels of PAHs in sediment and juvenile lobster samples. These two monitoring stations are located in the main flow of the Piscataqua River within the Dry Docks Area of Concern (AOC).

- Several pesticides in the monitoring station samples were at concentrations greater than ten times the average reference station sediment concentrations and two times the average reference station mussel and juvenile lobster concentrations. Monitoring stations M01, M04, and M08 had the greatest pesticide concentrations in the sediment. No monitoring stations stood out as having elevated pesticide levels for mussels. Monitoring stations M08 had greater concentrations for a limited number of pesticides in the juvenile lobster samples.

- Several PCBs in the monitoring station samples were at concentrations greater than ten times the average reference station sediment concentrations and two times greater the average reference station mussel and juvenile lobster concentrations. Monitoring stations M03, M08, and M11 had the greatest pesticide concentrations in the sediment. No monitoring stations stood out as having elevated levels of PCBs for mussels with the exception of sporadic detections at several monitoring stations. Monitoring station M08 had slightly greater PCB concentrations in the juvenile lobsters. No stations had elevated levels of PCBs in all three media.

- Normalized metal concentrations were greatest in the sediment at monitoring stations M04 and M11. Metal concentrations in the mussel and juvenile lobster samples were not normalized. Non-normalized concentrations were greatest in the mussels at monitoring stations M03 and M09, whereas no monitoring stations stood out as having elevated levels of metals in juvenile lobsters. No monitoring stations had elevated levels of metals in all three media.

3.0 EVALUATION OF COEFFICIENTS OF VARIATION FOR SEDIMENT DATA FOR THE MONITORING STATIONS

Table A.3-4 presents the coefficients of variation (CVs) for each of the parameters that were detected in the sediment samples at the monitoring stations. The table also presents the minimum, maximum, and mean concentrations and the average, minimum and maximum CVs for each analyte fraction (e.g., dioxins, PAHs, pesticides, PCBs, and metals). The average CVs ranged from 1.06 for metals, to 1.47 for dioxins. Most of the CVs for the individual chemicals were less than 2.0, and many were less than 1.5. The CVs were slightly greater than the CVs

that were presented in Appendix B.3 of the Interim Offshore Monitoring Plan for OU4 (TtNUS, October 1999). The following bullets list the potential reasons:

- The CVs in the monitoring plan were calculated for each area AOC (e.g., Back Channel, Clark Cove), and the CVs in Table A.3-4 represent the larger offshore area. The CVs in each area will be calculated and evaluated in the baseline report.

- Because a greater number of samples were used to calculate the CVs for these Interim Offshore Monitoring samples, greater variation in these sample results was expected.

- Elevated detections of a few parameters in a few samples from this sampling round skewed some of the CVs high. These elevated detections will be evaluated in the baseline report.

- The historic samples were either all subtidal (EERA) or intertidal (seep/sediment sampling), and the samples in Table A.3-4 consist of both intertidal and subtidal samples. The baseline Report evaluates whether there are differences in chemical concentrations between the subtidal and intertidal samples.

In summary, although the CVs for the Round 3 Interim Offshore Monitoring Program are greater than the CVs previously identified, the fact that most of them are less than 2.0 supports the assumption that there is relatively low variation in sample results across the stations, with a few exceptions. Some of these exceptions are discussed in more detail in the baseline report.

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	12/16	7.62	370	67	OU4-SD-M09-300A-D	97	1.44
1,2,3,4,6,7,8-HPCDF	10/16	2.48	116	20	OU4-SD-M09-300A-D	21	1.08
1,2,3,4,7,8,9-HPCDF	10/16	0.08	6.9	1.80	OU4-SD-M11-300A	1.92	1.07
1,2,3,4,7,8-HXCDD	9/16	0.12	5.43	1.24	OU4-SD-M09-300A-D	1.12	0.91
1,2,3,4,7,8-HXCDF	11/16	0.11	9.06	2.12	OU4-SD-M09-300A-D	2.28	1.07
1,2,3,6,7,8-HXCDD	12/16	0.28	17.7	3.85	OU4-SD-M09-300A-D	4.04	1.05
1,2,3,6,7,8-HXCDF	9/16	0.14	33.2	3.79	OU4-SD-M11-300A	8.04	2.12
1,2,3,7,8,9-HXCDD	12/16	0.12	11	2.49	OU4-SD-M09-300A-D	2.67	1.07
1,2,3,7,8,9-HXCDF	3/16	0.19	1.12	0.71	OU4-SD-M12-200A-D	0.27	0.38
1,2,3,7,8-PECDD	7/16	0.06	5.81	0.80	OU4-SD-M09-300A-D	0.82	1.02
1,2,3,7,8-PECDF	6/16	2.1	17.8	2.05	OU4-SD-M11-300A	4.29	2.09
2,3,4,6,7,8-HXCDF	11/16	0.12	39.4	4.33	OU4-SD-M11-300A	9.63	2.23
2,3,4,7,8-PECDF	6/16	0.14	41.3	4.01	OU4-SD-M11-300A	10	2.52
2,3,7,8-TCDD	6/16	0.07	1.81	0.25	OU4-SD-M09-300A-D	0.27	1.07
2,3,7,8-TCDF	12/16	0.23	17.5	2.22	OU4-SD-M11-300A	4.32	1.94
OCDD	12/16	64.3	3173	573	OU4-SD-M12-100A	837	1.46
OCDF	10/16	3.98	130	25	OU4-SD-M09-300A-D	27	1.09
TOTAL DIOXINS	12/16	85.1	4306	797	OU4-SD-M12-100A	1,139	1.43
TOTAL FURANS	13/16	8.48	947	179	OU4-SD-M11-300A	259	1.45
TOTAL HPCDD	12/16	19.2	1029	178	OU4-SD-M12-100A	265	1.49
TOTAL HPCDF	13/16	4.49	246	53	OU4-SD-M09-300A-D	66	1.25
TOTAL HXCDD	16/16	0.5	228	40	OU4-SD-M09-300A-D	39	0.98
TOTAL HXCDF	16/16	0.57	166	37	OU4-SD-M11-300A	46	1.26
TOTAL PECDD	8/16	0.06	25.1	2.64	OU4-SD-M09-300A-D	5.60	2.12
TOTAL PECDF	12/16	1.3	296	31	OU4-SD-M11-300A	72	2.29
TOTAL TCDD	8/16	1	31	3.33	OU4-SD-M09-300A-D	4.59	1.38
TOTAL TCDF	16/16	0.23	286	30	OU4-SD-M11-300A	71	2.34
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	40/40	0.6	65.4	17	OU4-SD-M13-100A	16	0.98
1-METHYLNAPHTHALENE	40/40	0.85	304	39	OU4-SD-M14-200A	61	1.56
1-METHYLPHENANTHRENE	40/40	1.43	1257	117	OU4-SD-M14-200A	225	1.92
2,6-DIMETHYLNAPHTHALENE	40/40	0.68	113	23	OU4-SD-M12-100A	23	0.99
2-METHYLNAPHTHALENE	40/40	1.33	353	54	OU4-SD-M14-200A	73	1.34
ACENAPHTHENE	40/40	0.56	2561	166	OU4-SD-M12-100A	466	2.80
ACENAPHTHYLENE	40/40	4.58	453	106	OU4-SD-M01-300A-D	87	0.82
ANTHRACENE	40/40	5.55	2205	322	OU4-SD-M12-100A	448	1.39
BENZO(A)ANTHRACENE	40/40	10.9	5833	670	OU4-SD-M12-100A	1,065	1.59
BENZO(A)PYRENE	40/40	16.3	8467	683	OU4-SD-M12-100A	1,505	2.20

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
BENZO(B)FLUORANTHENE	40/40	15.8	7235	897	OU4-SD-M12-100A	1,284	1.43
BENZO(E)PYRENE	40/40	10.4	3370	475	OU4-SD-M12-100A	636	1.34
BENZO(G,H,I)PERYLENE	40/40	11	3248	448	OU4-SD-M12-100A	597	1.33
BENZO(K)FLUORANTHENE	40/40	6.69	2332	291	OU4-SD-M12-100A	435	1.50
BIPHENYL	40/40	0.75	66.8	11	OU4-SD-M12-100A	13	1.17
C1-CHRYSENES	40/40	8.82	2386	415	OU4-SD-M01-300A-D	498	1.20
C1-DIBENZOTHIOPHENES	38/40	2.45	180	31	OU4-SD-M12-100A	40	1.30
C1-FLUORANTHENES/PYRENES	40/40	16.3	3584	662	OU4-SD-M12-100A	853	1.29
C1-FLUORENES	35/40	1.97	447	73	OU4-SD-M13-100A	108	1.48
C1-NAPHTHALENES	40/40	2.18	657	94	OU4-SD-M14-200A	134	1.43
C1-PHENANTHRENES/ANTHRACENES	40/40	6.84	1901	339	OU4-SD-M12-100A	493	1.45
C2-CHRYSENES	40/40	3.66	893	148	OU4-SD-M01-300A-D	159	1.07
C2-DIBENZOTHIOPHENES	40/40	1.39	123	32	OU4-SD-M01-300A-D	28	0.87
C2-FLUORENES	40/40	2.9	344	67	OU4-SD-M01-300A-D	70	1.04
C2-NAPHTHALENES	40/40	3.14	492	93	OU4-SD-M14-200A	105	1.12
C2-PHENANTHRENES/ANTHRACENES	40/40	4.52	1088	211	OU4-SD-M01-300A-D	267	1.27
C3-CHRYSENES	40/40	0.27	44.4	8.25	OU4-SD-M12-100A	7.57	0.92
C3-DIBENZOTHIOPHENES	40/40	1.23	177	30	OU4-SD-M13-300A	35	1.16
C3-FLUORENES	37/40	0.94	388	53	OU4-SD-M01-300A-D	71	1.35
C3-NAPHTHALENES	39/40	3.49	291	83	OU4-SD-M14-200A	72	0.87
C3-PHENANTHRENES/ANTHRACENES	40/40	5.64	888	123	OU4-SD-M01-300A-D	170	1.38
C4-CHRYSENES	40/40	0.44	109	10	OU4-SD-M12-200A-D	12	1.19
C4-NAPHTHALENES	36/40	1.48	264	45	OU4-SD-M14-200A	47	1.06
C4-PHENANTHRENES/ANTHRACENES	40/40	3.03	432	69	OU4-SD-M01-300A	74	1.08
CHRYSENE	40/40	11.6	6585	698	OU4-SD-M12-100A	1,141	1.63
DIBENZO(A,H)ANTHRACENE	40/40	2.12	790	111	OU4-SD-M12-100A	146	1.31
DIBENZOTHIOPHENE	40/40	0.59	481	46	OU4-SD-M12-100A	95	2.09
FLUORANTHENE	40/40	20.4	13837	1,489	OU4-SD-M12-100A	2,770	1.86
FLUORENE	40/40	1.41	2434	175	OU4-SD-M12-100A	431	2.46
INDENO(1,2,3-CD)PYRENE	40/40	10.9	3740	450	OU4-SD-M12-100A	658	1.46
NAPHTHALENE	40/40	2.14	582	83	OU4-SD-M12-100A	113	1.36
PERYLENE	40/40	3.38	1016	153	OU4-SD-M12-100A	193	1.26
PHENANTHRENE	40/40	7.73	9952	896	OU4-SD-M12-100A	1,952	2.18
PYRENE	39/40	17.6	11420	1,297	OU4-SD-M12-100A	2,226	1.72
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	9/40	0.01	0.93	0.15	OU4-SD-M13-300A	0.20	1.27
1,2,4,5-TETRACHLOROBENZENE	13/40	0.42	2.8	0.65	OU4-SD-M12-200A-D	0.43	0.67
2,4'-DDD	40/40	0.09	43	5.07	OU4-SD-M08-100A-D	6.47	1.28
2,4'-DDE	29/40	0.03	2.2	0.27	OU4-SD-M08-100A-D	0.39	1.46

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
2,4'-DDT	40/40	0.03	23	2.45	OU4-SD-M04-100A	5.60	2.28
4,4'-DDD	40/40	0.13	105	10	OU4-SD-M08-100A-D	18	1.68
4,4'-DDE	40/40	0.29	114	6.46	OU4-SD-M04-300A	18.12	2.80
4,4'-DDT	40/40	0.03	104	14	OU4-SD-M04-100A	27	1.95
ALDRIN	13/40	0.01	0.07	0.04	OU4-SD-M08-200A	0.01	0.42
ALPHA-BHC	38/40	0.02	0.32	0.09	OU4-SD-M14-300A	0.07	0.80
ALPHA-CHLORDANE	38/40	0.06	6.1	0.86	OU4-SD-M10-100A-D	1.11	1.30
BETA-BHC	20/40	0.08	1.8	0.40	OU4-SD-M01-100A, OU4-SD-M13-200A	0.48	1.19
CHLORPYRIFOS	1/40	4.2	4.2	0.41	OU4-SD-M09-300A-D	0.45	1.09
CIS-NONACHLOR	40/40	0.03	1.4	0.32	OU4-SD-M01-300A-D	0.27	0.85
DELTA-BHC	21/40	0.01	0.21	0.05	OU4-SD-M09-300A-D	0.04	0.84
DIELDRIN	29/40	0.01	32	1.52	OU4-SD-M01-200A	5.41	3.55
ENDOSULFAN II	40/40	0.01	5.3	0.86	OU4-SD-M01-300A	0.86	1.00
ENDRIN	3/40	0.14	0.63	0.11	OU4-SD-M01-200A	0.10	0.92
GAMMA-BHC (LINDANE)	10/40	0.06	0.43	0.16	OU4-SD-M01-300A	0.06	0.41
GAMMA-CHLORDANE	27/40	0.03	6.2	0.57	OU4-SD-M10-100A-D	1.19	2.08
HEPTACHLOR	14/40	0.04	0.97	0.18	OU4-SD-M03-100A	0.19	1.04
HEPTACHLOR EPOXIDE	2/40	0.01	0.05	0.02	OU4-SD-M09-100A	0.01	0.39
HEXACHLOROBENZENE	30/40	0.01	8.5	0.31	OU4-SD-M03-100A	1.33	4.32
MIREX	4/40	0.02	0.16	0.02	OU4-SD-M04-100A	0.02	0.98
OXYCHLORDANE	30/40	0.02	0.82	0.11	OU4-SD-M01-300A	0.15	1.34
PCB-101/90	40/40	0.09	41	3.20	OU4-SD-M08-100A	4.63	1.45
PCB-105	40/40	0.1	22	1.38	OU4-SD-M08-100A	1.98	1.43
PCB-118	40/40	0.16	32	2.41	OU4-SD-M08-100A	3.25	1.34
PCB-126	4/40	0.15	6.5	0.37	OU4-SD-M04-100A	1.16	3.10
PCB-128	40/40	0.05	9.2	0.91	OU4-SD-M08-100A	0.97	1.06
PCB-138/160	39/40	0.44	39	5.51	OU4-SD-M08-100A	6.53	1.18
PCB-149/123	40/40	0.18	20	3.31	OU4-SD-M03-100A	3.81	1.15
PCB-153/132	39/40	0.42	35	5.63	OU4-SD-M08-100A	6.70	1.19
PCB-156	40/40	0.11	9.9	1.29	OU4-SD-M12-100A	1.68	1.30
PCB-167	40/40	0.02	9.1	1.28	OU4-SD-M01-300A	1.41	1.10
PCB-169	1/40	0.4	0.4	0.05	OU4-SD-M05-100A	0.05	1.14
PCB-170/190	34/40	0.17	98	13	OU4-SD-M12-100A	20	1.54
PCB-18/17	31/40	0.03	2.7	0.47	OU4-SD-M08-100A-D	0.60	1.26

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-180	40/40	0.25	26	4.10	OU4-SD-M03-100A	5.19	1.26
PCB-187	39/40	0.17	19	3.01	OU4-SD-M03-100A	3.99	1.33
PCB-189	39/40	0.01	1.5	0.35	OU4-SD-M01-300A	0.27	0.78
PCB-195/208	40/40	0.04	6.4	1.41	OU4-SD-M12-100A	1.63	1.16
PCB-201/157/173	40/40	0.01	4.1	0.73	OU4-SD-M12-100A	0.82	1.12
PCB-206	39/40	0.08	15	2.33	OU4-SD-M08-100A	3.24	1.39
PCB-209	40/40	0.03	34	2.19	OU4-SD-M12-100A	5.45	2.49
PCB-28	34/40	0.02	4.3	0.81	OU4-SD-M12-100A	0.89	1.09
PCB-44	40/40	0.01	9.7	0.77	OU4-SD-M08-100A	1.09	1.42
PCB-52	39/40	0.12	27	1.80	OU4-SD-M08-100A	2.63	1.47
PCB-66	39/40	0.04	7.8	0.95	OU4-SD-M12-100A	1.36	1.43
PCB-77	15/40	0.01	0.15	0.06	OU4-SD-M04-100A	0.06	1.10
PCB-8/5	34/40	0.05	7.8	0.74	OU4-SD-M12-100A	1.26	1.70
PCB-81	19/40	0.01	3.6	0.35	OU4-SD-M04-100A	0.76	2.19
PENTACHLOROANISOLE	4/40	0.17	0.35	0.07	OU4-SD-M11-300A	0.06	0.85
TRANS-NONACHLOR	38/40	0.01	2.7	0.32	OU4-SD-M10-100A-D	0.47	1.49
Inorganics (mg/kg)							
ALUMINUM	40/40	34560	62766	50,465	OU4-SD-M05-100A	6,876	0.14
ARSENIC	40/40	7.97	27.6	15.04	OU4-SD-M04-100A	3.82	0.25
CADMIUM	40/40	0.10	0.91	0.44	OU4-SD-M04-100A	0.21	0.46
CHROMIUM	40/40	38.6	155	85	OU4-SD-M08-300A	28	0.33
COPPER	40/40	12.70	20507.00	679	OU4-SD-M04-100A	3,237	4.77
IRON	40/40	14164	89742	30,990	OU4-SD-M04-100A	14,874	0.48
LEAD	40/40	25.90	1265.00	150	OU4-SD-M11-300A	220	1.47
MANGANESE	40/40	282	1503	462	OU4-SD-M01-200A	235	0.51
MERCURY	33/40	0.0898	2.41	0.35	OU4-SD-M04-100A	0.41	1.16
NICKEL	40/40	12.90	197.00	37	OU4-SD-M04-100A	36	0.97
SILVER	40/40	2.21	8.11	3.84	OU4-SD-M04-100A	1.09	0.28
ZINC	40/40	28.50	2633.00	255	OU4-SD-M04-100A	480	1.88
Total Organic Carbon (%)							
TOTAL ORGANIC CARBON	40/40	0.2	4.64	1.58	OU4-SD-M14-100A	0.98	0.62

Notes:
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- This table includes the following monitoring station samples:
  - -OU4-SD-(M01 through M10 and M12 through M14)-(100A through 300A)
  - -OU4-SD-M11-300A
  - -OU4-SD-M01-300A-D
  - -OU4-SD-M05-100A-D
  - -OU4-SD-M08-100A-D
  - -OU4-SD-M09-300A-D
  - -OU4-SD-M10-100A-D
  - -OU4-SD-M12-200B-D
- Source data located in the Round 3 Data Package (TtNUS, January 2001)

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	9/16	4	320	46	OU4-SD-R03-100A	83	1.78
1,2,3,4,6,7,8-HPCDF	9/16	1.28	79.4	12	OU4-SD-R03-100A	21	1.70
1,2,3,4,7,8,9-HPCDF	5/16	0.09	2.24	0.71	OU4-SD-R03-100A	0.47	0.66
1,2,3,4,7,8-HXCDD	3/16	0.45	0.86	0.85	OU4-SD-R04-100A	0.85	1.00
1,2,3,4,7,8-HXCDF	2/16	0.66	1.45	0.91	OU4-SD-R04-100A	0.86	0.94
1,2,3,6,7,8-HXCDD	6/16	0.68	13	2.11	OU4-SD-R03-100A	3.33	1.58
1,2,3,6,7,8-HXCDF	5/16	0.4	3.38	0.85	OU4-SD-R03-100A	0.75	0.88
1,2,3,7,8,9-HXCDD	5/16	0.83	4.93	1.16	OU4-SD-R03-100A	1.24	1.07
1,2,3,7,8,9-HXCDF	2/16	0.08	0.17	0.79	OU4-SD-R04-100A	0.88	1.12
1,2,3,7,8-PECDD	4/16	0.35	1.7	0.70	OU4-SD-R03-100A	0.33	0.48
1,2,3,7,8-PECDF	4/16	0.94	2.34	0.79	OU4-SD-R03-100A	0.51	0.65
2,3,4,6,7,8-HXCDF	3/16	0.54	5.19	0.94	OU4-SD-R03-100A	1.15	1.22
2,3,4,7,8-PECDF	2/16	1.23	2.84	0.77	OU4-SD-R03-100A	0.62	0.80
2,3,7,8-TCDD	2/16	0.26	0.7	0.22	OU4-SD-R04-100A	0.21	0.99
2,3,7,8-TCDF	8/16	0.2	6	0.83	OU4-SD-R03-100A	1.47	1.76
OCDD	10/16	27.2	2410	440	OU4-SD-R03-100A	668	1.52
OCDF	9/16	2.14	98.7	17	OU4-SD-R03-100A	28	1.62
TOTAL DIOXINS	10/16	36	3274	579	OU4-SD-R03-100A	895	1.54
TOTAL FURANS	9/16	4.1	368	60	OU4-SD-R03-100A	99	1.66
TOTAL HPCDD	10/16	8.79	694	112	OU4-SD-R03-100A	183	1.63
TOTAL HPCDF	9/16	1.28	170	26	OU4-SD-R03-100A	45	1.75
TOTAL HXCDD	13/16	1.1	162	25	OU4-SD-R03-100A	44	1.73
TOTAL HXCDF	12/16	0.68	57.8	11	OU4-SD-R03-100A	16	1.53
TOTAL PECDD	5/16	0.5	3.41	0.96	OU4-SD-R03-400A	0.77	0.81
TOTAL PECDF	11/16	0.3	27.4	4.77	OU4-SD-R03-100A	7.32	1.53
TOTAL TCDD	8/16	0.2	6.56	1.62	OU4-SD-R03-100A	1.93	1.19
TOTAL TCDF	10/16	0.24	13.8	2.81	OU4-SD-R03-100A	3.62	1.29
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	16/16	0.32	30.2	8.61	OU4-SD-R03-200A	8.42	0.98
1-METHYLNAPHTHALENE	16/16	0.65	35.7	12	OU4-SD-R02-300A	12	0.97
1-METHYLPHENANTHRENE	16/16	0.89	161	51	OU4-SD-R03-200A	49	0.97

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
2,6-DIMETHYLNAPHTHALENE	16/16	0.82	28.4	9.19	OU4-SD-R02-300A	8.28	0.90
2-METHYLNAPHTHALENE	16/16	1	73.9	19	OU4-SD-R02-300A	21	1.09
ACENAPHTHENE	16/16	0.24	79.8	20	OU4-SD-R03-100A	22	1.10
ACENAPHTHYLENE	16/16	1.84	180	70	OU4-SD-R02-300A	67	0.96
ANTHRACENE	16/16	2.35	402	137	OU4-SD-R03-200A	136	0.99
BENZO(A)ANTHRACENE	16/16	2.82	715	312	OU4-SD-R02-300A	284	0.91
BENZO(A)PYRENE	16/16	5.01	838	329	OU4-SD-R03-200A	325	0.99
BENZO(B)FLUORANTHENE	16/16	6.31	1281	468	OU4-SD-R03-100A	451	0.96
BENZO(E)PYRENE	16/16	3.4	616	228	OU4-SD-R03-100A	217	0.95
BENZO(G,H,I)PERYLENE	13/16	11.7	578	202	OU4-SD-R03-100A	190	0.94
BENZO(K)FLUORANTHENE	16/16	1.86	327	126	OU4-SD-R02-100A	118	0.94
BIPHENYL	16/16	0.41	16.8	4.65	OU4-SD-R02-300A	4.56	0.98
C1-CHRYSENES	16/16	2.19	524	167	OU4-SD-R02-300A	178	1.07
C1-DIBENZOTHIOPHENES	14/16	0.42	47.8	18	OU4-SD-R02-300A	17	0.95
C1-FLUORANTHENES/PYRENES	16/16	2.62	822	233	OU4-SD-R02-300A	251	1.08
C1-FLUORENES	16/16	1.27	142	41	OU4-SD-R03-200A	42	1.01
C1-NAPHTHALENES	16/16	1.65	110	32	OU4-SD-R02-300A	33	1.03
C1-PHENANTHRENES/ANTHRACE	16/16	2.34	422	153	OU4-SD-R03-200A	140	0.92
C2-CHRYSENES	16/16	0.19	189	69	OU4-SD-R02-300A	71	1.03
C2-DIBENZOTHIOPHENES	16/16	0.58	99.1	25	OU4-SD-R02-300A	28	1.09
C2-FLUORENES	16/16	3.23	115	41	OU4-SD-R03-200A	37	0.90
C2-NAPHTHALENES	16/16	3.31	115	37	OU4-SD-R02-300A	35	0.93
C2-PHENANTHRENES/ANTHRACE	16/16	2.15	320	115	OU4-SD-R02-300A	112	0.97
C3-CHRYSENES	15/16	0.01	10.8	2.09	OU4-SD-R03-100A	3.08	1.47
C3-DIBENZOTHIOPHENES	16/16	0.39	96	18	OU4-SD-R02-300A	24	1.34
C3-FLUORENES	16/16	1.96	126	34	OU4-SD-R02-300A	36	1.05
C3-NAPHTHALENES	16/16	1.88	149	43	OU4-SD-R03-200A	43	1.00
C3-PHENANTHRENES/ANTHRACE	16/16	0.95	228	70	OU4-SD-R02-300A	75	1.07
C4-CHRYSENES	16/16	0.01	12.8	4.10	OU4-SD-R01-100A	4.48	1.09
C4-NAPHTHALENES	16/16	0.85	79.8	25	OU4-SD-R03-200A	25	0.99
C4-PHENANTHRENES/ANTHRACE	16/16	0.02	160	33	OU4-SD-R03-100A	41	1.26
CHRYSENE	16/16	4.01	809	311	OU4-SD-R03-100A	290	0.93

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
DIBENZO(A,H)ANTHRACENE	16/16	0.59	141	54	OU4-SD-R03-100A	51	0.94
DIBENZOTHIOPHENE	16/16	0.27	44.8	16	OU4-SD-R02-300A	16	0.99
FLUORANTHENE	16/16	6.11	1669	555	OU4-SD-R03-100A	560	1.01
FLUORENE	16/16	0.75	114	41	OU4-SD-R03-200A	41	0.99
INDENO(1,2,3-CD)PYRENE	16/16	3.62	692	243	OU4-SD-R03-100A	230	0.95
NAPHTHALENE	16/16	1.63	155	33	OU4-SD-R02-300A	40	1.19
PERYLENE	16/16	2.52	192	77	OU4-SD-R02-300A	68	0.89
PHENANTHRENE	16/16	3.21	691	240	OU4-SD-R03-100A	238	0.99
PYRENE	16/16	6.28	1357	494	OU4-SD-R03-100A	479	0.97
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	9/16	0.02	0.46	0.14	OU4-SD-R03-400A	0.12	0.85
1,2,4,5-TETRACHLOROBENZENE	2/16	2.4	3.1	0.87	OU4-SD-R03-400A	0.90	1.03
2,4'-DDD	14/16	0.04	5.2	1.40	OU4-SD-R03-100A	1.44	1.03
2,4'-DDE	14/16	0.04	0.8	0.13	OU4-SD-R03-100A	0.18	1.46
2,4'-DDT	14/16	0.01	0.57	0.13	OU4-SD-R01-200A	0.18	1.42
4,4'-DDD	16/16	0.04	4	0.74	OU4-SD-R03-100A	0.93	1.25
4,4'-DDE	16/16	0.05	9.7	1.10	OU4-SD-R03-100A	2.34	2.13
4,4'-DDT	13/16	0.01	2.4	0.66	OU4-SD-R02-100A	0.79	1.19
ALDRIN	11/16	0.01	0.82	0.09	OU4-SD-R03-100A	0.20	2.23
ALPHA-BHC	10/16	0.03	0.2	0.08	OU4-SD-R02-400A, OU4-SD-R03-200A	0.07	0.83
ALPHA-CHLORDANE	14/16	0.01	0.76	0.33	OU4-SD-R03-100A	0.28	0.85
BETA-BHC	1/16	0.37	0.37	0.13	OU4-SD-R02-100A	0.08	0.58
CIS-NONACHLOR	16/16	0.01	2	0.24	OU4-SD-R03-100A	0.48	2.00
DELTA-BHC	8/16	0.01	0.18	0.03	OU4-SD-R01-100A	0.04	1.20
DIELDRIN	7/16	0.01	0.21	0.05	OU4-SD-R02-200A	0.05	0.97
ENDOSULFAN II	10/16	0.06	2.3	0.36	OU4-SD-R03-100A	0.58	1.59
ENDRIN	1/16	0.45	0.45	0.09	OU4-SD-R03-100A	0.10	1.03
GAMMA-BHC (LINDANE)	4/16	0.08	0.78	0.17	OU4-SD-R03-100A	0.18	1.03
GAMMA-CHLORDANE	11/16	0.02	0.43	0.11	OU4-SD-R02-100A	0.15	1.31
HEPTACHLOR	10/16	0.02	0.57	0.13	OU4-SD-R02-400A	0.14	1.08
HEXACHLOROBENZENE	4/16	0.03	0.25	0.04	OU4-SD-R01-200A	0.06	1.34

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
MIREX	2/16	0.05	0.51	0.05	OU4-SD-R03-100A	0.12	2.53
OXYCHLORDANE	9/16	0.05	0.47	0.09	OU4-SD-R03-200A	0.14	1.54
PCB-101/90	16/16	0.05	3.2	0.93	OU4-SD-R03-100A	1.01	1.09
PCB-105	16/16	0.02	2	0.44	OU4-SD-R03-100A	0.57	1.30
PCB-118	16/16	0.05	4	1.05	OU4-SD-R03-100A	1.25	1.19
PCB-128	13/16	0.01	3.2	0.39	OU4-SD-R03-100A	0.80	2.05
PCB-138/160	10/16	0.15	4.7	1.00	OU4-SD-R02-400A	1.25	1.25
PCB-149/123	14/16	0.04	2.5	0.61	OU4-SD-R03-100A	0.72	1.17
PCB-153/132	9/16	0.59	4.6	1.09	OU4-SD-R03-100A	1.43	1.30
PCB-156	16/16	0.01	1.7	0.44	OU4-SD-R03-100A	0.47	1.08
PCB-167	14/16	0.02	3.1	0.73	OU4-SD-R01-100A, OU4-SD-R02-300A	1.10	1.50
PCB-170/190	12/16	0.48	15	4.48	OU4-SD-R02-400A	5.09	1.14
PCB-18/17	6/16	0.09	5.4	0.52	OU4-SD-R03-100A	1.34	2.57
PCB-180	10/16	0.23	2.3	0.55	OU4-SD-R03-100A	0.63	1.15
PCB-187	16/16	0.02	1.3	0.31	OU4-SD-R03-100A	0.37	1.18
PCB-189	10/16	0.09	0.45	0.18	OU4-SD-R03-100A	0.12	0.70
PCB-195/208	15/16	0.01	1.2	0.23	OU4-SD-R03-100A	0.29	1.28
PCB-201/157/173	12/16	0.02	1.41	0.32	OU4-SD-R03-100A	0.37	1.15
PCB-206	11/16	0.02	0.59	0.16	OU4-SD-R02-400A	0.17	1.09
PCB-209	16/16	0.07	1.1	0.44	OU4-SD-R02-400A	0.33	0.75
PCB-28	6/16	0.19	1	0.28	OU4-SD-R02-400A	0.31	1.12
PCB-44	15/16	0.02	1.3	0.27	OU4-SD-R03-100A	0.33	1.22
PCB-52	16/16	0.03	13	1.66	OU4-SD-R02-100A	3.32	2.00
PCB-66	11/16	0.05	1.4	0.34	OU4-SD-R03-100A	0.42	1.25
PCB-77	6/16	0.01	0.07	0.04	OU4-SD-R03-100A	0.07	1.89
PCB-8/5	6/16	0.11	2.4	0.52	OU4-SD-R03-100A	0.78	1.49
PCB-81	5/16	0.02	0.19	0.09	OU4-SD-R03-300A	0.06	0.64
PENTACHLOROANISOLE	1/16	0.39	0.39	0.08	OU4-SD-R02-100A	0.12	1.40
TRANS-NONACHLOR	14/16	0.03	1	0.21	OU4-SD-R03-100A	0.29	1.35

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 3 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Inorganics (mg/kg)							
ALUMINUM	16/16	35399	55986	44,404.25	OU4-SD-R02-400A	5,370.11	0.12
ARSENIC	16/16	3.32	14.8	9.32	OU4-SD-R02-400A	3.45	0.37
CADMIUM	16/16	0.05	0.81	0.26	OU4-SD-R03-100A	0.20	0.78
CHROMIUM	16/16	19.3	89.3	49.97	OU4-SD-R03-100A	21.22	0.42
COPPER	16/16	2.10	29.20	12.46	OU4-SD-R02-200A	9.01	0.72
IRON	16/16	7086	25988	16,348.38	OU4-SD-R02-400A	5,332.86	0.33
LEAD	16/16	16.10	107.00	52.43	OU4-SD-R02-200A	30.58	0.58
MANGANESE	16/16	217	463	339.25	OU4-SD-R03-400A	66.20	0.20
MERCURY	10/16	0.10	0.40	0.15	OU4-SD-R02-300A	0.12	0.80
NICKEL	13/16	8.51	24.60	14.00	OU4-SD-R02-400A	6.49	0.46
SILVER	15/16	1.69	4.15	2.56	OU4-SD-R02-400A	0.85	0.33
ZINC	14/16	13.40	90.20	42.36	OU4-SD-R03-100A	27.00	0.64
Total Organic Carbon (%)							
TOTAL ORGANIC CARBON	16/16	0.15	5.69	1.27	OU4-SD-R03-100A	1.45	1.15

Notes:
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samp
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- This table includes the following reference station samples:
  - OU4-SD-(R01 through R04)-(100A through 400A)
- Source data located in the Round 3 Data Package (TtNUS, January 2001)

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	8/11	9.1	32.2	19	OU4-MU-M09-200A	7.36	0.39
1,2,3,4,6,7,8-HPCDF	3/15	2.55	10.1	13	OU4-MU-M09-200A	4.60	0.35
1,2,3,4,7,8-HXCDD	1/15	1.84	1.84	14	OU4-MU-M09-100A	4.43	0.32
1,2,3,6,7,8-HXCDD	2/15	0.99	2.48	13	OU4-MU-M09-100A	5.41	0.42
1,2,3,7,8-PECDF	3/15	2.06	10.2	13	OU4-MU-M07-300A	4.88	0.37
2,3,4,6,7,8-HXCDF	1/15	2.88	2.88	14	OU4-MU-M10-100A-D	4.24	0.31
2,3,4,7,8-PECDF	1/15	2.05	2.05	14	OU4-MU-M09-200A	4.39	0.32
2,3,7,8-TCDF	5/15	4.95	9.93	3.90	OU4-MU-M11-200A-D	1.89	0.49
OCDD	9/15	81	168	86	OU4-MU-M09-200A	54	0.63
OCDF	1/15	62.1	62.1	30	OU4-MU-M12-100A	12	0.40
TOTAL DIOXINS	15/15	23.4	316	126	OU4-MU-M09-100A	87	0.69
TOTAL FURANS	8/15	12.7	107	31	OU4-MU-M11-100A	26	0.83
TOTAL HPCDD	9/15	9.1	88.1	32	OU4-MU-M09-200A	27	0.85
TOTAL HPCDF	2/15	2.55	7.13	13	OU4-MU-M09-100A	5	0.34
TOTAL HXCDD	7/15	0.99	20.9	13	OU4-MU-M08-100A	6	0.43
TOTAL HXCDF	5/15	2.88	42.7	17	OU4-MU-M11-100A	10	0.61
TOTAL PECDF	5/15	4.11	39.7	14	OU4-MU-M11-100A	8	0.55
TOTAL TCDD	11/15	17.5	78.5	27	OU4-MU-M12-100A-D	21	0.77
TOTAL TCDF	8/15	4.95	42.8	11	OU4-MU-M07-300A	11	1.08
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	32/32	0.89	105	5.58	OU4-MU-M13-100A	17	3.08
1-METHYLNAPHTHALENE	32/32	1.31	109	8.23	OU4-MU-M13-100A	18	2.13
1-METHYLPHENANTHRENE	32/32	1.28	553	21	OU4-MU-M13-100A	89	4.17
2,6-DIMETHYLNAPHTHALENE	32/32	0.93	154	7.71	OU4-MU-M13-100A	25	3.20
2-METHYLNAPHTHALENE	32/32	2.27	161	13	OU4-MU-M13-100A	26	2.05
ACENAPHTHENE	32/32	1.55	1269	53	OU4-MU-M13-100A	212	3.98
ACENAPHTHYLENE	32/32	0.14	289	21	OU4-MU-M13-100A-D	41	1.97
ANTHRACENE	32/32	5.49	2022	98	OU4-MU-M13-100A-D	354	3.62
BENZO(A)ANTHRACENE	32/32	7.3	4333	159	OU4-MU-M13-100A	693	4.37
BENZO(A)PYRENE	32/32	4.89	3461	127	OU4-MU-M13-100A	554	4.36
BENZO(B)FLUORANTHENE	32/32	10.3	4479	176	OU4-MU-M13-100A	712	4.04
BENZO(E)PYRENE	32/32	11.7	2075	94	OU4-MU-M13-100A	328	3.48
BENZO(G,H,I)PERYLENE	32/32	4.6	907	47	OU4-MU-M13-100A	150	3.20

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
BENZO(K)FLUORANTHENE	32/32	5	1198	41	OU4-MU-M13-100A-D	118	2.91
BIPHENYL	32/32	1.12	86.9	4.78	OU4-MU-M13-100A	14	2.91
C1-CHRYSENES	32/32	6.5	2071	81	OU4-MU-M13-100A	327	4.03
C1-DIBENZOTHIOPHENES	32/32	0.86	113	5.77	OU4-MU-M13-100A	18	3.04
C1-FLUORANTHENES/PYRENES	32/32	11.2	2924	121	OU4-MU-M13-100A	473	3.91
C1-FLUORENES	32/32	5.85	578	36	OU4-MU-M13-100A	98	2.73
C1-NAPHTHALENES	32/32	3.58	270	21	OU4-MU-M13-100A	43	2.08
C1-PHENANTHRENES/ANTHRACENES	32/32	6.24	1767	74	OU4-MU-M13-100A	289	3.92
C2-CHRYSENES	32/32	0.3	500	25	OU4-MU-M13-100A	73	2.96
C2-DIBENZOTHIOPHENES	32/32	0.04	67.9	5.94	OU4-MU-M13-100A	11	1.81
C2-FLUORENES	32/32	5.4	236	20	OU4-MU-M13-100A	39	1.93
C2-NAPHTHALENES	32/32	3.07	301	19	OU4-MU-M13-100A	47	2.41
C2-PHENANTHRENES/ANTHRACENES	32/32	5.31	694	41	OU4-MU-M13-100A	109	2.63
C3-CHRYSENES	31/32	0.02	12.9	0.74	OU4-MU-M13-100A	2.08	2.79
C3-DIBENZOTHIOPHENES	32/32	0.04	37.9	6.28	OU4-MU-M13-100A	6.05	0.96
C3-FLUORENES	32/32	2.21	129	23	OU4-MU-M13-100A	22	0.96
C3-NAPHTHALENES	32/32	2.82	225	18	OU4-MU-M13-100A	35	1.99
C3-PHENANTHRENES/ANTHRACENES	32/32	2.59	284	23	OU4-MU-M13-100A	45	1.93
C4-CHRYSENES	32/32	0.02	112	2.91	OU4-MU-M13-100A	13	4.51
C4-NAPHTHALENES	32/32	1.07	105	14	OU4-MU-M13-100A	17	1.25
C4-PHENANTHRENES/ANTHRACENES	32/32	0.07	88.2	10	OU4-MU-M13-100A	13	1.26
CHRYSENE	32/32	12.2	4976	196	OU4-MU-M13-100A	832	4.24
DIBENZO(A,H)ANTHRACENE	32/32	0.31	353	13	OU4-MU-M13-100A	55	4.25
DIBENZOTHIOPHENE	32/32	0.4	239	9.73	OU4-MU-M13-100A	39	4.01
FLUORANTHENE	32/32	19.6	8955	370	OU4-MU-M13-100A	1,494	4.04
FLUORENE	32/32	2.64	1870	69	OU4-MU-M13-100A	313	4.53
INDENO(1,2,3-CD)PYRENE	32/32	2.9	1207	53	OU4-MU-M13-100A	194	3.66
NAPHTHALENE	32/32	3.04	140	15	OU4-MU-M12-100A	26	1.73
PERYLENE	32/32	5.3	563	32	OU4-MU-M13-100A	94	2.97
PHENANTHRENE	32/32	5.28	6561	235	OU4-MU-M13-100A	1,044	4.44
PYRENE	32/32	19.7	5747	260	OU4-MU-M13-100A	971	3.73
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	21/32	0.12	13	0.77	OU4-MU-M14-100A	2.26	2.93
1,2,4,5-TETRACHLOROBENZENE	15/32	0.24	3	1.06	OU4-MU-M05-300A	0.81	0.76

TABLE 1

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
2,4'-DDD	31/32	0.57	364	9.49	OU4-MU-M13-100A	32	3.37
2,4'-DDE	19/32	0.1	1	0.33	OU4-MU-M08-200A, OU4-MU-M14-200A	0.24	0.71
2,4'-DDT	31/32	0.33	9.6	1.95	OU4-MU-M10-100A-D	1.76	0.90
4,4'-DDD	32/32	0.31	58	6.49	OU4-MU-M08-100A	10	1.61
4,4'-DDE	32/32	2.8	22	8.20	OU4-MU-M08-100A	4.92	0.60
4,4'-DDT	31/32	0.48	19	3.38	OU4-MU-M10-100A-D	3.73	1.10
ALDRIN	13/32	0.03	0.59	0.19	OU4-MU-M13-100A-D	0.09	0.48
ALPHA-BHC	24/32	0.15	2	0.33	OU4-MU-M13-100A	0.30	0.92
ALPHA-CHLORDANE	31/32	0.44	3.3	1.19	OU4-MU-M10-100A-D	0.64	0.54
BETA-BHC	20/32	0.43	28	2.62	OU4-MU-M10-100A-D	3.34	1.28
CIS-NONACHLOR	31/32	0.08	3.2	0.93	OU4-MU-M11-200A-D	0.64	0.70
DELTA-BHC	3/32	0.03	0.14	0.09	OU4-MU-M11-200A-D	0.02	0.23
DIELDRIN	32/32	0.28	2.5	0.79	OU4-MU-M14-100A	0.55	0.69
ENDOSULFAN II	29/32	0.09	6.3	0.40	OU4-MU-M13-100A	0.66	1.66
GAMMA-BHC (LINDANE)	26/32	0.02	0.18	0.12	OU4-MU-M13-100A-D	0.04	0.37
GAMMA-CHLORDANE	31/32	0.16	2.4	0.51	OU4-MU-M10-100A-D	0.42	0.82
HEPTACHLOR	8/32	0.14	0.79	0.26	OU4-MU-M06-300A	0.11	0.41
HEPTACHLOR EPOXIDE	1/32	0.09	0.09	0.17	OU4-MU-M14-100A	0.03	0.17
HEXACHLOROBENZENE	28/32	0.05	0.63	0.21	OU4-MU-M13-100A	0.11	0.52
MIREX	1/32	0.06	0.06	0.39	OU4-MU-M13-100A-D	0.08	0.21
OXYCHLORDANE	5/32	0.04	19	0.58	OU4-MU-M13-100A	1.85	3.16
PCB-101/90	32/32	0.71	39	10	OU4-MU-M10-300A	7.62	0.73
PCB-105	32/32	1	16	4.31	OU4-MU-M10-300A	2.98	0.69
PCB-118	32/32	2.9	33	9.08	OU4-MU-M11-200A	6.72	0.74
PCB-126	2/28	0.13	2.2	0.63	OU4-MU-M11-300A	0.33	0.52
PCB-128	32/32	0.63	9.9	2.37	OU4-MU-M11-200A	1.72	0.72
PCB-138/160	26/32	6.3	46	15	OU4-MU-M11-200A	9.03	0.60
PCB-149/123	32/32	0.32	28	9.33	OU4-MU-M03-100A	6.52	0.70
PCB-153/132	26/32	8.4	52	20	OU4-MU-M03-100A	12	0.62
PCB-156	27/32	0.16	5.1	1.02	OU4-MU-M11-200A-D	0.81	0.80
PCB-167	30/32	0.4	5.9	1.28	OU4-MU-M13-100A	0.84	0.66
PCB-169	6/32	0.05	0.73	0.36	OU4-MU-M14-200A	0.27	0.75
PCB-170/190	10/32	0.29	49	1.47	OU4-MU-M13-100A	5.68	3.87

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-18/17	11/32	0.1	38	1.92	OU4-MU-M13-100A	3.31	1.72
PCB-180	24/32	2.4	13	5.71	OU4-MU-M12-100A	2.97	0.52
PCB-187	32/32	2.5	22	8.28	OU4-MU-M03-100A	4.78	0.58
PCB-189	6/32	0.09	0.72	0.55	OU4-MU-M13-100A-D	0.18	0.33
PCB-195/208	7/32	0.05	1.1	0.46	OU4-MU-M13-100A	0.16	0.35
PCB-201/157/173	26/32	0.06	2.2	0.64	OU4-MU-M13-100A-D	0.49	0.77
PCB-206	3/32	0.09	0.33	0.49	OU4-MU-M14-100A	0.12	0.24
PCB-209	1/32	0.89	0.89	0.68	OU4-MU-M12-100A-D	0.11	0.16
PCB-28	31/32	0.21	3.7	1.10	OU4-MU-M13-100A	0.72	0.65
PCB-44	15/32	0.46	5.2	0.87	OU4-MU-M10-300A	0.92	1.06
PCB-52	28/32	1.2	15	3.23	OU4-MU-M10-300A	2.68	0.83
PCB-66	32/32	0.23	6.3	1.38	OU4-MU-M12-100A	1.11	0.80
PCB-77	20/32	0.07	2.8	0.55	OU4-MU-M12-100A	0.37	0.68
PCB-8/5	28/32	0.06	36	6.02	OU4-MU-M13-100A	5.05	0.84
PCB-81	7/32	0.11	1	0.56	OU4-MU-M07-300A	0.18	0.32
PENTACHLOROANISOLE	9/32	0.58	2.2	0.78	OU4-MU-M06-300A	0.49	0.62
PENTACHLOROBENZENE	9/32	0.99	2.1	0.80	OU4-MU-M06-300A	0.60	0.75
TRANS-NONACHLOR	31/32	0.34	1.9	0.97	OU4-MU-M08-200A	0.43	0.45
Inorganics (mg/kg)							
ALUMINUM	32/32	174	1175	396	OU4-MU-M09-100A	199	0.50
ARSENIC	32/32	4.01	8.08	6.00	OU4-MU-M07-300A	1.02	0.17
CADMIUM	32/32	1.03	2.85	1.65	OU4-MU-M05-100A	0.37	0.22
CHROMIUM	29/32	2.28	8.82	3.99	OU4-MU-M02-300A	1.83	0.46
COPPER	32/32	5.09	101	16.08	OU4-MU-M03-200A	19.01	1.18
IRON	32/32	300	1877	765	OU4-MU-M09-100A	379	0.50
LEAD	32/32	3.19	103	11	OU4-MU-M05-100A	18	1.58
MANGANESE	32/32	8.63	73.9	16	OU4-MU-M09-100A	13	0.81
MERCURY	31/32	0.19	2.31	0.34	OU4-MU-M05-100A	0.37	1.08
NICKEL	4/32	7.86	12.9	2.47	OU4-MU-M09-100A	2.86	1.16
SILVER	4/32	0.36	0.74	0.23	OU4-MU-M09-100A	0.15	0.66
ZINC	32/32	72.7	284	109	OU4-MU-M03-200A	42	0.38
Percent Lipids (%)							
% LIPID	32/32	2.4	8.8	4.79	OU4-MU-M06-100A	1.66	0.35

Notes:

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation

- All results are presented in dry weight
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
-This table includes the following monitoring station samples:
  - OU4-MU-M01-200A and 300A
  - OU4-MU-M02-100A, 200A and 300A
  - OU4-MU-M03-100A and 200A
  - OU4-MU-M04-100A
  - OU4-MU-M05-100A and 300A
  - OU4-MU-M06-100A, 200A and 300A
  - OU4-MU-M07-100A and 300A
  - OU4-MU-M08-100A, 200A and 300A
  - OU4-MU-M09-100A and 200A
  - OU4-MU-M10-100A, 100A-FD, 200A, and 300A
  - OU4-MU-M11-100A, 200A, 200A-FD and 300A
  - OU4-MU-M12-100A, 100A-FD and 200A
  - OU4-MU-M13-100A, 100A-FD and 300A
  - OU4-MU-M14-100A and 200A

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Detection	Standard Deviation	Coefficient of Variation
Dioxins/Furans (NG/KG)							
1,2,3,4,6,7,8,9-OCDD	4/7	79.4	96.2	60.4	OU4-MU-R01-400A	35.8	0.6
1,2,3,4,6,7,8-HPCDD	2/3	13.7	20.1	14.9	OU4-MU-R01-400A	4.7	0.3
1,2,3,7,8-PECDF	1/7	8.3	8.3	11.4	OU4-MU-R04-400A	1.6	0.1
2,3,7,8-TCDF	2/7	7.5	9.2	4.0	OU4-MU-R01-300A	3.0	0.7
TOTAL DIOXIN/FURANS (TEQ)-HALFND	7/7	25.3	30.3	27.6	OU4-MU-R01-300A	1.9	0.1
TOTAL DIOXIN/FURANS (TEQ)-POSONLY	5/7	0.01	0.9	1.0	OU4-MU-R01-300A	0.9	0.9
TOTAL DIOXINS	7/7	29.0	184.0	97.7	OU4-MU-R01-400A	50.6	0.5
TOTAL FURANS	6/7	7.5	71.0	34.9	OU4-MU-R01-400A	24.7	0.7
TOTAL HPCDD	3/7	13.7	65.9	22.7	OU4-MU-R01-400A	20.6	0.9
TOTAL HXCDF	3/7	13.7	23.2	15.4	OU4-MU-R02-300A	5.0	0.3
TOTAL PECDF	4/7	8.3	42.3	18.4	OU4-MU-R01-400A	12.3	0.7
TOTAL TCDD	5/7	21.6	68.2	31.4	OU4-MU-R03-400A	25.3	0.8
TOTAL TCDF	5/7	7.5	28.7	14.4	OU4-MU-R01-400A	11.0	0.8
Polyaromatic Hydrocarbons (UG/KG)							
1,1-BIPHENYL	7/7	1.7	2.8	2.2	OU4-MU-R03-300A	0.4	0.2
1-METHYLNAPHTHALENE	7/7	3.2	8.0	5.8	OU4-MU-R03-300A	1.5	0.3
1-METHYLPHENANTHRENE	7/7	2.3	7.6	4.7	OU4-MU-R03-400A	2.0	0.4
2,3,5-TRIMETHYLNAPHTHALENE	7/7	1.7	5.8	3.5	OU4-MU-R03-300A	1.6	0.4
2,6-DIMETHYLNAPHTHALENE	7/7	1.9	5.3	3.6	OU4-MU-R03-300A	1.1	0.3
2-METHYLNAPHTHALENE	7/7	6.5	11.4	8.3	OU4-MU-R03-300A	1.8	0.2
ACENAPHTHENE	7/7	2.3	7.5	4.8	OU4-MU-R03-400A	1.9	0.4
ACENAPHTHYLENE	7/7	4.8	18.6	14.1	OU4-MU-R03-400A, OU4-MU-R02-300A	5.5	0.4
ANTHRACENE	7/7	11.4	38.8	25.2	OU4-MU-R01-400A	10.1	0.4
BENZO(A)ANTHRACENE	7/7	9.3	28.7	17.0	OU4-MU-R01-400A	6.6	0.4
BENZO(A)PYRENE	7/7	5.4	18.2	12.2	OU4-MU-R02-300A	4.2	0.3
BENZO(B)FLUORANTHENE	7/7	15	44.2	28.3	OU4-MU-R01-400A	9.9	0.4
BENZO(E)PYRENE	7/7	16.2	39.9	28.7	OU4-MU-R02-300A	8.8	0.3
BENZO(G,H,I)PERYLENE	7/7	7.9	13.9	11.0	OU4-MU-R01-400A	2.4	0.2
BENZO(K)FLUORANTHENE	7/7	4.6	18.4	10.9	OU4-MU-R02-300A	4.9	0.5
C1-CHRYSENES	7/7	9.5	29.7	20.2	OU4-MU-R02-300A	8.2	0.4
C1-DIBENZOTHIOPHENES	7/7	1.2	5.4	3.0	OU4-MU-R03-400A	1.4	0.5
C1-FLUORANTHENES/PYRENES	7/7	16.2	42.8	31.0	OU4-MU-R02-300A	10.6	0.3
C1-FLUORENES	7/7	10.1	37.6	18.0	OU4-MU-R01-400A	9.2	0.5
C1-NAPHTHALENES	7/7	10.1	19.5	14.1	OU4-MU-R03-300A	3.2	0.2
C1-PHENANTHRENES/ANTHRACENES	7/7	11.2	34.7	19.3	OU4-MU-R03-400A	7.8	0.4
C2-CHRYSENES	7/7	5.0	31.1	15.9	OU4-MU-R01-300A	9.5	0.6
C2-DIBENZOTHIOPHENES	7/7	3.2	11.9	6.1	OU4-MU-R03-400A	3.0	0.5
C2-FLUORENES	7/7	10.0	30.1	18.7	OU4-MU-R03-400A	7.7	0.4
C2-NAPHTHALENES	7/7	8.6	21.6	13.9	OU4-MU-R03-300A	5.2	0.4
C2-PHENANTHRENES/ANTHRACENES	7/7	15.0	52.7	30.1	OU4-MU-R03-400A	12.7	0.4
C3-CHRYSENES	7/7	0.1	0.3	0.2	OU4-MU-R01-400A	0.1	0.6
C3-DIBENZOTHIOPHENES	7/7	5.2	14.2	8.5	OU4-MU-R03-400A	3.6	0.4
C3-FLUORENES	7/7	10.2	56.2	26.9	OU4-MU-R03-400A	15.7	0.6
C3-NAPHTHALENES	7/7	7.4	33.2	17.7	OU4-MU-R03-400A	9.6	0.5

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Detection	Standard Deviation	Coefficient of Variation
C3-PHENANTHRENES/ANTHRACENES	7/7	11.8	34.3	22.3	OU4-MU-R03-400A	9.2	0.4
C4-CHRYSENES	7/7	0.04	0.2	0.11	OU4-MU-R04-400A	0.04	0.4
C4-NAPHTHALENES	7/7	6.9	43.8	21.4	OU4-MU-R03-400A	12.8	0.6
C4-PHENANTHRENES/ANTHRACENES	7/7	6.3	17.0	12.1	OU4-MU-R02-300A	4.2	0.3
CHRYSENE	7/7	17.3	57.6	32.8	OU4-MU-R01-400A	13.2	0.4
DIBENZO(A,H)ANTHRACENE	7/7	0.3	2.1	1.2	OU4-MU-R01-400A	0.6	0.5
DIBENZOTHIOPHENE	7/7	0.7	1.6	1.0	OU4-MU-R03-300A	0.3	0.3
FLUORANTHENE	7/7	30.1	64.5	47.8	OU4-MU-R03-400A	13.1	0.3
FLUORENE	7/7	4.1	8.3	5.7	OU4-MU-R01-400A	1.57	0.3
HIGH MOLECULAR WEIGHT PAHS	7/7	89.6	212.6	159.9	OU4-MU-R02-300A	47.0	0.3
INDENO(1,2,3-CD)PYRENE	7/7	4.3	11.2	7.2	OU4-MU-R01-400A	2.5	0.3
LOW MOLECULAR WEIGHT PAHS	7/7	45.3	101.4	78.0	OU4-MU-R03-400A	21.2	0.3
NAPHTHALENE	7/7	4.3	14.0	10.0	OU4-MU-R03-300A	3.1	0.3
PERYLENE	7/7	7.2	23.4	15.8	OU4-MU-R01-300A	5.6	0.4
PHENANTHRENE	7/7	5.4	13.9	9.9	OU4-MU-R03-400A	2.7	0.3
PYRENE	7/7	26.9	69.7	49.1	OU4-MU-R02-300A	15.9	0.3
TOTAL PAHS	7/7	144.1	302.2	237.9	OU4-MU-R02-300A	66.6	0.3
Pesticides/PCB's (UG/KG)							
1,2,3,4-TETRACHLOROBENZENE	2/7	0.03	0.58	0.15	OU4-MU-R01-400A	0.2	1.3
1,2,4,5-TETRACHLOROBENZENE	2/7	0.65	2.4	0.72	OU4-MU-R01-400A	0.8	1.1
2,4'-DDD	7/7	1.2	2.3	1.7	OU4-MU-R03-400A	0.4	0.2
2,4'-DDE	6/7	0.11	0.39	0.22	OU4-MU-R04-400A	0.1	0.4
2,4'-DDT	7/7	0.22	1.8	0.71	OU4-MU-R01-400A	0.5	0.8
4,4'-DDD	7/7	1.7	4.5	2.73	OU4-MU-R03-400A	1.0	0.4
4,4'-DDE	7/7	5.1	10	7.04	OU4-MU-R03-400A	1.7	0.2
4,4'-DDT	7/7	0.51	1.5	0.83	OU4-MU-R03-400A	0.3	0.4
ALDRIN	4/7	0.05	0.24	0.15	OU4-MU-R01-400A	0.1	0.5
ALPHA-BHC	6/7	0.27	0.42	0.31	OU4-MU-R03-400A	0.1	0.3
ALPHA-CHLORDANE	7/7	0.74	1.5	1.03	OU4-MU-R03-400A	0.2	0.2
BETA-BHC	2/7	0.42	1.5	0.76	OU4-MU-R04-400A	0.6	0.7
CIS-NONACHLOR	7/7	0.56	1.5	1.08	OU4-MU-R03-400A	0.3	0.3
DIELDRIN	7/7	0.03	1.1	0.7	OU4-MU-R03-400A	0.4	0.5
ENDOSULFAN II	7/7	0.08	0.22	0.14	OU4-MU-R01-300A	0.1	0.4
GAMMA-BHC (LINDANE)	5/7	0.08	0.16	0.12	OU4-MU-R03-400A	0.03	0.2
GAMMA-CHLORDANE	7/7	0.25	0.57	0.41	OU4-MU-R03-400A	0.1	0.3
HEPTACHLOR	1/7	0.27	0.27	0.24	OU4-MU-R01-400A	0.02	0.1
HEXACHLOROBENZENE	7/7	0.1	0.36	0.21	OU4-MU-R01-400A	0.1	0.4
PCB-101/90	7/7	4.8	9.6	7.06	OU4-MU-R03-400A	1.7	0.2
PCB-105	7/7	2	3.9	2.89	OU4-MU-R01-300A	0.7	0.3
PCB-118	7/7	4.5	11	7.74	OU4-MU-R03-400A	2.5	0.3
PCB-126	1/7	1.6	1.6	0.72	OU4-MU-R03-400A	0.4	0.5
PCB-128	7/7	1.2	2.6	1.8	OU4-MU-R03-400A	0.5	0.3
PCB-138/160	7/7	7.5	17	11.7	OU4-MU-R03-400A	3.2	0.3
PCB-149/123	5/7	4.4	6.3	4.58	OU4-MU-R01-300A	1.5	0.3
PCB-153/132	6/7	10	21	14.1	OU4-MU-R03-400A	5.3	0.4

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 3 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Detection	Standard Deviation	Coefficient of Variation
PCB-156	4/7	0.19	1.2	0.6	OU4-MU-R01-300A	0.3	0.5
PCB-167	7/7	0.64	1.4	1	OU4-MU-R03-400A	0.3	0.3
PCB-169	1/7	0.13	0.13	0.37	OU4-MU-R04-400A	0.3	0.7
PCB-170/190	2/7	0.22	0.26	0.22	OU4-MU-R04-400A	0.1	0.3
PCB-18/17	5/7	0.27	1.2	0.85	OU4-MU-R03-400A	0.5	0.6
PCB-180	6/7	3.9	11	6.34	OU4-MU-R03-400A	3.0	0.5
PCB-187	7/7	3.4	7.3	5.37	OU4-MU-R03-400A	1.4	0.3
PCB-201/157/173	4/7	0.3	0.43	0.38	OU4-MU-R03-400A	0.1	0.2
PCB-28	7/7	0.43	0.97	0.68	OU4-MU-R01-400A	0.2	0.3
PCB-44	2/7	0.46	0.72	0.44	OU4-MU-R01-400A	0.1	0.3
PCB-52	2/7	1.6	3.1	1.39	OU4-MU-R01-400A	0.8	0.6
PCB-66	7/7	0.64	1.6	1.08	OU4-MU-R01-300A	0.4	0.3
PCB-77	4/7	0.23	0.68	0.45	OU4-MU-R03-400A	0.2	0.4
PCB-8/5	7/7	2.8	21	6.46	OU4-MU-R01-400A	6.5	1.0
PCB-81	2/7	0.12	0.14	0.46	OU4-MU-R03-300A	0.2	0.5
PENTACHLOROANISOLE	2/7	1.6	2.4	0.84	OU4-MU-R01-400A	0.8	1.0
PENTACHLOROBENZENE	2/7	0.48	1.9	0.58	OU4-MU-R01-400A	0.6	1.0
TOTAL DDT	7/7	8.98	18.99	13.2	OU4-MU-R03-400A	3.2	0.2
TOTAL PCB CONGENERS	7/7	74.08	188	139	OU4-MU-R03-400A	41.4	0.3
TRANS-NONACHLOR	7/7	0.75	1.4	1.02	OU4-MU-R03-400A	0.2	0.2
Inorganics (MG/KG)							
ALUMINUM	7/7	218	579	366	OU4-MU-R04-400A	122.8	0.3
ARSENIC	7/7	4.22	5.95	5.08	OU4-MU-R01-400A	0.6	0.1
CADMIUM	7/7	1.14	1.65	1.37	OU4-MU-R04-300A	0.2	0.1
CHROMIUM	5/7	3.09	5.17	3.44	OU4-MU-R04-400A	1.4	0.4
COPPER	7/7	5.33	33	14.8	OU4-MU-R04-400A	9.5	0.6
IRON	7/7	382	808	588	OU4-MU-R04-400A	183.8	0.3
LEAD	7/7	2.76	5.19	3.75	OU4-MU-R04-400A	0.8	0.2
MANGANESE	7/7	8.08	16.8	12.5	OU4-MU-R01-300A	3.2	0.3
MERCURY	7/7	0.22	0.34	0.28	OU4-MU-R04-300A	0.04	0.1
SILVER	1/7	0.49	0.49	0.2	OU4-MU-R01-300A	0.1	0.6
ZINC	7/7	70.4	105	87.1	OU4-MU-R04-400A	11.4	0.1
Percent Lipids (%)							
LIPIDS	7/7	1.7	7	4.3	OU4-MU-R03-400A	1.6	0.4

Notes:
- All results are presented in dry weight.
- The mean, standard deviation, and coefficient of variation were calculated using the 1/2 detection limet for non-detects and the average of the duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only conuted as one sample when determining the frequency of detection.
- This table includes the following reference station samples:
  - OU4-MU-(R01 through R04)-(300A and 400A) , excluding OU4-MU-R02-400A
- Revised from data table in the Round 3 Data Package by deleting sample OU4-MU-R02-400A (TtNUS, January 2001)

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 3 JUVENILE LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	3/6	1.59	5.5	4.74	OU4-LJ-M07-100A	3.30	0.70
2,3,7,8-TCDF	2/6	1.84	3.02	1.84	OU4-LJ-M08-100A	0.61	0.33
OCDD	4/6	4.53	28.6	12	OU4-LJ-M07-100A	9.04	0.73
TOTAL DIOXINS	4/6	1.59	34	13	OU4-LJ-M07-100A	11	0.89
TOTAL HPCDD	3/6	1.59	5.5	5.90	OU4-LJ-M07-100A	2.75	0.47
TOTAL TCDF	2/6	1.84	3.02	1.84	OU4-LJ-M08-100A	0.61	0.33
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	14/14	0.71	2.84	1.30	OU4-LJ-M08-100A	0.57	0.44
1-METHYLNAPHTHALENE	14/14	1.81	13	4.53	OU4-LJ-M14-100A	3.39	0.75
1-METHYLPHENANTHRENE	14/14	0.5	6.24	1.75	OU4-LJ-M13-100A	1.59	0.91
2,6-DIMETHYLNAPHTHALENE	14/14	0.9	4.18	1.69	OU4-LJ-M08-100A	0.91	0.54
2-METHYLNAPHTHALENE	14/14	2.6	18.3	6.55	OU4-LJ-M14-100A	4.65	0.71
ACENAPHTHENE	14/14	0.35	6.71	2.20	OU4-LJ-M13-100A	1.77	0.80
ACENAPHTHYLENE	14/14	0.25	6.9	1.29	OU4-LJ-M08-100A	1.71	1.32
ANTHRACENE	14/14	0.61	13.7	3.76	OU4-LJ-M08-100A	3.96	1.06
BENZO(A)ANTHRACENE	14/14	1.46	33.3	9.32	OU4-LJ-M13-100A	8.51	0.91
BENZO(A)PYRENE	14/14	0.92	23.6	10	OU4-LJ-M09-100A	6.58	0.64
BENZO(B)FLUORANTHENE	14/14	1.9	31.1	13	OU4-LJ-M08-100A	8.99	0.69
BENZO(E)PYRENE	14/14	1.93	26.4	9.50	OU4-LJ-M08-100A	6.36	0.67
BENZO(G,H,I)PERYLENE	14/14	1.6	11.7	5.72	OU4-LJ-M08-100A	2.74	0.48
BENZO(K)FLUORANTHENE	14/14	0.87	11.7	5.73	OU4-LJ-M09-100A	3.32	0.58
BIPHENYL	14/14	1.29	2.81	1.85	OU4-LJ-M14-100A	0.42	0.23
C1-CHRYSENES	14/14	0.1	15.1	5.83	OU4-LJ-M08-100A	4.11	0.71
C1-DIBENZOTHIOPHENES	14/14	0.06	2.2	1.04	OU4-LJ-M08-100A	0.57	0.55
C1-FLUORANTHENES/PYRENES	14/14	2.48	26.6	9.50	OU4-LJ-M13-100A	7.45	0.78
C1-FLUORENES	14/14	2.5	26.6	5.82	OU4-LJ-M08-100A	6.12	1.05
C1-NAPHTHALENES	14/14	4.41	31.3	11	OU4-LJ-M14-100A	8.01	0.72
C1-PHENANTHRENES/ANTHRACENES	14/14	3	21.5	6.56	OU4-LJ-M13-100A	5.39	0.82
C2-CHRYSENES	14/14	0.02	8.76	2.68	OU4-LJ-M08-100A	2.54	0.95
C2-DIBENZOTHIOPHENES	14/14	0.02	4.25	0.62	OU4-LJ-M08-100A	1.14	1.84
C2-FLUORENES	14/14	0.14	15.8	4.08	OU4-LJ-M08-100A	3.79	0.93
C2-NAPHTHALENES	14/14	2.78	18.6	6.57	OU4-LJ-M14-100A	5.48	0.83
C2-PHENANTHRENES/ANTHRACENES	14/14	2.08	19.9	5.14	OU4-LJ-M08-100A	4.75	0.92
C3-CHRYSENES	14/14	0.03	0.31	0.13	OU4-LJ-M06-100A	0.08	0.67

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 3 JUVENILE LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C3-DIBENZOTHIOPHENES	14/14	0.03	4.03	0.46	OU4-LJ-M08-100A	1.10	2.41
C3-FLUORENES	14/14	0.04	14.6	2.20	OU4-LJ-M08-100A	3.94	1.79
C3-NAPHTHALENES	14/14	0.06	11.6	4.50	OU4-LJ-M13-100A	3.35	0.74
C3-PHENANTHRENES/ANTHRACENES	14/14	0.06	13.6	2.40	OU4-LJ-M08-100A	3.48	1.45
C4-CHRYSENES	14/14	0.02	1.19	0.19	OU4-LJ-M06-100A	0.31	1.63
C4-NAPHTHALENES	14/14	0.09	10.9	2.20	OU4-LJ-M08-100A	2.95	1.34
C4-PHENANTHRENES/ANTHRACENES	14/14	0.01	8.49	0.75	OU4-LJ-M08-100A	2.24	3.00
CHRYSENE	14/14	3.05	41.4	16	OU4-LJ-M13-100A	10	0.64
DIBENZO(A,H)ANTHRACENE	14/14	0.04	1.44	0.48	OU4-LJ-M07-100A	0.47	0.97
DIBENZOTHIOPHENE	14/14	0.3	3.06	0.84	OU4-LJ-M13-100A	0.74	0.88
FLUORANTHENE	14/14	6.42	127	28	OU4-LJ-M13-100A	31	1.10
FLUORENE	14/14	1.17	10.8	3.64	OU4-LJ-M13-100A	3.04	0.84
INDENO(1,2,3-CD)PYRENE	14/14	0.06	14.4	5.93	OU4-LJ-M09-100A	3.98	0.67
NAPHTHALENE	14/14	3.84	16.3	7.57	OU4-LJ-M14-100A	3.89	0.51
PERYLENE	14/14	1.35	15	6.04	OU4-LJ-M08-100A	3.55	0.59
PHENANTHRENE	14/14	2.73	62.5	12	OU4-LJ-M13-100A	16	1.36
PYRENE	14/14	5.06	89	23	OU4-LJ-M13-100A	22	0.98
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	14/14	0.48	15	7.59	OU4-LJ-M01-100A	4.15	0.55
1,2,4,5-TETRACHLOROBENZENE	9/14	0.02	0.79	0.28	OU4-LJ-M04-100A	0.20	0.71
2,4'-DDD	3/14	0.57	2.2	0.41	OU4-LJ-M08-100A	0.53	1.31
2,4'-DDT	2/14	0.23	0.87	0.32	OU4-LJ-M08-100A	0.16	0.50
4,4'-DDD	3/14	0.07	2.2	0.39	OU4-LJ-M08-100A	0.52	1.36
4,4'-DDE	14/14	0.87	7.9	2.77	OU4-LJ-M08-100A	1.83	0.66
4,4'-DDT	1/14	0.94	0.94	0.45	OU4-LJ-M08-100A	0.14	0.32
ALPHA-BHC	1/14	1	1	0.28	OU4-LJ-M11-100A	0.10	0.37
ALPHA-CHLORDANE	2/14	0.23	0.88	0.31	OU4-LJ-M08-100A	0.17	0.54
BETA-BHC	8/14	0.1	1.6	0.37	OU4-LJ-M08-100A	0.38	1.05
CIS-NONACHLOR	2/14	0.25	1.4	0.33	OU4-LJ-M08-100A	0.31	0.95
DELTA-BHC	1/14	0.09	0.09	0.14	OU4-LJ-M01-100A	0.02	0.12
DIELDRIN	14/14	0.97	2.9	1.62	OU4-LJ-M01-100A	0.44	0.27
ENDOSULFAN II	2/14	0.12	0.23	0.25	OU4-LJ-M08-100A	0.04	0.17
GAMMA-BHC (LINDANE)	3/14	0.05	0.09	0.19	OU4-LJ-M08-100A	0.06	0.34
GAMMA-CHLORDANE	2/14	0.25	0.38	0.29	OU4-LJ-M08-100A	0.03	0.12
HEPTACHLOR EPOXIDE	1/14	0.24	0.24	0.28	OU4-LJ-M01-100A	0.02	0.08

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 3 JUVENILE LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
HEXACHLOROBENZENE	14/14	0.06	0.51	0.21	OU4-LJ-M01-100A	0.06	0.29
MIREX	1/14	0.33	0.33	0.61	OU4-LJ-M01-100A	0.09	0.15
OXYCHLORDANE	13/14	0.11	1.3	0.50	OU4-LJ-M01-100A	0.24	0.48
PCB-101/90	10/14	0.48	8	1.41	OU4-LJ-M08-100A	1.93	1.37
PCB-105	14/14	0.23	2.9	0.91	OU4-LJ-M08-100A	0.72	0.79
PCB-118	14/14	1.1	7.7	3.53	OU4-LJ-M08-100A	2.08	0.59
PCB-126	1/8	0.64	0.64	0.92	OU4-LJ-M01-100A	0.12	0.13
PCB-128	13/14	0.34	2	0.73	OU4-LJ-M08-100A	0.47	0.65
PCB-138/160	3/14	3.7	13	3.09	OU4-LJ-M08-100A	3.38	1.10
PCB-149/123	13/14	0.07	6.7	0.70	OU4-LJ-M08-100A	1.74	2.47
PCB-153/132	1/14	18	18	3.81	OU4-LJ-M08-100A	4.25	1.12
PCB-156	2/14	0.31	0.89	0.92	OU4-LJ-M08-100A	0.19	0.20
PCB-167	4/14	0.27	0.82	0.83	OU4-LJ-M08-100A	0.25	0.30
PCB-169	7/14	0.03	0.42	0.56	OU4-LJ-M03-100A	0.42	0.75
PCB-18/17	12/14	0.34	9.2	2.98	OU4-LJ-M11-100A-D	2.46	0.82
PCB-180	1/14	6.1	6.1	1.26	OU4-LJ-M08-100A	1.48	1.17
PCB-187	14/14	0.57	8.1	2.73	OU4-LJ-M13-100A	2.31	0.84
PCB-195/208	6/14	0.15	8.1	1.13	OU4-LJ-M13-100A	2.02	1.79
PCB-201/157/173	2/14	0.16	0.33	0.68	OU4-LJ-M01-100A	0.19	0.28
PCB-206	8/14	0.15	19	1.90	OU4-LJ-M13-100A	4.93	2.59
PCB-209	3/14	0.16	4.2	1.21	OU4-LJ-M13-100A	0.91	0.76
PCB-28	7/14	0.1	0.83	0.35	OU4-LJ-M08-100A	0.24	0.68
PCB-44	1/14	0.27	0.27	0.41	OU4-LJ-M13-100A	0.22	0.54
PCB-52	7/14	0.04	1.9	0.73	OU4-LJ-M08-100A	0.45	0.62
PCB-66	12/14	0.14	1.2	0.62	OU4-LJ-M05-100A	0.31	0.50
PCB-77	1/14	0.41	0.41	0.61	OU4-LJ-M14-100A	0.39	0.64
PCB-8/5	12/14	0.35	17	2.33	OU4-LJ-M08-100A	4.30	1.84
PCB-81	2/14	0.18	0.25	0.87	OU4-LJ-M14-100A	0.28	0.33
PENTACHLOROANISOLE	1/14	3.8	3.8	0.39	OU4-LJ-M08-100A	0.98	2.49
TRANS-NONACHLOR	9/14	0.1	1.1	0.22	OU4-LJ-M08-100A	0.26	1.15
Inorganics (mg/kg)							
ARSENIC	14/14	3	5.13	4.17	OU4-LJ-M09-100A	0.71	0.17
CADMIUM	14/14	0.0187	0.0478	0.03	OU4-LJ-M07-100A	0.01	0.28
CHROMIUM	12/14	0.54	1.63	0.72	OU4-LJ-M10-100A	0.34	0.47
COPPER	14/14	37.5	61	47	OU4-LJ-M03-100A	8.23	0.17

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 3 JUVENILE LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
IRON	14/14	5.09	27.7	13	OU4-LJ-M13-100A	5.64	0.44
LEAD	3/14	0.62	2.26	0.37	OU4-LJ-M09-100A	0.66	1.77
MANGANESE	14/14	1.62	9.3	3.52	OU4-LJ-M14-100A	2.16	0.61
MERCURY	14/14	0.48	0.68	0.58	OU4-LJ-M01-100A-D	0.07	0.12
SILVER	14/14	0.49	1.34	0.98	OU4-LJ-M03-100A	0.23	0.23
ZINC	14/14	81	101	91	OU4-LJ-M09-100A	5.71	0.06
Percent Lipids (%)							
% LIPID	14/14	1.8	3.4	2.57	U4-LJ-M01-100A, OU4-LJ-M10-100	0.43	0.17

Notes:
- All results are presented in dry weight
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- This table includes the following monitoring station samples:
  - OU4-LJ-(M01 through M14)-100A
  - OU4-LJ-M01-100A-FD
  - OU4-LJ-M11-100A-FD
- Source data located in the Round 3 Data Package (TtNUS, January 2001)

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 3 JUVENILE LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins/Furans (ng/kg)							
2,3,7,8-TCDD	1/4	0.37	0.37	1.22	OU4-LJ-R03-100A	0.63	0.51
2,3,7,8-TCDF	2/3	1.77	2.87	2.17	OU4-LJ-R02-100A	0.61	0.28
OCDD	1/4	6.41	6.41	9.92	OU4-LJ-R01-100A	3.22	0.33
TOTAL DIOXINS	4/4	0.37	26.09	11	OU4-LJ-R04-100A	12	1.02
TOTAL FURANS	1/4	17.77	17.77	5.21	OU4-LJ-R04-100A	8.38	1.61
TOTAL HPCDD	1/4	8.78	8.78	6.59	OU4-LJ-R01-100A	1.61	0.24
TOTAL TCDD	2/4	0.37	4.11	1.92	OU4-LJ-R02-100A	1.59	0.83
TOTAL TCDF	4/4	1.24	2.87	1.80	OU4-LJ-R02-100A	0.75	0.42
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	4/4	0.72	1.52	1.12	OU4-LJ-R04-100A	0.33	0.29
1-METHYLNAPHTHALENE	4/4	3.4	9.13	5.64	OU4-LJ-R04-100A	2.53	0.45
1-METHYLPHENANTHRENE	4/4	0.6	1.5	0.98	OU4-LJ-R03-100A	0.44	0.45
2,6-DIMETHYLNAPHTHALENE	4/4	1.53	2.2	1.77	OU4-LJ-R01-100A	0.30	0.17
2-METHYLNAPHTHALENE	4/4	4.95	10.2	7.16	OU4-LJ-R04-100A	2.24	0.31
ACENAPHTHENE	4/4	0.71	1.16	0.90	OU4-LJ-R01-100A	0.22	0.25
ACENAPHTHYLENE	4/4	0.64	0.84	0.72	OU4-LJ-R01-100A	0.09	0.12
ANTHRACENE	4/4	0.81	1.39	1.07	OU4-LJ-R03-100A	0.29	0.27
BENZO(A)ANTHRACENE	4/4	1.17	4.94	3.14	OU4-LJ-R03-100A	1.98	0.63
BENZO(A)PYRENE	4/4	1.63	8.32	5.04	OU4-LJ-R02-100A	3.65	0.72
BENZO(B)FLUORANTHENE	4/4	2.75	10.1	5.80	OU4-LJ-R02-100A	3.52	0.61
BENZO(E)PYRENE	4/4	1.8	7.01	4.20	OU4-LJ-R02-100A	2.28	0.54
BENZO(G,H,I)PERYLENE	4/4	0.73	3.56	2.24	OU4-LJ-R02-100A	1.22	0.55
BENZO(K)FLUORANTHENE	4/4	2.31	4.67	3.32	OU4-LJ-R03-100A	1.20	0.36
BIPHENYL	4/4	1.34	2.12	1.83	OU4-LJ-R01-100A	0.35	0.19
C1-CHRYSENES	4/4	0.11	4.06	1.76	OU4-LJ-R02-100A	1.97	1.12
C1-DIBENZOTHIOPHENES	4/4	0.28	0.89	0.63	OU4-LJ-R03-100A	0.28	0.45
C1-FLUORANTHENES/PYRENES	4/4	3.19	8.81	5.66	OU4-LJ-R02-100A	2.39	0.42
C1-FLUORENES	4/4	3.86	5.27	4.37	OU4-LJ-R04-100A	0.62	0.14
C1-NAPHTHALENES	4/4	8.35	19.3	13	OU4-LJ-R04-100A	4.74	0.37
C1-PHENANTHRENES/ANTHRACENES	4/4	2.97	5.36	3.98	OU4-LJ-R03-100A	1.11	0.28
C2-CHRYSENES	4/4	0.13	1.8	0.74	OU4-LJ-R02-100A	0.77	1.05
C2-DIBENZOTHIOPHENES	4/4	0.03	0.3	0.10	OU4-LJ-R02-100A	0.14	1.38
C2-FLUORENES	4/4	2.36	3.81	3.00	OU4-LJ-R04-100A	0.71	0.24
C2-NAPHTHALENES	4/4	3.85	13	6.65	OU4-LJ-R04-100A	4.29	0.65

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 3 JUVENILE LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C2-PHENANTHRENES/ANTHRACENES	4/4	2.9	4.3	3.57	OU4-LJ-R03-100A	0.63	0.18
C3-CHRYSENES	4/4	0.03	0.18	0.11	OU4-LJ-R04-100A	0.07	0.62
C3-DIBENZOTHIOPHENES	4/4	0.03	0.16	0.08	OU4-LJ-R02-100A	0.06	0.80
C3-FLUORENES	4/4	0.24	0.97	0.45	OU4-LJ-R01-100A	0.35	0.79
C3-NAPHTHALENES	4/4	3.06	10.2	5.29	OU4-LJ-R04-100A	3.36	0.63
C3-PHENANTHRENES/ANTHRACENES	4/4	0.04	1.2	0.57	OU4-LJ-R02-100A	0.61	1.06
C4-CHRYSENES	4/4	0.06	0.13	0.10	OU4-LJ-R04-100A	0.03	0.33
C4-NAPHTHALENES	4/4	0.13	1.79	0.96	OU4-LJ-R02-100A	0.94	0.98
C4-PHENANTHRENES/ANTHRACENES	4/4	0.03	0.08	0.05	OU4-LJ-R01-100A	0.02	0.39
CHRYSENE	4/4	4.83	15.1	9.07	OU4-LJ-R02-100A	4.97	0.55
DIBENZO(A,H)ANTHRACENE	4/4	0.07	0.24	0.12	OU4-LJ-R02-100A	0.08	0.73
DIBENZOTHIOPHENE	4/4	0.35	0.4	0.37	OU4-LJ-R03-100A	0.02	0.06
FLUORANTHENE	4/4	9.78	20.7	15	OU4-LJ-R02-100A	4.98	0.34
FLUORENE	4/4	1.76	2.15	1.90	OU4-LJ-R04-100A	0.18	0.09
INDENO(1,2,3-CD)PYRENE	4/4	0.71	3.42	1.90	OU4-LJ-R02-100A	1.39	0.73
NAPHTHALENE	4/4	6.15	9.05	7.89	OU4-LJ-R04-100A	1.25	0.16
PERYLENE	4/4	1.97	4.51	3.54	OU4-LJ-R02-100A	1.12	0.32
PHENANTHRENE	4/4	3.05	4.11	3.65	OU4-LJ-R03-100A	0.50	0.14
PYRENE	4/4	7.84	18.6	13	OU4-LJ-R02-100A	4.72	0.37
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	4/4	3.9	13	9.25	OU4-LJ-R03-100A, OU4-LJ-R04-100A	4.52	0.49
2,4'-DDT	1/4	0.19	0.19	0.25	OU4-LJ-R02-100A	0.04	0.16
4,4'-DDE	4/4	1.8	3.9	2.78	OU4-LJ-R02-100A	1.03	0.37
ALPHA-CHLORDANE	2/4	0.21	0.21	0.23	OU4-LJ-R01-100A, OU4-LJ-R04-100A	0.02	0.10
CIS-NONACHLOR	2/4	0.1	0.13	0.17	OU4-LJ-R03-100A	0.07	0.40
DIELDRIN	4/4	1.3	1.8	1.48	OU4-LJ-R02-100A	0.22	0.15
HEXACHLOROBENZENE	4/4	0.15	0.27	0.21	OU4-LJ-R02-100A	0.06	0.28
OXYCHLORDANE	4/4	0.61	1.6	0.94	OU4-LJ-R03-100A	0.45	0.48
PCB-101/90	4/4	0.38	0.9	0.55	OU4-LJ-R01-100A	0.24	0.44
PCB-105	4/4	0.54	1.2	0.85	OU4-LJ-R02-100A	0.35	0.41
PCB-118	4/4	1.7	5	3.30	OU4-LJ-R02-100A	1.45	0.44
PCB-128	4/4	0.37	0.91	0.60	OU4-LJ-R02-100A	0.24	0.40
PCB-149/123	4/4	0.12	0.25	0.16	OU4-LJ-R01-100A	0.06	0.39

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 3 JUVENILE LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 3 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-156	2/4	0.32	0.59	0.68	OU4-LJ-R04-100A	0.28	0.41
PCB-167	2/4	0.32	0.55	0.67	OU4-LJ-R02-100A	0.28	0.43
PCB-169	1/4	0.05	0.05	0.70	OU4-LJ-R02-100A	0.43	0.62
PCB-18/17	1/4	0.88	0.88	2.03	OU4-LJ-R02-100A	0.77	0.38
PCB-187	4/4	1	2.4	1.73	OU4-LJ-R02-100A	0.59	0.34
PCB-195/208	2/4	0.14	0.16	0.45	OU4-LJ-R02-100A	0.35	0.77
PCB-206	2/4	0.07	0.12	0.45	OU4-LJ-R04-100A	0.41	0.91
PCB-44	2/4	0.15	0.63	0.34	OU4-LJ-R02-100A	0.29	0.85
PCB-66	4/4	0.32	0.81	0.53	OU4-LJ-R02-100A	0.21	0.40
PCB-77	1/4	0.08	0.08	0.71	OU4-LJ-R01-100A	0.42	0.59
PCB-8/5	4/4	0.52	1.8	1.15	OU4-LJ-R01-100A	0.57	0.49
TRANS-NONACHLOR	4/4	0.16	0.22	0.19	OU4-LJ-R03-100A	0.03	0.14
Inorganics (mg/kg)							
ARSENIC	4/4	4.11	4.52	4.23	OU4-LJ-R01-100A	0.20	0.05
CADMIUM	4/4	0.0202	0.0332	0.03	OU4-LJ-R03-100A	0.01	0.21
CHROMIUM	4/4	0.61	0.87	0.69	OU4-LJ-R03-100A	0.12	0.18
COPPER	4/4	31.8	55.4	43	OU4-LJ-R01-100A	9.71	0.23
IRON	4/4	9.56	24.9	15	OU4-LJ-R01-100A	6.98	0.47
LEAD	1/4	0.66	0.66	0.25	OU4-LJ-R04-100A	0.28	1.13
MANGANESE	4/4	1.66	3.82	2.91	OU4-LJ-R01-100A	1.08	0.37
MERCURY	4/4	0.64	0.96	0.77	OU4-LJ-R01-100A	0.14	0.18
SILVER	4/4	0.72	1.63	1.05	OU4-LJ-R01-100A	0.41	0.39
ZINC	4/4	77.1	101	89	OU4-LJ-R04-100A	11	0.12
Percent Lipids (%)							
% LIPID	4/4	1.6	2.6	2.13	OU4-LJ-R03-100A	0.43	0.20

Notes:
- All results are presented in dry weight
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- This table includes the following reference station samples:
  - OU4-LJ-(R01 through R04)-100A
- Source data located in the Round 3 Data Package (TtNUS, January 2001)

TABLE A.3-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 1 OF 2

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
1,2,3,4,6,7,8-HPCDD	11.9 - 69.0	35.1							40.8	48.8	53.3	6.1	109.0 U	121.9		
1,2,3,4,6,7,8-HPCDF	3.2 - 17.5	9.3							10.8	17.5	18.8	2.9	250.0 U	18.6		
1,2,3,4,7,8,9-HPCDF	0.6 - 2.3	1.2							0.6	1.3	1.2	0.7 U	26.5	2.0		
1,2,3,4,7,8-HXCDD	0.6 - 2.3	1.3							0.7	1.1	1.0	0.5	16.5	1.0		
1,2,3,4,7,8-HXCDF	0.6 - 2.3	1.3							0.6	2.1	3.7	0.6	2.2 U	2.4		
1,2,3,6,7,8-HXCDD	0.6 - 2.9	2.1							2.0	2.7	3.4	1.1	30.0	5.1		
1,2,3,6,7,8-HXCDF	0.6 - 2.3	1.4							0.5	2.0	3.0	0.7 U	127.7	1.6		
1,2,3,7,8,9-HXCDD	0.7 - 2.6	1.5							1.1	1.7	2.1	0.5	28.5	3.3		
1,2,3,7,8,9-HXCDF	0.6 - 2.2	1.2							0.5 U	1.2 U	0.3	0.7 U	2.2 U	0.7		
1,2,3,7,8-PECDD	0.6 - 2.2	1.3							0.4	1.1	0.9	0.5	2.2 U	0.6 U		
1,2,3,7,8-PECDF	0.7 - 2.3	1.3							0.2 U	1.0	1.7	0.9	68.5	0.6 U		
2,3,4,6,7,8-HXCDF	0.6 - 2.2	1.3							0.5	2.2	4.3	0.5	151.5	1.2		
2,3,4,7,8-PECDF	0.7 - 2.3	1.3							0.4	1.5	3.3	0.6 U	158.8	0.6 U		
2,3,7,8-TCDD	0.1 - 0.5	0.3							0.4	0.3	0.2	0.1 U	0.4 U	0.1 U		
2,3,7,8-TCDF	0.2 - 1.0	0.7							0.6	1.8	2.0	0.6	67.3	0.1 U		
OCDD	152.5 - 777.3	358							343	493	424	75	504 U	1022		
OCDF	3.5 - 29.1	14.4							14.1	24.9	20.8	6.5	77.5 U	35.0		
TOTAL DIOXINS	187.3 - 1011.5	466							466	691	594	103	854 U	1426		
TOTAL FURANS	17.3 - 90.8	44.7							54.1	123.5	124.7	24.0	3642	184.7		
TOTAL HPCDD	28.3 - 185.5	88.4							95.9	132.3	125.1	19.2	233 U	353.9		
TOTAL HPCDF	5.7 - 39.1	19.0							25.3	38.4	38.1	6.3	612	72.5		
TOTAL HXCDD	7.5 - 45.3	17.7							22.3	28.4	43.0	10.5	192	48.2		
TOTAL HXCDF	4.4 - 13.5	8.4							11.2	26.6	35.1	6.2	638	36.4		
TOTAL PECDD	0.6 - 2.2	1.6							0.4	1.1	8.4	0.5	2 U	0.6 U		
TOTAL PECDF	2.5 - 7.4	4.2							2.8	24.1	18.0	7.1	1138	13.7		
TOTAL TCDD	0.7 - 2.7	1.8							2.0 U	4.4	2.5	1.2	41	1.8		
TOTAL TCDF	1.4 - 3.7	2.2							1.2	10.5	29.8	2.5	1100	4.8		
Semi-Volatile Organics (ug/kg)																
1,6,7-TRIMETHYLNAPHTHALENE	1.9 - 14.4	8.3	26.8	3.3	7.5	6.6	7.8	5.9	6.3	9.5	6.5	15.2	38.3	25.4	17.0	16.7
1-METHYLNAPHTHALENE	3.5 - 20.7	11.2	71.1	6.7	19.3	13.2	15.2	9.6	8.5	19.5	23.1	16.8	66.5	99.0	12.4	67.9
1-METHYLPHENANTHRENE	5.8 - 81.2	45.7	179.0	11.1	38.1	37.0	27.2	29.0	25.4	35.7	14.2	55.4	122.7	234.7	98.0	281.6
2,6-DIMETHYLNAPHTHALENE	5.5 - 14.8	9.2	39.3	4.9	12.5	10.5	9.2	10.1	7.8	14.6	12.6	15.2	70.8	48.5	15.0	20.0
2-METHYLNAPHTHALENE	5.5 - 33.8	16.9	96.9	11.0	32.3	23.4	21.1	17.5	13.2	33.4	28.7	24.5	148.8	127.7	18.2	81.1
ACENAPHTHENE	1.9 - 32.4	16.4	245.9	5.1	34.3	18.7	14.3	10.3	13.2	36.0	18.2	24.1	18.3	966.6	174.7	27.0
ACENAPHTHYLENE	12.0 - 129.3	62.1	197.2	23.9	69.1	62.9	64.9	47.4	37.4	83.5	28.1	78.7	81.2	153.4	82.3	68.2
ANTHRACENE	15.7 - 254.1	127	636.8	38.2	148.5	150.2	96.1	85.8	70.4	183.5	64.0	259.2	257.3	872.3	317.9	157.6
BENZO(A)ANTHRACENE	27.4 - 528.7	269	1054.6	72.3	272.4	399.4	218.2	211.7	167.9	330.8	144.5	455.3	546.2	2467.1	485.0	277.7
BENZO(A)PYRENE	37.4 - 666.0	337	1275.3	53.9	167.8	381.0	158.1	98.9	114.7	260.2	64.5	402.0	896.2	3317.5	255.9	205.2
BENZO(B)FLUORANTHENE	44.7 - 808.8	385	1318.7	119.8	500.9	618.3	322.0	367.2	274.5	577.8	224.4	536.5	850.0	3120.5	566.1	319.0
BENZO(E)PYRENE	23.0 - 393.7	187	918.3	64.6	265.1	306.0	171.6	187.2	118.7	311.8	119.0	279.1	392.3	1471.1	296.3	191.9
BENZO(G,H,I)PERYLENE	15.2 - 332.1	164	843.7	67.8	280.9	307.9	177.0	199.7	130.0	305.9	124.5	285.7	349.6	1422.7	213.2	178.4
BENZO(K)FLUORANTHENE	12.9 - 218.8	107	443.0	36.9	145.2	193.8	117.6	120.8	59.5	178.4	79.3	199.7	216.2	1059.5	180.8	109.5
BIPHENYL	2.2 - 7.4	4.3	24.8	2.3	6.5	4.2	4.4	4.8	3.5	7.3	4.0	5.4	33.8	30.4	5.8	6.3
C1-CHRYSENES	18.9 - 308.8	131	913.8	64.7	198.4	220.4	162.2	152.7	100.7	207.4	103.7	264.8	291.5	971.3	303.1	275.4
C1-DIBENZOTHIOPHENES	2.3 - 29.4	15.6	50.3	5.1	15.8	12.7	11.7	10.3	10.8	15.0	7.2	18.0	50.8	81.6	32.6	15.2
C1-FLUORANTHENES/PYRENES	27.0 - 413.7	191	1526.1	73.2	324.2	306.8	258.9	253.9	176.2	308.1	141.1	385.6	403.8	1487.2	623.7	359.7
C1-FLUORENES	8.7 - 66.9	38.6	119.1	8.1	26.3	20.2	22.8	13.4	16.8	21.3	14.9	48.5	71.9	196.4	86.0	57.1
C1-NAPHTHALENES	9.0 - 54.5	28.2	167.6	17.7	51.6	36.5	36.2	27.2	21.7	53.0	51.8	41.4	215.0	227.0	30.7	149.0
C1-PHENANTHRENES/ANTHRACE	16.8 - 239.9	136	691.6	41.4	130.4	135.6	105.2	92.8	88.2	137.3	63.8	199.7	323.1	831.5	302.4	368.4
C2-CHRYSENES	8.2 - 133.4	57.0	362.9	28.5	78.2	74.2	63.1	69.0	44.7	92.2	42.9	103.9	128.1	249.8	97.3	112.1
C2-DIBENZOTHIOPHENES	3.9 - 43.5	21.7	56.2	7.2	20.0	16.1	15.8	15.3	15.4	19.9	8.6	19.0	62.3	45.8	34.2	19.7
C2-FLUORENES	16.5 - 64.7	42.5	126.6	15.4	35.2	24.9	30.2	29.7	29.5	36.4	20.4	43.2	125.8	129.9	49.6	57.9
C2-NAPHTHALENES	15.8 - 63.1	35.9	163.0	19.3	44.7	43.3	45.5	33.0	22.9	54.0	51.1	72.9	238.5	187.1	48.6	120.9
C2-PHENANTHRENES/ANTHRACE	15.7 - 180.9	100.8	524.3	28.9	87.8	83.8	82.0	62.4	74.3	91.0	42.6	112.8	210.8	344.5	175.9	224.7
C3-CHRYSENES	0.9 - 1.5	1.3	9.0	3.5	7.9	7.4	5.3	5.1	3.1	10.9	3.3	8.4	7.7	14.7	4.6	4.0
C3-DIBENZOTHIOPHENES	3.2 - 33.6	14.9	52.7	5.3	19.7	12.3	12.3	12.4	13.1	23.7	7.3	12.4	43.1	33.8	46.2	17.2
C3-FLUORENES	11.4 - 65.8	34.2	100.9	10.7	19.7	14.2	15.4	16.4	20.5	25.8	13.2	31.1	105.0	115.0	55.8	30.0
C3-NAPHTHALENES	11.4 - 67.8	40.4	140.6	16.3	43.1	39.9	44.9	31.2	26.8	56.2	42.9	90.6	263.1	116.3	66.1	79.4
C3-PHENANTHRENES/ANTHRACE	8.0 - 109.4	59.2	313.3	17.7	57.6	43.4	48.1	43.8	47.0	73.3	23.0	51.2	134.2	139.8	86.8	166.4
C4-CHRYSENES	0.2 - 5.5	2.9	9.6	4.6	9.8	8.8	5.3	7.9	3.6	7.1	2.9	4.1	2.7	27.0	4.2	3.4
C4-NAPHTHALENES	5.5 - 40.0	24.6	69.3	10.9	21.9	18.7	19.8	17.2	11.6	27.6	17.8	46.3	186.2	42.5	44.3	65.6
C4-PHENANTHRENES/ANTHRACE	4.0 - 37.0	22.2	149.1	10.0	45.8	36.8	23.5	42.2	40.8	49.9	16.4	34.0	76.5	45.8	59.5	62.9
CHRYSENE	32.8 - 524.0	258	1043.0	80.0	309.0	376.3	206.9	225.8	178.0	430.5	157.6	386.9	738.5	2634.8	539.1	261.2
DIBENZO(A,H)ANTHRACENE	4.6 - 97.2	45.1	178.0	15.1	67.1	92.2	45.3	43.3	35.4	75.8	30.5	73.2	103.8	355.3	54.9	44.2
DIBENZOTHIOPHENE	1.7 - 24.7	13.4	73.5	3.9	13.6	12.3	10.0	10.2	8.3	16.7	7.3	20.8	31.4	201.5	49.7	10.5
FLUORANTHENE	54.4 - 877.9	451	2208.5	106.4	539.3	734.7	377.2	414.4	319.9	701.4	262.6	724.1	919.2	5838.6	1695.3	383.3
FLUORENE	4.6 - 63.6	35.6	270.5	9.9	44.3	33.4	27.5	21.9	27.8	45.4	22.3	59.3	63.8	909.9	158.2	45.3
INDENO(1,2,3-CD)PYRENE	25.3 - 395.4	199	745.2	67.6	311.3	183.1	192.6	209.8	105.4	309.1	130.3	323.0	434.6	1635.3	225.2	182.9
NAPHTHALENE	8.6 - 60.6	29.8	141.1	15.1	48.8	33.8	32.8	22.6	21.7	38.3	32.2	40.6	190.0	252.1	31.9	90.1
PERYLENE	15.2 - 127.5	70.8	226.7	28.3	89.6	74.0	71.6	69.3	73.9	92.2	48.6	89.9	115.0	481.0	94.3	56.7
PHENANTHRENE	21.7 - 387.3	208	1697.5	54.1	233.3	248.8	159.8	162.0	133.3	320.4	125.6	368.1	473.1	4122.6	783.0	347.2
PYRENE	50.3 - 771.9	401	2222.1	78.0	532.1	606.7	363.3	382.7	290.8	613.0	243.6	656.9	757.7	4796.0	1275.6	414.0
LMH PAH		496	3285.8	157.3	610.6	571.2	416.4	367.6	317.2	740.4	319.0	854.4	1232.5	7404.7	1566.2	816.5

TABLE A.3-1

AVERAGE NORMALIZED SEDIMENT CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
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Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
HMW PAH		1762	7981 5	405.6	1887.8	2590.2	1369.1	1376.8	1106.7	2411 6	903.2	2698 4	3961 5	19409 2	4305 8	1585 5
TOTAL PAH		2258	11267 3	562.9	2498.4	3161.4	1785.5	1744.4	1423.9	3152 0	1222.2	3552.8	5194 0	26813 9	5871 9	2402 0
Pesticides/PCBs (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	0 16 - 0.28	0.20	0 10 U	0.09	0.10 U	0.15 U	0.04 U	0.14 U	0 09 U	0.17	0.13	0 06 U	2 50	0.05	0.16	0.06
1,2,4,5-TETRACHLOROBENZENE	0.75 - 1.33	1.03	0.81	0.20	0 65 U	0 46 U	0.34 U	0.19 U	0.56	0 37	0 45	0 31	3 46 U	0.71	0 22	0 48
2,4'-DDD	0 18 - 1.81	1.09	11 29	0.60	2.97	8.43	1 21	6.62	1 16	38 04	1.05	5 38	3 85	4 03	1.72	0 69
2,4'-DDE	0 05 - 0 50	0:21	0.46	0.05	0.09	1 20	0.11	0.15	0.08	1.47	0 09	0 34	1 58	0 04 U	0 04	0 03
2,4'-DDT	0.03 - 0.69	0.26	11 27	0.66	0.57	13 85	0.10	0.33	0.18	26 88	0.30	1 87	3 27	0.21	0.03	0.04
4,4'-DDD	0.66 - 0 77	0 72	29 29	1.16	5.51	27.71	1.20	11 12	1 50	99 50	1 50	14 82	4 62	2 08	0 72	0 43
4,4'-DDE	0.59 - 0.89	0.68	13 42	1.17	2.15	65.11	1.00	2 28	1.38	25 21	0.92	4.64	3 27	1 33	0 63	0.50
4,4'-DDT	0.12 - 2.10	0.90	57 61	4.31	1.59	60 37	0.56	7.71	1.01	125 57	1 49	20 45	2 85	1 14	0.62	0.31
ALDRIN	0.02 - 0.13	0.07	0.03 U	0.03 U	0.02	0.03	0.02	0 04	0.03 U	0.06	0.02 U	0 03	0.09 U	0 02	0 03 U	0 02
ALPHA-BHC	0.04 - 0.14	0.10	0 06	0.03	0.09	0.07	0.06	0.06	0.05	0.07	0 04	0.06	0 08 U	0.17	0.03	0.06
ALPHA-CHLORDANE	0.15 - 0 50	0.33	3.17	0.08	0.65	0.42	0.21	0.17	0.19	2 01	0.53	2 67	4 62	0.72	0 34	0 14
BETA-BHC	0.09 - 0.39	0 23	0.77	1.03	0.25	0.09 U	0.10 U	0.24	0.21	0.20	0.17	0.39	0 31 U	0 09 U	0.60	0 12
CHLORPYRIFOS	0 29 - 1.01	0.59 U	0.15 U	0.15 U	0.95 U	0.32 U	0.34 U	0.97 U	0.20 U	0 38 U	0.48	0 20 U	1 02 U	0 28 U	0 13 U	0 15 U
CIS-NONACHLOR	0.09 - 0.25	0 15	0.55	0.08	0.40	0.71	0.12	0.13	0 11	0.61	0.15	0 28	2 23	0 36	0 10	0.05
DELTA-BHC	0.02 - 0 09	0 05	0.03	0.02 U	0.03	0 05	0.02	0.07	0.06	0.04	0.04	0.07	0 07 U	0 02 U	0 04	0 01
DIELDRIN	0.04 - 0.13	0 10	22 26	0.35	0.89	0.88	0.03	0.06	0.16	0 12	0 02	0 13	10 38	0 11	0 02	0.04
ENDOSULFAN II	0.14 - 0 44	0 25	2.05	0.24	0.82	0.72	0.45	0.43	0.46	0 61	0.34	0 43	0 65	0.21	0.87	0 30
ENDRIN	0.07 - 0.25	0.14	0.50	0.07 U	0.07 U	0 06 U	0.07 U	0.11 U	0 06 U	0 12 U	0.05 U	0.08 U	0.19 U	0 06 U	0 06 U	0 04 U
GAMMA-BHC (LINDANE)	0.13 - 0 45	0.25	0.19	0.12	0.12 U	0.12	0.11	0.19	0.11 U	0 21 U	0.08 U	0.12	0 35 U	0 11 U	0 12	0 07 U
GAMMA-CHLORDANE	0.07 - 0.21	0.12	3 12	0.09	0 03 U	0.03 U	0.04	0.08	0.09	2 48	0.64	2 85	1.04	0 09	0.04	0 04
HEPTACHLOR	0.08 - 0.21	0.16	0.30	0 09 U	0.35	0.17	0.11	0.09	0 08 U	0.14	0.08	0.19	2 23	0.08 U	0 08 U	0 05
HEPTACHLOR EPOXIDE	0 01 - 0 06	0 03 U	0.01 U	0.02 U	0 01 U	0.01 U	0.01 U	0 02 U	0.01 U	0 03 U	0.02	0 01	0 04 U	0.01 U	0.01 U	0 01 U
HEXACHLOROBENZENE	0.02 - 0 32	0 11	0.06	0.03	1 17	0.08	0.05	0 06	0.02	0 07	0.11	0 06	1 35	0 02	0 15	0 02
MIREX	0 02 - 0 06	0 04	0.02 U	0.02 U	0 01 U	0.07	0 01 U	0.04	0 01 U	0.03	0.01 U	0.02 U	0.04 U	0 01 U	0 01 U	0.01 U
OXYCHLORDANE	0 02 - 0 16	0 08	0.24	0.01	0 03	0.04	0 04	0 07	0 05	0 10	0.02	0 09	0 02 U	0 23	0 06	0 09
PCB-101/90	0 49 - 1 16	0.86	0.94	0.50	4 81	1.78	0.70	0.87	0.99	14 44	1.53	2.02	50 00	4 10	1 22	0 50
PCB-105	0 12 - 0.56	0 34	0.56	0 28	2.39	0.47	0.29	0.49	0 54	7 83	0.78	1.03	11 15	1.35	0.66	0.23
PCB-114	0.08 - 0 34	0 19 U	0.09 U	0 09 U	0.09 U	0 08 U	0.09 U	0 15 U	0.08 U	0 16 U	0.06 U	0 10 U	0 27 U	0 08 U	0.08 U	0.06 U
PCB-118	0 31 - 1.32	0 85	1.04	0.36	1 84	0.91	0 66	0.85	1.09	9 11	1.12	1.77	26 54	4 29	1 03	0 63
PCB-126	0.08 - 0 34	0 19 U	0.09 U	0.09 U	0 59	1.38	0.09 U	0.15 U	0.08 U	0 16 U	0.06 U	0 10 U	0 27 U	0 09	0 08 U	0 06 U
PCB-128	0 11 - 0 36	0 22	0.54	0.15	1.30	1.00	0 20	0 47	0.34	3 26	0 42	0 51	9 23	1 00	0 36	0 17
PCB-138/160	0 33 - 1 46	0 96	1 88	0 70	9 97	8.13	1.29	1 46	1 60	20 78	2 41	2 49	80 77	6 90	1 98	0 79
PCB-149/123	0 21 - 0 74	0 49	1.67	0.56	7 52	3.99	0.77	1.27	0.81	15 06	1 59	1 56	25 38	4 13	1 52	0 45
PCB-153/132	0 38 - 1 37	0 87	1.93	0 75	11 27	7 74	1.33	1 65	1.31	20 95	2 25	2 38	65 38	9 91	1 99	0 75
PCB-156	0 10 - 0.63	0 34	1.16	0.20	1.56	0 87	0 29	0 51	0 35	2.91	0.67	0.37	5 77	3 26	0.91	0 30
PCB-167	0 32 - 0.79	0 58	1.97	0 48	0 59	0.44	0.16	0.72	0.48	1.72	0.46	2 30	2 73	1 50	1 07	0 66
PCB-169	0.01 - 0.26	0.09 U	0.05 U	0 01 U	0.03 U	0.04 U	0.06	0.05 U	0.02 U	0 02 U	0 02 U	0.05 U	0 27 U	0.03 U	0.04 U	0.01 U
PCB-170/190	1.83 - 8.10	4 86	23.10	4.02	2.45	2.69	0.52	8.74	3.25	20.05	3.69	7 72	21.54	41 43	17 55	3 92
PCB-18/17	0 05 - 0 42	0.28	0.05	0.07	0.30	0.23	0.17	0.53	0.44	1.19	0 25	0.07	0.58	0 77	0.46	0 06
PCB-180	0 21 - 0.71	0.46	1.08	0 45	9 46	7 29	0.72	1.13	0.79	15 92	1 98	1.15	38 46	7 51	1 37	0 39
PCB-187	0 13 - 0 37	0 28	0.74	0.25	8 67	5 11	0.57	0.77	0.67	9 18	1.42	0.82	37 31	4 87	0.97	0 27
PCB-189	0 16 - 0 34	0.24	0.71	0.08	0 35	0.36	0.12	0.12	0.15	0.55	0.15	0.14	1 15	0 49	0 22	0 09
PCB-195/208	0 09 - 0 24	0.18	1 06	0 11	2 15	1.82	0.25	0 34	0.34	4 01	1.28	0 27	7 69	2 81	0 53	0 16
PCB-201/157/173	0 05 - 0.39	0.23	0.74	0.05	1 04	0 69	0 22	0 29	0 29	1.03	0.38	0.12	4 81	1 83	0 34	0 17
PCB-206	0.13 - 0.17	0 15	1 64	0 13	2 60	2 63	0 25	0.36	0.61	7 68	3 61	0.22	11 92	4 41	0.55	0 21
PCB-209	0 37 - 0 76	0 53	1.51	0 20	1 17	2.54	0.55	0 57	0 49	2 47	0 94	0.56	3 85	9 28	0.63	0 31
PCB-28	0 13 - 0 40	0 27	0 26	0.15	0.50	0 14 U	0 37	0.25	0.75	1 04	0.83	0.55	1 96	1.82	0 91	0 22
PCB-44	0 21 - 0.31	0 24	0.19	0 12	0 33	0 18	0 17	0.79	0.40	2 80	0.91	0 29	3 15	1 47	0 48	0 14
PCB-52	0 34 - 4 40	1 55	0.81	0 41	1 46	1 50	0 42	0 85	0.72	7.19	0 86	0 80	13 08	2 73	1 30	0 33
PCB-66	0 16 - 0 49	0 31	1 09	0 12	0 65	0.08	0.13	0 30	0 45	1 95	0 50	0 51	3 42	2.82	0 56	0 29
PCB-77	0.02 - 0 06	0 03	0 07 U	0.01 U	0 08	0 05	0 03	0 05	0 01	0 05	0.02	0 02 U	0 27 U	0 03	0 03 U	0 06 U
PCB-8/5	0 14 - 0 67	0 37	0 38	0.31	0 15	0 27	0.23	0.33	0.35	0 46	0.25	0 43	0 29 U	2 65	0 61	0 49
PCB-81	0 05 - 0.27	0.16	0 14	0.07	1.04	0 71	0.05 U	0 15 U	0 08 U	0 17	0 04	0 06	11.15	0 15	0 10	0 04
PENTACHLOROANISOLE	0 04 - 0.14	0 08	0.05 U	0 02 U	0 07 U	0 05 U	0 03 U	0.05 U	0 03 U	0.46	0 04 U	0 07	1 36	0 07 U	0 04 U	0 02 U
PENTACHLOROBENZENE	0 17 - 0 32	0 21 U	0 05 U	0 05 U	0 06 U	0 07 U	0 05 U	0 09 U	0 06 U	0.10 U	0 09 U	0 06 U	1 27 U	0 13 U	0 06 U	0 04 U
TRANS-NONACHLOR	0 07 - 0 30	0.17	1.14	0 06	0.11	0 11	0 07	0 08	0 09	1.31	0 29	1.18	1 12	0 16	0 03	0 04
Inorganics (mg/kg)																
ALUMINUM	1 0 - 1.0	1.0	1.0	1.0	1 0	1 0	1 0	1 0	1 0	1.0	1.0	1 0	1 0	1 0	1 0	1 0
ARSENIC	0.00014 - 0.00026	0 00021	0 00029	0 00028	0 00035	0 00047	0 00026	0 00028	0.00025	0 00025	0.00032	0.00026	0 00052	0 00030	0 00034	0 00024
CADMIUM	0 000003 - 0.000010	0 00001	0 00001	0 00001	0 00001	0 00001	0 00001	0 00001	0 00001	0 00001	0 00001	0 00001	0 00003	0 00001	0 00001	0.00001
CHROMIUM	0 00086 - 0 00149	0 00110	0 00130	0.00164	0 00203	0 00181	0 00152	0 00124	0.00145	0 00240	0 00197	0 00126	0 00301	0 00209	0 00160	0 00142
COPPER	0 00009 - 0 00042	0 00027	0 00076	0 00089	0 01713	0 19053	0.00070	0 00040	0 00047	0 00529	0 00412	0 00053	0 04280	0 00444	0 00099	0 00061
IRON	0 29 - 0.42	0 36061	0.54973	0 49395	0 69374	1.15237	0 50673	0.46300	0 44384	0 97877	0 70647	0 48592	1 32052	0 53266	0 58888	0 42919
LEAD	0.00062 - 0.00165	0 00114	0.00196	0.00169	0 00368	0 00854	0 00139	0.00101	0.00113	0 00284	0.00181	0.00190	0 03660	0 00481	0.00132	0 00146
MANGANESE	0 00684 - 0 00887	0 00773	0.01853	0 00926	0 00782	0 01216	0 00592	0 01168	0 00626	0 01049	0 00877	0 00749	0 02439	0 00813	0 00636	0 00641
MERCURY	0.000002 - 0.000006	0.00000	0.00001	0 00001	0 00001	0 00003	0.00000	0 00001	0 00000	0 00001	0 00000	0 00000	0 00003	0 00001	0 00001	0 00001
NICKEL	0 00019 - 0.00039	0.00031	0.00037	0 00046	0 00116	0 00211	0 00041	0 00044	0 00036	0 00146	0 00092	0.00046	0 00163	0 00096	0 00046	0 00043
SILVER	0.00004 - 0 00006	0 00006	0.00007	0 00007	0 00008	0 00012	0 00007	0 00007	0 00006	0 00008	0 00008	0 00007	0 00020	0 00007	0 00007	0 00007
ZINC	0.00042 - 0 00124	0 00092	0.00145	0 00146	0 00691	0 02502	0 00154	0 00100	0 00116	0 00830	0 00279	0 00142	0 01516	0 01711	0 00206	0 00133

Footnotes:
Shaded values indicate concentrations that are five times greater than concentrations at the reference stations for dioxins and metals; two times greater for semivolatiles; 10 times greater for pesticides/PCBs
Metal concentrations are normalized by dividing the parameter concentration by the aluminum concentration.
Normalized concentrations were determined by dividing sediment concentration by percent TOC.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station One-half of the method detection limit was used to calculate the average for non-detected data

TABLE A.3-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station (1)													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
1,2,3,4,6,7,8,9-OCDD	3.878 - 40.155	19.02							7.35 U	11.15	39.35	22.39	11.65	30.22		
1,2,3,4,6,7,8,9-OCDF	1.619 - 11.211	6.62 U							7.35 U	5.02 U	5.53 U	6.50 U	7.48 U	10.76		
1,2,3,4,6,7,8-HPCDD	1.159 - 5.743	3.63							3.27	3.33	7.52	2.90		3.00		
1,2,3,4,6,7,8-HPCDF	0.754 - 5.602	3.31 U							3.67 U	2.51 U	2.14	1.69	3.74 U	3.76 U		
1,2,3,4,7,8,9-HPCDF	1.159 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	3.25 U	3.74 U	3.76 U		
1,2,3,4,7,8-HXCDD	1.018 - 5.602	3.31 U							3.67 U	2.51 U	2.69	3.25 U	3.74 U	3.76 U		
1,2,3,4,7,8-HXCDF	1.159 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	3.25 U	3.74 U	3.76 U		
1,2,3,6,7,8-HXCDD	0.681 - 5.602	3.31 U							3.67 U	2.51 U	2.74	1.51	3.74 U	3.76 U		
1,2,3,6,7,8-HXCDF	0.833 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	3.25 U	3.74 U	3.76 U		
1,2,3,7,8,9-HXCDD	0.898 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	3.25 U	3.74 U	3.76 U		
1,2,3,7,8,9-HXCDF	1.159 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	3.25 U	3.74 U	3.76 U		
1,2,3,7,8-PECDD	1.159 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	3.25 U	3.74 U	3.76 U		
1,2,3,7,8-PECDF	0.798 - 5.602	3.23							3.02	2.51 U	0.79	3.25 U	3.74 U	3.76 U		
2,3,4,6,7,8-HXCDF	0.671 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	1.72	3.74 U	3.76 U		
2,3,4,7,8-PECDF	0.149 - 5.602	3.31 U							3.67 U	2.51 U	1.23	3.25 U	3.74 U	3.76 U		
2,3,7,8-TCDD	0.142 - 0.489	0.45 U									0.69 U	0.65 U				
2,3,7,8-TCDF	0.232 - 3.065	1.37							1.04	0.50 U	1.45	0.70	0.90	1.06		
TOTAL DIOXINS	6.116 - 52.697	27.88							12.97	22.81	67.42	23.25	9.97	45.56		
TOTAL FURANS	1.204 - 26.29	11.07							12.16	5.23	2.41 U	3.08 U	10.86	9.78		
TOTAL HPCDD	1.488 - 13.223	6.21							4.33	4.46	19.68	2.90	3.74 U	14.35		
TOTAL HPCDF	1.128 - 5.602	3.31 U							3.67 U	2.51 U	3.10	1.69	3.74 U	3.76 U		
TOTAL HXCDD	0.967 - 5.602	3.31 U							2.22	3.45	2.69	1.51	3.50	3.76 U		
TOTAL HXCDF	0.852 - 5.602	4.00							3.67 U	4.00	3.00 U	1.72	5.56	3.76 U		
TOTAL PECDD	1.159 - 5.602	3.31 U							3.67 U	2.51 U	3.44 U	3.25 U	3.74 U	3.76 U		
TOTAL PECDF	0.372 - 14.161	5.83							3.02	2.51 U	1.11	3.25 U	5.19	3.72		
TOTAL TCDD	0.232 - 10.525	6.80							7.42	8.82	6.24	1.80	5.15	5.19		
TOTAL TCDF	0.232 - 12.129	4.77							10.12	0.50 U	1.45	0.70	3.70	2.17		
Semivolatile Organics (ug/kg)																
1,1-BIPHENYL	0.194 - 0.893	0.60	0.33	0.44	0.42	0.44	0.37	0.40	0.44	0.51	0.41	0.39	0.56	2.21	6.82	0.33
1-METHYLNAPHTHALENE	0.312 - 2.506	1.56	1.06	0.94	0.84	0.90	0.80	0.95	0.92	0.92	0.59	0.41	1.22	5.11	9.53	0.69
1-METHYLPHENANTHRENE	0.247 - 2.111	1.14	0.92	0.77	0.61	0.73	0.85	0.47	0.58	1.29	1.07	0.69	0.82	7.95	42.70	0.53
2,3,5-TRIMETHYLNAPHTHALENE	0.225 - 1.023	0.84	0.67	0.55	0.58	0.62	0.45	0.57	0.42	0.51	0.43	0.43	0.52	1.41	8.73	0.30
2,6-DIMETHYLNAPHTHALENE	0.401 - 1.007	0.88	0.79	0.65	0.82	0.98	0.66	0.74	0.62	0.52	0.42	0.42	0.59	2.42	12.66	0.40
2-METHYLNAPHTHALENE	0.493 - 3.28	2.18	1.67	1.36	1.60	1.74	1.45	1.71	1.55	1.16	0.93	0.69	1.65	7.35	14.59	1.13
ACENAPHTHENE	0.158 - 1.68	1.26	1.65	1.38	1.21	1.47	1.65	0.87	1.33	3.01	1.41	0.66	1.79	39.69	99.31	0.52
ACENAPHTHYLENE	1.256 - 7.174	3.91	3.62	2.62	2.86	3.89	2.70	2.29	2.27	2.72	2.14	1.26	2.12	11.66	21.99	1.40
ANTHRACENE	1.46 - 13.161	6.94	5.47	4.76	5.71	7.29	6.48	4.27	3.90	6.22	4.60	2.74	3.90	55.88	173.26	2.96
BENZO(A)ANTHRACENE	1.205 - 8.306	4.59	5.68	3.28	4.29	4.00	10.77	2.86	3.17	7.92	4.99	3.54	2.53	58.53	333.19	3.82
BENZO(A)PYRENE	1.08 - 5.64	3.28	4.47	2.15	3.00	2.89	11.60	2.70	2.42	7.75	4.08	3.34	1.91	45.76	264.33	3.34
BENZO(B)FLUORANTHENE	1.458 - 14.285	7.80	7.09	5.16	7.32	6.54	15.27	5.32	5.37	13.43	8.42	5.78	3.69	71.04	344.38	4.94
BENZO(E)PYRENE	1.815 - 14.724	8.08	7.51	5.20	5.98	6.11	9.48	4.66	4.99	9.12	6.73	4.91	3.75	38.37	161.79	3.92
BENZO(G,H,I)PERYLENE	0.574 - 4.927	2.96	4.02	2.38	3.30	3.64	7.96	2.62	2.50	6.07	3.91	2.59	1.72	24.13	72.50	1.82
BENZO(K)FLUORANTHENE	0.555 - 5.091	2.94	2.71	2.19	2.81	2.38	6.78	2.15	2.47	5.63	3.38	2.35	1.60	27.88	57.65	1.85
C1-CHRYSENES	0.869 - 10.097	5.60	5.34	3.98	3.12	3.05	4.82	2.55	3.76	5.53	4.37	2.77	2.82	25.04	158.68	2.56
C1-DIBENZOTHIOPHENES	0.328 - 1.565	0.73	0.60	0.46	0.35	0.51	0.43	0.28	0.34	0.72	0.44	0.40	0.47	2.82	8.65	0.29
C1-FLUORANTHENES/PYRENES	2.677 - 16.003	8.76	8.49	4.92	4.96	5.64	6.44	4.12	4.31	8.23	5.94	4.03	4.01	49.56	230.42	4.76
C1-FLUORENES	0.955 - 8.342	4.67	4.78	4.82	3.78	4.89	2.71	6.73	3.65	3.62	3.33	2.21	3.67	10.69	49.04	2.35
C1-NAPHTHALENES	0.806 - 5.787	3.74	2.74	2.30	2.44	2.63	2.25	2.66	2.47	2.09	1.51	1.10	2.88	12.44	24.08	1.82
C1-PHENANTHRENES/ANTHRACENES	2.494 - 6.919	4.73	4.26	2.99	2.99	4.07	4.10	2.67	2.48	4.90	3.64	2.68	2.67	30.66	140.49	2.14
C2-CHRYSENES	0.332 - 10.381	4.97	3.45	1.48	1.54	1.81	2.15	1.67	2.01	2.61	2.53	1.49	0.92	13.27	36.96	1.48
C2-DIBENZOTHIOPHENES	1.053 - 3.584	1.47	1.02	0.78	0.64	0.65	0.59	0.65	0.65	1.08	0.75	0.80	0.81	2.56	5.84	0.30
C2-FLUORENES	1.709 - 7.322	4.48	4.36	2.56	3.23	4.46	3.82	3.13	2.34	2.15	2.80	2.41	2.18	5.13	21.38	2.15
C2-NAPHTHALENES	0.919 - 4.388	3.51	2.70	2.46	1.69	2.05	1.60	1.78	1.84	2.30	1.59	0.98	2.95	10.17	24.15	1.19
C2-PHENANTHRENES/ANTHRACENES	3.043 - 10.702	7.79	4.79	4.14	3.10	4.39	3.13	2.96	3.72	6.02	4.97	2.91	4.29	18.36	55.59	2.27
C3-CHRYSENES	0.02 - 0.576	0.04	0.03	0.04	0.06	0.01	0.04	0.04	0.06	0.02	1.09	0.01	0.09	0.03	0.98	0.05
C3-DIBENZOTHIOPHENES	0.818 - 3.278	2.22	1.43	1.04	0.91	0.89	0.65	0.68	0.83	1.56	1.07	0.86	1.29	2.89	3.60	0.52
C3-FLUORENES	2.215 - 10.285	6.41	5.83	4.42	3.20	5.32	3.70	2.02	3.24	5.37	3.45	2.78	4.01	9.89	13.37	1.56
C3-NAPHTHALENES	2.046 - 5.308	4.18	3.25	3.45	1.50	1.94	1.45	1.70	1.74	3.06	1.62	1.24	3.47	7.23	18.66	1.08
C3-PHENANTHRENES/ANTHRACENES	2.527 - 12.287	6.11	3.41	3.08	2.56	3.03	1.86	1.94	2.60	4.34	3.40	2.18	3.40	9.69	23.97	1.90

TABLE A.3-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station [1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
C4-CHRYSENES	0.011 - 0.576	0.03	0.02	0.04	0.02	0.41	0.50	0.02	0.02	0.04	0.51	0.02	0.02	0.65	6.36	0.05
C4-NAPHTHALENES	1.265 - 6.607	5.10	3.39	2.48	1.43	1.64	1.42	2.06	1.92	3.20	1.92	1.42	2.89	5.35	9.69	1.14
C4-PHENANTHRENES/ANTHRACENES	1.129 - 6.186	3.33	2.04	2.22	1.26	1.70	1.12	1.02	1.50	2.35	2.05	1.11	1.82	3.81	7.69	0.79
CHRYSENE	2.854 - 17.876	9.13	7.57	5.39	6.90	5.86	12.16	4.84	5.27	12.72	7.66	5.85	4.07	70.15	400.44	4.76
DIBENZO(A,H)ANTHRACENE	0.051 - 0.682	0.33	0.49	0.17	0.54	0.52	1.53	0.36	0.30	0.72	0.55	0.43	0.22	4.61	26.31	0.30
DIBENZOTHIOPHENE	0.056 - 0.448	0.26	0.25	0.20	0.20	0.20	0.29	0.19	0.20	0.94	0.21	0.23	0.27	6.10	18.52	0.15
FLUORANTHENE	4.936 - 20.239	12.72	11.23	8.74	12.07	11.18	22.49	8.86	8.70	26.98	12.59	9.33	7.84	193.47	719.24	8.50
FLUORENE	0.317 - 2.397	1.48	1.36	1.07	1.08	1.32	1.32	1.09	1.13	2.81	1.02	1.05	1.41	29.80	149.06	0.77
HIGH MOLECULAR WEIGHT PAHS	14.511 - 76.484	43.67	42.03	28.18	37.01	34.73	76.65	27.49	27.93	78.22	42.39	30.98	23.64	523.10	2213.43	29.57
INDENO(1,2,3-CD)PYRENE	0.338 - 3.276	1.92	2.65	1.41	2.68	2.69	8.15	2.07	1.92	5.35	3.10	2.26	1.16	27.51	92.76	1.65
LOW MOLECULAR WEIGHT PAHS	6.291 - 35.23	20.98	18.45	15.18	17.13	20.54	21.24	14.58	14.77	32.68	14.75	10.66	16.85	279.50	966.67	10.49
NAPHTHALENE	0.653 - 4.631	2.79	1.78	1.63	1.52	1.84	1.43	1.72	1.92	2.16	1.46	0.82	2.68	15.03	11.40	1.42
PERYLENE	0.831 - 9.097	4.67	2.68	2.26	2.27	2.73	4.15	1.96	2.41	3.83	3.37	1.96	4.19	10.79	47.04	2.00
PHENANTHRENE	0.655 - 5.406	2.42	2.90	2.36	3.15	3.00	6.22	2.62	2.68	14.60	3.19	3.45	3.31	120.09	497.07	2.28
PYRENE	4.001 - 23.74	13.61	12.59	8.45	10.20	10.29	18.10	7.88	8.07	22.14	12.51	8.49	7.09	150.59	469.92	8.85
TOTAL PAHS	21.891 - 111.714	64.64	60.47	43.36	54.13	55.27	97.90	42.07	42.70	110.90	57.13	41.64	40.50	802.60	3180.11	40.06
Pesticides/PCB's (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	0.014 - 2.92	0.04	0.05	0.06	0.09	0.14	0.20	0.32	0.12	0.03 U	0.09	0.05	0.03	0.04	0.06	1.16
1,2,4,5-TETRACHLOROBENZENE	0.078 - 0.505	0.20	0.12 U	0.17 U	0.23 U	0.71	0.60	0.53	0.43	0.23 U	0.08	0.07	0.10 U	0.12 U	0.22	0.30
2,4'-DDD	0.078 - 0.748	0.46	0.62	0.42	0.35	0.54	0.40	0.52	0.32	2.80	0.72	1.06	0.31	2.30	15.42	0.09
2,4'-DDE	0.024 - 0.148	0.06	0.07	0.05	0.05 U	0.07 U	0.04 U	0.09	0.05	0.12	0.06	0.08	0.05	0.05	0.09	0.12
2,4'-DDT	0.061 - 1.03	0.19	0.44	0.42	0.74	0.39	0.43	0.31	0.15	0.58	0.32	1.34	0.27	0.40	0.15	0.12
4,4'-DDD	0.281 - 1.476	0.73	1.20	0.61	0.89	1.07	0.61	1.27	0.48	6.16	0.99	1.75	0.48	0.75	0.50	0.17
4,4'-DDE	0.616 - 3.358	1.96	2.66	1.77	1.31	1.96	1.18	1.00	1.30	3.24	1.83	2.38	1.21	1.66	1.35	0.96
4,4'-DDT	0.048 - 1.499	0.22	1.46	0.39	0.66	0.71	0.49	0.64	0.23	1.43	0.55	2.44	0.21	0.27	0.41	0.10
ALDRIN	0.013 - 0.107	0.04	0.02	0.04	0.06 U	0.08 U	0.05 U	0.06	0.03	0.05 U	0.05 U	0.03	0.04	0.03	0.06	0.04
ALPHA-BHC	0.048 - 0.146	0.08	0.06	0.04	0.06 U	0.09	0.08	0.08	0.05	0.06	0.05	0.05	0.07	0.12	0.19	0.06
ALPHA-CHLORDANE	0.174 - 0.622	0.28	0.33	0.22	0.23	0.24	0.21	0.18	0.19	0.29	0.27	0.46	0.20	0.31	0.31	0.16
BETA-BHC	0.009 - 0.761	0.17	0.25 U	0.22	2.30	0.46	0.99	0.54	0.20	0.13 U	0.71	1.77	0.33	0.46	0.68	0.21
CHLORPYRIFOS	0.025 - 0.605	0.37 U	0.28 U	0.34 U	0.39 U	0.54 U	0.32 U	0.41 U	0.40 U	0.31 U	0.35 U	0.30 U	0.28 U	0.36 U	0.21 U	0.28 U
CIS-NONACHLOR	0.117 - 0.583	0.31	0.15	0.21	0.27	0.26	0.18	0.12	0.16	0.20	0.17	0.04	0.33	0.40	0.27	0.10
DELTA-BHC	0.004 - 0.039	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U	0.01	0.02	0.02 U	0.01	0.02 U
DIELDRIN	0.068 - 0.56	0.20	0.29	0.15	0.11	0.13	0.10	0.10	0.12	0.18	0.23	0.17	0.18	0.23	0.11	0.27
ENDOSULFAN II	0.011 - 0.175	0.04	0.03	0.05	0.08	0.19	0.06	0.04	0.03	0.06	0.06	0.05	0.09	0.15	0.33	0.04
ENDRIN	0.016 - 0.195	0.12 U	0.09 U	0.11 U	0.12 U	0.17 U	0.10 U	0.13 U	0.12 U	0.10 U	0.11 U	0.09 U	0.09 U	0.11 U	0.07 U	0.09 U
GAMMA-BHC (LINDANE)	0.008 - 0.22	0.03	0.03	0.03	0.02	0.05	0.03	0.04	0.01	0.02	0.02	0.02	0.03	0.03	0.02	0.02
GAMMA-CHLORDANE	0.06 - 0.285	0.12	0.21	0.07	0.08	0.10	0.06	0.05	0.06	0.18	0.13	0.30	0.07	0.11	0.08	0.06
HEPTACHLOR	0.013 - 0.115	0.07	0.06	0.06	0.07 U	0.09 U	0.06 U	0.14	0.07 U	0.05 U	0.06 U	0.05	0.04	0.06	0.04	0.05 U
HEPTACHLOR EPOXIDE	0.03 - 0.169	0.05 U	0.03 U	0.04 U	0.05 U	0.07 U	0.04 U	0.05 U	0.05 U	0.04 U	0.04 U	0.04 U	0.03 U	0.04 U	0.03 U	0.02
HEXACHLOROBENZENE	0.029 - 0.132	0.06	0.05	0.06	0.08	0.02	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.06	0.05	0.07
MIREX	0.02 - 0.601	0.10 U	0.08 U	0.10 U	0.11 U	0.15 U	0.09 U	0.11 U	0.11 U	0.09 U	0.10 U	0.08 U	0.08 U	0.10 U	0.03	0.08 U
OXYCHLORDANE	0.009 - 0.078	0.05 U	0.04 U	0.04 U	0.05 U	0.07 U	0.04 U	0.04	0.05 U	0.04 U	0.04 U	0.04 U	0.04 U	0.05 U	0.86	0.29
PCB-101/90	0.53 - 3.426	1.96	1.37	1.63	3.46	3.54	1.73	1.49	1.41	2.51	2.12	2.55	3.11	3.67	2.10	1.00
PCB-105	0.177 - 1.533	0.83	0.54	0.62	1.74	1.36	0.69	0.52	0.68	1.15	1.09	0.97	1.25	1.48	0.75	0.36
PCB-114	0.031 - 0.262	0.16 U	0.12 U	0.14 U	0.17 U	0.23 U	0.13 U	0.17 U	0.17 U	0.13 U	0.15 U	0.13 U	0.12 U	0.16 U	0.09 U	0.12 U
PCB-118	0.354 - 4.039	2.18	1.19	1.42	1.79	2.36	1.26	1.13	1.37	2.25	1.84	2.24	3.12	2.54	2.36	1.13
PCB-126	0.001 - 0.262	0.18	0.12 U	0.14 U	0.17 U	0.23 U	0.13 U	0.09	0.17 U	0.13 U	0.08 U		0.23	0.16 U	0.09 U	0.11 U
PCB-128	0.114 - 0.861	0.50	0.31	0.38	0.65	0.61	0.34	0.30	0.33	0.63	0.57	0.50	0.84	0.84	0.45	0.21
PCB-138/160	0.457 - 5.538	3.20	1.70	2.21	3.97 U	6.79	2.79	2.57	2.25	4.37	3.78	2.30	4.22	6.58	2.91	1.27
PCB-149/123	0.312 - 2.639	1.35	1.38	1.57	6.09	5.00	1.60	1.19	1.31	2.80	2.54	0.67	2.09	4.95	1.59	0.51
PCB-153/132	1.126 - 6.992	3.87	2.14	3.07	11.53	10.00	3.42	3.37	2.45	5.88	4.65	2.24	4.56	9.41	3.76	1.86
PCB-156	0.063 - 0.437	0.20	0.10	0.12	0.22	0.34	0.14	0.12	0.16	0.20	0.23	0.20	0.40	0.57	0.21	0.12
PCB-167	0.051 - 0.481	0.28	0.20	0.19	0.41	0.18	0.22	0.23	0.17	0.32	0.28	0.19	0.31	0.48	0.48	0.17
PCB-169	0.003 - 0.262	0.12	0.01 U	0.04 U	0.08 U	0.23 U	0.05	0.15	0.17 U	0.06 U	0.15 U	0.09	0.03 U	0.08 U	0.06	0.14
PCB-170/190	0.029 - 0.235	0.06	0.04 U	0.04 U	0.22 U	0.46	0.12	0.31	0.07	0.10 U	0.07 U	0.04 U	0.05 U	0.20 U	2.74	0.05
PCB-18/17	0.082 - 0.301	0.20	0.31 U	0.26	0.44 U	0.59 U	0.36 U	0.41	0.44 U	0.20	0.36	0.33 U	0.23	0.59	1.67	0.26
PCB-180	0.335 - 2.843	1.68	0.73	0.75	3.06	2.82	1.50	1.41	0.69	1.45	1.04	0.79	1.05	2.45	1.24	0.68
PCB-187	0.189 - 2.344	1.44	1.04	1.25	5.55	5.00	2.08	1.87	1.12	2.11	1.84	0.86	1.17	4.22	1.41	0.77
PCB-189	0.028 - 0.262	0.16 U	0.12 U	0.14 U	0.07	0.04	0.13 U	0.17 U	0.17 U	0.13 U	0.12	0.13 U	0.12 U	0.10	0.10	0.12 U
PCB-195/208	0.004 - 0.213	0.13 U	0.10 U	0.12 U	0.10	0.20 U	0.03	0.14	0.14 U	0.11 U	0.13 U	0.10 U	0.10 U	0.09	0.11	0.07

TABLE A.3-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station (1)													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-201/157/173	0.027 - 0.303	0.10	0.04	0.11	0.32	0.50	0.05	0.14	0.11	0.14	0.11	0.07	0.10	0.45	0.18	0.07
PCB-206	0.018 - 0.218	0.13 U	0.10 U	0.12 U	0.11	0.20 U	0.12 U	0.12	0.14 U	0.11 U	0.13 U	0.11 U	0.11 U	0.13 U	0.08 U	0.08
PCB-209	0.012 - 0.284	0.18 U	0.14 U	0.16 U	0.18 U	0.25 U	0.15 U	0.20 U	0.19 U	0.14 U	0.17 U	0.14 U	0.13 U	0.19	0.10 U	0.13 U
PCB-28	0.071 - 0.449	0.19	0.17	0.21	0.33	0.46	0.29	0.15	0.21	0.19	0.18	0.11	0.15	0.46	0.53	0.17
PCB-44	0.063 - 0.831	0.12	0.11	0.12	0.19	0.30	0.18	0.17	0.13	0.17	0.13 U	0.27	0.12 U	0.30 U	0.31	0.13
PCB-52	0.197 - 1.233	0.38	0.41	0.48	1.09	2.00	0.74	0.50	0.32	0.62	0.57	0.92	0.58	1.10	1.01	0.26
PCB-66	0.032 - 0.613	0.32	0.20	0.23	0.15	0.36	0.19	0.20	0.21	0.30	0.27	0.18	0.28	0.85	0.67	0.14
PCB-77	0.001 - 0.356	0.13	0.03	0.10	0.11 U	0.23 U	0.19	0.11	0.23	0.08	0.14	0.11 U	0.16	0.26	0.06	0.09
PCB-8/5	0.018 - 4.235	1.80	0.86	1.36	0.99 U	2.68	1.04	4.66	1.53	0.81	0.96	0.94	0.94	1.24	2.12	1.18
PCB-81	0.006 - 0.262	0.13	0.12 U	0.14 U	0.17 U	0.23 U	0.08	0.12	0.25	0.12	0.15 U	0.13 U	0.13	0.10	0.06	0.12 U
PENTACHLOROANISOLE	0.03 - 0.503	0.22	0.13 U	0.18 U	0.19 U	0.61	0.21	0.49	0.24	0.08 U	0.13 U	0.12 U	0.13 U	0.09 U	0.17	0.17
PENTACHLOROBENZENE	0.061 - 0.379	0.16	0.11 U	0.13 U	0.18 U	0.71	0.35	0.48	0.22	0.09 U	0.05 U	0.11 U	0.12 U	0.15 U	0.22	0.15
TOTAL DDT	1.456 - 6.096	3.63	6.46	3.67	4.00	4.75	3.15	3.83	2.53	14.33	4.46	9.06	2.53	5.44	17.92	1.56
TOTAL PCB CONGENERS	12.956 - 69.663	38.32	22.92	28.88	71.11	79.93	34.03	39.00	27.34	46.19	39.78	31.20	44.00	72.68	48.64	19.49
TRANS-NONACHLOR	0.156 - 0.651	0.28	0.26	0.19	0.17	0.28	0.18	0.15	0.17	0.28	0.25	0.29	0.19	0.22	0.22	0.11
Inorganics (mg/kg)																
ALUMINUM	265 - 828.58	365.71	349.50	397.00	281.00	507.00	455.00	384.33	320.00	437.00	887.00	321.83	350.50	313.00	362.00	278.00
ARSENIC	4.22 - 20.8	5.08	5.97	6.06	5.75	7.60	6.26	6.48	6.89	5.65	6.27	5.30	6.25	6.39	4.30	5.70
CADMIUM	1.22 - 3.7	1.37	1.61	1.67	2.04	1.81	2.30	1.35	1.34	1.45	1.53	1.85	1.95	1.27	1.48	1.48
CHROMIUM	3.6 - 15.34	3.44	3.49	4.94	4.51	4.62	4.82	3.43	3.10	5.74	7.02	2.91	3.15	3.45	2.89	2.01
COPPER	8.3 - 47.5	14.81	19.13	15.16	64.95	25.70	13.25	6.41	5.99	7.93	30.45	11.79	7.76	9.84	20.32	6.93
IRON	563 - 1490.79	588.43	704.50	708.33	986.00	1057.00	819.50	781.67	553.50	784.33	1428.50	589.83	794.50	682.00	554.50	498.50
LEAD	3.54 - 10.9	3.75	6.39	5.35	21.05	11.40	54.38	5.98	4.42	6.86	7.31	6.49	17.80	10.40	3.88	4.13
MANGANESE	12.6 - 28.66	12.45	11.65	12.00	11.50	13.30	12.84	11.25	8.64	13.83	43.05	12.92	15.83	20.03	32.03	11.15
MERCURY	0.26 - 0.71	0.28	0.28	0.28	0.44	0.44	1.29	0.28	0.25	0.24	0.27	0.24	0.23	0.27	0.24	0.31
NICKEL	1.64 - 4.465	1.59 U	1.98 U	3.93	8.09	2.48 U	1.42 U	1.06 U	1.46 U	1.95 U	6.92	1.50 U	1.59 U	1.36 U	1.10 U	0.93 U
SILVER	0.055 - 0.65	0.20	0.16 U	0.16 U	0.39	0.50	0.15 U	0.16 U	0.16 U	0.17 U	0.45	0.20 U	0.21 U	0.19 U	0.43 U	0.16 U
ZINC	87.9 - 229	87.10	96.15	96.03	227.00	150.00	147.55	89.10	85.80	93.80	115.00	93.55	88.77	97.10	103.30	97.70

Footnotes:
Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.
Normalized Concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.3-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (ng/kg)																
1,2,3,4,6,7,8-HPCDD	0.9 - 4.2	2.7 U							2.2	0.5	1.8	2.1 U	4.5 U	0.3 U		
1,2,3,4,6,7,8-HPCDF	0.6 - 4.2	2.6 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,4,7,8,9-HPCDF	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,4,7,8-HXCDD	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,4,7,8-HXCDF	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,6,7,8-HXCDD	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,6,7,8-HXCDF	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,7,8,9-HXCDD	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,7,8,9-HXCDF	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,7,8-PECDD	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
1,2,3,7,8-PECDF	0.4 - 4.2	2.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
2,3,4,6,7,8-HXCDF	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
2,3,4,7,8-PECDF	2.3 - 4.2	3.5 U							0.9 U	0.5 U	0.6 U	0.4 U	0.9 U	0.7 U		
2,3,7,8-TCDD	0.1 - 0.8	0.6							0.7	1.0	0.6 U	0.4 U	0.9 U	0.7 U		
2,3,7,8-TCDF	0.8 - 1.8	1.2							11.4	4.5 U	2.0	2.2	2.5	6.6 U		
OCDD	3.2 - 8.3	4.9							8.9 U	0.2 U	6.0 U	4.2 U	9.1 U	0.0 U		
OCDF	0.0 - 8.3	4.1 U							13.6	0.5	3.8	2.2	4.4 U	6.6 U		
TOTAL DIOXINS	0.1 - 11.3	5.4							0.4 U	0.7 U	6.0 U	4.2 U	9.1 U	6.6 U		
TOTAL FURANS	0.3 - 7.7	2.3							2.2	0.5	1.8	2.1 U	4.5 U	3.3 U		
TOTAL HPCDD	2.2 - 4.4	3.3							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
TOTAL HPCDF	0.6 - 4.2	2.6 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
TOTAL HXCDD	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
TOTAL HXCDF	1.2 - 4.2	2.7 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
TOTAL PECDD	2.3 - 4.2	3.5 U							4.5 U	2.3 U	3.0 U	2.1 U	4.5 U	3.3 U		
TOTAL PECDF	0.4 - 4.2	2.5 U							0.9 U	0.5 U	0.6 U	0.4 U	0.9 U	0.7 U		
TOTAL TCDD	0.1 - 2.6	1.0							0.7	1.0	0.6 U	0.4 U	0.9 U	0.7 U		
TOTAL TCDF	0.5 - 1.8	0.9														
Semi-Volatile Organics (ug/kg)																
1,6,7-TRIMETHYLNAPHTHALENE	0.36 - 0.67	0.5	0.3	0.3	0.4	0.5	0.4	0.4	0.3	0.9	0.6	0.5	0.4	0.5	0.9	0.9
1-METHYLNAPHTHALENE	1.31 - 3.97	2.7	1.1	0.8	1.2	0.8	0.7	1.1	1.0	1.2	1.5	1.4	1.2	3.4	4.9	6.8
1-METHYLPHENANTHRENE	0.27 - 0.74	0.5	0.3	0.3	0.3	0.8	0.5	0.2	0.3	1.3	0.5	0.4	0.2	0.5	3.0	1.4
2,6-DIMETHYLNAPHTHALENE	0.59 - 1.10	0.9	0.4	0.3	0.4	0.5	0.4	0.4	0.5	1.4	0.7	0.6	0.6	0.8	1.3	1.2
2-METHYLNAPHTHALENE	1.90 - 4.43	3.5	1.6	1.3	1.9	1.1	1.2	1.6	1.5	2.6	2.1	1.6	1.6	4.3	6.9	9.6
ACENAPHTHENE	0.28 - 0.64	0.5	0.5	0.4	0.4	0.8	0.5	0.3	0.7	1.6	0.6	0.3	0.2	1.0	3.2	2.1
ACENAPHTHYLENE	0.26 - 0.46	0.4	0.3	0.2	0.3	0.2	0.2	0.3	0.3	2.3	0.1	0.2	0.3	0.4	0.5	1.4
ANTHRACENE	0.37 - 0.76	0.5	0.8	0.4	0.6	2.1	0.6	0.5	0.5	4.6	0.9	0.6	0.3	0.9	5.1	3.4
BENZO(A)ANTHRACENE	0.51 - 2.96	1.6	2.0	2.7	1.2	4.2	1.5	0.7	3.3	6.4	5.7	1.9	0.8	1.2	15.9	6.5
BENZO(A)PYRENE	0.71 - 5.20	2.5	2.1	3.9	1.3	4.7	2.5	1.2	5.3	4.5	10.3	4.1	0.7	1.1	7.7	9.1
BENZO(B)FLUORANTHENE	1.20 - 6.31	3.0	2.6	4.7	2.2	5.7	2.7	1.8	6.2	10.4	9.5	3.0	1.2	1.5	13.6	8.2
BENZO(E)PYRENE	0.78 - 4.38	2.1	1.7	3.2	1.9	5.0	3.0	1.6	4.2	8.8	6.3	2.1	1.5	0.8	7.3	5.2
BENZO(G,H,I)PERYLENE	0.32 - 2.23	1.1	1.3	1.8	1.3	2.6	2.2	1.4	2.7	3.9	4.5	1.9	1.4	0.7	2.7	3.3
BENZO(K)FLUORANTHENE	1.00 - 2.49	1.6	1.3	2.1	1.2	2.5	1.6	0.9	2.2	3.8	5.1	1.2	1.6	0.4	4.6	4.0
BIPHENYL	0.58 - 1.27	0.9	0.6	0.4	0.5	0.8	0.5	0.6	0.6	0.9	0.8	0.5	0.9	0.8	1.1	1.5
C1-CHRYSENES	0.06 - 2.54	0.9	1.1	2.7	1.2	3.3	1.7	0.5	3.3	5.0	2.3	0.9	0.5	0.7	5.4	4.2
C1-DIBENZOTHIOPHENES	0.12 - 0.41	0.3	0.4	0.2	0.2	0.6	0.3	0.0	0.5	0.7	0.5	0.2	0.2	0.4	0.9	0.6
C1-FLUORANTHENES/PYRENES	1.39 - 5.51	2.9	1.7	3.1	1.9	3.9	1.9	1.6	3.8	8.4	3.9	1.8	1.5	1.6	12.7	6.3
C1-FLUORENES	1.48 - 2.63	2.1	1.3	1.1	1.2	2.1	0.9	1.1	1.4	8.9	1.6	1.5	2.0	2.4	3.5	2.6
C1-NAPHTHALENES	3.21 - 8.39	6.2	2.7	2.2	3.1	1.8	1.9	2.7	2.5	3.9	3.5	3.0	2.8	7.7	11.8	16.5
C1-PHENANTHRENES/ANTHRACENES	1.40 - 2.74	1.9	1.3	1.4	1.3	3.3	1.5	1.2	1.6	5.1	1.7	1.3	1.9	1.6	10.2	4.6
C2-CHRYSENES	0.06 - 1.13	0.40	0.4	1.2	0.3	2.6	1.0	0.0	1.3	2.9	0.7	0.4	0.0	0.0	1.9	2.2
C2-DIBENZOTHIOPHENES	0.01 - 0.19	0.06	0.0	0.3	0.0	0.1	0.4	0.0	0.2	1.4	0.0	0.0	0.0	0.0	0.7	0.0
C2-FLUORENES	1.23 - 1.66	1.4	0.7	1.5	1.5	1.9	0.7	0.1	1.6	5.3	1.9	0.9	1.0	1.7	0.1	3.3
C2-NAPHTHALENES	1.48 - 5.65	3.1	1.2	1.0	1.5	1.4	1.1	1.4	1.1	2.7	1.7	1.7	1.6	4.7	8.6	9.8
C2-PHENANTHRENES/ANTHRACENES	1.26 - 2.41	1.7	1.2	1.3	1.0	2.0	1.3	0.8	1.5	6.6	1.6	1.0	1.2	1.0	5.1	2.9
C3-CHRYSENES	0.02 - 0.08	0.05	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
C3-DIBENZOTHIOPHENES	0.01 - 0.10	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	0.0	0.0	0.0	0.0	0.7	0.0

TABLE A.3-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
C3-FLUORENES	0.10 - 0.49	0.22	0.4	0.2	0.9	2.4	0.1	0.0	1.5	4.9	0.1	0.0	0.1	0.2	0.2	0.3
C3-NAPHTHALENES	1.23 - 4.43	2.5	0.9	0.7	1.0	1.3	0.9	0.0	1.4	3.2	1.1	1.2	1.1	3.1	5.5	4.5
C3-PHENANTHRENES/ANTHRACENES	0.02 - 0.75	0.3	0.3	0.6	0.6	1.2	0.3	0.0	0.7	4.5	0.6	0.3	0.1	0.0	2.5	1.0
C4-CHRYSENES	0.03 - 0.07	0.05	0.1	0.0	0.2	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
C4-NAPHTHALENES	0.05 - 1.12	0.53	0.7	0.0	0.6	1.0	1.0	0.0	0.6	3.6	0.1	0.0	0.5	0.1	2.8	0.8
C4-PHENANTHRENES/ANTHRACENES	0.01 - 0.04	0.03	0.1	0.0	0.2	0.0	0.0	0.0	0.2	2.8	0.0	0.0	0.0	0.0	0.1	0.0
CHRYSENE	2.10 - 9.44	4.6	3.4	5.7	3.4	7.1	4.6	2.2	6.8	9.3	9.7	3.4	1.9	2.1	19.7	10.2
DIBENZO(A,H)ANTHRACENE	0.03 - 0.15	0.1	0.1	0.2	0.1	0.4	0.0	0.1	0.6	0.5	0.1	0.1	0.1	0.0	0.3	0.1
DIBENZOTHIOPHENE	0.15 - 0.22	0.2	0.2	0.1	0.1	0.3	0.2	0.1	0.2	0.4	0.3	0.1	0.2	0.4	1.5	0.9
FLUORANTHENE	4.25 - 12.94	7.3	5.7	5.4	4.5	8.8	5.5	3.3	6.4	16.4	10.3	5.7	3.3	8.7	60.5	19.9
FLUORENE	0.73 - 1.10	0.9	0.8	0.6	0.7	1.3	0.6	0.6	0.7	2.7	1.0	0.6	0.8	1.6	5.1	4.3
INDENO(1,2,3-CD)PYRENE	0.32 - 2.14	1.0	1.1	2.9	0.9	2.7	1.9	0.0	4.2	2.8	6.3	2.0	0.8	0.6	3.9	3.0
NAPHTHALENE	2.37 - 5.30	3.9	2.2	1.8	2.6	1.6	1.5	1.9	2.4	2.0	3.1	2.4	2.4	4.4	7.3	8.6
PERYLENE	0.86 - 2.82	1.8	1.3	1.8	1.1	2.7	2.0	1.3	2.8	5.0	4.3	1.5	1.4	0.6	4.5	3.3
PHENANTHRENE	1.53 - 2.14	1.7	2.6	1.3	1.2	4.1	1.4	1.2	1.6	6.1	2.7	1.5	1.4	3.8	29.8	12.9
PYRENE	3.41 - 11.63	6.4	4.6	4.9	4.0	8.1	3.9	2.6	6.0	16.4	9.9	4.5	2.6	5.0	42.4	18.1
LMH PAH		11.3	8.8	6.1	7.8	11.2	6.0	6.6	7.7	21.9	10.5	7.3	6.9	16.5	58.0	42.4
HMW PAH		22.5	17.9	22.7	14.3	33.3	18.0	10.1	28.5	53.5	45.9	19.7	9.3	18.1	146.5	64.0
TOTAL PAH		33.8	26.7	28.8	22.1	44.5	24.0	16.7	36.2	75.4	56.4	26.9	16.2	34.7	204.5	106.4
Pesticides/PCBs (ug/kg)																
1,2,3,4-TETRACHLOROBENZENE	2.4 - 5.7	4.16	4.7	3.8	4.6	4.2	2.8	0.5	3.6	0.2	3.0	2.8	2.9	2.7	4.4	1.0
1,2,4,5-TETRACHLOROBENZENE	0.14 - 0.18	0.16 U	0.1	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.2 U	0.0 U	0.2	0.1 U	0.1 U	0.2 U
2,4'-DDD	0.08 - 0.13	0.10 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U
2,4'-DDE	0.11 - 0.18	0.14 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U
2,4'-DDT	0.10 - 0.13	0.12	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
4,4'-DDD	0.10 - 0.15	0.12 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0
4,4'-DDE	0.69 - 2.44	1.40	1.0	1.1	0.9	1.5	1.8	0.5	0.9	2.6	0.7	0.4	1.1	0.4	1.1	1.1
4,4'-DDT	0.15 - 0.24	0.19 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U	0.2 U	0.3	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U
ALDRIN	0.13 - 0.20	0.16 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U
ALPHA-BHC	0.09 - 0.14	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1 U
ALPHA-CHLORDANE	0.09 - 0.15	0.11	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1
BETA-BHC	0.08 - 0.13	0.10 U	0.1	0.1 U	0.2	0.0	0.1	0.1	0.2	0.5	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U
CHLORPYRIFOS	0.83 - 1.34	1.05 U	0.8 U	0.8 U	0.8 U	1.0 U	0.9 U	0.8 U	1.0 U	0.7 U	1.0 U	0.6 U	1.1 U	1.0 U	1.0 U	1.2 U
CIS-NONACHLOR	0.05 - 0.12	0.08	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DELTA-BHC	0.05 - 0.08	0.06 U	0.0	0.0 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U	0.1 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U
DIELDRIN	0.54 - 1.13	0.73	0.9	0.7	0.6	0.7	0.8	0.6	0.7	0.3	0.5	0.4	0.8	0.5	0.8	0.7
ENDOSULFAN II	0.10 - 0.15	0.12 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN	0.27 - 0.44	0.34 U	0.3 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.2 U	0.3 U	0.2 U	0.4 U	0.3 U	0.3 U	0.4 U
GAMMA-BHC (LINDANE)	0.08 - 0.13	0.10 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0	0.1 U	0.1 U	0.1 U	0.0	0.0	0.1 U
GAMMA-CHLORDANE	0.10 - 0.16	0.13 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
HEPTACHLOR	0.14 - 0.23	0.18 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U	0.2 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U
HEPTACHLOR EPOXIDE	0.10 - 0.16	0.13 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
HEXACHLOROBENZENE	0.06 - 0.17	0.11	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MIREX	0.23 - 0.38	0.29 U	0.1	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.2 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
OXYCHLORDANE	0.30 - 0.62	0.44	0.3	0.2	0.3	0.2	0.3	0.1	0.2	0.1 U	0.1	0.1	0.4	0.1	0.1	0.3
PCB-101/90	0.15 - 0.45	0.27	0.3	0.2	0.3	0.7	0.5	0.3 U	0.4 U	2.7	0.2	0.4	0.4 U	0.4 U	0.3	0.3
PCB-105	0.21 - 0.75	0.43	0.6	0.3	0.2	0.4	0.6	0.2	0.2	1.0	0.2	0.1	0.3	0.1	0.4	0.3
PCB-114	0.35 - 0.56	0.44 U	0.4 U	0.3 U	0.3 U	0.4 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.5 U	0.4 U	0.5 U	0.5 U
PCB-118	0.65 - 3.13	1.69	2.1	1.1	1.0	1.8	2.6	0.8	1.0	2.6	0.8	0.5	1.3	0.5	1.5	1.4
PCB-126	0.35 - 0.56	0.44 U	0.2	0.3 U	U	U	U	U	U	U	0.4 U	0.3 U	0.5 U	0.4 U	0.5 U	0.5 U
PCB-128	0.14 - 0.57	0.31	0.3	0.2	0.2	0.3	0.5	0.1	0.2	0.7	0.1	0.1	0.2	0.3 U	0.3	0.2
PCB-138/160	0.42 - 1.75	0.99 U	0.9 U	1.3	0.6 U	1.3 U	2.9	0.5 U	0.6 U	4.3	0.5 U	0.4 U	0.8 U	0.4 U	0.9 U	0.7 U
PCB-149/123	0.05 - 0.13	0.08	0.1	0.0	0.0	0.3	0.1	0.3 U	0.1	2.2	0.1	0.0	0.1	0.0	0.1	0.1
PCB-153/132	0.06 - 2.31	1.18 U	1.3 U	0.9 U	0.9 U	1.9 U	2.0 U	0.8 U	0.9 U	6.0	0.7 U	0.5 U	1.2 U	0.5 U	1.4 U	1.1 U
PCB-156	0.12 - 0.56	0.35	0.1	0.3 U	0.3 U	0.4 U	0.4 U	0.3 U	0.4 U	0.3	0.4 U	0.3 U	0.5 U	0.4 U	0.5 U	0.5 U
PCB-167	0.14 - 0.45	0.32	0.1	0.3 U	0.3 U	0.4 U	0.2	0.3 U	0.4 U	0.3	0.4 U	0.3 U	0.2	0.4 U	0.5 U	0.5 U
PCB-169	0.03 - 0.45	0.31	0.1	0.1	0.2	0.4 U	0.0	0.3 U	0.0	0.0	0.4 U	0.3 U	0.5 U	0.0	0.5 U	0.5 U
PCB-170/190	0.12 - 0.26	0.20 U	0.3 U	0.2 U	0.1 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
PCB-18/17	0.55 - 1.20	0.93	1.9	1.3	0.4	0.9	2.2	0.3	3.1	0.8 U	0.7	0.2	2.9	0.1	0.4	1.4 U
PCB-180	0.16 - 0.56	0.33 U	0.5 U	0.3 U	0.3 U	0.8 U	0.6 U	0.2 U	0.3 U	2.0	0.2 U	0.1 U	0.3 U	0.1 U	0.7 U	0.3 U
PCB-187	0.38 - 1.50	0.88	1.2	0.6	0.6	1.9	1.4	0.5	0.7	2.2	0.5	0.3	0.8	0.2	3.9	0.5
PCB-189	0.35 - 0.56	0.44 U	0.4 U	0.3 U	0.3 U	0.4 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.5 U	0.4 U	0.5 U	0.5 U
PCB-195/208	0.06 - 0.38	0.21	0.1	0.1	0.1	0.1	0.1	0.3 U	0.4 U	0.2 U	0.3 U	0.2 U	0.4 U	0.4 U	3.9	0.4 U
PCB-201/157/173	0.27 - 0.44	0.34 U	0.1	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1	0.3 U	0.2 U	0.4 U	0.3 U	0.4 U	0.4 U

TABLE A.3-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-206	0.04 - 0.40	0.20	0.1	0.1	0.1	0.2	0.1	0.1	0.5	0.3 U	0.4 U	0.2 U	0.4 U	0.4 U	9.0	0.4 U
PCB-209	0.40 - 0.63	0.50 U	0.1	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U	0.5 U	0.3 U	0.1	0.3 U	0.5 U	0.5 U	2.0	0.6 U
PCB-28	0.02 - 0.15	0.09 U	0.1	0.0	0.0	0.1	0.1	0.1	0.3 U	0.3	0.1 U	0.1 U	0.3 U	0.1 U	0.2 U	0.2 U
PCB-44	0.02 - 0.39	0.18	0.1 U	0.0 U	0.0 U	0.0 U	0.2 U	0.2 U	0.3 U	0.1 U	0.2 U	0.2 U	0.3 U	0.3 U	0.1	0.3 U
PCB-52	0.25 - 0.38	0.31 U	0.4	0.0	0.2	0.4	0.3	0.2 U	0.3 U	0.6	0.3 U	0.2 U	0.0	0.3 U	0.3 U	0.4 U
PCB-66	0.12 - 0.51	0.27	0.2	0.2	0.2	0.3	0.4	0.1	0.1	0.3	0.4 U	0.3 U	0.2	0.1	0.3	0.2
PCB-77	0.04 - 0.56	0.34	0.4 U	0.1 U	0.3 U	0.1 U	0.1 U	0.3 U	0.0 U	0.0 U	0.4 U	0.3 U	0.3 U	0.4 U	0.5 U	0.2
PCB-8/5	0.20 - 0.90	0.59	0.3	0.1	0.1	0.7 U	0.2	0.6 U	0.2	5.7	1.3	0.5	1.0	0.2	0.3	1.2
PCB-81	0.35 - 0.56	0.44 U	0.4 U	0.3 U	0.3 U	0.4 U	0.4 U	0.1	0.4 U	0.3 U	0.4 U	0.3 U	0.5 U	0.4 U	0.5 U	0.1
PENTACHLOROANISOLE	0.05 - 0.08	0.06 U	0.1 U	0.0 U	0.1 U	0.1 U	0.0 U	0.0 U	0.1 U	1.3	0.1 U	0.0 U	0.1 U	0.1 U	0.1 U	0.1 U
PENTACHLOROBENZENE	0.59 - 1.25	0.85 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.7 U	0.5 U	0.5 U	1.0 U	0.9 U	1.0 U
TRANS-NONACHLOR	0.08 - 0.11	0.09	0.1	0.0	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.4	0.0	0.0	0.1	0.0	0.1 U	0.1
Inorganics (mg/kg)																
ALUMINUM	1.5 - 3.5	2.0 U	1.7 U	1.6 U	1.6 U	3.0 U	2.3 U	1.4 U	1.6 U	1.6 U	9.6 U	1.6 U	2.3 U	1.5 U	10.0 U	1.5 U
ARSENIC	4.1 - 4.5	4.2	4.2	4.0	3.5	3.0	4.9	5.0	3.9	4.6	5.1	3.8	4.8	4.9	3.3	3.4
CADMIUM	0.02 - 0.03	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CHROMIUM	0.6 - 0.9	0.7	0.5	0.6	0.8	0.8 U	0.4	0.6	0.6 U	0.3	1.0	1.6	0.9	0.5	1.0	0.6
COPPER	31.8 - 55.4	42.6	47.5	43.7	81.0	38.8	52.5	41.3	58.4	46.2	37.5	39.2	38.2	47.7	60.5	48.5
IRON	9.6 - 24.9	15.0	7.0	8.8	10.9	17.2	9.6	21.2	10.4	13.4	13.2	11.3	12.1	9.6	27.7	8.5
LEAD	0.1 - 0.7	0.3	0.3 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1	2.3 U	0.1 U	0.1 U	0.1	1.5 U	0.1
MANGANESE	1.7 - 3.8	2.9	3.0	2.5	5.2	4.6	2.0	1.7	2.4	1.6	1.7	2.6	3.8	3.0	6.1	9.3
MERCURY	0.6 - 1.0	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.7	0.5	0.5	0.5	0.5	0.6	0.7
NICKEL	0.9 - 1.1	1.0 U	1.0 U	1.0 U	1.9 U	1.6 U	1.5 U	1.2 U	1.0 U	1.0 U	1.0 U	1.0 U	0.9 U	0.9 U	1.0 U	0.9 U
SILVER	0.7 - 1.6	1.0	0.8	0.9	1.3	1.1	0.5	1.0	1.3	1.1	0.8	1.1	0.9	1.2	0.8	0.9
ZINC	77.1 - 101.0	89.4	95.8	86.7	90.5	81.0	89.1	93.1	93.0	81.0	101.0	92.2	94.5	91.3	98.6	90.7

Footnotes:
Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.
Normalized concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.3-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 3 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
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Parameter	Coefficient of Variation
Dioxins/Furans (ng/kg)	
1,2,3,4,6,7,8-HPCDD	1.44
1,2,3,4,6,7,8-HPCDF	1.08
1,2,3,4,7,8,9-HPCDF	1.07
1,2,3,4,7,8-HXCDD	0.91
1,2,3,4,7,8-HXCDF	1.07
1,2,3,6,7,8-HXCDD	1.05
1,2,3,6,7,8-HXCDF	2.12
1,2,3,7,8,9-HXCDD	1.07
1,2,3,7,8,9-HXCDF	0.38
1,2,3,7,8-PECDD	1.02
1,2,3,7,8-PECDF	2.09
2,3,4,6,7,8-HXCDF	2.23
2,3,4,7,8-PECDF	2.52
2,3,7,8-TCDD	1.07
2,3,7,8-TCDF	1.94
OCDD	1.46
OCDF	1.09
TOTAL DIOXINS	1.43
TOTAL FURANS	1.45
TOTAL HPCDD	1.49
TOTAL HPCDF	1.25
TOTAL HXCDD	0.98
TOTAL HXCDF	1.26
TOTAL PECDD	2.12
TOTAL PECDF	2.29
TOTAL TCDD	1.38
TOTAL TCDF	2.34
Average Coefficient of Variation	**1.47**
Minimum Coefficient of Variation	**0.38**
Maximum Coefficient of Variation	**2.52**
Semi-Volatile Organics (ug/kg)	
1,6,7-TRIMETHYLNAPHTHALENE	0.98
1-METHYLNAPHTHALENE	1.56
1-METHYLPHENANTHRENE	1.92
2,6-DIMETHYLNAPHTHALENE	0.99
2-METHYLNAPHTHALENE	1.34
ACENAPHTHENE	2.80
ACENAPHTHYLENE	0.82
ANTHRACENE	1.39
BENZO(A)ANTHRACENE	1.59
BENZO(A)PYRENE	2.20
BENZO(B)FLUORANTHENE	1.43
BENZO(E)PYRENE	1.34
BENZO(G,H,I)PERYLENE	1.33
BENZO(K)FLUORANTHENE	1.50
BIPHENYL	1.17
C1-CHRYSENES	1.20
C1-DIBENZOTHIOPHENES	1.30
C1-FLUORANTHENES/PYRENES	1.29
C1-FLUORENES	1.48
C1-NAPHTHALENES	1.43
C1-PHENANTHRENES/ANTHRACENES	1.45
C2-CHRYSENES	1.07
C2-DIBENZOTHIOPHENES	0.87
C2-FLUORENES	1.04
C2-NAPHTHALENES	1.12

TABLE A.3-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 3 SEDIMENT DATA FOR THE MONITORING STATIONS
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Parameter	Coefficient of Variation
C2-PHENANTHRENES/ANTHRACENES	1.27
C3-CHRYSENES	0.92
C3-DIBENZOTHIOPHENES	1.16
C3-FLUORENES	1.35
C3-NAPHTHALENES	0.87
C3-PHENANTHRENES/ANTHRACENES	1.38
C4-CHRYSENES	1.19
C4-NAPHTHALENES	1.06
C4-PHENANTHRENES/ANTHRACENES	1.08
CHRYSENE	1.63
DIBENZO(A,H)ANTHRACENE	1.31
DIBENZOTHIOPHENE	2.09
FLUORANTHENE	1.86
FLUORENE	2.46
INDENO(1,2,3-CD)PYRENE	1.46
NAPHTHALENE	1.36
PERYLENE	1.26
PHENANTHRENE	2.18
PYRENE	1.72
Average Coefficient of Variation	**1.41**
Minimum Coefficient of Variation	**0.82**
Maximum Coefficient of Variation	**2.80**

Pesticides (ug/kg)

1,2,3,4-TETRACHLOROBENZENE	1.27
1,2,4,5-TETRACHLOROBENZENE	0.67
2,4'-DDD	1.28
2,4'-DDE	1.46
2,4'-DDT	2.28
4,4'-DDD	1.68
4,4'-DDE	2.80
4,4'-DDT	1.95
ALDRIN	0.42
ALPHA-BHC	0.80
ALPHA-CHLORDANE	1.30
BETA-BHC	1.19
CHLORPYRIFOS	1.09
CIS-NONACHLOR	0.85
DELTA-BHC	0.84
DIELDRIN	3.55
ENDOSULFAN II	1.00
ENDRIN	0.92
GAMMA-BHC (LINDANE)	0.41
GAMMA-CHLORDANE	2.08
HEPTACHLOR	1.04
HEPTACHLOR EPOXIDE	0.39
HEXACHLOROBENZENE	4.32
MIREX	0.98
OXYCHLORDANE	1.34
PENTACHLOROANISOLE	0.85
TRANS-NONACHLOR	1.49
Average Coefficient of Variation	**1.42**
Minimum Coefficient of Variation	**0.39**
Maximum Coefficient of Variation	**4.32**

PCBs (ug/kg)

PCB-101/90	1.45
PCB-105	1.43
PCB-118	1.34
PCB-126	3.10

TABLE A.3-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 3 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Coefficient of Variation
PCB-128	1.06
PCB-138/160	1.18
PCB-149/123	1.15
PCB-153/132	1.19
PCB-156	1.30
PCB-167	1.10
PCB-169	1.14
PCB-170/190	1.54
PCB-18/17	1.26
PCB-180	1.26
PCB-187	1.33
PCB-189	0.78
PCB-195/208	1.16
PCB-201/157/173	1.12
PCB-206	1.39
PCB-209	2.49
PCB-28	1.09
PCB-44	1.42
PCB-52	1.47
PCB-66	1.43
PCB-77	1.10
PCB-8/5	1.70
PCB-81	2.19
Average Coefficient of Variation	**1.41**
Minimum Coefficient of Variation	**0.78**
Maximum Coefficient of Variation	**3.10**

Inorganics (mg/kg)

ALUMINUM	0.14
ARSENIC	0.25
CADMIUM	0.46
CHROMIUM	0.33
COPPER	4.77
IRON	0.48
LEAD	1.47
MANGANESE	0.51
MERCURY	1.16
NICKEL	0.97
SILVER	0.28
ZINC	1.88
Average Coefficient of Variation	**1.06**
Minimum Coefficient of Variation	**0.14**
Maximum Coefficient of Variation	**4.77**

Total Organic Carbon (%)

TOTAL ORGANIC CARBON	0.62

Notes:
- Source data located in the Round 3 data package (TtNUS, January 2001).

ATTACHMENT A.3-1
DATA QUALITY REVIEW (DQR)
ROUND 3

Various data quality control measures were implemented during the field investigation performed for Portsmouth Naval Shipyard (PNS), Round 3 (September 2000). These quality measures were conducted to help ensure that the resultant data were suitable for their intended uses. A brief summary of the measures is provided in the next three sections. Section 1.0 contains a summary of the data quality indicators (DQIs). Field quality control samples are discussed in Section 2.0. A summary of the data validation procedures and the results of the data validation process appear in Section 3.0.

During Round 3, samples were collected and analyzed from the following media: mussels, juvenile lobsters, and sediment. Juvenile lobsters were dissected into muscle and hepatopancreas samples during Rounds 1, 2 and 3. The hepatopancreas samples were frozen and preserved for future analysis, if necessary for Rounds 2 and 3. The intestines were removed from the muscle samples, prior to extraction.

1.0 DATA QUALITY INDICATORS

The Interim Offshore Monitoring Plan was prepared as required by the Interim Record of Decision (ROD) for Operable Unit (OU) 4. The monitoring program is designed to provide offshore monitoring in the interim period before completion of the offshore feasibility study (FS) and selection and implementation of the final remedy for OU4. The focus of the interim offshore monitoring program is to provide data to determine whether, over the course of the interim monitoring, current and future concentrations of chemicals of concern (metals, PCBs, and PAHs) in the offshore areas are at acceptable levels. When the FS is conducted, available data, including data collected as part of the interim monitoring, will be used for the identification and evaluation of final remedial options for OU4.

DQIs are parameters that are monitored to establish the quality of data generated during an investigation. Some of the DQIs are generated from analysis of field samples (e.g., from field duplicates), and others result from the analysis of laboratory samples (e.g., laboratory duplicates). Individually, field and laboratory DQIs provide measures of the performance of the respective investigative operations (field or laboratory). Taken together, the DQIs provide a measure of the overall project performance. An overall evaluation of DQIs may also be used to improve the investigative process by identifying where in the process major uncertainties or biases are occurring.

1.1 Precision

Precision is a measure of the degree to which two or more measurements are in agreement and describes the reproducibility of measurements of the same parameter for samples analyzed under similar conditions.

Precision is expressed as a relative percent difference (RPD), which is defined as the ratio of the range to the mean. RPDs, which are typically expressed as percentages, are used to evaluate both field and laboratory duplicate precision and are calculated as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where RPD = relative percent difference
V1, V2 = two results obtained by analyzing duplicate samples

Field precision is assessed by collecting and measuring field duplicates at a rate of one duplicate per 10 environmental samples. This precision estimate encompasses the combined uncertainty associated with sample collection, homogenization, splitting, handling, laboratory and field storage (as applicable), preparation for analysis, and analysis. In contrast, precision estimates obtained from analyzing duplicate laboratory samples incorporate only homogenization, subsampling, preparation for analysis, laboratory storage (if applicable), and analysis uncertainties.

Laboratory precision QC samples [i.e., laboratory duplicates for inorganic chemicals and matrix spike duplicates (MSDs) for organic chemicals] will be analyzed with a minimum frequency of five percent (i.e., 1 QC sample per 20 environmental samples). Laboratory precision is measured by comparing RPD values to precision control limits specified in the applicable analytical standard operating procedures (SOPs).

The precision objectives for parameters are specified in the associated analytical protocols. General precision objectives such as ±50 percent for solid matrices and ±30 percent for aqueous matrices were employed for this project for both field and laboratory duplicates. In general, qualification due to imprecision was not a significant cause of data qualification and does not impact the usability of the data for monitoring purposes, as depicted in Table 1-1 below. A 0 percent qualification rate indicates that no data were qualified due to duplicate imprecison and reflects the best possible performance.

Table 1-1 - Rates of Qualification
Laboratory and Field Duplicate Precision

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Lab Duplicate Imprecision	0%	0%	0%	0%	0%
Field Duplicate Imprecision	0%	0%	0%	0%	4%
	Mussels				
Lab Duplicate Imprecision	0%	0%	0%	0%	0%
Field Duplicate Imprecision	4%	0%	2%	8%	6%
	Sediment				
Lab Duplicate Imprecision	0%	0%	0%	0%	0%
Field Duplicate Imprecision	9%	28%	11%	6%	7%

Twelve field duplicates were collected for 124 sediment samples. Six field duplicates were collected for 64 tissue samples. Therefore, the 10 percent minimum frequency criterion was achieved.

1.2 Accuracy

Accuracy is the degree of agreement between an observed value and an accepted reference value. This parameter is assessed by measuring spiked samples [e.g., surrogate spikes or matrix spikes (MSs)] or well-characterized samples of certified analyte concentrations (e.g., LCSs) and by measuring blanks. Accuracy measurements are designed to detect biases resulting from sample handling and analysis.

Accuracy requirements for field measurements are typically ensured through control over the sample collection and handling and through routine instrument calibration. Accuracy is also typically monitored through the use of blanks to detect cross-contamination and by monitoring adherence to procedures that prevent sample contamination or degradation. Equipment rinsate blanks were collected for this investigation to assess cross-contamination via sample collection equipment. Source water blanks were collected to monitor the purity of water used to

decontaminate sampling equipment. Accuracy was also assured qualitatively through adherence to all sample handling, preservation, and holding time requirements.

Accuracy in the laboratory is measured through the comparison of a spiked sample or LCS result to a known or calculated value and is expressed as a percent recovery (%R). It is also assessed by monitoring the analytical recovery of select surrogate compounds added to samples that are analyzed by organic chromatographic methods. MS and surrogate compound analyses measure the combined accuracy effects of the sample matrix, sample preparation, and sample measurement. LCSs are used to assess the accuracy of laboratory operations with minimal sample matrix effects. Spiking concentrations were required to equal or approximate the default concentrations detailed in the applicable sample preparation or analysis SOPs. LCS and MS analyses were performed at a frequency no less than one per 20 associated samples of like matrix as required by the Interim Offshore Monitoring Plan. Laboratory accuracy is assessed by comparing calculated %R values to accuracy control limits specified in the applicable laboratory SOP.

Percent recovery is calculated using the following equation:

$$\%R = \frac{Ss - So}{S} \times 100$$

where %R = percent recovery
Ss = result of spiked sample
So = result of non-spiked sample
S = concentration of spiked amount.

In general, a percent recovery range of 75 to 125 defines the accuracy objective for the analytical data. It should be noted, however, that the analytical laboratory establishes analyte-specific percent recoveries.

Table 1-2 depicts the qualification rates for MS, LCS, surrogate, and internal standard recoveries. Failure to meet accuracy requirements (internal standard recovery) resulted in a high rate of qualification of juvenile lobster and mussel tissues in Round 1. The percentage of tissue data qualified based on internal standard noncompliances dropped in Round 2 and continued to drop again in Round 3. This demonstrates continued improvement in laboratory performance for this matrix. The exclusion of the hepatopancreas data from Rounds 2 and 3 and removal of the intestine from the juvenile lobster muscle tissue may have contributed to the decreased rate of rejection and qualification from Round 1 to Round 3.

Table 1-2 - Rates of Qualification
Surrogate, Matrix Spike, Blank Spike, and Internal Standard Recoveries

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Matrix Spike Recovery	17%	0%	12%	0%	0%
Blank Spike Recovery	0%	0%	0%	7%	5%
Surrogate Recovery	NA	NA	0%	1%	0%
Internal Standard Recovery	NA	NA	13%	0%	0%
	Mussels				
Matrix Spike Recovery	9%	0%	6%	1%	0%
Blank Spike Recovery	4%	0%	0%	10%	4%
Surrogate Recovery	NA	NA	0%	0%	0%
Internal Standard Recovery	NA	NA	25%	0%	0%

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Sediment				
Matrix Spike Recovery	18%	34%	0%	3%	<1%
Blank Spike Recovery	14%	9%	0%	5%	3%
Surrogate Recovery	NA	NA	0%	2%	0%
Internal Standard Recovery	NA	NA	15%	0%	0%

NA = Not applicable

1.3 Completeness

Completeness is a measure of the amount of usable, valid analytical data obtained compared to the amount expected to be obtained. Completeness is expressed as a percentage.

Field completeness is a measure of the amount of valid field measurements obtained from all the field measurements taken in the project. A completeness criterion of 100 percent applies to these measurements.

Laboratory completeness is a measure of the amount of usable, valid laboratory measurements per matrix obtained for each target analyte. Usable, valid results are those that are judged, after data assessment, to represent the sampling populations and to have not been disqualified for use through data validation or data assessment. Completeness is typically expressed as a percentage and is determined using the following equation:

$$\%C = \frac{V}{T} \times 100$$

where %C = percent completeness
V = number of results determined to be valid
T = Total number of results

Under ideal conditions, the laboratory completeness objective would be 100 percent. However, samples can be rendered unusable during shipping and preparation (e.g., bottles broken or extracts accidentally destroyed) or analysis (e.g., loss of instrument sensitivity, strong matrix effects). Laboratory completeness objectives are 90 percent for sediment, 80 percent for mussel tissues, and 60 percent for juvenile lobster tissue. Table 1-3 compares the percent completeness among Rounds 1, 2, and 3 for sediment and tissues. Porewater and surface water samples were collected during Round 2 only and, therefore, were not included in the comparison.

Table 1-3 – Percent Completeness

	Tissues			Sediment		
	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3
Total Data Points	13,082	8,178	8,231	8,673	8,673	8,598
Rejected Data Points	230	0	41	10	10	1
% Completeness	98.2%	100%	99.5%	99.9%	99.9%	99.9%

The calculated percent completeness for laboratory analytical data collected during the field investigation is 99.5 percent for mussel tissues and juvenile lobster tissues (i.e., 41 laboratory analytical results out of a total of 8,231 data points were qualified as unusable). The calculated percent completeness for laboratory analytical data collected during the field investigation is 99.9 percent for sediments (i.e., one laboratory analytical result out of a total of 8,598 data points were

qualified as unusable). Therefore, the data completeness objectives for the project were achieved. Table 1-4 lists the specific results that were rejected during Round 3.

Table 1-4 – Rejected Results

Samples	Rejected Parameters	Basis for Rejection
OU4-LJ-M01-100A-LD	PCB-126	LCS Recovery < 10%
OU4-LJ-M03-100A	PCB-126	LCS Recovery < 10%
OU4-LJ-M04-100A	PCB-126	LCS Recovery < 10%
OU4-LJ-M05-100A	PCB-126	LCS Recovery < 10%
OU4-LJ-M06-100A	PCB-126	LCS Recovery < 10%
OU4-LJ-M07-100A	PCB-126	LCS Recovery < 10%
OU4-LJ-M08-100A	PCB-126	LCS Recovery < 10%
OU4-LJ-M11-100A-LD	PCB-126	LCS Recovery < 10%
OU4-LJ-R03-100A	2,3,7,8-TCDF	Compound Identification
OU4-MU-M07-100A	2,3,7,8-TCDD	Calibration
OU4-MU-M07-300A	2,3,7,8-TCDD	Calibration
OU4-MU-M08-100A	2,3,7,8-TCDD	Calibration
OU4-MU-M08-200A	2,3,7,8-TCDD	Calibration
OU4-MU-M08-300A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-MU-M09-200A	PCB-126	LCS Recovery < 10%
OU4-MU-M10-100A	PCB-126	LCS Recovery < 10%
OU4-MU-M10-200A	PCB-126	LCS Recovery < 10%
OU4-MU-M10-300A	PCB-126	LCS Recovery < 10%
OU4-MU-M11-100A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-MU-M11-200A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-MU-M11-300A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-MU-M12-100A	2,3,7,8-TCDD	Calibration
OU4-MU-M12-200A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-MU-M13-100A	Dieldrin, PCB-126	LCS Recovery < 10%
OU4-MU-M14-100A	PCB-126	LCS Recovery < 10%
OU4-MU-R01-300A	1,2,3,4,6,7,8-HPCDD	Calibration
OU4-MU-R01-400A	2,3,7,8-TCDD	Calibration
OU4-MU-R02-300A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-MU-R03-300A	2,3,7,8-TCDD	Calibration
OU4-MU-R03-400A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-MU-R04-300A	1,2,3,4,6,7,8-HPCDD, 2,3,7,8-TCDD	Calibration
OU4-SD-M03-300A	Copper	MS Recovery < 30%

Dioxin samples were rejected due to continuing calibration standards that failed to meet ion ratio requirements and recovery acceptance requirements. The result for 2,3,7,8-TCDF in sample OU4-LJ-R03-100A was rejected due to failure to meet identification criteria (i.e., ion ratio and retention time). These noncompliances appear to be isolated occurrences and may be linked to instrument malfunction rather than an indication of poor laboratory performance. Rejected data are not suitable for use for the Interim Offshore Monitoring Plan.

1.4 Sensitivity

Minimum and maximum nondetected results achieved during laboratory analysis were compared to target method detection limits contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan. Because MDLs in Table 6-5i were presented on a wet weight basis for dioxins,

the detection limits were adjusted for tissue by multiplying by 5 and for sediment by multiplying by 2 in order to be consistent with the other fractions and report them on a dry weight basis. Tables 1-5 and 1-6 (located at the end of the Round 3 DQR) compare the Target MDLs to the minimum and maximum nondetects for each parameter, for each matrix. Exceedances of the Target MDLs for sediment were noted for dioxins, semivolatile compounds, pesticides, and PCB congeners. Target MDL mussel exceedances were noted for dioxins, PCB congeners, chromium, mercury, nickel, and silver. Lobster target MDL exceedances were noted for dioxins, PCB congeners, aluminum, chromium, lead, and nickel.

1.5 Comparability

Comparability is defined as the confidence with which one data set can be compared with another (e.g., among sampling points; among sampling events). This is a key parameter because data will be compared among monitoring stations and reference locations and among sampling events (as part of trend analysis) to make interim decisions. Comparability is achieved by using standardized sampling and analysis methods, as well as data reporting formats. Additionally, consideration is given to seasonal conditions and other environmental variations that could exist to influence data results. Comparability of laboratory measurements will be assessed primarily through the use and documentation of similar sampling and analytical methods. Results will be reported in units to ensure comparability with previous data and with current state and federal standards and guidelines. Comparability of field data will be satisfied by ensuring the field sampling plan is followed and that proper sampling techniques are used. It also depends on recording field measurements using the correct units. Comparability of laboratory measurements will be assessed primarily through the use of certified reference materials, spike recoveries, and RPD values. Failure to achieve comparability will result in corrective action.

Field data were generated using the methodologies and units as specified in the Interim Offshore Monitoring Plan. Sampling techniques described in the plan and field sampling SOPs were followed.

1.6 Representativeness

Representativeness is an expression of the degree to which the data accurately and precisely depict the actual characteristics of a population or environmental condition existing at an individual sampling point and is contingent on a good design for the sampling program. The project planning documents (monitoring plan, field and laboratory SOPs) and use of standardized sampling, handling, analytical, and reporting procedures are designed so that the final data are accurate representations of actual site conditions. A number of conditions could arise that cause the representativeness of samples to be questioned. For example, data outliers or samples collected from a place different from the intended location could adversely impact representativeness of the data set.

Data were collected from the specified locations using sampling, sample handling, analytical, and reporting procedures as specified in the Interim Offshore Monitoring Plan. Therefore, no data representativeness concerns have been raised and the data are suitable for use as part of the monitoring program.

2.0 FIELD QUALITY CONTROL SAMPLES

The following field QC samples were collected during sampling efforts and were analyzed in accordance with requirements specified in the Interim Offshore Monitoring Plan:

Field duplicates for interim monitoring sediments were a single sample homogenized and split into two portions. Field duplicates were collected during a single act of sampling and analyzed for chemical constituents to measure the precision of the sampling and analysis program, as well as

natural sample heterogeneity. As planned, mussel and juvenile lobster tissue sample duplicates were prepared by the laboratory in a manner similar to normal environmental media samples.

Source water blanks consist of sampling of source waters, used in decontamination, before use. The samples were obtained at the rate of one per source per sampling event. Source water is analyzed for all organic and inorganic constituents under investigation, as a means of determining whether the source water used in field procedures could potentially have introduced contaminants to the environmental samples collected. Source water blanks were evaluated in accordance with the planned data validation protocols to determine whether false positive results may exist. A false positive result is a result that indicates the presence of an analyte when the analyte should have been classified as nondetected.

Equipment rinsate blanks were collected and analyzed to check the effectiveness of decontamination procedures. Samples were obtained under representative field conditions by collecting the rinse water generated by running analyte-free water through sample collection equipment after decontamination and before use. Rinsate blanks were obtained for each type of sampling equipment for each day that the sampling equipment was decontaminated. Where pre-cleaned, dedicated sampling equipment was used, one rinsate blank was collected as a "batch blank." Rinsate blanks were analyzed for the same chemical constituents as the associated environmental samples.

Temperature blanks were included in each cooler as a temperature indicator to assure that samples were received at the laboratory at the appropriate temperature.

Positive results in the field blanks were not used as a basis for data validation because field blank results were not included in the SDG with their associated samples. Therefore, false positives may exist particularly for sample data close to or less than the reporting limit. Table 2-1 presents the maximum contamination values reported in the field and rinsate blanks associated with the Round 3 sampling event.

Table 2-1 – Maximum Positive Concentrations in Field and Rinsate Blanks, μg/L

Parameter	Compounds	Maximum Rinsate Blank Contamination	Maximum Field Blank Contamination
Pesticide/PCB	1,2,3,4-Tetrachlorobenzene	0.62	0.39
	1,2,4,5-Tetrachlorobenzene	1.4	ND
	2,4'-DDE	0.94	0.04
	4,4'-DDE	0.01	ND
	ALPHA-BHC	0.44	0.28
	Mirex	0.2	ND
	PCB-138/160	12	14
	PCB-149/123	0.37	0.2
	PCB-153/132	0.05	0.03
	PCB-167	0.47	0.53
	PCB-170/190	0.91	0.53
	PCB-18/17	1.4	ND
	PCB-180	0.26	ND
	PCB-28	0.41	0.3
	PCB-44	0.33	0.37
	PCB-52	1.5	0.44
	PCB-8/5	2.3	0.75
	PCB-81	0.08	ND
	Pentachloroanisole	0.22	0.13
	Pentachlorobenzene	0.31	0.57
PAH	1,6,7-Trimethylnaphthalene	4.16	3.81

Parameter	Compounds	Maximum Rinsate Blank Contamination	Maximum Field Blank Contamination
	1-Methylnaphthalene	6.42	4.4
	1-Methylphenanthrene	0.95	0.89
	2,6-Dimethylnaphthalene	9.34	8.54
	2-Methylnaphthalene	11.4	8
	Acenaphthene	3.27	2.49
	Acenaphthylene	1.17	0.8
	Anthracene	0.91	0.56
	Benzo(A)Anthracene	1.41	0.51
	Benzo(A)Pyrene	1.84	0.9
	Benzo(B)Fluoranthene	1.58	0.46
	Benzo(E)Pyrene	1.87	1.57
	Benzo(G,H,I)Perylene	1.78	2.07
	Benzo(K)Fluoranthene	0.71	0.1
	Biphenyl	5.39	6.05
	C1-Chrysenes	1.28	0.05
	C1-Dibenzothiophenes	0.24	0.04
	C1-Fluoranthenes/Pyrenes	1.05	0.09
	C1-Fluorenes	0.4	1.95
	C1-Naphthalenes	17.8	12.4
	C1-Phenanthrenes/Anthracenes	2.98	2.65
	C2-Chrysenes	0.05	0.02
	C2-Dibenzothiophenes	0.03	0.03
	C2-Fluorenes	0.31	2.65
	C2-Naphthalenes	25.4	23.3
	C2-Phenanthrenes/Anthracenes	1.68	2.1
	C3-Chrysenes	0.03	0.01
	C3-Dibenzothiophenes	0.02	0.1
	C3-Fluorenes	0.59	0.31
	C3-Naphthalenes	12.8	16.3
	C3-Phenanthrenes/Anthracenes	0.35	0.13
	C4-Chrysenes	0.07	0.08
	C4-Naphthalenes	7.3	9.1
	C4-Phenanthrenes/Anthracenes	0.12	0.07
	Chrysene	4.25	1.23
	Dibenzo(A,H)Anthracene	0.15	0.08
	Dibenzothiophene	1.44	1.23
	Fluoranthene	7.55	1.3
	Fluorene	4.57	4.09
	Indeno(1,2,3-Cd)Pyrene	0.57	0.21
	Naphthalene	21.2	14.3
	Perylene	0.66	0.38
	Phenanthrene	13.9	7.39
	Pyrene	4.71	1.28
Metals	Arsenic	ND	1.16
	Iron	13.4	9.16
	Manganese	3.5	ND
	Mercury	0.16	0.17
	Silver	3.46	ND
	Zinc	37.6	15
Miscellaneous	Dissolved Organic Carbon	0.62	0.47

ND = Not detected.

3.0 DATA VALIDATION

Data validation is a systematic review of analytical chemical data packages with respect to sample receipt and handling, analytical methods, data reporting and deliverables, and document control. The quality of data generated by a laboratory is extremely important; it is an integral part of the investigation and must be clearly tied to the project goals. This section summarizes the various aspects of the data validation process.

3.1 General Data Validation Procedures

After receipt of analytical results, data validation was performed based upon USEPA Region I Tier II validation procedures (USEPA, 1996). The Tier II validation consists of a completeness audit defined as a Tier I review and a review of all quality control check results. The Tier II validation does not evaluate raw data and does not provide calculation confirmation of sample results.

After the data were validated, a list of non-conformities requiring data qualifiers, which are used to alert the data user to inaccurate or imprecise data, was developed. For situations in which several quality control criteria were out of specification, the data validator made professional judgments and/or comments on the validity of the overall data package. The reviewer then prepared a technical memorandum presenting qualification of the data, if necessary, and the rationale for making such qualifications.

The net result is a data package that has been carefully reviewed for its adherence to prescribed technical requirements. One hundred percent of the environmental samples were validated. Validators incorporated data qualifiers into the electronic database and submitted the information to the data management group.

3.2 Data Validation Qualifiers

As mentioned previously, the analytical data was qualified during the validation process (i.e., application of U, J, UJ, UR, and R qualifiers) was conducted as required by the USEPA Functional Guidelines. The attachment of the data qualifiers to analytical results signifies the occurrence of QC noncompliances that were noted during the course of data validation. The various data qualifiers are defined, as follows:

U - Indicates that the chemical was not detected at the numerical detection limit (sample-specific quantitation limit) noted. Nondetected results from the laboratory are reported in this manner. This qualifier is also added to a positive result (reported by the laboratory) if the detected concentration is determined to be attributable to contamination introduced during field sampling or laboratory analysis.

UJ - Indicates that the chemical was not detected. However, the detection limit (sample-specific quantitation limit) is considered to be estimated based on problems encountered during laboratory analysis. The associated numerical detection limit is regarded as inaccurate or imprecise.

J - Indicates that the chemical was detected. However, the associated numerical result is not a precise representation of the amount that is actually present in the sample. The laboratory-reported concentration is considered to be an estimate of the true concentration.

UR - Indicates that the chemical may or may not be present. The nondetected analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies (i.e., holding times missed by a factor of two times the specified time limit, severe calibration noncompliances, and extremely low quality control recoveries).

R - Indicates that the chemical may or may not be present. The positive analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies.

The preceding data qualifiers may be categorized as indicative of major or minor problems. Major problems are defined as issues that result in the rejection of data, qualified with UR and R data validation qualifiers. These data are considered invalid and are not used for decision-making purposes unless they are used in a qualitative way and the use is justified and documented. Minor problems are defined as issues resulting in the estimation of data, qualified with U, J, and UJ data validation qualifiers. Estimated analytical results are considered to be suitable for decision-making purposes unless the data use requirements are very stringent and the qualifier indicates a deficiency that is incompatible with the intended data use. It is notable that a "U" qualifier does not necessarily indicate a data deficiency because all non-detect values are flagged with the "U" qualifier even when no deficiency exists.

3.3 Summary Of Data Validation Results

A summary of the data validation results for the analytical data effort is provided in the remainder of this section. Because the methodologies used for extraction and analysis of the sediment and tissue samples were non-routine, the laboratory SOPs were used to establish acceptance limits for calibration, spike and LCS recoveries, compound identification, and quantitation.

Table 3-1 presents the percentages of data qualified as either estimated (J flag) or rejected (R flag) during Round 3 for each sample matrix. The percentage of qualified and unqualified data will not equal 100 percent because some data points are qualified for more than one technical noncompliance. Qualification for PARCC parameters (field and laboratory duplicates, surrogates, matrix spikes, blank spikes, and internal standards) was presented and discussed in Section 1.0. Unqualified data are data that did not require qualification for any technical noncompliances.

Method Blank Contamination – Positive results in the rinsate and field blanks were not used as a basis for data validation. Therefore, the likelihood of false positives exists. Field blanks and rinsate blanks were not qualified on the basis of method blank contamination. Table 2-1 in Section 2.0 depicts the maximum values detected in the rinsate and field blanks. As noted in Rounds 1 and 2, the laboratory continued to report all positive detections in the method blanks. Method blanks in Round 3 were cleaner than Round 1 but slightly more contaminated than Round 2. No action is required on this basis; however, method blank contamination will continue to be an area of concern in Round 4.

Table 3-1 - Rates of Qualification

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Unqualified Data	56%	100%	67%	14%	56%
<Reporting Limit	0%	0%	10%	84%	24%
Method Blank Contamination	10%	0%	6%	0%	13%
Calibration Noncompliance	17%	0%	1%	9%	0%
	Mussels				
Unqualified Data	81%	100%	62%	42%	65%
<Reporting Limit	0%	0%	9%	39%	17%
Method Blank Contamination	6%	0%	2%	0%	10%
Calibration Noncompliance	4%	0%	7%	18%	0%
	Sediment				
Unqualified Data	63%	34%	54%	68%	67%
<Reporting Limit	0%	0%	10%	3%	12%
Percent Solids	0%	<1%	3%	0%	1%
Method Blank Contamination	1%	8%	12%	1%	11%
Calibration Noncompliance	6%	0%	0%	15%	0%
Other Technical Noncompliance	0%	0%	0%	0%	2%
Hold Time Noncompliance	0%	21%	0%	5%	0%

The remaining tables compare the percentage of qualification for tissue and sediment samples between Rounds 1, 2 and 3. Only technical noncompliances are listed. Technical areas that were evaluated but did not result in qualification are not presented. Overall data quality was similar to Round 2. No areas of concern were identified on this basis.

Table 3-2 Mussel Tissues, Dioxin Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	29%	4%	2%
Hold Time Noncompliance	0%	2%	0%
Field Duplicate Imprecision	0%	2%	2%
Internal/Surrogate Recovery	50% (13% rejected)	57%	25%
Compound Identification	2%	0%	0%
Calibration	0%	0%	7%
MS/MSD Recovery	0%	0%	6%
Less than Reporting Limit	5%	19%	9%
Data Not Qualified	16%	33%	62%

Table 3-3 Mussel Tissues, PAH Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Calibration Noncompliance	5%	5%	18%
LCS Noncompliance	2%	1%	10%
Field Duplicate Imprecision	<1%	3%	8%
Surrogate Recovery	<1%	0%	0%
Less than Reporting Limit	21%	12%	39%
Data Not Qualified	54%	79%	42%

Table 3-4 Mussel Tissues, Pesticides and PCBs Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	0%	0%	10%
LCS Noncompliance	1%	1%	4%
MS/MSD Noncompliance	<1%	<1%	0%
Field Duplicate Imprecision	0%	6%	6%
Surrogate Recovery	0%	2%	0%
Less than Reporting Limit	14%	8%	17%
Data Not Qualified	69%	74%	65%

Table 3-5 Mussel Tissues, Metals Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	0%	1%	6%
Calibration Noncompliance	0%	0%	4%
Field Duplicate Imprecision	0%	0%	4%
LCS Noncompliance	2%	8%	<1%
MS Noncompliance	29%	16%	9%
Less than Reporting Limit	<1%	0%	0%
Data Not Qualified	69%	84%	81%

Table 3-6 Juvenile Lobster Tissues, Dioxins Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Hold Time Noncompliance	0%	57%	0%
Method Blank Contamination	5%	16%	6%
Calibration Noncompliance	0%	0%	1%
MS Noncompliance	0%	0%	12%
Field Duplicate Imprecision	0%	1%	0%
Internal/Surrogate Recovery	87% (52% rejected)	57%	13%
Less than Reporting Limit	2%	10%	10%
Data Not Qualified	8%	27%	67%

Table3-7 Juvenile Lobster Tissues, PAH Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	21%	0%	0%
Calibration Noncompliance	8%	3%	9%
LCS Noncompliance	1%	1%	7%
Surrogate Noncompliance	0%	0%	1%
Field Duplicate Imprecision	1%	6%	0%
Less than Reporting Limit	56%	78%	84%
Data Not Qualified	8%	21%	14%

Table 3-8 Juvenile Lobster Tissues, Pesticides and PCBs Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	21%	7%	13%
LCS Noncompliance	4%	10%	5%
MS/MSD Noncompliance	<1% (0.09% rejected)	0%	0%
Field Duplicate Imprecision	1%	2%	4%
Less than Reporting Limit	26%	28%	24%
Data Not Qualified	50%	56%	56%

Table 3-9 Juvenile Lobster Tissues, Metals Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	2%	1%	10%
Calibration Noncompliance	0%	0%	2%
LCS Noncompliance	1%	4%	0%
MS Noncompliance	23%	1%	17%
Lab Duplicate Noncompliance	0%	12%	0%
Less than Reporting Limit	0%	0%	0%
Data Not Qualified	74%	84%	56%

Table 3-10 Sediment, Dioxin Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Hold Time Noncompliance	0%	0%	2%
Method Blank Contamination	53%	13%	12%
Field Blank Contamination	6%	0%	0%
MS/MSD Noncompliance	0%	4%	0%
Field Duplicate Imprecision	0%	8%	11%
Internal/Surrogate Recovery	9% (1% rejected)	21%	15%
Compound Identification	2%	0%	0%
Less than Reporting Limit	2%	13%	10%
Data Not Qualified	28%	48%	54%

Table 3-11 Sediment, PAH Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Hold Time Noncompliance	0%	0%	5%
Method Blank Contamination	14%	0%	1%
Calibration Noncompliance	5%	11%	15%
LCS Noncompliance	6%	4%	5%
MS/MSD Noncompliance	2%	3%	3%
Field Duplicate Imprecision	0%	10%	6%
Surrogate Recovery	<1%	6%	2%
Less than Reporting Limit	2%	3%	3%
Data Not Qualified	72%	66%	68%

Table 3-12 Sediment, Pesticides and PCBs Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	10%	4%	11%
Calibration Noncompliance	<1%	<1%	0%
LCS Noncompliance	6%	3%	3%
MS/MSD Noncompliance	<1%	<1%	<1%
Field Duplicate Imprecision	1%	9%	7%
Surrogate Recovery	3%	2%	0%
Less than Reporting Limit	19%	18%	12%
Data Not Qualified	63%	66%	67%

Table 3-13 Sediment, Metals Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3
Method Blank Contamination	0%	0%	1%
Hold Time Noncompliance	0%	0%	6%
LCS Noncompliance	0%	2%	14%
MS Noncompliance	8%	0%	18%
Field Duplicate Noncompliance	17%	1%	9%
Less than Reporting Limit	0%	0%	0%
Data Not Qualified	74%	98%	63%

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	14/20	1.37	114	10
1,2,3,4,6,7,8-HPCDF	12/20	1.37	130	10
1,2,3,4,7,8,9-HPCDF	12/20	1.17	2.22	10
1,2,3,4,7,8-HXCDD	10/20	1.32	2.44	10
1,2,3,4,7,8-HXCDF	12/20	1	2.44	10
1,2,3,6,7,8-HXCDD	14/20	1.37	2.44	10
1,2,3,6,7,8-HXCDF	10/20	1	2.44	10
1,2,3,7,8,9-HXCDD	12/20	0.97	2.44	10
1,2,3,7,8,9-HXCDF	3/20	0.66	2.44	10
1,2,3,7,8-PECDD	7/20	0.66	2.44	10
1,2,3,7,8-PECDF	6/20	0.09	1.76	10
2,3,4,6,7,8-HXCDF	13/20	1	1.76	10
2,3,4,7,8-PECDF	6/20	0.34	2.44	10
2,3,7,8-TCDD	6/20	0.13	0.49	2
2,3,7,8-TCDF	15/20	0.27	0.35	2
OCDD	15/20	12.5	345	20
OCDF	12/20	3.9	187	20
TOTAL DIOXINS	15/20	13.1	444	10
TOTAL FURANS	15/20	15.1	232	10
TOTAL HPCDD	14/20	1.37	321	10
TOTAL HPCDF	15/20	1.37	79.1	10
TOTAL HXCDD	20/20	0	0	10
TOTAL HXCDF	20/20	0	0	10
TOTAL PECDD	8/20	0.97	2.44	10
TOTAL PECDF	15/20	0.15	1.69	10
TOTAL TCDD	9/20	0.07	8.43	2
TOTAL TCDF	19/20	0.33	0.33	2
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	46/46	0	0	20
1-METHYLNAPHTHALENE	46/46	0	0	20
1-METHYLPHENANTHRENE	46/46	0	0	20
2,6-DIMETHYLNAPHTHALENE	46/46	0	0	20
2-METHYLNAPHTHALENE	46/46	0	0	20
ACENAPHTHENE	46/46	0	0	20
ACENAPHTHYLENE	46/46	0	0	20
ANTHRACENE	46/46	0	0	20
BENZO(A)ANTHRACENE	46/46	0	0	20
BENZO(A)PYRENE	46/46	0	0	20
BENZO(B)FLUORANTHENE	46/46	0	0	20
BENZO(E)PYRENE	46/46	0	0	20
BENZO(G,H,I)PERYLENE	46/46	0	0	20
BENZO(K)FLUORANTHENE	46/46	0	0	20
BIPHENYL	46/46	0	0	20
C1-CHRYSENES	46/46	0	0	20
C1-DIBENZOTHIOPHENES	44/46	0.96	4.64	20
C1-FLUORANTHENES/PYRENES	46/46	0	0	20
C1-FLUORENES	40/46	4.42	277	20
C1-NAPHTHALENES	46/46	0	0	20
C1-PHENANTHRENES/ANTHRACENES	46/46	0	0	20
C2-CHRYSENES	46/46	0	0	20

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RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	46/46	0	0	20
C2-FLUORENES	46/46	0	0	20
C2-NAPHTHALENES	46/46	0	0	20
C2-PHENANTHRENES/ANTHRACENES	46/46	0	0	20
C3-CHRYSENES	46/46	0	0	20
C3-DIBENZOTHIOPHENES	46/46	0	0	20
C3-FLUORENES	43/46	5.94	63.2	20
C3-NAPHTHALENES	45/46	8.06	8.06	20
C3-PHENANTHRENES/ANTHRACENES	46/46	0	0	20
C4-CHRYSENES	46/46	0	0	20
C4-NAPHTHALENES	42/46	9.31	127	20
C4-PHENANTHRENES/ANTHRACENES	46/46	0	0	20
CHRYSENE	46/46	0	0	20
DIBENZO(A,H)ANTHRACENE	46/46	0	0	20
DIBENZOTHIOPHENE	46/46	0	0	20
FLUORANTHENE	46/46	0	0	20
FLUORENE	46/46	0	0	20
INDENO(1,2,3-CD)PYRENE	46/46	0	0	20
NAPHTHALENE	46/46	0	0	20
PERYLENE	46/46	0	0	20
PHENANTHRENE	46/46	0	0	20
PYRENE	45/46	51.8	51.8	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	10/46	0.01	0.49	2
1,2,4,5-TETRACHLOROBENZENE	13/46	0.03	3	2
2,4'-DDD	46/46	0	0	2
2,4'-DDE	34/46	0.075	0.17	2
2,4'-DDT	46/46	0	0	2
4,4'-DDD	46/46	0	0	2
4,4'-DDE	46/46	0	0	2
4,4'-DDT	46/46	0	0	2
ALDRIN	15/46	0.042	0.12	2
ALPHA-BHC	44/46	0.03	0.04	2
ALPHA-CHLORDANE	44/46	0.061	0.065	2
BETA-BHC	20/46	0.14	0.37	2
CHLORPYRIFOS	1/46	0.2	3.2	2
CIS-NONACHLOR	46/46	0	0	2
DELTA-BHC	22/46	0.032	0.088	2
DIELDRIN	31/46	0.048	0.13	2
ENDOSULFAN II	45/46	0.11	0.11	2
ENDRIN	3/46	0.096	0.27	2
GAMMA-BHC (LINDANE)	10/46	0.17	0.49	2
GAMMA-CHLORDANE	31/46	0.055	0.13	2
HEPTACHLOR	16/46	0.12	0.35	2
HEPTACHLOR EPOXIDE	2/46	0.02	0.061	2
HEXACHLOROBENZENE	32/46	0.041	0.076	2
MIREX	4/46	0.021	0.061	2
OXYCHLORDANE	34/46	0.011	0.029	2
PCB-101/90	46/46	0	0	1
PCB-105	46/46	0	0	1
PCB-114	0/46	0.13	0.36	1
PCB-118	46/46	0	0	1

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RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	4/46	0.13	0.36	1
PCB-128	46/46	0	0	1
PCB-138/160	45/46	0.29	0.29	1
PCB-149/123	46/46	0	0	1
PCB-153/132	45/46	0.36	0.36	1
PCB-156	45/46	0.22	0.22	1
PCB-167	46/46	0	0	1
PCB-169	1/46	0.01	0.32	1
PCB-170/190	39/46	0.93	1.8	1
PCB-18/17	33/46	0.074	0.16	1
PCB-180	46/46	0	0	1
PCB-187	45/46	0.16	0.16	1
PCB-189	44/46	0.17	0.18	1
PCB-195/208	46/46	0	0	1
PCB-201/157/173	45/46	0.02124	0.02124	1
PCB-206	44/46	0.075	0.083	1
PCB-209	46/46	0	0	1
PCB-28	38/46	0.18	0.53	1
PCB-44	45/46	0.16	0.16	1
PCB-52	45/46	0.21	0.21	1
PCB-66	45/46	0.12	0.12	1
PCB-77	16/46	0.01	0.71	1
PCB-8/5	38/46	0.15	0.52	1
PCB-81	22/46	0.03	0.36	1
PENTACHLOROANISOLE	4/46	0.03	0.56	2
PENTACHLOROBENZENE	0/46	0.05	0.66	2
TRANS-NONACHLOR	43/46	0.034	0.046	2
Inorganics (mg/kg)				
ALUMINUM	46/46	0	0	50
ARSENIC	46/46	0	0	5
CHROMIUM	46/46	0	0	0.3
IRON	46/46	0	0	5
MANGANESE	46/46	0	0	5
MERCURY	38/46	0.0851	0.1878	50
SILVER	46/46	0	0	5
CADMIUM	63/92	0.0718	0.2199	5
COPPER	91/91	0	0	0.2
LEAD	92/92	0	0	5
NICKEL	92/92	0	0	0.1
ZINC	88/92	9.95	32.9	15

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RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussel				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	8/13	23.9	42.7	25
1,2,3,4,6,7,8-HPCDF	3/18	20.7	43.9	25
1,2,3,4,7,8,9-HPCDF	0/18	20.7	43.9	25
1,2,3,4,7,8-HXCDD	1/18	20.7	43.9	25
1,2,3,4,7,8-HXCDF	0/18	20.7	43.9	25
1,2,3,6,7,8-HXCDD	2/18	20.7	43.9	25
1,2,3,6,7,8-HXCDF	0/18	20.7	43.9	25
1,2,3,7,8,9-HXCDD	0/18	20.7	43.9	25
1,2,3,7,8,9-HXCDF	0/18	20.7	43.9	25
1,2,3,7,8-PECDD	0/18	20.7	43.9	25
1,2,3,7,8-PECDF	3/18	20.7	43.9	25
2,3,4,6,7,8-HXCDF	1/18	20.7	43.9	25
2,3,4,7,8-PECDF	1/18	20.7	43.9	25
2,3,7,8-TCDD	0/8	4.57	8.55	5
2,3,7,8-TCDF	5/18	4.13	8.77	5
OCDD	12/18	41.3	87.7	50
OCDF	1/18	11.7	87.7	50
TOTAL DIOXINS	15/18	120	185	25
TOTAL FURANS	8/18	2.55	77.5	25
TOTAL HPCDD	9/18	23.9	43.9	25
TOTAL HPCDF	2/18	20.7	43.9	25
TOTAL HXCDD	7/18	6.17	43.9	25
TOTAL HXCDF	5/18	11.7	42.7	25
TOTAL PECDD	0/18	20.7	43.9	25
TOTAL PECDF	5/18	20.7	42.7	25
TOTAL TCDD	12/18	4.78	8	5
TOTAL TCDF	9/18	4.13	7.75	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	36/36	0	0	20
1-METHYLNAPHTHALENE	36/36	0	0	20
1-METHYLPHENANTHRENE	36/36	0	0	20
2,6-DIMETHYLNAPHTHALENE	36/36	0	0	20
2-METHYLNAPHTHALENE	36/36	0	0	20
ACENAPHTHENE	36/36	0	0	20
ACENAPHTHYLENE	36/36	0	0	20
ANTHRACENE	36/36	0	0	20
BENZO(A)ANTHRACENE	36/36	0	0	20
BENZO(A)PYRENE	36/36	0	0	20
BENZO(B)FLUORANTHENE	36/36	0	0	20
BENZO(E)PYRENE	36/36	0	0	20
BENZO(G,H,I)PERYLENE	36/36	0	0	20
BENZO(K)FLUORANTHENE	36/36	0	0	20
BIPHENYL	36/36	0	0	20
C1-CHRYSENES	36/36	0	0	20
C1-DIBENZOTHIOPHENES	36/36	0	0	20
C1-FLUORANTHENES/PYRENES	36/36	0	0	20
C1-FLUORENES	36/36	0	0	20
C1-NAPHTHALENES	36/36	0	0	20
C1-PHENANTHRENES/ANTHRACENES	36/36	0	0	20
C2-CHRYSENES	36/36	0	0	20

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ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	36/36	0	0	20
C2-FLUORENES	36/36	0	0	20
C2-NAPHTHALENES	36/36	0	0	20
C2-PHENANTHRENES/ANTHRACENES	36/36	0	0	20
C3-CHRYSENES	35/36	13.8	13.8	20
C3-DIBENZOTHIOPHENES	36/36	0	0	20
C3-FLUORENES	36/36	0	0	20
C3-NAPHTHALENES	36/36	0	0	20
C3-PHENANTHRENES/ANTHRACENES	36/36	0	0	20
C4-CHRYSENES	36/36	0	0	20
C4-NAPHTHALENES	36/36	0	0	20
C4-PHENANTHRENES/ANTHRACENES	36/36	0	0	20
CHRYSENE	36/36	0	0	20
DIBENZO(A,H)ANTHRACENE	36/36	0	0	20
DIBENZOTHIOPHENE	36/36	0	0	20
FLUORANTHENE	36/36	0	0	20
FLUORENE	36/36	0	0	20
INDENO(1,2,3-CD)PYRENE	36/36	0	0	20
NAPHTHALENE	36/36	0	0	20
PERYLENE	36/36	0	0	20
PHENANTHRENE	36/36	0	0	20
PYRENE	36/36	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	23/36	0.14	0.43	10
1,2,4,5-TETRACHLOROBENZENE	15/36	0.36	4.8	10
2,4'-DDD	35/36	0.32	0.32	10
2,4'-DDE	20/36	0.31	0.48	10
2,4'-DDT	35/36	0.41	0.41	10
4,4'-DDD	36/36	0	0	10
4,4'-DDE	36/36	0	0	10
4,4'-DDT	35/36	0.59	0.59	10
ALDRIN	13/36	0.35	0.55	10
ALPHA-BHC	27/36	0.27	0.66	10
ALPHA-CHLORDANE	35/36	0.38	0.38	10
BETA-BHC	22/36	0.25	4.6	10
CHLORPYRIFOS	0/36	2.2	3.6	10
CIS-NONACHLOR	35/36	0.35	0.35	10
DELTA-BHC	3/36	0.13	0.22	10
DIELDRIN	34/35	0.3	0.3	10
ENDOSULFAN II	31/36	0.32	0.42	10
ENDRIN	0/36	0.7	1.1	10
GAMMA-BHC (LINDANE)	27/36	0.22	0.34	10
GAMMA-CHLORDANE	34/36	0.31	0.41	10
HEPTACHLOR	9/36	0.38	0.59	10
HEPTACHLOR EPOXIDE	1/36	0.27	0.44	10
HEXACHLOROBENZENE	32/36	0.42	0.55	10
MIREX	1/36	0.61	1	10
OXYCHLORDANE	6/36	0.28	0.46	10
PCB-101/90	36/36	0	0	2
PCB-105	36/36	0	0	2
PCB-114	0/36	0.94	1.5	2
PCB-118	36/36	0	0	2

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	2/30	0.94	1.5	2
PCB-128	36/36	0	0	2
PCB-138/160	29/36	5.2	35	2
PCB-149/123	36/36	0	0	2
PCB-153/132	29/36	7	17	2
PCB-156	31/36	0.94	1.4	2
PCB-167	34/36	1.4	1.5	2
PCB-169	6/36	0.06	1.5	2
PCB-170/190	11/36	0.22	2.3	2
PCB-18/17	11/36	2.4	4	2
PCB-180	24/36	2.5	8	2
PCB-187	36/36	0	0	2
PCB-189	6/36	0.94	1.5	2
PCB-195/208	9/36	0.78	1.3	2
PCB-201/157/173	28/36	0.86	1.2	2
PCB-206	3/36	0.81	1.3	2
PCB-209	1/36	1.1	1.7	2
PCB-28	31/36	0.68	5.2	2
PCB-44	15/36	0.41	4.1	2
PCB-52	32/36	0.96	2.1	2
PCB-66	36/36	0	0	2
PCB-77	20/36	0.21	1.4	2
PCB-8/5	31/36	1.7	18	2
PCB-81	9/36	0.94	1.5	2
PENTACHLOROANISOLE	9/36	0.22	3.1	10
PENTACHLOROBENZENE	9/36	0.23	2.8	10
TRANS-NONACHLOR	35/36	0.25	0.25	10
Inorganics (mg/kg)				
ALUMINUM	36/36	0	0	10
ARSENIC	36/36	0	0	0.35
CADMIUM	36/36	0	0	0.1
CHROMIUM	33/36	3.02	3.37	0.4
COPPER	36/36	0	0	0.1
IRON	36/36	0	0	15
LEAD	36/36	0	0	0.1
MANGANESE	36/36	0	0	1.7
MERCURY	35/36	0.21	0.21	0.01
NICKEL	4/36	0.3	5.33	0.14
SILVER	4/36	0.29	1.33	0.29
ZINC	36/36	0	0	5.7

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	3/7	1.26	21.7	25
1,2,3,4,6,7,8-HPCDF	0/7	13.5	22.3	25
1,2,3,4,7,8,9-HPCDF	0/7	13.5	22.3	25
1,2,3,4,7,8-HXCDD	0/7	13.5	22.3	25
1,2,3,4,7,8-HXCDF	0/7	13.5	22.3	25
1,2,3,6,7,8-HXCDD	0/7	13.5	22.3	25
1,2,3,6,7,8-HXCDF	0/7	13.5	22.3	25
1,2,3,7,8,9-HXCDD	0/7	13.5	22.3	25
1,2,3,7,8,9-HXCDF	0/7	13.5	22.3	25
1,2,3,7,8-PECDD	0/7	13.5	22.3	25
1,2,3,7,8-PECDF	0/7	13.5	22.3	25
2,3,4,6,7,8-HXCDF	0/7	13.5	22.3	25
2,3,4,7,8-PECDF	0/7	13.5	22.3	25
2,3,7,8-TCDD	0/7	2.7	4.46	5
2,3,7,8-TCDF	2/7	2.74	4.35	5
OCDD	4/7	27	31.3	50
OCDF	0/7	0.12	44.6	50
TOTAL DIOXINS	4/7	5.16	31.3	25
TOTAL FURANS	0/7	1.84	43.5	25
TOTAL HPCDD	3/7	14.3	21.7	25
TOTAL HPCDF	0/7	13.5	22.3	25
TOTAL HXCDD	0/7	13.5	22.3	25
TOTAL HXCDF	0/7	13.5	22.3	25
TOTAL PECDD	0/7	13.5	22.3	25
TOTAL PECDF	0/7	13.5	22.3	25
TOTAL TCDD	0/7	2.7	4.46	5
TOTAL TCDF	2/7	2.74	4.35	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	16/16	0	0	20
1-METHYLNAPHTHALENE	16/16	0	0	20
1-METHYLPHENANTHRENE	16/16	0	0	20
2,6-DIMETHYLNAPHTHALENE	16/16	0	0	20
2-METHYLNAPHTHALENE	16/16	0	0	20
ACENAPHTHENE	16/16	0	0	20
ACENAPHTHYLENE	16/16	0	0	20
ANTHRACENE	16/16	0	0	20
BENZO(A)ANTHRACENE	16/16	0	0	20
BENZO(A)PYRENE	16/16	0	0	20
BENZO(B)FLUORANTHENE	16/16	0	0	20
BENZO(E)PYRENE	16/16	0	0	20
BENZO(G,H,I)PERYLENE	16/16	0	0	20
BENZO(K)FLUORANTHENE	16/16	0	0	20
BIPHENYL	16/16	0	0	20
C1-CHRYSENES	16/16	0	0	20
C1-DIBENZOTHIOPHENES	16/16	0	0	20
C1-FLUORANTHENES/PYRENES	16/16	0	0	20
C1-FLUORENES	16/16	0	0	20
C1-NAPHTHALENES	16/16	0	0	20
C1-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C2-CHRYSENES	16/16	0	0	20

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	16/16	0	0	20
C2-FLUORENES	16/16	0	0	20
C2-NAPHTHALENES	16/16	0	0	20
C2-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C3-CHRYSENES	16/16	0	0	20
C3-DIBENZOTHIOPHENES	16/16	0	0	20
C3-FLUORENES	16/16	0	0	20
C3-NAPHTHALENES	16/16	0	0	20
C3-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C4-CHRYSENES	16/16	0	0	20
C4-NAPHTHALENES	16/16	0	0	20
C4-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
CHRYSENE	16/16	0	0	20
DIBENZO(A,H)ANTHRACENE	16/16	0	0	20
DIBENZOTHIOPHENE	16/16	0	0	20
FLUORANTHENE	16/16	0	0	20
FLUORENE	16/16	0	0	20
INDENO(1,2,3-CD)PYRENE	16/16	0	0	20
NAPHTHALENE	16/16	0	0	20
PERYLENE	16/16	0	0	20
PHENANTHRENE	16/16	0	0	20
PYRENE	16/16	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	16/16	0	0	10
1,2,4,5-TETRACHLOROBENZENE	10/16	0.14	1.5	10
2,4'-DDD	3/16	0.39	0.49	10
2,4'-DDE	0/16	0.54	0.68	10
2,4'-DDT	2/16	0.5	0.62	10
4,4'-DDD	3/16	0.47	0.59	10
4,4'-DDE	16/16	0	0	10
4,4'-DDT	1/16	0.72	0.9	10
ALDRIN	0/16	0.63	0.78	10
ALPHA-BHC	1/16	0.45	0.56	10
ALPHA-CHLORDANE	2/16	0.47	0.59	10
BETA-BHC	10/16	0.44	0.47	10
CHLORPYRIFOS	0/16	4.1	5.1	10
CIS-NONACHLOR	2/16	0.43	0.54	10
DELTA-BHC	1/16	0.25	0.31	10
DIELDRIN	16/16	0	0	10
ENDOSULFAN II	2/16	0.47	0.59	10
ENDRIN	0/16	1.3	1.6	10
GAMMA-BHC (LINDANE)	3/16	0.39	0.49	10
GAMMA-CHLORDANE	2/16	0.5	0.62	10
HEPTACHLOR	0/16	0.71	0.88	10
HEPTACHLOR EPOXIDE	1/16	0.5	0.62	10
HEXACHLOROBENZENE	16/16	0	0	10
MIREX	1/16	1.1	1.4	10
OXYCHLORDANE	15/16	0.53	0.53	10
PCB-101/90	11/16	1.5	1.9	2
PCB-105	16/16	0	0	2
PCB-114	0/16	1.7	2.2	2
PCB-118	16/16	0	0	2

TABLE 1-5

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	1/8	1.9	2	2
PCB-128	15/16	1.5	1.5	2
PCB-138/160	3/16	1.7	6.2	2
PCB-149/123	14/16	1.7	2.1	2
PCB-153/132	1/16	2.2	11	2
PCB-156	2/16	1.7	2.2	2
PCB-167	5/16	1.7	2.2	2
PCB-169	7/16	1.7	2.1	2
PCB-170/190	0/16	0.28	1.6	2
PCB-18/17	13/16	4.6	5.2	2
PCB-180	1/16	0.58	3.6	2
PCB-187	16/16	0	0	2
PCB-189	0/16	1.7	2.2	2
PCB-195/208	7/16	1.4	1.8	2
PCB-201/157/173	2/16	1.3	1.7	2
PCB-206	9/16	1.5	1.8	2
PCB-209	3/16	2	2.4	2
PCB-28	7/16	0.44	1.7	2
PCB-44	1/16	0.09	1.3	2
PCB-52	7/16	1.2	1.5	2
PCB-66	14/16	1.8	1.8	2
PCB-77	1/16	0.18	2.1	2
PCB-8/5	14/16	2.8	3.3	2
PCB-81	2/16	1.7	2.2	2
PENTACHLOROANISOLE	1/16	0.17	0.47	10
PENTACHLOROBENZENE	0/16	0.28	4.5	10
TRANS-NONACHLOR	10/16	0.31	0.38	10
Inorganics (mg/kg)				
ALUMINUM	0/16	2.74	19.9	10
ARSENIC	16/16	0	0	0.35
CADMIUM	16/16	0	0	0.1
CHROMIUM	13/16	0.51	0.72	0.4
COPPER	16/16	0	0	0.1
IRON	16/16	0	0	15
LEAD	3/16	0.12	0.47	0.1
MANGANESE	16/16	0	0	1.7
MERCURY	16/16	0	0	0.01
NICKEL	0/16	1.68	3.87	0.14
SILVER	16/16	0	0	0.29
ZINC	16/16	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	9/16	2.13	84.6	10
1,2,3,4,6,7,8-HPCDF	9/16	0.98	21.8	10
1,2,3,4,7,8,9-HPCDF	5/16	0.91	2.13	10
1,2,3,4,7,8-HXCDD	3/16	0.91	7.91	10
1,2,3,4,7,8-HXCDF	2/16	0.91	7.91	10
1,2,3,6,7,8-HXCDD	6/16	0.91	2.13	10
1,2,3,6,7,8-HXCDF	5/16	0.91	2.13	10
1,2,3,7,8,9-HXCDD	5/16	0.91	2.13	10
1,2,3,7,8,9-HXCDF	2/16	0.91	7.91	10
1,2,3,7,8-PECDD	4/16	0.91	2.13	10
1,2,3,7,8-PECDF	4/16	0.33	2.13	10
2,3,4,6,7,8-HXCDF	3/16	0.91	2.13	10
2,3,4,7,8-PECDF	2/16	0.32	2.13	10
2,3,7,8-TCDD	2/16	0.18	1.58	2
2,3,7,8-TCDF	8/16	0.18	0.43	2
OCDD	10/16	34	257	20
OCDF	9/16	1.82	43.7	20
TOTAL DIOXINS	10/16	44.5	333	10
TOTAL FURANS	9/16	1.5	104	10
TOTAL HPCDD	10/16	8.2	64.5	10
TOTAL HPCDF	9/16	1.5	50.9	10
TOTAL HXCDD	13/16	0.98	1.07	10
TOTAL HXCDF	12/16	0.98	1.16	10
TOTAL PECDD	5/16	0.91	2.13	10
TOTAL PECDF	11/16	0.98	2.13	10
TOTAL TCDD	8/16	0.2	5.96	2
TOTAL TCDF	10/16	0.2	0.43	2
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	16/16	0	0	20
1-METHYLNAPHTHALENE	16/16	0	0	20
1-METHYLPHENANTHRENE	16/16	0	0	20
2,6-DIMETHYLNAPHTHALENE	16/16	0	0	20
2-METHYLNAPHTHALENE	16/16	0	0	20
ACENAPHTHENE	16/16	0	0	20
ACENAPHTHYLENE	16/16	0	0	20
ANTHRACENE	16/16	0	0	20
BENZO(A)ANTHRACENE	16/16	0	0	20
BENZO(A)PYRENE	16/16	0	0	20
BENZO(B)FLUORANTHENE	16/16	0	0	20
BENZO(E)PYRENE	16/16	0	0	20
BENZO(G,H,I)PERYLENE	13/16	3.61	4.78	20
BENZO(K)FLUORANTHENE	16/16	0	0	20
BIPHENYL	16/16	0	0	20
C1-CHRYSENES	16/16	0	0	20
C1-DIBENZOTHIOPHENES	14/16	3.3	4.78	20
C1-FLUORANTHENES/PYRENES	16/16	0	0	20
C1-FLUORENES	16/16	0	0	20
C1-NAPHTHALENES	16/16	0	0	20
C1-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C2-CHRYSENES	16/16	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	16/16	0	0	20
C2-FLUORENES	16/16	0	0	20
C2-NAPHTHALENES	16/16	0	0	20
C2-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C3-CHRYSENES	15/16	0.97	0.97	20
C3-DIBENZOTHIOPHENES	16/16	0	0	20
C3-FLUORENES	16/16	0	0	20
C3-NAPHTHALENES	16/16	0	0	20
C3-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
C4-CHRYSENES	16/16	0	0	20
C4-NAPHTHALENES	16/16	0	0	20
C4-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
CHRYSENE	16/16	0	0	20
DIBENZO(A,H)ANTHRACENE	16/16	0	0	20
DIBENZOTHIOPHENE	16/16	0	0	20
FLUORANTHENE	16/16	0	0	20
FLUORENE	16/16	0	0	20
INDENO(1,2,3-CD)PYRENE	16/16	0	0	20
NAPHTHALENE	16/16	0	0	20
PERYLENE	16/16	0	0	20
PHENANTHRENE	16/16	0	0	20
PYRENE	16/16	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	9/16	0.01	0.64	2
1,2,4,5-TETRACHLOROBENZENE	2/16	0.43	4.3	2
2,4'-DDD	14/16	0.05	0.055	2
2,4'-DDE	14/16	0.081	0.097	2
2,4'-DDT	14/16	0.02	0.026	2
4,4'-DDD	16/16	0	0	2
4,4'-DDE	16/16	0	0	2
4,4'-DDT	13/16	0.031	0.035	2
ALDRIN	11/16	0.05	0.075	2
ALPHA-BHC	10/16	0.02	0.08	2
ALPHA-CHLORDANE	14/16	0.06	0.062	2
BETA-BHC	1/16	0.17	0.46	2
CHLORPYRIFOS	0/16	0.28	2.8	2
CIS-NONACHLOR	16/16	0	0	2
DELTA-BHC	8/16	0.04	0.1	2
DIELDRIN	7/16	0.056	0.15	2
ENDOSULFAN II	10/16	0.074	0.095	2
ENDRIN	1/16	0.11	0.27	2
GAMMA-BHC (LINDANE)	4/16	0.2	0.3	2
GAMMA-CHLORDANE	11/16	0.057	0.13	2
HEPTACHLOR	10/16	0.15	0.34	2
HEPTACHLOR EPOXIDE	0/16	0.025	0.068	2
HEXACHLOROBENZENE	4/16	0.037	0.1	2
MIREX	2/16	0.025	0.059	2
OXYCHLORDANE	9/16	0.012	0.015	2
PCB-101/90	16/16	0	0	1
PCB-105	16/16	0	0	1
PCB-114	0/16	0.15	0.41	1
PCB-118	16/16	0	0	1

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	0/16	0.15	0.41	1
PCB-128	13/16	0.038	0.053	1
PCB-138/160	10/16	0.12	0.62	1
PCB-149/123	14/16	0.04	0.11	1
PCB-153/132	9/16	0.1	0.67	1
PCB-156	16/16	0	0	1
PCB-167	14/16	0.15	0.17	1
PCB-169	0/16	0.01	0.18	1
PCB-170/190	12/16	0.92	2.3	1
PCB-18/17	6/16	0.074	0.18	1
PCB-180	10/16	0.06	0.14	1
PCB-187	16/16	0	0	1
PCB-189	10/16	0.15	0.18	1
PCB-195/208	15/16	0.048	0.048	1
PCB-201/157/173	12/16	0.02	0.02022	1
PCB-206	11/16	0.068	0.076	1
PCB-209	16/16	0	0	1
PCB-28	6/16	0.03	0.7	1
PCB-44	15/16	0.18	0.18	1
PCB-52	16/16	0	0	1
PCB-66	11/16	0.11	0.12	1
PCB-77	6/16	0.01	0.55	1
PCB-8/5	6/16	0.03	0.65	1
PCB-81	5/16	0.15	0.41	1
PENTACHLOROANISOLE	1/16	0.02	0.55	2
PENTACHLOROBENZENE	0/16	0.06	0.62	2
TRANS-NONACHLOR	14/16	0.033	0.034	2
Inorganics (mg/kg)				
ALUMINUM	16/16	0	0	50
ARSENIC	16/16	0	0	5
CHROMIUM	16/16	0	0	0.3
IRON	16/16	0	0	5
MANGANESE	16/16	0	0	5
MERCURY	10/16	0.0669	0.0946	50
SILVER	15/16	1.54	1.54	5
CADMIUM	17/32	0.0676	0.3314	5
COPPER	31/32	0.15	0.15	0.2
LEAD	32/32	0	0	5
NICKEL	27/32	0.35	9.17	0.1
ZINC	21/32	3.14	24	15

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussels				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	2/4	21.9	27	25
1,2,3,4,6,7,8-HPCDF	0/8	21.9	27	25
1,2,3,4,7,8,9-HPCDF	0/8	21.9	27	25
1,2,3,4,7,8-HXCDD	0/8	21.9	27	25
1,2,3,4,7,8-HXCDF	0/8	21.9	27	25
1,2,3,6,7,8-HXCDD	0/8	21.9	27	25
1,2,3,6,7,8-HXCDF	0/8	21.9	27	25
1,2,3,7,8,9-HXCDD	0/8	21.9	27	25
1,2,3,7,8,9-HXCDF	0/8	21.9	27	25
1,2,3,7,8-PECDD	0/8	21.9	27	25
1,2,3,7,8-PECDF	1/8	22.1	27	25
2,3,4,6,7,8-HXCDF	0/8	21.9	27	25
2,3,4,7,8-PECDF	0/8	21.9	27	25
2,3,7,8-TCDD	0/2	4.39	5.41	5
2,3,7,8-TCDF	3/8	4.39	5.03	5
OCDD	4/8	43.9	54.1	50
OCDF	0/8	43.9	54.1	50
TOTAL DIOXINS	7/8	54.1	54.1	25
TOTAL FURANS	6/8	8.25	10.3	25
TOTAL HPCDD	3/8	21.9	27	25
TOTAL HPCDF	0/8	21.9	27	25
TOTAL HXCDD	0/8	21.9	27	25
TOTAL HXCDF	3/8	21.9	27	25
TOTAL PECDD	0/8	21.9	27	25
TOTAL PECDF	4/8	22.5	27	25
TOTAL TCDD	5/8	4.98	5.41	5
TOTAL TCDF	6/8	4.39	4.59	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	8/8	0	0	20
1-METHYLNAPHTHALENE	8/8	0	0	20
1-METHYLPHENANTHRENE	8/8	0	0	20
2,6-DIMETHYLNAPHTHALENE	8/8	0	0	20
2-METHYLNAPHTHALENE	8/8	0	0	20
ACENAPHTHENE	8/8	0	0	20
ACENAPHTHYLENE	8/8	0	0	20
ANTHRACENE	8/8	0	0	20
BENZO(A)ANTHRACENE	8/8	0	0	20
BENZO(A)PYRENE	8/8	0	0	20
BENZO(B)FLUORANTHENE	8/8	0	0	20
BENZO(E)PYRENE	8/8	0	0	20
BENZO(G,H,I)PERYLENE	8/8	0	0	20
BENZO(K)FLUORANTHENE	8/8	0	0	20
BIPHENYL	8/8	0	0	20
C1-CHRYSENES	8/8	0	0	20
C1-DIBENZOTHIOPHENES	8/8	0	0	20
C1-FLUORANTHENES/PYRENES	8/8	0	0	20
C1-FLUORENES	8/8	0	0	20
C1-NAPHTHALENES	8/8	0	0	20
C1-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C2-CHRYSENES	8/8	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	8/8	0	0	20
C2-FLUORENES	8/8	0	0	20
C2-NAPHTHALENES	8/8	0	0	20
C2-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C3-CHRYSENES	8/8	0	0	20
C3-DIBENZOTHIOPHENES	8/8	0	0	20
C3-FLUORENES	8/8	0	0	20
C3-NAPHTHALENES	8/8	0	0	20
C3-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C4-CHRYSENES	8/8	0	0	20
C4-NAPHTHALENES	8/8	0	0	20
C4-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
CHRYSENE	8/8	0	0	20
DIBENZO(A,H)ANTHRACENE	8/8	0	0	20
DIBENZOTHIOPHENE	8/8	0	0	20
FLUORANTHENE	8/8	0	0	20
FLUORENE	8/8	0	0	20
INDENO(1,2,3-CD)PYRENE	8/8	0	0	20
NAPHTHALENE	8/8	0	0	20
PERYLENE	8/8	0	0	20
PHENANTHRENE	8/8	0	0	20
PYRENE	8/8	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	3/8	0.13	0.25	10
1,2,4,5-TETRACHLOROBENZENE	3/8	0.33	1.1	10
2,4'-DDD	8/8	0	0	10
2,4'-DDE	6/8	0.36	0.39	10
2,4'-DDT	8/8	0	0	10
4,4'-DDD	8/8	0	0	10
4,4'-DDE	8/8	0	0	10
4,4'-DDT	8/8	0	0	10
ALDRIN	4/8	0.35	0.45	10
ALPHA-BHC	7/8	0.25	0.25	10
ALPHA-CHLORDANE	8/8	0	0	10
BETA-BHC	3/8	0.51	3.2	10
CHLORPYRIFOS	0/8	2.3	2.9	10
CIS-NONACHLOR	8/8	0	0	10
DELTA-BHC	0/8	0.14	0.18	10
DIELDRIN	8/8	0	0	10
ENDOSULFAN II	8/8	0	0	10
ENDRIN	0/8	0.73	0.93	10
GAMMA-BHC (LINDANE)	6/8	0.26	0.26	10
GAMMA-CHLORDANE	7/8	0.36	0.36	10
HEPTACHLOR	2/8	0.4	0.49	10
HEPTACHLOR EPOXIDE	0/8	0.28	0.36	10
HEXACHLOROBENZENE	8/8	0	0	10
MIREX	0/8	0.64	0.82	10
OXYCHLORDANE	1/8	0.3	0.37	10
PCB-101/90	8/8	0	0	2
PCB-105	8/8	0	0	2
PCB-114	0/8	0.98	1.3	2
PCB-118	8/8	0	0	2

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	1/8	0.98	1.3	2
PCB-128	8/8	0	0	2
PCB-138/160	8/8	0	0	2
PCB-149/123	6/8	3.8	7.3	2
PCB-153/132	7/8	9.7	9.7	2
PCB-156	5/8	1.1	1.2	2
PCB-167	8/8	0	0	2
PCB-169	1/8	0.11	1.3	2
PCB-170/190	3/8	0.27	0.6	2
PCB-18/17	6/8	2.6	3.1	2
PCB-180	7/8	3.4	3.4	2
PCB-187	8/8	0	0	2
PCB-189	1/8	0.98	1.2	2
PCB-195/208	1/8	0.81	1	2
PCB-201/157/173	5/8	0.75	0.93	2
PCB-206	0/8	0.85	1.1	2
PCB-209	0/8	1.1	1.4	2
PCB-28	8/8	0	0	2
PCB-44	3/8	0.55	0.93	2
PCB-52	3/8	1.1	2.7	2
PCB-66	8/8	0	0	2
PCB-77	5/8	0.98	1.2	2
PCB-8/5	8/8	0	0	2
PCB-81	3/8	1.1	1.2	2
PENTACHLOROANISOLE	3/8	0.47	1.1	10
PENTACHLOROBENZENE	3/8	0.32	0.99	10
TRANS-NONACHLOR	8/8	0	0	10
Inorganics (mg/kg)				
ALUMINUM	8/8	0	0	10
ARSENIC	8/8	0	0	0.35
CADMIUM	8/8	0	0	0.1
CHROMIUM	6/8	3.21	3.5	0.4
COPPER	8/8	0	0	0.1
IRON	8/8	0	0	15
LEAD	8/8	0	0	0.1
MANGANESE	8/8	0	0	1.7
MERCURY	8/8	0	0	0.01
NICKEL	0/8	1.83	5.4	0.14
SILVER	1/8	0.29	0.33	0.29
ZINC	8/8	0	0	5.7

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8-HPCDD	0/4	4.35	13.3	25
1,2,3,4,6,7,8-HPCDF	0/4	2.85	13.3	25
1,2,3,4,7,8,9-HPCDF	0/4	11.9	18.7	25
1,2,3,4,7,8-HXCDD	0/4	11.9	18.7	25
1,2,3,4,7,8-HXCDF	0/4	11.9	18.7	25
1,2,3,6,7,8-HXCDD	0/4	11.9	18.7	25
1,2,3,6,7,8-HXCDF	0/4	11.9	18.7	25
1,2,3,7,8,9-HXCDD	0/4	11.9	18.7	25
1,2,3,7,8,9-HXCDF	0/4	11.9	18.7	25
1,2,3,7,8-PECDD	0/4	11.9	18.7	25
1,2,3,7,8-PECDF	0/4	1.78	13.3	25
2,3,4,6,7,8-HXCDF	0/4	11.9	18.7	25
2,3,4,7,8-PECDF	0/4	11.9	18.7	25
2,3,7,8-TCDD	1/4	2.63	3.75	5
2,3,7,8-TCDF	2/3	3.75	3.75	5
OCDD	1/4	16.1	26.6	50
OCDF	0/4	0.19	26.6	50
TOTAL DIOXINS	4/4	0	0	25
TOTAL FURANS	1/4	1.52	2.87	25
TOTAL HPCDD	1/4	9.98	13.3	25
TOTAL HPCDF	0/4	2.85	13.3	25
TOTAL HXCDD	0/4	11.9	18.7	25
TOTAL HXCDF	0/4	5.38	13.3	25
TOTAL PECDD	0/4	11.9	18.7	25
TOTAL PECDF	0/4	1.78	13.3	25
TOTAL TCDD	2/4	2.63	3.75	5
TOTAL TCDF	4/4	0	0	5
Semivolatile Organics (ug/kg)				
1,6,7-TRIMETHYLNAPHTHALENE	4/4	0	0	20
1-METHYLNAPHTHALENE	4/4	0	0	20
1-METHYLPHENANTHRENE	4/4	0	0	20
2,6-DIMETHYLNAPHTHALENE	4/4	0	0	20
2-METHYLNAPHTHALENE	4/4	0	0	20
ACENAPHTHENE	4/4	0	0	20
ACENAPHTHYLENE	4/4	0	0	20
ANTHRACENE	4/4	0	0	20
BENZO(A)ANTHRACENE	4/4	0	0	20
BENZO(A)PYRENE	4/4	0	0	20
BENZO(B)FLUORANTHENE	4/4	0	0	20
BENZO(E)PYRENE	4/4	0	0	20
BENZO(G,H,I)PERYLENE	4/4	0	0	20
BENZO(K)FLUORANTHENE	4/4	0	0	20
BIPHENYL	4/4	0	0	20
C1-CHRYSENES	4/4	0	0	20
C1-DIBENZOTHIOPHENES	4/4	0	0	20
C1-FLUORANTHENES/PYRENES	4/4	0	0	20
C1-FLUORENES	4/4	0	0	20
C1-NAPHTHALENES	4/4	0	0	20
C1-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
C2-CHRYSENES	4/4	0	0	20

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	4/4	0	0	20
C2-FLUORENES	4/4	0	0	20
C2-NAPHTHALENES	4/4	0	0	20
C2-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
C3-CHRYSENES	4/4	0	0	20
C3-DIBENZOTHIOPHENES	4/4	0	0	20
C3-FLUORENES	4/4	0	0	20
C3-NAPHTHALENES	4/4	0	0	20
C3-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
C4-CHRYSENES	4/4	0	0	20
C4-NAPHTHALENES	4/4	0	0	20
C4-PHENANTHRENES/ANTHRACENES	4/4	0	0	20
CHRYSENE	4/4	0	0	20
DIBENZO(A,H)ANTHRACENE	4/4	0	0	20
DIBENZOTHIOPHENE	4/4	0	0	20
FLUORANTHENE	4/4	0	0	20
FLUORENE	4/4	0	0	20
INDENO(1,2,3-CD)PYRENE	4/4	0	0	20
NAPHTHALENE	4/4	0	0	20
PERYLENE	4/4	0	0	20
PHENANTHRENE	4/4	0	0	20
PYRENE	4/4	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	4/4	0	0	10
1,2,4,5-TETRACHLOROBENZENE	0/4	0.48	0.73	10
2,4'-DDD	0/4	0.41	0.42	10
2,4'-DDE	0/4	0.57	0.59	10
2,4'-DDT	1/4	0.53	0.54	10
4,4'-DDD	0/4	0.49	0.51	10
4,4'-DDE	4/4	0	0	10
4,4'-DDT	0/4	0.76	0.78	10
ALDRIN	0/4	0.65	0.68	10
ALPHA-BHC	0/4	0.46	0.48	10
ALPHA-CHLORDANE	2/4	0.49	0.5	10
BETA-BHC	0/4	0.42	0.44	10
CHLORPYRIFOS	0/4	4.3	4.4	10
CIS-NONACHLOR	2/4	0.46	0.47	10
DELTA-BHC	0/4	0.26	0.27	10
DIELDRIN	4/4	0	0	10
ENDOSULFAN II	0/4	0.49	0.51	10
ENDRIN	0/4	1.4	1.4	10
GAMMA-BHC (LINDANE)	0/4	0.41	0.42	10
GAMMA-CHLORDANE	0/4	0.52	0.54	10
HEPTACHLOR	0/4	0.74	0.77	10
HEPTACHLOR EPOXIDE	0/4	0.52	0.54	10
HEXACHLOROBENZENE	4/4	0	0	10
MIREX	0/4	1.2	1.2	10
OXYCHLORDANE	4/4	0	0	10
PCB-101/90	4/4	0	0	2
PCB-105	4/4	0	0	2
PCB-114	0/4	1.8	1.9	2
PCB-118	4/4	0	0	2

TABLE 1-6

RANGE OF NON-DETECT DATA FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 3 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	0/4	1.8	1.9	2
PCB-128	4/4	0	0	2
PCB-138/160	0/4	2.2	5.6	2
PCB-149/123	4/4	0	0	2
PCB-153/132	0/4	0.29	7.4	2
PCB-156	2/4	1.8	1.8	2
PCB-167	2/4	1.8	1.8	2
PCB-169	1/4	1.8	1.9	2
PCB-170/190	0/4	0.64	0.93	2
PCB-18/17	1/4	4.8	4.9	2
PCB-180	0/4	0.81	1.8	2
PCB-187	4/4	0	0	2
PCB-189	0/4	1.8	1.9	2
PCB-195/208	2/4	1.5	1.5	2
PCB-201/157/173	0/4	1.4	1.4	2
PCB-206	2/4	1.6	1.6	2
PCB-209	0/4	2	2.1	2
PCB-28	0/4	0.05	0.59	2
PCB-44	2/4	0.08	1.1	2
PCB-52	0/4	1.2	1.3	2
PCB-66	4/4	0	0	2
PCB-77	1/4	1.8	1.9	2
PCB-8/5	4/4	0	0	2
PCB-81	0/4	1.8	1.9	2
PENTACHLOROANISOLE	0/4	0.23	0.29	10
PENTACHLOROBENZENE	0/4	2.5	5	10
TRANS-NONACHLOR	4/4	0	0	10
Inorganics (mg/kg)				
ALUMINUM	0/4	3.04	6.9	10
ARSENIC	4/4	0	0	0.35
CADMIUM	4/4	0	0	0.1
CHROMIUM	4/4	0	0	0.4
COPPER	4/4	0	0	0.1
IRON	4/4	0	0	15
LEAD	1/4	0.11	0.42	0.1
MANGANESE	4/4	0	0	1.7
MERCURY	4/4	0	0	0.01
NICKEL	0/4	1.86	2.12	0.14
SILVER	4/4	0	0	0.29
ZINC	4/4	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999

APPENDIX A.4

DATA QUALITY ASSESSMENT REPORT FOR ROUND 4

Interim Offshore Monitoring Round 4 Data Quality Assessment
Portsmouth Naval Shipyard
November 16, 2001

This memorandum presents the data quality assessment (DQA) for Round 4 of the Interim Offshore Monitoring Program. The detailed data quality evaluation is provided in Attachment A.4-1. This DQA document consists of reviewing the data for the following:

- Gross errors in chemical analyses, toxicology assessments, or data reporting.
- Gross inconsistencies among monitoring stations, reference stations, or sampling locations within monitoring stations or reference stations.
- Gross differences between observed coefficients of variation and expectations based on past data analyses.

1.0 GROSS ERRORS IN CHEMICAL ANALYSES, TOXICOLOGY ASSESSMENTS, OR DATA REPORTING

1.1 Detection Limits

Minimum and maximum detection limits achieved during laboratory analysis were compared to target method detection limits (MDLs) contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan (TtNUS, October 1999). Because MDLs in Tables 6-5i (Dioxins) were presented on a wet weight basis, target MDLs were recalculated accounting for the percent moisture to facilitate these comparisons (multiplied by 2 for sediment and 5 for tissue to obtain dry weight values). Tables 1-5 and 1-6 in Attachment A.4-1 list the minimum and maximum non-detected values for each matrix. As presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999), trending of chemicals will be conducted for limiting chemicals of concern (COCs) with interim remediation goals (IRGs) in sediment. Based on Tables 1-5 and 1-6, the chemicals with IRGs were either detected in all of the sediment samples or the MDL did not exceed the target MDL with the exception of acenaphthylene and copper in one sample. Exceedance of the target MDL for these two chemicals did affect the usability of the sample data for monitoring purposes because the MDL is less than the IRG.

1.2 Analytical Methods

Comparability of laboratory measurements is assessed primarily through the use and documentation of similar sampling and analytical methods. Results are reported in units that ensure comparability with previous data and with current state and federal standards and guidelines. Comparability of field data is satisfied by ensuring that the field sampling plan is followed and that proper sampling techniques are used. Comparability of laboratory measurements is assessed primarily through the use of certified reference materials, spike recoveries, and relative percent difference (RPD) values, as well as by using proven analytical methods of comparable performance characteristics such as accuracy, precision, and sensitivity. Failure to achieve comparability results in corrective action.

Field data were generated using the methodologies and units specified in the Interim Offshore Monitoring Plan.

1.3 Sampling Methods

Sampling was conducted by the University of Rhode Island (URI) with supervision of Tech Tech NUS, Inc. (TtNUS). URI collected the samples in accordance with the standard operating procedures that were developed for this project, as specified in the plan. Deviations in the sampling plan were documented in the Interim Offshore Monitoring Program Round 4 Data Package (TtNUS, September 2001). In addition to the deviations presented in the Round 4 Data Package, the following modifications were made in the sampling procedures based on the availability of mussels and juvenile lobsters:

- Mussels that were 5 to 6 cm in length were preferentially collected for chemical analysis, when available as stated in Appendix B.5 of the interim Offshore Monitoring Plan (TtNUS, October 1999). Some of the samples had a few large or smaller mussels, depending upon availability. However, primarily larger mussels (6 to 9 cm) were collected at several locations because inadequate numbers of mussels in the preferred size range were available. These samples are listed below. Most of those samples were collected from subtidal areas. Several of the reference station samples (OU-MU-R01-301B and OU4-MU-R02-301B) had several larger mussels in the sample. Subtidal mussels are typically larger than intertidal mussels because subtidal mussels spend a larger portion of their time feeding, because they are covered with water all of the time. Mussels from OU4-MU-M11-101B were slightly smaller (4 to 5 cm) than the preferred size range. The reason for the smaller mussels at this location is not known but may have been caused by sampling error.

Samples with Larger Mussels

- OU4-MU-M01-301B
- OU4-MU-M02-101B
- OU4-MU-M06-201B
- OU4-MU-M08-201B
- OU4-MU-M10-201B
- OU4-MU-M10-301B
- OU4-MU-M13-301B
- OU4-MU-R03-301B

- Adequate numbers of juvenile lobsters were collected in the preferred size range (5 to 6 cm carapace length) at each of the monitoring stations. Five lobsters (in the preferred size range) from each station were composited into a single tissue sample and analyzed by the laboratory, with the exception of station OU4-LJ-M04-101B, OU4-LJ-M11-101B, and OU4-LJ-R02-101B where two, three, and two lobsters were collected, respectively. The collected sizes of juvenile lobsters fell mostly within the size range specified in the monitoring plan so there is no anticipated adverse impact to the project.

1.4 Data Validation

Attachment 1 presents a detailed data quality evaluation. Part of that evaluation includes a section on data validation. The following bullets present the most significant issues noted during the data validation:

- Many pesticides and PCBs in several samples were qualified as nondetected, U, because of noncompliances with holding times.

- Slight increases in the qualification for PAH and pesticide/PCB mussel samples were noted in blank spikes. The increases are not considered significant; however, data generated in Round 5 should be examined to determine if this is an isolated occurrence.

- Qualification rate for surrogate recovery in sediment pesticide/PCBs was higher than all previous rounds. This should be closely monitored in Round 5.

2.0 CONSISTENCY AMONG MONITORING STATIONS, REFERENCE STATIONS, OR SAMPLING LOCATIONS WITHIN MONITORING STATIONS OR REFERENCE STATIONS

The Round 4 data package presents the descriptive statistics for sediment (Tables 3-4a and 3-4b), mussel (Tables 3-8a and 3-8b), and juvenile lobsters (Tables 3-9a and 3-9b). The data in those tables are not normalized (see below). Those tables are included as an attachment to this DQA report for ease of review. The tables were not renumbered for this report. A juvenile lobster sample could not be collected at reference station R04 during Round 4. The following general observations were made after reviewing the tables:

- More dioxins were detected in the sediment samples than in the mussel or juvenile lobster samples. In general, the greatest dioxin concentrations at the monitoring stations were in samples from M12 (sediment) and M09 (juvenile lobster). In general, the greatest dioxin concentrations at the reference stations were in samples from R02 (sediment) and R01 (juvenile lobster). No stations stood out as having the greatest number of the maximum detections for dioxins for mussel at the monitoring or reference stations.

- Most of the PAHs were detected in every sediment, mussel, and lobster sample. In general, the greatest PAH concentrations at the monitoring stations were in samples from M01 and M04 (sediment), M02, M08, and M12 (mussel), and M01 (juvenile lobster). In general, the greatest PAH concentrations at the reference stations were in samples from R03 (sediment), R01 and R02 (mussel), and R02 (juvenile lobster).

- Most of the pesticides and PCBs were detected in the majority of the sediment, mussel, and juvenile lobster samples; the frequency of detection was greater in sediment and mussel than juvenile lobster, except that few pesticides were detected in the juvenile lobster samples. In general, the greatest PCB concentrations at the monitoring stations were in samples from M02 and M12 (sediment), M03 and M10 (mussel), and M12 (juvenile lobster), and monitoring stations had the greatest number of maximum detections for pesticides for sediment, mussel, or juvenile lobster. In general, the greatest pesticide concentrations at the reference stations were in samples from R02 (sediment), R01 (mussel), and the greatest PCB concentrations at the reference stations were in samples from R02 (sediment) and R01 (mussel and juvenile lobster).

- Metals were detected in most if not all the sediment, mussel, and juvenile lobster samples. In general, the greatest metal concentrations at the monitoring stations were in samples from

M04 (sediment), and M05 (mussel). In general, the greatest metal concentrations at the reference stations were in samples from R02 (sediment), R04 (mussel), and R01 (juvenile lobster).

Analytical data were also normalized using the procedures described in the DQA report for Round 1 (see Attachment A.1-1).

Tables A.4-1, A.4-2 and A.4-3 present the normalized sediment (organics and metals), mussel (organics), and juvenile lobster (organics) results, respectively, at each monitoring station. The non-normalized metals results for mussels and juvenile lobsters are also included in the appropriate tables. The results for the individual sample locations from each station were averaged, as presented in the Interim Offshore Monitoring Plan (TtNUS, October 1999). The results for the individual samples are provided in Appendix B. The average reference station concentration (the average results from all four reference stations), along with the range of the reference station average concentrations also are included on the Tables A.4-1, A4.2, and A.4-3. Various values on the tables are shaded based on how high the numerical value was compared to the average reference concentration. The footnotes on the tables indicate the number of times greater than the reference concentration a sample had to be in order to be shaded. There is no significance in the number of times greater than the reference concentration a sample had to be to become shaded except that the factors used were selected to identify monitoring stations that had chemical concentrations that were the most elevated as compared to the reference stations in the data. The intent was to determine whether elevated chemical concentrations appear to be correlated across the sampled media (sediment, mussel tissue, and lobster tissue).

The following bullets summarize the results of this evaluation using the normalized data.

- Few dioxins in the sediment, mussel, and juvenile lobsters were detected at concentrations greater than the average reference concentrations. Monitoring station M11 generally had the greatest dioxin concentrations in the sediment, but no monitoring stations stood out as having elevated levels of dioxins for mussel or juvenile lobsters.

- Concentrations of various PAHs in the sediment, mussel, and juvenile lobsters were greater than the average reference concentrations. Monitoring Stations M01, M04, M06, and M12 had the greatest sediment PAH concentrations, and monitoring stations M01, M08, and M12 had the greatest mussel PAH concentrations. Monitoring stations M01, M09, and M13 had the greatest juvenile lobster PAH concentrations. Therefore, monitoring station M01 had

elevated PAHs levels in all three media, and M12 had elevated levels of PAHs in sediment and mussels.

- Various pesticides in the monitoring station samples were detected at concentrations ten times greater than the average reference station sediment concentrations and two times greater than the average reference station mussel and juvenile lobster concentrations. Monitoring stations M01, M04, M08, and M10 had the greatest pesticide concentrations in the sediment, and monitoring stations M08, M09, M10, and M11 had the greatest pesticide concentrations in the mussels. Monitoring station M09 had slightly greater pesticide concentrations in the juvenile lobsters. No station had elevated pesticide levels in all three media, but M08 and M10 had elevated levels of pesticides in sediment and mussel and M09 had elevated levels of pesticides in mussel and juvenile lobster.

- Several PCBs in the monitoring station samples were at concentrations ten times greater than the average reference station sediment concentrations and two times greater than the average reference station mussel and juvenile lobster concentrations. Monitoring stations M02, M08, and M12 had the greatest PCB concentrations in the sediment. Monitoring stations M03, M10, and M11 had the greatest PCB concentrations in the mussels, but numerous monitoring stations had concentrations greater than the average reference station concentration. Monitoring stations M09 and M12 had the slightly greater PCB concentrations in the juvenile lobsters. No monitoring station had elevated levels of PCBs in all three media, but M12 had elevated PCB concentrations in sediment and juvenile lobster samples.

- Normalized metal concentrations were greatest in the sediment at monitoring stations M04 and M11. Metal concentrations in the mussel and juvenile lobster samples were not normalized. No monitoring stations stood out as having elevated levels of metals for mussel and juvenile lobster. No monitoring station had elevated levels of metals in all three media.

3.0 EVALUATION OF COEFFICIENTS OF VARIATION FOR SEDIMENT DATA FOR THE MONITORING STATIONS

Table A.4-4 presents the coefficients of variation (CVs) for each of the parameters that were detected in the sediment samples at the monitoring stations. The table also presents the minimum, maximum, and mean concentrations, and the average, minimum and maximum CVs for each analyte fraction (e.g., dioxins, PAHs, pesticides, PCBs, and metals). The average CVs ranged from 0.98 for dioxins to 1.88 for PCBs. Most of the CVs for the individual chemicals were

less than 2.0, and many were less than 1.5. The CVs were slightly higher than the CVs that were presented in Appendix B.3 of the Interim Offshore Monitoring Plan for OU4 (TtNUS, October 1999). The following bullets list the potential reasons:

- The CVs in the monitoring plan were calculated for each area of concern (AOC) (e.g., Back Channel, Clark Cove), and the CVs in Table A.4-4 represent the larger offshore areas. The CVs in each area will be calculated and evaluated in the Baseline Report.

- Because a greater number of samples were used to calculate the CVs for these Interim Offshore Monitoring samples, greater variation in these sample results was expected.

- Elevated detections of a few parameters in a few samples from this sampling round were skewed some of the CVs high. These elevated detections will be evaluated in the Baseline Report.
- The historic samples were either all subtidal (EERA) or intertidal (seep/sediment sampling) and the samples in Table A.4-4 consist of both intertidal and subtidal samples. The Baseline Report evaluates whether there are differences in the chemical concentrations between the subtidal and intertidal samples.

In summary, although the CVs for the Round 4 Interim Offshore Monitoring Program are slightly greater than the CVs previously identified, the fact that most of them are less than 2.0 supports the assumption that there is relatively low variation in sample results across the stations, with a few exceptions. Some of these exceptions are discussed in more detail in the Baseline Report.

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins (PG/G)							
1,2,3,4,6,7,8,9-OCDD	6/16	141	2145	423	OU4-SD-M12-101B	688	1.6
1,2,3,4,6,7,8-HPCDD	4/16	17.8	244	38.0	OU4-SD-M12-101B	61.8	1.6
1,2,3,4,6,7,8-HPCDF	16/16	2	58.3	15.0	OU4-SD-M12-101B	17.5	1.2
1,2,3,4,7,8,9-HPCDF	7/15	0.2	1.7	0.93	OU4-SD-M12-201B-D	0.47	0.51
1,2,3,4,7,8-HXCDD	1/15	1.5	1.5	0.89	OU4-SD-M12-201B-D	0.42	0.47
1,2,3,6,7,8-HXCDD	8/15	1	10	2.4	OU4-SD-M10-301B	2.40	1.0
1,2,3,6,7,8-HXCDF	1/15	1.7	1.7	0.99	OU4-SD-M12-201B-D	0.44	0.44
1,2,3,7,8,9-HXCDD	1/15	3.9	3.9	1.2	OU4-SD-M12-201B-D	0.63	0.54
1,2,3,7,8,9-HXCDF	1/15	0.7	0.7	0.97	OU4-SD-M12-201B-D	0.33	0.34
1,2,3,7,8-PECDD	4/15	0.1	3.2	1.0	OU4-SD-M09-301B-D	0.51	0.49
2,3,4,6,7,8-HXCDF	1/15	2.6	2.6	1.2	OU4-SD-M12-201B-D	0.47	0.41
2,3,7,8-TCDD	3/15	0.2	0.5	0.25	OU4-SD-M12-201B-D	0.18	0.71
2,3,7,8-TCDF	1/15	0.3	0.3	0.41	OU4-SD-M11-301B	0.38	0.94
TOTAL; DIOXINS	6/16	190	2929	575	OU4-SD-M12-101B	914	1.6
TOTAL HPCDD	6/16	39	677	123	OU4-SD-M12-101B	191	1.6
TOTAL HPCDF	16/16	1.8	148	25.5	OU4-SD-M12-101B	36.7	1.4
TOTAL HXCDD	4/16	6.3	107	19.6	OU4-SD-M12-101B	27.9	1.4
TOTAL HXCDF	4/16	4.6	43.9	9.3	OU4-SD-M12-201B-D	8.7	0.93
TOTAL PECDD	2/15	0.1	1.4	1.6	OU4-SD-M12-201B-D	2.0	1.2
TOTAL TCDD	1/15	0.2	4	0.55	OU4-SD-M12-201B-D	0.60	1.1
Polyaromatic Hydrocarbons (NG/G)							
1,1-Biphenyl	39/40	0.9	94	12.6	OU4-SD-M01-301B	17.2	1.4
1-Methylnaphthalene	39/40	1.8	238	31.5	OU4-SD-M01-301B-D	46.0	1.5
1-Methylphenanthrene	40/40	5.8	749	97.2	OU4-SD-M01-301B-D	135	1.4
2,3,5-Trimethylnaphthalene	40/40	0.9	116	17.9	OU4-SD-M01-301B-D	20.0	1.1
2,6-Dimethylnaphthalene	40/40	1.5	127	24.7	OU4-SD-M04-101B-D	27.2	1.1
2-Methylnaphthalene	40/40	2.7	347	48.5	OU4-SD-M01-301B	65.0	1.3
Acenaphthene	40/40	2.6	1591	147	OU4-SD-M01-301B	338	2.3
Acenaphthylene	39/40	7.7	1435	120	OU4-SD-M01-301B-D	175	1.5
Anthracene	40/40	22.2	5921	595	OU4-SD-M04-101B-D	865	1.5
Benzo(a)anthracene	40/40	45.3	4812	731	OU4-SD-M04-101B-D	971	1.3
Benzo(a)pyrene	40/40	70.6	6132	1013	OU4-SD-M01-301B-D	1325	1.3
Benzo(b)fluoranthene	40/40	73.9	5491	909	OU4-SD-M04-101B-D	1114	1.2
Benzo(e)pyrene	40/40	36.5	3428	450	OU4-SD-M01-301B-D	607	1.3
Benzo(g,h,i)perylene	40/40	9.2	2801	393	OU4-SD-M01-301B-D	534	1.4
Benzo(k)fluoranthene	40/40	18.6	1851	278	OU4-SD-M04-101B-D	361	1.3
C1-Chrysenes	40/40	23.2	4957	387	OU4-SD-M01-301B-D	585	1.5
C1-Dibenzothiophenes	40/40	2.5	174	29.5	OU4-SD-M04-101B-D	33.3	1.1
C1-Fluoranthenes/pyrenes	40/40	34.3	9586	726	OU4-SD-M01-301B-D	1311	1.8
C1-Fluorenes	40/40	4.1	1590	95.3	OU4-SD-M01-301B-D	187	2.0
C1-Naphthalenes	40/40	4.5	582	81.7	OU4-SD-M01-301B	113	1.4
C1-Phenanthrenes/anthracenes	40/40	21	3519	370	OU4-SD-M01-301B-D	567	1.5
C2-Chrysenes	40/40	12.9	2055	179	OU4-SD-M01-301B-D	236	1.3
C2-Dibenzothiophenes	40/40	3.3	344	33.8	OU4-SD-M01-301B-D	42.5	1.3
C2-Fluorenes	40/40	3.7	1799	83.3	OU4-SD-M01-301B-D	185	2.2
C2-Naphthalenes	40/40	3.9	444	70.5	OU4-SD-M01-301B-D	86.6	1.2
C2-Phenanthrenes/anthracenes	40/40	14.9	4409	253	OU4-SD-M01-301B-D	503	2.0

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C3-Chrysenes	40/40	1.6	53.6	12.9	OU4-SD-M04-101B-D	9.4	0.73
C3-Dibenzothiophenes	40/40	2.8	330	24.6	OU4-SD-M01-301B-D	37.4	1.5
C3-Fluorenes	40/40	3.6	1591	74.2	OU4-SD-M01-301B-D	169	2.3
C3-Naphthalenes	40/40	3.9	466	65.6	OU4-SD-M01-301B-D	76.0	1.2
C3-Phenanthrenes/anthracenes	40/40	7.9	2693	136	OU4-SD-M01-301B-D	302	2.2
C4-Chrysenes	40/40	5.4	463	64.3	OU4-SD-M04-101B-D	72.2	1.1
C4-Naphthalenes	40/40	4.3	484	43.0	OU4-SD-M01-301B-D	61.1	1.4
C4-Phenanthrenes/anthracenes	40/40	3.4	1038	55.2	OU4-SD-M01-301B-D	120	2.2
Chrysene	40/40	51.1	4074	688	OU4-SD-M01-301B	866	1.3
Dibenzo(a,h)anthracene	40/40	7.7	812	99.2	OU4-SD-M04-101B-D	131	1.3
Dibenzothiophene	40/40	1.8	375	43.7	OU4-SD-M01-301B	70.2	1.6
Fluoranthene	40/40	98.6	16098	1634	OU4-SD-M04-101B-D	2573	1.6
Fluorene	40/40	4.2	2109	196	OU4-SD-M01-301B	381	1.9
Indeno(1,2,3-cd)pyrene	40/40	38.4	3509	453	OU4-SD-M04-101B-D	574	1.3
Naphthalene	39/40	3.3	710	81.7	OU4-SD-M01-301B	125	1.5
Perylene	40/40	13.1	664	122	OU4-SD-M12-101B	127	1.0
Phenanthrene	40/40	38.3	9223	965	OU4-SD-M01-301B	1760	1.8
Pyrene	39/40	79.9	12102	1353	OU4-SD-M04-101B-D	2190	1.6
Pesticides/PCB's (NG/G)							
1,2,3,4-Tetrachlorobenzene	38/40	0.02	0.54	0.15	OU4-SD-M03-101B	0.12	0.79
1,2,4,5-Tetrachlorobenzene	16/40	0.07	1.7	0.60	OU4-SD-M02-301B	0.49	0.81
2,4'-DDD	40/40	0.43	51	8.9	OU4-SD-M01-301B-D	8.8	0.98
2,4'-DDE	33/40	0.04	5.3	0.57	OU4-SD-M04-101B-D	0.69	1.2
2,4'-DDT	36/40	0.03	36	3.1	OU4-SD-M08-301B	7.1	2.3
4,4'-DDD	40/40	0.48	97	12.2	OU4-SD-M08-101B-D	18.1	1.5
4,4'-DDE	40/40	0.68	95	7.3	OU4-SD-M04-301B	15.9	2.2
4,4'-DDT	40/40	0.61	173	16.2	OU4-SD-M01-201B	34.5	2.1
Aldrin	29/40	0.01	51	3.1	OU4-SD-M12-201B	6.9	2.2
alpha-BHC	29/40	0.03	0.37	0.10	OU4-SD-M13-301B	0.07	0.71
Alpha-Chlordane	40/40	0.12	15	1.3	OU4-SD-M10-101B-D	2.1	1.6
beta-BHC	18/40	0.03	0.34	0.12	OU4-SD-M01-201B, OU4-SD-M02-301B	0.08	0.68
Chlorpyrifos	9/40	0.01	0.43	0.07	OU4-SD-M04-101B-D	0.04	0.56
cis-Nonachlor	38/40	0.04	5.5	0.51	OU4-SD-M01-301B-D	0.57	1.1
delta-BHC	29/40	0.01	0.77	0.11	OU4-SD-M12-101B	0.16	1.4
Dieldrin	27/40	0.03	9.9	0.77	OU4-SD-M01-201B	1.8	2.3
Endosulfan II	27/40	0.06	5.9	0.86	OU4-SD-M01-301B-D	0.96	1.1
Endrin	7/40	0.05	0.3	0.06	OU4-SD-M09-301B-D	0.04	0.75
gamma-BHC (Lindane)	15/40	0.02	0.47	0.21	OU4-SD-M13-101B	0.14	0.65
Gamma-Chlordane	32/40	0.02	21	0.94	OU4-SD-M10-101B-D	2.6	2.7
Heptachlor	34/40	0.05	2.4	0.33	OU4-SD-M11-301B	0.46	1.4
Heptachlor Epoxide	16/40	0.03	1.6	0.09	OU4-SD-M01-301B-D	0.15	1.7
Hexachlorobenzene	16/40	0.01	0.36	0.07	OU4-SD-M06-201B	0.08	1.1

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Mirex	21/40	0.01	2.3	0.17	OU4-SD-M12-101B	0.39	2.2
Oxychlordane	21/40	0.01	0.75	0.09	OU4-SD-M12-201B-D	0.09	1.1
PCB-101/90	40/40	0.39	17	3.8	OU4-SD-M03-101B	3.8	1.0
PCB-105	40/40	0.22	7.1	1.4	OU4-SD-M02-201B	1.4	1.0
PCB-118	40/40	0.36	12	2.5	OU4-SD-M12-101B	2.3	0.93
PCB-126	7/40	0.03	3	0.26	OU4-SD-M04-101B-D	0.39	1.5
PCB-128	40/40	0.14	5.7	1.3	OU4-SD-M12-101B	1.1	0.86
PCB-138 /160	35/40	1.3	52	8.4	OU4-SD-M03-101B	10.6	1.3
PCB-149/123	32/40	0.6	70	6.6	OU4-SD-M02-201B	12.2	1.8
PCB-153/132	30/40	1.1	128	11.7	OU4-SD-M02-201B	22.3	1.9
PCB-156	38/40	0.31	8	2.0	OU4-SD-M12-101B	1.7	0.84
PCB-167	38/40	0.19	84	2.9	OU4-SD-M01-301B-D	7.2	2.5
PCB-169	31/40	0.01	0.45	0.09	OU4-SD-M08-301B	0.10	1.1
PCB-170/190	40/40	1.8	117	18.0	OU4-SD-M12-101B	20.8	1.2
PCB-18/17	19/40	0.09	5.8	0.54	OU4-SD-M13-301B	1.0	1.9
PCB-180	28/40	0.34	380	16.6	OU4-SD-M02-201B	60.2	3.6
PCB-187	35/40	0.41	305	15.1	OU4-SD-M02-201B	48.8	3.2
PCB-189	34/40	0.03	23	0.56	OU4-SD-M01-301B-D	1.8	3.3
PCB-195/208	36/40	0.07	126	5.8	OU4-SD-M02-201B	20.3	3.5
PCB-201/157/173	38/40	0.13	55	2.7	OU4-SD-M02-201B	8.8	3.3
PCB-206	40/40	0.18	258	12.5	OU4-SD-M02-201B	43.3	3.5
PCB-209	37/40	0.02	23.3	2.3	OU4-SD-M02-201B	4.5	1.9
PCB-28	28/40	0.04	11	1.2	OU4-SD-M13-301B	2.3	1.9
PCB-44	35/40	0.04	5.1	0.69	OU4-SD-M12-101B	1.0	1.5
PCB-52	40/40	0.08	7.3	1.5	OU4-SD-M12-101B	1.7	1.1
PCB-66	40/40	0.05	8.5	0.99	OU4-SD-M12-101B	1.4	1.5
PCB-77	18/40	0.04	0.54	0.12	OU4-SD-M14-301B	0.13	1.0
PCB-8/5	26/40	0.13	7.4	0.62	OU4-SD-M12-101B	1.2	1.9
PCB-81	17/39	0.02	3.6	0.28	OU4-SD-M12-201B	0.47	1.7
Pentachloroanisole	13/40	0.07	0.36	0.09	OU4-SD-M05-101B	0.08	0.89
Pentachlorobenzene	27/40	0.01	0.36	0.09	OU4-SD-M11-301B	0.07	0.78
Trans-Nonachlor	35/40	0.02	8.1	0.51	OU4-SD-M10-101B-D	0.99	1.9
Inorganics (UG/G)							
Aluminum	40/40	34118	60699	49118	OU4-SD-M08-201B	6614	0.13
Arsenic	40/40	5.7	24.4	12.5	OU4-SD-M04-101B-D	3.5	0.28
Cadmium	14/40	0.19	1.5	0.30	OU4-SD-M04-101B	0.3	1.1
Chromium	40/40	58.6	219	107	OU4-SD-M08-301B	39.1	0.37
Copper	40/40	14.4	2680	172	OU4-SD-M04-101B-D	403	2.3
Iron	40/40	15895	78945	30764	OU4-SD-M08-301B	13526	0.44
Lead	40/40	37.2	1225	151	OU4-SD-M11-301B	202	1.3
Manganese	40/40	166	830	377	OU4-SD-M06-301B	107	0.28
Mercury	40/40	0.05	4.7	0.38	OU4-SD-M04-101B-D	0.6	1.7
Nickel	40/40	16.3	313	43.3	OU4-SD-M04-101B-D	47.3	1.1
Silver	40/40	0.1	14.4	0.96	OU4-SD-M03-201B	2.3	2.4
Zinc	40/40	54.5	1988	237	OU4-SD-M04-101B	355	1.5
Miscellaneous Parameter (%)							
Total Organic Carbon	40/40	0.29	6.080	1.8	OU4-SD-M14-101B	1.1	0.59

TABLE 3-4a

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation

Notes:
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- Source data located in the Round 4 Data Package (TtNUS, September 2001)
- This table includes the following monitoring station samples:

OU4-SD-M01-101B	OU4-SD-M04-101B	OU4-SD-M07-101B	OU4-SD-M09-301B-2-AVG	OU4-SD-M12-201B-AVG
OU4-SD-M01-101B-2	OU4-SD-M04-101B-2	OU4-SD-M07-101B-2	OU4-SD-M09-301B-2-D	OU4-SD-M12-201B-D
OU4-SD-M01-201B	OU4-SD-M04-101B-2-AVG	OU4-SD-M07-201B	OU4-SD-M09-301B-AVG	OU4-SD-M12-301B
OU4-SD-M01-201B-2	OU4-SD-M04-101B-2-D	OU4-SD-M07-201B-2	OU4-SD-M09-301B-D	OU4-SD-M12-301B-2
OU4-SD-M01-301B	OU4-SD-M04-101B-AVG	OU4-SD-M07-301B	OU4-SD-M10-101B	OU4-SD-M13-101B
OU4-SD-M01-301B-2	OU4-SD-M04-101B-D	OU4-SD-M07-301B-2	OU4-SD-M10-101B-2	OU4-SD-M13-101B-2
OU4-SD-M01-301B-2-AVG	OU4-SD-M04-201B	OU4-SD-M08-101B	OU4-SD-M10-101B-2-AVG	OU4-SD-M13-201B
OU4-SD-M01-301B-2-D	OU4-SD-M04-201B-2	OU4-SD-M08-101B-2	OU4-SD-M10-101B-2-D	OU4-SD-M13-201B-2
OU4-SD-M01-301B-AVG	OU4-SD-M04-301B	OU4-SD-M08-101B-2-AVG	OU4-SD-M10-101B-AVG	OU4-SD-M13-301B
OU4-SD-M01-301B-D	OU4-SD-M04-301B-2	OU4-SD-M08-101B-2-D	OU4-SD-M10-101B-D	OU4-SD-M13-301B-2
OU4-SD-M02-101B	OU4-SD-M05-101B	OU4-SD-M08-101B-AVG	OU4-SD-M10-201B	OU4-SD-M14-101B
OU4-SD-M02-101B-2	OU4-SD-M05-101B-2	OU4-SD-M08-101B-D	OU4-SD-M10-201B-2	OU4-SD-M14-101B-2
OU4-SD-M02-201B	OU4-SD-M05-201B	OU4-SD-M08-201B	OU4-SD-M10-301B	OU4-SD-M14-201B
OU4-SD-M02-201B-2	OU4-SD-M05-201B-2	OU4-SD-M08-201B-2	OU4-SD-M10-301B-2	OU4-SD-M14-201B-2
OU4-SD-M02-301B	OU4-SD-M05-301B	OU4-SD-M08-301B	OU4-SD-M11-301B	OU4-SD-M14-301B
OU4-SD-M02-301B-2	OU4-SD-M05-301B-2	OU4-SD-M08-301B-2	OU4-SD-M11-301B-2	OU4-SD-M14-301B-2
OU4-SD-M03-101B	OU4-SD-M06-101B	OU4-SD-M09-101B	OU4-SD-M12-101B	
OU4-SD-M03-101B-2	OU4-SD-M06-101B-2	OU4-SD-M09-101B-2	OU4-SD-M12-101B-2	
OU4-SD-M03-201B	OU4-SD-M06-201B	OU4-SD-M09-201B	OU4-SD-M12-201B	
OU4-SD-M03-201B-2	OU4-SD-M06-201B-2	OU4-SD-M09-201B-2	OU4-SD-M12-201B-2	
OU4-SD-M03-301B	OU4-SD-M06-301B	OU4-SD-M09-301B	OU4-SD-M12-201B-2-AVG	
OU4-SD-M03-301B-2	OU4-SD-M06-301B-2	OU4-SD-M09-301B-2	OU4-SD-M12-201B-2-D	

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins (PG/G)							
1,2,3,4,6,7,8,9-OCDD	15/16	19.5	1857	604	OU4-SD-R02-401B	588	0.97
1,2,3,4,6,7,8-HPCDD	15/16	2.6	205	61.0	OU4-SD-R02-401B	64.4	1.1
1,2,3,4,6,7,8-HPCDF	15/16	0.8	56.2	16.8	OU4-SD-R02-401B	19.1	1.1
1,2,3,4,7,8,9-HPCDF	9/16	0.3	2.3	0.95	OU4-SD-R02-401B	0.56	0.59
1,2,3,4,7,8-HXCDD	10/16	0.3	4.1	1.2	OU4-SD-R01-401B	0.99	0.82
1,2,3,6,7,8-HXCDD	11/16	1.1	9	3.0	OU4-SD-R02-401B	2.8	0.93
1,2,3,6,7,8-HXCDF	10/16	0.3	2.5	0.89	OU4-SD-R02-401B	0.67	0.76
1,2,3,7,8,9-HXCDD	10/16	0.7	6.2	1.9	OU4-SD-R02-401B	1.8	0.96
1,2,3,7,8,9-HXCDF	1/16	0.8	0.8	0.79	OU4-SD-R03-201B	0.38	0.48
1,2,3,7,8-PECDD	3/16	0.6	1.9	0.81	OU4-SD-R02-401B	0.51	0.62
2,3,4,6,7,8-HXCDF	10/16	0.6	3.9	1.4	OU4-SD-R02-401B	1.1	0.77
2,3,7,8-TCDD	3/16	0.1	0.5	0.18	OU4-SD-R03-201B	0.12	0.64
TOTAL DIOXINS	15/16	25.6	2495	801	OU4-SD-R02-401B	788	0.98
TOTAL HPCDD	15/16	6.2	508	149	OU4-SD-R02-401B	163	1.1
TOTAL HPCDF	1/16	1.8	1.8	17.5	OU4-SD-R02-201B	19.7	1.1
TOTAL HXCDD	14/16	0.9	270	43.0	OU4-SD-R01-401B	68.9	1.6
TOTAL HXCDF	13/16	0.6	61.7	18.3	OU4-SD-R02-401B	21.0	1.1
TOTAL PECDD	7/16	0.6	44.1	5.1	OU4-SD-R01-401B	11.0	2.1
TOTAL TCDD	4/16	0	0.5	0.18	OU4-SD-R03-201B	0.12	0.70
Polyaromatic Hydrocarbons (NG/G)							
1,1-Biphenyl	10/16	0.6	11.5	3.8	OU4-SD-R03-201B	3.5	0.92
1-Methylnaphthalene	12/16	0.7	21.4	8.0	OU4-SD-R01-101B, OU4-SD-R03-301B	8.1	1.02
1-Methylphenanthrene	16/16	0.9	148	49.5	OU4-SD-R03-401B	53.1	1.1
2,3,5-Trimethylnaphthalene	16/16	0.5	38.8	10.1	OU4-SD-R03-201B	11.7	1.2
2,6-Dimethylnaphthalene	16/16	1.2	26.1	9.8	OU4-SD-R03-201B	8.7	0.89
2-Methylnaphthalene	16/16	1.1	41.7	13.9	OU4-SD-R01-101B	13.7	0.99
Acenaphthene	16/16	0.6	44.8	15.7	OU4-SD-R02-101B	15.0	0.96
Acenaphthylene	14/16	1.7	142	49.5	OU4-SD-R02-401B	51.9	1.0
Anthracene	15/16	3.8	822	200	OU4-SD-R03-301B	228	1.1
Benzo(a)anthracene	14/16	5.3	765	247	OU4-SD-R03-301B	234	0.95
Benzo(a)pyrene	13/16	9	985	341	OU4-SD-R03-301B	322	0.95
Benzo(b)fluoranthene	14/16	11.3	799	333	OU4-SD-R03-301B	293	0.88
Benzo(e)pyrene	13/16	5.6	382	142	OU4-SD-R03-301B	128	0.90
Benzo(g,h,i)perylene	13/16	3.6	359	136	OU4-SD-R01-101B	127	0.93
Benzo(k)fluoranthene	14/16	3.1	247	107	OU4-SD-R03-301B	93.6	0.87
C1-Chrysenes	16/16	4	493	170	OU4-SD-R03-301B	152	0.90
C1-Dibenzothiophenes	16/16	0.5	56.9	15.2	OU4-SD-R03-301B	16.0	1.1
C1-Fluoranthenes/pyrenes	16/16	5.4	1029	288	OU4-SD-R03-301B	290	1.0
C1-Fluorenes	16/16	1.2	163	39.1	OU4-SD-R03-301B	48.5	1.2
C1-Naphthalenes	16/16	1.8	63.1	22.4	OU4-SD-R01-101B	21.6	0.96
C1-Phenanthrenes/anthracenes	13/16	3.3	731	181	OU4-SD-R03-301B	221	1.2
C2-Chrysenes	16/16	1.4	209	88.8	OU4-SD-R03-401B	79.7	0.90
C2-Dibenzothiophenes	16/16	0.5	61	19.7	OU4-SD-R03-301B	18.5	0.94
C2-Fluorenes	16/16	2.2	159	40.7	OU4-SD-R03-301B	44.7	1.1
C2-Naphthalenes	16/16	2	72.1	22.5	OU4-SD-R03-201B	22.2	0.99
C2-Phenanthrenes/anthracenes	12/16	3.4	1142	189	OU4-SD-R03-401B	297	1.6
C3-Chrysenes	16/16	0	35.5	6.8	OU4-SD-R03-401B	8.7	1.3
C3-Dibenzothiophenes	16/16	0.5	32.1	12.5	OU4-SD-R01-101B	11.3	0.91

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C3-Fluorenes	16/16	1.1	156	41.2	OU4-SD-R03-301B	47.2	1.1
C3-Naphthalenes	16/16	1.2	124	31.0	OU4-SD-R03-201B	38.5	1.2
C3-Phenanthrenes/anthracenes	12/16	1.9	1035	131	OU4-SD-R03-401B	256	2.0
C4-Chrysenes	13/16	0.1	59.3	21.4	OU4-SD-R01-101B	20.3	0.95
C4-Naphthalenes	16/16	0.9	74.8	23.5	OU4-SD-R03-301B	26.7	1.1
C4-Phenanthrenes/anthracenes	16/16	0.9	856	76.4	OU4-SD-R03-401B	210	2.7
Chrysene	14/16	5.6	603	214	OU4-SD-R03-301B	184	0.9
Dibenzo(a,h)anthracene	13/16	1.2	102	39.4	OU4-SD-R03-301B	36.7	0.93
Dibenzothiophene	16/16	0.4	32.4	11.8	OU4-SD-R03-301B	10.6	0.90
Fluoranthene	15/16	11.9	1430	511	OU4-SD-R03-301B	454	0.89
Fluorene	16/16	1.4	125	39.1	OU4-SD-R03-301B	40.4	1.0
Indeno(1,2,3-cd)pyrene	13/16	6.9	457	176	OU4-SD-R03-301B	163	0.93
Naphthalene	12/16	1.6	88.3	24.4	OU4-SD-R01-101B	29.3	1.2
Perylene	16/16	3.1	173	57.6	OU4-SD-R03-301B	51.5	0.89
Phenanthrene	16/16	5.5	636	226	OU4-SD-R03-301B	220	0.97
Pyrene	13/16	10.5	1408	415	OU4-SD-R03-301B	416	1.0
Pesticides/PCB's (NG/G)							
1,2,3,4-Tetrachlorobenzene	9/16	0.04	1	0.21	OU4-SD-R02-101B	0.28	1.3
1,2,4,5-Tetrachlorobenzene	13/16	0.07	2.1	0.60	OU4-SD-R01-101B	0.67	1.1
2,4'-DDD	13/16	0.1	8.2	2.5	OU4-SD-R03-301B	2.5	1.0
2,4'-DDE	5/16	0.09	0.44	0.10	OU4-SD-R04-301B	0.11	1.1
2,4'-DDT	1/16	0.15	0.15	0.04	OU4-SD-R02-101B	0.03	0.76
4,4'-DDD	15/16	0.09	3.3	0.98	OU4-SD-R01-101B	0.95	0.97
4,4'-DDE	16/16	0.05	2.3	0.65	OU4-SD-R01-101B	0.57	0.88
4,4'-DDT	13/16	0.04	1.4	0.58	OU4-SD-R02-101B	0.45	0.78
alpha-BHC	9/16	0.04	0.14	0.05	OU4-SD-R03-201B	0.04	0.70
Alpha-Chlordane	14/16	0.02	1.5	0.28	OU4-SD-R02-101B	0.40	1.4
beta-BHC	2/16	0.25	0.4	0.11	OU4-SD-R02-101B	0.09	0.81
Chlorpyrifos	6/16	0.19	3.6	0.57	OU4-SD-R02-401B	1.1	2.0
cis-Nonachlor	11/16	0.04	3.2	0.36	OU4-SD-R02-101B	0.78	2.2
delta-BHC	8/16	0.01	0.36	0.10	OU4-SD-R03-301B	0.11	1.1
Dieldrin	3/16	0.05	0.3	0.05	OU4-SD-R01-101B	0.08	1.7
Endosulfan II	15/16	0.07	4.8	1.6	OU4-SD-R02-101B	1.6	1.0
gamma-BHC (Lindane)	7/16	0.04	1.2	0.21	OU4-SD-R01-101B	0.32	1.5
Gamma-Chlordane	4/16	0.01	0.18	0.03	OU4-SD-R02-101B	0.04	1.4
Heptachlor	7/16	0.11	0.42	0.15	OU4-SD-R02-101B	0.10	0.70
Heptachlor Epoxide	8/16	0.01	0.22	0.06	OU4-SD-R03-301B	0.06	1.0
Hexachlorobenzene	7/16	0.01	0.29	0.08	OU4-SD-R02-101B	0.09	1.2
Mirex	7/16	0.11	0.49	0.13	OU4-SD-R03-301B	0.14	1.1
Oxychlordane	6/16	0.02	0.69	0.09	OU4-SD-R03-301B	0.17	1.8
PCB-101/90	15/16	0.23	15	2.3	OU4-SD-R02-101B	3.8	1.6
PCB-105	9/16	0.17	4.4	0.89	OU4-SD-R02-101B	1.3	1.4
PCB-118	16/16	0.06	12	2.0	OU4-SD-R02-101B	3.2	1.6
PCB-128	13/16	0.03	4.5	1.0	OU4-SD-R02-101B	1.3	1.3
PCB-138 /160	6/16	1.3	24	3.1	OU4-SD-R02-101B	5.8	1.9
PCB-149/123	10/16	0.44	6.2	1.3	OU4-SD-R02-101B	1.6	1.2
PCB-153/132	8/16	0.82	10	2.0	OU4-SD-R02-101B	2.8	1.4

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-156	5/16	0.31	5.3	0.93	OU4-SD-R02-101B	1.5	1.6
PCB-167	13/16	0.02	8.4	2.1	OU4-SD-R03-301B	2.5	1.2
PCB-169	8/16	0.01	0.09	0.09	OU4-SD-R02-201B	0.07	0.77
PCB-170/190	12/16	2.2	48	12.9	OU4-SD-R03-401B	13.1	1.0
PCB-18/17	9/16	0.07	2	0.33	OU4-SD-R01-101B	0.53	1.6
PCB-180	4/16	0.74	1.4	0.55	OU4-SD-R03-201B	0.40	0.73
PCB-187	7/16	0.42	9.2	1.3	OU4-SD-R02-101B	2.3	1.7
PCB-189	9/16	0.09	0.67	0.26	OU4-SD-R03-301B	0.18	0.69
PCB-195/208	8/16	0.16	0.65	0.24	OU4-SD-R03-401B	0.20	0.84
PCB-201/157/173	11/16	0.04	0.69	0.28	OU4-SD-R03-101B	0.17	0.62
PCB-206	13/16	0.09	1.5	0.56	OU4-SD-R01-201B	0.53	0.95
PCB-206	13/16	0.09	1.5	0.56	OU4-SD-R02-401B	0.53	0.95
PCB-209	12/15	0.11	1.4	0.38	OU4-SD-R03-301B	0.37	0.98
PCB-28	10/16	0.07	3.6	0.67	OU4-SD-R03-301B	0.92	1.4
PCB-44	12/16	0.12	1.9	0.50	OU4-SD-R01-201B	0.55	1.1
PCB-52	11/16	0.1	3.9	0.86	OU4-SD-R02-101B	1.2	1.4
PCB-66	8/16	0.02	1.3	0.21	OU4-SD-R02-101B	0.35	1.7
PCB-77	7/16	0.01	0.32	0.09	OU4-SD-R03-301B	0.10	1.1
PCB-8/5	10/16	0.17	2.3	0.49	OU4-SD-R01-101B	0.58	1.2
PCB-81	7/13	0.01	0.39	0.11	OU4-SD-R02-401B	0.09	0.84
Pentachloroanisole	3/16	0.13	0.91	0.12	OU4-SD-R02-101B	0.23	1.9
Pentachlorobenzene	8/16	0.01	1	0.14	OU4-SD-R04-401B	0.27	1.9
Trans-Nonachlor	9/16	0.03	0.56	0.19	OU4-SD-R03-201B	0.19	1.0
Inorganics (UG/G)							
Aluminum	16/16	30753	52905	41688	OU4-SD-R03-101B	6190	0.15
Arsenic	16/16	4.0	11.2	7.1	OU4-SD-R02-401B	2.3	0.33
Cadmium	1/16	0.37	0.37	0.1	OU4-SD-R01-101B	0.09	0.65
Chromium	16/16	30.3	97.9	56.0	OU4-SD-R02-401B	19.7	0.35
Copper	14/16	2.3	25.8	9.6	OU4-SD-R02-401B	6.9	0.72
Iron	16/16	7358	27265	15115	OU4-SD-R03-101B	6104	0.40
Lead	16/16	17.4	108	40.4	OU4-SD-R02-401B	23.8	0.59
Manganese	16/16	135	479	284	OU4-SD-R02-301B	107	0.38
Mercury	14/16	0.05	0.36	0.1	OU4-SD-R02-201B	0.10	0.77
Nickel	16/16	7.2	32.6	14.4	OU4-SD-R03-101B	6.5	0.45
Silver	9/16	0.11	0.46	0.2	OU4-SD-R02-401B	0.12	0.75
Zinc	16/16	21.7	98.2	48.4	OU4-SD-R02-401B	23.3	0.48
Miscellaneous Parameters (%)							
Total Organic Carbon	16/16	0.17	5.0	1.4	OU4-SD-R03-101B	1.4	1.0

TABLE 3-4b

DESCRIPTIVE STATISTICS OF THE ROUND 4 SEDIMENT DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation

Notes:
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- Source data located in the Round 4 Data Package (TtNUS, September 2001)
- This table includes the following reference station samples:

OU4-SD-R01-101B	OU4-SD-R03-101B
OU4-SD-R01-101B-2	OU4-SD-R03-101B-2
OU4-SD-R01-201B	OU4-SD-R03-201B
OU4-SD-R01-201B-2	OU4-SD-R03-201B-2
OU4-SD-R01-301B	OU4-SD-R03-301B
OU4-SD-R01-301B-2	OU4-SD-R03-301B-2
OU4-SD-R01-401B	OU4-SD-R03-401B
OU4-SD-R01-401B-2	OU4-SD-R03-401B-2
OU4-SD-R02-101B	OU4-SD-R04-101B
OU4-SD-R02-101B-2	OU4-SD-R04-101B-2
OU4-SD-R02-201B	OU4-SD-R04-201B
OU4-SD-R02-201B-2	OU4-SD-R04-201B-2
OU4-SD-R02-301B	OU4-SD-R04-301B
OU4-SD-R02-301B-2	OU4-SD-R04-301B-2
OU4-SD-R02-401B	OU4-SD-R04-401B
OU4-SD-R02-401B-2	OU4-SD-R04-401B-2

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins (PG/G)							
1,2,3,4,6,7,8,9-OCDD	6/14	105	177	74.6	OU4-MU-M12-201B	57.3	0.77
1,2,3,4,6,7,8,9-OCDF	2/14	9.1	26.3	26.9	OU4-MU-M12-201B	7.4	0.27
1,2,3,4,6,7,8-HPCDD	3/14	24.1	29.5	16.5	OU4-MU-M09-101B	6.2	0.37
1,2,3,4,6,7,8-HPCDF	1/14	4.6	4.6	12.7	OU4-MU-M08-101B	2.9	0.23
2,3,7,8-TCDF	1/14	5.4	5.4	3.0	OU4-MU-M09-101B	0.9	0.28
TOTAL DIOXINS	9/14	17.6	220	94.5	OU4-MU-M11-101B	70.5	0.75
TOTAL FURANS	4/14	4.6	26.3	23.9	OU4-MU-M12-201B	8.5	0.36
TOTAL HPCDD	5/14	15.4	56.1	18.4	OU4-MU-M08-101B	8.2	0.45
TOTAL HPCDF	1/14	4.6	4.6	12.7	OU4-MU-M08-101B	2.9	0.23
TOTAL TCDD	5/14	17.6	22.8	9.5	OU4-MU-M11-201B	9.2	0.97
TOTAL TCDF	1/14	15.1	15.1	3.7	OU4-MU-M09-101B	3.3	0.89
Polyaromatic Hydrocarbons (NG/G)							
1,1-Biphenyl	20/32	2.7	9.7	4.4	OU4-MU-M12-101B	2.1	0.47
1-Methylnaphthalene	20/32	3.8	17.1	5.3	OU4-MU-M01-301B	3.1	0.58
1-Methylphenanthrene	32/32	4	25.4	9.4	OU4-MU-M01-301B	5.3	0.57
2,3,5-Trimethylnaphthalene	32/32	2.7	15.9	5.0	OU4-MU-M01-301B	2.6	0.52
2,6-Dimethylnaphthalene	32/32	3.2	9.4	5.0	OU4-MU-M02-301B	1.7	0.34
2-Methylnaphthalene	23/32	6.4	20.5	8.8	OU4-MU-M12-201B	4.4	0.50
Acenaphthene	32/32	1.9	92	7.4	OU4-MU-M12-101B	15.8	2.1
Acenaphthylene	32/32	8.9	31.2	14.9	OU4-MU-M02-301B	5.4	0.36
Anthracene	32/32	16.6	152.7	34.6	OU4-MU-M12-101B	24.8	0.72
Benzo(a)anthracene	32/32	6.1	70.2	16.2	OU4-MU-M12-101B	12.9	0.79
Benzo(a)pyrene	21/32	5.8	50	12.5	OU4-MU-M02-101B	9.8	0.79
Benzo(b)fluoranthene	32/32	9.9	57.4	23.0	OU4-MU-M02-101B	10.9	0.47
Benzo(e)pyrene	32/32	13.8	43.4	24.1	OU4-MU-M02-101B	8.0	0.33
Benzo(g,h,i)perylene	32/32	4.2	24.8	9.6	OU4-MU-M02-101B	4.1	0.43
Benzo(k)fluoranthene	32/32	4.6	28.3	9.4	OU4-MU-M12-101B	5.1	0.54
C1-Chrysenes	32/32	6.8	28.5	13.3	OU4-MU-M01-301B	5.6	0.42
C1-Dibenzothiophenes	32/32	2.5	12.9	4.3	OU4-MU-M08-101B	2.0	0.47
C1-Fluoranthenes/pyrenes	32/32	19.6	129.7	38.9	OU4-MU-M12-101B	23.4	0.60
C1-Fluorenes	32/32	15.4	95.6	35.7	OU4-MU-M01-301B	19.6	0.55
C1-Naphthalenes	20/32	10.4	29.9	13.4	OU4-MU-M12-101B	6.0	0.45
C1-Phenanthrenes/anthracenes	32/32	17.5	96.3	38.5	OU4-MU-M12-101B	18.6	0.48
C2-Chrysenes	32/32	0.4	17.5	7.9	OU4-MU-M02-301B	4.1	0.52
C2-Dibenzothiophenes	32/32	5.3	35.9	9.9	OU4-MU-M08-101B-FD	5.3	0.53
C2-Fluorenes	32/32	6.1	87.6	30.9	OU4-MU-M08-101B-FD	17.1	0.55
C2-Naphthalenes	32/32	8.4	42	13.9	OU4-MU-M01-301B	6.3	0.46
C2-Phenanthrenes/anthracenes	32/32	15.5	119	33.9	OU4-MU-M08-101B-FD	20.1	0.59
C3-Chrysenes	15/32	0.1	0.4	3.8	OU4-MU-M10-101B	3.5	0.93
C3-Dibenzothiophenes	32/32	5.2	34.3	9.8	OU4-MU-M08-101B	4.9	0.49
C3-Fluorenes	32/32	9.7	103	25.0	OU4-MU-M08-101B-FD	15.6	0.62
C3-Naphthalenes	32/32	11.1	44.7	17.5	OU4-MU-M01-301B	7.3	0.42
C3-Phenanthrenes/anthracenes	32/32	10.9	100.4	27.2	OU4-MU-M08-101B-FD	14.5	0.53
C4-Chrysenes	28/32	0.1	1.5	0.98	OU4-MU-M14-101B	2.2	2.2

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C4-Naphthalenes	32/32	9.4	67.2	17.4	OU4-MU-M08-101B-FD	9.7	0.55
C4-Phenanthrenes/anthracenes	32/32	6.2	55.5	13.0	OU4-MU-M08-101B-FD	7.1	0.54
Chrysene	32/32	24.2	108	39.4	OU4-MU-M12-101B	16.4	0.42
Dibenzo(a,h)anthracene	32/32	0.2	3.5	1.0	OU4-MU-M02-101B	0.6	0.60
Dibenzothiophene	32/32	1.1	13.1	2.4	OU4-MU-M12-101B	2.1	0.89
Fluoranthene	22/32	41.5	474	80.3	OU4-MU-M12-101B	79.9	0.99
Fluorene	32/32	7.1	84	14.9	OU4-MU-M12-101B	13.3	0.89
Indeno(1,2,3-cd)pyrene	32/32	1.7	24.2	7.1	OU4-MU-M02-101B	4.1	0.58
Naphthalene	20/32	7.3	29.9	9.8	OU4-MU-M12-101B	5.1	0.52
Perylene	32/32	5.6	19.2	9.5	OU4-MU-M02-101B	3.3	0.35
Phenanthrene	32/32	17.9	252	40.0	OU4-MU-M12-101B	40.6	1.0
Pyrene	21/32	24.9	289	54.2	OU4-MU-M12-101B	52.6	0.97
Pesticides/PCB's (NG/G)							
1,2,3,4-Tetrachlorobenzene	32/32	0.18	19	3.6	OU4-MU-M13-101B-FD	4.5	1.3
1,2,4,5-Tetrachlorobenzene	13/32	1.3	8	1.5	OU4-MU-M06-301B	1.4	0.9
2,4'-DDD	32/32	0.84	22	2.8	OU4-MU-M08-101B	3.5	1.2
2,4'-DDE	32/32	0.17	7.5	1.8	OU4-MU-M11-301B	1.6	0.9
2,4'-DDT	32/32	0.24	15	2.9	OU4-MU-M10-101B	2.6	0.9
4,4'-DDD	32/32	1.6	49	5.5	OU4-MU-M08-101B	7.8	1.4
4,4'-DDE	32/32	4.2	18	8.1	OU4-MU-M08-101B	2.7	0.3
4,4'-DDT	32/32	0.57	27	3.6	OU4-MU-M10-101B	4.6	1.3
alpha-BHC	29/32	0.56	2.8	1.1	OU4-MU-M11-301B	0.68	0.6
Alpha-Chlordane	22/32	0.75	5.1	1.4	OU4-MU-M08-301B	1.3	0.9
beta-BHC	18/32	0.76	3.5	1.1	OU4-MU-M11-201B	0.92	0.8
Chlorpyrifos	19/32	0.85	4.3	1.2	OU4-MU-M04-101B	1.0	0.9
cis-Nonachlor	32/32	0.44	3	1.4	OU4-MU-M09-101B	0.67	0.5
delta-BHC	26/32	0.12	2.2	0.6	OU4-MU-M11-301B	0.59	0.9
Dieldrin	32/32	0.64	3.4	1.0	OU4-MU-M01-201B	0.48	0.5
Endosulfan II	2/32	0.27	1.6	0.16	OU4-MU-M10-301B	0.26	1.6
Endrin	10/32	0.18	3.8	0.50	OU4-MU-M04-101B	1.0	2.0
gamma-BHC (Lindane)	21/32	0.16	1.4	0.45	OU4-MU-M12-101B	0.35	0.8
Gamma-Chlordane	31/32	0.56	5.9	1.7	OU4-MU-M10-101B	1.3	0.8
Heptachlor	18/32	0.26	4.9	1.4	OU4-MU-M08-101B	1.7	1.2
Heptachlor Epoxide	4/32	0.06	0.59	0.66	OU4-MU-M06-101B	0.20	0.3
Hexachlorobenzene	29/32	0.13	3.5	1.0	OU4-MU-M10-301B	0.93	0.9
Oxychlordane	13/32	0.38	2.2	0.48	OU4-MU-M13-101B	0.45	0.9

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-101/90	32/32	4.8	54	11.3	OU4-MU-M10-301B	9.1	0.8
PCB-105	32/32	1.4	17	3.1	OU4-MU-M10-301B	2.8	0.9
PCB-118	32/32	3.2	34	6.8	OU4-MU-M10-301B	5.3	0.8
PCB-126	27/32	0.01	0.39	0.07	OU4-MU-M10-201B	0.19	2.8
PCB-128	32/32	0.74	6.9	1.9	OU4-MU-M10-301B	1.3	0.7
PCB-138 /160	27/32	7.6	53	13.0	OU4-MU-M03-101B	9.8	0.8
PCB-149/123	32/32	2.5	43	8.4	OU4-MU-M03-101B	7.0	0.8
PCB-153/132	32/32	8.9	87	19.3	OU4-MU-M03-101B	13.9	0.7
PCB-156	26/32	0.36	2.9	0.81	OU4-MU-M03-101B	0.49	0.6
PCB-167	31/32	0.24	2.9	0.88	OU4-MU-M10-301B	0.57	0.6
PCB-169	19/32	0.01	0.24	0.39	OU4-MU-M03-201B	0.50	1.3
PCB-170/190	20/32	0.11	2.8	0.50	OU4-MU-M03-101B	0.54	1.1
PCB-18/17	31/32	0.25	5.9	1.9	OU4-MU-M10-301B	1.5	0.8
PCB-180	27/32	2.8	21	6.4	OU4-MU-M03-101B	3.4	0.5
PCB-187	32/32	3	31	6.6	OU4-MU-M03-101B	5.2	0.8
PCB-189	5/32	0.14	0.58	0.40	OU4-MU-M08-101B-FD	0.09	0.2
PCB-195/208	5/32	0.13	0.73	0.09	OU4-MU-M07-101B	0.15	1.6
PCB-201/157/173	16/32	0.47	2.3	0.81	OU4-MU-M12-201B	0.59	0.7
PCB-209	1/32	0.64	0.64	0.13	OU4-MU-M04-101B	0.09	0.7
PCB-28	30/32	0.28	9.8	1.5	OU4-MU-M13-301B	1.9	1.2
PCB-44	27/32	0.21	6.5	1.5	OU4-MU-M10-301B	1.4	1.0
PCB-52	26/32	1.9	34	4.7	OU4-MU-M10-301B	5.8	1.2
PCB-66	21/32	0.3	3.3	0.66	OU4-MU-M13-301B	0.61	0.9
PCB-77	23/32	0.01	0.09	0.30	OU4-MU-M02-101B	0.49	1.6
PCB-8/5	15/32	0.86	19	4.4	OU4-MU-M06-301B	4.3	1.0
PCB-81	24/32	0.01	0.04	0.32	OU4-MU-M06-301B	0.53	1.7
Pentachloroanisole	28/32	1.2	5.3	2.3	OU4-MU-M06-301B	1.1	0.5
Pentachlorobenzene	32/32	0.15	2	0.86	OU4-MU-M04-101B	0.40	0.5
Trans-Nonachlor	32/32	0.53	7.1	2.0	OU4-MU-M12-201B	1.1	0.6
Inorganics (UG/G)							
Aluminum	32/32	30.1	445	262	OU4-MU-M08-301B	86.0	0.3
Arsenic	32/32	7.8	10.9	9.3	OU4-MU-M11-301B	0.79	0.1
Cadmium	32/32	0.69	2.0	1.3	OU4-MU-M10-301B	0.51	0.4
Chromium	24/32	2.5	6.0	3.6	OU4-MU-M05-101B	1.4	0.4
Copper	32/32	5.6	64.6	23.1	OU4-MU-M07-101B	55.3	2.4
Iron	32/32	312	971	516	OU4-MU-M08-301B	137.8	0.3
Lead	32/32	1.7	117.9	8.7	OU4-MU-M05-101B	20.8	2.4
Manganese	32/32	9.7	21.1	13.0	OU4-MU-M11-301B	2.6	0.2
Mercury	32/32	0.14	1.2	0.2	OU4-MU-M05-101B	0.18	0.7
Nickel	16/32	1.7	4.9	1.7	OU4-MU-M07-101B	1.0	0.6
Silver	14/32	0.06	0.26	1.8	OU4-MU-M10-301B	9.6	5.5
Zinc	32/32	61.8	134	83.9	OU4-MU-M05-101B	13.5	0.2
Miscellaneous Parameter (%)							
Lipids	32/32	5.6	11.2	8.3	OU4-MU-M04-101B	1.3	0.2

TABLE 3-8a

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation

Notes:
- All results are presented in dry weight
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- Source data located in the Round 4 Data Package (TtNUS, September 2001)
-This table includes the following monitoring station samples:
  - OU4-MU-M01-201B and 301B
  - OU4-MU-M02-101B, 201B and 301B
  - OU4-MU-M03-101B and 201B
  - OU4-MU-M04-101B
  - OU4-MU-M05-101B and 301B
  - OU4-MU-M06-101B, 201B and 301B
  - OU4-MU-M07-101B and 301B
  - OU4-MU-M08-101B, 201B and 301B
  - OU4-MU-M09-101B and 201B
  - OU4-MU-M10-101B, 201B and 301B
  - OU4-MU-M11-101B, 201B and 301B
  - OU4-MU-M12-101B and 201B
  - OU4-MU-M13-101B and 301B
  - OU4-MU-M14-101B and 201B

Field duplicates:
OU4-MU-M03-201B-FD
OU4-MU-M08-101B-FD
OU4-MU-M09-201B-FD
OU4-MU-M10-101B-FD
OU4-MU-M13-101B-FD

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins (PG/G)							
1,2,3,4,6,7,8,9-OCDF	1/8	13.8	13.8	22.1	OU4-MU-R01-301B	5.0	0.23
1,2,3,4,6,7,8-HPCDD	2/8	24.8	31.7	16.0	OU4-MU-R03-401B	8.0	0.50
1,2,3,4,6,7,8-HPCDF	2/8	4.5	7.7	10.4	OU4-MU-R04-301B	3.4	0.32
TOTAL FURANS	1/8	3.1	3.1	13.0	OU4-MU-R03-301B	10.2	0.78
TOTAL HPCDD	3/8	24.8	35.0	18.7	OU4-MU-R01-301B	10.3	0.55
TOTAL HPCDF	2/8	4.5	7.7	10.4	OU4-MU-R04-301B	3.4	0.32
TOTAL HXCDD	1/8	11.9	11.9	11.7	OU4-MU-R03-401B	1.9	0.16
Polyaromatic Hydrocarbons (NG/G)							
1,1-Biphenyl	8/8	4.3	8.4	5.9	OU4-MU-R02-401B	1.5	0.26
1-Methylnaphthalene	8/8	5.7	9.2	7.7	OU4-MU-R03-401B	1.4	0.18
1-Methylphenanthrene	8/8	4.6	7.3	6.2	OU4-MU-R02-401B	1.1	0.17
2,3,5-Trimethylnaphthalene	8/8	5.1	8.0	6.3	OU4-MU-R03-401B	0.91	0.14
2,6-Dimethylnaphthalene	8/8	4.0	7.4	5.3	OU4-MU-R03-401B	1.1	0.21
2-Methylnaphthalene	8/8	9.5	15.1	12.7	OU4-MU-R04-301B	2.1	0.17
Acenaphthene	8/8	2.4	4.6	3.7	OU4-MU-R01-401B, OU4-MU-R02-301B	0.84	0.23
Acenaphthylene	8/8	7.1	18.0	13.0	OU4-MU-R01-401B	4.0	0.31
Anthracene	8/8	13.7	38.1	27.9	OU4-MU-R01-401B	8.9	0.32
Benzo(a)anthracene	8/8	7.4	17.8	11.7	OU4-MU-R02-401B	3.6	0.31
Benzo(a)pyrene	8/8	7.8	18.4	11.7	OU4-MU-R02-401B	3.6	0.31
Benzo(b)fluoranthene	8/8	8.5	21.8	15.0	OU4-MU-R02-401B	5.1	0.34
Benzo(e)pyrene	8/8	10.1	26.6	18.6	OU4-MU-R01-401B	5.9	0.32
Benzo(g,h,i)perylene	8/8	3.0	10.3	6.5	OU4-MU-R02-401B	2.5	0.39
Benzo(k)fluoranthene	8/8	4.0	12.0	8.1	OU4-MU-R02-401B	3.0	0.37
C1-Chrysenes	8/8	4.9	13.6	9.3	OU4-MU-R01-301B	3.2	0.35
C1-Dibenzothiophenes	8/8	2.6	4.9	3.6	OU4-MU-R01-401B	0.64	0.18
C1-Fluoranthenes/pyrenes	8/8	15.6	41.0	29.8	OU4-MU-R01-301B	9.0	0.30
C1-Fluorenes	8/8	24.4	55.2	39.0	OU4-MU-R02-401B	9.9	0.25
C1-Naphthalenes	8/8	15.8	23.8	20.4	OU4-MU-R04-301B	3.4	0.17
C1-Phenanthrenes/anthracenes	8/8	15.7	42.0	29.2	OU4-MU-R01-401B	7.9	0.27
C2-Chrysenes	8/8	2.5	9.2	5.9	OU4-MU-R01-401B	2.6	0.45
C2-Dibenzothiophenes	8/8	5.5	11.2	9.1	OU4-MU-R01-401B	1.9	0.21
C2-Fluorenes	8/8	27.4	45.0	38.2	OU4-MU-R04-401B	7.7	0.20
C2-Naphthalenes	8/8	14.6	25.6	18.3	OU4-MU-R03-401B	3.3	0.18
C2-Phenanthrenes/anthracenes	8/8	15.6	29.7	25.1	OU4-MU-R03-401B	4.4	0.18

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C3-Chrysenes	4/8	0.10	0.10	3.4	OU4-MU-R01-401B, OU4-MU-R02-401B, OU4-MU-R03-301B, OU4-MU-R04-301B	3.5	1.04
C3-Dibenzothiophenes	8/8	4.5	10.8	8.4	OU4-MU-R02-301B	2.3	0.28
C3-Fluorenes	8/8	8.9	35.5	22.8	OU4-MU-R04-301B	7.9	0.35
C3-Naphthalenes	8/8	19.1	29.9	22.7	OU4-MU-R03-401B	3.9	0.17
C3-Phenanthrenes/anthracenes	8/8	12.0	28.3	22.1	OU4-MU-R01-401B	4.9	0.22
C4-Chrysenes	7/8	0.10	0.20	0.89	OU4-MU-R01-301B, OU4-MU-R01-401B, OU4-MU-R02-401B	2.1	2.38
C4-Naphthalenes	8/8	18.5	22.5	20.7	OU4-MU-R04-301B	1.4	0.07
C4-Phenanthrenes/anthracenes	8/8	5.5	16.5	11.2	OU4-MU-R01-401B	3.6	0.33
Chrysene	8/8	18.3	37.5	29.1	OU4-MU-R02-401B	6.9	0.24
Dibenzo(a,h)anthracene	8/8	0.30	0.90	0.58	OU4-MU-R02-401B	0.23	0.39
Dibenzothiophene	8/8	1.1	2.0	1.7	OU4-MU-R01-401B	0.31	0.18
Fluoranthene	8/8	36.9	91.6	68.4	OU4-MU-R02-401B	19.1	0.28
Fluorene	8/8	8.8	15.0	11.4	OU4-MU-R02-401B	2.1	0.18
Indeno(1,2,3-cd)pyrene	8/8	2.6	6.7	4.1	OU4-MU-R02-401B	1.6	0.39
Naphthalene	8/8	12.3	23.7	17.2	OU4-MU-R02-401B	3.9	0.22
Perylene	8/8	5.0	10.5	7.7	OU4-MU-R01-301B	1.8	0.23
Phenanthrene	8/8	15.9	35.5	26.2	OU4-MU-R02-401B	6.3	0.24
Pyrene	8/8	22.2	65.1	46.6	OU4-MU-R02-401B	16.1	0.35
Pesticides/PCB's (NG/G)							
1,2,3,4-Tetrachlorobenzene	8/8	8.8	27.0	17.7	OU4-MU-R02-401B, OU4-MU-R04-301B	6.8	0.38
2,4'-DDD	8/8	0.92	1.9	1.3	OU4-MU-R01-401B	0.32	0.24
2,4'-DDE	8/8	0.29	1.4	0.93	OU4-MU-R01-401B	0.37	0.40
2,4'-DDT	8/8	1.1	1.7	1.3	OU4-MU-R02-401B, OU4-MU-R04-301B	0.26	0.19
4,4'-DDD	8/8	2.1	3.2	2.6	OU4-MU-R01-401B	0.35	0.13
4,4'-DDE	8/8	5.3	9.5	6.8	OU4-MU-R01-401B	1.4	0.20
4,4'-DDT	8/8	0.39	1.4	1.0	OU4-MU-R01-401B	0.28	0.28
alpha-BHC	8/8	0.75	1.2	0.90	OU4-MU-R03-301B	0.18	0.20
Alpha-Chlordane	8/8	1.3	2.4	1.8	OU4-MU-R04-401B	0.33	0.18
beta-BHC	1/8	1.8	1.8	0.50	OU4-MU-R01-401B	0.53	1.06
Chlorpyrifos	8/8	1.4	3.4	2.2	OU4-MU-R03-301B	0.74	0.34
cis-Nonachlor	8/8	0.77	1.8	1.4	OU4-MU-R01-401B	0.33	0.24
delta-BHC	2/8	0.16	0.21	0.13	OU4-MU-R04-301B	0.04	0.32

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dieldrin	8/8	0.38	1.7	1.1	OU4-MU-R01-301B	0.41	0.38
Endrin	3/8	0.15	0.28	0.16	OU4-MU-R01-401B	0.06	0.35
gamma-BHC (Lindane)	8/8	0.69	1.5	1.2	OU4-MU-R03-401B	0.27	0.23
Gamma-Chlordane	8/8	0.81	1.4	1.0	OU4-MU-R01-401B	0.18	0.17
Heptachlor Epoxide	2/8	0.09	0.18	0.57	OU4-MU-R02-301B	0.27	0.48
Hexachlorobenzene	6/8	0.17	0.53	0.30	OU4-MU-R03-301B	0.16	0.52
Oxychlordane	2/8	0.42	0.48	0.27	OU4-MU-R01-301B	0.11	0.42
PCB-101/90	8/8	5.2	9.3	6.9	OU4-MU-R01-401B	1.1	0.17
PCB-105	8/8	1.5	2.7	1.9	OU4-MU-R03-401B	0.39	0.20
PCB-118	8/8	3.3	6.6	4.9	OU4-MU-R01-401B	1.0	0.21
PCB-128	8/8	0.55	1.7	1.2	OU4-MU-R01-401B	0.35	0.30
PCB138 /160	1/8	9.1	9.1	4.8	OU4-MU-R01-301B	1.9	0.40
PCB-149/123	8/8	4.3	6.5	5.5	OU4-MU-R01-401B	0.67	0.12
PCB-153/132	8/8	9.0	17.0	13.4	OU4-MU-R01-401B	2.4	0.18
PCB-156	8/8	0.70	1.3	1.0	OU4-MU-R01-301B	0.21	0.22
PCB-167	7/8	0.29	0.86	0.57	OU4-MU-R01-401B	0.19	0.34
PCB-169	1/8	0.02	0.02	0.37	OU4-MU-R04-301B	0.58	1.58
PCB-170/190	8/8	0.19	1.8	0.89	OU4-MU-R03-301B	0.70	0.79
PCB-18/17	8/8	0.33	2.3	1.4	OU4-MU-R04-301B	0.66	0.46
PCB-187	8/8	3.0	5.3	4.0	OU4-MU-R01-401B	0.69	0.18
PCB-28	8/8	0.39	3.2	1.9	OU4-MU-R02-301B	1.1	0.58
PCB-52	8/8	3.9	7.2	5.4	OU4-MU-R03-401B	1.1	0.20
PCB-66	8/8	0.26	0.91	0.61	OU4-MU-R03-401B	0.25	0.41
PCB-81	4/8	0.01	0.06	0.62	OU4-MU-R04-401B	0.64	1.03
Pentachloroanisole	8/8	1.9	3.3	2.5	OU4-MU-R04-401B	0.44	0.18
Pentachlorobenzene	8/8	0.56	1.5	1.0	OU4-MU-R03-401B	0.31	0.32
Trans-Nonachlor	8/8	1.3	3.0	1.6	OU4-MU-R01-401B	0.58	0.35
Inorganics (UG/G)							
Aluminum	8/8	203	452	304	OU4-MU-R04-301B	77.1	0.25
Arsenic	8/8	7.8	10.6	9.6	OU4-MU-R02-401B	0.82	0.09
Cadmium	8/8	0.93	1.1	1.0	OU4-MU-R04-301B	0.07	0.07
Chromium	8/8	3.1	11.6	4.8	OU4-MU-R04-301B	2.8	0.57
Copper	8/8	5.8	27.5	10.3	OU4-MU-R04-301B	8.3	0.81
Iron	8/8	365	774	596	OU4-MU-R04-401B	135.9	0.23
Lead	8/8	1.9	4.3	2.7	OU4-MU-R02-401B	0.79	0.29

TABLE 3-8b

DESCRIPTIVE STATISTICS OF THE ROUND 4 MUSSEL DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Manganese	8/8	11.1	15.1	12.7	OU4-MU-R01-301B	1.3	0.10
Mercury	8/8	0.18	0.27	0.22	OU4-MU-R04-301B	0.036	0.16
Nickel	3/8	1.7	3.3	1.4	OU4-MU-R04-301B	0.87	0.64
Silver	6/8	0.06	0.07	0.06	OU4-MU-R01-301B, OU4-MU-R01-401B, OU4-MU-R02-301B, OU4-MU-R03-301B, OU4-MU-R03-401B	0.02	0.33
Zinc	8/8	69.7	90.1	77.0	OU4-MU-R04-301B	6.9	0.09
Miscellaneous Parmeter (%)							
Lipids	8/8	5.4	9.9	8.0	OU4-MU-R01-401B	1.4	0.17

Notes:
- All results are presented in dry weight
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- This table includes the following reference station samples:
  - OU4-MU-(R01 through R04)-(301B and 401B)
- Source data located in the Round 4 Data Package (TtNUS, September 2001)

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 4 JUVENILE LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins (PG/G)							
1,2,3,4,6,7,8,9-OCDF	1/6	19.2	19.2	16.8	OU4-LJ-M09-101B	2.2	0.13
2,3,7,8-TCDF	1/6	2.6	2.6	1.8	OU4-LJ-M09-101B	0.44	0.24
TOTAL HPCDD	1/6	6.1	6.1	7.8	OU4-LJ-M07-101B	1.3	0.16
TOTAL HXCDF	1/6	7.8	7.8	8.1	OU4-LJ-M09-101B	0.95	0.12
TOTAL TCDF	1/6	2.6	2.6	1.8	OU4-LJ-M09-101B	0.44	0.24
Polyaromatic Hydrocarbons (NG/G)							
1,1-Biphenyl	14/14	3.8	9.8	6.3	OU4-LJ-M01-101B	1.3	0.20
1-Methylnaphthalene	14/14	3	7.4	4.2	OU4-LJ-M09-101B	1.2	0.28
1-Methylphenanthrene	14/14	0.7	4.2	1.8	OU4-LJ-M01-101B	1.1	0.66
2,3,5-Trimethylnaphthalene	14/14	0.9	2	1.2	OU4-LJ-M01-101B	0.26	0.21
2,6-Dimethylnaphthalene	14/14	1.1	2.2	1.4	OU4-LJ-M01-101B	0.25	0.18
2-Methylnaphthalene	14/14	4	9.5	5.4	OU4-LJ-M09-101B	1.4	0.26
Acenaphthene	14/14	1.2	2.9	1.8	OU4-LJ-M09-101B	0.47	0.26
Acenaphthylene	14/14	0.2	1.6	0.26	OU4-LJ-M01-101B-FD	0.21	0.81
Anthracene	14/14	1.3	9.2	3.1	OU4-LJ-M10-101B	2.2	0.70
Benzo(a)anthracene	14/14	2.1	28	8.3	OU4-LJ-M13-101B	7.1	0.86
Benzo(a)pyrene	14/14	3.7	41.6	16.1	OU4-LJ-M01-101B	13.1	0.81
Benzo(b)fluoranthene	14/14	4.4	36	13.2	OU4-LJ-M13-101B	9.0	0.68
Benzo(e)pyrene	14/14	3.4	17.2	8.4	OU4-LJ-M01-101B	4.3	0.52
Benzo(g,h,i)perylene	14/14	3.9	17.1	7.7	OU4-LJ-M01-101B	3.5	0.45
Benzo(k)fluoranthene	14/14	2.1	14.2	5.1	OU4-LJ-M13-101B	3.6	0.69
C1-Chrysenes	14/14	1.2	11.4	4.6	OU4-LJ-M13-101B	3.2	0.69
C1-Dibenzothiophenes	14/14	0.6	2.6	1.1	OU4-LJ-M08-101B-FD	0.50	0.46
C1-Fluoranthenes/pyrenes	14/14	3.1	26.6	10.6	OU4-LJ-M01-101B	7.4	0.70
C1-Fluorenes	14/14	2.4	8.2	5.4	OU4-LJ-M01-101B	1.3	0.25
C1-Naphthalenes	14/14	7.2	16.8	9.6	OU4-LJ-M09-101B	2.6	0.27
C1-Phenanthrenes/anthracenes	14/14	3.5	14.6	6.6	OU4-LJ-M13-101B	3.5	0.54
C2-Chrysenes	14/14	0.1	5.4	2.4	OU4-LJ-M08-101B-FD	1.4	0.59
C2-Dibenzothiophenes	11/14	0.1	2.3	1.0	OU4-LJ-M08-101B-FD	1.4	1.4
C2-Fluorenes	14/14	2.2	7	4.1	OU4-LJ-M01-101B	1.4	0.33
C2-Naphthalenes	14/14	3.5	7.8	4.7	OU4-LJ-M01-101B	1.1	0.22
C2-Phenanthrenes/anthracenes	14/14	2.1	14.3	4.9	OU4-LJ-M13-101B	3.3	0.67
C3-Chrysenes	7/14	0.1	0.1	4.3	OU4-LJ-M01-101B, OU4-LJ-M03-101B, OU4-LJ-M05-101B, OU4-LJ-M08-101B, OU4-LJ-M09-101B, OU4-LJ-M12-101B, OU4-LJ-M14-101B	4.4	1.0

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 4 JUVENILE LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C3-Dibenzothiophenes	9/14	0.1	0.9	1.4	OU4-LJ-M08-101B, OU4-LJ-M08-101B-FD	1.7	1.2
C3-Fluorenes	13/14	0.1	13.3	2.9	OU4-LJ-M01-101B-FD	4.1	1.4
C3-Naphthalenes	14/14	1.9	3.9	2.8	OU4-LJ-M01-101B, OU4-LJ-M08-101B-FD	0.60	0.21
C3-Phenanthrenes/anthracenes	14/14	0.1	8.4	2.1	OU4-LJ-M13-101B	2.2	1.0
C4-Chrysenes	5/14	0.1	18.2	7.0	OU4-LJ-M01-101B-FD	5.2	0.74
C4-Naphthalenes	14/14	0.1	6.4	1.3	OU4-LJ-M01-101B-FD	1.7	1.3
C4-Phenanthrenes/anthracenes	13/14	0.1	3.9	1.2	OU4-LJ-M01-101B	2.2	1.9
Chrysene	14/14	3.8	37.3	12.9	OU4-LJ-M13-101B	8.9	0.69
Dibenzo(a,h)anthracene	14/14	0.1	1.3	0.59	OU4-LJ-M01-101B	0.32	0.55
Dibenzothiophene	14/14	0.5	1.6	0.80	OU4-LJ-M10-101B	0.34	0.42
Fluoranthene	14/14	6.9	70.5	22.9	OU4-LJ-M13-101B	18.5	0.81
Fluorene	14/14	2.9	6.4	3.9	OU4-LJ-M01-101B	0.97	0.25
Indeno(1,2,3-cd)pyrene	14/14	3.1	20.7	8.5	OU4-LJ-M01-101B-FD	5.3	0.63
Naphthalene	14/14	6.3	15.8	8.4	OU4-LJ-M09-101B	2.5	0.30
Perylene	14/14	2.3	10.2	5.5	OU4-LJ-M13-101B	2.4	0.43
Phenanthrene	14/14	5.4	21.3	10.6	OU4-LJ-M10-101B	5.5	0.52
Pyrene	14/14	4.9	39.6	16.4	OU4-LJ-M13-101B	11.8	0.72
Pesticides/PCB's (NG/G)							
1,2,3,4-Tetrachlorobenzene	14/14	5	75	19.5	OU4-LJ-M01-101B-FD	14.4	0.74
1,2,4,5-Tetrachlorobenzene	6/14	0.1	0.56	0.37	OU4-LJ-M08-101B	0.12	0.34
4,4'-DDD	1/14	0.76	0.76	0.28	OU4-LJ-M03-101B	0.14	0.51
4,4'-DDE	14/14	0.88	7.2	2.4	OU4-LJ-M08-101B	1.6	0.68
Alpha-Chlordane	2/14	0.1	0.11	0.06	OU4-LJ-M11-101B	0.020	0.34
Chlorpyrifos	14/14	1	1.7	1.4	OU4-LJ-M08-101B	0.20	0.14
Dieldrin	14/14	0.87	2.6	1.6	OU4-LJ-M01-101B, OU4-LJ-M01-101B-FD	0.52	0.33
Endosulfan II	1/14	0.28	0.28	0.15	OU4-LJ-M12-101B	0.04	0.27
gamma-BHC (Lindane)	14/14	0.76	2	1.2	OU4-LJ-M14-101B	0.39	0.33
Oxychlordane	10/14	0.36	2.6	0.67	OU4-LJ-M09-101B	0.62	0.93
PCB-101/90	4/14	0.23	2.8	0.51	OU4-LJ-M12-101B	0.66	1.3
PCB-105	14/14	0.19	3	0.74	OU4-LJ-M12-101B	0.67	0.90
PCB-118	14/14	0.76	9.6	2.4	OU4-LJ-M12-101B	2.2	0.91
PCB-126	7/14	0.01	0.02	0.75	OU4-LJ-M05-101B	0.78	1.0
PCB-128	10/14	0.32	1.8	0.47	OU4-LJ-M12-101B	0.39	0.83
Pcb138 /160	14/14	1	8	2.7	OU4-LJ-M12-101B	1.7	0.65
PCB-149/123	4/14	0.04	0.74	0.45	OU4-LJ-M12-101B	0.20	0.44
PCB-153/132	14/14	1.7	7.9	3.9	OU4-LJ-M12-101B	1.7	0.44
PCB-156	2/14	0.53	1.7	0.61	OU4-LJ-M12-101B	0.32	0.52
PCB-167	1/14	0.36	0.36	0.51	OU4-LJ-M12-101B	0.07	0.13
PCB-169	9/14	0.01	0.07	0.58	OU4-LJ-M02-101B	0.77	1.3
PCB-170/190	10/14	0.16	0.77	0.52	OU4-LJ-M12-101B	0.23	0.45
PCB-18/17	2/14	0.15	0.23	0.48	OU4-LJ-M02-101B	0.13	0.28
PCB-180	14/14	0.47	2.8	1.2	OU4-LJ-M01-101B	0.60	0.49
PCB-187	14/14	0.36	1.9	1.1	OU4-LJ-M09-101B	0.50	0.45

TABLE 3-9a

DESCRIPTIVE STATISTICS OF THE ROUND 4 JUVENILE LOBSTER DATA FOR THE MONITORING STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-28	1/14	0.11	0.19	0.39	OU4-LJ-M01-101B-FD	0.08	0.20
PCB-44	12/14	0.13	0.64	0.35	OU4-LJ-M03-101B	0.23	0.66
PCB-52	1/14	0.8	0.8	0.55	OU4-LJ-M12-101B	0.09	0.16
PCB-66	4/14	0.31	1	0.31	OU4-LJ-M12-101B	0.23	0.75
PCB-77	5/14	0.01	0.02	1.0	OU4-LJ-M13-101B, OU4-LJ-M14-101B	0.77	0.77
PCB-81	3/14	0.01	0.01	1.3	OU4-LJ-M07-101B, OU4-LJ-M13-101B, OU4-LJ-M14-101B	0.69	0.55
Pentachloroanisole	14/14	0.13	0.31	0.23	OU4-LJ-M01-101B	0.04	0.17
Pentachlorobenzene	5/14	0.02	0.39	0.21	OU4-LJ-M01-101B	0.11	0.55
Trans-Nonachlor	1/14	0.15	0.15	0.14	OU4-LJ-M14-101B	0.01	0.10
Inorganics ((UG/G)							
Arsenic	14/14	15.5	33.8	20.4	OU4-LJ-M13-101B	4.3	0.21
Cadmium	2/14	0.06	0.14	0.028	OU4-LJ-M01-101B-FD	0.018	0.64
Chromium	1/14	5.2	5.2	1.0	OU4-LJ-M04-101B	1.2	1.23
Copper	14/14	19.6	46.2	31.4	OU4-LJ-M01-101B-FD	8.1	0.26
Iron	11/14	6	27.3	10.7	OU4-LJ-M04-101B	6.3	0.59
Lead	13/14	0.07	0.58	0.21	OU4-LJ-M13-101B	0.17	0.81
Manganese	14/14	1.9	13.6	5.7	OU4-LJ-M11-101B	3.8	0.67
Mercury	14/14	0.38	0.78	0.57	OU4-LJ-M12-101B	0.11	0.19
Silver	14/14	0.51	1.2	0.86	OU4-LJ-M14-101B	0.19	0.22
Zinc	14/14	77.1	123	101	OU4-LJ-M13-101B	13.2	0.13
Miscellaneous Parameter (%)							
Lipids	14/14	2.2	3.8	3.1	OU4-LJ-M06-101B	0.42	0.13

Notes:
All results presented in dry weight
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- This table includes the following monitoring station samples:
  - OU4-LJ-(M01 through M14)-101B
  - OU4-LJ-M01-101B-FD
  - OU4-LJ-M08-101B-FD
- Source data located in the Round 4 Data Package (TtNUS, September 2001)

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 4 JUVENILE LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
Dioxins (PG/G)							
2,3,7,8-TCDF	1/3	3.5	3.5	2.2	OU4-LJ-R01-101B	1.1	0.50
TOTAL HXCDD	1/3	30	30	15.3	OU4-LJ-R01-101B	12.8	0.83
TOTAL TCDF	1/3	3.5	3.5	2.2	OU4-LJ-R01-101B	1.1	0.50
Polyaromatic Hydrocarbons (NG/G)							
1,1-Biphenyl	3/3	4	5.3	4.8	OU4-LJ-R03-101B	0.70	0.15
1-Methylnaphthalene	3/3	2.9	4.3	3.7	OU4-LJ-R02-101B	0.72	0.19
1-Methylphenanthrene	3/3	1.2	20.2	7.8	OU4-LJ-R02-101B	10.7	1.4
2,3,5-Trimethylnaphthalene	3/3	1	3	1.8	OU4-LJ-R02-101B	1.1	0.61
2,6-Dimethylnaphthalene	3/3	1.3	1.5	1.4	OU4-LJ-R01-101B	0.10	0.07
2-Methylnaphthalene	3/3	4.2	5.7	4.9	OU4-LJ-R02-101B	0.75	0.15
Acenaphthene	3/3	1.2	2.2	1.7	OU4-LJ-R02-101B	0.50	0.30
Acenaphthylene	3/3	0.2	0.3	0.27	OU4-LJ-R02-101B, OU4-LJ-R03-101B	0.06	0.22
Anthracene	3/3	1.6	4.1	2.6	OU4-LJ-R02-101B	1.3	0.51
Benzo(a)anthracene	3/3	3.7	20	10.2	OU4-LJ-R02-101B	8.6	0.84
Benzo(a)pyrene	3/3	9.3	18.1	13.6	OU4-LJ-R02-101B	4.4	0.32
Benzo(b)fluoranthene	3/3	6.8	26.2	14.9	OU4-LJ-R02-101B	10.1	0.67
Benzo(e)pyrene	3/3	5.2	13.7	8.9	OU4-LJ-R02-101B	4.4	0.49
Benzo(g,h,i)perylene	3/3	4	6.1	5.0	OU4-LJ-R03-101B	1.1	0.21
Benzo(k)fluoranthene	3/3	2.5	12.9	6.7	OU4-LJ-R02-101B	5.5	0.82
C1-Chrysenes	3/3	2.7	12.7	6.4	OU4-LJ-R02-101B	5.5	0.85
C1-Dibenzothiophenes	3/3	1	7.7	3.3	OU4-LJ-R02-101B	3.8	1.2
C1-Fluoranthenes/pyrenes	3/3	7	62.9	26.4	OU4-LJ-R02-101B	31.6	1.2
C1-Fluorenes	3/3	4.9	15.5	8.7	OU4-LJ-R02-101B	5.9	0.68
C1-Naphthalenes	3/3	7.1	9.9	8.6	OU4-LJ-R02-101B	1.4	0.16
C1-Phenanthrenes/anthracenes	3/3	5.8	81.2	31.2	OU4-LJ-R02-101B	43.3	1.4
C2-Chrysenes	3/3	1.6	4.1	2.6	OU4-LJ-R02-101B	1.3	0.51
C2-Dibenzothiophenes	3/3	0.1	0.7	0.33	OU4-LJ-R02-101B	0.32	0.96
C2-Fluorenes	3/3	4.4	10.5	6.7	OU4-LJ-R02-101B	3.3	0.49
C2-Naphthalenes	3/3	3.9	6.7	5.0	OU4-LJ-R02-101B	1.5	0.29
C2-Phenanthrenes/anthracenes	3/3	4.6	27.5	12.5	OU4-LJ-R02-101B	13.0	1.0
C3-Chrysenes	2/3	0.1	0.1	3.4	OU4-LJ-R02-101B, OU4-LJ-R03-101B	5.7	1.7
C3-Dibenzothiophenes	2/3	0.1	0.6	1.4	OU4-LJ-R02-101B	1.9	1.3
C3-Fluorenes	3/3	0.1	1.5	0.60	OU4-LJ-R02-101B	0.78	1.3
C3-Naphthalenes	3/3	2.3	8.8	5.1	OU4-LJ-R02-101B	3.4	0.66
C3-Phenanthrenes/anthracenes	3/3	2	7.3	3.9	OU4-LJ-R02-101B	3.0	0.76
C4-Chrysenes	2/3	0.1	0.1	2.8	OU4-LJ-R01-101B, OU4-LJ-R03-101B	4.6	1.7

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 4 JUVENILE LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
C4-Naphthalenes	3/3	0.2	1	0.67	OU4-LJ-R03-101B	0.42	0.62
C4-Phenanthrenes/anthracenes	3/3	0.1	2.1	0.90	OU4-LJ-R02-101B	1.1	1.2
Chrysene	3/3	8.5	62	27.3	OU4-LJ-R02-101B	30.1	1.1
Dibenzo(a,h)anthracene	3/3	0.3	0.3	0.30	OU4-LJ-R01-101B, OU4-LJ-R02-101B, OU4-LJ-R03-101B	5.3E-09	1.8E-08
Dibenzothiophene	3/3	0.5	6.3	2.5	OU4-LJ-R02-101B	3.3	1.3
Fluoranthene	3/3	15	353	129.0	OU4-LJ-R02-101B	194	1.5
Fluorene	3/3	2.8	9.2	5.1	OU4-LJ-R02-101B	3.5	0.69
Indeno(1,2,3-cd)pyrene	3/3	4.1	6.5	5.7	OU4-LJ-R03-101B	1.4	0.24
Naphthalene	3/3	6.5	8.9	7.7	OU4-LJ-R02-101B	1.2	0.16
Perylene	3/3	4.1	5.5	4.9	OU4-LJ-R03-101B	0.74	0.15
Phenanthrene	3/3	8.1	209	75.6	OU4-LJ-R02-101B	116	1.5
Pyrene	3/3	12.1	177	68.2	OU4-LJ-R02-101B	94.2	1.4
Pesticides/PCB's (NG/G)							
1,2,3,4-Tetrachlorobenzene	3/3	3.4	11	6.5	OU4-LJ-R01-101B	4.0	0.62
1,2,4,5-Tetrachlorobenzene	2/3	0.3	0.34	0.36	OU4-LJ-R03-101B	0.07	0.20
4,4'-DDE	3/3	2.2	2.6	2.4	OU4-LJ-R01-101B	0.20	0.08
Chlorpyrifos	3/3	1.6	2.5	2.2	OU4-LJ-R01-101B, OU4-LJ-R03-101B	0.52	0.24
Dieldrin	3/3	1.4	1.9	1.6	OU4-LJ-R03-101B	0.26	0.17
gamma-BHC (Lindane)	3/3	0.83	1.5	1.1	OU4-LJ-R02-101B	0.34	0.29
Oxychlordane	2/3	0.64	0.92	0.60	OU4-LJ-R03-101B	0.34	0.57
PCB-101/90	1/3	0.52	0.52	0.39	OU4-LJ-R01-101B	0.11	0.29
PCB-105	3/3	0.56	0.65	0.59	OU4-LJ-R02-101B	0.05	0.08
PCB-118	3/3	1.6	2.4	2.0	OU4-LJ-R01-101B	0.40	0.20
PCB-126	2/3	0.01	0.03	0.55	OU4-LJ-R01-101B	0.91	1.7
PCB-128	3/3	0.32	0.43	0.36	OU4-LJ-R01-101B	0.06	0.17
PCB-138 /160	3/3	2.1	2.8	2.4	OU4-LJ-R01-101B	0.36	0.15
PCB-149/123	1/3	0.18	0.18	0.39	OU4-LJ-R01-101B	0.18	0.46
PCB-153/132	3/3	3.3	4.2	3.6	OU4-LJ-R01-101B	0.49	0.14
PCB-169	2/3	0.02	0.02	0.55	OU4-LJ-R01-101B, OU4-LJ-R02-101B	0.91	1.7
PCB-18/17	1/3	0.23	0.23	0.44	OU4-LJ-R02-101B	0.19	0.43
PCB-180	3/3	0.87	1.2	1.0	OU4-LJ-R01-101B	0.18	0.18
PCB-187	3/3	0.94	1.3	1.1	OU4-LJ-R01-101B	0.18	0.16
PCB-44	3/3	0.25	0.41	0.35	OU4-LJ-R01-101B	0.09	0.25
PCB-52	2/3	0.34	0.52	0.49	OU4-LJ-R02-101B	0.13	0.27
PCB-66	1/3	0.38	0.38	0.26	OU4-LJ-R01-101B	0.11	0.42
PCB-77	3/3	0.01	0.04	0.03	OU4-LJ-R01-101B	0.02	0.57

TABLE 3-9b

DESCRIPTIVE STATISTICS OF THE ROUND 4 JUVENILE LOBSTER DATA FOR THE REFERENCE STATIONS
ROUND 4 - INTERIM OFFSHORE MONITORING PROGRAM
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum Concentration	Maximum Concentration	Mean Concentration	Sample with Maximum Concentration	Standard Deviation	Coefficient of Variation
PCB-81	2/3	0.01	0.03	0.50	OU4-LJ-R01-101B	0.83	1.7
Pentachloroanisole	3/3	0.26	0.35	0.29	OU4-LJ-R01-101B	0.05	0.18
Pentachlorobenzene	1/3	0.08	0.08	0.22	OU4-LJ-R02-101B	0.12	0.55
Inorganics (UG/G)							
Arsenic	3/3	17.3	22.1	19.6	OU4-LJ-R01-101B	2.4	0.12
Copper	3/3	21.4	53.4	41.4	OU4-LJ-R02-101B	17.5	0.42
Iron	3/3	8.9	13.9	10.7	OU4-LJ-R01-101B	2.8	0.26
Lead	2/3	0.28	0.86	0.4	OU4-LJ-R01-101B	0.42	1.08
Manganese	3/3	3.4	9.5	7.0	OU4-LJ-R01-101B	3.2	0.46
Mercury	3/3	0.57	0.82	0.71	OU4-LJ-R01-101B	0.13	0.18
Silver	3/3	0.78	1.4	1.1	OU4-LJ-R01-101B	0.31	0.30
Zinc	3/3	76.2	143	109	OU4-LJ-R01-101B	33.4	0.31
Miscellaneous Parameter (%)							
Lipids	3/3	2.6	3.5	3.2	OU4-LJ-R02-101B	0.49	0.16

Notes:
- All results are presented in dry weight
- The mean, standard deviation, and coefficient of variation were calculated using 1/2 the detection limit for non-detects and the average of duplicate samples.
- The sample and duplicate were counted as two separate samples when determining the minimum and maximum detected concentrations, but were only counted as one sample when determining the frequency of detection.
- This table includes the following reference station samples:
  - OU4-LJ-(R01 through R03)-101B
- Source data located in the Round 4 Data Package (TtNUS, September 2001)

TABLE A.4-1

AVERAGE NORMALIZED CHEMICAL CONCENTRATION IN SEDIMENT AT EACH MONITORING STATION ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (PG/G)																
1,2,3,4,6,7,8,9-OCDD	190.5 - 696.0	482.3							371.4	93.5	58.5 U	258.7	63.1 U	681.8		
1,2,3,4,6,7,8,9-OCDF	4.8 - 13.7	10.2 U							10.1 U	3.8 U	5.6 U	11.3 U	8.9 U	23.7 U		
1,2,3,4,6,7,8-HPCDD	23.2 - 81.1	52.3							21.8 U	13.2	7.1 U	19.1	16.4 U	76.1		
1,2,3,4,6,7,8-HPCDF	6.5 - 20.4	14.1							11.0	7.7	6.0	9.0	16.7	19.2		
1,2,3,4,7,8,9-HPCDF	0.8 - 2.0	1.4							0.9	0.4	0.5	0.6	0.7	0.8		
1,2,3,4,7,8-HXCDD	0.8 - 2.9	1.7							0.7 U	0.9 U	0.3 U	0.7 U	1.1 U	0.7		
1,2,3,4,7,8-HXCDF	0.4 - 2.0	1.1 U							0.7 U	0.9 U	0.8 U	0.7 U	2.4 U	0.7 U		
1,2,3,6,7,8-HXCDD	2.3 - 4.3	3.0							2.0	0.8	1.2	1.6	5.4	1.2		
1,2,3,6,7,8-HXCDF	0.6 - 2.0	1.3							0.6 U	0.8 U	0.6 U	0.6 U	1.5 U	0.8		
1,2,3,7,8,9-HXCDD	1.7 - 2.2	2.0							0.8 U	1.0 U	0.5 U	0.8 U	1.9 U	1.0		
1,2,3,7,8,9-HXCDF	0.5 - 2.0	1.2							0.8 U	1.0 U	0.5 U	0.7 U	1.1 U	0.5		
1,2,3,7,8-PECDD	0.5 - 2.0	1.2							0.8 U	1.0 U	0.5	0.5	2.2	0.7		
1,2,3,7,8-PECDF	0.3 - 1.9	1.0 U							0.6 U	0.7 U	0.6 U	0.4 U	1.5 U	0.5 U		
2,3,4,6,7,8-HXCDF	1.2 - 2.1	1.7							0.8 U	1.0 U	0.8 U	0.7 U	2.0 U	0.8		
2,3,4,7,8-PECDF	0.3 - 2.0	1.2 U							0.6 U	0.9 U	0.4 U	0.6 U	3.7 U	0.7 U		
2,3,7,8-TCDD	0.1 - 0.4	0.3							0.2 U	0.1 U	0.1 U	0.2	0.4	0.2		
2,3,7,8-TCDF	0.3 - 0.6	0.5 U							0.2 U	0.5 U	0.1 U	0.4 U	0.4	0.2 U		
TOTAL DIOXINS	251.9 - 1032.3	659.3							491.8	138.3	82.4 U	357.7	130.5 U	937.5		
TOTAL FURANS	14.4 - 49.0	35.6 U							29.7 U	23.0 U	20.4 U	24.3 U	80.8 U	54.3 U		
TOTAL HPCDD	53.7 - 219.9	130.6							96.1	37.3	17.5 U	65.1	35.2 U	220.7		
TOTAL HPCDF	6.2 - 21.6	15.2							25.9	11.8	10.3	8.6	27.4	40.6		
TOTAL HXCDD	8.8 - 102.1	41.2							11.6 U	6.1	5.2 U	10.1	23.5 U	34.5		
TOTAL HXCDF	4.8 - 20.2	14.0							5.2 U	7.8	4.6 U	5.9	19.1 U	10.5		
TOTAL PECDD	1.9 - 15.4	6.1							1.7 U	1.3 U	0.8 U	1.0	5.2 U	0.2		
TOTAL PECDF	1.5 - 3.6	2.7 U							1.2 U	6.3 U	3.2 U	2.2 U	18.8 U	1.1 U		
TOTAL TCDD	0.1 - 0.4	0.2							0.2 U	0.7 U	0.4 U	0.2	3.5 U	0.3 U		
TOTAL TCDF	0.4 - 2.1	1.2 U							0.2 U	0.5 U	2.2 U	0.6 U	20.4 U	0.6 U		
Polyaromatic Hydrocarbons (NG/G)																
1,1-BIPHENYL	2.4 - 4.9	3.4	26.2	3.3	4.7	6.2	3.8	5.7	3.3	5.6	2.6	6.0	27.4	20.1	4.2	4.9
1-METHYLNAPHTHALENE	2.8 - 10.1	6.4	67.1	10.2	11.3	14.7	9.6	11.1	7.3	16.4	5.6	14.6	45.7	55.6	9.5	10.5
1-METHYLPHENANTHRENE	5.6 - 88.6	48.7	224.4	23.5	41.4	53.5	28.8	57.0	22.2	37.7	17.6	51.5	64.1	151.7	40.1	37.1
2,3,5-TRIMETHYLNAPHTHALENE	2.4 - 15.6	8.6	30.5	6.3	6.1	7.5	4.2	6.7	3.6	9.6	4.0	15.9	21.0	24.8	13.1	8.5
2,6-DIMETHYLNAPHTHALENE	7.0 - 11.4	9.2	36.8	9.2	9.8	13.6	7.4	10.1	6.4	15.0	6.0	16.4	38.4	48.7	9.9	9.6
2-METHYLNAPHTHALENE	4.8 - 16.2	11.1	90.9	13.3	18.7	24.7	14.7	19.0	11.4	30.3	9.2	20.0	99.7	92.6	14.2	17.3
ACENAPHTHENE	2.9 - 21.5	14.5	219.5	11.3	22.0	51.8	28.9	25.4	11.1	28.3	17.3	23.3	47.5	631.3	64.8	20.0
ACENAPHTHYLENE	10.0 - 58.1	40.8	341.0	30.5	63.8	59.7	45.5	76.3	34.9	63.1	21.5	57.5	65.7	64.7	53.3	60.3
ANTHRACENE	23.5 - 272.1	158.4	806.5	83.2	219.9	513.4	149.1	248.5	111.0	225.6	113.8	514.8	343.9	1100.2	298.6	190.8
BENZO(A)ANTHRACENE	35.3 - 357.3	204.3	1280.3	110.9	307.4	495.0	234.2	433.9	158.3	326.9	140.0	403.4	347.4	1382.5	341.0	226.9
BENZO(A)PYRENE	52.8 - 485.2	277.7	1900.8	169.6	446.6	646.5	360.9	688.5	259.6	494.3	196.3	488.3	450.0	1943.7	368.8	351.1
BENZO(B)FLUORANTHENE	59.3 - 444.6	276.1	1441.7	148.0	446.5	584.5	296.6	630.7	237.5	493.3	200.0	433.4	448.0	1830.1	394.0	303.4
BENZO(E)PYRENE	27.7 - 203.1	119.7	931.4	72.7	210.5	269.3	142.4	294.9	108.8	253.1	96.5	198.1	224.5	809.4	174.1	147.1
BENZO(G,H,I)PERYLENE	24.6 - 185.8	110.0	820.4	68.8	199.3	273.2	134.3	282.9	108.5	220.6	83.4	175.9	191.4	703.8	96.2	127.9
BENZO(K)FLUORANTHENE	15.7 - 151.4	94.2	425.2	40.1	139.0	182.3	80.2	190.3	61.4	156.1	67.5	127.9	112.0	586.5	137.5	77.8
C1-CHRYSENES	22.3 - 239.1	146.3	940.2	72.7	151.6	183.1	118.4	217.9	85.9	197.1	83.7	181.0	191.4	545.3	174.4	140.3
C1-DIBENZOTHIOPHENES	2.6 - 23.7	13.7	45.0	8.9	17.6	19.6	9.5	18.3	7.8	14.2	6.3	19.6	22.6	42.4	13.5	11.6
C1-FLUORANTHENES/PYRENES	34.4 - 397.2	241.4	1932.0	116.2	264.9	388.0	209.5	423.1	142.3	242.2	114.9	363.3	261.9	1019.6	306.6	220.9
C1-FLUORENES	5.8 - 57.6	32.5	269.6	24.3	29.5	37.5	22.1	40.4	15.2	25.8	12.3	76.3	57.0	134.6	39.9	29.7
C1-NAPHTHALENES	7.6 - 26.2	18.2	158.1	23.4	30.0	39.4	24.3	30.1	18.7	46.6	14.8	34.6	145.5	164.6	23.6	27.7
C1-PHENANTHRENES/ANTHRACENES	20.7 - 332.0	162.0	848.5	80.2	152.5	232.7	105.7	202.6	77.5	138.8	62.1	251.0	200.3	569.5	134.6	119.6
C2-CHRYSENES	9.7 - 130.4	75.8	427.6	38.8	74.5	76.1	55.0	121.1	44.2	161.3	44.3	88.7	105.9	216.7	76.4	73.7
C2-DIBENZOTHIOPHENES	3.2 - 28.5	17.6	70.8	10.8	17.8	17.7	12.4	24.0	9.5	19.3	7.8	15.6	27.5	30.4	18.6	14.2
C2-FLUORENES	10.0 - 66.1	35.7	267.4	28.0	23.8	33.7	17.8	40.9	14.3	24.3	12.2	47.1	59.3	72.2	37.1	26.9
C2-NAPHTHALENES	8.7 - 28.8	19.2	125.1	25.7	26.8	38.1	20.5	26.5	17.1	37.3	12.1	45.3	93.8	126.9	28.2	26.2
C2-PHENANTHRENES/ANTHRACENES	17.9 - 525.9	191.0	784.5	58.8	89.6	118.4	72.0	145.9	54.9	97.2	44.2	140.8	141.7	231.6	96.7	88.0
C3-CHRYSENES	0.6 - 15.0	6.6	19.0	3.8	12.6	8.9	5.5	13.5	5.1	18.0	3.2	8.0	6.1	10.0	4.8	4.6
C3-DIBENZOTHIOPHENES	2.1 - 17.5	10.9	57.9	7.2	12.4	9.5	8.1	18.2	6.9	13.3	5.7	9.8	15.7	17.6	17.3	8.6
C3-FLUORENES	13.1 - 82.8	38.0	236.4	21.8	18.5	25.7	24.5	44.3	13.0	26.7	9.1	34.9	44.6	49.9	50.1	19.0
C3-NAPHTHALENES	6.7 - 53.1	25.9	115.8	22.3	28.3	34.5	17.0	27.9	16.1	39.0	11.4	53.6	86.5	88.6	35.3	28.6
C3-PHENANTHRENES/ANTHRACENES	9.9 - 433.0	140.0	466.4	30.5	45.9	53.9	36.3	82.0	29.3	52.6	21.9	62.1	71.0	97.9	54.2	43.8
C4-CHRYSENES	7.1 - 26.1	17.4	80.5	12.5	37.5	48.9	21.2	51.3	17.0	60.3	15.8	31.8	36.2	119.3	25.7	25.2
C4-NAPHTHALENES	4.5 - 45.9	20.5	98.3	10.1	17.1	21.7	11.1	24.7	10.3	27.5	7.5	25.0	46.8	39.6	28.1	17.7
C4-PHENANTHRENES/ANTHRACENES	3.6 - 319.8	90.4	175.2	9.5	17.6	19.0	14.7	42.7	11.0	28.5	8.4	21.0	19.6	33.7	34.6	17.1
CHRYSENE	44.6 - 301.5	192.0	1181.4	106.1	349.9	406.0	208.9	427.1	177.8	326.1	161.5	302.9	310.7	1296.0	379.3	202.5
DIBENZO(A,H)ANTHRACENE	6.7 - 56.0	32.3	168.3	16.6	45.1	78.0	33.6	68.2	24.7	57.4	22.4	50.9	52.2	190.0	29.2	32.8
DIBENZOTHIOPHENE	1.9 - 18.4	10.5	68.9	7.4	15.2	31.3	11.1	21.0	7.6	13.5	7.2	24.2	26.1	113.4	15.1	10.9

TABLE A.4-1

AVERAGE NORMALIZED CHEMICAL CONCENTRATION IN SEDIMENT AT EACH MONITORING STATION ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
FLUORANTHENE	76.7 - 706.9	448.1	2712.2	209.5	606.4	1373.9	409.6	855.3	299.5	579.4	270.7	888.3	533.0	3513.1	858.5	340.1
FLUORENE	6.1 - 54.1	32.8	339.6	24.8	39.0	108.7	43.6	60.3	23.0	40.2	25.8	96.0	94.1	618.3	54.4	43.5
INDENO(1,2,3-CD)PYRENE	34.7 - 257.9	144.8	759.4	75.9	223.5	343.6	153.0	330.0	124.3	244.5	103.4	234.9	223.5	843.5	141.2	149.4
NAPHTHALENE	7.7 - 32.1	17.8	169.1	18.6	28.1	34.7	23.1	28.7	17.7	33.0	13.4	41.8	266.5	139.1	25.0	27.9
PERYLENE	13.9 - 76.2	50.4	120.8	25.3	62.3	59.8	44.7	79.9	41.1	70.8	33.7	104.7	84.9	276.8	62.5	43.5
PHENANTHRENE	30.4 - 360.8	207.2	1666.2	112.0	287.9	755.3	242.0	415.8	147.2	272.9	139.2	510.6	404.6	2726.3	217.6	194.1
PYRENE	67.8 - 611.8	358.9	2960.0	187.6	588.4	1048.1	359.3	774.4	269.4	553.9	236.0	727.5	448.3	1960.8	636.8	335.7
LMW PAHs		482.5	3632.8	293.8	679.2	1548.3	546.9	873.9	356.3	693.4	340.2	1264.1	1322.0	5372.4	727.9	553.9
HMW PAHs		1513.3	10202.4	800.4	2343.8	4047.4	1606.4	3247.3	1189.3	2338.0	1026.9	2861.3	2141.6	10286.0	2613.6	1489.0
TOTAL PAHs		1995.8	13835.2	1094.2	3023.1	5595.7	2153.3	4121.2	1545.7	3031.4	1367.1	4125.4	3463.6	15658.4	3341.5	2042.9
Pesticides/PCB's (NG/G)																
1,2,3,4-TETRACHLOROBENZENE	0.07 - 0.80	0.32	0.1	0.0	0.2	0.1	0.1	0.3	0.1	0.3	0.1	0.1	0.4	0.0	0.0	0.1
1,2,4,5-TETRACHLOROBENZENE	0.21 - 1.57	0.80	0.3	0.2	0.6	0.4	0.3	0.2 U	0.5	0.6	0.4	0.2	0.6 U	0.3	0.4 U	0.6 U
2,4'-DDD	0.29 - 3.05	1.90	22.5	1.7	3.6	14.9	1.8	6.8	1.8	37.4	1.6	12.3	1.4	6.4	2.6	2.2
2,4'-DDE	0.04 - 0.78	0.25	1.1	0.2	0.3	2.7	0.4	0.4	0.3	1.6	0.1	0.3	3.8	0.0	0.1	0.1
2,4'-DDT	0.03 - 0.09	0.06	11.8	0.6	0.3	19.9	0.1	0.4	0.1	43.5	0.4	4.1	1.7	0.5	0.2	0.1
4,4'-DDD	0.43 - 1.10	0.80	36.9	3.9	6.2	30.9	1.4	12.6	1.7	71.0	1.2	20.8	1.9	2.7	0.6	0.6
4,4'-DDE	0.41 - 0.69	0.57	15.7	4.2	1.9	87.1	0.9	4.7	1.5	24.4	0.9	6.1	1.4	1.3	0.5	0.5
4,4'-DDT	0.54 - 0.76	0.63	113.0	3.4	1.4	67.9	0.9	3.5	1.0	151.6	1.9	12.3	14.2	3.6	1.5	1.7
ALDRIN	0.03 - 0.09	0.04 U	5.8	0.0	0.1	0.6	0.0	0.0	0.0	1.2	1.4	0.0 U	4.1	6.7	1.3	2.3
ALPHA-BHC	0.06 - 0.11	0.08	0.1	0.0	0.1	0.1	0.0	0.1 U	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.1
ALPHA-CHLORDANE	0.19 - 0.31	0.25	4.8	0.3	0.5	0.3	0.2	0.4	0.2	4.9	0.2	5.4	1.7	0.7	0.2	0.2
BETA-BHC	0.08 - 0.26	0.15	0.2	0.1	0.1	0.1	0.0 U	0.1 U	0.0 U	0.1 U	0.1	0.1	0.3	0.1	0.1	0.1
CHLORPYRIFOS	0.09 - 1.46	0.59	0.0 U	0.0	0.0 U	0.1	0.0	0.1 U	0.0	0.1	0.0 U	0.1 U	0.1 U	0.1	0.0 U	0.0
CIS-NONACHLOR	0.12 - 0.60	0.26	1.1	0.2	0.3	0.1	0.1	0.1	0.1	2.0	0.1	0.7	0.9	0.4	0.2	0.1
DELTA-BHC	0.05 - 0.15	0.10	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.0	0.0
DIELDRIN	0.01 - 0.05	0.04	6.8	0.5	0.0 U	0.8	0.0	0.2	0.1	0.6	0.1	0.3	3.9	0.5	0.1	0.0
ENDOSULFAN II	0.26 - 2.21	1.27	2.2	0.4	0.6	0.3	0.3	0.8	0.5	0.7	0.2	1.4	0.1 U	1.1	0.1 U	0.0 U
ENDRIN	0.03 - 0.09	0.05 U	0.0 U	0.0 U	0.0	0.0 U	0.0 U	0.1	0.0 U	0.1	0.0	0.0	0.0 U	0.0 U	0.0 U	0.0
GAMMA-BHC (LINDANE)	0.09 - 0.26	0.16	0.2	0.1 U	0.2 U	0.1	0.2 U	0.4 U	0.1	0.1	0.1	0.1	0.1 U	0.0 U	0.1	0.1
GAMMA-CHLORDANE	0.01 - 0.06	0.04	3.8	0.2	0.2	0.1	0.1	0.0	0.1	5.9	0.1	6.3	0.2	0.0	0.0	0.0
HEPTACHLOR	0.07 - 0.43	0.22	0.3	0.1	0.6	0.2	0.1	0.3	0.1	0.5	0.1	0.2	3.5	0.1	0.1	0.1
HEPTACHLOR EPOXIDE	0.04 - 0.23	0.09	0.2	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.2	0.0 U	0.0 U	0.0 U	0.0 U
HEXACHLOROBENZENE	0.03 - 0.16	0.08	0.0 U	0.0 U	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.3	0.0	0.0 U	0.0
MIREX	0.11 - 0.12	0.11	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1 U	0.6	0.0 U	0.1
OXYCHLORDANE	0.04 - 0.18	0.08	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0 U	0.1	0.1	0.1
PCB-101/90	0.81 - 4.70	2.11	0.9	3.1	4.8	2.3	0.7	1.9	1.3	9.9	1.4	2.6	11.7	4.2	0.9	0.8
PCB-105	0.09 - 1.77	0.71	0.9	1.4	1.5	2.1	0.2	0.6	0.5	1.7	0.5	0.9	3.3	1.2	0.3	0.2
PCB-114	0.17 - 0.57	0.33 U	0.1 U	0.0 U	0.0 U	0.1 U	0.0 U	0.1 U	0.0 U	0.3 U	0.1 U	0.2 U	0.3 U	0.1 U	0.2 U	0.1 U
PCB-118	0.36 - 4.02	1.55	1.0	1.8	1.3	1.0	0.4	1.4	1.1	4.5	1.1	2.7	9.0	4.4	0.9	0.7
PCB-126	0.10 - 0.35	0.23 U	0.1 U	0.1 U	0.3	0.3	0.1 U	0.2 U	0.1 U	0.1 U	0.1	0.1 U	2.5	0.1	0.1 U	0.1 U
PCB-128	0.16 - 1.43	0.71	1.3	0.7	1.1	1.3	0.2	0.7	0.4	2.7	0.4	0.9	2.6	2.0	0.3	0.3
PCB138 /160	1.02 - 6.17	2.64	1.7	6.5	12.3	14.8	0.8	2.9	1.1	25.9	2.2	4.6	20.3	9.6	1.3	1.1
PCB-149/123	0.37 - 2.50	1.24	1.6	11.2	8.3	8.4	0.4 U	1.7	0.4 U	26.9	1.6	3.1	10.7	4.5	0.9	0.7
PCB-153/132	0.55 - 4.33	1.95	3.5	20.2	14.4	13.7	0.3 U	2.6	0.8 U	33.4	2.5	5.1	18.8	10.9	1.5	1.3
PCB-156	0.17 - 1.35	0.74	2.9	0.9	1.0	1.2	0.6	1.2	0.6	2.1	0.6	0.6	4.1	3.7	0.7	0.8
PCB-167	0.41 - 3.27	1.66	10.2	0.6	0.3	1.4	0.7	1.5	0.7	1.2	0.4	1.5	4.6	1.3	0.9	1.7
PCB-169	0.05 - 0.25	0.15	0.1	0.0	0.0	0.0	0.1	0.1	0.1 U	0.5	0.0	0.0	0.0	0.0	0.0	0.0
PCB-170/190	2.00 - 23.44	12.65	24.0	7.8	10.3	9.8	3.7	12.0	4.0	18.4	5.3	11.6	9.1	45.6	6.2	5.4
PCB-18/17	0.03 - 1.04	0.37	0.1	0.2	0.2	0.1 U	0.2	0.3	0.5	0.6	0.1	0.0 U	0.2	1.1	0.7	0.0 U
PCB-180	0.56 - 1.06	0.71	1.1	58.1	12.2	15.4	0.4 U	1.1 U	0.5 U	24.4	1.6	2.6	12.9	16.8	0.8	0.6
PCB-187	0.37 - 2.24	1.10	7.4	46.7	8.3	9.2	0.3	1.2	0.8	16.4	1.4	1.9	10.0	23.7	1.8	1.8
PCB-189	0.22 - 0.57	0.34	2.6	0.1	0.2	0.4	0.1	0.1	0.0	0.4	0.1	0.3	0.2	0.5	0.1	0.1
PCB-195/208	0.18 - 0.43	0.30	0.3	19.3	1.6	2.2	0.2	2.2	2.4	6.2	1.2	0.2	2.8	9.8	0.3	0.2
PCB-201/157/173	0.22 - 0.57	0.34	1.9	8.4	0.7	0.7	0.1	0.5	0.3	1.6	0.3	0.5	1.7	3.4	1.0	0.6
PCB-206	0.32 - 1.58	0.69	0.9	39.6	1.9	2.2	0.2	4.9	6.0	11.0	2.6	0.4	4.6	29.2	0.5	0.6
PCB-209	0.11 - 0.45	0.31	0.2	3.7	0.7	1.6	0.2	1.9	2.3	2.9	0.7	0.5	1.4	4.7	0.3	0.2
PCB-28	0.35 - 0.84	0.60	0.2	0.0 U	0.1	0.1	0.0	0.2	0.2	0.8	0.5	0.8	1.1	3.3	2.5	0.3
PCB-44	0.26 - 1.63	0.77	0.2	0.4	0.1	0.1	0.0	0.2	0.3	1.2	0.4	0.7	1.2	1.8	0.6	0.1
PCB-52	0.09 - 1.99	0.75	0.3	0.8	1.7	0.4	0.2	0.5	0.6	2.3	0.7	1.2	4.9	2.8	0.8	0.2
PCB-66	0.02 - 0.41	0.18	0.8	0.4	0.3	0.2	0.2	0.4	0.4	0.9	0.4	0.4	0.9	2.8	0.8	0.2
PCB-77	0.05 - 0.16	0.10	0.0	0.0 U	0.1 U	0.1	0.1 U	0.0 U	0.0 U	0.3	0.1	0.1	0.2 U	0.1	0.1	0.1
PCB-8/5	0.33 - 0.68	0.48	0.4	0.2	0.3	0.3	0.2	0.5	0.3	0.3	0.2	0.2	0.2 U	2.1	0.4 U	0.1 U
PCB-81	0.03 - 0.35	0.18	0.2	0.0 U	0.2	0.3	0.1 U	0.2 U	0.1 U	0.1	0.0	0.1	3.5	0.5	0.1	0.0
PENTACHLOROANISOLE	0.06 - 0.17	0.10	0.1	0.0 U	0.1	0.0	0.1	0.0 U	0.0 U	0.1	0.0	0.1	0.2	0.1	0.0	0.0 U
PENTACHLOROBENZENE	0.04 - 1.09	0.34	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.5	0.0	0.0 U	0.0 U

TABLE A.4-1

AVERAGE NORMALIZED CHEMICAL CONCENTRATION IN SEDIMENT AT EACH MONITORING STATION ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
TRANS-NONACHLOR	0.11 - 0.43	0.21	1.8	0.2	0.1	0.1	0.1	0.1	0.1	2.8	0.1	2.6	0.2	0.1	0.1	0.0 U
Inorganics (UG/G)																
ALUMINUM	1.00 - 1.00	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.00013 - 0.00019	0.0002	0.0003	0.0003	0.0003	0.0004	0.0002	0.0003	0.0002	0.0002	0.0003	0.0002	0.0003	0.0002	0.0003	0.0002
CADMIUM	0.000002 - 0.000004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 U	0.0000	0.0000 U	0.0000 U
CHROMIUM	0.00117 - 0.00147	0.0013	0.0017	0.0023	0.0018	0.0029	0.0020	0.0019	0.0018	0.0032	0.0022	0.0016	0.0053	0.0024	0.0020	0.0019
COPPER	0.00010 - 0.00031	0.0002	0.0012	0.0008	0.0053	0.0260	0.0006	0.0004	0.0005	0.0059	0.0029	0.0006	0.0184	0.0030	0.0009	0.0006
IRON	0.28380 - 0.41043	0.3509	0.5570	0.5849	0.6075	0.9844	0.4785	0.5132	0.4751	1.0110	0.6985	0.4925	1.5930	0.5546	0.5865	0.4576
LEAD	0.00055 - 0.00129	0.0009	0.0060	0.0020	0.0024	0.0061	0.0013	0.0013	0.0011	0.0037	0.0024	0.0016	0.0302	0.0041	0.0014	0.0013
MANGANESE	0.00513 - 0.00793	0.0066	0.0086	0.0064	0.0067	0.0104	0.0075	0.0110	0.0062	0.0064	0.0084	0.0057	0.0155	0.0076	0.0074	0.0068
MERCURY	0.000001 - 0.000004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NICKEL	0.00028 - 0.00041	0.0003	0.0006	0.0006	0.0008	0.0033	0.0005	0.0007	0.0005	0.0014	0.0012	0.0006	0.0026	0.0009	0.0005	0.0004
SILVER	0.00000 - 0.00000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
ZINC	0.00071 - 0.00134	0.0011	0.0023	0.0019	0.0052	0.0208	0.0019	0.0017	0.0016	0.0102	0.0041	0.0019	0.0147	0.0102	0.0025	0.0017

Footnotes:
Shaded values indicate concentrations that are five times greater than concentrations at the reference stations for dioxins and metals; two times greater for semivolatiles; 10 times greater for pesticides/PCBs.
Metal concentrations are normalized by dividing the parameter concentration by the aluminum concentration.
Normalized concentrations were determined by dividing sediment concentration by percent TOC.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.4-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (PG/G)																
1,2,3,4,6,7,8,9-OCDD	6.1 - 9.7	7.8 U							7.6	6.2	6.7	3.4 U	12.7	15.6		
1,2,3,4,6,7,8,9-OCDF	1.6 - 3.6	2.9							3.2 U	4.5 U	1.8 U	3.4 U	3.5 U	2.3		
1,2,3,4,6,7,8-HPCDD	1.2 - 3.1	2.1							1.6 U	2.4	2.0	1.7 U	2.2	1.6 U		
1,2,3,4,6,7,8-HPCDF	1.1 - 1.5	1.3							1.6 U	1.4	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,4,7,8,9-HPCDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,4,7,8-HXCDD	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,4,7,8-HXCDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,6,7,8-HXCDD	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,6,7,8-HXCDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,7,8,9-HXCDD	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,7,8,9-HXCDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,7,8-PECDD	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
1,2,3,7,8-PECDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
2,3,4,6,7,8-HXCDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
2,3,4,7,8-PECDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
2,3,7,8-TCDD	0.2 - 0.4	0.3 U							0.3 U	0.4 U	0.2 U	0.3 U	0.3 U	0.3 U		
2,3,7,8-TCDF	0.2 - 0.4	0.3 U							0.3 U	0.4 U	0.3	0.3 U	0.3 U	0.3 U		
TOTAL DIOXINS	6.1 - 10.8	8.7 U							7.6	13.1	9.3	3.1	16.2	15.6		
TOTAL FURANS	1.2 - 2.2	1.7							3.2 U	2.6	2.0	3.4 U	3.4	2.0		
TOTAL HPCDD	1.6 - 3.1	2.4							1.6 U	3.5	2.0	1.7 U	2.4	1.6 U		
TOTAL HPCDF	1.1 - 1.5	1.3							1.6 U	1.4	0.9 U	1.7 U	1.7 U	1.6 U		
TOTAL HXCDD	1.2 - 1.8	1.5							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
TOTAL HXCDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
TOTAL PECDD	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
TOTAL PECDF	1.2 - 1.8	1.5 U							1.6 U	2.2 U	0.9 U	1.7 U	1.7 U	1.6 U		
TOTAL TCDD	0.2 - 0.4	0.3 U							0.3 U	0.4 U	1.0	0.9	2.9	0.3 U		
TOTAL TCDF	0.2 - 0.4	0.3 U							0.3 U	0.4 U	0.7	0.3 U	0.3 U	0.3 U		
Polyaromatic Hydrocarbons (NG/G)																
1,1-BIPHENYL	0.5 - 0.9	0.75	0.75	0.56	0.49	0.46	0.56	0.33	0.36	0.50 U	0.28 U	0.28 U	0.49 U	0.8	1.2	0.9
1-METHYLNAPHTHALENE	0.7 - 1.2	0.99	1.69	0.73	0.66	0.46	0.52	0.48	0.48	0.48 U	0.52 U	0.32 U	0.38 U	1.2	1.0	0.8
1-METHYLPHENANTHRENE	0.6 - 0.9	0.79	2.57	1.32	1.09	0.52	0.94	0.68	0.94	1.81	1.00	0.73	0.61	2.2	1.0	0.8
2,3,5-TRIMETHYLNAPHTHALENE	0.6 - 1.0	0.81	1.47	0.63	0.47	0.42	0.43	0.37	0.42	0.86	0.61	0.51	0.47	1.0	0.7	0.5
2,6-DIMETHYLNAPHTHALENE	0.5 - 0.8	0.67	0.97	0.66	0.57	0.47	0.42	0.39	0.42	0.66	0.81	0.51	0.54	1.1	0.6	0.5
2-METHYLNAPHTHALENE	1.1 - 2.1	1.65	1.32	1.13	1.09	0.80	0.84	0.77	0.83	0.89	1.58	0.51 U	0.60 U	2.5	1.6	1.3
ACENAPHTHENE	0.4 - 0.5	0.46	1.61	0.69	0.40	0.28	0.33	0.24	0.22	0.74	0.56	0.43	0.58	6.8	0.7	0.4
ACENAPHTHYLENE	1.3 - 1.9	1.61	3.26	2.25	2.01	1.71	1.76	1.39	1.53	1.61	1.48	1.24	1.32	2.5	2.1	1.6
ANTHRACENE	2.5 - 4.1	3.45	6.19	5.16	4.04	3.43	3.43	2.64	2.76	3.42	3.51	2.63	2.47	13.4	5.0	3.2
BENZO(A)ANTHRACENE	1.2 - 1.8	1.46	3.60	2.85	1.71	1.56	1.40	1.06	1.27	1.55	1.51	1.02	1.06	6.3	2.8	1.5
BENZO(A)PYRENE	1.2 - 1.8	1.48	2.25	2.99	1.76	1.54	1.28	0.97	1.33	1.24	0.82 U	0.51 U	0.63 U	3.1	2.1	1.4
BENZO(B)FLUORANTHENE	1.5 - 2.3	1.87	2.81	4.26	3.11	2.92	2.51	2.29	2.50	2.73	2.51	1.57	1.63	5.4	3.1	2.2
BENZO(E)PYRENE	1.8 - 2.9	2.30	3.68	3.87	3.24	2.86	2.53	2.44	2.45	2.84	2.73	2.03	2.06	4.9	3.3	2.5
BENZO(G,H,I)PERYLENE	0.6 - 1.0	0.80	1.30	1.81	1.42	1.19	1.04	0.89	1.14	1.35	1.27	0.67	0.74	1.6	1.0	0.9
BENZO(K)FLUORANTHENE	0.7 - 1.3	1.01	1.15	1.41	0.87	0.78	0.77	0.80	0.86	1.06	1.10	0.71	1.01	3.1	1.8	1.0
C1-CHRYSENES	0.9 - 1.5	1.15	2.98	2.17	1.70	1.21	1.20	1.20	1.35	1.71	1.56	0.94	1.20	2.7	1.6	1.4
C1-DIBENZOTHIOPHENES	0.4 - 0.5	0.45	0.75	0.47	0.47	0.40	0.35	0.37	0.50	1.00	0.42	0.41	0.41	0.9	0.5	0.4
C1-FLUORANTHENES/PYRENES	2.9 - 4.4	3.70	9.90	5.27	4.15	3.48	3.42	3.07	3.30	4.84	4.40	2.88	2.88	12.3	5.6	4.1
C1-FLUORENES	2.9 - 7.0	5.13	8.25	4.90	3.38	1.95	2.03	4.06	3.67	5.44	3.13	3.41	3.89	7.7	5.4	5.2
C1-NAPHTHALENES	1.7 - 3.3	2.64	3.01	1.86	1.75	1.27	1.35	1.25	1.31	1.21 U	1.49 U	0.83 U	0.98 U	3.0	2.6	2.0
C1-PHENANTHRENES/ANTHRACENES	3.4 - 3.8	3.63	8.87	4.19	4.22	2.58	3.56	3.49	3.48	6.22	5.84	3.03	3.65	10.1	3.8	4.4
C2-CHRYSENES	0.3 - 1.0	0.74	1.41	1.48	1.50	1.36	1.01	0.78	0.99	0.30	0.78	0.45	0.83	0.9	0.8	1.1
C2-DIBENZOTHIOPHENES	1.1 - 1.2	1.13	1.45	1.05	1.03	0.99	1.02	0.86	1.42	2.59	1.03	0.94	0.83	1.5	1.2	1.0
C2-FLUORENES	3.4 - 7.3	5.03	7.05	4.02	2.69	2.20	1.92	2.49	3.76	6.67	2.79	2.85	2.88	5.7	4.5	5.0

TABLE A.4-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
C2-NAPHTHALENES	1.8 - 2.9	2.34	4.02	1.67	1.45	1.19	1.12	1.13	1.09	1.78	1.82	1.34	1.50	2.8	1.9	1.7
C2-PHENANTHRENES/ANTHRACENES	3.0 - 3.2	3.14	8.12	4.26	3.61	2.93	3.23	2.74	4.18	8.34	4.20	2.40	2.35	5.6	3.8	2.7
C3-CHRYSENES	0.4 - 0.6	0.45	0.02	0.50	0.36	0.60 U	0.74 U	0.68 U	0.92 U	0.69	0.01	0.30	0.58	0.0	0.02	0.5
C3-DIBENZOTHIOPHENES	0.8 - 1.2	1.04	1.23	1.19	1.09	0.98	1.06	0.92	1.39	2.42	0.93	0.84	0.88	1.4	1.2	1.1
C3-FLUORENES	2.2 - 3.3	2.86	3.75	1.76	2.31	1.54	3.06	2.11	2.36	7.02	3.62	2.77	2.81	4.7	2.6	2.4
C3-NAPHTHALENES	2.1 - 3.8	2.92	4.44	2.18	1.79	1.39	1.53	1.48	1.55	2.78	2.12	1.71	1.67	3.3	2.7	1.9
C3-PHENANTHRENES/ANTHRACENES	2.5 - 3.0	2.74	4.92	3.09	3.22	2.72	2.68	2.98	3.36	6.65	3.21	1.95	1.86	3.7	3.2	3.2
C4-CHRYSENES	0.0 - 0.6	0.16	0.46	0.01	0.75 U	0.01	0.01	0.21	0.02	0.02	0.01	0.02	0.02	0.0	0.02	0.1
C4-NAPHTHALENES	2.4 - 3.3	2.66	3.34	1.87	1.48	1.42	1.90	1.26	2.15	4.37	1.96	1.65	1.61	2.4	3.2	1.6
C4-PHENANTHRENES/ANTHRACENES	1.1 - 1.7	1.39	1.97	1.44	1.39	0.96	1.45	1.36	1.40	3.28	1.48	0.97	1.09	2.2	1.6	1.6
CHRYSENE	3.2 - 4.1	3.64	5.83	5.38	4.74	3.96	3.83	3.66	3.66	5.01	4.30	3.38	3.81	11.2	5.9	3.7
DIBENZO(A,H)ANTHRACENE	0.1 - 0.1	0.07	0.13	0.23	0.18	0.15	0.12	0.09	0.12	0.15	0.10	0.06	0.05	0.2	0.1	0.1
DIBENZOTHIOPHENE	0.2 - 0.2	0.22	0.38	0.35	0.24	0.17	0.18	0.17	0.20	0.33	0.22	0.19	0.17	1.1	0.3	0.2
FLUORANTHENE	6.7 - 10.4	8.49	12.25	11.73	7.57	8.21	3.93 U	3.77 U	3.49 U	9.76	9.90	6.83	6.13	40.9	13.6	6.1
FLUORENE	1.3 - 1.7	1.44	1.99	2.04	1.41	1.23	1.04	1.05	1.09	1.68	1.33	1.30	1.31	6.9	2.3	2.1
INDENO(1,2,3-CD)PYRENE	0.3 - 0.6	0.51	0.82	1.55	1.07	0.95	0.78	0.66	0.85	1.01	0.91	0.46	0.35	1.2	0.7	0.6
NAPHTHALENE	1.4 - 2.8	2.23	1.77	1.35	1.37	0.90	1.01	0.82	1.14	0.84 U	0.85 U	0.66 U	0.73 U	2.6	2.0	1.6
PERYLENE	0.8 - 1.1	0.97	1.30	1.66	1.11	1.05	0.99	0.80	0.99	1.32	1.18	0.82	0.80	1.9	1.2	1.0
PHENANTHRENE	2.8 - 4.3	3.28	5.77	6.14	3.95	3.04	2.96	2.78	3.16	4.20	4.14	3.00	2.87	20.8	4.8	3.3
PYRENE	4.0 - 7.2	5.76	14.57	7.99	4.27	2.79 U	2.50 U	2.27 U	2.35 U	6.80	6.91	4.35	3.82	25.9	8.9	4.6
LMW PAHs		14.12	21.91	18.76	14.28	11.39	11.36	9.68	10.74	13.38	13.44	9.77	9.89	55.7	18.4	13.4
HMW PAHs		20.91	38.63	31.18	20.23	18.23	13.06	11.82	12.21	24.50	23.54	16.16	15.50	87.5	33.4	17.4
TOTAL PAHs		35.02	60.54	49.94	34.51	29.62	24.42	21.50	22.95	37.88	36.98	25.93	25.39	143.2	51.9	30.9
Pesticides/PCB's (NG/G)																
1,2,3,4-TETRACHLOROBENZENE	1.77 - 2.92	2.28	0.71	0.25	0.42	0.54	0.11	0.44	0.11	0.15	0.04	0.08	0.14	1.16	2.0	1.03
1,2,4,5-TETRACHLOROBENZENE	0.10 - 0.12	0.11 U	0.07	0.09	0.11 U	0.03 U	0.10 U	0.31	0.13 U	0.32	0.25	0.23	0.29	0.17	0.3 U	0.08 U
2,4'-DDD	0.13 - 0.19	0.17	0.26	0.16	0.22	0.28	0.22	0.25	0.27	1.34	0.26	0.50	0.31	0.19	0.1	0.12
2,4'-DDE	0.09 - 0.14	0.12	0.12	0.09	0.10	0.06	0.16	0.09	0.17	0.28	0.39	0.29	0.64	0.35	0.1	0.10
2,4'-DDT	0.13 - 0.23	0.17	0.22	0.19	0.23	0.19	0.23	0.08	0.16	0.56	0.55	1.04	0.52	0.37	0.1	0.18
4,4'-DDD	0.28 - 0.37	0.33	0.50	0.29	0.43	0.36	0.38	0.33	0.33	2.87	0.80	0.95	0.62	0.45	0.3	0.29
4,4'-DDE	0.73 - 0.96	0.86	1.16	0.89	0.96	0.98	1.02	0.73	0.96	1.54	0.88	1.15	0.85	0.87	0.8	0.78
4,4'-DDT	0.11 - 0.13	0.12	0.54	0.23	0.29	0.26	0.30	0.16	0.27	0.96	0.42	1.27	0.34	0.23	0.1	0.10
ALDRIN	0.01 - 0.02	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.02 U	0.01 U	0.02 U	0.02 U	0.02 U	0.04 U	0.02 U
ALPHA-BHC	0.09 - 0.14	0.12	0.11	0.08	0.07	0.11	0.08	0.09	0.09	0.10	0.23	0.24	0.20	0.19	0.1	0.10
ALPHA-CHLORDANE	0.17 - 0.35	0.24	0.22	0.17	0.18	0.20	0.21	0.16	0.26	0.24	0.00 U	0.19	0.01 U	0.12	0.2	0.23
BETA-BHC	0.04 - 0.11	0.06	0.04 U	0.04 U	0.11	0.09	0.09	0.07	0.07	0.28	0.22	0.19	0.37	0.11	0.1	0.04 U
CHLORPYRIFOS	0.18 - 0.37	0.27	0.10	0.17	0.23	0.38	0.12	0.23	0.18	0.02 U	0.02 U	0.02 U	0.02 U	0.14	0.2	0.32
CIS-NONACHLOR	0.12 - 0.22	0.17	0.12	0.12	0.22	0.12	0.18	0.09	0.11	0.12	0.31	0.19	0.24	0.22	0.1	0.15
DELTA-BHC	0.01 - 0.02	0.02	0.01 U	0.02	0.03	0.08	0.01	0.08	0.04	0.13	0.24	0.11	0.16	0.07	0.03	0.04
DIELDRIN	0.09 - 0.16	0.14	0.25	0.12	0.13	0.10	0.12	0.09	0.09	0.09	0.11	0.11	0.14	0.13	0.2	0.12
ENDOSULFAN II	0.01 - 0.02	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02	0.01 U	0.07	0.01 U	0.01 U	0.03 U	0.01 U
ENDRIN	0.02 - 0.02	0.02	0.02 U	0.02 U	0.02	0.34	0.01 U	0.12	0.20	0.03	0.07	0.03	0.02 U	0.02 U	0.04 U	0.02 U
GAMMA-BHC (LINDANE)	0.10 - 0.21	0.15	0.11	0.02 U	0.04	0.03	0.02 U	0.02	0.08	0.10	0.05	0.04	0.06	0.12	0.1	0.04
GAMMA-CHLORDANE	0.12 - 0.16	0.13	0.13	0.10	0.12	0.12	0.11	0.15	0.11	0.51	0.36	0.36	0.22	0.11	0.1	0.11
HEPTACHLOR	0.01 - 0.02	0.02 U	0.01 U	0.03	0.01 U	0.01 U	0.01 U	0.07	0.03	0.48	0.50	0.30	0.49	0.25	0.04 U	0.07
HEPTACHLOR EPOXIDE	0.05 - 0.10	0.07	0.08 U	0.09 U	0.01	0.03	0.08 U	0.07	0.09 U	0.12 U	0.08 U	0.09 U	0.09 U	0.09 U	0.2 U	0.09 U
HEXACHLOROBENZENE	0.03 - 0.04	0.04	0.03	0.03	0.04	0.13	0.02	0.07	0.05	0.19	0.28	0.33	0.24	0.15	0.2	0.03
MIREX	0.03 - 0.04	0.03 U	0.03 U	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.03 U	0.04 U	0.03 U	0.03 U	0.03 U	0.03 U	0.1 U	0.03 U
OXYCHLORDANE	0.03 - 0.05	0.03	0.06	0.10	0.05	0.04	0.02 U	0.11	0.04	0.03 U	0.02 U	0.03 U	0.03 U	0.03 U	0.2	0.05
PCB-101/90	0.81 - 0.96	0.87	0.83	0.72	1.94	0.89	0.88	0.77	0.82	1.32	1.52	2.75	2.46	1.73	0.9	1.04
PCB-105	0.21 - 0.31	0.25	0.22	0.23	0.37	0.36	0.21	0.18	0.20	0.39	0.39	0.88	0.61	0.41	0.3	0.26
PCB-114	0.04 - 0.06	0.05 U	0.05 U	0.05 U	0.04 U	0.04 U	0.04 U	0.04 U	0.05 U	0.07 U	0.05 U	0.05 U	0.06 U	0.05 U	0.1 U	0.05 U
PCB-118	0.52 - 0.66	0.61	0.63	0.57	0.87	0.50	0.67	0.42	0.48	0.95	0.75	1.70	1.23	0.86	0.7	0.68

TABLE A.4-2

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
MUSSEL CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-126	0.001 - 0.08	0.04 U	0.00	0.00	0.00	0.00	0.00 #	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.003 U	0.08
PCB-128	0.11 - 0.17	0.14	0.13	0.15	0.31	0.17	0.17	0.11	0.14	0.29	0.27	0.37	0.44	0.25	0.2	0.14
PCB138 /160	0.46 - 0.83	0.60	0.81	1.09	3.92	1.70	1.14	0.93	0.99	1.94	1.66	2.11	2.23	1.59	1.28 U	0.77
PCB-149/123	0.60 - 0.77	0.69	0.75	0.72	3.11	1.25	0.75	0.64	0.68	0.98	0.96	0.82	1.08	1.32	0.9	0.75
PCB-153/132	1.56 - 1.78	1.68	1.75	1.75	6.39	2.95	1.77	1.31	1.58	2.63	2.27	2.28	2.31	2.80	2.0	1.65
PCB-156	0.10 - 0.14	0.12	0.11	0.09	0.22	0.13	0.14	0.08	0.08	0.07	0.05 U	0.05 U	0.09	0.16	0.1	0.08
PCB-167	0.05 - 0.08	0.07	0.04	0.07	0.14	0.09	0.07	0.07	0.07	0.14	0.13	0.17	0.19	0.11	0.1	0.07
PCB-169	0.003 - 0.15	0.04	0.01	0.01	0.01	0.02	0.13 U	0.12 U	0.00	0.01	0.00	0.00	0.17 U	0.01	0.1 U	0.08
PCB-170/190	0.03 - 0.24	0.12	0.03	0.03	0.18	0.05	0.03	0.02	0.02	0.07 U	0.05 U	0.05 U	0.05 U	0.07	0.2	0.12
PCB-18/17	0.12 - 0.28	0.18	0.18	0.12	0.11	0.03	0.07	0.19	0.14	0.37	0.21	0.47	0.31	0.27	0.5	0.05
PCB-180	0.33 - 0.50	0.41 U	0.60	0.74	1.67	1.07	0.78	0.65	0.70	0.84	0.58	0.72	0.65	0.65	0.9 U	0.61
PCB-187	0.44 - 0.52	0.50	0.53	0.52	2.39	1.25	0.56	0.46	0.46	0.95	0.90	0.47	0.64	1.47	0.6	0.63
PCB-189	0.04 - 0.06	0.05 U	0.05 U	0.05 U	0.04	0.04 U	0.04 U	0.04 U	0.05 U	0.07	0.05 U	0.05 U	0.03	0.05	0.1 U	0.05 U
PCB-195/208	0.004 - 0.01	0.01 U	0.00 U	0.00 U	0.02	0.02	0.00 U	0.02	0.04	0.01 U	0.00 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
PCB-201/157/173	0.04 - 0.06	0.05 U	0.05 U	0.05 U	0.15	0.09	0.04 U	0.05	0.05 U	0.13	0.25	0.08	0.14	0.22	0.1 U	0.07
PCB-206	0.02 - 0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1 U	0.02 U
PCB-209	0.01 - 0.02	0.01 U	0.01 U	0.01 U	0.01 U	0.06	0.01 U	0.01 U	0.02 U	0.02 U	0.01 U	0.01 U	0.02 U	0.01 U	0.03 U	0.01 U
PCB-28	0.07 - 0.36	0.23	0.32	0.21	0.11	0.17	0.06	0.04	0.21	0.07	0.12	0.11	0.09	0.44	0.9	0.32
PCB-44	0.06 - 0.10	0.08 U	0.10	0.07	0.14	0.11	0.15	0.11	0.09	0.26	0.09	0.29	0.41	0.38	0.5 U	0.11
PCB-52	0.49 - 0.92	0.69	0.46	0.25	0.73	0.58	0.42	0.61	0.62	0.29	0.45	1.44	0.11	0.35	1.1	0.56
PCB-66	0.03 - 0.10	0.08	0.12	0.09	0.07	0.07	0.10	0.07	0.09	0.03 U	0.02 U	0.02 U	0.02 U	0.11	0.3	0.10
PCB-77	0.001 - 0.19	0.07 U	0.08	0.00	0.01	0.00	0.00	0.05	0.09	0.00	0.00	0.00	0.06	0.16 U	0.1 U	0.08
PCB-8/5	0.23 - 0.53	0.43 U	0.40	1.06	0.64	0.73	0.21	1.10	0.77	0.13 U	0.10 U	0.14 U	0.13 U	0.32 U	2.0 U	0.54
PCB-81	0.01 - 0.13	0.07	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.06	0.14 U	0.05	0.07	0.07	0.001	0.00
PENTACHLOROANISOLE	0.22 - 0.50	0.33	0.32	0.35	0.34	0.26	0.18	0.36	0.25	0.17	0.15	0.20	0.18	0.26	0.6	0.35
PENTACHLOROBENZENE	0.09 - 0.17	0.13	0.13	0.10	0.07	0.18	0.06	0.13	0.07	0.11	0.08	0.09	0.10	0.14	0.1	0.10
TRANS-NONACHLOR	0.16 - 0.25	0.20	0.20	0.15	0.22	0.15	0.24	0.22	0.24	0.32	0.23	0.23	0.31	0.53	0.2	0.19
Inorganics (UG/G)																
ALUMINUM	244.4 - 414.3	304.0	223.7	243.6	326.1	275.5	265.6	236.8	333.2	260.0	341.3	207.0	287.9	264.9	228.9	270.0
ARSENIC	8.8 - 10.0	9.6	8.8	9.2	9.9	9.8	9.5	9.5	9.6	9.5	9.6	9.3	9.7	9.5	8.0	8.7
CADMIUM	0.9 - 1.1	1.0	1.0	1.3	1.0	1.1	1.5	1.0	1.2	1.1	1.1	1.5	1.5	1.0	1.3	0.8
CHROMIUM	3.5 - 7.7	4.8	3.1	2.7	3.3	5.8	5.2	3.0	3.3	3.6	3.7	2.7	4.3	3.6	3.5	4.2
COPPER	6.0 - 16.6	10.3	6.0	18.4	33.9	18.3	11.4	14.0	35.1	8.3	8.4	11.0	8.7	6.7	11.0	6.0
IRON	463.5 - 745.4	596.5	432.3	476.0	629.1	562.0	578.3	502.9	539.7	665.8	612.0	380.5	458.9	489.4	420.6	541.9
LEAD	2.0 - 3.4	2.7	3.3	4.0	5.6	6.5	60.5	3.1	4.2	3.3	4.1	4.6	16.9	4.2	2.6	2.1
MANGANESE	11.7 - 14.3	12.7	10.4	11.0	12.5	12.1	12.4	12.2	12.8	11.9	15.5	11.8	17.2	12.9	16.1	12.5
MERCURY	0.2 - 0.3	0.2	0.2	0.2	0.2	0.3	0.7	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2
NICKEL	0.8 - 2.0	1.4	0.9 U	1.7	2.8	2.2	1.7	1.3	2.9	2.0	2.5	1.6	1.3	1.3	1.4	0.9 U
SILVER	0.03 - 0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0 U	0.1	0.1	0.0	0.0 U	0.03 U	0.1
ZINC	72.4 - 83.0	77.0	80.1	81.9	85.6	93.7	102.8	74.3	91.9	74.3	85.7	83.3	86.8	83.7	95.0	70.3

Footnotes:
Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.
Normalized concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.4-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Dioxins (PG/G)																
1,2,3,4,6,7,8,9-OCDD	4.3 - 6.5	5.2 U							5.1 U	3.2 U	5.1 U	4.2 U	5.1 U	1.9 U		
1,2,3,4,6,7,8,9-OCDF	4.3 - 6.5	5.2 U							5.1 U	5.0 U	8.7	4.2 U	5.1 U	5.3 U		
1,2,3,4,6,7,8-HPCDD	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,4,6,7,8-HPCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,4,7,8,9-HPCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,4,7,8-HXCDD	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,4,7,8-HXCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,6,7,8-HXCDD	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,6,7,8-HXCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,7,8,9-HXCDD	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,7,8,9-HXCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,7,8-PECDD	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
1,2,3,7,8-PECDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
2,3,4,6,7,8-HXCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
2,3,4,7,8-PECDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
2,3,7,8-TCDD	0.4 - 0.6	0.5 U							0.5 U	0.5 U	0.8 U	0.4 U	0.5 U	0.5 U		
2,3,7,8-TCDF	0.4 - 1.3	0.8							0.5 U	0.5 U	1.2	0.4 U	0.5 U	0.5 U		
TOTAL DIOXINS	4.3 - 5.8	5.0 U							0.9 U	3.2 U	5.1 U	4.2 U	5.1 U	1.9 U		
TOTAL FURANS	0.7 - 4.9	3.3 U							5.1 U	5.0 U	6.7 U	4.2 U	5.1 U	5.3 U		
TOTAL HPCDD	2.2 - 3.2	2.6 U							1.8	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
TOTAL HPCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
TOTAL HXCDD	2.2 - 11.5	5.4							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
TOTAL HXCDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.5	2.1 U	2.6 U	2.7 U		
TOTAL PECDD	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
TOTAL PECDF	2.2 - 3.2	2.6 U							2.5 U	2.5 U	3.8 U	2.1 U	2.6 U	2.7 U		
TOTAL TCDD	0.4 - 0.6	0.5 U							0.5 U	0.5 U	0.8 U	0.4 U	0.5 U	0.5 U		
TOTAL TCDF	0.4 - 1.3	0.8							0.5 U	0.5 U	1.2	0.4 U	0.5 U	0.5 U		
Polyaromatic Hydrocarbons (NG/G)																
1,1-BIPHENYL	1.5 - 1.6	1.5	2.8	1.6	1.1	1.3	2.3	1.7	2.1	1.9	3.6	2.0	1.9	2.2	2.2	2.0
1-METHYLNAPHTHALENE	0.9 - 1.5	1.2	2.1	1.4	1.2	1.0	1.4	1.1	1.2	0.9	3.4	1.5	1.7	1.1	1.0	0.9
1-METHYLPHENANTHRENE	0.5 - 5.8	2.3	1.5	0.3	0.4	0.3	0.3	0.5	0.3	0.5	0.5	0.9	0.7	0.3	1.4	0.3
2,3,5-TRIMETHYLNAPHTHALENE	0.3 - 0.9	0.6	0.7	0.4	0.3	0.4	0.4	0.4	0.3	0.3	0.6	0.5	0.4	0.3	0.4	0.3
2,6-DIMETHYLNAPHTHALENE	0.4 - 0.6	0.5	0.7	0.5	0.3	0.4	0.5	0.5	0.4	0.4	0.9	0.4	0.4	0.4	0.5	0.4
2-METHYLNAPHTHALENE	1.2 - 1.9	1.6	2.5	1.8	1.3	1.2	1.9	1.4	1.4	1.4	4.3	1.7	2.0	1.5	1.5	1.4
ACENAPHTHENE	0.4 - 0.6	0.5	0.9	0.6	0.4	0.6	0.6	0.5	0.4	0.5	1.3	0.7	0.5	0.5	0.5	0.4
ACENAPHTHYLENE	0.1 - 0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ANTHRACENE	0.6 - 1.2	0.8	2.0	0.8	0.5	0.5	0.5	0.6	0.7	0.5	1.5	3.0	1.6	0.4	1.3	0.6
BENZO(A)ANTHRACENE	1.4 - 5.7	3.1	4.7	0.8	1.4	1.4	0.8	0.6	1.2	2.2	3.2	4.5	4.7	1.9	9.7	1.4
BENZO(A)PYRENE	3.6 - 5.2	4.2	15.2	2.4	2.0	2.5	1.3	1.4	2.5	3.6	5.5	7.5	12.7	3.6	12.0	2.9
BENZO(B)FLUORANTHENE	2.6 - 7.5	4.5	8.4	2.4	2.9	2.4	1.6	1.3	2.2	3.1	5.7	5.5	7.9	3.2	12.4	2.8
BENZO(E)PYRENE	2.0 - 3.9	2.7	6.3	2.0	1.6	2.6	1.2	1.1	1.5	2.0	3.8	3.6	4.1	1.9	5.6	2.0
BENZO(G,H,I)PERYLENE	1.4 - 1.8	1.6	6.1	2.2	1.3	2.5	1.4	1.2	1.4	1.7	3.4	3.3	3.8	2.2	3.6	1.8
BENZO(K)FLUORANTHENE	1.0 - 3.7	2.0	3.1	0.8	0.8	0.8	1.4	0.6	0.8	1.1	2.3	2.3	3.2	1.1	4.9	1.0
C1-CHRYSENES	1.0 - 3.6	1.9	4.0	0.9	0.9	1.1	0.6	0.3	0.6	1.9	1.8	2.1	1.6	1.1	3.9	1.0
C1-DIBENZOTHIOPHENES	0.3 - 2.2	1.0	0.7	0.3	0.3	0.2	0.4	0.2	0.2	0.6	0.5	0.3	0.4	0.2	0.5	0.3
C1-FLUORANTHENES/PYRENES	2.7 - 18.0	7.8	9.3	2.0	2.5	2.2	1.1	0.8	1.6	3.7	4.0	4.3	4.8	1.9	9.1	2.1
C1-FLUORENES	1.7 - 4.4	2.7	2.9	1.8	1.4	1.6	2.6	1.6	0.7	1.5	2.4	2.0	1.2	1.5	1.6	1.8
C1-NAPHTHALENES	2.1 - 3.3	2.8	4.6	3.1	2.4	2.2	3.3	2.6	2.6	2.3	7.6	3.1	3.7	2.5	2.5	2.3
C1-PHENANTHRENES/ANTHRACENES	1.9 - 23.2	9.1	4.4	1.3	1.3	1.7	1.3	1.1	1.1	2.4	2.2	3.1	2.9	1.4	5.0	1.3
C2-CHRYSENES	0.6 - 1.2	0.8	1.8	0.6	0.6	0.7	0.0	0.3	0.4	1.3	1.4	0.8	0.6	0.4	1.6	0.7
C2-DIBENZOTHIOPHENES	0.0 - 0.2	0.1	0.1	1.1 U	0.0	1.2 U	0.1	0.1	0.0	0.5	0.0	0.1	0.0	0.0	1.2 U	0.1
C2-FLUORENES	1.3 - 3.0	2.1	2.3	1.0	1.3	0.9	1.5	0.8	0.7	1.5	2.4	1.4	0.9	1.2	2.3	1.0
C2-NAPHTHALENES	1.1 - 1.9	1.6	2.6	1.5	1.3	1.2	1.6	1.1	1.2	1.2	3.2	1.7	1.7	1.3	1.5	1.1

TABLE A.4-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
2 OF 3

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
C2-PHENANTHRENES/ANTHRACENES	1.6 - 7.9	3.7	3.2	1.0	1.2	1.1	1.0	0.6	0.6	2.0	1.6	1.7	1.3	1.3	4.9	1.2
C3-CHRYSENES	0.0 - 3.9	1.3	0.0	2.7 U	0.0	2.9 U	0.0	2.1 U	2.7 U	0.0	0.0	2.7 U	2.5 U	0.0	3.0 U	0.0
C3-DIBENZOTHIOPHENES	0.0 - 1.0	0.4	1.4 U	1.1 U	0.0	1.2 U	0.0	0.0	0.0	0.2	1.9 U	0.0	1.0 U	0.0	0.0	0.0
C3-FLUORENES	0.0 - 0.4	0.2	4.5	1.2	0.4	0.5	0.8	0.4	0.0	0.6	1.1	0.3	0.1	0.1	0.0	3.9 U
C3-NAPHTHALENES	0.7 - 2.5	1.6	1.4	0.9	0.6	0.8	1.0	0.7	0.6	1.0	1.7	1.1	0.8	0.8	1.0	0.8
C3-PHENANTHRENES/ANTHRACENES	0.7 - 2.1	1.2	1.6	0.4	0.5	0.5	0.2	0.2	0.2	1.1	0.6	0.6	0.4	0.0	2.9	0.6
C4-CHRYSENES	0.0 - 2.3	0.8	6.7	2.7 U	2.8 U	2.9 U	0.0	2.1 U	2.7 U	2.6 U	4.7 U	2.7 U	2.5 U	0.0	0.0	0.0
C4-NAPHTHALENES	0.1 - 0.3	0.2	2.3	0.0	0.0	0.5	0.0	0.2	0.0	0.6	1.2	0.1	0.0	0.2	0.4	0.7
C4-PHENANTHRENES/ANTHRACENES	0.0 - 0.6	0.3	0.9	0.0	2.3 U	0.0	0.0	0.0	0.0	0.8	0.3	0.1	0.0	0.0	0.0	0.4
CHRYSENE	3.3 - 17.7	8.1	7.9	2.4	2.4	2.5	1.4	1.3	2.6	3.4	6.3	5.6	6.7	2.7	12.9	2.5
DIBENZO(A,H)ANTHRACENE	0.1 - 0.1	0.1	0.4	0.2	0.1	0.2	0.0	0.3	0.2	0.1	0.3	0.2	0.3	0.1	0.2	0.1
DIBENZOTHIOPHENE	0.2 - 1.8	0.7	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.5	0.4	0.1	0.3	0.2
FLUORANTHENE	5.6 - 100.9	37.4	13.5	3.3	4.8	3.4	2.5	1.9	3.0	9.5	6.4	12.5	12.8	4.3	24.3	3.6
FLUORENE	0.8 - 2.6	1.6	2.1	1.1	0.9	0.9	1.3	1.0	1.0	1.0	2.4	1.8	1.4	1.0	1.2	0.9
INDENO(1,2,3-CD)PYRENE	1.6 - 1.9	1.8	7.6	1.8	1.6	1.8	1.1	1.3	1.6	1.9	3.3	3.6	5.7	1.9	4.9	1.5
NAPHTHALENE	1.9 - 2.9	2.5	4.2	2.8	2.3	2.0	2.7	2.1	2.4	1.8	7.2	2.5	2.9	2.5	2.2	2.0
PERYLENE	1.5 - 1.6	1.6	3.9	1.2	1.2	1.9	0.8	1.1	1.1	1.3	2.8	2.4	2.5	1.2	3.5	1.2
PHENANTHRENE	2.9 - 59.7	21.9	6.6	2.3	2.0	1.8	1.9	1.7	1.9	4.2	4.4	6.9	5.0	2.3	5.6	2.1
PYRENE	4.6 - 50.6	19.9	13.4	2.4	5.1	2.7	1.8	1.5	2.3	5.4	4.8	8.6	9.1	2.3	13.7	3.2
LMW PAHS		28.9	18.7	9.4	7.4	7.1	8.9	7.3	7.8	9.5	21.2	16.6	13.6	8.2	12.4	7.5
HMW PAHS		72.8	55.2	11.5	15.9	12.7	7.7	7.1	11.7	24.2	26.4	38.9	46.4	14.9	72.8	13.8
TOTAL PAHS		101.8	73.9	20.9	23.3	19.8	16.6	14.4	19.5	33.7	47.5	55.5	60.0	23.1	85.2	21.3
Pesticides/PCB's (NG/G)																
1,2,3,4-TETRACHLOROBENZENE	1.0 - 4.2	2.22	20.0	14.3	2.9	10.0	1.9	2.4	7.9	5.1	10.0	2.6	1.6	4.1	4.1	5.0
1,2,4,5-TETRACHLOROBENZENE	0.1 - 0.2	0.12	0.15 U	0.12 U	0.12 U	0.13 U	0.04	0.09 U	0.12 U	0.15	0.21 U	0.12 U	0.16	0.04	0.12	0.12
2,4'-DDD	0.2 - 0.4	0.29 U	0.34 U	0.27 U	0.28 U	0.29 U	0.34 U	0.21 U	0.26 U	0.26 U	0.45 U	0.26 U	0.24 U	0.24 U	0.29 U	0.27 U
2,4'-DDE	0.06 - 0.09	0.07 U	0.08 U	0.07 U	0.07 U	0.07 U	0.09 U	0.05 U	0.07 U	0.06 U	0.11 U	0.06 U	0.06 U	0.06 U	0.07 U	0.06 U
2,4'-DDT	0.06 - 0.09	0.07 U	0.08 U	0.07 U	0.07 U	0.07 U	0.09 U	0.05 U	0.07 U	0.06 U	0.11 U	0.06 U	0.06 U	0.06 U	0.07 U	0.06 U
4,4'-DDD	0.06 - 0.10	0.08 U	0.09 U	0.07 U	0.22	0.08 U	0.10 U	0.06 U	0.07 U	0.07 U	0.13 U	0.07 U	0.07 U	0.06 U	0.08 U	0.07 U
4,4'-DDE	0.65 - 1.00	0.78	1.39	0.82	0.74	0.55	0.61	0.26	0.39	1.96	1.45	0.30	0.28	0.68	0.83	0.63
4,4'-DDT	0.05 - 0.08	0.06 U	0.07 U	0.05 U	0.06 U	0.06 U	0.07 U	0.04 U	0.05 U	0.05 U	0.09 U	0.05 U	0.05 U	0.05 U	0.06 U	0.05 U
ALDRIN	0.04 - 0.07	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U	0.06 U	0.04 U	0.05 U	0.05 U	0.08 U	0.05 U	0.04 U	0.04 U	0.05 U	0.05 U
ALPHA-BHC	0.04 - 0.07	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U	0.06 U	0.04 U	0.05 U	0.05 U	0.08 U	0.05 U	0.04 U	0.04 U	0.05 U	0.05 U
ALPHA-CHLORDANE	0.01 - 0.02	0.02 U	0.02 U	0.04	0.02 U	0.02 U	0.02 U	0.01 U	0.02 U	0.02 U	0.03 U	0.02 U	0.04	0.01 U	0.02 U	0.02 U
BETA-BHC	0.10 - 0.17	0.13 U	0.15 U	0.12 U	0.12 U	0.13 U	0.16 U	0.09 U	0.12 U	0.12 U	0.21 U	0.12 U	0.11 U	0.11 U	0.13 U	0.12 U
CHLORPYRIFOS	0.46 - 0.96	0.72	0.50	0.39	0.47	0.48	0.50	0.42	0.45	0.37	0.68	0.32	0.48	0.38	0.41	0.50
CIS-NONACHLOR	0.04 - 0.07	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U	0.07 U	0.04 U	0.05 U	0.05 U	0.09 U	0.05 U	0.05 U	0.04 U	0.06 U	0.05 U
DELTA-BHC	0.04 - 0.06	0.05 U	0.05 U	0.04 U	0.04 U	0.05 U	0.06 U	0.03 U	0.04 U	0.04 U	0.07 U	0.04 U	0.04 U	0.04 U	0.05 U	0.04 U
DIELDRIN	0.40 - 0.58	0.51	0.96	0.57	0.47	0.26	0.34 U	0.29	0.39	0.42	1.09	0.52	0.35	0.62	0.62	0.44
ENDOSULFAN II	0.04 - 0.06	0.05 U	0.05 U	0.04 U	0.04 U	0.05 U	0.06	0.03 U	0.04 U	0.04 U	0.07 U	0.04 U	0.04 U	0.08	0.05 U	0.04 U
ENDRIN	0.04 - 0.07	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U	0.07	0.04 U	0.05 U	0.05 U	0.09 U	0.05 U	0.05 U	0.04 U	0.06 U	0.05 U
GAMMA-BHC (LINDANE)	0.24 - 0.43	0.37	0.52	0.35	0.38	0.23	0.30 U	0.29	0.33	0.27	0.82	0.31	0.25	0.44	0.30	0.63
GAMMA-CHLORDANE	0.02 - 0.03	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U	0.03	0.02 U	0.02 U	0.02 U	0.04 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U
HEPTACHLOR	0.04 - 0.07	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U	0.06	0.04 U	0.05 U	0.05 U	0.08 U	0.05 U	0.04 U	0.04 U	0.05 U	0.05 U
HEPTACHLOR EPOXIDE	0.23 - 0.38	0.29 U	0.34 U	0.27 U	0.28 U	0.29 U	0.36	0.21 U	0.27 U	0.26 U	0.48 U	0.27 U	0.26 U	0.25 U	0.29 U	0.27 U
HEXACHLOROBENZENE	0.05 - 0.08	0.06 U	0.07 U	0.05 U	0.06 U	0.06 U	0.07	0.04 U	0.05 U	0.05 U	0.09 U	0.05 U	0.05 U	0.05 U	0.06 U	0.05 U
MIREX	0.09 - 0.14	0.11 U	0.13 U	0.10 U	0.10 U	0.11 U	0.13 U	0.08 U	0.10 U	0.10 U	0.17 U	0.10 U	0.09 U	0.09 U	0.11 U	0.10 U
OXYCHLORDANE	0.07 - 0.27	0.20	0.26	0.39	0.14	0.16	0.19	0.09	0.08 U	0.30	1.18	0.08 U	0.08 U	0.15	0.09 U	0.14
PCB-101/90	0.09 - 0.20	0.13 1	0.13 U	0.11 U	0.11 U	0.11 U	0.14 U	0.08 U	0.10 U	0.09	0.18 U	0.10 U	0.10 U	0.82	0.12	0.08
PCB-105	0.17 - 0.22	0.19	0.23	0.24	0.16	0.21	0.20	0.09	0.18	0.12	0.38	0.06	0.22	0.88	0.17	0.24

TABLE A.4-3

AVERAGE NORMALIZED ORGANIC AND NON-NORMALIZED INORGANIC
JUVENILE LOBSTER CONCENTRATIONS AT MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Range of Reference Station Concentration	Average Reference Station Concentration	Monitoring Station[1]													
			M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
PCB-114	0.14 - 0.23	0.17 U	0.20 U	0.16 U	0.16 U	0.17 U	0.21 U	0.12 U	0.15 U	0.16 U	0.27 U	0.16 U	0.15 U	0.14 U	0.17 U	0.15 U
PCB-118	0.47 - 0.92	0.66	0.87	0.61	0.65	0.48	0.46	0.21	0.33	0.59	1.32	0.25	0.77	2.82	0.69	0.84
PCB-126	0.00 - 0.47	0.16	0.61 U	0.48 U	0.50 U	0.00	0.01	0.38 U	0.00	0.00	0.00	0.48 U	0.45 U	0.43 U	0.00	0.00
PCB-128	0.09 - 0.17	0.12	0.15	0.13	0.12	0.12	0.11 U	0.07 U	0.08 U	0.12	0.26	0.08 U	0.12	0.53	0.11	0.14
PCB138 /160	0.62 - 1.08	0.78	1.15	0.75	0.76	0.82	0.71	0.26	0.39	0.95	1.55	0.32	0.55	2.35	0.79	0.81
PCB-149/123	0.07 - 0.15	0.12	0.20 U	0.16 U	0.16 U	0.17 U	0.21 U	0.12 U	0.15 U	0.04	0.27 U	0.16 U	0.15 U	0.22	0.06	0.01
PCB-153/132	0.94 - 1.62	1.19	1.65	1.29	1.29	1.45	1.18	0.47	0.67	1.59	2.45	0.55	0.74	2.32	1.21	1.25
PCB-156	0.14 - 0.23	0.17 U	0.20 U	0.16 U	0.16 U	0.17 U	0.21 U	0.12 U	0.15 U	0.16 U	0.27 U	0.16 U	0.17	0.50	0.17 U	0.15 U
PCB-167	0.14 - 0.23	0.17 U	0.20 U	0.16 U	0.16 U	0.17 U	0.21 U	0.12 U	0.15 U	0.16 U	0.27 U	0.16 U	0.15 U	0.11	0.17 U	0.15 U
PCB-169	0.01 - 0.47	0.16	0.02	0.03	0.00	0.01	0.02	0.01	0.47 U	0.01	0.84 U	0.48 U	0.00	0.43 U	0.00	0.47 U
PCB-170/190	0.21 - 0.35	0.27 U	0.31 U	0.11	0.10	0.18	0.14	0.04	0.05	0.14	0.26	0.24 U	0.23 U	0.23	0.28 U	0.11
PCB-18/17	0.07 - 0.23	0.15	0.20 U	0.08	0.16 U	0.17 U	0.21 U	0.12 U	0.05	0.16 U	0.27 U	0.16 U	0.15 U	0.14 U	0.17 U	0.15 U
PCB-180	0.25 - 0.46	0.33	0.76	0.36	0.35	0.58	0.39	0.12	0.15	0.49	0.86	0.17	0.17	0.56	0.32	0.34
PCB-187	0.28 - 0.50	0.36	0.46	0.39	0.35	0.52	0.35	0.13	0.17	0.49	0.86	0.12	0.16	0.44	0.34	0.38
PCB-189	0.14 - 0.23	0.17 U	0.20 U	0.16 U	0.16 U	0.17 U	0.21 U	0.12 U	0.15 U	0.16 U	0.27 U	0.16 U	0.15 U	0.14 U	0.17 U	0.15 U
PCB-195/208	0.01 - 0.02	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.02 U	0.02 U	0.03 U	0.02 U	0.01 U	0.01 U	0.02 U	0.02 U
PCB-201/157/173	0.14 - 0.23	0.17 U	0.20 U	0.16 U	0.16 U	0.17 U	0.21 U	0.12 U	0.15 U	0.16 U	0.27 U	0.16 U	0.15 U	0.14 U	0.17 U	0.15 U
PCB-206	0.06 - 0.09	0.07 U	0.08 U	0.07 U	0.07 U	0.07 U	0.09 U	0.05 U	0.07 U	0.06 U	0.11 U	0.06 U	0.06 U	0.06 U	0.07 U	0.06 U
PCB-209	0.04 - 0.06	0.05 U	0.05 U	0.04 U	0.04 U	0.05 U	0.06 U	0.03 U	0.04 U	0.04 U	0.07 U	0.04 U	0.04 U	0.04 U	0.05 U	0.04 U
PCB-28	0.11 - 0.18	0.13 U	0.06	0.13 U	0.13 U	0.13 U	0.16 U	0.10 U	0.12 U	0.12 U	0.21 U	0.12 U	0.11 U	0.11 U	0.14 U	0.12 U
PCB-44	0.07 - 0.16	0.12	0.29 U	0.05	0.19	0.07	0.08	0.04	0.06	0.07	0.39 U	0.12	0.07	0.07	0.11	0.08
PCB-52	0.10 - 0.23	0.16	0.20 U	0.16 U	0.16 U	0.18 U	0.21 U	0.13 U	0.17 U	0.16 U	0.27 U	0.16 U	0.15 U	0.24	0.17 U	0.16 U
PCB-66	0.05 - 0.15	0.09	0.24	0.06 U	0.06 U	0.07 U	0.08 U	0.05 U	0.06 U	0.06 U	0.11 U	0.06 U	0.06 U	0.29	0.12	0.10
PCB-77	0.00 - 0.02	0.01	0.00	0.48 U	0.50 U	0.00	0.00	0.38 U	0.47 U	0.47 U	0.83 U	0.48 U	0.45 U	0.43 U	0.01	0.01
PCB-8/5	0.07 - 0.12	0.09 U	0.10 U	0.08 U	0.08 U	0.09 U	0.11 U	0.06 U	0.08 U	0.08 U	0.14 U	0.08 U	0.08 U	0.07 U	0.09 U	0.08 U
PCB-81	0.00 - 0.41	0.14	0.61 U	0.48 U	0.50 U	0.52 U	0.63 U	0.38 U	0.00	0.47 U	0.84 U	0.48 U	0.45 U	0.43 U	0.00	0.00
PENTACHLOROANISOLE	0.07 - 0.13	0.10	0.11	0.08	0.06	0.07	0.10	0.06	0.06	0.04	0.12	0.07	0.05 U	0.07	0.09	0.08
PENTACHLOROBENZENE	0.02 - 0.12	0.07	0.14	0.08 U	0.01	0.09 U	0.11 U	0.06 U	0.08 U	0.08 U	0.05	0.08 U	0.08 U	0.01	0.09 U	0.01
TRANS-NONACHLOR	0.04 - 0.06	0.05 U	0.05 U	0.04 U	0.04 U	0.05 U	0.06 U	0.03 U	0.04 U	0.04 U	0.07 U	0.04 U	0.04 U	0.04 U	0.05 U	0.05
Inorganics (UG/G)																
ALUMINUM	0.8 - 8.2	3.4 U	1.4 U	1.1 U	1.7 U	10.8 U	1.8 U	0.5 U	2.0 U	1.4 U	2.3 U	1.4 U	1.4 U	1.4 U	2.6 U	2.4 U
ARSENIC	17.3 - 22.1	19.6	20.3	18.1	22.0	15.5	18.8	19.4	21.0	17.5	19.3	18.6	20.4	17.6	33.8	23.5
CADMIUM	0.02 - 0.04	0.025 U	0.1	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U
CHROMIUM	0.4 - 0.7	0.5 U	0.4 U	0.5 U	0.5 U	5.2	0.5 U	0.6 U	0.8 U	0.3 U	0.9 U	1.3 U	0.9 U	0.8 U	0.9 U	0.6 U
COPPER	21.4 - 53.4	41.4	45.7	32.3	37.4	24.5	39.0	43.1	29.5	21.1	24.7	24.7	30.0	19.6	31.4	37.1
IRON	8.9 - 13.9	10.7	6.0	11.4	12.4	27.3	12.9	4.2 U	14.9	9.6	13.8	3.4 U	2.3 U	9.4	12.4	9.6
LEAD	0.0 - 0.9	0.4	0.5	0.4	0.3	0.1	0.3	0.1	0.1	0.0 U	0.1	0.1	0.1	0.2	0.6	0.2
MANGANESE	3.4 - 9.5	7.0	3.3	4.2	3.5	9.3	2.0	3.9	8.7	2.0	3.1	12.9	13.6	4.8	4.8	3.9
MERCURY	0.6 - 0.8	0.7	0.6	0.7	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.7	0.8	0.5	0.7
NICKEL	0.8 - 0.9	0.8 U	0.9 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.9 U	0.9 U	0.8 U	0.9 U	0.8 U	0.9 U	0.8 U
SILVER	0.8 - 1.4	1.1	0.8	0.9	1.0	0.5	0.9	1.1	0.9	0.8	0.8	0.9	0.6	0.6	1.0	1.2
ZINC	76.2 - 143.0	109.4	102.7	112.0	87.0	87.8	120.0	91.2	97.1	80.3	92.1	102.0	97.1	114.0	123.0	112.0

Footnotes:
Shaded values indicate concentrations that are two times greater than concentrations at the reference stations for all parameters except for dioxins which are three times greater.
Normalized concentrations were determined by dividing tissue concentration by percent lipid. Metals were not normalized.
Parameters where all samples were non-detects are designated with a "U".
1 - Concentrations in this table are average concentrations at each monitoring station. One-half of the method detection limit was used to calculate the average for non-detected data.

TABLE A.4-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Coefficient of Variation
Dioxins (PG/G)	
1,2,3,4,6,7,8,9-OCDD	1.6
1,2,3,4,6,7,8-HPCDD	1.6
1,2,3,4,6,7,8-HPCDF	1.2
1,2,3,4,7,8,9-HPCDF	0.51
1,2,3,4,7,8-HXCDD	0.47
1,2,3,6,7,8-HXCDD	1.0
1,2,3,6,7,8-HXCDF	0.44
1,2,3,7,8,9-HXCDD	0.54
1,2,3,7,8,9-HXCDF	0.34
1,2,3,7,8-PECDD	0.49
2,3,4,6,7,8-HXCDF	0.41
2,3,7,8-TCDD	0.71
2,3,7,8-TCDF	0.94
TOTAL; DIOXINS	1.6
TOTAL HPCDD	1.6
TOTAL HPCDF	1.4
TOTAL HXCDD	1.4
TOTAL HXCDF	0.93
TOTAL PECDD	1.2
TOTAL TCDD	1.1
Average Coefficient of Variation	**0.98**
Minimum Coefficient of Variation	**0.34**
Maximum Coefficient of Variation	**1.63**
Semi-Volatile Organics (NG/G)	
1,1-Biphenyl	1.4
1-Methylnaphthalene	1.5
1-Methylphenanthrene	1.4
2,3,5-Trimethylnaphthalene	1.1
2,6-Dimethylnaphthalene	1.1
2-Methylnaphthalene	1.3
Acenaphthene	2.3
Acenaphthylene	1.5
Anthracene	1.5
Benzo(a)anthracene	1.3
Benzo(a)pyrene	1.3
Benzo(b)fluoranthene	1.2
Benzo(e)pyrene	1.3
Benzo(g,h,i)perylene	1.4
Benzo(k)fluoranthene	1.3
C1-Chrysenes	1.5
C1-Dibenzothiophenes	1.1
C1-Fluoranthenes/pyrenes	1.8
C1-Fluorenes	2.0
C1-Naphthalenes	1.4
C1-Phenanthrenes/anthracenes	1.5
C2-Chrysenes	1.3
C2-Dibenzothiophenes	1.3
C2-Fluorenes	2.2
C2-Naphthalenes	1.2
C2-Phenanthrenes/anthracenes	2.0

TABLE A.4-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Coefficient of Variation
C3-Chrysenes	0.73
C3-Dibenzothiophenes	1.5
C3-Fluorenes	2.3
C3-Naphthalenes	1.2
C3-Phenanthrenes/anthracenes	2.2
C4-Chrysenes	1.1
C4-Naphthalenes	1.4
C4-Phenanthrenes/anthracenes	2.2
Chrysene	1.3
Dibenzo(a,h)anthracene	1.3
Dibenzothiophene	1.6
Fluoranthene	1.6
Fluorene	1.9
Indeno(1,2,3-cd)pyrene	1.3
Naphthalene	1.5
Perylene	1.0
Phenanthrene	1.8
Pyrene	1.6
Average Coefficient of Variation	**1.50**
Minimum Coefficient of Variation	**0.73**
Maximum Coefficient of Variation	**2.31**

Pesticides (NG/G)	
1,2,3,4-Tetrachlorobenzene	0.79
1,2,4,5-Tetrachlorobenzene	0.81
2,4'-DDD	0.98
2,4'-DDE	1.2
2,4'-DDT	2.3
4,4'-DDD	1.5
4,4'-DDE	2.2
4,4'-DDT	2.1
Aldrin	2.2
alpha-BHC	0.71
Alpha-Chlordane	1.6
beta-BHC	0.68
Chlorpyrifos	0.56
cis-Nonachlor	1.1
delta-BHC	1.4
Dieldrin	2.3
Endosulfan II	1.1
Endrin	0.75
gamma-BHC (Lindane)	0.65
Gamma-Chlordane	2.7
Heptachlor	1.4
Heptachlor Epoxide	1.7
Hexachlorobenzene	1.1

TABLE A.4-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Coefficient of Variation
Mirex	2.2
Oxychlordane	1.1
Pentachloroanisole	0.89
Pentachlorobenzene	0.78
Trans-Nonachlor	1.9
Average Coefficient of Variation	**1.39**
Minimum Coefficient of Variation	**0.56**
Maximum Coefficient of Variation	**2.73**

PCB's (NG/G)

PCB-101/90	1.0
PCB-105	1.0
PCB-118	0.93
PCB-126	1.5
PCB-128	0.86
PCB-138 /160	1.3
PCB-149/123	1.8
PCB-153/132	1.9
PCB-156	0.84
PCB-167	2.5
PCB-169	1.1
PCB-170/190	1.2
PCB-18/17	1.9
PCB-180	3.6
PCB-187	3.2
PCB-189	3.3
PCB-195/208	3.5
PCB-201/157/173	3.3
PCB-206	3.5
PCB-209	1.9
PCB-28	1.9
PCB-44	1.5
PCB-52	1.1
PCB-66	1.5
PCB-77	1.0
PCB-8/5	1.9
PCB-81	1.7
Average Coefficient of Variation	**1.88**
Minimum Coefficient of Variation	**0.84**
Maximum Coefficient of Variation	**3.62**

TABLE A.4-4

COEFFICIENT OF VARIATIONS FOR THE ROUND 4 SEDIMENT DATA FOR THE MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Coefficient of Variation
Inorganics (UG/G)	
Aluminum	0.13
Arsenic	0.28
Cadmium	1.1
Chromium	0.37
Copper	2.3
Iron	0.44
Lead	1.3
Manganese	0.28
Mercury	1.7
Nickel	1.1
Silver	2.4
Zinc	1.5
Average Coefficient of Variation	**1.08**
Minimum Coefficient of Variation	**0.13**
Maximum Coefficient of Variation	**2.39**
Miscellaneous Parameter (%)	
Total Organic Carbon	0.59

Notes:
- Source data located in the Round 4 data package (TtNUS, September 2001).

ATTACHMENT A.4-1
DATA QUALITY REVIEW (DQR)
ROUND 4

Various data quality control measures were implemented during the field investigation performed for Portsmouth Naval Shipyard (PNS), Round 4 (April 2001). These quality measures were conducted to help ensure that the resultant data were suitable for their intended uses. A brief summary of the measures is provided in the next three sections. Section 1.0 contains a summary of the data quality indicators (DQIs). Field quality control samples are discussed in Section 2.0. A summary of the data validation procedures and the results of the data validation process appear in Section 3.0.

During Round 4, samples were collected and analyzed from the following media: mussels, juvenile lobsters, and sediment. Juvenile lobsters were dissected into muscle and hepatopancreas samples during Rounds 1, 2, 3, and 4. The hepatopancreas samples were frozen and preserved for future analysis, if necessary for Rounds 2, 3, and 4. The intestines were removed from the muscle samples, prior to extraction.

1.0 DATA QUALITY INDICATORS

The Interim Offshore Monitoring Plan was prepared as required by the Interim Record of Decision (ROD) for Operable Unit (OU) 4. The monitoring program is designed to provide offshore monitoring in the interim period before completion of the offshore feasibility study (FS) and selection and implementation of the final remedy for OU4. The focus of the interim offshore monitoring program is to provide data to determine whether, over the course of the interim monitoring, current and future concentrations of chemicals of concern (metals, PCBs, and PAHs) in the offshore areas are at acceptable levels. When the FS is conducted, available data, including data collected as part of the interim monitoring, will be used for the identification and evaluation of final remedial options for OU4.

DQIs are parameters that are monitored to establish the quality of data generated during an investigation. Some of the DQIs are generated from analysis of field samples (e.g., from field duplicates), and others result from the analysis of laboratory samples (e.g., laboratory duplicates). Individually, field and laboratory DQIs provide measures of the performance of the respective investigative operations (field or laboratory). Taken together, the DQIs provide a measure of the overall project performance. An overall evaluation of DQIs may also be used to improve the investigative process by identifying where in the process major uncertainties or biases are occurring.

1.1 Precision

Precision is a measure of the degree to which two or more measurements are in agreement and describes the reproducibility of measurements of the same parameter for samples analyzed under similar conditions.

Precision is expressed as a relative percent difference (RPD), which is defined as the ratio of the range to the mean. RPDs, which are typically expressed as percentages, are used to evaluate both field and laboratory duplicate precision and are calculated as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where RPD = relative percent difference
V1, V2 = two results obtained by analyzing duplicate samples

Field precision is assessed by collecting and measuring field duplicates at a rate of one duplicate per 10 environmental samples. This precision estimate encompasses the combined uncertainty associated with sample collection, homogenization, splitting, handling, laboratory and field storage (as applicable), preparation for analysis, and analysis. In contrast, precision estimates obtained from analyzing duplicate laboratory samples incorporate only homogenization, subsampling, preparation for analysis, laboratory storage (if applicable), and analysis uncertainties.

Laboratory precision QC samples [i.e., laboratory duplicates for inorganic chemicals and matrix spike duplicates (MSDs) for organic chemicals] were analyzed with a minimum frequency of five percent (i.e., 1 QC sample per 20 environmental samples). Laboratory precision is measured by comparing RPD values to precision control limits specified in the applicable analytical standard operating procedures (SOPs).

The precision objectives for parameters are specified in the associated analytical protocols. General precision objectives such as ±50 percent for solid matrices and ±30 percent for aqueous matrices were employed for this project for both field and laboratory duplicates. In general, qualification due to imprecision was not a significant cause of data qualification and does not impact the usability of the data for monitoring purposes, as depicted in Table 1-1 below. A 0 percent qualification rate indicates that no data were qualified due to duplicate imprecision and reflects the best possible performance.

Table 1-1 - Rates of Qualification
Laboratory and Field Duplicate Precision

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Lab Duplicate Imprecision	8%	0%	0%	0%	1%
Field Duplicate Imprecision	0%	0%	0%	0%	0%
	Mussels				
Lab Duplicate Imprecision	0%	0%	1%	2%	2%
Field Duplicate Imprecision	0%	0%	0%	0%	0%
	Sediment				
Lab Duplicate Imprecision	2%	6%	0%	1%	1%
Field Duplicate Imprecision	1%	11%	3%	6%	8%

Twelve field duplicates were collected for 127 sediment samples. Seven field duplicates were collected for 64 tissue samples. Therefore, the 10 percent minimum frequency criterion was achieved.

1.2 Accuracy

Accuracy is the degree of agreement between an observed value and an accepted reference value. This parameter is assessed by measuring spiked samples [e.g., surrogate spikes or matrix spikes (MSs)] or well-characterized samples of certified analyte concentrations (e.g., LCSs) and by measuring blanks. Accuracy measurements are designed to detect biases associated with sample handling and analysis.

Accuracy requirements for field measurements are typically ensured through control over the sample collection and handling and through routine instrument calibration. Accuracy is also typically monitored through the use of blanks to detect cross-contamination and by monitoring adherence to procedures that prevent sample contamination or degradation. Equipment rinsate blanks were collected for this investigation to assess cross-contamination via sample collection equipment. Source water blanks were collected to monitor the purity of water used to

decontaminate sampling equipment. Accuracy was also assured qualitatively through adherence to all sample handling, preservation, and holding time requirements.

Accuracy in the laboratory is measured through the comparison of a spiked sample or LCS result to a known or calculated value and is expressed as a percent recovery (%R). It is also assessed by monitoring the analytical recovery of select surrogate compounds added to samples that are analyzed by organic chromatographic methods. MS and surrogate compound analyses measure the combined accuracy effects of the sample matrix, sample preparation, and sample measurement. LCSs are used to assess the accuracy of laboratory operations with minimal sample matrix effects. Spiking concentrations were required to equal or approximate the default concentrations detailed in the applicable sample preparation or analysis SOPs. LCS and MS analyses were performed at a frequency no less than one per 20 associated samples of like matrix as required by the Interim Offshore Monitoring Plan. Laboratory accuracy is assessed by comparing calculated %R values to accuracy control limits specified in the applicable laboratory SOP.

Percent recovery is calculated using the following equation:

$$\%R = \frac{Ss - So}{S} \times 100$$

where %R = percent recovery
Ss = result of spiked sample
So = result of non-spiked sample
S = concentration of spiked amount.

In general, a percent recovery range of 75 to 125 defines the accuracy objective for the analytical data. It should be noted, however, that the analytical laboratory establishes analyte-specific percent recoveries.

Table 1-2 depicts the qualification rates for MS, LCS, surrogate, and internal standard recoveries. Failure to meet accuracy requirements (internal standard recovery) resulted in a high rate of qualification of juvenile lobster and mussel tissues in Round 1. The percentage of tissue data qualified for internal standard noncompliances dropped in Round 2 and continued to drop again in Rounds 3 and 4. This demonstrates continued improvement in laboratory performance for this matrix. The exclusion of the hepatopancreas data from Rounds 2, 3, and 4 and removal of the intestine from the juvenile lobster muscle tissue probably contributed to the decreased rate of rejection and qualification from Round 1 to Round 4. A significant increase in the qualification rate of pesticide/PCB sediment samples was observed (Round 4 = 29 percent, Round 3 = 0 percent). The cause of the increase is unknown and should be monitored closely in subsequent rounds. Increases in qualification may be due to problems in one or more of the following areas: matrix of samples, age of standard, manufacture of standard solution, spiking of standard solution, or calibration of surrogate compounds.

Table 1-2 - Rates of Qualification
Surrogate, Matrix Spike, Blank Spike, and Internal Standard Recoveries

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Matrix Spike Recovery	0%	0%	0%	0%	<1%
Blank Spike Recovery	0%	0%	0%	8%	8%
Surrogate Recovery	NA	NA	0%	0%	0%
Internal Standard Recovery	NA	NA	0%	0%	0%
Recovery Standard	NA	NA	3%	NA	NA
Clean-up Standard	NA	NA	3%	NA	NA
	Mussels				
Matrix Spike Recovery	8%	0%	0%	<1%	<1%
Blank Spike Recovery	0%	0%	<1%	18%	13%
Surrogate Recovery	NA	NA	0%	<1%	0%
Internal Standard Recovery	NA	NA	0%	0%	0%
Recovery Standard	NA	NA	8%	NA	NA
Clean-up Standard	NA	NA	8%	NA	NA
	Sediment				
Matrix Spike Recovery	2%	12%	<1%	4%	<1%
Blank Spike Recovery	0%	10%	0%	2%	3%
Surrogate Recovery	NA	NA	0%	<1%	29%
Internal Standard Recovery	NA	NA	0%	<1%	0%
Recovery Standard	NA	NA	4%	NA	NA
Clean-up Standard	NA	NA	4%	NA	NA

NA = Not applicable.

1.3 Completeness

Completeness is a measure of the amount of usable, valid analytical data obtained compared to the amount expected to be obtained. Completeness is expressed as a percentage.

Field completeness is a measure of the amount of valid field measurements obtained from all the field measurements taken in the project. A completeness criterion of 100 percent applies to these measurements.

Laboratory completeness is a measure of the amount of usable, valid laboratory measurements per matrix obtained for each target analyte. Usable, valid results are those that are judged, after data assessment, to represent the sampling populations and to have not been disqualified for use through data validation or data assessment. Completeness is typically expressed as a percentage and is determined using the following equation:

$$\%C = \frac{V}{T} \times 100$$

where %C = percent completeness
V = number of results determined to be valid
T = Total number of results

Under ideal conditions, the laboratory completeness objective would be 100 percent. However, samples can be rendered unusable during shipping and preparation (e.g., bottles broken or extracts accidentally destroyed) or analysis (e.g., loss of instrument sensitivity, strong matrix

effects). Laboratory completeness objectives are 90 percent for sediment, 80 percent for mussel tissues, and 60 percent for juvenile lobster tissue. Table 1-3 compares the percent completeness among Rounds 1, 2, 3, and 4 for sediment and tissues. Pore water and surface water samples were collected during Round 2 only and, therefore, were not included in the comparison.

Table 1-3 – Percent Completeness

	Tissues				Sediment			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Total Data Points	13,082	8,178	8,231	8,064	8,673	8,673	8,598	8,643
Rejected Data Points	230	0	41	0	10	10	1	31
% Completeness	98.2%	100%	99.5%	100%	99.9%	99.9%	99.9%	99.6%

The calculated percent completeness for laboratory analytical data collected during the field investigation is 100 percent for mussel tissues and juvenile lobster tissues (i.e., zero laboratory analytical results out of a total of 8,064 data points were qualified as unusable). The calculated percent completeness for laboratory analytical data collected during the field investigation is 99.6 percent for sediments (i.e., 31 laboratory analytical results out of a total of 8,643 data points were qualified as unusable). Therefore, the data completeness objectives for the project were achieved. Table 1-4 lists the specific results that were rejected during Round 4.

The laboratory failed to extract these field quality control samples within 14 days of sample collection (i.e., two times the 7-day holding time requirement). Rejected data are not suitable for use for the Interim Offshore Monitoring Plan. Extraction of the aqueous field quality control samples outside the required holding time may lead to an increased reporting of false positives.

Table 1-4 – Rejected Results

Sample	Parameter	Basis for Rejection
OU4-SD-M04-101B-2-D	ACID VOLATILE SULFIDE	Matrix Spike <10%
OU4-SD-R01-101B	PCB-126	Blank Spike <10%
OU4-SD-R01-201B	PCB-126	Blank Spike <10%
OU4-SD-R01-301B	PCB-126	Blank Spike <10%
OU4-SD-R01-401B	PCB-126	Blank Spike <10%
OU4-SD-R02-101B	PCB-126	Blank Spike <10%
OU4-SD-R02-401B	PCB-126	Blank Spike <10%
OU4-SD-M01-301B	PCB-156	Blank Spike <10%
OU4-SD-R01-301B	PCB-209	Blank Spike <10%
OU4-SD-M12-101B	PCB-81	Blank Spike <10%
OU4-SD-R01-101B	PCB-81	Blank Spike <10%
OU4-SD-R01-201B	PCB-81	Blank Spike <10%
OU4-SD-R02-101B	PCB-81	Blank Spike <10%
OU4-SD-M08-101B	HEPTACHLOR	Surrogate Recovery <10%
OU4-SD-M04-101B-2	ACID VOLATILE SULFIDE	Holding Time Noncompliance
OU4-SD-M12-101B	1,2,3,4,7,8,9-HPCDF	Recovery Standard <10%
OU4-SD-M12-101B	1,2,3,4,7,8-HXCDD	Recovery Standard <10%
OU4-SD-M12-101B	1,2,3,4,7,8-HXCDF	Recovery Standard <10%
OU4-SD-M12-101B	1,2,3,6,7,8-HXCDD	Recovery Standard <10%
OU4-SD-M12-101B	1,2,3,6,7,8-HXCDF	Recovery Standard <10%
OU4-SD-M12-101B	1,2,3,7,8,9-HXCDD	Recovery Standard <10%
OU4-SD-M12-101B	1,2,3,7,8,9-HXCDF	Recovery Standard <10%
OU4-SD-M12-101B	1,2,3,7,8-PECDD	Recovery Standard <10%
OU4-SD-M12-101B	2,3,4,6,7,8-HXCDF	Recovery Standard <10%
OU4-SD-M12-101B	2,3,4,7,8-PECDF	Recovery Standard <10%
OU4-SD-M12-101B	2,3,7,8-TCDD	Recovery Standard <10%
OU4-SD-M12-101B	2,3,7,8-TCDF	Recovery Standard <10%
OU4-SD-M12-101B	TOTAL PECDD	Recovery Standard <10% and Hold Time
OU4-SD-M12-101B	TOTAL TCDD	Recovery Standard <10% and Hold Time
OU4-SD-M12-101B	TOTAL TCDF	Recovery Standard <10% and Hold Time
OU4-SD-M08-101B	GAMMA-CHLORDANE	Surrogate Recovery <10%
OU4-RB-001-001B	BENZO(G,H,I)PERYLENE	Holding Time Noncompliance
OU4-RB-001-001B	C1-FLUORANTHENES/PYRENES	Holding Time Noncompliance
OU4-RB-001-001B	C2-CHRYSENES	Holding Time Noncompliance
OU4-RB-001-001B	C2-FLUORENES	Holding Time Noncompliance
OU4-FB-001-001B	C3-CHRYSENES	Holding Time Noncompliance
OU4-RB-001-001B	C3-CHRYSENES	Holding Time Noncompliance
OU4-RB-002-001B	C3-CHRYSENES	Holding Time Noncompliance
OU4-RB-003-001B	C3-CHRYSENES	Holding Time Noncompliance
OU4-RB-003-001B	C3-PHENANTHRENES/ANTHRACENES	Holding Time Noncompliance
OU4-RB-001-001B	C4-CHRYSENES	Holding Time Noncompliance
OU4-RB-002-001B	C4-CHRYSENES	Holding Time Noncompliance
OU4-RB-001-001B	C4-NAPHTHALENES	Holding Time Noncompliance
OU4-FB-001-001B	1,2,4,5-TETRACHLOROBENZENE	Holding Time Noncompliance
OU4-RB-001-001B	1,2,4,5-TETRACHLOROBENZENE	Holding Time Noncompliance
OU4-RB-002-001B	1,2,4,5-TETRACHLOROBENZENE	Holding Time Noncompliance

Sample	Parameter	Basis for Rejection
OU4-FB-001-001B	2,4'-DDD	Holding Time Noncompliance
OU4-RB-001-001B	2,4'-DDD	Holding Time Noncompliance
OU4-RB-002-001B	2,4'-DDD	Holding Time Noncompliance
OU4-RB-003-001B	2,4'-DDD	Holding Time Noncompliance
OU4-FB-001-001B	2,4'-DDE	Holding Time Noncompliance
OU4-RB-001-001B	2,4'-DDE	Holding Time Noncompliance
OU4-RB-002-001B	2,4'-DDE	Holding Time Noncompliance
OU4-RB-003-001B	2,4'-DDE	Holding Time Noncompliance
OU4-FB-001-001B	2,4'-DDT	Holding Time Noncompliance
OU4-RB-001-001B	2,4'-DDT	Holding Time Noncompliance
OU4-RB-002-001B	2,4'-DDT	Holding Time Noncompliance
OU4-RB-003-001B	2,4'-DDT	Holding Time Noncompliance
OU4-FB-001-001B	4,4'-DDD	Holding Time Noncompliance
OU4-RB-001-001B	4,4'-DDD	Holding Time Noncompliance
OU4-RB-002-001B	4,4'-DDD	Holding Time Noncompliance
OU4-RB-003-001B	4,4'-DDD	Holding Time Noncompliance
OU4-RB-001-001B	4,4'-DDE	Holding Time Noncompliance
OU4-RB-002-001B	4,4'-DDE	Holding Time Noncompliance
OU4-RB-003-001B	4,4'-DDE	Holding Time Noncompliance
OU4-FB-001-001B	4,4'-DDT	Holding Time Noncompliance
OU4-RB-002-001B	4,4'-DDT	Holding Time Noncompliance
OU4-RB-003-001B	4,4'-DDT	Holding Time Noncompliance
OU4-FB-001-001B	ALDRIN	Holding Time Noncompliance
OU4-RB-001-001B	ALDRIN	Holding Time Noncompliance
OU4-RB-002-001B	ALDRIN	Holding Time Noncompliance
OU4-RB-003-001B	ALDRIN	Holding Time Noncompliance
OU4-RB-003-001B	ALPHA-BHC	Holding Time Noncompliance
OU4-FB-001-001B	ALPHA-CHLORDANE	Holding Time Noncompliance
OU4-RB-001-001B	ALPHA-CHLORDANE	Holding Time Noncompliance
OU4-RB-002-001B	ALPHA-CHLORDANE	Holding Time Noncompliance
OU4-RB-003-001B	ALPHA-CHLORDANE	Holding Time Noncompliance
OU4-FB-001-001B	CHLORPYRIFOS	Holding Time Noncompliance
OU4-RB-001-001B	CHLORPYRIFOS	Holding Time Noncompliance
OU4-RB-002-001B	CHLORPYRIFOS	Holding Time Noncompliance
OU4-RB-003-001B	CHLORPYRIFOS	Holding Time Noncompliance
OU4-FB-001-001B	CIS-NONACHLOR	Holding Time Noncompliance
OU4-RB-001-001B	CIS-NONACHLOR	Holding Time Noncompliance
OU4-RB-002-001B	CIS-NONACHLOR	Holding Time Noncompliance
OU4-RB-003-001B	CIS-NONACHLOR	Holding Time Noncompliance
OU4-FB-001-001B	DELTA-BHC	Holding Time Noncompliance
OU4-RB-001-001B	DELTA-BHC	Holding Time Noncompliance
OU4-RB-003-001B	DELTA-BHC	Holding Time Noncompliance
OU4-FB-001-001B	DIELDRIN	Holding Time Noncompliance
OU4-RB-001-001B	DIELDRIN	Holding Time Noncompliance
OU4-RB-002-001B	DIELDRIN	Holding Time Noncompliance
OU4-RB-003-001B	DIELDRIN	Holding Time Noncompliance
OU4-FB-001-001B	ENDOSULFAN II	Holding Time Noncompliance
OU4-RB-001-001B	ENDOSULFAN II	Holding Time Noncompliance
OU4-RB-002-001B	ENDOSULFAN II	Holding Time Noncompliance

Sample	Parameter	Basis for Rejection
OU4-RB-003-001B	ENDOSULFAN II	Holding Time Noncompliance
OU4-FB-001-001B	ENDRIN	Holding Time Noncompliance
OU4-RB-001-001B	ENDRIN	Holding Time Noncompliance
OU4-RB-002-001B	ENDRIN	Holding Time Noncompliance
OU4-RB-003-001B	ENDRIN	Holding Time Noncompliance
OU4-FB-001-001B	GAMMA-BHC (LINDANE)	Holding Time Noncompliance
OU4-RB-001-001B	GAMMA-BHC (LINDANE)	Holding Time Noncompliance
OU4-RB-002-001B	GAMMA-BHC (LINDANE)	Holding Time Noncompliance
OU4-RB-003-001B	GAMMA-BHC (LINDANE)	Holding Time Noncompliance
OU4-FB-001-001B	GAMMA-CHLORDANE	Holding Time Noncompliance
OU4-RB-001-001B	GAMMA-CHLORDANE	Holding Time Noncompliance
OU4-RB-002-001B	GAMMA-CHLORDANE	Holding Time Noncompliance
OU4-RB-003-001B	GAMMA-CHLORDANE	Holding Time Noncompliance
OU4-FB-001-001B	HEPTACHLOR	Holding Time Noncompliance
OU4-RB-001-001B	HEPTACHLOR	Holding Time Noncompliance
OU4-RB-002-001B	HEPTACHLOR	Holding Time Noncompliance
OU4-RB-003-001B	HEPTACHLOR	Holding Time Noncompliance
OU4-FB-001-001B	HEPTACHLOR EPOXIDE	Holding Time Noncompliance
OU4-RB-001-001B	HEPTACHLOR EPOXIDE	Holding Time Noncompliance
OU4-RB-002-001B	HEPTACHLOR EPOXIDE	Holding Time Noncompliance
OU4-RB-003-001B	HEPTACHLOR EPOXIDE	Holding Time Noncompliance
OU4-FB-001-001B	HEXACHLOROBENZENE	Holding Time Noncompliance
OU4-RB-001-001B	HEXACHLOROBENZENE	Holding Time Noncompliance
OU4-RB-002-001B	HEXACHLOROBENZENE	Holding Time Noncompliance
OU4-FB-001-001B	MIREX	Holding Time Noncompliance
OU4-RB-001-001B	MIREX	Holding Time Noncompliance
OU4-RB-002-001B	MIREX	Holding Time Noncompliance
OU4-RB-003-001B	MIREX	Holding Time Noncompliance
OU4-FB-001-001B	OXYCHLORDANE	Holding Time Noncompliance
OU4-RB-001-001B	OXYCHLORDANE	Holding Time Noncompliance
OU4-RB-002-001B	OXYCHLORDANE	Holding Time Noncompliance
OU4-RB-003-001B	OXYCHLORDANE	Holding Time Noncompliance
OU4-FB-001-001B	PCB-101/90	Holding Time Noncompliance
OU4-RB-001-001B	PCB-101/90	Holding Time Noncompliance
OU4-RB-002-001B	PCB-101/90	Holding Time Noncompliance
OU4-RB-003-001B	PCB-101/90	Holding Time Noncompliance
OU4-FB-001-001B	PCB-105	Holding Time Noncompliance
OU4-RB-001-001B	PCB-105	Holding Time Noncompliance
OU4-RB-002-001B	PCB-105	Holding Time Noncompliance
OU4-RB-003-001B	PCB-105	Holding Time Noncompliance
OU4-FB-001-001B	PCB-114	Holding Time Noncompliance
OU4-RB-001-001B	PCB-114	Holding Time Noncompliance
OU4-RB-002-001B	PCB-114	Holding Time Noncompliance
OU4-RB-003-001B	PCB-114	Holding Time Noncompliance
OU4-FB-001-001B	PCB-118	Holding Time Noncompliance
OU4-RB-001-001B	PCB-118	Holding Time Noncompliance
OU4-RB-002-001B	PCB-118	Holding Time Noncompliance
OU4-RB-003-001B	PCB-118	Holding Time Noncompliance
OU4-FB-001-001B	PCB-128	Holding Time Noncompliance

Sample	Parameter	Basis for Rejection
OU4-RB-001-001B	PCB-128	Holding Time Noncompliance
OU4-RB-002-001B	PCB-128	Holding Time Noncompliance
OU4-RB-003-001B	PCB-128	Holding Time Noncompliance
OU4-FB-001-001B	PCB-149/123	Holding Time Noncompliance
OU4-RB-001-001B	PCB-149/123	Holding Time Noncompliance
OU4-RB-002-001B	PCB-149/123	Holding Time Noncompliance
OU4-RB-003-001B	PCB-149/123	Holding Time Noncompliance
OU4-FB-001-001B	PCB-156	Holding Time Noncompliance
OU4-RB-001-001B	PCB-156	Holding Time Noncompliance
OU4-RB-002-001B	PCB-156	Holding Time Noncompliance
OU4-RB-003-001B	PCB-156	Holding Time Noncompliance
OU4-FB-001-001B	PCB-167	Holding Time Noncompliance
OU4-RB-001-001B	PCB-167	Holding Time Noncompliance
OU4-RB-002-001B	PCB-167	Holding Time Noncompliance
OU4-RB-003-001B	PCB-167	Holding Time Noncompliance
OU4-FB-001-001B	PCB-170/190	Holding Time Noncompliance
OU4-RB-001-001B	PCB-170/190	Holding Time Noncompliance
OU4-RB-002-001B	PCB-170/190	Holding Time Noncompliance
OU4-RB-003-001B	PCB-170/190	Holding Time Noncompliance
OU4-RB-002-001B	PCB-18/17	Holding Time Noncompliance
OU4-FB-001-001B	PCB-180	Holding Time Noncompliance
OU4-RB-001-001B	PCB-180	Holding Time Noncompliance
OU4-RB-002-001B	PCB-180	Holding Time Noncompliance
OU4-RB-003-001B	PCB-180	Holding Time Noncompliance
OU4-FB-001-001B	PCB-187	Holding Time Noncompliance
OU4-RB-001-001B	PCB-187	Holding Time Noncompliance
OU4-RB-002-001B	PCB-187	Holding Time Noncompliance
OU4-RB-003-001B	PCB-187	Holding Time Noncompliance
OU4-FB-001-001B	PCB-189	Holding Time Noncompliance
OU4-RB-001-001B	PCB-189	Holding Time Noncompliance
OU4-RB-002-001B	PCB-189	Holding Time Noncompliance
OU4-RB-003-001B	PCB-189	Holding Time Noncompliance
OU4-FB-001-001B	PCB-195/208	Holding Time Noncompliance
OU4-RB-001-001B	PCB-195/208	Holding Time Noncompliance
OU4-RB-002-001B	PCB-195/208	Holding Time Noncompliance
OU4-RB-003-001B	PCB-195/208	Holding Time Noncompliance
OU4-FB-001-001B	PCB-201/157/173	Holding Time Noncompliance
OU4-RB-001-001B	PCB-201/157/173	Holding Time Noncompliance
OU4-RB-002-001B	PCB-201/157/173	Holding Time Noncompliance
OU4-RB-003-001B	PCB-201/157/173	Holding Time Noncompliance
OU4-FB-001-001B	PCB-206	Holding Time Noncompliance
OU4-RB-001-001B	PCB-206	Holding Time Noncompliance
OU4-RB-002-001B	PCB-206	Holding Time Noncompliance
OU4-RB-003-001B	PCB-206	Holding Time Noncompliance
OU4-FB-001-001B	PCB-209	Holding Time Noncompliance
OU4-RB-001-001B	PCB-209	Holding Time Noncompliance
OU4-RB-002-001B	PCB-209	Holding Time Noncompliance
OU4-RB-003-001B	PCB-209	Holding Time Noncompliance
OU4-FB-001-001B	PCB-44	Holding Time Noncompliance

Sample	Parameter	Basis for Rejection
OU4-RB-001-001B	PCB-44	Holding Time Noncompliance
OU4-RB-002-001B	PCB-44	Holding Time Noncompliance
OU4-FB-001-001B	PCB-66	Holding Time Noncompliance
OU4-RB-001-001B	PCB-66	Holding Time Noncompliance
OU4-RB-003-001B	PCB-66	Holding Time Noncompliance
OU4-FB-001-001B	PCB-8/5	Holding Time Noncompliance
OU4-RB-001-001B	PCB-8/5	Holding Time Noncompliance
OU4-RB-002-001B	PCB-8/5	Holding Time Noncompliance
OU4-RB-003-001B	PCB-8/5	Holding Time Noncompliance
OU4-FB-001-001B	PCB-81	Holding Time Noncompliance
OU4-RB-001-001B	PCB-81	Holding Time Noncompliance
OU4-RB-002-001B	PCB-81	Holding Time Noncompliance
OU4-RB-003-001B	PCB-81	Holding Time Noncompliance
OU4-RB-003-001B	PENTACHLOROBENZENE	Holding Time Noncompliance
OU4-FB-001-001B	TRANS-NONACHLOR	Holding Time Noncompliance
OU4-RB-001-001B	TRANS-NONACHLOR	Holding Time Noncompliance
OU4-RB-002-001B	TRANS-NONACHLOR	Holding Time Noncompliance
OU4-RB-003-001B	TRANS-NONACHLOR	Holding Time Noncompliance

1.4 Sensitivity

Minimum and maximum nondetected results achieved during laboratory analysis were compared to target method detection limits contained in Tables 6-5a through 6-5g of the Interim Offshore Monitoring Plan. Because MDLs in Table 6-5i were presented on a wet weight basis for dioxins, the detection limits were adjusted for tissue by multiplying by 5 and for sediment by multiplying by 2 in order to be consistent with the other fractions and report them on a dry weight basis. Tables 1-5 and 1-6 (located at the end of the Round 4 DQR) compare the Target MDLs to the minimum and maximum nondetects for each parameter, for each matrix. Exceedances of the target MDLs for sediment were noted for dioxins, semivolatile compounds, pesticides, PCB congeners, cadmium, copper, and silver. Target MDL mussel exceedances were noted for dioxins, semivolatile compounds, PCB congeners, chromium, and nickel. Lobster target MDL exceedances were noted for dioxins, semivolatile compounds, PCB congeners, aluminum, chromium, and nickel.

1.5 Comparability

Comparability is defined as the confidence with which one data set can be compared with another (e.g., among sampling points; among sampling events). This is a key parameter because data will be compared among monitoring stations and reference locations and among sampling events (as part of trend analysis) to make interim decisions. Comparability is achieved by using standardized sampling and analysis methods, as well as data reporting formats. Additionally, consideration is given to seasonal conditions and other environmental variations that could exist to influence data results. Comparability of laboratory measurements will be assessed primarily through the use and documentation of similar sampling and analytical methods. Results will be reported in units to ensure comparability with previous data and with current state and federal standards and guidelines. Comparability of field data will be satisfied by ensuring the field sampling plan is followed and that proper sampling techniques are used. It also depends on recording field measurements using the correct units. Comparability of laboratory measurements will be assessed primarily through the use of certified reference materials, spike recoveries, and RPD values. Failure to achieve comparability will result in corrective action.

Field data were generated using the methodologies and units as specified in the Interim Offshore Monitoring Plan. Sampling techniques described in the plan and field sampling SOPs were followed.

1.6 Representativeness

Representativeness is an expression of the degree to which the data accurately and precisely depict the actual characteristics of a population or environmental condition existing at an individual sampling point and is contingent on a good design for the sampling program. The project planning documents (monitoring plan, field and laboratory SOPs) and use of standardized sampling, handling, analytical, and reporting procedures are designed so that the final data are accurate representations of actual site conditions. A number of conditions could arise that cause the representativeness of samples to be questioned. For example, data outliers or samples collected from a place different from the intended location could adversely impact representativeness of the data set.

Data were collected from the specified locations using sampling, sample handling, analytical, and reporting procedures as specified in the Interim Offshore Monitoring Plan. Therefore, no data representativeness concerns have been raised and the data are suitable for use as part of the monitoring program.

2.0 FIELD QUALITY CONTROL SAMPLES

The following field QC samples were collected during the sampling efforts and were analyzed in accordance with requirements specified in the Interim Offshore Monitoring Plan:

Field duplicates for interim monitoring sediments were a single sample homogenized and split into two portions. Field duplicates were collected during a single act of sampling and analyzed for chemical constituents to measure the precision of the sampling and analysis program, as well as natural sample heterogeneity. As planned, mussel and juvenile lobster tissue sample duplicates were prepared by the laboratory in a manner similar to normal environmental media samples.

Source water blanks consist of sampling of source waters, used in decontamination and steam cleaning, before use. The samples were obtained at the rate of one per source per sampling event. Source water is analyzed for all organic and inorganic constituents under investigation, as a means of determining whether the source water used in field procedures could potentially have introduced contaminants to the environmental samples collected. Source water blanks were evaluated in accordance with the planned data validation protocols to determine whether false positive results may exist. A false positive result is a result that indicates the presence of an analyte when the analyte should have been classified as nondetected.

Equipment rinsate blanks were collected and analyzed to check the effectiveness of decontamination procedures. Samples were obtained under representative field conditions by collecting the rinse water generated by running analyte-free water through sample collection equipment after decontamination and before use. Rinsate blanks were obtained for each type of sampling equipment for each day that the sampling equipment was decontaminated. Where pre-cleaned, dedicated sampling equipment was used, one rinsate blank was collected as a "batch blank." Rinsate blanks were analyzed for the same chemical constituents as the associated environmental samples.

Temperature blanks were included in each cooler as a temperature indicator to assure that samples were received at the laboratory at the appropriate temperature.

Positive results in the field blanks were not used as a basis for data validation because field blank results were not included in the SDG with their associated samples. Therefore, false positives may exist particularly for sample data close to or less than the reporting limit. Table 2-1 presents

the maximum contamination values reported in the field and rinsate blanks associated with the Round 4 sampling event.

Table 2-1 – Maximum Positive Concentrations in Field and Rinsate Blanks

Parameter	Compounds	Maximum Rinsate Blank	Maximum Field Blank
Dioxins (pg/L)	1,2,3,4,6,7,8,9-OCDD	ND	31.7
	1,2,3,4,6,7,8-HPCDD	ND	10.2
	1,2,3,4,6,7,8-HPCDF	ND	5.39
	1,2,3,7,8-PECDF	ND	7.32
	TOTAL HPCDD	ND	31.7
	TOTAL HXCDD	ND	10.2
	TOTAL HXCDF	ND	5.4
PAH (μg/L)	1,1-BIPHENYL	2.6	2.2
	1-METHYLNAPHTHALENE	4.3	3.2
	1-METHYLPHENANTHRENE	0.7	1
	2,3,5-TRIMETHYLNAPHTHALENE	1.3	1
	2,6-DIMETHYLNAPHTHALENE	1.6	1.3
	2-METHYLNAPHTHALENE	6.3	4.9
	ACENAPHTHENE	2.1	0.5
	ACENAPHTHYLENE	1.6	1.5
	ANTHRACENE	5.9	1.9
	BENZO(A)ANTHRACENE	7.9	1.7
	BENZO(A)PYRENE	11.2	1
	BENZO(B)FLUORANTHENE	10.1	4.6
	BENZO(E)PYRENE	6.1	2.1
	BENZO(G,H,I)PERYLENE	4.3	2.2
	BENZO(K)FLUORANTHENE	3.8	2.8
	C1-CHRYSENES	0.2	0.7
	C1-DIBENZOTHIOPHENES	0.1	0.2
	C1-FLUORANTHENES/PYRENES	3.6	0.3
	C1-FLUORENES	0.2	0.2
	C1-NAPHTHALENES	10.6	8.1
	C1-PHENANTHRENES/ANTHRACENES	2	4.2
	C2-CHRYSENES	0.1	0.3
	C2-DIBENZOTHIOPHENES	0.2	0.1
	C2-FLUORENES	0.3	0.2
	C2-NAPHTHALENES	3.3	3.7
	C2-PHENANTHRENES/ANTHRACENES	1	4.9
	C3-DIBENZOTHIOPHENES	0.1	0.1
	C3-FLUORENES	0.4	0.2
	C3-NAPHTHALENES	1	1.1
	C3-PHENANTHRENES/ANTHRACENES	0.1	0.1
	C4-CHRYSENES	0.1	0.1
	C4-NAPHTHALENES	0.2	0.1

Parameter	Compounds	Maximum Rinsate Blank	Maximum Field Blank
	C4-PHENANTHRENES/ANTHRACENES	0.1	0.2
	CHRYSENE	7	5
	DIBENZO(A,H)ANTHRACENE	0.9	1
	DIBENZOTHIOPHENE	1.3	1.2
	FLUORANTHENE	13.6	5
	FLUORENE	4.5	2.8
	INDENO(1,2,3-CD)PYRENE	4.7	2.3
	NAPHTHALENE	9.7	7.5
	PERYLENE	3.2	0.7
	PHENANTHRENE	10.7	8.1
	PYRENE	10.3	4.4
Pest/PCB (μg/L)	1,2,3,4-TETRACHLOROBENZENE	0.57	0.97
	1,2,4,5-TETRACHLOROBENZENE	0.16	ND
	4,4'-DDE	ND	0.96
	4,4'-DDT	1	ND
	ALPHA-BHC	7	0.95
	BETA-BHC	0.59	0.59
	DELTA-BHC	0.09	ND
	HEXACHLOROBENZENE	0.07	ND
	PCB-126	0.13	0.11
	PCB-153/132	0.54	0.54
	PCB-169	0.32	0.19
	PCB-18/17	1.2	1
	PCB-28	2.2	0.75
	PCB-44	0.23	ND
	PCB-52	7.5	1.6
	PCB-66	2.3	ND
	PCB-77	1.3	1.3
	PCB138 /160	5.9	2.9
	PENTACHLOROANISOLE	0.32	0.12
	PENTACHLOROBENZENE	0.41	0.14
Metals (μg/L)	ALUMINUM	50.14	ND
	SILVER	ND	7.22
Misc. (μg/L)	DISSOLVED ORGANIC CARBON	0.232	0.1051

ND = Not detected.

3.0 DATA VALIDATION

Data validation is a systematic review of analytical chemical data packages with respect to sample receipt and handling, analytical methods, data reporting and deliverables, and document control. The quality of data generated by a laboratory is extremely important; it is an integral part of the investigation and must be clearly tied to the project goals. This section summarizes the various aspects of the data validation process.

3.1 General Data Validation Procedures

After receipt of analytical results, data validation was performed based upon USEPA Region I Tier II validation procedures (USEPA, 1996). The Tier II validation consists of a completeness audit defined as a Tier I review and a review of all quality control check results. The Tier II validation does not evaluate raw data and does not provide calculation confirmation of sample results.

After the data were validated, a list of non-conformities requiring data qualifiers, which are used to alert the data user to inaccurate or imprecise data, was developed. For situations in which several quality control criteria were out of specification, the data validator made professional judgments and/or comments on the validity of the overall data package. The reviewer then prepared a technical memorandum presenting qualification of the data, if necessary, and the rationale for making such qualifications.

The net result is a data package that has been carefully reviewed for its adherence to prescribed technical requirements. One hundred percent of the environmental samples were validated. Validators incorporated data qualifiers into the electronic database and submitted the information to the data management group.

3.2 Data Validation Qualifiers

As mentioned previously, the analytical data were qualified during the validation process (i.e., application of U, J, UJ, UR, and R qualifiers) as required by the USEPA Functional Guidelines. The attachment of the data qualifiers to analytical results signifies the occurrence of QC noncompliances that were noted during the course of data validation. The various data qualifiers are defined, as follows:

U - Indicates that the chemical was not detected at the numerical detection limit (sample-specific quantitation limit) noted. Nondetected results from the laboratory are reported in this manner. This qualifier is also added to a positive result (reported by the laboratory) if the detected concentration is determined to be attributable to contamination introduced during field sampling or laboratory analysis.

UJ - Indicates that the chemical was not detected. However, the detection limit (sample-specific quantitation limit) is considered estimated based on problems encountered during laboratory analysis. The associated numerical detection limit is regarded as inaccurate or imprecise.

J - Indicates that the chemical was detected. However, the associated numerical result is not a precise representation of the amount that is actually present in the sample. The laboratory-reported concentration is considered to be an estimate of the true concentration.

UR - Indicates that the chemical may or may not be present. The nondetected analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies (i.e., holding times missed by a factor of two times the specified time limit, severe calibration noncompliances, and extremely low quality control recoveries).

R - Indicates that the chemical may or may not be present. The positive analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies.

The preceding data qualifiers may be categorized as indicative of major or minor problems. Major problems are defined as issues that result in the rejection of data, qualified with UR and R data validation qualifiers. These data are considered invalid and are not used for decision-making purposes unless they are used in a qualitative way and the use is justified and documented. Minor problems are defined as issues resulting in the estimation of data, qualified with U, J, and UJ data validation qualifiers. Estimated analytical results are considered to be suitable for decision-making purposes unless the data use requirements are very stringent and the qualifier indicates a deficiency that is incompatible with the intended data use. It is notable that a "U" qualifier does not necessarily indicate a data deficiency because all non-detect values are flagged with the "U" qualifier even when no deficiency exists.

3.3 Summary Of Data Validation Results

A summary of the data validation results for the analytical data effort is provided in the remainder of this section. Because the methodologies used for extraction and analysis of the sediment and tissue samples were non-routine, the laboratory SOPs were used to establish acceptance limits for calibration, spike and LCS recoveries, compound identification, and quantitation.

Table 3-1 presents the percentages of data qualified as either estimated (J flage) or rejected (R flag) during Round 4 for each sample matrix. The percentage of qualified and unqualified data will not equal 100 percent as some data points are qualified for more than one technical noncompliance. Qualification for PARCC parameters (field and laboratory duplicates, surrogates, matrix spikes, blank spikes, and internal standards) was presented and discussed in Section 1.0. Unqualified data are data that did not require qualification for any technical noncompliances.

The remaining tables compare the percentage of qualification for tissue and sediment samples between Rounds 1, 2, 3 and 4. Only technical noncompliances are listed. Technical areas that were evaluated but did not result in qualification are not presented.

Method Blank Contamination – Positive results in the rinsate and field blanks were not used as a basis for data validation. Rinsate and field blanks were not extracted within the required holding time. This means that results which reflect contamination of samples by samplers or laboratory analysts could have been reported as site contamination but there is no way to know for sure from the available data. Field blanks and rinsate blanks were not qualified on the basis of method blank contamination. Table 2-1 in Section 2.0 depicts the maximum values detected in the rinsate and field blanks. As noted in Rounds 1, 2, and 3, the laboratory continued to report all positive detections in the method blanks. Method blanks in Round 4 were similar to those reported in Rounds 2 and 3. Increases in the qualification rate for juvenile lobster metals (Round 3 10 percent, Round 4 17 percent) and sediment dioxins (Round 3 12 percent, Round 4 39 percent) were significant and should be closely monitored in Round 5.

Holding Time Noncompliance - As noted in Section 1.3, the laboratory failed to extract aqueous field quality control samples within the required 7-day holding time. This led to the rejection of most of the pesticide/PCB data for these samples. The laboratory also failed to analyze dioxin

samples within the required 40-day holding time. This led to qualification rates of 93 percent for mussel samples, 96 percent for juvenile lobster samples, and 38 percent for sediment samples. Given the length of the holding time from extraction to analysis, the laboratory either failed to track the samples properly or were over capacity. No instrument problems that could have delayed analysis of the samples were noted in the data packages.

Blank Spike Results – Slight increases were noted in the qualification rate for PAH and pesticide/PCB mussel samples. The increases are not considered significant; however, data generated in Round 5 should be examined to determine if this is a correlation or an isolated occurrence.

Surrogate Recovery – The qualification rate for surrogate recovery in sediment pesticide/PCBs jumped from 0 percent in Round 3 to 29 percent in Round 4. Previous Rounds 1 and 2 had qualification rates of 3 percent and 2 percent, respectively. No cause of the increase was noted during data validation. Possible causes were discussed in Section 1.2. This should be closely monitored in Round 5.

Table 3-1 - Rates of Qualification

	Metals	Misc.	Dioxin	PAH	Pest/PCB
	Juvenile Lobsters				
Unqualified Data	73%	100%	0%	23%	75%
<Reporting Limit	3%	0%	3%	74%	18%
Hold Time Noncompliance	0%	0%	96%	0%	0%
Method Blank Contamination	17%	0%	4%	0%	0%
Calibration Noncompliance	0%	0%	0%	12%	0%
	Mussels				
Unqualified Data	85%	100%	4%%	43%	70%
<Reporting Limit	5%	0%	4%	30%	13%
Hold Time Noncompliance	0%	0%	93%	0%	0%
Method Blank Contamination	2%	0%	3%	5%	6%
Calibration Noncompliance	0%	0%	0%	16%	<1%
Other Noncompliance	0%	0%	1%	0%	0%
	Sediment				
Unqualified Data	84%	50%	17%	69%	47%
<Reporting Limit	3%	4%	6%	5%	14%
Hold Time Noncompliance	8%	18%	38%	0%	0%
Method Blank Contamination	1%	7%	39%	2%	8%
Calibration Noncompliance	0%	0%	0%	15%	0%
Percent Solids <30%	0%	<1%	0%	0%	0%
Other Noncompliance	0%	0%	1%	0%	1%

Table 3-2 Mussel Tissues, Dioxin Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	29%	4%	2%	3%
Hold Time Noncompliance	0%	2%	0%	93%
Lab Duplicate Imprecision	0%	0%	0%	1%
Field Duplicate Imprecision	0%	2%	2%	0%
Internal/Surrogate Recovery	50% (13% rejected)	57%	25%	16%
Compound Identification	2%	0%	0%	1%
Calibration	0%	0%	7%	0%
MS/MSD Recovery	0%	0%	6%	0%

Blank Spike Recovery	0%	0%	0%	<1%
Less than Reporting Limit	5%	19%	9%	4%
Data Not Qualified	16%	33%	62%	4%

Table 3-3 Mussel Tissues, PAH Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Calibration Noncompliance	5%	5%	18%	16%
LCS Noncompliance	2%	1%	10%	18%
MS/MSD Noncompliance	0%	0%	0%	<1%
Field Duplicate Imprecision	<1%	3%	8%	0%
Lab Duplicate Imprecision	0%	0%	0%	2%
Surrogate Recovery	<1%	0%	0%	<1%
Method Blank Noncompliance	0%	0%	0%	5%
Less than Reporting Limit	21%	12%	39%	30%
Data Not Qualified	54%	79%	42%	43%

Table 3-4 Mussel Tissues, Pesticides and PCBs Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	0%	0%	10%	6%
LCS Noncompliance	1%	1%	4%	13%
MS/MSD Noncompliance	<1%	<1%	0%	<1%
Field Duplicate Imprecision	0%	6%	6%	0%
Lab Duplicate Imprecision	0%	0%	0%	2%
Surrogate Recovery	0%	2%	0%	0%
Calibration Noncompliance	0%	0%	0%	<1%
Less than Reporting Limit	14%	8%	17%	13%
Data Not Qualified	69%	74%	65%	70%

Table 3-5 Mussel Tissues, Metals Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	0%	1%	6%	2%
Calibration Noncompliance	0%	0%	4%	0%
Field Duplicate Imprecision	0%	0%	4%	0%
LCS Noncompliance	2%	8%	<1%	0%
MS Noncompliance	29%	16%	9%	8%
Less than Reporting Limit	<1%	0%	0%	5%
Data Not Qualified	69%	84%	81%	85%

Table 3-6 Juvenile Lobster Tissues, Dioxins Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Hold Time Noncompliance	0%	57%	0%	96%
Method Blank Contamination	5%	16%	6%	4%
Calibration Noncompliance	0%	0%	1%	0%
MS Noncompliance	0%	0%	12%	0%
Field Duplicate Imprecision	0%	1%	0%	0%
Internal/Surrogate Recovery	87% (52% rejected)	57%	13%	6%
Less than Reporting Limit	2%	10%	10%	3%
Data Not Qualified	8%	27%	67%	0%

Table3-7 Juvenile Lobster Tissues, PAH Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	21%	0%	0%	0%
Calibration Noncompliance	8%	3%	9%	12%
LCS Noncompliance	1%	1%	7%	8%
Surrogate Noncompliance	0%	0%	1%	0%
Field Duplicate Imprecision	1%	6%	0%	0%
Less than Reporting Limit	56%	78%	84%	74%
Data Not Qualified	8%	21%	14%	23%

Table 3-8 Juvenile Lobster Tissues, Pesticides and PCBs Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	21%	7%	13%	0%
LCS Noncompliance	4%	10%	5%	8%
MS/MSD Noncompliance	<1% (0.09% rejected)	0%	0%	<1%
Field Duplicate Imprecision	1%	2%	4%	0%
Lab Duplicate Imprecision	0%	0%	0%	1%
Less than Reporting Limit	26%	28%	24%	18%
Data Not Qualified	50%	56%	56%	75%

Table 3-9 Juvenile Lobster Tissues, Metals Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	2%	1%	10%	17%
Calibration Noncompliance	0%	0%	2%	0%
LCS Noncompliance	1%	4%	0%	0%
MS Noncompliance	23%	1%	17%	0%
Lab Duplicate Noncompliance	0%	12%	0%	8%
Less than Reporting Limit	0%	0%	0%	3%
Data Not Qualified	74%	84%	56%	73%

Table 3-10 Sediment, Dioxin Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Hold Time Noncompliance	0%	0%	2%	38%
Method Blank Contamination	53%	13%	12%	39%
Field Blank Contamination	6%	0%	0%	0%
MS/MSD Noncompliance	0%	4%	0%	<1%
Field Duplicate Imprecision	0%	8%	11%	3%
Internal/Surrogate Recovery	9% (1% rejected)	21%	15%	8%
Compound Identification	2%	0%	0%	1%
Less than Reporting Limit	2%	13%	10%	6%
Data Not Qualified	28%	48%	54%	17%

Table 3-11 Sediment, PAH Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Hold Time Noncompliance	0%	0%	5%	0%
Method Blank Contamination	14%	0%	1%	2%
Calibration Noncompliance	5%	11%	15%	15%
LCS Noncompliance	6%	4%	5%	2%
MS/MSD Noncompliance	2%	3%	3%	4%
Field Duplicate Imprecision	0%	10%	6%	6%
Lab Duplicate Imprecision	0%	0%	0%	1%
Surrogate Recovery	<1%	6%	2%	<1%
Internal Standard Recovery	0%	0%	0%	<1%
Less than Reporting Limit	2%	3%	3%	5%
Data Not Qualified	72%	66%	68%	69%

Table 3-12 Sediment, Pesticides and PCBs Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	10%	4%	11%	8%
Calibration Noncompliance	<1%	<1%	0%	0%
LCS Noncompliance	6%	3%	3%	3%
MS/MSD Noncompliance	<1%	<1%	<1%	<1%
Field Duplicate Imprecision	1%	9%	7%	8%
Lab Duplicate Imprecision	0%	0%	0%	1%
Surrogate Recovery	3%	2%	0%	29%
Less than Reporting Limit	19%	18%	12%	14%
Data Not Qualified	63%	66%	67%	47%

Table 3-13 Sediment, Metals Qualification Rate

Basis for Qualification	Round 1	Round 2	Round 3	Round 4
Method Blank Contamination	0%	0%	1%	1%
Hold Time Noncompliance	0%	0%	6%	8%
LCS Noncompliance	0%	2%	14%	0%
MS Noncompliance	8%	0%	18%	2%
Field Duplicate Noncompliance	17%	1%	9%	1%
Lab Duplicate Noncompliance	0%	0%	0%	2%
Less than Reporting Limit	0%	0%	0%	3%
Data Not Qualified	74%	98%	63%	84%

TABLE 1-5

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8,9-OCDD	9/24	30.6	724.5	20
1,2,3,4,6,7,8,9-OCDF	0/24	2.2	155.2	20
1,2,3,4,6,7,8-HPCDD	7/24	2.11	202.2	10
1,2,3,4,6,7,8-HPCDF	22/24	2.1	2.7	10
1,2,3,4,7,8,9-HPCDF	11/23	1.3	3	10
1,2,3,4,7,8-HXCDD	2/23	0.3	2.9	10
1,2,3,4,7,8-HXCDF	0/23	0.6	4.4	10
1,2,3,6,7,8-HXCDD	10/23	0.7	2.9	10
1,2,3,6,7,8-HXCDF	2/23	0.4	3	10
1,2,3,7,8,9-HXCDF	2/23	1.1	3.2	10
1,2,3,7,8-PECDD	8/23	0.3	2.9	10
1,2,3,7,8-PECDF	0/24	0.2	3.2	10
2,3,4,6,7,8-HXCDF	2/23	0.7	3.8	10
2,3,4,7,8-PECDF	0/23	0.4	5.1	10
2,3,7,8-TCDD	6/23	0.1	1.7	2
2,3,7,8-TCDF	1/23	0.2	3.3	2
TOTAL DIOXINS	9/24	43.3	994.2	10
TOTAL FURANS	1/24	5.1	314	10
TOTAL HPCDD	9/24	9.8	213.5	10
TOTAL HPCDF	21/24	13.7	96.2	10
TOTAL HXCDD	7/24	0.8	109.7	10
TOTAL HXCDF	7/24	1.4	53.2	10
TOTAL HXCDF	7/24	1.4	53.2	10
TOTAL PECDD	4/23	0.2	16.1	10
TOTAL PECDF	0/24	0.3	25.9	10
TOTAL TCDD	3/23	0.2	4.8	2
TOTAL TCDF	0/23	0.2	28.2	2
Semivolatile Organics (ug/kg)				
1,1-BIPHENYL	51/52	47.3	47.3	20
1-METHYLNAPHTHALENE	51/52	130.9	130.9	20
1-METHYLPHENANTHRENE	52/52	0	0	20
2,3,5-TRIMETHYLNAPHTHALENE	52/52	0	0	20
2,6-DIMETHYLNAPHTHALENE	52/52	0	0	20
2-METHYLNAPHTHALENE	52/52	0	0	20
ACENAPHTHENE	52/52	0	0	20
ACENAPHTHYLENE	51/52	167.9	167.9	20
ANTHRACENE	52/52	0	0	20
BENZO(A)ANTHRACENE	52/52	0	0	20
BENZO(A)PYRENE	52/52	0	0	20
BENZO(B)FLUORANTHENE	52/52	0	0	20
BENZO(E)PYRENE	52/52	0	0	20
BENZO(G,H,I)PERYLENE	52/52	0	0	20
BENZO(K)FLUORANTHENE	52/52	0	0	20
C1-CHRYSENES	52/52	0	0	20
C1-DIBENZOTHIOPHENES	52/52	0	0	20
C1-FLUORANTHENES/PYRENES	52/52	0	0	20
C1-FLUORENES	52/52	0	0	20
C1-NAPHTHALENES	52/52	0	0	20
C1-PHENANTHRENES/ANTHRACENES	52/52	0	0	20
C2-CHRYSENES	52/52	0	0	20

TABLE 1-5

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - MONITORING STATIONS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	52/52	0	0	20
C2-FLUORENES	52/52	0	0	20
C2-NAPHTHALENES	52/52	0	0	20
C2-PHENANTHRENES/ANTHRACENES	52/52	0	0	20
C3-CHRYSENES	52/52	0	0	20
C3-DIBENZOTHIOPHENES	52/52	0	0	20
C3-FLUORENES	52/52	0	0	20
C3-NAPHTHALENES	52/52	0	0	20
C3-PHENANTHRENES/ANTHRACENES	52/52	0	0	20
C4-CHRYSENES	52/52	0	0	20
C4-NAPHTHALENES	52/52	0	0	20
C4-PHENANTHRENES/ANTHRACENES	52/52	0	0	20
CHRYSENE	52/52	0	0	20
DIBENZO(A,H)ANTHRACENE	52/52	0	0	20
DIBENZOTHIOPHENE	52/52	0	0	20
FLUORANTHENE	52/52	0	0	20
FLUORENE	52/52	0	0	20
INDENO(1,2,3-CD)PYRENE	52/52	0	0	20
NAPHTHALENE	51/52	267.5	267.5	20
PERYLENE	52/52	0	0	20
PHENANTHRENE	52/52	0	0	20
PYRENE	51/52	6450.7	6450.7	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	49/52	0.076	0.21	2
1,2,4,5-TETRACHLOROBENZENE	22/52	0.09	3.1	2
2,4'-DDD	52/52	0	0	2
2,4'-DDE	43/52	0.059	0.14	2
2,4'-DDT	46/52	0.042	0.082	2
4,4'-DDD	52/52	0	0	2
4,4'-DDE	52/52	0	0	2
4,4'-DDT	52/52	0	0	2
ALDRIN	35/52	0.022	0.31	2
ALPHA-BHC	41/52	0.064	0.15	2
ALPHA-CHLORDANE	52/52	0	0	2
BETA-BHC	22/52	0.04	0.37	2
CHLORPYRIFOS	11/52	0.065	0.25	2
CIS-NONACHLOR	50/52	0.046	0.077	2
DELTA-BHC	34/52	0.045	0.1	2
DIELDRIN	38/52	0.028	0.12	2
ENDOSULFAN II	33/52	0.11	0.32	2
ENDRIN	9/52	0.048	0.14	2
GAMMA-BHC (LINDANE)	19/52	0.1	0.89	2
GAMMA-CHLORDANE	39/51	0.033	0.062	2
HEPTACHLOR	43/51	0.084	0.29	2
HEPTACHLOR EPOXIDE	20/52	0.042	0.13	2
HEXACHLOROBENZENE	25/52	0.042	0.12	2
MIREX	28/52	0.027	0.18	2
OXYCHLORDANE	30/52	0.018	0.1	2
PCB-101/90	52/52	0	0	1
PCB-105	52/52	0	0	1
PCB-114	0/52	0.064	0.9	1
PCB-118	51/52	0.43	0.43	1

TABLE 1-5

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - MONITORING STATIONS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	10/52	0.01	0.55	1
PCB-128	52/52	0	0	1
PCB138 /160	46/52	1.4	3	1
PCB-149/123	44/52	0.63	1.7	1
PCB-153/132	42/52	0.44	2.9	1
PCB-156	46/51	0.43	0.79	1
PCB-167	50/52	0.081	0.12	1
PCB-169	41/52	0.25	0.48	1
PCB-170/190	51/52	0.97	0.97	1
PCB-18/17	23/52	0.084	0.28	1
PCB-180	40/52	0.68	2.6	1
PCB-187	46/52	0.74	1.9	1
PCB-189	44/52	0.11	0.81	1
PCB-195/208	45/52	0.13	0.21	1
PCB-201/157/173	49/52	0.03	0.67	1
PCB-206	52/52	0	0	1
PCB-209	47/52	0.08	0.12	1
PCB-28	37/52	0.082	0.48	1
PCB-44	46/52	0.15	0.31	1
PCB-52	51/52	0.11	0.11	1
PCB-66	51/52	0.079	0.079	1
PCB-77	26/52	0.01	0.42	1
PCB-8/5	31/52	0.09	5.2	1
PCB-81	27/51	0.01	0.55	1
PENTACHLOROANISOLE	21/52	0.04	0.2	2
PENTACHLOROBENZENE	33/52	0.0755	0.21	2
TRANS-NONACHLOR	46/52	0.11	0.19	2
Inorganics (mg/kg)				
ALUMINUM	52/52	0	0	50
ARSENIC	52/52	0	0	5
CADMIUM	20/52	0.1767	2	0.3
CHROMIUM	52/52	0	0	5
COPPER	52/52	0	0	5
IRON	52/52	0	0	50
LEAD	52/52	0	0	5
MANGANESE	52/52	0	0	5
MERCURY	52/52	0	0	0.2
NICKEL	52/52	0	0	5
SILVER	52/52	0	0	0.1
ZINC	52/52	0	0	15

TABLE 1-5

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - MONITORING STATIONS
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussels				
Dioxins (ng/kg)				
1,2,3,4,6,7,8,9-OCDD	7/19	46.5	117	50
1,2,3,4,6,7,8,9-OCDF	2/19	39.2	87.7	50
1,2,3,4,6,7,8-HPCDD	5/19	21.1	42	25
1,2,3,4,6,7,8-HPCDF	2/19	19.6	42	25
1,2,3,4,7,8,9-HPCDF	0/19	19.6	43.9	25
1,2,3,4,7,8-HXCDD	0/19	19.6	43.9	25
1,2,3,4,7,8-HXCDF	0/19	19.6	43.9	25
1,2,3,6,7,8-HXCDD	0/19	19.6	43.9	25
1,2,3,6,7,8-HXCDF	0/19	19.6	43.9	25
1,2,3,7,8,9-HXCDD	0/19	19.6	43.9	25
1,2,3,7,8,9-HXCDF	0/19	19.6	43.9	25
1,2,3,7,8-PECDD	0/19	19.6	43.9	25
1,2,3,7,8-PECDF	0/19	19.6	43.9	25
2,3,4,6,7,8-HXCDF	0/19	19.6	43.9	25
2,3,4,7,8-PECDF	0/19	19.6	43.9	25
2,3,7,8-TCDD	0/19	3.92	8.77	5
2,3,7,8-TCDF	1/19	4.22	8.77	5
TOTAL DIOXINS	12/19	49.5	117	25
TOTAL FURANS	5/19	9.1	84	25
TOTAL HPCDD	7/19	21.1	42	25
TOTAL HPCDF	2/19	19.6	42	25
TOTAL HXCDD	0/19	19.6	43.9	25
TOTAL HXCDF	0/19	19.6	43.9	25
TOTAL PECDD	0/19	19.6	43.9	25
TOTAL PECDF	0/19	19.6	43.9	25
TOTAL TCDD	6/19	4.22	8.77	5
TOTAL TCDF	1/19	4.22	8.77	5
Semivolatile Organics (ug/kg)				
1,1-BIPHENYL	24/40	2.8	12.8	20
1-METHYLNAPHTHALENE	24/40	5	10.8	20
1-METHYLPHENANTHRENE	40/40	0	0	20
2,3,5-TRIMETHYLNAPHTHALENE	40/40	0	0	20
2,6-DIMETHYLNAPHTHALENE	40/40	0	0	20
2-METHYLNAPHTHALENE	28/40	8.1	12.2	20
ACENAPHTHENE	40/40	0	0	20
ACENAPHTHYLENE	40/40	0	0	20
ANTHRACENE	40/40	0	0	20
BENZO(A)ANTHRACENE	40/40	0	0	20
BENZO(A)PYRENE	27/40	7.6	17.6	20
BENZO(B)FLUORANTHENE	40/40	0	0	20
BENZO(E)PYRENE	40/40	0	0	20
BENZO(G,H,I)PERYLENE	40/40	0	0	20
BENZO(K)FLUORANTHENE	40/40	0	0	20
C1-CHRYSENES	40/40	0	0	20
C1-DIBENZOTHIOPHENES	40/40	0	0	20
C1-FLUORANTHENES/PYRENES	40/40	0	0	20
C1-FLUORENES	40/40	0	0	20
C1-NAPHTHALENES	24/40	13.1	31.3	20
C1-PHENANTHRENES/ANTHRACENES	40/40	0	0	20
C2-CHRYSENES	40/40	0	0	20

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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	40/40	0	0	20
C2-FLUORENES	40/40	0	0	20
C2-NAPHTHALENES	40/40	0	0	20
C2-PHENANTHRENES/ANTHRACENES	40/40	0	0	20
C3-CHRYSENES	22/40	11.6	16.3	20
C3-DIBENZOTHIOPHENES	40/40	0	0	20
C3-FLUORENES	40/40	0	0	20
C3-NAPHTHALENES	40/40	0	0	20
C3-PHENANTHRENES/ANTHRACENES	40/40	0	0	20
C4-CHRYSENES	33/40	12.1	15	20
C4-NAPHTHALENES	40/40	0	0	20
C4-PHENANTHRENES/ANTHRACENES	40/40	0	0	20
CHRYSENE	40/40	0	0	20
DIBENZO(A,H)ANTHRACENE	40/40	0	0	20
DIBENZOTHIOPHENE	40/40	0	0	20
FLUORANTHENE	30/40	52.6	90.4	20
FLUORENE	40/40	0	0	20
INDENO(1,2,3-CD)PYRENE	40/40	0	0	20
NAPHTHALENE	24/40	8.9	18.4	20
PERYLENE	40/40	0	0	20
PHENANTHRENE	40/40	0	0	20
PYRENE	28/40	32.4	62.5	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	40/40	0	0	10
1,2,4,5-TETRACHLOROBENZENE	17/40	0.41	2.8	10
2,4'-DDD	40/40	0	0	10
2,4'-DDE	40/40	0	0	10
2,4'-DDT	40/40	0	0	10
4,4'-DDD	40/40	0	0	10
4,4'-DDE	40/40	0	0	10
4,4'-DDT	40/40	0	0	10
ALDRIN	0/40	0.2	0.33	10
ALPHA-BHC	35/40	0.26	0.33	10
ALPHA-CHLORDANE	26/40	0.068	0.11	10
BETA-BHC	23/40	0.52	0.84	10
CHLORPYRIFOS	22/40	0.25	0.41	10
CIS-NONACHLOR	40/40	0	0	10
DELTA-BHC	32/40	0.18	0.3	10
DIELDRIN	40/40	0	0	10
ENDOSULFAN II	2/40	0.18	0.3	10
ENDRIN	11/40	0.21	0.36	10
GAMMA-BHC (LINDANE)	29/40	0.33	0.54	10
GAMMA-CHLORDANE	39/40	0.12	0.12	10
HEPTACHLOR	22/40	0.2	0.32	10
HEPTACHLOR EPOXIDE	5/40	1.2	1.9	10
HEXACHLOROBENZENE	37/40	0.27	0.38	10
MIREX	0/40	0.43	0.71	10
OXYCHLORDANE	16/40	0.35	0.58	10
PCB-101/90	40/40	0	0	2
PCB-105	40/40	0	0	2
PCB-114	0/40	0.68	1.1	2
PCB-118	40/40	0	0	2

TABLE 1-5

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	30/40	0.01	3.4	2
PCB-128	40/40	0	0	2
PCB138 /160	33/40	6.8	14	2
PCB-149/123	40/40	0	0	2
PCB-153/132	40/40	0	0	2
PCB-156	31/40	0.72	1.1	2
PCB-167	39/40	1.1	1.1	2
PCB-169	24/40	0.01	3.4	2
PCB-170/190	24/40	0.27	2.1	2
PCB-18/17	39/40	0.83	0.83	2
PCB-180	33/40	4.7	8	2
PCB-187	40/40	0	0	2
PCB-189	6/40	0.68	1.1	2
PCB-195/208	5/40	0.066	0.11	2
PCB-201/157/173	22/40	0.68	1.1	2
PCB-206	0/40	0.28	0.47	2
PCB-209	1/40	0.19	0.31	2
PCB-28	35/40	0.6	0.66	2
PCB-44	33/40	0.85	4.3	2
PCB-52	31/40	0.71	1.2	2
PCB-66	25/40	0.28	0.44	2
PCB-77	28/40	0.01	2.76	2
PCB-8/5	17/40	0.77	14	2
PCB-81	30/40	0.01	2.7	2
PENTACHLOROANISOLE	36/40	1.1	1.6	10
PENTACHLOROBENZENE	40/40	0	0	10
TRANS-NONACHLOR	40/40	0	0	10
Inorganics (mg/kg)				
ALUMINUM	40/40	0	0	10
ARSENIC	40/40	0	0	0.35
CADMIUM	40/40	0	0	0.1
CHROMIUM	31/40	2.98	4.06	0.4
COPPER	40/40	0	0	0.1
IRON	40/40	0	0	15
LEAD	40/40	0	0	0.1
MANGANESE	40/40	0	0	1.7
MERCURY	40/40	0	0	0.01
NICKEL	18/40	1.53	4.23	0.14
SILVER	14/40	0.05	0.14	0.29
ZINC	40/40	0	0	5.7

TABLE 1-5

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8,9-OCDD	0/8	4.3	42.6	50
1,2,3,4,6,7,8,9-OCDF	1/8	25.9	42.6	50
1,2,3,4,6,7,8-HPCDD	0/8	13	21.3	25
1,2,3,4,6,7,8-HPCDF	0/8	13	21.3	25
1,2,3,4,7,8,9-HPCDF	0/8	13	21.3	25
1,2,3,4,7,8-HXCDD	0/8	13	21.3	25
1,2,3,4,7,8-HXCDF	0/8	13	21.3	25
1,2,3,6,7,8-HXCDD	0/8	13	21.3	25
1,2,3,6,7,8-HXCDF	0/8	13	21.3	25
1,2,3,7,8,9-HXCDD	0/8	13	21.3	25
1,2,3,7,8,9-HXCDF	0/8	13	21.3	25
1,2,3,7,8-PECDD	0/8	13	21.3	25
1,2,3,7,8-PECDF	0/8	13	21.3	25
2,3,4,6,7,8-HXCDF	0/8	13	21.3	25
2,3,4,7,8-PECDF	0/8	13	21.3	25
2,3,7,8-TCDD	0/8	2.59	4.26	5
2,3,7,8-TCDF	1/8	2.59	4.26	5
TOTAL DIOXINS	0/8	4.3	42.6	25
TOTAL FURANS	0/8	25.9	42.6	25
TOTAL HPCDD	1/8	13	21.3	25
TOTAL HPCDF	0/8	13	21.3	25
TOTAL HXCDD	0/8	13	21.3	25
TOTAL HXCDF	1/8	13	21.3	25
TOTAL PECDD	0/8	13	21.3	25
TOTAL PECDF	0/8	13	21.3	25
TOTAL TCDD	0/8	2.59	4.26	5
TOTAL TCDF	1/8	2.59	4.26	5
Semivolatile Organics (ug/kg)				
1,1-BIPHENYL	18/18	0	0	20
1-METHYLNAPHTHALENE	18/18	0	0	20
1-METHYLPHENANTHRENE	18/18	0	0	20
2,3,5-TRIMETHYLNAPHTHALENE	18/18	0	0	20
2,6-DIMETHYLNAPHTHALENE	18/18	0	0	20
2-METHYLNAPHTHALENE	18/18	0	0	20
ACENAPHTHENE	18/18	0	0	20
ACENAPHTHYLENE	18/18	0	0	20
ANTHRACENE	18/18	0	0	20
BENZO(A)ANTHRACENE	18/18	0	0	20
BENZO(A)PYRENE	18/18	0	0	20
BENZO(B)FLUORANTHENE	18/18	0	0	20
BENZO(E)PYRENE	18/18	0	0	20
BENZO(G,H,I)PERYLENE	18/18	0	0	20
BENZO(K)FLUORANTHENE	18/18	0	0	20
C1-CHRYSENES	18/18	0	0	20
C1-DIBENZOTHIOPHENES	18/18	0	0	20
C1-FLUORANTHENES/PYRENES	18/18	0	0	20
C1-FLUORENES	18/18	0	0	20
C1-NAPHTHALENES	18/18	0	0	20
C1-PHENANTHRENES/ANTHRACENES	18/18	0	0	20
C2-CHRYSENES	18/18	0	0	20

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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-DIBENZOTHIOPHENES	15/18	6.1	7.8	20
C2-FLUORENES	18/18	0	0	20
C2-NAPHTHALENES	18/18	0	0	20
C2-PHENANTHRENES/ANTHRACENES	18/18	0	0	20
C3-CHRYSENES	9/18	15.3	19.4	20
C3-DIBENZOTHIOPHENES	11/18	6.1	8.2	20
C3-FLUORENES	17/18	24.7	24.7	20
C3-NAPHTHALENES	18/18	0	0	20
C3-PHENANTHRENES/ANTHRACENES	18/18	0	0	20
C4-CHRYSENES	6/18	15.3	20.6	20
C4-NAPHTHALENES	18/18	0	0	20
C4-PHENANTHRENES/ANTHRACENES	17/18	15.9	15.9	20
CHRYSENE	18/18	0	0	20
DIBENZO(A,H)ANTHRACENE	18/18	0	0	20
DIBENZOTHIOPHENE	18/18	0	0	20
FLUORANTHENE	18/18	0	0	20
FLUORENE	18/18	0	0	20
INDENO(1,2,3-CD)PYRENE	18/18	0	0	20
NAPHTHALENE	18/18	0	0	20
PERYLENE	18/18	0	0	20
PHENANTHRENE	18/18	0	0	20
PYRENE	18/18	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	18/18	0	0	10
1,2,4,5-TETRACHLOROBENZENE	8/18	0.67	0.91	10
2,4'-DDD	0/18	1.5	2	10
2,4'-DDE	0/18	0.37	0.5	10
2,4'-DDT	0/18	0.37	0.5	10
4,4'-DDD	1/18	0.41	0.56	10
4,4'-DDE	18/18	0	0	10
4,4'-DDT	0/18	0.3	0.41	10
ALDRIN	0/18	0.26	0.35	10
ALPHA-BHC	0/18	0.26	0.35	10
ALPHA-CHLORDANE	2/18	0.092	0.12	10
BETA-BHC	0/18	0.67	0.91	10
CHLORPYRIFOS	18/18	0	0	10
CIS-NONACHLOR	0/18	0.28	0.38	10
DELTA-BHC	0/18	0.24	0.32	10
DIELDRIN	18/18	0	0	10
ENDOSULFAN II	1/18	0.24	0.32	10
ENDRIN	0/18	0.28	0.38	10
GAMMA-BHC (LINDANE)	18/18	0	0	10
GAMMA-CHLORDANE	0/18	0.13	0.18	10
HEPTACHLOR	0/18	0.26	0.35	10
HEPTACHLOR EPOXIDE	0/18	1.5	2.1	10
HEXACHLOROBENZENE	0/18	0.3	0.41	10
MIREX	0/18	0.56	0.76	10
OXYCHLORDANE	14/18	0.47	0.53	10
PCB-101/90	6/18	0.59	0.79	2
PCB-105	18/18	0	0	2
PCB-114	0/18	0.89	1.2	2
PCB-118	18/18	0	0	2

TABLE 1-5

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - MONITORING STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-126	8/18	2.7	3.6	2
PCB-128	14/18	0.5	0.62	2
PCB138 /160	18/18	0	0	2
PCB-149/123	6/18	0.89	1.2	2
PCB-153/132	18/18	0	0	2
PCB-156	2/18	0.89	1.2	2
PCB-167	1/18	0.89	1.2	2
PCB-169	11/18	2.92	3.7	2
PCB-170/190	12/18	1.4	1.7	2
PCB-18/17	2/18	0.91	1.2	2
PCB-180	18/18	0	0	2
PCB-187	18/18	0	0	2
PCB-189	0/18	0.89	1.2	2
PCB-195/208	0/18	0.087	0.12	2
PCB-201/157/173	0/18	0.89	1.2	2
PCB-206	0/18	0.37	0.5	2
PCB-209	0/18	0.24	0.32	2
PCB-28	3/18	0.7	0.94	2
PCB-44	14/18	1.5	1.7	2
PCB-52	1/18	0.91	1.2	2
PCB-66	6/18	0.35	0.47	2
PCB-77	7/18	2.7	3.65	2
PCB-8/5	0/18	0.46	0.62	2
PCB-81	3/18	2.7	3.7	2
PENTACHLOROANISOLE	18/18	0	0	10
PENTACHLOROBENZENE	6/18	0.46	0.6	10
TRANS-NONACHLOR	1/18	0.24	0.32	10
Inorganics (mg/kg)				
ALUMINUM	0/18	1	21.6	10
ARSENIC	18/18	0	0	0.35
CADMIUM	4/18	0.03	0.08	0.1
CHROMIUM	1/18	0.46	2.6	0.4
COPPER	18/18	0	0	0.1
IRON	14/18	4.5	8.4	15
LEAD	15/18	0.07	0.08	0.1
MANGANESE	18/18	0	0	1.7
MERCURY	18/18	0	0	0.01
NICKEL	0/18	1.6	2	0.14
SILVER	18/18	0	0	0.29
ZINC	18/18	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Sediment				
Dioxins (ng/kg)				
1,2,3,4,6,7,8,9-OCDD	15/16	22.4	22.4	20
1,2,3,4,6,7,8,9-OCDF	0/16	1	87.8	20
1,2,3,4,6,7,8-HPCDD	15/16	3	3	10
1,2,3,4,6,7,8-HPCDF	15/16	1.44	1.44	10
1,2,3,4,7,8,9-HPCDF	9/16	1.1	2.37	10
1,2,3,4,7,8-HXCDD	10/16	1.1	1.47	10
1,2,3,4,7,8-HXCDF	0/16	0.1	3.3	10
1,2,3,6,7,8-HXCDD	11/16	1.1	1.47	10
1,2,3,6,7,8-HXCDF	10/16	0.1	4.07	10
1,2,3,7,8,9-HXCDD	10/16	1.1	1.47	10
1,2,3,7,8,9-HXCDF	1/16	0.8	4.07	10
1,2,3,7,8-PECDD	3/16	0.1	4.07	10
1,2,3,7,8-PECDF	0/16	0.1	2.1	10
2,3,4,6,7,8-HXCDF	10/16	1.1	2.37	10
2,3,4,7,8-PECDF	0/16	0.3	4.07	10
2,3,7,8-TCDD	3/16	0.2	0.8	2
2,3,7,8-TCDF	0/16	0.1	5.9	2
TOTAL DIOXINS	15/16	31.7	31.7	10
TOTAL FURANS	0/16	2	315	10
TOTAL HPCDD	15/16	7.5	7.5	10
TOTAL HPCDF	1/16	0.8	120	10
TOTAL HXCDD	14/16	1.44	1.8	10
TOTAL HXCDF	13/16	1.1	1.47	10
TOTAL PECDD	7/16	0.1	4.07	10
TOTAL PECDF	0/16	0.3	31.1	10
TOTAL TCDD	4/16	0.2	0.8	2
TOTAL TCDF	0/16	0.1	14.9	2
Semivolatile Organics (ug/kg)				
1,1-BIPHENYL	10/16	1.1	15.7	20
1-METHYLNAPHTHALENE	12/16	1	11.4	20
1-METHYLPHENANTHRENE	16/16	0	0	20
2,3,5-TRIMETHYLNAPHTHALENE	16/16	0	0	20
2,6-DIMETHYLNAPHTHALENE	16/16	0	0	20
2-METHYLNAPHTHALENE	16/16	0	0	20
ACENAPHTHENE	16/16	0	0	20
ACENAPHTHYLENE	14/16	3.1	49.5	20
ANTHRACENE	15/16	9.8	9.8	20
BENZO(A)ANTHRACENE	14/16	13.3	194.5	20
BENZO(A)PYRENE	13/16	24.3	642.8	20
BENZO(B)FLUORANTHENE	14/16	25.9	320.1	20
BENZO(E)PYRENE	13/16	11.8	318.2	20
BENZO(G,H,I)PERYLENE	13/16	11.5	291	20
BENZO(K)FLUORANTHENE	14/16	6.8	108	20
C1-CHRYSENES	16/16	0	0	20
C1-DIBENZOTHIOPHENES	16/16	0	0	20
C1-FLUORANTHENES/PYRENES	16/16	0	0	20
C1-FLUORENES	16/16	0	0	20
C1-NAPHTHALENES	16/16	0	0	20
C1-PHENANTHRENES/ANTHRACENES	13/16	6.4	161.6	20
C2-CHRYSENES	16/16	0	0	20
C2-DIBENZOTHIOPHENES	16/16	0	0	20
C2-FLUORENES	16/16	0	0	20

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-NAPHTHALENES	16/16	0	0	20
C2-PHENANTHRENES/ANTHRACENES	12/16	4.1	105.4	20
C3-CHRYSENES	16/16	0	0	20
C3-DIBENZOTHIOPHENES	16/16	0	0	20
C3-FLUORENES	16/16	0	0	20
C3-NAPHTHALENES	16/16	0	0	20
C3-PHENANTHRENES/ANTHRACENES	12/16	2	53.5	20
C4-CHRYSENES	13/16	4.1	4.4	20
C4-NAPHTHALENES	16/16	0	0	20
C4-PHENANTHRENES/ANTHRACENES	16/16	0	0	20
CHRYSENE	14/16	13.4	418.7	20
DIBENZO(A,H)ANTHRACENE	13/16	3	75.7	20
DIBENZOTHIOPHENE	16/16	0	0	20
FLUORANTHENE	15/16	27.5	27.5	20
FLUORENE	16/16	0	0	20
INDENO(1,2,3-CD)PYRENE	13/16	13.7	325.5	20
NAPHTHALENE	12/16	2.8	18.3	20
PERYLENE	16/16	0	0	20
PHENANTHRENE	16/16	0	0	20
PYRENE	13/16	24.8	763.8	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	9/16	0.03	0.28	2
1,2,4,5-TETRACHLOROBENZENE	13/16	0.17	0.33	2
2,4'-DDD	13/16	0.085	0.14	2
2,4'-DDE	5/16	0.043	0.15	2
2,4'-DDT	1/16	0.037	0.11	2
4,4'-DDD	15/16	0.01	0.01	2
4,4'-DDE	16/16	0	0	2
4,4'-DDT	13/16	0.18	0.37	2
ALDRIN	0/16	0.01	0.11	2
ALPHA-BHC	9/16	0.031	0.078	2
ALPHA-CHLORDANE	14/16	0.11	0.11	2
BETA-BHC	2/16	0.06	0.24	2
CHLORPYRIFOS	6/16	0.067	0.21	2
CIS-NONACHLOR	11/16	0.043	0.11	2
DELTA-BHC	8/16	0.037	0.11	2
DIELDRIN	3/16	0.018	0.057	2
ENDOSULFAN II	15/16	0.085	0.085	2
ENDRIN	0/16	0.037	0.11	2
GAMMA-BHC (LINDANE)	7/16	0.03	0.18	2
GAMMA-CHLORDANE	4/16	0.018	0.057	2
HEPTACHLOR	7/16	0.13	0.29	2
HEPTACHLOR EPOXIDE	8/16	0.047	0.095	2
HEXACHLOROBENZENE	7/16	0.031	0.095	2
MIREX	7/16	0.049	0.095	2
OXYCHLORDANE	6/16	0.031	0.057	2
PCB-101/90	15/16	0.36	0.36	1
PCB-105	9/16	0.03	1	1
PCB-114	0/16	0.24	0.74	1
PCB-118	16/16	0	0	1
PCB-126	0/10	0.22	0.46	1
PCB-128	13/16	0.099	0.11	1
PCB138 /160	6/16	0.44	9	1
PCB-149/123	10/16	0.17	0.99	1

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-153/132	8/16	0.07	0.71	1
PCB-156	5/16	0.05	0.74	1
PCB-167	13/16	0.24	0.39	1
PCB-169	8/16	0.22	0.46	1
PCB-170/190	12/16	0.3	0.83	1
PCB-18/17	9/16	0.075	0.15	1
PCB-180	4/16	0.22	2.4	1
PCB-187	7/16	0.11	2.3	1
PCB-189	9/16	0.24	0.44	1
PCB-195/208	8/16	0.09	0.53	1
PCB-201/157/173	11/16	0.35	0.61	1
PCB-206	13/16	0.054	0.11	1
PCB-209	12/15	0.063	0.07	1
PCB-28	10/16	0.16	1.7	1
PCB-44	12/16	0.11	0.25	1
PCB-52	11/16	0.055	0.09	1
PCB-66	8/16	0.043	0.13	1
PCB-77	7/16	0.04	0.3	1
PCB-8/5	10/16	0.08	0.62	1
PCB-81	7/13	0.22	0.27	1
PENTACHLOROANISOLE	3/16	0.03	0.17	2
PENTACHLOROBENZENE	8/16	0.055	0.12	2
TRANS-NONACHLOR	9/16	0.081	0.17	2
Inorganics (mg/kg)				
ALUMINUM	16/16	0	0	50
ARSENIC	16/16	0	0	5
CADMIUM	1/16	0.181	0.67	0.3
CHROMIUM	16/16	0	0	5
COPPER	14/16	2.18	5.22	5
IRON	16/16	0	0	50
LEAD	16/16	0	0	5
MANGANESE	16/16	0	0	5
MERCURY	14/16	0.0466	0.0513	0.2
NICKEL	16/16	0	0	5
SILVER	9/16	0.11	0.11	0.1
ZINC	16/16	0	0	15

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Mussel				
Dioxins (ng/kg)				
1,2,3,4,6,7,8,9-OCDD	0/8	52.6	184	50
1,2,3,4,6,7,8,9-OCDF	1/8	31.2	56.5	50
1,2,3,4,6,7,8-HPCDD	2/8	15.6	28.2	25
1,2,3,4,6,7,8-HPCDF	2/8	15.6	28.2	25
1,2,3,4,7,8,9-HPCDF	0/8	15.6	28.2	25
1,2,3,4,7,8-HXCDD	0/8	15.6	28.2	25
1,2,3,4,7,8-HXCDF	0/8	15.6	28.2	25
1,2,3,6,7,8-HXCDD	0/8	15.6	28.2	25
1,2,3,6,7,8-HXCDF	0/8	15.6	28.2	25
1,2,3,7,8,9-HXCDD	0/8	15.6	28.2	25
1,2,3,7,8,9-HXCDF	0/8	15.6	28.2	25
1,2,3,7,8-PECDD	0/8	15.6	28.2	25
1,2,3,7,8-PECDF	0/8	15.6	28.2	25
2,3,4,6,7,8-HXCDF	0/8	15.6	28.2	25
2,3,4,7,8-PECDF	0/8	15.6	28.2	25
2,3,7,8-TCDD	0/8	3.12	5.65	5
2,3,7,8-TCDF	0/8	3.12	5.65	5
TOTAL DIOXINS	0/8	52.6	228	25
TOTAL FURANS	1/8	4.5	52.6	25
TOTAL HPCDD	3/8	15.6	28.2	25
TOTAL HPCDF	2/8	15.6	28.2	25
TOTAL HXCDD	1/8	15.6	28.2	25
TOTAL HXCDF	0/8	15.6	28.2	25
TOTAL PECDD	0/8	15.6	28.2	25
TOTAL PECDF	0/8	15.6	28.2	25
TOTAL TCDD	0/8	3.12	5.65	5
TOTAL TCDF	0/8	3.12	5.65	5
Semivolatile Organics (ug/kg)				
1,1-BIPHENYL	8/8	0	0	20
1-METHYLNAPHTHALENE	8/8	0	0	20
1-METHYLPHENANTHRENE	8/8	0	0	20
2,3,5-TRIMETHYLNAPHTHALENE	8/8	0	0	20
2,6-DIMETHYLNAPHTHALENE	8/8	0	0	20
2-METHYLNAPHTHALENE	8/8	0	0	20
ACENAPHTHENE	8/8	0	0	20
ACENAPHTHYLENE	8/8	0	0	20
ANTHRACENE	8/8	0	0	20
BENZO(A)ANTHRACENE	8/8	0	0	20
BENZO(A)PYRENE	8/8	0	0	20
BENZO(B)FLUORANTHENE	8/8	0	0	20
BENZO(E)PYRENE	8/8	0	0	20
BENZO(G,H,I)PERYLENE	8/8	0	0	20
BENZO(K)FLUORANTHENE	8/8	0	0	20
C1-CHRYSENES	8/8	0	0	20
C1-DIBENZOTHIOPHENES	8/8	0	0	20
C1-FLUORANTHENES/PYRENES	8/8	0	0	20
C1-FLUORENES	8/8	0	0	20
C1-NAPHTHALENES	8/8	0	0	20
C1-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C2-CHRYSENES	8/8	0	0	20
C2-DIBENZOTHIOPHENES	8/8	0	0	20
C2-FLUORENES	8/8	0	0	20

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-NAPHTHALENES	8/8	0	0	20
C2-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C3-CHRYSENES	4/8	12.3	14	20
C3-DIBENZOTHIOPHENES	8/8	0	0	20
C3-FLUORENES	8/8	0	0	20
C3-NAPHTHALENES	8/8	0	0	20
C3-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
C4-CHRYSENES	7/8	12.3	12.3	20
C4-NAPHTHALENES	8/8	0	0	20
C4-PHENANTHRENES/ANTHRACENES	8/8	0	0	20
CHRYSENE	8/8	0	0	20
DIBENZO(A,H)ANTHRACENE	8/8	0	0	20
DIBENZOTHIOPHENE	8/8	0	0	20
FLUORANTHENE	8/8	0	0	20
FLUORENE	8/8	0	0	20
INDENO(1,2,3-CD)PYRENE	8/8	0	0	20
NAPHTHALENE	8/8	0	0	20
PERYLENE	8/8	0	0	20
PHENANTHRENE	8/8	0	0	20
PYRENE	8/8	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	8/8	0	0	10
1,2,4,5-TETRACHLOROBENZENE	0/8	1.3	2.2	10
2,4'-DDD	8/8	0	0	10
2,4'-DDE	8/8	0	0	10
2,4'-DDT	8/8	0	0	10
4,4'-DDD	8/8	0	0	10
4,4'-DDE	8/8	0	0	10
4,4'-DDT	8/8	0	0	10
ALDRIN	0/8	0.21	0.27	10
ALPHA-BHC	8/8	0	0	10
ALPHA-CHLORDANE	8/8	0	0	10
BETA-BHC	1/8	0.54	0.69	10
CHLORPYRIFOS	8/8	0	0	10
CIS-NONACHLOR	8/8	0	0	10
DELTA-BHC	2/8	0.19	0.24	10
DIELDRIN	8/8	0	0	10
ENDOSULFAN II	0/8	0.19	0.24	10
ENDRIN	3/8	0.23	0.29	10
GAMMA-BHC (LINDANE)	8/8	0	0	10
GAMMA-CHLORDANE	8/8	0	0	10
HEPTACHLOR	0/8	0.21	0.27	10
HEPTACHLOR EPOXIDE	2/8	1.2	1.6	10
HEXACHLOROBENZENE	6/8	0.24	0.3	10
MIREX	0/8	0.45	0.58	10
OXYCHLORDANE	2/8	0.37	0.47	10
PCB-101/90	8/8	0	0	2
PCB-105	8/8	0	0	2
PCB-114	0/8	0.7	0.91	2
PCB-118	8/8	0	0	2
PCB-126	0/8	0.01	2.49	2
PCB-128	8/8	0	0	2
PCB138 /160	1/8	6	11	2
PCB-149/123	8/8	0	0	2

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-153/132	8/8	0	0	2
PCB-156	8/8	0	0	2
PCB-167	7/8	0.91	0.91	2
PCB-169	1/8	0.03	2.8	2
PCB-170/190	8/8	0	0	2
PCB-18/17	8/8	0	0	2
PCB-180	0/8	3.5	9.4	2
PCB-187	8/8	0	0	2
PCB-189	0/8	0.7	0.91	2
PCB-195/208	0/8	0.069	0.089	2
PCB-201/157/173	0/8	0.7	0.91	2
PCB-206	0/8	0.29	0.38	2
PCB-209	0/8	0.19	0.25	2
PCB-28	8/8	0	0	2
PCB-44	0/8	0.63	1.8	2
PCB-52	8/8	0	0	2
PCB-66	8/8	0	0	2
PCB-77	0/8	0.01	2.7	2
PCB-8/5	0/8	3.5	12	2
PCB-81	4/8	2.1	2.7	2
PENTACHLOROANISOLE	8/8	0	0	10
PENTACHLOROBENZENE	8/8	0	0	10
TRANS-NONACHLOR	8/8	0	0	10
Inorganics (mg/kg)				
ALUMINUM	8/8	0	0	10
ARSENIC	8/8	0	0	0.35
CADMIUM	8/8	0	0	0.1
CHROMIUM	8/8	0	0	0.4
COPPER	8/8	0	0	0.1
IRON	8/8	0	0	15
LEAD	8/8	0	0	0.1
MANGANESE	8/8	0	0	1.7
MERCURY	8/8	0	0	0.01
NICKEL	3/8	1.5	1.81	0.14
SILVER	6/8	0.05	0.06	0.29
ZINC	8/8	0	0	5.7

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
Juvenile Lobster				
Dioxins (ng/kg)				
1,2,3,4,6,7,8,9-OCDD	0/3	29.3	34	50
1,2,3,4,6,7,8,9-OCDF	0/3	29.3	34	50
1,2,3,4,6,7,8-HPCDD	0/3	14.7	17	25
1,2,3,4,6,7,8-HPCDF	0/3	14.7	17	25
1,2,3,4,7,8,9-HPCDF	0/3	14.7	17	25
1,2,3,4,7,8-HXCDD	0/3	14.7	17	25
1,2,3,4,7,8-HXCDF	0/3	14.7	17	25
1,2,3,6,7,8-HXCDD	0/3	14.7	17	25
1,2,3,6,7,8-HXCDF	0/3	14.7	17	25
1,2,3,7,8,9-HXCDD	0/3	14.7	17	25
1,2,3,7,8,9-HXCDF	0/3	14.7	17	25
1,2,3,7,8-PECDD	0/3	14.7	17	25
1,2,3,7,8-PECDF	0/3	14.7	17	25
2,3,4,6,7,8-HXCDF	0/3	14.7	17	25
2,3,4,7,8-PECDF	0/3	14.7	17	25
2,3,7,8-TCDD	0/3	2.93	3.4	5
2,3,7,8-TCDF	1/3	2.93	3.4	5
TOTAL DIOXINS	0/3	29.3	34	25
TOTAL FURANS	0/3	3.5	34	25
TOTAL HPCDD	0/3	14.7	17	25
TOTAL HPCDF	0/3	14.7	17	25
TOTAL HXCDD	1/3	14.7	17	25
TOTAL HXCDF	0/3	14.7	17	25
TOTAL PECDD	0/3	14.7	17	25
TOTAL PECDF	0/3	14.7	17	25
TOTAL TCDD	0/3	2.93	3.4	5
TOTAL TCDF	1/3	2.93	3.4	5
Semivolatile Organics (ug/kg)				
1,1-BIPHENYL	3/3	0	0	20
1-METHYLNAPHTHALENE	3/3	0	0	20
1-METHYLPHENANTHRENE	3/3	0	0	20
2,3,5-TRIMETHYLNAPHTHALENE	3/3	0	0	20
2,6-DIMETHYLNAPHTHALENE	3/3	0	0	20
2-METHYLNAPHTHALENE	3/3	0	0	20
ACENAPHTHENE	3/3	0	0	20
ACENAPHTHYLENE	3/3	0	0	20
ANTHRACENE	3/3	0	0	20
BENZO(A)ANTHRACENE	3/3	0	0	20
BENZO(A)PYRENE	3/3	0	0	20
BENZO(B)FLUORANTHENE	3/3	0	0	20
BENZO(E)PYRENE	3/3	0	0	20
BENZO(G,H,I)PERYLENE	3/3	0	0	20
BENZO(K)FLUORANTHENE	3/3	0	0	20
C1-CHRYSENES	3/3	0	0	20
C1-DIBENZOTHIOPHENES	3/3	0	0	20
C1-FLUORANTHENES/PYRENES	3/3	0	0	20
C1-FLUORENES	3/3	0	0	20
C1-NAPHTHALENES	3/3	0	0	20
C1-PHENANTHRENES/ANTHRACENES	3/3	0	0	20
C2-CHRYSENES	3/3	0	0	20
C2-DIBENZOTHIOPHENES	3/3	0	0	20
C2-FLUORENES	3/3	0	0	20

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
C2-NAPHTHALENES	3/3	0	0	20
C2-PHENANTHRENES/ANTHRACENES	3/3	0	0	20
C3-CHRYSENES	2/3	20.1	20.1	20
C3-DIBENZOTHIOPHENES	2/3	7.1	7.1	20
C3-FLUORENES	3/3	0	0	20
C3-NAPHTHALENES	3/3	0	0	20
C3-PHENANTHRENES/ANTHRACENES	3/3	0	0	20
C4-CHRYSENES	2/3	16.3	16.3	20
C4-NAPHTHALENES	3/3	0	0	20
C4-PHENANTHRENES/ANTHRACENES	3/3	0	0	20
CHRYSENE	3/3	0	0	20
DIBENZO(A,H)ANTHRACENE	3/3	0	0	20
DIBENZOTHIOPHENE	3/3	0	0	20
FLUORANTHENE	3/3	0	0	20
FLUORENE	3/3	0	0	20
INDENO(1,2,3-CD)PYRENE	3/3	0	0	20
NAPHTHALENE	3/3	0	0	20
PERYLENE	3/3	0	0	20
PHENANTHRENE	3/3	0	0	20
PYRENE	3/3	0	0	20
Pesticides/PCBs (ug/kg)				
1,2,3,4-TETRACHLOROBENZENE	3/3	0	0	10
1,2,4,5-TETRACHLOROBENZENE	2/3	0.88	0.88	10
2,4'-DDD	0/3	1.6	2	10
2,4'-DDE	0/3	0.39	0.48	10
2,4'-DDT	0/3	0.39	0.48	10
4,4'-DDD	0/3	0.44	0.54	10
4,4'-DDE	3/3	0	0	10
4,4'-DDT	0/3	0.32	0.4	10
ALDRIN	0/3	0.28	0.34	10
ALPHA-BHC	0/3	0.28	0.34	10
ALPHA-CHLORDANE	0/3	0.092	0.11	10
BETA-BHC	0/3	0.71	0.88	10
CHLORPYRIFOS	3/3	0	0	10
CIS-NONACHLOR	0/3	0.3	0.37	10
DELTA-BHC	0/3	0.25	0.31	10
DIELDRIN	3/3	0	0	10
ENDOSULFAN II	0/3	0.25	0.31	10
ENDRIN	0/3	0.3	0.37	10
GAMMA-BHC (LINDANE)	3/3	0	0	10
GAMMA-CHLORDANE	0/3	0.14	0.17	10
HEPTACHLOR	0/3	0.28	0.34	10
HEPTACHLOR EPOXIDE	0/3	1.6	2	10
HEXACHLOROBENZENE	0/3	0.32	0.4	10
MIREX	0/3	0.6	0.74	10
OXYCHLORDANE	2/3	0.48	0.48	10
PCB-101/90	1/3	0.62	0.69	2
PCB-105	3/3	0	0	2
PCB-114	0/3	0.95	1.2	2
PCB-118	3/3	0	0	2
PCB-126	2/3	3.2	3.2	2
PCB-128	3/3	0	0	2
PCB138 /160	3/3	0	0	2
PCB-149/123	1/3	0.95	1	2

TABLE 1-6

RANGE OF NON-DETECTS FOR SEDIMENT AND TISSUES ABOVE TARGET MDL
ROUND 4 - REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter	Frequency of Detection	Minimum Nondetect	Maximum Nondetect	Target MDL
PCB-153/132	3/3	0	0	2
PCB-156	0/3	0.95	1.2	2
PCB-167	0/3	0.95	1.2	2
PCB-169	2/3	3.2	3.2	2
PCB-170/190	0/3	1.5	1.8	2
PCB-18/17	1/3	1	1.2	2
PCB-180	3/3	0	0	2
PCB-187	3/3	0	0	2
PCB-189	0/3	0.95	1.2	2
PCB-195/208	0/3	0.092	0.11	2
PCB-201/157/173	0/3	0.95	1.2	2
PCB-206	0/3	0.39	0.48	2
PCB-209	0/3	0.25	0.31	2
PCB-28	0/3	0.74	0.91	2
PCB-44	3/3	0	0	2
PCB-52	2/3	1.2	1.2	2
PCB-66	1/3	0.37	0.41	2
PCB-77	3/3	0	0	2
PCB-8/5	0/3	0.48	0.6	2
PCB-81	2/3	2.9	2.9	2
PENTACHLOROANISOLE	3/3	0	0	10
PENTACHLOROBENZENE	1/3	0.53	0.6	10
TRANS-NONACHLOR	0/3	0.25	0.31	10
Inorganics (mg/kg)				
ALUMINUM	0/3	1.5	16.3	10
ARSENIC	3/3	0	0	0.35
CADMIUM	0/3	0.04	0.07	0.1
CHROMIUM	0/3	0.86	1.3	0.4
COPPER	3/3	0	0	0.1
IRON	3/3	0	0	15
LEAD	2/3	0.07	0.07	0.1
MANGANESE	3/3	0	0	1.7
MERCURY	3/3	0	0	0.01
NICKEL	0/3	1.65	1.7	0.14
SILVER	3/3	0	0	0.29
ZINC	3/3	0	0	5.7

- Dry Weight values presented. Dioxins were converted from wet to dry weight by multiplying by a factor of 5 for tissue and a factor of 2 for sediment (Wade, personal comm).
- Shaded cells are non-detected values that are greater than the target MDL.
- Target MDLs are from Tables 6-5a through 6-5g in the Interim Offshore Monitoring Plan (TtNUS, October 1999).

APPENDIX B

NON-NORMALIZED ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND JUVENILE LOBSTER FROM ROUNDS 1 THROUGH 4

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01						
	Sediment			Mussel			Lobster [1]
Parameters	199A	299A	399A	299A	299A-DUP[3]	399A	199AM
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	8.4	19.8	29.4	1.71 J		2.61 J	2.4 J
1-METHYLNAPHTHALENE	13.8 U	96.3	35.6 U	3.73 U		8.54 U	7.1
1-METHYLPHENANTHRENE	64.1	130	269	3.51		6.76	2.7 J
2,6-DIMETHYLNAPHTHALENE	10.6	37.4	33.9	3.12		5.31	2.5 J
2-METHYLNAPHTHALENE	27.5 J	125	48.8 U	6.74 U		15 U	9.7
ACENAPHTHENE	11.4 U	162	146	3.32 J		29.4	0.6 J
ACENAPHTHYLENE	71.5 J	189 J	166	9.24 J		13.3 J	0.7 J
ANTHRACENE	99.7	766	508 J	22.8		24.8	0.9 J
BENZO(A)ANTHRACENE	227	1515	1003	11 J		19.4 J	1.9 J
BENZO(A)PYRENE	319	1741 J	1186	6.72 J		11.7 J	1.5 J
BENZO(B)FLUORANTHENE	316	1655	1026	14.3 J		24.1 J	1.4 J
BENZO(E)PYRENE	225	904	757	14.1		29.7	2.8 J
BENZO(G,H,I)PERYLENE	207	1149 J	639	5.67		10	1.8 J
BENZO(K)FLUORANTHENE	78.4	522	372	3.57		5.51 J	1.1 J
BIPHENYL	6.2 U	25.4 J	14.2 J	2.09 U		3.37 U	2.3 J
CHRYSENE	0.4	1343	994	18.2		31.1	4.8
DIBENZO(A,H)ANTHRACENE	51.2	364 J	153	1.46 J		2.03 J	0.1 J
DIBENZOTHIOPHENE	11.8	94.8	66.8	0.98 U		1.39 U	0.5 J
FLUORANTHENE	342	1764	1954	34.3		41.8	6.9 J
FLUORENE	24.7	202	195	2.56 J		3.46 J	1.9 J
INDENO(1,2,3-CD)PYRENE	183	265 J	561	3.8 J		6.88 J	0.1 J
NAPHTHALENE	40.3 U	242	70.2 U	11 U		28.6 U	13.3
PERYLENE	45.2	286	206	5.11 J		7.63 J	0.7 J
PHENANTHRENE	199	1388	1530	10.8 U		15.5 U	4.5 J
PYRENE	0.3	1477 J	2070	34.1		63.6	5.3
Pesticides /PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.035 J	0.037 J	0.065 J	0.6 U		2.2	20.2
1,2,4,5-TETRACHLOROBENZENE	0.24 J	0.72	0.74	2.2 U		3.6 U	1.16
2,4'-DDD	9	16	9.6	4.4		2.2	0.23 U
2,4'-DDE	0.21	0.96	0.18	0.31		1.1	0.32 U
2,4'-DDT	0.58	25	4	2.9		6.2	0.30 U
4,4'-DDD	26 J	43	93	11		7.9	0.28 U
4,4'-DDE	4.5	30	8.5	16		11	4.03
4,4'-DDT	46	109 J	1113	6.3 U		4.9 U	0.43 UJ
ALDRIN	0.058 U	12	0.074 U	0.21 U		0.36 U	0.37 U
ALPHA-BHC	0.04 U	0.052 U	0.16 U	0.61		0.86	0.4
ALPHA-CHLORDANE	2.3	3.4	14	4.6		7.9	2.03
BETA-BHC	0.2 U	0.2	0.25 U	0.13 U		0.23 U	0.24 U
CHLORPYRIFOS	0.025 J	0.58	0.037 J	1.4 U		2.3 U	2.43 U
CIS-NONACHLOR	0.27	0.6	1	1.7		2.6	0.17 J
DELTA-BHC	0.085	0.1	0.066	0.42		1.2	0.15 UJ
DIELDRIN	0.03 J	26	0.07 J	3		1.4	1.85
ENDOSULFAN II	1.9 J	0.074 U	7	0.33		0.23 J	0.28 UJ
ENDRIN	0.13 U	0.85	0.21	0.43 U		0.74 U	0.77 U
GAMMA-BHC (LINDANE)	0.47 U	0.67 U	0.69	1.2 U		1.3 U	0.54
GAMMA-CHLORDANE	2.2	3.3	16	1.4		1.5	0.29 U
HEPTACHLOR	0.21	0.42	1	0.24		1.4	0.42 U
HEPTACHLOR EPOXIDE	0.029 U	0.13	0.037 U	0.17 U		0.28 U	0.30 U
HEXACHLOROBENZENE	0.038 U	0.1 U	0.056 U	0.34		0.5	0.27 J
MIREX	0.029 U	0.025 U	0.037 U	0.39		0.65 U	0.68 U
OXYCHLORDANE	0.43	0.012 U	0.62	0.73		0.46	1.34
PCB-101/90	1.3	0.73	2.1	8.2		9.8	3.01
PCB-105	0.74 J	0.3 J	1 J	4.1		5.9	1.16
PCB-114	0.17 U	0.15 U	0.22 U	0.58 U		0.99 U	1.03 U
PCB-118	1.3	0.43	2.7	7.7		7.1	3.19
PCB-126	0.7 U	0.025 J	0.89 U	0.18 J		0.04 J	0.19 J

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01						
	Sediment			Mussel			Lobster [1]
Parameters	199A	299A	399A	299A	299A-DUP[3]	399A	199AM
PCB-128	0.9 J	0.83	2.7 J	2.2		2.2	0.52 J
PCB-138 /160	2.2	1.6	3.8	14 U		13 U	3.27
PCB-149/123	1.2	0.66	1.7	4.7 U		4.8 U	1.03 U
PCB-153/132	1.9	1.2	2.4	15 U		14 U	5.53
PCB-156	1.53	3.02	4.34	1.2		1.8	1.03 U
PCB-167	1.5	1.6	5.1	1.1		1.4	1.03 U
PCB-169	0.7 U	0.15 U	0.89 U	0.061 J		0.03 J	4.13 U
PCB-170/190	7.5 J	0.54 J	20 J	0.9 U		0.4 U	1.03 U
PCB-18/17	0.62	0.57 J	0.11 U	3.3 U		6.5	0.66 J
PCB-180	1.3 J	2 J	1.6 J	7.1 U		6 U	1.43
PCB-187	0.71	3.2	0.94	6.6 U		6 U	1.39
PCB-189	0.33	0.15 U	0.93	0.58 U		0.99 U	1.03 U
PCB-195/208	0.3	0.66	1.5	0.48 U		0.82 U	0.86 U
PCB-201/157/173	0.19	0.47	0.62	1.47 U		2.13 U	0.89 U
PCB-206	0.71	0.42	5	0.5 U		0.86 U	0.79 UJ
PCB-209	0.61 J	0.12 J	2.4 J	0.65 U		1.1 U	0.08 J
PCB-28	0.44 J	0.3	0.25 U	2		1.7	0.17 J
PCB-44	0.23	0.13 U	0.12 J	1.2 U		2.1	0.60 U
PCB-52	0.5 J	1.1	0.65	4.5		6	0.70 U
PCB-66	0.48	0.72	1	1.3		1.3	0.44 J
PCB-77	0.046 J	0.21 J	0.2 J	0.31 J		0.28 J	4.13 U
PCB-8/5	0.086 J	0.27 J	0.85	0.68 J		0.63 J	0.6 J
PCB-81	0.011 J	0.048 J	0.018 J	0.057 J		0.11 J	4.13 U
PENTACHLOROANISOLE	0.069 J	0.17 J	0.18 J	0.63		0.62	0.36
PENTACHLOROBENZENE	0.074	0.097	0.049 J	4.7		2.5	0.46
TRANS-NONACHLOR	0.61	1.6	5.8	2.6		3.3	0.18 U
Metals (mg/kg)							
ALUMINUM	53913	52265	55569	136 J	106 J	221 J	5.02 J
ARSENIC	9.6	9.7	10.8	6.7	6.7	5.8	9.79
CADMIUM	0.44	0.09	0.31	1.8	1.9	2.6	0.0447 J
CHROMIUM	108	46.4	83.9	1.9	1.4	2.1	0.203 U
COPPER	47.4 J	29.1 J	44.1 J	7.1	7.1	7	40.5
IRON	21476	23730	26014	288	293	432	10.9
LEAD	158 J	116 J	106 J	3.5	3.5	4.8	0.132 J
MANGANESE	558	411	437	6.6	6.6	13	2.5
MERCURY	0.19 J	0.05 J	0.23 J	0.27		0.3	0.496
NICKEL	23.5	21.7	27.1	1.2	1.1	1.3	0.203 U
SILVER	0.31	0.09	0.35	0.04 J	0.04 J	0.04 J	0.81 J
ZINC	178	117	108	94.2	96.9	97	92.6
Miscellaneous Parameters (%)							
LIPID				5.5		9.2	3.2
TOTAL ORGANIC CARBON	1.01	1.54	1.5				

Notes:

MS-1 includes the following samples:
OU4-SD-M01-199A
OU4-SD-M01-299A
OU4-SD-M01-399A
OU4-MU-M01-299A
OU4-MU-M01-299A-FD
OU4-MU-M01-399A
OU4-LJ-M01-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02						
	Sediment			Mussel			Lobster [1]
Parameters	199A	299A	399A	199A	299A	399A	199AM
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	11.4	13.5	18.9	2.13 J	1.65 J	2.51 J	4.8 J
1-METHYLNAPHTHALENE	16.4 U	24.1 U	21.2 U	6.13 U	5.23 U	6.13 U	10.2
1-METHYLPHENANTHRENE	35.7	71.6	54.9	4.29	3.7 J	5.07	14.7
2,6-DIMETHYLNAPHTHALENE	16	29.1	14.1	3.97	3.49 J	3.59	4.4 J
2-METHYLNAPHTHALENE	24.6 U	49 U	34.3 U	12.5 U	9.84 U	8.71 U	14
ACENAPHTHENE	16.2	12.8	21.6	26.7	28	12.8	6.5 J
ACENAPHTHYLENE	64.9 J	60.3 J	67.3 J	9.71 J	9.44 J	9.38 J	1.0 J
ANTHRACENE	161	118	178	26.6	25.2	30.4	21.1
BENZO(A)ANTHRACENE	244	223	280	13.8 J	10.2 J	21.7 J	67.5 J
BENZO(A)PYRENE	324	261	345	7.06 J	6.19 J	18.7 J	70.9
BENZO(B)FLUORANTHENE	351	286	384	18.7 J	15.2 J	32.7 J	34.6
BENZO(E)PYRENE	190	199	229	17.3	13.4	21.3	32.7
BENZO(G,H,I)PERYLENE	188	220	217	7.01 J	5.92 J	12.8 J	20.8
BENZO(K)FLUORANTHENE	115	77.4	125	5	4.17 J	7.58	44.7 J
BIPHENYL	6.51 U	7.37 U	6.64 U	2.39 U	2.1 U	2.34 U	2.6 J
CHRYSENE	303	249	448	23.8	19.7	35	87.3
DIBENZO(A,H)ANTHRACENE	52.3	44.5	53.6	2.31 J	1.37 J	2.32 J	7.9 J
DIBENZOTHIOPHENE	22	28.4	31.5	1.37 U	1.27 U	3.21 U	5.8
FLUORANTHENE	429	477	535	40.9	37.2	79.2	171 J
FLUORENE	36.2	33.4	44	2.73 J	2.19 J	5.71	11.5 J
INDENO(1,2,3-CD)PYRENE	214	159	215	5.63 J	4.04 J	12.1 J	26.9 J
NAPHTHALENE	40.2 U	32.4 U	42.5 U	23 U	20.1 U	13.1 U	14.1
PERYLENE	74.4	42.6	79.8	7.39 J	5.65 J	8.51 J	17.6 J
PHENANTHRENE	254	297	338	14.4 U	12.3 U	44.7 U	85.2
PYRENE	412	423	476	37.1	31.7	57.4	128
Pesticides /PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.18 J	0.049 J	0.66	0.81 U	0.93 U	0.34 U	48.77
1,2,4,5-TETRACHLOROBENZENE	0.57 J	0.38 J	2.7	3.5 U	5.3 U	2.4 U	0.42 J
2,4'-DDD	2.3	5.1	20	3	1.9	2	0.23 U
2,4'-DDE	0.19	0.26	1.7	0.59	0.83	0.27	0.32 U
2,4'-DDT	0.21	6.2	0.71	4	3.6	3.1	0.30 U
4,4'-DDD	1.9	11	56	6	7	6.3	0.15 J
4,4'-DDE	1.3	7.4	48	9.3	12	9.7	4.77
4,4'-DDT	2.1	24	4.7	2.8 U	4 U	1.2 U	0.43 UJ
ALDRIN	0.085 U	0.053 U	0.13 U	0.28 U	0.35 U	0.28 U	0.37 U
ALPHA-BHC	0.13 U	0.058 U	0.13 U	0.53	0.68	0.41	0.16 J
ALPHA-CHLORDANE	0.66	0.56	2.5	5.2	6.2	4.2	14.82
BETA-BHC	0.29 U	0.18 U	0.17 J	0.18 U	0.22 U	0.18 U	0.24 U
CHLORPYRIFOS	0.4 U	0.012 J	0.61 U	1.8 U	2.3 U	1.8 U	2.42 U
CIS-NONACHLOR	0.2	0.28	1.4	2.5	2.3	1.7	0.03 J
DELTA-BHC	0.057 J	0.029 J	0.12	1.2	0.86	0.94	0.15 UJ
DIELDRIN	0.095 U	0.06 U	0.32	1 U	1.5	1.2	1.05
ENDOSULFAN II	1.4	1.3	1.1	0.86	0.92	1.2	0.28 UJ
ENDRIN	0.065 J	0.03 J	0.099 J	0.57 U	0.72 U	0.57 U	0.77 U
GAMMA-BHC (LINDANE)	0.42 U	0.56 U	0.51 U	0.87 U	1.1 U	0.59 U	0.59
GAMMA-CHLORDANE	0.28	0.2	3.1	1.3	0.45	0.7	0.29 U
HEPTACHLOR	0.054 J	0.032 J	0.27 J	2.4	2.9	1.8	0.42 U
HEPTACHLOR EPOXIDE	0.097	0.026 U	0.067	0.22 U	0.28 U	0.22 U	0.30 U
HEXACHLOROBENZENE	0.043 U	0.048 U	0.054 U	0.72	0.75	0.59	1.54
MIREX	0.042 U	0.25	0.28	0.5 U	0.63 U	0.5 U	0.67 U
OXYCHLORDANE	0.11	0.29	0.34	0.73	0.69	0.24 U	0.99
PCB-101/90	2.1	0.51	7.5	12	10	11	2.67
PCB-105	1 J	0.34 J	5 J	6.5	5.7	5.9	1.23
PCB-114	0.25 U	0.16 U	0.38 U	0.76 U	0.97 U	0.77 U	1.03 U

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02						
	Sediment			Mussel			Lobster [1]
Parameters	199A	299A	399A	199A	299A	399A	199AM
PCB-118	1.9	0.54	8.5	9.4	9.1	10	4.3
PCB-126	1 U	0.43 U	0.012 J	0.041 J	0.079 J	0.21 J	0.3 J
PCB-128	0.94 J	0.5 J	3.6 J	3.7	3	4	1
PCB-138 /160	3.6	1.4	14	20 U	17 U	18 U	9.43
PCB-149/123	1.5	0.73	5.3	8.5 U	6.2 U	7.8 U	0.24 J
PCB-153/132	2.7	0.95	11	21 U	20 U	18 U	13.1
PCB-156	0.88	0.16	0.38 U	1.7	1.4	1.9	1.03 U
PCB-167	1.4	1.3	0.35 J	1.8	1.5	1.8	0.54 J
PCB-169	1 U	0.43 U	1.5 U	0.016 J	0.032 J	0.063 J	4.11 U
PCB-170/190	8.1 J	6.4 J	11 J	0.76 U	0.98 U	1.3 U	4.68
PCB-18/17	0.13 U	0.52 J	0.7 J	4.4 U	5.1	5	5.92
PCB-180	2.2 J	0.59 J	5.3 J	8 U	7.2 U	8.2 U	9.14
PCB-187	1.5	0.31	3.3	8.7 U	7.3 U	8.5 U	5.1
PCB-189	0.16 J	0.32	0.47	0.76 U	0.97 U	0.77 U	0.11 J
PCB-195/208	4.2	0.16	1.3	0.63 U	0.8 U	0.64 U	0.78 J
PCB-201/157/173	0.55	0.29	0.31	1.74 U	1.54 U	1.26 U	0.89 U
PCB-206	10	0.6	2.6	0.66 U	0.83 U	0.66 U	0.16 J
PCB-209	4.3 J	0.25 J	1.9 J	0.86 U	1.1 U	0.86 U	0.49 J
PCB-28	0.29 U	0.18 U	0.43 U	2.2	3.2	2.8	0.21 J
PCB-44	0.11 J	0.12 J	1	0.79 U	1.1 U	1.1 U	0.60 U
PCB-52	0.85	0.41	2.7	4.7	5.4	4.2	0.91
PCB-66	0.74	0.32	1.4	1.1	1.5	1.3	0.31 J
PCB-77	0.038 J	0.069 J	0.1 J	0.22 J	0.12 J	0.13 J	4.11 U
PCB-8/5	1	0.26 J	1.2 J	0.95 J	1.2 J	0.93 J	1.66 U
PCB-81	0.027 J	0.43 U	0.19 J	0.016 J	0.032 J	0.08 J	4.11 U
PENTACHLOROANISOLE	0.14 J	0.049 J	0.18 J	0.7	1.2	0.64	0.32
PENTACHLOROBENZENE	0.13	0.068	0.14 J	3	2.7	5	0.15 J
TRANS-NONACHLOR	0.26	0.2	1.6	1.3	1.3	1.9	0.92
Metals (mg/kg)							
ALUMINUM	60784	52422	55922	252 J	164 J	213 J	11.9 J
ARSENIC	10.9	8.5	18	6.8	6.9	7.5	10.7
CADMIUM	0.33	0.16	0.91	2	2	1.7	0.0416 J
CHROMIUM	92.8	68.9	192	2.1	1.7	2	0.198 U
COPPER	31.5 J	30.7 J	43 J	7.1	6.2	7.5	46.6
IRON	25518	24287	27426	516	406	620	17
LEAD	68.7 J	128 J	142 J	6.3	5.1	4.3	0.228 J
MANGANESE	426	424	360	8	7	8.8	4.24
MERCURY	0.26 J	0.61 J	0.49 J	0.3	0.31	0.26	0.563
NICKEL	27.6	30.9	32.6	1.4	1.3	1.3	0.523
SILVER	0.48	0.15	1.3	0.06 J	0.05 J	0.06 J	1.18 J
ZINC	109	91.9	176	109	92.7	87.8	106
Miscellaneous Parameters (%)							
LIPID				5.9	5.9	6.4	3.4
TOTAL ORGANIC CARBON	1.63	2.89	7.25				

Notes:

MS-2 includes the following samples:
OU4-SD-M02-199A
OU4-SD-M02-299A
OU4-SD-M02-399A
OU4-MU-M02-199A
OU4-MU-M02-299A
OU4-MU-M02-399A
OU4-LJ-M02-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03							
	Sediment				Mussel			Lobster [1]
Parameters	199A	199A-DUP	299A	399A	199A	199A-DUP[2]	299A	199AM
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	16.6	13.2	20	11.3	2.22 J	2.26 J	4.74 J	3.9 J
1-METHYLNAPHTHALENE	30.6 U	26.3 U	30.8 U	17.1 U	6.03 U	6.01 U	9.13 U	11
1-METHYLPHENANTHRENE	93.8	56.4	108	38.6	4.2	5.01	7.5 J	6.9
2,6-DIMETHYLNAPHTHALENE	21.6	17.6	28.1	16.8	3.69	3.73	6.88 J	3.6 J
2-METHYLNAPHTHALENE	50.7 U	43.1 U	52.8 U	29.4 U	7.69 U	8.21 U	13.9 U	14.8
ACENAPHTHENE	32.8	41.5	85.3	18.8	17.7	14.4	41.1	0.7 J
ACENAPHTHYLENE	107 J	116 J	77.3 J	62.1 J	10.7 J	9.68	20.1 J	0.8 J
ANTHRACENE	248	314	353	150	27	27.4	59.6	5.5
BENZO(A)ANTHRACENE	514	571	619	313	10.8 J	11	25.5 J	10.1 J
BENZO(A)PYRENE	587	691	626	409	3.99 J	4.42 J	11.8 J	11.6
BENZO(B)FLUORANTHENE	765	809	769	489	15.2 J	15.7	35.4 J	11.2
BENZO(E)PYRENE	396	414	385	262	16	16.5	33.3	11.6
BENZO(G,H,I)PERYLENE	378	394	402	277	5.56 J	6.28 J	12.2 J	6.7 J
BENZO(K)FLUORANTHENE	241	281	230	165	2.95 J	2.89 J	7.68 J	6.8 J
BIPHENYL	12.9 U	10.7 U	12.5 U	6.8 U	1.18 U	1.88 U	5.41 U	1.8 J
CHRYSENE	668	671	661	408	23	23.5	51.3	24.1
DIBENZO(A,H)ANTHRACENE	102	115	115	75.6	1.04 J	1.08 J	1.93 J	0.3 J
DIBENZOTHIOPHENE	39.6	37.8	59.7	19.3	1.12 U	1.18 U	2.98 U	1.3 J
FLUORANTHENE	1010	927	1280	621	57.3	59.1	123	46.5 J
FLUORENE	50.7	60.3	126	33.2	2.49 J	2.81 J	4.99 J	2.8 J
INDENO(1,2,3-CD)PYRENE	408	430	437	292	3.64 J	4.47 J	7.29 J	2.8 J
NAPHTHALENE	68.3 U	62.2 U	61.8 U	40 U	12.3 U	12.8 U	24.7 U	18.2
PERYLENE	111	111	123	73.8	4.53 J	3.7 J	11.3 J	4.7 J
PHENANTHRENE	502	487	902	273	10.2 U	11.3 U	22.4 U	13.1
PYRENE	986	916	1141	580	44.9	46.5	92	37.6
Pesticides /PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.72	0.64	0.17 J	0.2 J	2.1	2.4	1.1 U	9.15
1,2,4,5-TETRACHLOROBENZENE	1.8	1.5	0.81	1.1	1.7 U	1.4 U	6.4 U	0.34 J
2,4'-DDD	10	9.7	3.9	3.6	3.9	5	4.8	0.20 U
2,4'-DDE	0.45	0.48	0.34	0.23	0.74 J	1	1.1	0.28 U
2,4'-DDT	1.6	2.3	0.64	0.15	5.7	6.1	7.1	0.26 U
4,4'-DDD	27	25	5.6	5.6	13	13	14	0.24 U
4,4'-DDE	6.9	5.7	2.8	2.5	10	9.4	18	1.16
4,4'-DDT	4.9	3.8	6.7	2.1	3.6 U	4.2 U	5 U	0.37 UJ
ALDRIN	0.094 U	0.098 U	0.074 U	0.073 U	0.25 U	0.25 U	0.64 U	0.32 U
ALPHA-BHC	0.083 U	0.1 U	0.081 U	0.046 U	0.36	0.38	0.79	0.33
ALPHA-CHLORDANE	1.6	1.3	1.1	0.7	4.2	3.8	9.5	0.24 U
BETA-BHC	0.32 U	0.33 U	0.25 U	0.25 U	0.16 U	0.16 U	0.41 U	0.21 U
CHLORPYRIFOS	0.017 J	0.47 U	0.35 U	0.017 J	1.6 U	1.6 U	4.1 U	2.10 U
CIS-NONACHLOR	1	0.81	0.89	0.27	2.1	2.4	5.4	0.22 U
DELTA-BHC	0.07 U	0.048 J	0.004 J	0.25	1.2 J	0.82	3.7	0.13 UJ
DIELDRIN	0.11 U	0.03 J	0.083 U	0.16	1 U	0.83 U	2.1	1.25
ENDOSULFAN II	1.8	1.9	1.9	1.7	1.9 J	1.9	2.8	0.24 UJ
ENDRIN	0.041 J	0.22 U	0.16 J	0.077 J	2	0.54 U	1.3 U	0.66 U
GAMMA-BHC (LINDANE)	0.37 U	1.1 U	0.58 U	0.73 U	1.4 U	1.6 U	2.2 U	0.21 U
GAMMA-CHLORDANE	0.42	0.42	0.13	0.083 U	1.1	1.2	0.77	0.25 U
HEPTACHLOR	2.2	3	0.37	0.25	0.81	0.99	4.9	0.37 U
HEPTACHLOR EPOXIDE	0.047 U	0.049 U	0.037 U	0.037 U	0.25	0.17 J	0.78	0.42 U
HEXACHLOROBENZENE	0.095 U	0.16 U	0.31 U	0.044 U	0.54	0.68	1.1	0.51
MIREX	0.41	0.049 U	0.24	0.037 U	0.45 U	0.4 J	1.2 U	0.58 U
OXYCHLORDANE	0.094	0.25	0.17	0.068	0.21 U	0.21 U	0.54 U	0.27 U
PCB-101/90	29	17	4.5	4.2	19	21	32	3.1
PCB-105	5.5 J	8.4 J	1.8 J	2 J	11	13	17	0.44 J
PCB-114	0.28 U	0.29 U	0.22 U	0.22 U	0.68 U	0.68 U	1.8 U	0.89 U
PCB-118	3.9	4.9	1.9	2.6	9.4	12	26	0.93 J

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03							
	Sediment				Mussel			Lobster [1]
Parameters	199A	199A-DUP	299A	399A	199A	199A-DUP[2]	299A	199AM
PCB-126	1.1 U	1.2 U	0.89 U	0.88 U	0.14 J	0.065 J	0.093 J	0.15 J
PCB-128	5.6 J	4.5 J	1.4 J	1.5 J	5.1	5.4	8.7	0.68 U
PCB-138 /160	73	38	12	10	44	45	62	1.61
PCB-149/123	41	30	6.5	5.2	30	27	36	0.89 U
PCB-153/132	65	40	11	9.7	54	54	75	1.88
PCB-156	0.28 U	5.8	2.02	1.91	4.2	3.9	6.7	0.89 U
PCB-167	17	5	4.3	2.2	3	3.4	6.5	0.89 U
PCB-169	1.1 U	1.2 U	0.039 J	0.88 U	0.051 J	0.022 J	0.13 J	3.56 U
PCB-170/190	37 J	34 J	20 J	15 J	2.1 U	2.7 U	3.5	0.89 U
PCB-18/17	0.14 U	0.15 U	0.2 J	0.11 U	8.1	0.15 U	8.5	2.33 U
PCB-180	53 J	44 J	12 J	7.9 J	19	19	32	0.74 J
PCB-187	39	31	11	5.7	28	29	54	0.53 J
PCB-189	1.1	1.2	0.31	0.4	0.53 J	0.66 J	0.76 J	0.89 U
PCB-195/208	7	11	3	1.3	0.57 U	0.12 J	0.22 J	0.74 U
PCB-201/157/173	2.6	3.47	1.3	0.54	2.97 U	0.24 J	5.65	0.77 U
PCB-206	7.1	21	6.6	1.9	0.59 U	0.24 J	0.19 J	0.68 UJ
PCB-209	3.6 J	3.4 J	2.6 J	0.8 J	0.77 U	0.77 U	2 U	0.91 J
PCB-28	0.32 U	1	0.25 U	1	2.6	2.5	8.3	0.71 U
PCB-44	0.48	0.48	2.1	0.31	0.9 U	1.3 U	4.3	0.52 U
PCB-52	5.3	2.4	2.6	1.1	4.3	5.1	9.7	0.61 U
PCB-66	0.68	0.94	0.43	0.63	1	1.3	2.6	0.86 U
PCB-77	0.032 J	0.03 J	0.057 J	0.075 J	0.15 J	0.19 J	0.13 J	3.56 U
PCB-8/5	1 J	0.23 J	0.44 J	0.33 J	0.92 J	1.1 J	2.7 J	1.44 U
PCB-81	4.8	1.1 J	1.2	0.12 J	0.18 J	0.043 J	0.83 J	0.8 J
PENTACHLOROANISOLE	0.15 J	0.12 J	0.15 J	0.11 J	0.27	0.36	1.7	0.32
PENTACHLOROBENZENE	0.15	0.21	0.13	0.11	1.8 J	1.8	5.1	0.42
TRANS-NONACHLOR	0.23	0.6	0.12	0.22	1.8	2	3.3	0.28
Metals (mg/kg)								
ALUMINUM	64051	67179	56680	58174	137 J		145 J	8.95 J
ARSENIC	11.7	17.3	17.9	18	6		6.3	9.59
CADMIUM	0.6	0.54	0.65	0.38	1.8		2.6	0.0377 J
CHROMIUM	124	125	108 J	91.6 J	1.8		3	0.199 U
COPPER	173 J	236 J	3720	125	11.2		23.9	48.4
IRON	31809	32598	44051	22327	340		393	9.15
LEAD	128 J	126 J	206 J	79.2 J	7.5		11	0.149 J
MANGANESE	439	446	524	414	7		7.1	2.13
MERCURY	0.63 J	1.2 J	0.45 J	0.35 J	0.32		0.35	0.413
NICKEL	43.2	47.9	85.8 J	29.5 J	2.3		2.5	0.199 U
SILVER	1.1	1.1	2.4	0.97	0.07 J		0.34 J	1.03 J
ZINC	225	249	2324	154	121		192	102
Miscellaneous Parameters (%)								
LIPID					7.1		19.3	3.2
TOTAL ORGANIC CARBON	2.38	2.88	1.7	1.36				

Notes:

MS-3 includes the following samples:
OU4-SD-M03-199A
OU4-FD-003-099A (duplicate of OU4-SD-M03-199A)
OU4-SD-M03-299A
OU4-SD-M03-399A
OU4-MU-M03-199A
OU4-MU-M03-199A-FD
OU4-MU-M03-299A
OU4-LJ-M03-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04				
	Sediment			Mussel	Lobster [1]
Parameters	199A	299A	399A	199A	199AM
Polyaromatic Hydrocarbons (ug/kg)					
1,6,7-TRIMETHYLNAPHTHALENE	16.3	7.31	2.43	3.65 J	3.4 J
1-METHYLNAPHTHALENE	31.1 U	10.5 U	3 U	11 U	8.2
1-METHYLPHENANTHRENE	60.7	21.2	18.4	5.01	5.6
2,6-DIMETHYLNAPHTHALENE	28.8	7.77	1.89	5.84	7.5
2-METHYLNAPHTHALENE	54.4 U	16.6 U	4.45 U	13.8 U	10.6
ACENAPHTHENE	27.8	6.98	7.97	22.5	1.7 J
ACENAPHTHYLENE	79.9 J	53 J	25.5 J	9.22	0.8 J
ANTHRACENE	197	120	61.1	20.1	3.7 J
BENZO(A)ANTHRACENE	414	164	291	10.6	11.1 J
BENZO(A)PYRENE	495	265	399	8.91	13.1
BENZO(B)FLUORANTHENE	609	242	420	15.5	7.6 J
BENZO(E)PYRENE	308	129	233	13.9	7.0
BENZO(G,H,I)PERYLENE	313	151 J	267	6.15 J	3.4 J
BENZO(K)FLUORANTHENE	170	82.8	154	4.14 J	12.2 J
BIPHENYL	13.2 U	4.36 U	1.26 U	5.39 U	2.0 J
CHRYSENE	466	170	294	19.6	17.6
DIBENZO(A,H)ANTHRACENE	88.9	39.7 J	69.8	1.63 J	0.2 J
DIBENZOTHIOPHENE	28.3	9.41 J	6.8	2.29 U	1.4 J
FLUORANTHENE	767	308	459	31.7	23.7 J
FLUORENE	41.2	17	9.45	4.3 J	3.7 J
INDENO(1,2,3-CD)PYRENE	367	162 J	297	4.29 J	3.3 J
NAPHTHALENE	60.7 U	29.6 U	5.92 U	21.4 U	15
PERYLENE	93.8	45	76	5.11 J	2.8 J
PHENANTHRENE	359	112	133	10.5 U	13.7
PYRENE	708	290 J	390	29.8	18.6
Pesticides /PCBs (ug/kg)					
1,2,3,4-TETRACHLOROBENZENE	0.25 J	0.37	0.11 J	1.3	13.12
1,2,4,5-TETRACHLOROBENZENE	1.5	0.66	0.69	1.9 U	0.36 J
2,4'-DDD	6.4	0.87	8.2	3.3	0.20 U
2,4'-DDE	0.34	0.86	3.3	0.29 U	0.28 U
2,4'-DDT	0.56	0.11	22	6.8	0.26 U
4,4'-DDD	14	0.75	15	8.4	0.24 U
4,4'-DDE	4.3	0.77	38	9.3	1.49
4,4'-DDT	4.9	0.68 J	89	3.5 U	0.37 UJ
ALDRIN	0.08 U	2.1	0.049 U	0.34 U	0.33 U
ALPHA-BHC	0.059 U	0.058 U	0.033 U	0.44	0.21 J
ALPHA-CHLORDANE	0.95	0.17	0.27	4.8	2
BETA-BHC	0.27 U	0.069 J	0.028 J	0.22 U	0.21 U
CHLORPYRIFOS	0.006 J	0.22 J	0.079 J	2.2 U	2.11 U
CIS-NONACHLOR	0.57	0.16	0.36	3.3	0.22 U
DELTA-BHC	0.035 J	0.043 J	0.037 U	2.9	0.13 UJ
DIELDRIN	0.09 U	0.11	0.055 U	1.2	1.11
ENDOSULFAN II	1.3	0.12 U	0.4	1.1	0.24 UJ
ENDRIN	0.18 U	0.18 U	0.057 J	0.7 U	0.67 U
GAMMA-BHC (LINDANE)	0.32 U	0.3 U	0.2 U	0.99 U	0.51
GAMMA-CHLORDANE	0.15	0.18	0.089	0.81	0.25 U
HEPTACHLOR	1	0.18 J	0.031 J	1.8	0.37 U
HEPTACHLOR EPOXIDE	0.04 U	0.24	0.024 U	0.27 U	0.26 U
HEXACHLOROBENZENE	0.041 U	0.17 U	0.079 U	0.34	0.3 J
MIREX	0.088	0.031 J	0.024 U	0.57 J	0.59 U
OXYCHLORDANE	0.02 U	0.02 U	0.17	0.83	0.58
PCB-101/90	7.3	1	1.1	16	1.12
PCB-105	3 J	0.53 J	1.9 J	9.6	0.57 J

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04				
	Sediment			Mussel	Lobster [1]
Parameters	199A	299A	399A	199A	199AM
PCB-114	0.24 U	0.24 U	0.15 U	0.93 U	0.90 U
PCB-118	4	0.68	0.69	12	1.09 J
PCB-126	0.96 U	0.13 J	0.59 U	0.1 J	0.04 J
PCB-128	1.8 J	0.44	1.2 J	3.9	0.19 J
PCB-138 /160	17	1.9	11	34	1.86
PCB-149/123	9.3	1	6.4	18	0.90 U
PCB-153/132	18	1.7	11	44	2.51
PCB-156	1.31	0.55	0.78	4	0.90 U
PCB-167	3.4	0.074 J	1.2	2.8	0.90 U
PCB-169	0.96 U	0.24 U	0.59 U	0.93 U	3.59 U
PCB-170/190	17 J	0.31 J	12 J	2.3 U	0.90 U
PCB-18/17	0.44 J	0.12 U	0.19 J	3.9 U	0.27 J
PCB-180	17 J	1.4 J	14 J	15 U	0.67 J
PCB-187	12	1	7.2	25	0.7
PCB-189	0.32	0.24 U	0.53	0.93 U	0.90 U
PCB-195/208	3.9	0.59	2.7	0.78 U	0.75 U
PCB-201/157/173	1.37	0.21	0.73	2.5 U	0.78 U
PCB-206	5.7	1.2	3	0.81 U	0.69 UJ
PCB-209	7 J	0.7 J	1.4 J	1.1 U	0.44 J
PCB-28	0.27 U	0.4	0.097 J	3.1	0.72 U
PCB-44	0.61	0.13 J	0.086 J	1.1 U	0.52 U
PCB-52	5.2	0.73	0.22	5.3	0.29 J
PCB-66	1.1	0.43	0.13	1.2	0.86 U
PCB-77	0.043 J	0.083 J	0.009 J	0.72 J	3.59 U
PCB-8/5	0.6 J	0.22 J	0.14 J	0.83 J	1.45 U
PCB-81	0.94 J	0.007 J	0.054 J	0.045 J	3.59 U
PENTACHLOROANISOLE	0.093 J	0.13 J	0.033 J	0.68	0.29
PENTACHLOROBENZENE	0.22	0.18	0.12	2	1.41
TRANS-NONACHLOR	0.1	0.025 J	0.091	1.4	0.16 U
Metals (mg/kg)					
ALUMINUM	51890	58081	48353	195 J	5.11 J
ARSENIC	16.8	8.7	9.8	7.5	10.4
CADMIUM	0.38	0.35	0.05	2.4	0.314 J
CHROMIUM	101 J	69.7 J	68.5 J	2.2	0.203 U
COPPER	565	22.4	140	19.8	49.9
IRON	29057	19262	23498	465	8.21
LEAD	110 J	47.4 J	67.4 J	7.6	0.0911 U
MANGANESE	374	379	682	8.6	2.91
MERCURY	1.6 J	0.48 J	0.34 J	0.44	0.521
NICKEL	60.6 J	19.4 J	38.9 J	2.6	0.203 U
SILVER	3.1	0.3	0.05	0.15 J	1.39 J
ZINC	427	80.6	84.6	154	91.3
Miscellaneous Parameters (%)					
LIPID				5.6	2.9
TOTAL ORGANIC CARBON	1.46	1.62	0.48		

Notes:

MS-4 includes the following samples:
OU4-SD-M04-199A
OU4-SD-M04-299A
OU4-SD-M04-399A
OU4-MU-M04-199A
OU4-LJ-M04-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	399A	199AM
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	16	9.45	7.14	1.77 J	2.01 J	4.4 J
1-METHYLNAPHTHALENE	21.2 U	13.8 U	7.95 U	4.66 U	4.15 U	7.4
1-METHYLPHENANTHRENE	67.2	28.4	27.4	2.55 J	3.62 J	6.2
2,6-DIMETHYLNAPHTHALENE	19	8.89	7.58	2.6 J	2.64 J	3.4 J
2-METHYLNAPHTHALENE	32.8 U	20.2 U	12.7 U	6.06 U	5.52 U	9.3
ACENAPHTHENE	50.2	11.7	13	4.07 J	17.5	0.4 J
ACENAPHTHYLENE	87.2 J	62.7 J	55.6 J	7.74	6.29	0.5 J
ANTHRACENE	295	123	118	20.8	15.6 U	1.9 J
BENZO(A)ANTHRACENE	727	259	231	7.08	4.76	2.5 J
BENZO(A)PYRENE	981 J	422 J	379	5.38 J	3.2 J	2.0 J
BENZO(B)FLUORANTHENE	1013	344	360	10.3	7.1 J	1.2 J
BENZO(E)PYRENE	456	196	172	11.2	7.2	1.8 J
BENZO(G,H,I)PERYLENE	566 J	221 J	193	4.64 J	3.59 J	0.6 J
BENZO(K)FLUORANTHENE	229	118	94.4	2.97 J	1.86 J	2.2 J
BIPHENYL	8.56 U	5.04 U	4.5 U	1.32 U	2.2 U	1.8 J
CHRYSENE	679	264	237	15.7	10.1	5.4
DIBENZO(A,H)ANTHRACENE	185 J	59.4 J	52.4	0.74 J	0.59 J	0.1 J
DIBENZOTHIOPHENE	36.2	12.7	12.3 J	0.91 U	1.14 U	0.5 J
FLUORANTHENE	1251	393	351	33.1	21.4	9.4 J
FLUORENE	63.3	22.4	23.1	2.24 J	2.11 J	2.5 J
INDENO(1,2,3-CD)PYRENE	661 J	230 J	208 J	2.96 J	2.37 J	0.1 J
NAPHTHALENE	58.4 U	43.8 U	21.3 U	9.64 U	8.87 U	14.2
PERYLENE	252	58.5	56.9	5.23 J	1.94 J	0.4 J
PHENANTHRENE	520	155	162	10.2 U	8.51 U	5.7
PYRENE	1105 J	365 J	333 J	26	17.1	7.2
Pesticides /PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.07 J	0.12 J	0.14 J	3.6	2.5	8.91
1,2,4,5-TETRACHLOROBENZENE	0.41 J	0.53 J	0.56	1.2 U	2.2 U	0.32 J
2,4'-DDD	2.7	1.1	1.7	2.5	1.9	0.26 U
2,4'-DDE	0.82	0.23	0.17	0.35	0.44	0.37 U
2,4'-DDT	1	0.04 U	0.55	3.5	2.1	0.34 U
4,4'-DDD	2.7	1	2.1	5.5	4.4	0.32 U
4,4'-DDE	4	0.87	1.6	8.3	6.6	1.97
4,4'-DDT	3.5 J	0.52 J	1.2 J	1.9 U	1.5 U	0.49 UJ
ALDRIN	6.9	2.7	2.6	0.24 U	0.29 U	0.43 U
ALPHA-BHC	0.17 U	0.067 U	0.063 U	0.49	0.28	0.43
ALPHA-CHLORDANE	0.69	0.27	0.13	2.9	4.1	0.8
BETA-BHC	0.14 J	0.056 J	0.038 J	0.15 U	0.19 U	0.27 U
CHLORPYRIFOS	1.1	0.18 J	0.06 J	1.6 U	1.9 U	2.79 U
CIS-NONACHLOR	0.32	0.16	0.14	2.2	1.7	0.29 U
DELTA-BHC	0.13	0.079 U	0.031 J	0.59	2.5	0.17 UJ
DIELDRIN	0.42	0.14	0.1	0.83 U	1.1 U	1.65
ENDOSULFAN II	0.13 U	0.63	0.092 U	0.18	0.7	0.32 UJ
ENDRIN	0.2 U	0.24 U	0.14 U	0.5 U	0.6 U	0.88 U
GAMMA-BHC (LINDANE)	1.1 U	0.5 U	0.51 U	2.4 U	0.87 U	0.26 U
GAMMA-CHLORDANE	0.23	0.073 J	0.16	1.6	0.22 J	0.34 U
HEPTACHLOR	0.65	0.23 J	0.15 J	0.42	0.86	0.49 U
HEPTACHLOR EPOXIDE	0.15 U	0.14	0.12	0.23	0.23 U	1.24 U
HEXACHLOROBENZENE	0.15	2.9	0.72	0.78	0.27 J	1.05
MIREX	0.21	0.16	0.031 U	0.3 J	0.53 U	0.78 U
OXYCHLORDANE	0.022 U	0.026 U	0.015 U	0.2 U	0.78	0.31 J
PCB-101/90	1.8	0.87	1.1	8.1	7.6	2.09
PCB-105	0.14 J	0.52 J	0.36 J	4.5	4.3	0.98
PCB-114	0.27 U	0.32 U	0.27 U	0.67 U	0.81 U	1.19 U

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	399A	199AM
PCB-118	1.2	0.64	0.82	8.4	6.5	2.32
PCB-126	0.2 J	0.035 J	0.027 J	0.41 J	0.16 J	0.12 J
PCB-128	1.1	0.31	0.54	2.3	1.8	0.91 U
PCB-138 /160	2.7	1.3 U	2.2	13 U	12 U	2.89
PCB-149/123	1.6	0.92	1.5	4.5 U	5.3 U	1.19 U
PCB-153/132	2.2	1.4	2.4	15 U	13 U	4.03
PCB-156	1.91	0.74	0.93	1.5	1.3	0.06 J
PCB-167	1.3	1	0.85	1.2	1	1.19 U
PCB-169	0.27 U	0.32 U	0.19 U	0.28 J	0.057 J	0.02 J
PCB-170/190	0.32 J	0.36 J	0.34 J	0.48 U	0.66 U	1.19 U
PCB-18/17	0.13 U	0.16 U	0.43 J	7.3	3.1 U	3.10 U
PCB-180	2.5 J	1.5 J	1.3 J	5.6 U	5.9 U	1.25 J
PCB-187	4.1	1.2	1.3	6 U	5.7 U	0.99
PCB-189	0.27 U	0.32 U	0.18 U	0.67 U	0.81 U	1.19 U
PCB-195/208	0.77	0.42	1.1	0.55 U	0.67 U	0.99 U
PCB-201/157/173	0.4	0.09	0.15	1.06 U	1.13 U	1.02 U
PCB-206	1	0.66	2.8	0.57 U	0.7 U	0.91 UJ
PCB-209	0.78 J	0.47 J	3 J	0.75 U	0.91 U	0.08 J
PCB-28	1.4	0.46	0.3	3.1	2.7	0.94 U
PCB-44	0.074 J	0.16 J	0.13 J	2.2	2	0.69 U
PCB-52	0.72	0.21 J	0.66	8.8	4.6	0.81 U
PCB-66	0.95	0.54	0.27	1.2	1.5	1.14 U
PCB-77	0.14 J	0.054 J	0.12 J	2 J	1.2 J	4.74 U
PCB-8/5	0.44 J	0.38 J	0.23 J	1.5	0.74 J	1.91 U
PCB-81	0.026 J	0.014 J	0.086 J	0.83 J	0.065 J	4.74 U
PENTACHLOROANISOLE	0.22 J	0.18 J	0.047 J	1.2	0.51	0.36
PENTACHLOROBENZENE	0.12	0.11 J	0.19	4.4	4.7	0.39 U
TRANS-NONACHLOR	0.29	0.23	0.044	1.3	1.7	0.20 U
Metals (mg/kg)						
ALUMINUM	62489	64319	54211	199 J	209 J	13.2 J
ARSENIC	11.7	12.6	5.3	7.8	6.7	16.7
CADMIUM	0.59	0.54	0.99	2.2	2.1	0.0437 J
CHROMIUM	94.9 J	102 J	66.4 J	2.1	2	0.194 U
COPPER	105	32.2	24.4	11.9	6.1	34.4
IRON	26883	27779	17877	593	490	18.6
LEAD	187 J	59.8 J	46.9 J	53.8	3.6	0.126 J
MANGANESE	428	416	495	10.7	7.6	1.94
MERCURY	1.1 J	0.26 J	0.21 J	0.55	0.29	0.415
NICKEL	32.2 J	28.9 J	30.1 J	1.8	1.1	0.194 U
SILVER	0.6	0.38	0.41	0.03 J	0.06 J	0.76 J
ZINC	208	115	84.1	145	81.1	102
Miscellaneous Parameters (%)						
LIPID				7.8	4.8	2.6
TOTAL ORGANIC CARBON	2.34	2.51	0.96			

Notes:
MS-5 includes the following samples:
OU4-SD-M05-199A
OU4-SD-M05-299A
OU4-SD-M05-399A
OU4-MU-M05-199A
OU4-MU-M05-399A
OU4-LJ-M05-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06								
	Sediment				Mussel				Lobster [1]
Parameters	199A	299A	299A-DUP	399A	199A	299A	299A-DUP[4]	399A	199AM
Polyaromatic Hydrocarbons (ug/kg)									
1,6,7-TRIMETHYLNAPHTHALENE	7.16	12	16.5	1.83	2.18 J	2.33 J		1.33 J	4.3 J
1-METHYLNAPHTHALENE	16.3 U	15.3 U	29.1 U	2.63 U	4.16 U	4.56 U		4.41 U	9.6
1-METHYLPHENANTHRENE	22.7	47.5	66.3	6.63	4.67	3.62		1.7 J	8.1
2,6-DIMETHYLNAPHTHALENE	10.7	12.4	17.9 J	1.7	2.96 J	3.31		2.57 J	3.4 J
2-METHYLNAPHTHALENE	27.9 U	24.4 U	43.3 U	4.05 U	5.81 U	5.61 U		7.69 U	13.8
ACENAPHTHENE	8.84	18.6	32.8 J	3	5.25	12.9		0.94 J	1.0 J
ACENAPHTHYLENE	70.6 J	72.8 J	107 J	9.81 J	7.23	8.94		5.93	0.6 J
ANTHRACENE	120	260	252 J	23.5	19.7	21.3		11.1 U	4.7
BENZO(A)ANTHRACENE	200	437	440 J	57.8	9.87	10.7		5.4	10.4 J
BENZO(A)PYRENE	360 J	622	722 J	83.2 J	6.48 J	6.84 J		6.57	11
BENZO(B)FLUORANTHENE	358	588	680 J	81.9	18.7	14.8		8.3	7.3 J
BENZO(E)PYRENE	190	264	308 J	39.4	15.9	13.1		7.09	8.2
BENZO(G,H,I)PERYLENE	222 J	292	358 J	38.9 J	6.57 J	6.69		3.23 J	5.1 J
BENZO(K)FLUORANTHENE	119	216	254 J	15.4	5.45	4.67		2.15 J	7.6 J
BIPHENYL	6.11 U	7.25 U	10.4 U	1.23 U	2.02 U	1.86 U		6.65 U	1.2 J
CHRYSENE	226	416	472 J	57	26.9	18.4		10.4 J	17.5
DIBENZO(A,H)ANTHRACENE	60.8 J	81.3	101 J	10.7 J	1.3 J	1.55 J		0.49 J	0.3 J
DIBENZOTHIOPHENE	13.3	21.7 J	32.8 J	3.16	1.66 U	1.15 U		0.77 U	1.3 J
FLUORANTHENE	318	603	776 J	119	57.7	31.7		18	33.7 J
FLUORENE	25	49.5	66.5 J	5.56	2.19 J	2.36 J		2.31 J	2.8 J
INDENO(1,2,3-CD)PYRENE	248 J	332 J	407 J	45 J	4.96 J	5.08 J		1.64 J	3.6 J
NAPHTHALENE	43.1 U	56.7 U	83.8 U	6.77 U	8.96 U	10.2 U		13.6 U	19.4
PERYLENE	56.5	90.6	127 J	17.2 J	4.19 J	6.31 J		3.53 J	3.6 J
PHENANTHRENE	146	304	427 J	45.6	13.8 U	11 U		9 U	13.4
PYRENE	346 J	562 J	772 J	100 J	46.2	27.1		14.8	26.8
Pesticides /PCBs (ug/kg)									
1,2,3,4-TETRACHLOROBENZENE	0.035 J	0.068 J	0.034 J	0.084 J	0.51 U	2.3		0.35 U	10.11
1,2,4,5-TETRACHLOROBENZENE	0.5	0.53 J	0.69	0.088 J	1.1 U	3.1 U		2.4 U	1.03
2,4'-DDD	1.1	1.8	2.5	0.35	2	2		0.65	0.21 U
2,4'-DDE	0.16	0.13	0.14	0.079 J	0.35	0.38		0.3	0.29 U
2,4'-DDT	0.021 U	0.16	0.21	0.023 U	2.5	1.6		2.1	0.27 U
4,4'-DDD	1.7	1.1	1.5	0.45	4.5	3.7		2.8	0.26 U
4,4'-DDE	1.9	0.62	0.92	1.7	6.8	6.6		4.6	1.69
4,4'-DDT	0.34 J	1.6 J	0.57 J	0.25 J	1.4 U	1.3 U		3 U	0.39 UJ
ALDRIN	3.3	4.2	5.7 J	0.69	0.26 U	0.22 U		0.039 J	0.34 U
ALPHA-BHC	0.029 U	0.056 U	0.042 U	0.042 U	0.39	0.41		0.58	0.34
ALPHA-CHLORDANE	0.056 J	0.14	0.21	0.17	4	3.9		1.4	3.13
BETA-BHC	0.02 J	0.072 J	0.098 J	0.012 J	0.17 U	0.14 U		1.1	0.22 U
CHLORPYRIFOS	0.27 U	0.092 J	0.078 J	0.051 J	1.7 U	1.4 U		1.5 U	2.22 U
CIS-NONACHLOR	0.13	0.13	0.18	0.11	1.8	1.5		0.8	0.23 U
DELTA-BHC	0.018 J	0.049 J	0.13	0.031 J	0.82	1.1		0.09 U	0.13 UJ
DIELDRIN	0.19	0.054 J	0.13	0.069	0.99 U	1.1 U		2.3	1.36
ENDOSULFAN II	0.085 U	0.11 J	0.13 U	0.092 U	0.15 J	0.72		0.17 U	0.26 UJ
ENDRIN	0.13 U	0.2 U	0.2 U	0.14 U	0.54 U	0.45 U		0.66	0.70 U
GAMMA-BHC (LINDANE)	0.28 U	0.53 U	0.52 U	0.38 U	1.5 U	0.51 U		0.054 U	0.42
GAMMA-CHLORDANE	0.026 J	0.029 J	0.38	0.071	0.45	0.4		0.68	0.27 U
HEPTACHLOR	0.13 J	0.16 J	0.13 J	0.12 J	1	0.62		0.26 U	0.39 U
HEPTACHLOR EPOXIDE	0.028 U	0.11	0.044 U	0.42	0.61	0.17 U		0.074 J	0.27 U
HEXACHLOROBENZENE	0.1 U	0.15 U	0.3 U	0.17 U	0.68	0.37		0.47	0.44
MIREX	0.005 J	0.045 U	0.073	0.031 U	0.47 U	0.23 J		1.4	0.62 U
OXYCHLORDANE	0.014 U	0.022 U	0.12	0.015 U	0.22 U	0.83		0.19 U	0.49
PCB-101/90	2	0.93	1.6	0.6	8	8.2		5 U	1.61
PCB-105	0.28 J	0.26 J	0.61 J	0.19 J	4.6	3.9		2.3	0.78
PCB-114	0.17 U	0.27 U	0.26 U	0.18 U	0.72 U	0.61 U		0.63 U	0.94 U
PCB-118	1.2	0.63	1.2	0.22	7.3	7.7		2.6 U	1.03 J
PCB-126	0.12 J	0.026 J	0.032 J	0.022 J	0.61 J	0.031 J		0.27 J	0.12 J
PCB-128	0.72	0.49	0.93	0.47	2	2.4		1.3	0.3 J
PCB-138 /160	3.4	1.4 U	2.2	0.96 U	13 U	14 U		8.2 U	1.7
PCB-149/123	2.6	0.7	1.3	0.4	5 U	6.4 U		4.4 U	0.94 U
PCB-153/132	4.9	1.3	2.7	0.65	15 U	15 U		11 U	2.71
PCB-156	0.87	0.93	1.44	0.06 J	1.4	0.61 U		0.31 J	0.21 J

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06								
	Sediment				Mussel				Lobster [1]
Parameters	199A	299A	299A-DUP	399A	199A	299A	299A-DUP[4]	399A	199AM
PCB-167	0.88	1.1	1.6	0.14 J	1.1	1.4		1	0.94 U
PCB-169	0.033 J	0.007 J	0.26 U	0.18 U	0.16 J	0.6 U		0.13 J	0.16 J
PCB-170/190	1.1	0.27 J	0.32 J	0.084 J	1 U	0.88 U		0.63 U	0.94 U
PCB-18/17	0.017 J	0.13 U	0.13 U	0.092 U	4.3 U	2.3 U		2.9 U	3.8
PCB-180	3.9 J	0.9 J	1.6 J	0.3 J	6.2 U	6.9 U		3.8 U	0.89 J
PCB-187	3	1.1	1.9	0.38	6 U	5.9 U		5 U	0.69
PCB-189	0.042 J	0.27 U	0.26 U	0.18 U	0.72 U	0.61 U		0.63 U	0.94 U
PCB-195/208	1.2	0.3	0.88	0.041 J	0.6 U	0.5 U		0.14 J	0.78 U
PCB-201/157/173	0.1	0.15	0.2	0.06	0.82 U	1.18 U		0.36 J	0.81 U
PCB-206	2.7	0.4	1.7 J	0.12	0.62 U	0.52 U		0.54 U	0.72 UJ
PCB-209	1.3 J	0.26 J	0.85 J	0.061 J	0.82 U	0.68 U		0.71 U	0.14 J
PCB-28	0.18 J	0.29 J	1.3	0.097 J	2.2	2.1		1.9	0.09 J
PCB-44	0.16	0.081 J	0.25	0.24	1 U	1.7 U		1.4 U	0.55 U
PCB-52	0.54	0.54	0.72	0.14 U	4.1	4.2		3.2	0.64 U
PCB-66	0.38	0.74	0.6	0.25	1.5	0.95		1.3	0.91 U
PCB-77	0.22 J	0.12 J	0.11 J	0.028 J	0.85 J	0.3 J		0.81 J	3.77 U
PCB-8/5	0.12 J	0.14 J	0.25 J	0.29 J	1.8	0.67 J		0.54 J	1.52 U
PCB-81	0.088 J	0.025 J	0.025 J	0.18 U	0.033 J	0.037 J		0.081 J	3.77 U
PENTACHLOROANISOLE	0.075 J	0.14 U	0.17 J	0.062 J	0.76	0.71		0.46	0.31
PENTACHLOROBENZENE	0.009 J	0.23	0.11	0.076 U	4.5	4		0.52	1.8
TRANS-NONACHLOR	0.048	0.1	0.11	0.062	1.2	1.8		0.66	0.36
Metals (mg/kg)									
ALUMINUM	49392	60402	58564	44689	153 J	130 J		94 J	3.72 J
ARSENIC	11.9	8.2	9.2	8.8	6.2	6.1		7.5	9.74
CADMIUM	0.26	0.42	0.44	0.11	1.8	2		2.2	0.0373 J
CHROMIUM	65.5 J	80.2 J	81.3	54 J	1.5	1.4		1.6	0.202 U
COPPER	25.1	26.6	25.5 J	9.8	6.7	7.3		6.2	41.2
IRON	18019	21302	22109	22148	349	327		411	5.99
LEAD	60.5 J	59.2 J	71 J	19.1 J	3	3.4		3.1	0.121 J
MANGANESE	475	431	405	1298	7	6.1		7.8	1.95
MERCURY	0.36 J	0.45 J	0.38 J	0.08 J	0.25	0.26	0.27	0.25	0.488
NICKEL	21.3 J	23.2 J	24.5	26.4 J	1.3	0.89		1.2	0.202 U
SILVER	0.23	0.3	0.34	0.05	0.04 J	0.1 J		0.06 J	1.16 J
ZINC	78.1	99	97.4	40.1	87.5	97.4		75.7	94.6
Miscellaneous Parameters (%)									
LIPID					5.5	6.2		6.8	2.4
TOTAL ORGANIC CARBON	0.78	1.76	1.82	0.9					

Notes:

MS-6 includes the following samples:
OU4-SD-M06-199A
OU4-SD-M06-299A
OU4-FD-001-099A (duplicate of OU4-SD-M06-299A)
OU4-SD-M06-399A
OU4-MU-M06-199A
OU4-MU-M06-299A
OU4-MU-M06-299A-FD
OU4-MU-M06-399A
OU4-LJ-M06-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	399A	199AM
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8-HPCDD	89.3	14.8	22	23.9 U	30.6 UR	44.6 U
1,2,3,4,6,7,8-HPCDF	22.5 U	4.87 U	7.02 U	23.9 U	30.6 UR	44.6 U
1,2,3,4,7,8,9-HPCDF	1.23 U	2.5 UR	2 U	23.9 U	30.6 UR	44.6 U
1,2,3,4,7,8-HXCDD	1.53 J	2.5 UR	0.33 J	23.9 U	30.6 UR	44.6 U
1,2,3,4,7,8-HXCDF	1.3 U	2.5 UR	2 U	23.9 U	2.04 J	44.6 U
1,2,3,6,7,8-HXCDD	4.84 J	2.5 UR	1.46 J	23.9 U	30.6 UR	44.6 U
1,2,3,6,7,8-HXCDF	1.17 U	2.5 UR	2 U	23.9 U	2.72 J	44.6 U
1,2,3,7,8,9-HXCDD	2.91 U	2.5 UR	2 U	23.9 U	30.6 UR	44.6 U
1,2,3,7,8,9-HXCDF	1.1 UJ	2.5 UR	2	23.9 U	2.61 J	44.6 U
1,2,3,7,8-PECDD	1.1 UJ	2.5 UJ	2 U	23.9 U	30.6 UJ	44.6 U
1,2,3,7,8-PECDF	1.1 U	2.5 U	2 U	23.9 U	30.6 U	44.6 U
2,3,4,6,7,8-HXCDF	1.48 U	2.5 UR	2 U	23.9 U	3.19 J	44.6 U
2,3,4,7,8-PECDF	1.1 UJ	2.5 UJ	2 U	23.9 U	30.6 U	44.6 U
2,3,7,8-TCDD	0.2 UJ	0.5 UJ	0.4 U	4.8 U	6.12 UJ	8.9 U
2,3,7,8-TCDF	1.61 U	1.16 U	1.32 U	6.79 U	9.04 U	8.9 U
OCDD	783 U	121 U	160 U	38 J	49.2 J	89.3 U
OCDF	43.8 U	8.32 U	11.6 U	9.86 J	61.2 UR	89.3 U
TOTAL HPCDD	206	36.5	54.4	23.9 U	30.6 UR	44.6 U
TOTAL HPCDF	54.7 U	4.87 U	17.9 U	23.9 U	30.6 UR	44.6 U
TOTAL HXCDD	39.2 U	3.94 U	16.9 U	23.9 U	30.6 UR	44.6 U
TOTAL HXCDF	3.95 U	2.5 UR	2.8 U	23.9 U	10.6 J	44.6 U
TOTAL PECDD	3.47 U	2.5 UR	2 U	23.9 U	30.6 UJ	44.6 U
TOTAL PECDF	1.1 U	2.5 U	2.74 U	23.9 U	30.6 U	11 J
TOTAL TCDD	0.2 UJ	0.5 UJ	0.46	20 U	6.12 UJ	8.9 U
TOTAL TCDF	4.45 U	2.03 U	4.24 U	19.7 U	22.3 U	8.9 U
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	3.89	7.46	16.9	1.81 J	0.85 J	5.2 J
1-METHYLNAPHTHALENE	6.84 U	9.43 U	28.1 U	4.46 U	7.67 U	9.0
1-METHYLPHENANTHRENE	12.8	29	70.8	2.87 J	2 J	7.3
2,6-DIMETHYLNAPHTHALENE	4.53	7.46	19.5	2.65 J	2.89 J	4.7 J
2-METHYLNAPHTHALENE	10.7 U	13.1 U	43.5 U	8.34 U	12.4 U	9.8
ACENAPHTHENE	6.81	13.2	53.2	1.41 J	0.49 J	0.4 J
ACENAPHTHYLENE	20.5 J	58.8 J	116 J	18.3	4.69	0.5 J
ANTHRACENE	37.2 J	121	280	22 J	15.3 U	0.9 J
BENZO(A)ANTHRACENE	93.6 J	219	580	11.1	15.5	1.2 J
BENZO(A)PYRENE	129 J	351	879	11.2	18.4	1.4 J
BENZO(B)FLUORANTHENE	137 J	295	740	16	24.1	1.7 J
BENZO(E)PYRENE	75.5 J	153	416	12.4	13.7	2.2 J
BENZO(G,H,I)PERYLENE	75.1 J	170	469	5.89	7.99	0.6 J
BENZO(K)FLUORANTHENE	40.3 J	93.7	296	3.32 J	7.54	1.6 J
BIPHENYL	2.45 U	4.7 U	11.2 U	3.97 U	2.19 U	2.1 J
CHRYSENE	108 J	239	619	19.5 J	23.8 J	6.8
DIBENZO(A,H)ANTHRACENE	18.4 J	44.2	132	0.81 J	1.55 J	0.3 J
DIBENZOTHIOPHENE	7.58	12.8 J	31.6 J	0.8 U	0.72 U	0.5 J
FLUORANTHENE	193	390	940	33.2	29.6	9.4 J
FLUORENE	9.97	25.7	73.3	2.43 J	2.24 J	3 J
INDENO(1,2,3-CD)PYRENE	82.3 J	188 J	495 J	3.17 J	6.4 J	0.1 J
NAPHTHALENE	13.9 U	28.6 U	74.1 U	11.3 U	15.6 U	15.1
PERYLENE	29.4 J	47.5	131	5.83 J	4.23 J	0.5 J
PHENANTHRENE	88	174	462	8.52 U	8.73 U	4.5 J
PYRENE	171	352 J	943 J	28.9	26.6	7.9
Pesticides /PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.16 J	0.069 J	0.077 J	0.75 U	0.8 U	26.38
1,2,4,5-TETRACHLOROBENZENE	1	0.51 J	0.78	2.8 U	2.9 U	0.52 J
2,4'-DDD	1.9	1.1	4	3	1.5	0.26 U
2,4'-DDE	0.14	0.26	0.32	0.15 J	0.25 U	0.36 U
2,4'-DDT	0.28	0.2	2.3	2	2.7	0.35
4,4'-DDD	3.4	1.1	6.5	7.2	5.1	0.32 U
4,4'-DDE	2.6	0.74	3.5	9	6.5	13.02
4,4'-DDT	1.5	0.8 J	5.9 J	9.9	8.4 J	0.49 UJ
ALDRIN	0.058 U	2.1	6.2	0.22 U	0.29 U	0.42 U
ALPHA-BHC	0.09 U	0.11 U	0.034 U	0.75	0.53	0.26 J
ALPHA-CHLORDANE	0.21	0.32	0.55	2	1.3	0.32 U
BETA-BHC	0.2 U	0.05 J	0.043 J	0.93	7.3	0.27 U
CHLORPYRIFOS	0.28 U	0.073 J	0.034 J	0.54 J	1.9 U	2.75 U
CIS-NONACHLOR	0.06	0.2	0.28	1.5	1.1	0.29 U
DELTA-BHC	0.032 J	0.097	0.098	0.088 U	0.12 U	0.17 UJ

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	399A	199AM
DIELDRIN	0.089	0.12 U	0.11	2.7	3.1	1.85
ENDOSULFAN II	0.45	0.13 J	0.13 U	0.49	0.22 U	0.32 UJ
ENDRIN	0.02 J	0.24 U	0.19 U	0.35 J	0.56 J	0.87 U
GAMMA-BHC (LINDANE)	0.2 U	1.3 U	0.61 U	0.32 U	1.4 U	0.72
GAMMA-CHLORDANE	0.1	0.23	0.45	0.96	1.1	0.33 U
HEPTACHLOR	0.045 J	0.28 J	0.072 J	0.25 U	0.33 U	0.48 U
HEPTACHLOR EPOXIDE	0.021 J	0.25	0.007 J	0.2	0.23 U	0.69 U
HEXACHLOROBENZENE	0.044 U	0.22 U	0.2 U	0.25	0.75	0.48
MIREX	0.14	0.053 U	0.054	2.2	2.9	0.77 U
OXYCHLORDANE	0.06	0.027 U	0.055	0.19 U	0.25 U	3.83
PCB-101/90	1	1.4	2.3	9.2	5.3 U	0.45 J
PCB-105	0.41 J	0.34 J	1.3	5.4	4.6	0.45
PCB-114	0.17 U	0.32 U	0.25 U	0.62 U	0.81 U	1.17 U
PCB-118	0.9	0.46	1.9	6.3	5 U	9.18
PCB-126	0.7 U	0.1 J	0.076 J	0.16 J	0.097 J	0.31 J
PCB-128	0.37 J	0.31	1.4	3.1	2.9	0.91
PCB-138 /160	1.5	1.9	3.6	16 U	12 U	11.71
PCB-149/123	0.7	1.1	2.1	7.8 U	5.8 U	0.54 J
PCB-153/132	1.4	2	3.5	17 U	14 U	18.32
PCB-156	0.17 U	0.68	1.45	0.94	1.21	1.65
PCB-167	0.41	0.76	1.5	2.6	1.3	1.72
PCB-169	0.7 U	0.32 U	0.25 U	0.67 J	0.22 J	4.67 U
PCB-170/190	3.8 J	0.36 J	9.6	0.62 U	0.81 U	2.88
PCB-18/17	0.63 J	0.68 J	0.29 J	1.7 U	4.8	3.06 U
PCB-180	0.86 J	1.7 J	2.3 J	5.4 U	5.1 U	6.86
PCB-187	0.72	1.1	2.6	8 U	7.6 U	6.2
PCB-189	0.061 J	0.32 U	0.25 U	0.62 U	0.81 U	0.05 J
PCB-195/208	0.4	0.72	0.92	0.087 J	0.4 J	0.62 J
PCB-201/157/173	0.15	0.16	0.29	0.64	3.22	0.68 J
PCB-206	1.1	1.4	1.8	0.53 U	0.92	0.90 UJ
PCB-209	0.46 J	0.53 J	1 J	0.35 J	0.91 U	0.57 J
PCB-28	0.86	0.14 J	0.78	1.5	3.4	2.87
PCB-44	0.31	0.047 J	0.31	2.9	3.8	0.68 U
PCB-52	0.49	0.45	0.85	3.5	5.6	0.79 U
PCB-66	0.5	0.92	0.85	1.7	1.6	1.86
PCB-77	0.032 J	0.083 J	0.2 J	0.83 J	0.66 J	4.67 U
PCB-8/5	0.49 J	0.38 J	0.23 J	1.2	0.65 J	1.89 U
PCB-81	0.019 J	0.038 J	0.093 J	0.34 J	0.072 J	0.38 J
PENTACHLOROANISOLE	0.083 J	0.19 J	0.15 J	0.91	0.42	0.5
PENTACHLOROBENZENE	0.066 J	0.28	0.082 J	0.81	0.72	0.34 J
TRANS-NONACHLOR	0.13	0.2	0.29	1.2	0.94	0.20 U
Metals (mg/kg)						
ALUMINUM	49881	67478	61912	155 J	124 J	12.5 J
ARSENIC	6.7	11.6	10.1	7.3	6.7	10.5
CADMIUM	0.18	0.58	0.42	1.8	1.9	0.744 J
CHROMIUM	68.4 J	118 J	83.9 J	1.7	1.6	0.199 U
COPPER	20	31.7	43.1	7.6	6.4	34.8
IRON	18373	31003	23481	427	256	16.8
LEAD	38.8 J	60.4 J	67.8 J	2.9	2.9	0.289 J
MANGANESE	317	433	433	7.7	8.3	1.89
MERCURY	0.1 J	0.33 J	0.33 J	0.22	0.24	0.621
NICKEL	26 J	30.6 J	25.8 J	1.4	1.3	0.213 U
SILVER	0.15	0.41	0.32	0.06 J	0.03 J	0.940 J
ZINC	71.4	122	115	93.6	100	106
Miscellaneous Parameters (%)						
LIPID				4.2	1.1	1.8
TOTAL ORGANIC CARBON	0.95	2.3	2			

Notes:
MS-7 includes the following samples: OU4-SD-M07-199A
OU4-SD-M07-299A
OU4-SD-M07-399A
OU4-MU-M07-199A
OU4-MU-M07-399A
OU4-LJ-M07-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08								
	Sediment			Mussel					Lobster [1]
Parameters	199A	299A	399A	199A	199A-DUP[2]	299A	299A-DUP[3]	399A	199AM
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HPCDD	90.4	275	18.1	20.7 UJ	21.2 U	24.2 U		24.4 U	39.6 U
1,2,3,4,6,7,8-HPCDF	26.4 U	78.8 U	5.01 U	20.7 U	21.2 U	24.2 U		24.4 UJ	39.6 U
1,2,3,4,7,8,9-HPCDF	1.56 U	3.93 U	1.3 U	11.8 J	2.17 J	1.1 J		24.4 UJ	39.6 U
1,2,3,4,7,8-HXCDD	1.13	3.41	0.19 J	2.21 J	5.46 J	1.32 J		24.4 UJ	39.6 U
1,2,3,4,7,8-HXCDF	3.03 U	6.19 U	1.3 U	2.54 J	5.07 J	1.49 J		0.9 J	39.6 U
1,2,3,6,7,8-HXCDD	4.33	13.6	0.98 J	1.56 J	3.72 J	1.28 J		0.88 J	39.6 U
1,2,3,6,7,8-HXCDF	1.98 U	4.27 U	1.3 U	4.5 J	4.94 J	1.05 J		1.05 J	39.6 U
1,2,3,7,8,9-HXCDD	2.92 U	8.66 U	1.3 U	4.03 J	1.64 J	24.2 UJ		24.4 UJ	39.6 U
1,2,3,7,8,9-HXCDF	0.9	1.9	1.3	2.05 J	2.06 J	1.64 J		24.4 UJ	39.6 U
1,2,3,7,8-PECDD	0.95 U	1.9 U	0.2 U	20.7 U	3.46 UJ	24.2 U		24.4 UJ	39.6 U
1,2,3,7,8-PECDF	1.35 U	2.37 U	1.3 U	20.7 U	21.4 U	24.2 U		24.4 U	39.6 U
2,3,4,6,7,8-HXCDF	3.02 U	6.42 U	1.3 U	2.52 J	2.8 J	2.04 J		0.64 J	39.6 U
2,3,4,7,8-PECDF	2.34 U	3.93 U	1.3 U	20.7 U	21.2 U	24.2 U		24.4 U	39.6 U
2,3,7,8-TCDD	0.36 U	0.57 U	0.3 U	20.7 U	21.2 U	4.8 U		4.87 UJ	7.9 U
2,3,7,8-TCDF	2.57 U	4.93 U	1.13 U	9.16 U	8.09 U	8.81 U		7.2 U	7.9 U
OCDD	671 U	1946 U	133 U	115 J	101 J	86.2 UJ		55.8 J	26.3 J
OCDF	43.4 U	128 U	6.19 U	30.1 J	7.14 J	36.7 J		48.7 UJ	79.2 U
TOTAL HPCDD	252	662	54.3	20.7 UJ	39.6 J	24.2 U		21.7 J	39.6 U
TOTAL HPCDF	61.4 U	194 U	10.6 U	17.5 J	21.2 U	1.1 J		24.4 UJ	39.6 U
TOTAL HXCDD	53.2 U	85.4 U	12.4 U	7.8 J	10.8 J	2.6 J		0.9 J	39.6 U
TOTAL HXCDF	8.76 U	18.3 U	2.84 U	11.6 J	14.9 J	6.2 J		2.6 J	39.6 U
TOTAL PECDD	0.95 U	13.9 U	1.3 U	20.7 U	21.2 UJ	1.2 J		24.4 UJ	39.6 U
TOTAL PECDF	20.9 U	28 U	3.18 U	25.4 U	21.2 U	24.2 U		24.4 U	39.6 U
TOTAL TCDD	2.48	9.42	1.09 J	34.5 U	21.2 U	4.8 U		32.6 U	7.9 U
TOTAL TCDF	14 U	23.9 U	3.71 U	12.6 U	26.7 U	16.7 U		26.5 U	7.9 U
Polyaromatic Hydrocarbons (ug/kg)									
1,6,7-TRIMETHYLNAPHTHALENE	9.43	16.3	9.99	2.69 J	2.65 J	1.75 J		1.83 J	3.6 J
1-METHYLNAPHTHALENE	30.5 U	30.9 U	12.6 U	4.91 U	5.29	5.43 U		5.95 U	7.4
1-METHYLPHENANTHRENE	31.7	54.2	29	3.36	2.32 J	1.65 J		3.29	5.7
2,6-DIMETHYLNAPHTHALENE	14.8	22.9	11.1	3.35	3.58	3.11		3.28	3.0 J
2-METHYLNAPHTHALENE	47.7 U	49.8 U	17.5 U	8.15 U	8.8 U	9.66 U		9.68 U	8.8
ACENAPHTHENE	61.4	55.7	33.7	3.7	3.24 J	1.59 J		1.55 J	1.0 J
ACENAPHTHYLENE	53.9 J	108 J	80.4 J	11.1	10.6	10.7		8.57	0.5 J
ANTHRACENE	233	286	285	26.4 J	24.8	20.1 J		22.4 J	2.7 J
BENZO(A)ANTHRACENE	426	689	558	10.2	11.2	8.31		12.3	7.2 J
BENZO(A)PYRENE	552 J	937	630 J	9.83	8.71	8.24		10.4	8.1
BENZO(B)FLUORANTHENE	607	905	636	16.9	16.1	13.7		20.1	8.1 J
BENZO(E)PYRENE	302	476	323	13.1	13.4	11.5		15.4	3.9 J
BENZO(G,H,I)PERYLENE	339 J	529 J	357 J	4.99	4.95	4.35 J		6.8	3.0 J
BENZO(K)FLUORANTHENE	191	323	238	4.22	4.43	3.3 J		4.19	5.4 J
BIPHENYL	9.16 U	12.3 U	4.64 U	7.21 U	6.66 U	6.96 U		6.93 U	1.6 J
CHRYSENE	443	718	570	21.8 J	21.9	18.2 J		24.6 J	12.2
DIBENZO(A,H)ANTHRACENE	103 J	165 J	121 J	0.59 J	0.67 J	0.48 J		0.77 J	0.2 J
DIBENZOTHIOPHENE	29.7	33.5 J	33	1.97 U	1.88 U	0.95 U		1.21 U	1.1 J
FLUORANTHENE	878	1063	1052	47.6	46.3	32.1		42.5	29.3 J
FLUORENE	72.4	75	61.7	4.44	3.76	3.34 J		3.6 J	2.7 J
INDENO(1,2,3-CD)PYRENE	378 J	607 J	413 J	2.36 J	2.49 J	1.99 J		3.71 J	2.1 J
NAPHTHALENE	80.1 U	79.1 U	45 U	15.6 U	16 U	16.4 U		18.4 U	13.1
PERYLENE	102	151	117	3.23 J	6.2 J	4.79 J		4.14 J	3.1 J
PHENANTHRENE	464	483	581	18 U	17.2 U	12.7 U		16.9 U	8.7
PYRENE	779 J	946 J	880 J	42.7	42	30.6		35.8	26.5
Pesticides /PCBs (ug/kg)									
1,2,3,4-TETRACHLOROBENZENE	0.053 J	0.14 J	0.13 J	0.98 U	1.1	0.55 U		0.41 U	4.01
1,2,4,5-TETRACHLOROBENZENE	0.21 J	1	0.24 J	2.4 U	1.9	2.1 U		0.8 U	0.97 U
2,4'-DDD	27	8.3	48	25	25	7.6		9.9	0.22 U
2,4'-DDE	0.86	0.71	1.6	0.37	0.32	0.15 J		0.45	0.31 U
2,4'-DDT	12	2.9	37	3.2	3	2.2		4.1	0.29 U
4,4'-DDD	81	19	135	63 J	67	20		20	0.29
4,4'-DDE	14	5.7	21	19	21	11		13	3.08
4,4'-DDT	42 J	17 J	132 J	3.6 U	3.9	3.8 U		5 U	0.42 UJ
ALDRIN	6	6	4.2	0.16 J	0.14 J	0.22 U		0.23 U	0.37 U
ALPHA-BHC	0.045 U	0.095 U	0.047 U	0.52	0.49	0.63		0.47	0.35
ALPHA-CHLORDANE	1.6	0.93	2	2.1	2	2.2		3	3.61
BETA-BHC	0.16 J	0.11 J	0.13 J	0.4	0.14 U	0.14 U		0.14 U	0.24 U
CHLORPYRIFOS	0.26 U	0.05 J	0.2 U	0.3 J	0.24 J	0.17 J		1.5 U	2.38 U
CIS-NONACHLOR	0.46	0.47	1.1	0.46	0.6	0.54		1.4	0.25 U
DELTA-BHC	0.18	0.15	0.032 U	0.076 UJ	0.087 U	0.087 U		0.088 U	0.14 UJ
DIELDRIN	0.28	0.33	0.38	2	1.8	2.2		1.9	1.54
ENDOSULFAN II	0.083 U	0.13 U	0.064 U	0.84 J	0.75	0.17 U		0.61	0.28 UJ
ENDRIN	0.12 U	0.19 U	0.096 U	0.52	0.37 J	1.1		0.53	0.76 U

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08								
	Sediment			Mussel					Lobster [1]
Parameters	199A	299A	399A	199A	199A-DUP[2]	299A	299A-DUP[3]	399A	199AM
GAMMA-BHC (LINDANE)	0.44 U	0.7 U	0.26 U	0.12 U	0.2	0.048 U		0.13 U	0.22 U
GAMMA-CHLORDANE	1.9	1.1	2.3	1.4	1.4	1.1		1.5	0.29 U
HEPTACHLOR	0.39	0.27	0.32	0.22 U	0.25 U	0.25 U		0.26 U	0.42 U
HEPTACHLOR EPOXIDE	0.3	0.13	0.089	0.49	0.39	2.2		1	0.29 U
HEXACHLOROBENZENE	0.088 U	0.2 U	0.099 U	0.14 J	0.11 J	0.51		0.14 J	0.32 J
MIREX	0.062	0.072	0.06	1.9	2.1	1.8		0.89	0.66 U
OXYCHLORDANE	0.014 U	0.021 U	0.023	0.16 U	0.19 U	1.3		0.19 U	1.35
PCB-101/90	4.7	5.4	3.3	14	13	12		11	0.52 J
PCB-105	2.5	2	1.5	6.9	6.1	5.2		6.8	1.29
PCB-114	0.17 U	0.25 U	0.13 U	0.53 U	0.61 U	0.61 U		0.62 U	1.01 U
PCB-118	2.4	3	1	9.7	10	5.6 U		5.2 U	1.78
PCB-126	0.075 J	0.074 J	0.043 J	0.009 J	2.13 U	0.69 J		0.24 J	0.14 J
PCB-128	1.7	1.6	1.2	3.9	3.8	2.9		2.9	0.19 J
PCB-138 /160	10	8.5	8.5	23 U	23	19 U		19 U	3.07
PCB-149/123	7.4	6.1	6.3	15	13	14		15	1.01 U
PCB-153/132	11	11	9.4	30	30	24 U		26	5.01
PCB-156	2.16	1.63	1.49	0.83 U	0.62 U	1.18		0.62 U	0.43 J
PCB-167	0.83	1.2	0.52	1.9	1.9	1.6		1.4	1.01 U
PCB-169	0.17 U	0.25 U	0.007 J	0.076 J	2.13 U	0.15 J		0.011 J	4.05 U
PCB-170/190	2.7	1.6	2.2	0.53 U	0.21 J	0.071 U		0.48 U	1.01 U
PCB-18/17	0.87 J	1.1 J	0.088 J	2 U	1.6	1.7 U		2.1 U	0.74 J
PCB-180	11 J	7.3 J	8.1 J	7.4 U	7.1	6.7 U		7.5 U	1.73
PCB-187	7.7	5.8	7.6	14	12	11 U		13	1.7
PCB-189	0.35	0.11 J	0.35	0.13 J	0.17 J	0.08 J		0.62 U	1.01 U
PCB-195/208	2.5	4.9	1.5	0.2 J	0.14 J	0.27 J		0.21 J	0.12 J
PCB-201/157/173	1.46	0.92	0.45	0.9	0.48 U	1		1.12	0.88 U
PCB-206	4	12	1.8	0.05 J	0.033 J	0.53 U		0.54 U	0.78 UJ
PCB-209	0.87 J	3.9	0.6 J	0.6 U	0.7 U	0.69 U		0.7 U	0.55 J
PCB-28	0.99	1.2	0.3	2.2	2	2		1.1	0.80 U
PCB-44	0.71	0.53	0.81	1 U	0.96	1.9 U		3.1	0.59 U
PCB-52	1.8	2	1.5	4.3	4.3	5		3.2	0.69 U
PCB-66	1	1.6	0.78	2.8	2.7	1.8		2.1	0.22 J
PCB-77	0.28 J	0.32 J	0.19 J	0.44 J	2.13 U	0.94 J		0.97 J	4.05 U
PCB-8/5	0.2 J	0.35 J	0.21 J	0.29 J	0.36 J	0.18 J		1.1	1.64 U
PCB-81	0.028 J	0.055 J	0.038 J	0.066 J	2.13 U	0.29 J		0.5 J	4.05 U
PENTACHLOROANISOLE	0.12 J	0.28 J	0.22 J	0.3	0.25	0.22		0.095 J	0.33
PENTACHLOROBENZENE	0.044 J	0.39	0.084	0.72	0.68	1.5		0.76	1.83
TRANS-NONACHLOR	1.4	0.84	1.2	1.8	1.5	2.4		2.1	0.18 U
Metals (mg/kg)									
ALUMINUM	57877	64359	47318	59.5 J		120 J	124 J	73.2 J	6.55 J
ARSENIC	12.2	12	10.8	7.4		7.1 J	6.9 J	8.7 J	11.8
CADMIUM	0.23	0.44	0.2	1.7		1.6	1.6	2	0.0337 U
CHROMIUM	170 J	114 J	144 J	1.4		1.8	2.0	1.6	0.198 U
COPPER	370	94.8	282	9.3		7.7	7.9	7	34.2
IRON	56926	27898	68679	274		341	345	342	10.3
LEAD	428 J	178 J	141 J	4		4.4	4.5	4.6	0.0891 U
MANGANESE	508	430	678	5.3		5.5	5.2	10.9	1.69
MERCURY	0.14 J	0.39 J	0.07 J	0.24		0.25		0.27	0.46
NICKEL	83.4 J	35.7	174 J	1.5		1.7	1.6	3.5	0.198 U
SILVER	0.48	0.62 J	0.19	0.03 J		0.03 J	0.03 J	0.02 J	0.958 J
ZINC	1034	180	537	110		107	101	99.7	82
Miscellaneous Parameters (%)									
LIPID				9.5		6.3		6.8	2.5
TOTAL ORGANIC CARBON	0.75	2.37	0.49						

Notes:

MS-8 includes the following samples:
OU4-SD-M08-199A
OU4-SD-M08-299A
OU4-SD-M08-399A
OU4-MU-M08-199A
OU4-MU-M08-199A-FD
OU4-MU-M08-299A
OU4-MU-M08-299A-FD
OU4-MU-M08-399A
OU4-LJ-M08-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	299A	199AM
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8-HPCDD	39.7	32.3	19	138 UR	24.5 U	42.5 U
1,2,3,4,6,7,8-HPCDF	87.1 U	30.2 U	6.88 U	138 UR	24.5 UJ	42.5 U
1,2,3,4,7,8,9-HPCDF	4.59 U	1.13 U	2.2 U	138 UR	24.5 UJ	42.5 U
1,2,3,4,7,8-HXCDD	2.38 J	0.98 J	0.25 J	138 UR	0.65 J	42.5 U
1,2,3,4,7,8-HXCDF	18.1 U	5.97 U	2.2 U	138 UR	24.5 UJ	42.5 U
1,2,3,6,7,8-HXCDD	4.34 J	2.26 J	1.06 J	138 UR	0.82 J	42.5 U
1,2,3,6,7,8-HXCDF	15.8 U	5.43 U	2.2 U	138 UR	24.5 UJ	42.5 U
1,2,3,7,8,9-HXCDD	2.97 U	1.38 UJ	2.2 U	138 UR	1.71 J	42.5 U
1,2,3,7,8,9-HXCDF	4.22	1.33	2.2 U	138 UR	24.5 UJ	42.5 U
1,2,3,7,8-PECDD	1.79 U	1.4 U	2.2 U	138 U	24.5 U	42.5 U
1,2,3,7,8-PECDF	6.25 U	2.65 U	2.2 U	138 UJ	24.5 UJ	42.5 U
2,3,4,6,7,8-HXCDF	17.9 U	6.45 U	2.2 U	138 UR	24.5 UJ	42.5 U
2,3,4,7,8-PECDF	14.4 U	6.3 U	2.2 U	138 U	24.5 U	42.5 U
2,3,7,8-TCDD	0.6 U	0.27 U	0.4 U	27.6 UJ	4.9 U	8.5 U
2,3,7,8-TCDF	6.26 U	3.2 U	1.07 U	27.6 UJ	5.06 U	8.5 U
OCDD	191 U	223 U	142 U	28.8 J	55 J	85 U
OCDF	27.3 U	15.6 U	11.5 U	276 UR	3.5 J	85 U
TOTAL HPCDD	104	78	45.9	138 UR	4.6 J	42.5 U
TOTAL HPCDF	124 U	46.6 U	15.2 U	138 UR	24.5 UJ	42.5 U
TOTAL HXCDD	56.8 U	25.4 U	6.44 U	138 UR	3.2 J	42.5 U
TOTAL HXCDF	56 U	19.2 U	2.2 U	138 UR	24.5 UJ	42.5 U
TOTAL PECDD	25.9 U	4.85 U	2.2 U	138 U	1.1 J	42.5 U
TOTAL PECDF	84.7 U	43.8 U	2.85 U	138 U	24.5 U	8 J
TOTAL TCDD	6.97 J	5.02 U	0.4 U	27.6 U	18 U	8.5 U
TOTAL TCDF	108 U	55.8 U	2.16 U	55.2 U	18.6 U	8.5 U
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	3.31	2.02	11.5	3.1 J	1.15 J	3.7 J
1-METHYLNAPHTHALENE	8.39 U	4.42 U	30.9 U	15.7 U	3.33 U	6.4
1-METHYLPHENANTHRENE	8.1	21	50.7	4.48 J	2.43 J	5.2 J
2,6-DIMETHYLNAPHTHALENE	10.4	5.98	14.8	8.55 J	2.22 J	2.7 J
2-METHYLNAPHTHALENE	11.9 U	6.83 U	44.9 U	27.1 U	6.2 U	8.7
ACENAPHTHENE	10.4	29.5	66.1	4.24 J	1.08 J	0.5 J
ACENAPHTHYLENE	5.68 J	14.1 J	66.4 J	7.69 J	4.67	0.6 J
ANTHRACENE	26.1	83	252	18.4 J	15.7 U	1.3 J
BENZO(A)ANTHRACENE	54.9	173	472	9.48 J	8.68	1.6 J
BENZO(A)PYRENE	78.2 J	169 J	701	5.35 J	5.7	1.3 J
BENZO(B)FLUORANTHENE	79.5	215	607	11.4 J	13	1.7 J
BENZO(E)PYRENE	41.3	87.4	315	10.8 J	10.5	2.9 J
BENZO(G,H,I)PERYLENE	44.5 J	80.3 J	370	3.51 J	3.92 J	0.4 J
BENZO(K)FLUORANTHENE	35.3	47.5	254	3.58 J	3.42 J	1.5 J
BIPHENYL	3.1 U	2.37 U	9.19 U	29.7 J	6 U	1.4 J
CHRYSENE	62.4	188	489	24.9 J	17.8 J	5.4
DIBENZO(A,H)ANTHRACENE	13.1 J	23.1 J	101	0.66 J	0.5 J	0.1 J
DIBENZOTHIOPHENE	5.63	15.5	36.1	1.89 U	0.68 U	0.7 J
FLUORANTHENE	122	597	976 U	40.7	30.8	11.6 J
FLUORENE	11.5	15.4	80.5	7.5 J	2.39 J	2 J
INDENO(1,2,3-CD)PYRENE	52.4 J	90.7 J	409	1.65 J	1.78 J	0.1 J
NAPHTHALENE	14.9 U	12.8 U	97.1	57.7 U	14 U	14.1
PERYLENE	17.2	33.2	76.3	2.7 J	4.95 J	0.5 J
PHENANTHRENE	74.2	283	540	29.1 U	10.7 U	4.6 J
PYRENE	97.9 J	451 J	814 J	33.5	29.1	10.8
Pesticides /PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.15 J	0.065 J	0.84	0.6 U	0.5 U	8.86
1,2,4,5-TETRACHLOROBENZENE	0.78	0.42	4.7	6 U	1.3 U	0.512 J
2,4'-DDD	0.54	1	3.5	1.8	2.4	0.25 U
2,4'-DDE	0.14	0.11	0.6	1.1 U	0.11 J	0.35 U
2,4'-DDT	1	0.58	0.74	2.9	1.9	0.39
4,4'-DDD	1.4	2.1	4.3	5.1	7	0.30 U
4,4'-DDE	0.85	1.2	3.7	5	5.4	5.51
4,4'-DDT	2.7 J	1.3 J	2.6 J	4.3 U	2.7 U	0.47 UJ
ALDRIN	0.94	3.6	6	1.3 U	0.22 U	0.41 U
ALPHA-BHC	0.059 U	0.048 U	0.15 U	1.3	0.36	0.47
ALPHA-CHLORDANE	0.26	0.54	0.85	1.6	2.1	1.34
BETA-BHC	0.019 J	0.032 J	3.6	0.8 U	0.14 U	0.26 U
CHLORPYRIFOS	0.18 J	0.24 U	0.48 U	8.1 U	0.08 J	2.63 U
CIS-NONACHLOR	0.17	0.18	0.33	1.2	0.45	0.27 U
DELTA-BHC	0.026 J	0.024 J	0.26	0.49 U	0.088 U	0.16 UJ

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	299A	199AM
DIELDRIN	0.1	0.11	0.28	1.6	1.7	1.79
ENDOSULFAN II	0.079 U	0.077 U	0.15 U	0.5 J	0.6	0.30 UJ
ENDRIN	0.12 U	0.11 U	0.23 U	2.6 U	0.58	0.83 U
GAMMA-BHC (LINDANE)	0.36 U	0.22 U	1.8 U	0.76 U	0.07 U	0.25 U
GAMMA-CHLORDANE	0.17	0.26	0.87	1.4	0.47	0.32 U
HEPTACHLOR	0.096 J	0.16	0.43	1.4 U	0.25 U	0.46 U
HEPTACHLOR EPOXIDE	0.007 J	0.39	0.3	0.65 J	0.45	0.32 U
HEXACHLOROBENZENE	0.32 U	0.14 U	5.6	0.35 J	0.15 J	0.38 J
MIREX	0.026 U	0.01 J	0.12	2.3 U	0.74	0.73 U
OXYCHLORDANE	0.013 U	0.013 U	0.025 U	1.1 U	0.19 U	0.90
PCB-101/90	2.5	2.2	4.1	8.1	7.9	0.96 U
PCB-105	0.91	0.68	1.2 J	6	3.9	1.41
PCB-114	0.16 U	0.15 U	0.3 U	3.45 U	0.62 U	1.12 U
PCB-118	1.2	1.1	2.1	5.7	4.7 U	5.71
PCB-126	0.041 J	0.047 J	0.083 J	0.59 J	0.24 J	0.16 J
PCB-128	0.66	0.58	1.3	2.6 U	2.1	0.97
PCB-138 /160	3.3	2.5	5.2	23 U	12 U	5.74
PCB-149/123	2.2	1.6	3	17	7.6 U	1.12 U
PCB-153/132	3.4	2.7	5.8	24 U	14 U	10.35
PCB-156	0.33	0.53	1.56	3.45 U	0.62 U	1.12 U
PCB-167	0.11 J	0.077 J	0.87	0.64 J	1.1	0.57 J
PCB-169	0.009 J	0.15 U	0.035 J	0.17 J	0.41 J	4.47 U
PCB-170/190	0.69 J	0.45 J	0.9 J	2.6 U	0.27 U	1.51
PCB-18/17	0.42 J	0.67 J	9.1 J	4 U	1.1 U	1.49 J
PCB-180	2.6 J	1.9 J	4.6 J	11 U	4.6 U	2.91
PCB-187	2.1	2.3	3.9	15	6.8 U	2.88
PCB-189	0.011 J	0.15 U	0.3 U	3.5 U	0.62 U	0.12 J
PCB-195/208	1.7	2	2.5	0.55 J	0.19 J	0.24 J
PCB-201/157/173	0.46	0.63	0.42	0.32 J	0.05	0.49 J
PCB-206	3.9	5.1	5.9	3 U	0.05 J	0.86 UJ
PCB-209	0.82 J	0.86 J	1.4 J	3.9 U	0.69 U	1.26 U
PCB-28	0.57	0.41	1.3	2.2 J	3.1	0.88 U
PCB-44	0.52	0.27	3.2	5.4	2.7	0.65 U
PCB-52	0.77	0.65	1.9	3.5	3.6	0.70 J
PCB-66	0.36	0.53	1.6	2.1 J	1.5	1.13
PCB-77	0.098 J	0.075 J	0.22 J	5.6 J	1 J	4.47 U
PCB-8/5	0.22 J	0.23 J	0.32 J	4.8 J	0.25 J	1.80 U
PCB-81	0.008 J	0.032 J	0.065 J	2.9 J	0.36 J	4.47 U
PENTACHLOROANISOLE	0.16 J	0.054 J	0.59 J	0.54 J	0.25	0.36
PENTACHLOROBENZENE	0.18	0.045 J	0.64	1.7	0.64	0.49
TRANS-NONACHLOR	0.34	0.5	0.69	0.54 J	0.87	0.19 U
Metals (mg/kg)						
ALUMINUM	50500	47371	66568	76.1 J	88 J	21.2 J
ARSENIC	8.3	6.7	14	6 J	7 J	12.1
CADMIUM	0.14	0.16	0.61	2.1	1.9	0.0623 J
CHROMIUM	119 J	69.5 J	123 J	1.9	2.1	0.198 U
COPPER	98	119	106	7	6.8	34.6
IRON	41861	25268	32659	186	246	32.7
LEAD	65.5 J	190 J	102 J	2.6	3.6	0.218 J
MANGANESE	780	652	455	8.7	8.3	3.39
MERCURY	0.1 J	0.04 J	0.39 J	0.3	0.29	0.421
NICKEL	114 J	41.4 J	41.8 J	2.4	1.7	0.198 U
SILVER	0.21	0.3	0.64	0.14 J	0.04 J	0.838 J
ZINC	156	426	245	107	102	101
Miscellaneous Parameters (%)						
LIPID				8.2	7.7	2.1
TOTAL ORGANIC CARBON	0.91	0.46	2.49			

Notes:
MS-9 includes the following samples: OU4-SD-M09-199A
OU4-SD-M09-299A
OU4-SD-M09-399A
OU4-MU-M09-199A
OU4-MU-M09-299A
OU4-LJ-M09-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10								
	Sediment			Mussel					Lobster (1)
Parameters	199A	299A	399A	199A	199A-DUP(2)	299A	399A	399A-DUP(5)	199AM
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HPCDD	10.5	102	467	68 U	21.6 U	22.4 U	27.4 U		38.1 U
1,2,3,4,6,7,8-HPCDF	3.63 U	31 U	84.6 U	23.6 U	21.6 U	22.4 U	27.4 UJ		38.1 U
1,2,3,4,7,8,9-HPCDF	1.1 U	1.8 U	4.02 U	59.4	3.22 J	0.53 J	27.4 UJ		38.1 U
1,2,3,4,7,8-HXCDD	0.39 J	0.59 J	3.19	12 J	1.99 J	22.4 UJ	27.4 UJ		38.1 U
1,2,3,4,7,8-HXCDF	1.1 U	2.29 U	5.83 U	11.3 J	1.73 J	22.4 UJ	27.4 UJ		38.1 U
1,2,3,6,7,8-HXCDD	0.81 J	4.48	15.5	2.79 J	1.9 J	22.4 UJ	27.4 UJ		38.1 U
1,2,3,6,7,8-HXCDF	1.1 U	1.8 U	3.36 U	7.88 J	1.6 J	22.4 UJ	27.4 UJ		38.1 U
1,2,3,7,8,9-HXCDD	1.1 U	2.94 U	9.71 U	5.89 J	2.11 J	22.4 UJ	27.4 UJ		38.1 U
1,2,3,7,8,9-HXCDF	1.1	1.8	2.8 U	24.7	1.78 J	22.4 UJ	27.4 UJ		38.1 U
1,2,3,7,8-PECDD	0.16 UJ	1.8 U	2.8 U	22.5 U	21.6 U	22.4 U	27.4 UJ		38.1 U
1,2,3,7,8-PECDF	0.47 UJ	1.8 U	2.8 U	37.5 U	21.6 U	22.4 U	27.4 U		38.1 U
2,3,4,6,7,8-HXCDF	1.1 U	1.99 U	5.33 U	14.3 J	3.15 J	22.4 UJ	27.4 UJ		38.1 U
2,3,4,7,8-PECDF	1.1 U	1.8 U	3.33 U	22.5 U	21.6 U	22.4 U	27.4 U		38.1 U
2,3,7,8-TCDD	0.14 UJ	0.4 U	0.6 U	4.5 U	4.3 U	4.5 U	5.5 U		7.6 U
2,3,7,8-TCDF	0.75 U	2.43 U	5.63 U	7.73 U	7.59 U	8.32 U	9.56 U		7.6 U
OCDD	70.8 U	824 U	3563 U	308	62.2	63.2 J	56 J		76.3 U
OCDF	5.78 U	52.8 U	147 U	45 U	8.14 J	6.81 J	54.9 UJ		76.3 U
TOTAL HPCDD	22.3	240	1290	68 U	21.6 U	22.4 U	27.4 U		38.1 U
TOTAL HPCDF	8.62 U	108 U	203 U	59.4	6.5 J	0.53 J	27.4 UJ		38.1 U
TOTAL HXCDD	7.1 U	59.8 U	241 U	20.7 J	6 J	6.1 J	27.4 U		9.5 J
TOTAL HXCDF	1.76 U	6 U	14.5 U	58.2 J	8.3 J	22.4 UJ	27.4 U		38.1 U
TOTAL PECDD	1.1 U	2.8 U	6.76 U	22.5 U	3 J	22.4 U	27.4 U		38.1 U
TOTAL PECDF	1.1 U	7.67 U	24.4 U	71.2 U	34.8 U	22.4 U	27.4 U		38.1 U
TOTAL TCDD	0.79	5.23	16.2	20.3 U	26.3 U	35.9 U	5.5 U		7.6 U
TOTAL TCDF	0.75 U	9.13 U	30.9 U	121 U	56.7 U	30.3 U	32.9 U		7.6 U
Polyaromatic Hydrocarbons (ug/kg)									
1,6,7-TRIMETHYLNAPHTHALENE	1.93	40.9	14.1	2.2 J	2.13 J	1.98 J	1.74 J		4.8 J
1-METHYLNAPHTHALENE	1.65 U	39.2 U	23.1 U	4.4 U	4.26 U	3.92 U	3.35 U		7.5
1-METHYLPHENANTHRENE	4.35	131	85.9	3.74	3.4	2.9 J	2.68 J		9.6
2,6-DIMETHYLNAPHTHALENE	2.35	31.4	16.7	3.41	3.23	2.89	2.49 J		3.4 J
2-METHYLNAPHTHALENE	4.29 U	46.2 U	30.7 U	5.1 U	5.38 U	5 U	4.46 U		9.7
ACENAPHTHENE	1.06	47.4	22.8	7.98	5.55	9.25	4.37		0.6 J
ACENAPHTHYLENE	3.22 J	157 J	217 J	9.4	11.6	7.64	9.59		0.6 J
ANTHRACENE	13.7	806	592	25.4	23.7	20.8	30.7		9.2
BENZO(A)ANTHRACENE	30.4	1285	1718	13.2	10.2	11	13.6		34.4 J
BENZO(A)PYRENE	46.5	1609	1334	8.17	5.25	5.25 J	6.07 J		39.5
BENZO(B)FLUORANTHENE	45.4	1332	2282	15.5	11.7	13.3	18		21.8
BENZO(E)PYRENE	36.3	628	1039	13.3	10.1	12.4	15.2		13.5
BENZO(G,H,I)PERYLENE	38.4	715 J	563 J	6.62	5.45	4.3 J	5.99 J		11.2
BENZO(K)FLUORANTHENE	17.6	462	790	4.74	4.59	3.37 J	4.32 J		27.3 J
BIPHENYL	1.23 U	11.5 U	8.24 U	3.61 U	3.9 U	1.8 U	2.77 U		1.4 J
CHRYSENE	33.3	1113	1946	19.2	18.9	14.6	26.5		39.3
DIBENZO(A,H)ANTHRACENE	11.6	254 J	221 J	1.59 J	0.94 J	0.87 J	1.06 J		3.4 J
DIBENZOTHIOPHENE	3.34	75.7 J	30 J	0.95 U	0.83 U	0.86 U	1 U		1.2 J
FLUORANTHENE	74.1	1992	3508	37.2	29	35.1	45.9		80.4 J
FLUORENE	3.78	163	66.8	2.6 J	3.19 J	2.59 J	2.93 J		3.0 J
INDENO(1,2,3-CD)PYRENE	30.9	913 J	672 J	5.26 J	4.28 J	2.89 J	4.44 J		13.9 J
NAPHTHALENE	11.4 U	125 U	51.9 U	10.1 U	10.6 U	9.8 U	8.7 U		16.8
PERYLENE	11.7	211	190	5.95 J	5.57 J	5.73 J	6.51 J		11.2 J
PHENANTHRENE	49.1	990	414	12.8 U	10.1 U	10 U	14 U		15.6
PYRENE	56.2 J	1604 J	2735 J	32.7	25.2	30.5	37.2		59.4
Pesticides /PCBs (ug/kg)									
1,2,3,4-TETRACHLOROBENZENE	0.18 J	0.01 J	0.24 J	2.5	2.5	3.8	1.4		17.8
1,2,4,5-TETRACHLOROBENZENE	0.52	0.24 J	1.1	1.4 U	1.4 U	1.4 U	1.7 U		1.02 U
2,4'-DDD	22	1.5	3.5	80	80	6	4.1		0.24 U
2,4'-DDE	0.8	0.2	0.21	8.6	9.7	0.31	0.88		0.33 U
2,4'-DDT	23	0.31	0.34	398	384	0.5	0.16 J		0.31 U
4,4'-DDD	94	2.8	4.8	103	105	14	13		0.29 U
4,4'-DDE	13	0.9	2	100	98	13	16		1.77
4,4'-DDT	48 J	1.2 J	1.9 J	631	561	6.4	9		0.45 UJ
ALDRIN	0.47	4.4	11	0.2 U	0.2 U	0.21 U	0.25 U		0.39 U
ALPHA-BHC	0.074 U	0.052 U	0.066 U	0.31	0.27	0.3	0.64		0.43
ALPHA-CHLORDANE	45	0.36	0.22	32	33	3.2	3.2		8.4
BETA-BHC	0.17 J	0.1 J	0.008 J	0.13 U	0.13 U	0.13 U	0.16 U		1.16
CHLORPYRIFOS	0.067 J	0.15 J	0.25 J	1.3 U	1.3 U	1.3 U	1.6 U		0.6 J
CIS-NONACHLOR	3.8	0.25	0.31	5.1	5	1.6	2.2		0.26 U
DELTA-BHC	0.03 J	0.17	0.12	1.8 J	0.39	0.082 U	2.2		0.15 UJ
DIELDRIN	0.61	0.29	0.12 U	1.8	1.7	1.5	1.3		1.32
ENDOSULFAN II	0.082 U	0.23	0.16 U	0.3	0.28	0.27	1		0.29 UJ

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10								
	Sediment			Mussel					Lobster (1)
Parameters	199A	299A	399A	199A	199A-DUP(2)	299A	399A	399A-DUP(5)	199AM
ENDRIN	0.12 U	0.16 U	0.24 U	0.42 U	0.42 U	0.43 U	0.52 U		0.80 U
GAMMA-BHC (LINDANE)	0.45 U	0.46 U	0.79 U	1.3 U	1.3 U	0.73 U	0.52 U		0.45
GAMMA-CHLORDANE	61	0.33	0.12 U	32	31	2.4	1.3		0.30 U
HEPTACHLOR	0.96	0.23	0.14 J	3	2.7	0.76	1.7		0.44 U
HEPTACHLOR EPOXIDE	0.31 U	0.036 U	0.11 U	1.4	1.6	0.16 U	0.2 U		0.31 U
HEXACHLOROBENZENE	0.24	0.054 U	0.11	0.19 J	0.51	0.25	0.71		0.38 U
MIREX	0.027 U	0.036 U	0.36	0.64 J	0.41	0.38 U	0.46 U		0.70 U
OXYCHLORDANE	0.72	0.018 U	0.027 U	1.1	1.2	1.3	2.4		0.33 U
PCB-101/90	1.8	1.6	1.7	7.9	9.4	7	25		1.25
PCB-105	0.21 J	0.22 J	0.66 J	5.2	5.4	4.6	13		0.54 J
PCB-114	0.16 U	0.21 U	0.32	0.56 U	0.56 U	0.57 U	0.7 U		1.07 U
PCB-118	1.5	1.6	1.6	9.8	9.5	7.8	21		2.13
PCB-126	0.029 J	0.023 J	0.041 J	0.029 J	0.098 J	0.049 J	0.11 J		0.05 J
PCB-128	0.6	0.79	1.2	3.5	3.3	2.6	5.8		0.17 J
PCB-138 /160	2.9	2	5.5	15 U	16 U	12 U	25 U		2.28
PCB-149/123	2.3	0.71	1.3	6.2 U	6.3 U	4.5 U	10		1.07 U
PCB-153/132	2.2	1.8	2.2	14 U	16 U	12 U	22 U		2.95
PCB-156	0.13 J	1.6	3.95	0.76	0.85	1.1	1.9		1.07 U
PCB-167	0.13 J	4.7	0.99	2.4	2.6	1.3	1.9		1.07 U
PCB-169	0.006 J	0.22 U	0.005 J	0.031 J	0.026 J	0.023 J	0.038 J		0.02 J
PCB-170/190	0.22 J	5.2	47	0.88 U	0.73 U	1.4 U	0.47 U		1.07 U
PCB-18/17	0.6 J	0.22 J	0.32 J	1.5 U	1.5 U	3.7 U	5.2		3.69
PCB-180	1.1 J	1.2 J	2.4 J	9.6 U	8.8 U	7 U	7.6 U		1.42
PCB-187	0.84	1.8	7.7	6.6 U	6.6 U	5.8 U	8.1 U		0.82
PCB-189	0.27	0.062 J	0.32 U	5.2	4.4	0.57 U	0.7 U		1.07 U
PCB-195/208	0.24	0.27	0.87	0.47 U	0.47 U	0.48 U	0.58 U		0.89 U
PCB-201/157/173	0.05	0.03 U	0.04 U	1.29	0.39 J	1.29	1.61		0.92 U
PCB-206	0.29	0.32	0.33	0.049 J	0.39 J	0.49 U	0.6 U		0.82 UJ
PCB-209	0.13 J	0.61 J	0.22 J	0.64 U	0.64 U	0.65 U	0.79 U		1.20 U
PCB-28	0.16 J	2.3	1.5	2.2	2.4	2.4	2		0.85 U
PCB-44	0.63	0.26	0.2 J	2.1	2.8	2.1	4.2		0.62 U
PCB-52	0.89	1.6	1.2	6.1	6.1	3.5	11		0.23 J
PCB-66	0.12 U	1.3	0.5	1	1	0.98	1.8		1.02 U
PCB-77	0.22 J	0.14 J	0.23 J	0.54 J	0.94 J	0.094 J	0.25 J		4.27 U
PCB-8/5	0.43 J	0.28 J	0.47 J	0.55 J	3.4	2.6	3.3		1.15 J
PCB-81	0.013 J	0.012 J	0.14 J	0.016 J	0.075 J	0.028 J	0.061 J		4.27 U
PENTACHLOROANISOLE	0.39 J	0.074 J	0.17 J	0.59	0.73	0.67	0.95		0.39
PENTACHLOROBENZENE	0.01 J	0.082 J	0.33	5.4	5.6	5.9	4.3		0.79
TRANS-NONACHLOR	21	0.36	0.18	22	22	4.3	4.9		0.18 U
Metals (mg/kg)									
ALUMINUM	52143	49718	60967	153 J		187 J	156 J	123 J	9.47 J
ARSENIC	8.4	6.5	12.1	7.1 J		10.5 J	11.3 J	9.3 J	10.1
CADMIUM	0.11	0.22	0.52	2 J		2.4 J	3.2 J	2.7 J	0.0333 U
CHROMIUM	68	55.6	94	1.6		1.9	2.3	1.7	0.196 U
COPPER	21.1 J	17 J	105 J	7.1 J		8.2 J	8.5 J	6.3 J	35.3
IRON	29062	15856	27303	238 J		342 J	323 J	261 J	13.5
LEAD	30.5 J	73.4 J	116 J	2.8 J		4.6 J	10.2 J	8.5 J	0.147 J
MANGANESE	469	356	408	8.8		9.5	9.1	7.2	2.41
MERCURY	0.03 J	0.13 J	0.22 J	0.19		0.27	0.23	0.47	0.43
NICKEL	42.4	21.3	27.5	1.2		1.4	1.7	1.5	0.196 U
SILVER	0.1	0.25	0.37	0.08 J		0.1 J	0.08 J	0.07 J	0.991 J
ZINC	100	71.1	250	77.2 J		105 J	113 J	90.6 J	108
Miscellaneous Parameters (%)									
LIPID				8.7		7.0	6.9		2.2
TOTAL ORGANIC CARBON	0.69	1.8	2.37						

Notes:

MS-10 includes the following samples: OU4-SD-M10-199A
OU4-SD-M10-299A
OU4-SD-M10-399A
OU4-MU-M10-199A
OU4-MU-M10-199A-FD
OU4-MU-M10-299A
OU4-MU-M10-399A
OU4-MU-M10-399A-FD
OU4-LJ-M10-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11							
	Sediment		Mussel				Lobster [1]	
Parameters	299A	399A	199A	299A	399A	399A-DUP[2]	199AM	199AM-DUP
Dioxins/Furans (ng/kg)								
1,2,3,4,6,7,8-HPCDD	26.3	51.3	24.8 U	13.7 UJ	40.9 U	39.3 U	38.7 U	35.8 U
1,2,3,4,6,7,8-HPCDF	24.5 U	30.3 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,4,7,8,9-HPCDF	1.82 U	1.87 UJ	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,4,7,8-HXCDD	0.61 J	1.65	0.7 J	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,4,7,8-HXCDF	4.28 U	10.5 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,6,7,8-HXCDD	1.84	4.58	1.01 J	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,6,7,8-HXCDF	3.49 U	8.81 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,7,8,9-HXCDD	1.4 U	3.29 U	0.97 J	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,7,8,9-HXCDF	0.9	1.81	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,7,8-PECDD	0.9 U	1.93 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
1,2,3,7,8-PECDF	2.02 U	7.95 U	24.8 U	34 U	40.9 UJ	39.3 U	38.7 U	35.8 U
2,3,4,6,7,8-HXCDF	4.21 U	9.94 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
2,3,4,7,8-PECDF	3.64 U	15 U	24.8 U	34 U	40.9 UJ	4.62 UJ	38.7 U	35.8 U
2,3,7,8-TCDD	0.2 U	0.57 U	5 U	6.8 U	8.2 UJ	7.9 UJ	7.7 U	7.2 U
2,3,7,8-TCDF	3.92 U	11.3 U	12.1 U	7.15 U	8.39 U	11.1 U	7.7 U	7.2 U
OCDD	182 U	319 U	61	56.1 UJ	75.6 J	99.4 UJ	77.5 U	71.6 U
OCDF	17.3 U	22.5 U	8.75 J	68 U	81.7 UJ	78.6 UJ	77.5 U	71.6 U
TOTAL HPCDD	56.3	120	24.8 U	13.7 U	40.9 U	39.3 U	38.7 U	35.8 U
TOTAL HPCDF	40.8 U	53.7 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
TOTAL HXCDD	26.5 U	47.1 U	2.7 J	34 U	40.9 UJ	39.3 UJ	38.7 U	4.4 J
TOTAL HXCDF	12.5 U	31.1 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
TOTAL PECDD	0.9 U	12.2 U	24.8 U	34 U	40.9 UJ	39.3 UJ	38.7 U	35.8 U
TOTAL PECDF	28.9 U	131 U	24.8 U	34 U	40.9 UJ	39.3 U	38.7 U	35.8 U
TOTAL TCDD	4.65	4.62	29.6 U	34.4 U	75.7 U	55.6 U	7.7 U	7.2 U
TOTAL TCDF	22.3 U	123 U	46.4 U	22.6 U	14.7 U	18 U	7.7 U	7.2 U
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	4.8	5.41 U	2.22 J	2.5 J	5.67 J	4.59 J	4.3 J	4.4 J
1-METHYLNAPHTHALENE	7.31 U	12.2	4.4 U	8.02 U	9.48 U	7.59 U	7.7	8.5
1-METHYLPHENANTHRENE	22.3	8.92	4.67	5.51	4.54 J	5.45	6.0	6.5
2,6-DIMETHYLNAPHTHALENE	7.75	10.6 U	3.41	4.6	7.87	6.83	3.0 J	3.2 J
2-METHYLNAPHTHALENE	17.5 U	23.6	6.04 U	11.3 U	12.4 U	11.4 U	9.8	11
ACENAPHTHENE	4.2	3.9 J	4.7	28.7	4.84 J	3.6 J	0.6 J	1.1 J
ACENAPHTHYLENE	20.1 J	7.59	11	10.8 J	12.4 J	11.5	0.6 J	0.6 J
ANTHRACENE	51.9	13.1	24.3	28.6	29.8 J	27.8	3.8 J	4.5 J
BENZO(A)ANTHRACENE	95.1	27.4	10.2	16.8 J	15.2	18.5	8.9 J	9.4 J
BENZO(A)PYRENE	100	34.1	6.59	9.26 J	7.68 J	7.22	12.4	15
BENZO(B)FLUORANTHENE	112	42.6	12.4	19.4 J	17.4	21.3	6.4 J	6.0 J
BENZO(E)PYRENE	74.9	25	10.8	14.8	19.3	22.1	6.4 J	6.3 J
BENZO(G,H,I)PERYLENE	72.8	27	5.04 J	7.65 J	7.3 J	9.61	3.7 J	4.4 J
BENZO(K)FLUORANTHENE	36.7	12.5	2.89 J	5.88	9.7	9.96	7.7 J	9.3 J
BIPHENYL	3.43 U	4.72 U	4.88 U	4.44 U	10.3 U	9.43 U	1.2 J	1.3 J
CHRYSENE	103	56.7	20.4	24.3	11.3	14	16.4	17.2
DIBENZO(A,H)ANTHRACENE	27.5	6.66	0.63 J	2.08 J	2.04 J	2.42 J	0.6 J	0.2 J
DIBENZOTHIOPHENE	10.3	6.79	0.84 U	2.07 U	4.82 U	3.59 U	1.0 J	0.9 J
FLUORANTHENE	198	54.5	31.8	48.2	46.6	61.4	32.3 J	36 J
FLUORENE	10.6	5.07	3.96	4.59 J	6.29 J	6.4	2.4 J	2.5 J
INDENO(1,2,3-CD)PYRENE	68.8	25.4	3.39 J	6.16 J	5.89 J	7.65 J	4.1 J	5.1 J
NAPHTHALENE	16.3 U	18.3 U	10.7 U	19.2 U	15.5 U	15.2 U	14.7	13.8
PERYLENE	22	9.19	4.8 J	7.7 J	10.3 J	13.7 J	3.5 J	4.4 J
PHENANTHRENE	155	42.3	11.3 U	23.3 U	15.7 U	15.7 U	9.8	9.7
PYRENE	164	48.2	28.2	39	43.3	53.9	22.2	25.1
Pesticides /PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.17 J	0.12 J	0.48 U	0.23 U	0.43 U	0.29 U	10.55	10.63
1,2,4,5-TETRACHLOROBENZENE	0.71	0.35 J	1.5 U	3.7 U	4.3 U	3.6 U	0.36 J	0.14 J
2,4'-DDD	0.85	0.78	2.6	2.6	1.3	1.4	0.23 U	0.23 U
2,4'-DDE	0.56	0.28	0.19 U	0.27 U	0.85 U	0.85 U	0.32 U	0.32 U
2,4'-DDT	2.5	1.5	0.084 J	0.55	1.2 U	1.2 U	0.30 U	0.30 U
4,4'-DDD	3.5	1.3	6.4	8.1	9.4	9	0.4	0.36
4,4'-DDE	3.6	0.86	8.9	10	8.9	8.3	2.02	2.15
4,4'-DDT	6.7	1.7	2.6 U	4.1 U	0.71 U	0.92 U	0.44 UJ	0.43 UJ
ALDRIN	0.054 U	0.055 U	0.22 U	0.31 U	0.33 J	0.92 U	0.38 U	0.37 U
ALPHA-BHC	0.032 U	0.04 U	0.28	0.41	1.1	0.89	0.28	0.4
ALPHA-CHLORDANE	0.44	1	2.3	4.8	3.2	2.9	14.84 J	37.1 J
BETA-BHC	0.18 U	0.18 U	0.14 U	4.9	1.3 U	1.3 U	0.24 U	2.2
CHLORPYRIFOS	0.025 J	0.26 U	0.43 J	2 U	1.3	1.06 U	3.98 J	1.75 J
CIS-NONACHLOR	0.48	0.35	2.6	3.6	2.2 J	1.6	0.26 U	0.25 U
DELTA-BHC	0.055	0.041 U	0.92	1.6	1	1	0.15 UJ	0.15 UJ
DIELDRIN	0.33	0.061 U	1.7	1.7	1.1 U	0.06 J	0.29 UJ	2.72 J
ENDOSULFAN II	0.7	0.22	0.72	2.5	2 U	2 U	0.28 UJ	0.28 UJ

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11							
	Sediment		Mussel				Lobster [1]	
Parameters	**299A**	**399A**	**199A**	**299A**	**399A**	**399A-DUP[2]**	**199AM**	**199AM-DUP**
ENDRIN	0.048 J	0.12 U	0.87	0.29 J	3.7 U	3.7 U	0.78 U	0.76 U
GAMMA-BHC (LINDANE)	0.39 U	0.21 U	0.91 U	0.69 U	1.5 U	0.48 U	1.02	0.84
GAMMA-CHLORDANE	0.063	0.12	0.17 U	0.6	1.4	1.4	0.30 U	0.29 U
HEPTACHLOR	0.13 J	0.45	1.1	1.4	1.5	1.4	0.43 U	0.42 U
HEPTACHLOR EPOXIDE	0.027 U	0.007 J	0.18 U	0.25 U	9.6	9.2	0.30 U	0.29 U
HEXACHLOROBENZENE	0.2	0.2 U	0.31	0.36	10	9	1.11 J	2.66 J
MIREX	0.43	0.027 U	0.36 J	0.66	0.033 J	0.64 U	0.69 U	0.67 U
OXYCHLORDANE	0.13	0.014 U	0.74	1.8	0.77 J	1.19 U	0.59	0.31 U
PCB-101/90	21	6.5	17	26	16	13	0.89 UJ	2.22 J
PCB-105	11 J	3.4 J	11	20	10	7.8	5.06	4.75
PCB-114	0.16 U	0.16 U	0.61 U	0.86 U	0.73 U	0.73 U	1.05 U	1.02 U
PCB-118	18	4.8	23	27	17	17	15.55	16.19
PCB-126	0.044 J	0.66 U	0.084 J	0.096 J	0.81 J	0.47 J	0.26 J	0.12 J
PCB-128	7.7 J	2 J	7.8	13	4.7	4	2.1 J	0.78 UJ
PCB-138 /160	33	13	30	46	27 U	20 U	1.05 U	9.78
PCB-149/123	10	3.9	12	21	11	9.5	8.36	1.02 U
PCB-153/132	24	7.3	24 U	38	31	23	2.08 J	7.51
PCB-156	6.52	1.1	1.5	2	0.73 UJ	0.73	0.94 J	1.02 UJ
PCB-167	2.7	0.28	2.5	4.1	1.7	1.4	4.18 U	0.98 J
PCB-169	0.65 U	0.015 J	0.015 J	0.013 J	0.33 J	0.12 J	1.4	0.02 J
PCB-170/190	7.6 J	3.1 J	0.9 U	1.6 U	3.2 J	0.94	4.31 J	1.56
PCB-18/17	0.41 J	0.51 J	4.6	5.8	0.79 UJ	0.79 U	1.06 J	7.54 J
PCB-180	10 J	6.5 J	8.8 U	11 U	16 J	9.6	1.11	0.81 J
PCB-187	6.8	7.4	8.4 U	12 U	14 J	9.2	1.05 U	1.08
PCB-189	0.41	0.17	0.61 U	0.86 U	0.27 J	0.14 J	0.87 U	1.02 U
PCB-195/208	2.1	1.7	0.51 U	0.72 U	0.43 J	0.54 U	0.90 U	0.85 U
PCB-201/157/173	0.73	0.8	0.91	1.54	2	0.6 U	1.18 U	0.88 U
PCB-206	4.1	2.7	0.53 U	0.74 U	0.15 J	1.13 U	0.83 U	0.78 UJ
PCB-209	1.4	0.98 J	0.69 U	0.97 U	0.65 U	0.86	0.61 U	1.15 U
PCB-28	0.73	0.18 J	1.2	2.2	1.4	1.5	1.89	0.81 U
PCB-44	1.7	0.6	2	2.2	3.1	2.5	0.92 J	0.60 U
PCB-52	4	2.2	3.6	6.8	12	9.6	4.18 U	2.48
PCB-66	2.1	0.69	1.9	1.8	1.2	1.4	1.69 U	0.48 J
PCB-77	0.25 J	0.073 J	0.18 J	0.18 J	2.6 J	2.2 J	4.18 U	4.08 U
PCB-8/5	0.45 J	0.13 J	0.65 J	0.46 J	1.6 U	0.35 J	9.25	0.8 J
PCB-81	0.44 J	2.4	0.092 J	0.059 J	1.7 J	0.96 J	0.80 UJ	4.08 U
PENTACHLOROANISOLE	0.11 J	0.085 J	0.51	0.49	1.2	1.1	0.45	0.49
PENTACHLOROBENZENE	0.12	0.2	6.4	5.4	1.3	1.2	1.61	2
TRANS-NONACHLOR	0.055	0.19	3.5	2.7	4.8	3.5	0.18	0.18 U
Metals (mg/kg)								
ALUMINUM	46440	63604	151 J	164 J	194 J		7.46 J	5.24 J
ARSENIC	30	11	8.1 J	7.4 J	7 J		10.2	10.3
CADMIUM	1.3	0.15	2 J	2 J	1.7 J		0.0745 J	0.07 J
CHROMIUM	224	147	1.3	1.6	1.5		0.162 U	0.200 U
COPPER	17495 J	139 J	8.2 J	24.4 J	9.8 J		47.9	47.9
IRON	92784	32068	219 J	312 J	292 J		22.2	9.81
LEAD	16250 J	206 J	15.3 J	199 J	2.5 J		0.272 J	0.18 J
MANGANESE	1099	450	11.3	10.6	14.4		5.12	4.07
MERCURY	3.2 J	0.43 J	0.18	0.47	0.17		0.785	0.921
NICKEL	5601	68.6	1.1	2	0.82		0.497	0.226 U
SILVER	1.6	0.45	0.05 J	0.02 J	0.04 J		1.16 J	1.18 J
ZINC	8524	174	94.5 J	121 J	85.7 J		141	138
Miscellaneous Parameters (%)								
LIPID			9.0	8.2	8.9		3.0	2.6
TOTAL ORGANIC CARBON	0.72	0.43						

Notes:

MS-11 includes the following samples:
OU4-SD-M11-299A
OU4-SD-M11-399A
OU4-MU-M11-199A
OU4-MU-M11-299A
OU4-MU-M11-399A
OU4-MU-M11-399A-FD
OU4-LJ-M11-199AM
OU4-LJ-M11-199AM-D

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12						
	Sediment				Mussel		Lobster [1]
Parameters	199A	299A	399A	399A-DUP	199A	299A	199AM
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	202	140	274	259	52.2 UJ	66.4 U	37.1 U
1,2,3,4,6,7,8-HPCDF	1.5 U	32.5 U	66.1 U	62.3 U	77.7 UJ	66.4 UR	37.1 U
1,2,3,4,7,8,9-HPCDF	53.5 U	1.49 U	3.4 U	3.25 U	77.7 UJ	66.4 UR	37.1 U
1,2,3,4,7,8-HXCDD	2.26	1.19 J	3.04	1.93	77.7 UJ	66.4 UR	37.1 U
1,2,3,4,7,8-HXCDF	3.34 U	1.93 U	6.04 U	4.45 U	77.7 UJ	66.4 UR	37.1 U
1,2,3,6,7,8-HXCDD	9.02	6.13	11.8	11.1	77.7 UJ	66.4 UR	37.1 U
1,2,3,6,7,8-HXCDF	4.19 U	1.4 U	2.69 U	2.86 U	77.7 UJ	66.4 UR	37.1 U
1,2,3,7,8,9-HXCDD	4.51 U	1.72 U	6.18 U	5.85 U	77.7 UJ	66.4 UR	37.1 U
1,2,3,7,8,9-HXCDF	4.08	1.4	1.8	1.5	77.7 UJ	66.4 UR	37.1 U
1,2,3,7,8-PECDD	1.5 U	1.4 U	1.8 U	1.5 U	77.7 UJ	66.4 UJ	37.1 U
1,2,3,7,8-PECDF	3.72 U	1.4 U	2.24 U	1.5 U	77.7 UJ	66.4 UJ	37.1 U
2,3,4,6,7,8-HXCDF	2.49 U	1.96 U	3.85 U	4.06 U	77.7 UJ	66.4 UR	37.1 U
2,3,4,7,8-PECDF	1.7 U	1.4 U	2.21 U	2.53 U	77.7 UJ	66.4 UJ	37.1 U
2,3,7,8-TCDD	0.3 U	0.32 U	0.52 U	0.4 U	15.5 UJ	13.3 UJ	7.4 U
2,3,7,8-TCDF	0.3 U	2.03 U	3.98 U	3.35 U	19.7 U	13.3 UJ	7.4 U
OCDD	1749 U	1223 U	2470 U	2273 U	196 J	13.3 UR	74.3 U
OCDF	3 U	74 U	130 U	129 U	155 UJ	13.3 UR	74.3 U
TOTAL HPCDD	665	329	808	779	26.1 J	66.4 U	12.6 J
TOTAL HPCDF	132 U	85.6 U	174 U	166 U	77.7 UJ	66.4 UR	37.1 U
TOTAL HXCDD	103 U	66.1 U	80.4 U	68.3 U	77.7 UJ	66.4 UR	37.1 U
TOTAL HXCDF	11.8 U	5.15 U	13.4 U	12.3 U	77.7 UJ	66.4 UR	37.1 U
TOTAL PECDD	1.5 U	4.4 U	1.8 U	3.96 U	77.7 UJ	66.4 UJ	37.1 U
TOTAL PECDF	22.5 U	7.57 U	13.3 U	14 U	77.7 UJ	66.4 UJ	37.1 U
TOTAL TCDD	5.23	4.67	9.68	8.26	15.5 UJ	85.8 U	7.4 U
TOTAL TCDF	19.8 U	6.09 U	16 U	14.9 U	43.4 U	13.3 UJ	7.4 U
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	49	12.4	16.4	10.3 J	5.75 J	13.4	3.5 J
1-METHYLNAPHTHALENE	198	34.1	38.8	24.7 U	15.4 U	30.3 U	7.3
1-METHYLPHENANTHRENE	658	103	107	98.8	20	39.2	6.0
2,6-DIMETHYLNAPHTHALENE	103	17.6	22.1	16.3 J	11.9	26.2	2.8 J
2-METHYLNAPHTHALENE	245	43.7 U	54.6	33.1 U	19.7 U	38.2 U	8.7
ACENAPHTHENE	1866	161	181	151	64.8	258	5.9 J
ACENAPHTHYLENE	217 J	68.9 J	78.5 J	67.5 J	38 J	46.5 J	0.5 J
ANTHRACENE	2880	355	479	318	292 J	485 J	7.1
BENZO(A)ANTHRACENE	4938	628	769	638	132	229	10.7 J
BENZO(A)PYRENE	5396	814	949	819	54.2 J	153 J	9.0
BENZO(B)FLUORANTHENE	6312	811	1033	886	96.4	177	7.1 J
BENZO(E)PYRENE	2913	433	535	456	74.7	114	5.1 J
BENZO(G,H,I)PERYLENE	2172	394	454	376	18.7 J	46.5	2.2 J
BENZO(K)FLUORANTHENE	1866	331	377	329	47.5	85.5	7.4 J
BIPHENYL	63.4 J	11 U	11.1 U	9.82 U	16.8 U	18.5 U	1.1 J
CHRYSENE	5741	759	934	811	202	282	17.9
DIBENZO(A,H)ANTHRACENE	684	99.8	122	99.2	1.36 J	8.35 J	0.1 J
DIBENZOTHIOPHENE	512	58.7	74.7	59	18.8	48.7	2.8 J
FLUORANTHENE	12106	1672	1903	1876	560	1018.45001	44.2 J
FLUORENE	1393	146	151	126	60.9	152	8.2 J
INDENO(1,2,3-CD)PYRENE	2602	448	533	425	16.4 J	47.5 J	2.5 J
NAPHTHALENE	451	72.6 U	90.7 U	51.7 U	44.6 U	60.1 U	22.7
PERYLENE	918	120	130	148	26.1 J	48.3	2.3 J
PHENANTHRENE	10224	1120	1427	1229	275	693	36.9
PYRENE	10714	1380	1798	1552	368	695	27.3
Pesticides /PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.23 U	0.075 J	0.23 J	0.13 J	1 U	0.39 U	7.27
1,2,4,5-TETRACHLOROBENZENE	0.72	0.55 J	0.31 J	0.26 J	6.3 U	6.5 U	0.16 J
2,4'-DDD	11	1.6	1.6	1.6	1.6 J	3.1	0.30 U
2,4'-DDE	0.36	0.12	0.06 J	0.15	1.7 U	1.4 U	0.32 U
2,4'-DDT	0.025 U	0.12	0.25	0.27	2.4 U	2 U	0.23 U
4,4'-DDD	6.1	0.9	1.6	1.3	12	10	0.28 U
4,4'-DDE	0.82	0.69	1.5	1.2	10	13	3.52
4,4'-DDT	3.2	0.52	0.27	0.24	1.5 U	1.3 U	0.43 UJ
ALDRIN	77	0.078 U	0.079 U	0.079 U	1.6 U	0.43 J	0.37 U
ALPHA-BHC	0.33 U	0.15 U	0.088 U	0.041 U	1.6 J	2.6	0.42
ALPHA-CHLORDANE	0.074 U	0.59	0.74	0.76	4.7	6.2	3.42
BETA-BHC	0.22 U	0.26 U	0.27 U	0.27 U	2.6 U	2.2 U	0.24 U
CHLORPYRIFOS	0.31 U	0.019 J	0.11 J	0.09 J	1.9 U	2	2.40 U
CIS-NONACHLOR	0.55	0.25	0.31	0.32	4.6	4.7	0.25 U
DELTA-BHC	0.46	0.097	0.065	0.059 U	1.6 U	1.4 U	0.15 UJ

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12						
	Sediment				Mussel		Lobster [1]
Parameters	199A	299A	399A	399A-DUP	199A	299A	199AM
DIELDRIN	0.074 U	0.025 J	0.052 J	0.047 J	0.14 U	0.034 U	1.57
ENDOSULFAN II	0.99	0.84	2.4	2.9	4 U	3.4 U	0.28 UJ
ENDRIN	0.15 U	0.28	0.12 J	0.18	7.3 U	1.3 J	0.76 U
GAMMA-BHC (LINDANE)	0.59 U	0.76 U	0.52 U	0.68 U	0.92 U	1.1 U	0.19 J
GAMMA-CHLORDANE	0.12	0.17	0.077 J	0.089 U	2.2	3.2	0.29 U
HEPTACHLOR	0.19 U	0.22 U	0.089 J	0.14 J	2.8	2.6	0.42 U
HEPTACHLOR EPOXIDE	0.033 U	0.039 U	0.04 U	0.039 U	8.9	8.8	0.29 U
HEXACHLOROBENZENE	0.05 U	0.041 U	0.025 U	0.027 U	17	8.6	0.66
MIREX	1.7	0.2	0.34	0.039 U	0.4 J	0.58 J	0.67 U
OXYCHLORDANE	0.25	0.14	0.28	0.32	2.1 U	1.8 U	1.44
PCB-101/90	6.1	2.6	4.4	3.3	22	27	1.78
PCB-105	3.2 J	1.2 J	1.7 J	2 J	16	15	0.44 J
PCB-114	0.2 U	0.23 U	0.24 U	0.24 U	1.4 U	1.2 U	1.02 U
PCB-118	5.7	2.8	3.4	3.8	24	22	1.93
PCB-126	0.14 J	0.006 J	0.006 J	0.95 U	1.2 J	0.73 J	4.08 U
PCB-128	0.56 J	1.9 J	1.4 J	1.4 J	6.4	6.8	0.78 U
PCB-138 /160	2.6	5.4	6.6	5.3	41 U	48	2.53
PCB-149/123	3.5	2.4	4.3	2.6	21	29	1.02 U
PCB-153/132	8.8	5.4	7.2	4.8	55	60	3.6
PCB-156	0.2 U	2.44	3.44	2.85	1.4 UJ	1.2 UJ	1.02 U
PCB-167	1.1	2.8	2.6	3.3	3.3	3.8	1.02 U
PCB-169	0.8 U	0.11 J	0.95 U	0.95 U	0.5 J	0.56 J	4.08 U
PCB-170/190	1.1 U	20 J	27 J	34 J	3 U	4.1 J	1.02 U
PCB-18/17	3.9 J	0.12 U	0.011 J	0.12 U	1.5 U	1.3 U	0.76 J
PCB-180	13 J	6.2 J	4.8 J	4 J	17	21	0.66 J
PCB-187	44	3.1	3.7	1.8	32	30	0.78
PCB-189	1.2	0.32	0.29	0.43	0.44 J	0.45 J	1.02 U
PCB-195/208	7.9	1.5	7.1	1.5	0.98 U	0.84 U	0.85 U
PCB-201/157/173	0.02 U	0.64	1.11	0.87	5.7	4.7	0.88 U
PCB-206	0.57	2.7	17	4.3	0.1 J	0.26 J	0.78 UJ
PCB-209	3.7 J	1 J	7.8 J	1.3 J	0.74 J	1.1 U	0.11 J
PCB-28	11	1.7	2	2	5.7	6.7	0.81 U
PCB-44	6.2	0.9	0.72	0.72	5.3	8.6	0.60 U
PCB-52	11	1.5	1.8	1.3	15	11	0.69 U
PCB-66	1.3	0.81	0.86	1.2	8.1	6.5	0.2 J
PCB-77	0.065 J	0.1 J	0.059 J	0.059 J	4.7 J	2.4 J	4.08 U
PCB-8/5	0.36 U	0.66 J	0.65 J	0.57 J	3.8	3.3	1.65 U
PCB-81	0.072 J	0.94 U	0.021 J	0.032 J	2.4 J	1.3 J	4.08 U
PENTACHLOROANISOLE	0.032 J	0.097 J	0.098 J	0.1 J	2.5	2.8	0.39
PENTACHLOROBENZENE	0.1	0.063 J	0.12	0.058 J	2.2	1.3 J	0.4
TRANS-NONACHLOR	0.071	0.17	0.17	0.067	6.3	8.5	0.18 U
Metals (mg/kg)							
ALUMINUM	56351	55859	61067	58443	202 J	345 J	3.48 J
ARSENIC	10.4	6.4	8.9	9.2	9.7 J	8.1 J	12.7
CADMIUM	0.52	0.31	0.38	0.38	1.8 J	1.6 J	0.0402 J
CHROMIUM	95.2	64.6	79.5	83.2	2.4	2.2	0.201 U
COPPER	162 J	27.1 J	50.9 J	43.5 J	7.6 J	9.8 J	37.7
IRON	25046	17012	22065	22779	394 J	483 J	6.81
LEAD	190 J	53.3 J	87.7 J	83.1 J	4.6 J	4 J	0.312 J
MANGANESE	501	420	417	420	10.2	11.9	3.16
MERCURY	1.7 J	0.47 J	0.32 J	0.35 J	0.22	0.2	0.945
NICKEL	51.3	24.7	27.4	26	1.8	1.4	0.201 U
SILVER	0.35	0.25	0.83	0.48	0.03 J	0.07 J	1.39 J
ZINC	552	86	131	121	96 J	99.1 J	103
Miscellaneous Parameters (%)							
LIPID					9.8	13.0	2.1
TOTAL ORGANIC CARBON	2.29	1.4	1.84	1.73			

Notes:
MS-12 includes the following samples: OU4-SD-M12-199A
OU4-SD-M12-299A
OU4-SD-M12-399A
OU4-FD-002-099A (duplicate of OU4-SD-M12-399A)
OU4-MU-M12-199A
OU4-MU-M12-299A
OU4-LJ-M12-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	399A	199AM
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	21.2	24.9	34.3 J	7.97	3.3 J	3.3 J
1-METHYLNAPHTHALENE	21.7 U	22.5 U	23.5 U	16.7 U	8.1 U	5.3 J
1-METHYLPHENANTHRENE	139	68.1	56	44.4	10.2	7.9
2,6-DIMETHYLNAPHTHALENE	26.7	21.4	26.4	14.3	8.46	2.4 J
2-METHYLNAPHTHALENE	34.4 U	32.2 U	37.7 U	22.2 U	14.1 U	6.9 J
ACENAPHTHENE	175	62	55.2 J	78.9	10.3	0.5 J
ACENAPHTHYLENE	85.3 J	123 J	109 J	73	45.6	0.5 J
ANTHRACENE	453	463	348	333 J	135 J	28.6
BENZO(A)ANTHRACENE	748	723	581	528	125	45.7 J
BENZO(A)PYRENE	726	718	608 J	299	43.6	39.6
BENZO(B)FLUORANTHENE	840	807	765	599	164	22.7
BENZO(E)PYRENE	412	421	367 J	268	90.2	14.2
BENZO(G,H,I)PERYLENE	311	344	433 J	56.7	16.7	8.2 J
BENZO(K)FLUORANTHENE	249	294	211 J	128	38.1	31.5 J
BIPHENYL	10.8 U	8.62 U	11.2 U	13 U	12.5 U	1.2 J
CHRYSENE	686	792	650	516 J	173 J	55.5
DIBENZO(A,H)ANTHRACENE	87.5	97.3	87.1	14.2	3.46 J	2.8 J
DIBENZOTHIOPHENE	64.4	69.1	71.9 J	25.1 J	4.89 U	1.6 J
FLUORANTHENE	2261	1599	1410	1135	288	119.8 J
FLUORENE	160	87.2	93.5	82.1	13.6	4.5 J
INDENO(1,2,3-CD)PYRENE	364	401	488 J	54.1 J	11.7 J	12.6 J
NAPHTHALENE	75.4 U	44.1 U	59.8 U	47 U	24.9 U	13
PERYLENE	119	135	98.4 J	78.8	23.4 J	7.3 J
PHENANTHRENE	570	766	410	493	90.3	20.9
PYRENE	1585	1342	1273	815	232	79.3
Pesticides /PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.087 J	0.14 J	0.02 U	0.56 U	0.43 U	2.99
1,2,4,5-TETRACHLOROBENZENE	0.54 J	0.55 J	0.58 U	1.3 U	0.94 U	0.63 J
2,4'-DDD	6.1	2	4.1	7.5	4.1	0.25 U
2,4'-DDE	0.23	0.16	0.057 J	0.21	0.34	0.36 U
2,4'-DDT	0.038 U	0.04 U	0.11	2.1	1.8	0.33 U
4,4'-DDD	1.5	1.1	2.9	5.5	5.5	0.31 U
4,4'-DDE	1.6	1.3	1.7	8.2	6.6	2.78
4,4'-DDT	0.64	0.31	0.48	8.3 J	8.9 J	0.48 UJ
ALDRIN	0.1 U	0.11 U	1.4	0.26	0.14 J	0.42 U
ALPHA-BHC	0.13 U	0.14 U	0.19	0.49	0.55	0.41
ALPHA-CHLORDANE	0.76	1.2	0.35	1.7	1.6	18.2
BETA-BHC	0.34 U	0.028 J	0.39 U	0.15 U	0.15 U	0.27 U
CHLORPYRIFOS	0.065 J	0.51 U	0.14 J	1.6 U	1.5 U	2.70 U
CIS-NONACHLOR	0.23	0.32	0.32	1	0.77	0.28 U
DELTA-BHC	0.13	0.15	0.087 U	0.095 U	0.09 U	0.16 UJ
DIELDRIN	0.22	0.24	0.15	1.8	2.7	1.07
ENDOSULFAN II	1.7	2.2	0.83	0.56	0.37	0.31 UJ
ENDRIN	0.33	0.21 J	0.26 U	0.61	0.87	0.85 U
GAMMA-BHC (LINDANE)	0.68 U	0.58 U	0.86 U	0.17 U	0.14 U	0.33
GAMMA-CHLORDANE	0.11 U	0.12 U	0.22	0.74	0.65	0.33 U
HEPTACHLOR	0.12 J	0.096 J	0.33 U	0.27 U	0.26 U	0.47 U
HEPTACHLOR EPOXIDE	0.051 U	0.054 U	0.55 U	0.41	1.1	0.33 U
HEXACHLOROBENZENE	0.062 U	0.19 U	0.89 U	0.11 J	0.13 J	1.1
MIREX	0.051 U	0.054 U	0.058 U	2.2	2.3	0.75 U
OXYCHLORDANE	0.094	0.32	0.029 U	0.2 U	0.19 U	0.35 U
PCB-101/90	2.8	1.8	3	9.6	9.1	1.08
PCB-105	1.2 J	0.74 J	1.8	6.5	4.9	0.83 J
PCB-114	0.3 U	0.32 U	0.35 U	0.66 U	0.63 U	1.15 U

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	399A	199AM
PCB-118	2.8	2.1	2.1	7.1	5.9	2.18
PCB-126	0.005 J	1.3 U	1.4 U	0.3 J	0.066 J	0.13 J
PCB-128	1 J	1.2 J	0.79	3.4	2.4	0.14 J
PCB-138 /160	3.5	2.7	4.8	17 U	15 U	2.54
PCB-149/123	1.5	1.1	3.1	9.3	8.5	1.15 U
PCB-153/132	2.7	2.3	4.8	19 U	17 U	2.41
PCB-156	1.79	2.95	1.69	0.73	0.88	2.02
PCB-167	2.3	2.3	1.5	3	2.9	0.37 J
PCB-169	1.2 U	0.079 J	1.4 U	0.017 J	0.15 J	0.05 J
PCB-170/190	12 J	12 J	11	8.7	2 U	1.15 U
PCB-18/17	0.15 U	0.16 U	0.68	2.3 U	1.3 U	10.14
PCB-180	2.1 J	1.9 J	3.1	8.3 U	6.5 U	0.65 J
PCB-187	1	0.89	2.2	8.6 U	8.6 U	0.68 J
PCB-189	0.13 J	0.33	0.35 U	0.66 U	0.63 U	1.15 U
PCB-195/208	0.49	0.45	0.79	0.15 J	0.53 U	0.95 U
PCB-201/157/173	0.34	0.39	0.54	0.49 J	0.43 J	0.99 U
PCB-206	0.52	0.83	1.1	0.57 U	0.55 U	0.88 UJ
PCB-209	1 J	0.86 J	1.5	0.75 U	0.72 U	0.41 J
PCB-28	2.1	1.5	5.6	2.1	1.1	0.58 J
PCB-44	0.28	0.18 J	0.88	3	3.3	0.67 U
PCB-52	0.91	0.59	1.3	2.8	3.1	0.66 J
PCB-66	0.68	0.68	0.97	1.7	1.7	0.22 J
PCB-77	0.25 J	0.053 J	0.21 U	1.5 J	0.73 J	4.58 U
PCB-8/5	0.78 J	0.99 J	1.3	0.78 J	0.086 J	1.18 J
PCB-81	0.009 J	0.015 J	0.084 J	0.5 J	0.78 J	4.58 U
PENTACHLOROANISOLE	0.17 J	0.13 J	0.21 U	0.77	0.086 J	0.35
PENTACHLOROBENZENE	0.13 J	0.12 J	0.14 U	0.45	0.67	2.05
TRANS-NONACHLOR	0.15	0.14	0.096	1.4	1.2	0.20 U
Metals (mg/kg)						
ALUMINUM	64272	63072	63943	79.5 J	96.4 J	7.44 J
ARSENIC	12.1	12.1	11.9	5.7 J	6.2 J	12.5
CADMIUM	0.46	0.43	0.51	1.8	1.8	0.0355 J
CHROMIUM	107 J	95.9	110	1.2	1.4	0.182 U
COPPER	46.8	45.5	61.9	7.3	8.7	28.5
IRON	31316	28487	32428	249	267	12.4
LEAD	59.9 J	56.2 J	70 J	2.1	2.3	0.136 J
MANGANESE	439	427	445	12.9	13	1.9
MERCURY	0.25 J	0.25 J	0.28 J	0.26	0.25	0.657
NICKEL	31.5 J	37.7	31.3	1	0.94	0.182 U
SILVER	0.44	0.54	0.49	0.03 J	0.03 J	0.754 J
ZINC	134	133	155	116	95.8	75
Miscellaneous Parameters (%)						
LIPID				8.1	11.0	2.2
TOTAL ORGANIC CARBON	1.39 J	1.93	1.48 J			

Notes:
MS-13 includes the following samples: OU4-SD-M13-199A
OU4-SD-M13-299A
OU4-SD-M13-399A
OU4-MU-M13-199A
OU4-MU-M13-399A
OU4-LJ-M13-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	299A	199AM
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	8.15 J	24.4 J	10.3 J	3.03 J	2.37 J	3.4 J
1-METHYLNAPHTHALENE	12.5 U	18.1 U	9.89 U	6.47 U	4.95 U	6.5
1-METHYLPHENANTHRENE	23.5	74.8	47	4.98 J	3.7 J	6.6
2,6-DIMETHYLNAPHTHALENE	12.4	19.9	8.52	5.65 J	4.11	2.2 J
2-METHYLNAPHTHALENE	23.9 U	31.6 U	16.1 U	9.25 U	7.52 U	8.1
ACENAPHTHENE	9.39 J	22.4 J	15.9 J	10.9	4.77 J	0.5 J
ACENAPHTHYLENE	41.6 J	120 J	77.4 J	12.9 J	13.5 J	0.5 J
ANTHRACENE	90.1	307	145	42.5 J	37.7 J	3.3 J
BENZO(A)ANTHRACENE	215	653	304	20.5	25.1	21.8 J
BENZO(A)PYRENE	293 J	953 J	427 J	9.5 J	11.7 J	40.7
BENZO(B)FLUORANTHENE	331	832	419	20.1	30.1	30.2
BENZO(E)PYRENE	188 J	505 J	224 J	21.1	24.4	12.5
BENZO(G,H,I)PERYLENE	255 J	514 J	264 J	7.04 J	9.16	9.3
BENZO(K)FLUORANTHENE	109 J	252 J	114 J	9.88	12.2	19.5 J
BIPHENYL	7.54 U	13 J	5.32 U	7.82 U	4.41 U	1.0 J
CHRYSENE	227	643	289	33.7	36.4	35.1
DIBENZO(A,H)ANTHRACENE	44.8	110	56.9	1.06 J	1.65 J	2.5 J
DIBENZOTHIOPHENE	16.3 J	36 J	24.5 J	3.92 U	2.82 U	1.0 J
FLUORANTHENE	376	1014	538	87.8	77	80.1 J
FLUORENE	23.1	73.9	29.7	9.39	5.64	1.9 J
INDENO(1,2,3-CD)PYRENE	268 J	488 J	273 J	4.98 J	7.3 J	15.5 J
NAPHTHALENE	45.9 U	64.3 U	31.3 U	15.4 U	10.1 U	14.6
PERYLENE	39.7 J	114 J	54.6 J	8.01 J	10.7 J	1.9 J
PHENANTHRENE	152	511	220	43.9	28.6 U	9.4
PYRENE	359	1092	525	66.1	65.5	70.3
Pesticides /PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.15 U	0.26 U	0.05 U	1.9	0.9 U	2.43
1,2,4,5-TETRACHLOROBENZENE	0.73 U	0.18 U	0.7 U	4.4 U	1.2 U	0.43 J
2,4'-DDD	1	3	1.3	1.5	1.9	0.22 U
2,4'-DDE	0.11 J	0.1 U	0.079 J	0.74 J	1.6	0.31 U
2,4'-DDT	0.21	0.028 U	0.037	5.5	1.7	0.22 J
4,4'-DDD	2.3	0.5	0.82	6.6	6.5	0.27 U
4,4'-DDE	2	0.48	0.61	6.4	8.4	1.49
4,4'-DDT	0.11	0.36	1.1	4.1 U	1.8 U	0.42 UJ
ALDRIN	2.1	2.9	2.3	0.76 J	1.3	0.36 U
ALPHA-BHC	0.2	0.036 J	0.11	1.7	1.1	0.39
ALPHA-CHLORDANE	0.17	0.12	0.11	1.9	2.1	2.07
BETA-BHC	0.27 U	0.25 U	0.31 U	1.6 U	2.7	0.23 U
CHLORPYRIFOS	0.39 U	0.064 J	0.075 J	1.6	0.78 U	2.36 U
CIS-NONACHLOR	0.11	1.1	0.19	2.4	1.6	0.25 U
DELTA-BHC	0.061 U	0.053 J	0.11	0.97 U	0.66 U	0.14 UJ
DIELDRIN	0.36	0.083 U	0.07 J	0.81 U	1.3	1.59
ENDOSULFAN II	0.61	0.96	0.54	2.4 U	1.6 U	0.27 UJ
ENDRIN	0.18 U	0.17 U	0.21 U	1.4 J	2.7 J	0.75 U
GAMMA-BHC (LINDANE)	0.26 U	0.28 U	0.55 U	1.9 U	3.6 U	0.49
GAMMA-CHLORDANE	0.11	0.16	0.22	1.3	2.2	0.28 U
HEPTACHLOR	0.15 J	0.21 U	0.27 U	2.7	0.95 J	0.81
HEPTACHLOR EPOXIDE	0.59 U	0.17 U	0.59 U	21	3.3	0.29 U
HEXACHLOROBENZENE	0.44 U	0.56 U	1 U	7.2	3.6	0.45
MIREX	0.045	0.037 U	0.047 U	0.7 U	0.47 U	0.66 U
OXYCHLORDANE	0.02 U	0.015 J	0.023 U	1.3 U	0.87 U	0.31 U
PCB-101/90	0.56	0.42	1.4	7.5	10	0.86 U
PCB-105	0.52 J	0.088 J	0.75 J	5	4.1	0.32 J
PCB-114	0.24 U	0.22 U	0.28 U	0.86 U	0.58 U	1.0 U
PCB-118	0.76	0.38	0.92	7.4	11	1.15 J
PCB-126	0.98 U	0.89 U	1.1 U	0.15 J	0.17 J	4.01 U
PCB-128	0.48	0.52	0.47	2.4	2.7	0.77 U
PCB-138 /160	2.4	1.3	2.7	21 U	19 U	1.54
PCB-149/123	0.39	0.53	1.1	5.8 U	5.1 U	1.0 U
PCB-153/132	1.5	0.68	1.5	22 U	19 U	1.88
PCB-156	0.64	0.96	1.04	0.86 UJ	0.58 UJ	1.01 U
PCB-167	0.65	3.1	0.7	0.82 J	0.82	1.0 U
PCB-169	0.98 U	0.89 U	1.1 U	0.024 J	0.14 J	0.04 J
PCB-170/190	3.9	5.6	5	0.82 UJ	0.56 UJ	0.23 J
PCB-18/17	0.12 U	0.11 U	0.14 U	5.4	7.9	1.47 J
PCB-180	0.77	1.1	0.95	7.8 U	6.2 U	0.7 J
PCB-187	0.33	1	1.3	9 U	6	0.47 J
PCB-189	0.24 U	0.082 J	0.28 U	0.86 U	0.58 U	1.0 U
PCB-195/208	0.13	0.29	0.11	0.34 J	0.22 J	0.83 U
PCB-201/157/173	0.03 U	0.29	0.2	0.95	0.48	0.87 U

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster [1]
Parameters	199A	299A	399A	199A	299A	199AM
PCB-206	0.7	0.56	0.61	0.09 J	0.015 J	0.77 UJ
PCB-209	0.11	0.42	0.24	1	0.32 J	1.13 U
PCB-28	1.8	0.45	0.44	7.8	6.9	0.79 U
PCB-44	0.042 J	0.19 U	0.18 J	9.9	3.6	0.59 U
PCB-52	0.3	0.6	0.81	8.5	11	0.68 U
PCB-66	0.4	0.3	0.45	2.7	3.8	0.96 U
PCB-77	0.07 U	0.03 U	0.08 U	1.2 J	1 J	4.01 U
PCB-8/5	0.87	0.26 J	0.46 J	0.79 J	1 J	1.07 J
PCB-81	0.023 J	0.025 J	0.04 J	0.49 J	0.38 J	4.01 U
PENTACHLOROANISOLE	0.06 U	0.06 U	0.07 U	1.8	1.2	0.36
PENTACHLOROBENZENE	0.3	0.15	0.12	3.5	0.57 U	1.8
TRANS-NONACHLOR	0.25	0.098	0.12	2.3	2.3	0.17 U
Metals (mg/kg)						
ALUMINUM	51459	57954	61663	251 J	183 J	4.29 J
ARSENIC	9.4	8.4	11.6	7.1 J	7.2 J	9.38
CADMIUM	0.24	0.3	0.43	1.4	1.8	0.0625 J
CHROMIUM	78.5	64.4	95.4	1.9	1.9	0.223 U
COPPER	27.4	24.8	38	7	6.9	31
IRON	19559	19297	25262	571	399	8.89
LEAD	56.5 J	64.6 J	58 J	2.7	3.8	0.0815 U
MANGANESE	360	422	419	10	8.9	2.15
MERCURY	0.25 J	0.26 J	0.35 J	0.24	0.31	0.489
NICKEL	26.5	19.3	27	1.1	0.92	0.266 U
SILVER	0.19	0.19	0.62	0.08 J	0.05 J	1.03 J
ZINC	92.1	90.8	123	83.3	110	83.7
Miscellaneous Parameters (%)						
LIPID				7.5	8.8	2.3
TOTAL ORGANIC CARBON	2.85	2.24	1.55			

Notes:
MS-14 includes the following samples: OU4-SD-M14-199A
OU4-SD-M14-299A
OU4-SD-M14-399A
OU4-MU-M14-199A
OU4-MU-M14-299A
OU4-LJ-M14-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01							
	Sediment					Mussel		Lobster [1]
Parameters	199A	299A	299A-DUP	399A	499A	399A	499A	199AM
Dioxins/Furans (ng/kg)								
1,2,3,4,6,7,8-HPCDD	146	50.4	33.5	24.9	75	24.4 UR	22.3 UR	37.7 U
1,2,3,4,6,7,8-HPCDF	43.9 U	7.4 U	8.49 U	6.76 U	19.4 U	24.4 UR	22.3 UR	37.7 U
1,2,3,4,7,8,9-HPCDF	2.7 U	1.1 U	1.2 U	1 U	0.93 U	24.4 UR	22.3 UR	37.7 U
1,2,3,4,7,8-HXCDD	1.36 J	1.31	0.071 J	0.22 J	0.84 J	24.4 UR	22.3 UR	37.7 U
1,2,3,4,7,8-HXCDF	2.94 U	1.1 U	1.2 U	1 U	0.94 U	24.4 UR	22.3 UR	37.7 U
1,2,3,6,7,8-HXCDD	8.18	2.46	0.52 J	1.06	3.14	24.4 UR	22.3 UR	37.7 U
1,2,3,6,7,8-HXCDF	2.7 U	0.28 UJ	1.2 U	1 U	0.9 U	24.4 UR	22.3 UR	37.7 U
1,2,3,7,8,9-HXCDD	3.93 U	1.51 U	1.2 U	1 U	1.54 U	24.4 UR	22.3 UR	37.7 U
1,2,3,7,8,9-HXCDF	2.7 U	1.1 U	1.2 U	1 U	0.9 U	24.4 UR	22.3 UR	37.7 U
1,2,3,7,8-PECDD	2.7 U	0.27 UJ	1.2 UJ	1 U	0.9 U	24.4 UJ	22.3 UJ	37.7 U
1,2,3,7,8-PECDF	2.7 U	0.21 UJ	1.2 U	1 U	0.9 U	24.4 U	22.3 UJ	37.7 U
2,3,4,6,7,8-HXCDF	3.37 U	0.61 UJ	1.2 U	1 U	1.09 U	24.4 UR	22.3 UR	37.7 U
2,3,4,7,8-PECDF	2.7 U	0.32 UJ	0.2 U	1 U	0.9 U	24.4 UJ	22.3 UJ	37.7
2,3,7,8-TCDD	0.5 U	0.34 U	0.2 UJ	0.2 U	0.2 U	4.9 UJ	4.5 UJ	7.5 U
2,3,7,8-TCDF	2.64 U	0.73 U	0.73 U	0.54 U	1.18 U	8.2 U	4.5 UJ	7.5 U
OCDD	1043 U	343 U	274 U	223 U	610 U	48.9 UR	44.6 UR	75.3 U
OCDF	29.2 U	9.23 U	16.9 U	12.7 U	35.5 U	48.9 UR	44.6 UR	75.3 U
TOTAL HPCDD	357	188	78.4	57.7	181	24.4 UR	25.7 J	37.7 U
TOTAL HPCDF	99.9 U	19.6 U	22 U	15.6 U	48.9 U	24.4 UR	22.3 UR	37.7 U
TOTAL HXCDD	93 U	139 U	9.19 U	10.1 U	40.9 U	24.4 UR	22.3 UR	7.9 J
TOTAL HXCDF	8.09 U	1.27 U	1.2 U	1 U	2.73 U	24.4 UR	22.3 UR	37.7 U
TOTAL PECDD	4.85 U	27.1 U	1.2 UJ	1 U	0.9 U	24.4 UJ	22.3 UJ	37.7 U
TOTAL PECDF	11.3 U	2.68 U	1.2 U	2.03 U	0.9 U	24.4 U	22.3 UJ	5.4 J
TOTAL TCDD	0.84	4.96	1.81 J	0.2 U	3.29	52.2 U	4.5 UJ	7.5 U
TOTAL TCDF	14 U	1.5 U	0.73 U	1.02 U	5.55 U	30.7 U	8.8 U	7.5 U
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	14.3 J	2.38 J	1.82	3.36 J	6.29 J	1.51 J	1.7 J	3.5 J
1-METHYLNAPHTHALENE	10.2 U	2.47 U	2.51 U	2.6 U	5.06 U	4.31 U	4.89 U	8.4
1-METHYLPHENANTHRENE	70.4	8.6	5.44	13.8	20.9	1.59 J	1.96 J	6.0
2,6-DIMETHYLNAPHTHALENE	9.66	1.95	2.82 J	2.5	5.98	3.02	3.57	2.4 J
2-METHYLNAPHTHALENE	17.6 U	3.68 U	5.12	4.2 U	9.56 U	7.73 U	8.41 U	10.1
ACENAPHTHENE	13.5 J	2 J	1.93 U	5.88 J	6.46 J	1.06 J	1.81 J	0.4 J
ACENAPHTHYLENE	83 J	14.5 J	13	23.7 J	38.2 J	11.3	12.2	0.7 J
ANTHRACENE	139	29.7	22.4 J	39.1	53.7	27.6 J	31.1 J	1 J
BENZO(A)ANTHRACENE	432	46.5	40.7 J	117	167	18.4	17.3	1.1 J
BENZO(A)PYRENE	566 J	64.2 J	63.4 J	168 J	235 J	16.3	16.1	0.5 J
BENZO(B)FLUORANTHENE	574	65.7	58.1 J	150	230	25.7	25.7	1.1 J
BENZO(E)PYRENE	293 J	33.8 J	25.2 J	82.2 J	127 J	26.3	23.5	2.3 J
BENZO(G,H,I)PERYLENE	331 J	41.1 J	29.2 J	105 J	153 J	7.47	7.19	0.9 J
BENZO(K)FLUORANTHENE	146	17.7	14.1 J	48.2	82.1	6.47	7.42	1 J
BIPHENYL	5.62 U	0.97 U	2.01 U	1.42 U	3.16 U	5.26 U	6.55 U	1.1 J
CHRYSENE	403	48.3	41.6 J	113	178	30.6 J	31.9 J	5.3
DIBENZO(A,H)ANTHRACENE	77.6	8.15	8.42 J	18.8	30.5	0.88 J	1.03 J	0.1 J
DIBENZOTHIOPHENE	27.5 J	4.47 J	2.52 J	8.02 J	9.43 J	0.83 U	1.23 U	0.6 J
FLUORANTHENE	628	95.8	62.7 J	199	221	42.6	51.9	8.5 J
FLUORENE	30.4	6.5	4.26 J	8.03	11.9	2.73 J	3.36 J	2.0 J
INDENO(1,2,3-CD)PYRENE	358 J	44.4 J	33 J	110 J	160 J	3.79 J	3.85 J	0.2 J
NAPHTHALENE	35.3 U	7.76 U	11.1 U	10.1 U	18.1 U	12.3 U	14.4 U	14.5
PERYLENE	48.5 J	11.5 J	13	21.4 J	29.3 J	14.8	12.8	1.0 J
PHENANTHRENE	229	44.5	27.9 J	63.4	82	9.03 U	12.4 U	3.1 J
PYRENE	600	89.1	62.3 J	195	232	53.7	53.1	6.5
Pesticides /PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.2 U	0.06 U	0.02 U	0.06 U	0.21 U	0.36 U	0.25 U	5.49
1,2,4,5-TETRACHLOROBENZENE	0.62 U	0.05 U	0.03 U	0.18 U	0.45 U	2.2 U	2.1 U	0.92
2,4'-DDD	1.4 J	0.14	0.18	0.23	0.81	2.5	2.5	0.21 U
2,4'-DDE	0.088 J	0.074 U	0.075 U	0.033 J	0.091	0.47	0.49	0.30 U
2,4'-DDT	0.041 UJ	0.02 U	0.021 U	0.02 U	0.023 U	1.5	1.3	0.28 U
4,4'-DDD	0.42 J	0.064	0.069	0.082	0.36	5.2	5.2	0.26 U
4,4'-DDE	0.88 J	0.12	0.33	0.14	0.58	8.4	8.3	2.63
4,4'-DDT	0.7 J	0.022 J	0.092 U	0.063	0.15	9.1 J	8.3 J	0.40 UJ
ALDRIN	1.8 J	0.39	0.034 J	0.3	1	0.19 J	0.43	0.35 U
ALPHA-BHC	0.087 J	0.055 J	0.058 J	0.048 J	0.08	0.48	0.62	0.92
ALPHA-CHLORDANE	0.091 J	0.035 J	0.064	0.025 J	0.15	2.5	2.3	2.4
BETA-BHC	0.12 J	0.18 U	0.18 U	0.047 J	0.2 U	0.14 U	0.13 U	0.26
CHLORPYRIFOS	0.28 J	0.26 U	0.062 J	0.038 J	0.033 J	0.034 J	0.38 J	2.25 U
CIS-NONACHLOR	0.18 J	0.019 J	0.026 J	0.02 J	0.053	0.82	0.83	0.23 U
DELTA-BHC	0.081 UJ	0.048	0.072	0.016 J	0.046 U	0.089 U	0.082 U	0.14 UJ
DIELDRIN	0.12 UJ	0.091	0.062 U	0.061 U	0.068 U	2.4	2.3	1.54 U
ENDOSULFAN II	0.43 J	0.12 U	0.096	0.11 U	0.55	0.58	0.62	0.26 UJ
ENDRIN	0.24 UJ	0.12 U	0.12 U	0.12 U	0.14 U	0.7	0.57	0.71 U
GAMMA-BHC (LINDANE)	0.35 U	0.18 U	1.1 U	0.22 U	0.23 U	0.054 U	0.19 U	1.67
GAMMA-CHLORDANE	0.07 J	0.06 J	0.062 U	0.065	0.088	1.2	1.1	0.27 U
HEPTACHLOR	0.31 UJ	0.15 U	0.12 J	0.16 U	0.007 J	0.26 U	0.24 U	0.39 U
HEPTACHLOR EPOXIDE	0.05 U	0.3 U	0.027 U	0.22 U	0.23 U	0.44	0.62	0.27 U

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01							
	Sediment					Mussel		Lobster [1]
Parameters	199A	299A	299A-DUP	399A	499A	399A	499A	199AM
HEXACHLOROBENZENE	1 U	0.37 U	0.041 U	0.46 U	0.4 U	0.28	0.38	0.62
MIREX	0.054 UJ	0.027 U	0.027 U	0.071	0.03 U	1.6	1.6	0.63 U
OXYCHLORDANE	0.027 UJ	0.013 U	0.014 U	0.014 U	0.015 U	0.19 U	0.18 U	0.73
PCB-101/90	0.44 J	0.15	0.12 U	0.16	0.36	11	10	0.71 J
PCB-105	0.28 J	0.075 J	0.71 U	0.086 J	0.23 J	4.3	4.4	0.69 J
PCB-114	0.33 UJ	0.16 U	0.16 U	0.16 U	0.18 U	0.62 U	0.58 U	0.96 U
PCB-118	0.083 J	0.11	0.089 U	0.034 J	0.23	8.9	7.8	1.48
PCB-126	1.3 UJ	0.65 U	0.16 U	0.65 U	0.007 J	0.24 J	0.21 J	0.02 J
PCB-128	0.45 J	0.047	0.091	0.046	0.099	2.3	2.3	0.73 U
PCB-138 /160	1 J	1.2	0.53 U	0.32	0.7	15 U	15 U	2.64
PCB-149/123	0.18 J	0.12 J	0.12 U	0.13 J	0.31	6.7 U	7.6 U	0.96 U
PCB-153/132	0.75 J	0.22 U	0.24 U	0.25 U	0.55	18 U	18 U	3.13
PCB-156	0.83 J	0.14 J	0.16 U	0.12 J	0.48	0.8	1.06	0.96 U
PCB-167	1.6 J	0.16	0.17	0.44	0.51	1.4	1.4	0.22 J
PCB-169	0.005 J	0.65 U	0.16 U	0.01 J	0.73 U	0.044 J	0.032 J	3.82 U
PCB-170/190	3.8 J	0.72 J	0.91 U	1	3.3	0.62 U	0.58 U	0.96 U
PCB-18/17	0.16 UJ	0.046 J	0.26 U	0.11	0.062 J	1.3 U	1.2 U	0.36 J
PCB-180	0.57 J	0.12	0.17 U	0.11	0.27	7 U	7.1 U	1.39
PCB-187	0.1 J	0.079 J	0.026 U	0.076 J	0.22	6.2 U	6.9 U	0.99
PCB-189	0.044 J	0.16 U	0.16 U	0.16 U	0.031 J	0.62 U	0.044 J	0.96 U
PCB-195/208	0.18 J	0.053	0.013 J	0.038 J	0.052 J	0.52 U	0.091 J	0.80 U
PCB-201/157/173	0.2 J	0.04	0.03	0.04	0.09	0.48 U	0.4 J	0.83 U
PCB-206	0.19 J	0.098	0.1	0.085	0.17	0.54 U	0.034 J	0.73 UJ
PCB-209	0.19 J	0.034 J	0.082	0.054 J	0.22	0.7 U	0.65 U	0.43 J
PCB-28	0.074 J	0.13 J	0.49	0.093 J	0.25	1.5	1.4	0.76 U
PCB-44	0.062 J	0.029 J	0.023 U	0.056 J	0.061 J	2.8	2.6	0.56 U
PCB-52	0.22 J	0.12 U	0.13	0.085 J	0.19	3.8	3.9	0.65 U
PCB-66	0.22 J	0.04 J	0.14	0.033 J	0.13 U	1.7	1.8	0.16 J
PCB-77	0.09 U	0.044 U	0.053 J	0.25 J	0.07 U	1.5 J	1.1 J	3.82 U
PCB-8/5	0.91 J	0.18 J	0.3 U	0.16 J	0.58	0.15 J	0.087 J	4.48
PCB-81	0.007 J	0.045 J	0.043 J	0.006 J	0.015 J	1.1 J	0.2 J	3.82 U
PENTACHLOROANISOLE	0.07 U	0.03 U	0.025 J	0.03 U	0.06 U	0.25	0.15 J	0.33
PENTACHLOROBENZENE	0.15 J	0.047 U	0.036 J	0.02 U	0.05 U	0.59	0.54	0.99
TRANS-NONACHLOR	0.068 J	0.006 J	0.05	0.034 U	0.12	2.7	2.5	0.17 U
Metals (mg/kg)								
ALUMINUM	55307 J	43765	43842	44370	50183	145 J	233 J	8.67 J
ARSENIC	8 J	2.6	3	3.3	5	6 J	6.8 J	7.72
CADMIUM	0.38 J	0.1	0.11	0.07	0.39	1.6	1.2	0.0468 J
CHROMIUM	70.4 J	22.1	23.7	27.5	38.4	1.8	1.8	0.503
COPPER	18.4 J	4.4	4.9 J	4.4	7.9	6.6	7.1	55.7
IRON	21359 J	9133	9505	9221	12473	287	475	16.1
LEAD	59.2 J	21.8 J	22.6 J	24.8 J	29.3 J	2	1.9	0.440 J
MANGANESE	401 J	505	546	464	328	11.8	10.3	4.46
MERCURY	0.33 J	0.05 J	0.04 J	0.03 J	0.09 J	0.31	0.29	0.578
NICKEL	19.5 J	9.1	9.8	10.3	12.2	1.1	1	0.573
SILVER	0.19 J	0.09	0.07	0.06	0.12	0.07 J	0.07 J	1.72 J
ZINC	93.4 J	25.9	27.4	28	45.8	90	105	120
Miscellaneous Parameters (%)								
LIPID						6.0	8.6	2.9
TOTAL ORGANIC CARBON	2.35	0.47	0.48	0.45	0.92			

Notes:

RF-1 includes the following samples:
OU4-SD-R01-199A
OU4-SD-R01-299A
OU4-FD-006-099A (duplicate of OU4-SD-R01-299A)
OU4-SD-R01-399A
OU4-SD-R01-499A
OU4-MU-R01-399A
OU4-MU-R01-499A
OU4-LJ-R01-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02									
	Sediment					Mussel			Lobster [1]	
Parameters	199A	299A	399A	399A-DUP	499A	399A	499A	499A-DUP[6]	199AM	199AM-DUP
Dioxins/Furans (ng/kg)										
1,2,3,4,6,7,8-HPCDD	50.7	49.6	26.7	145 UJ	159	25.6 U	28.6 U	26.1 U	41.9 U	
1,2,3,4,6,7,8-HPCDF	10.5 U	13.2 U	7.45 U	37.7 U	40.3 U	25.6 U	25.9 U	26.1 U	41.9 U	
1,2,3,4,7,8,9-HPCDF	1 U	1 U	1.1 U	1.47 U	1.66 U	25.6 U	7.46 J	26.1 U	41.9 U	
1,2,3,4,7,8-HXCDD	0.28 J	0.071 J	0.33 J	1.62 J	1.85	25.6 U	25.9 U	26.1 U	41.9 U	
1,2,3,4,7,8-HXCDF	1 UJ	1.1 U	1.1 U	1.99 U	2.4 U	25.6 U	2.41 J	26.1 U	41.9 U	
1,2,3,6,7,8-HXCDD	0.29 U	1.38	0.92 J	6.96 J	8.25	2.51 J	25.9 U	26.1 U	41.9 U	
1,2,3,6,7,8-HXCDF	0.91 UJ	1.1 U	0.33 U	1.41 U	1.78 U	25.6 U	1.63 J	26.1 U	41.9 U	
1,2,3,7,8,9-HXCDD	2.19 UJ	1.57 U	1.1 U	4.64 UJ	4.73 U	25.6 U	25.9 U	26.1 U	41.9 U	
1,2,3,7,8,9-HXCDF	1 U	1.1 U	1.1 U	1.4 U	1.2 U	25.6 U	11.6 J	26.1 U	41.9 U	
1,2,3,7,8-PECDD	1 U	1.1 U	1.1 U	1.4 U	1.4 U	25.6 UJ	25.9 U	26.1 U	41.9 U	
1,2,3,7,8-PECDF	0.49 U	1.1 U	1.1 U	0.56 UJ	1.27 U	25.6 U	25.9 U	26.1 U	41.9 U	
2,3,4,6,7,8-HXCDF	1.17 UJ	1.1 U	1.1 U	2.93 U	3.03 U	25.6 U	3.52 J	26.1 U	41.9 U	
2,3,4,7,8-PECDF	1 UJ	1.1 U	1.1 U	1.4 U	1.2 U	25.6 U	25.9 U	26.1 U	41.9 U	
2,3,7,8-TCDD	0.24 U	0.2 U	0.2 U	0.25 U	0.2 U	0.51 UJ	5.18 U	5.2 U	8.4 U	
2,3,7,8-TCDF	0.76 U	0.49 U	0.4 U	2.03 U	2.33 U	6.15 U	10 U	5.2 U	8.4 U	
OCDD	481 U	413 U	437 U	1052 U	1378 U	11.2 UJ	119	19.4 J	83.8 U	
OCDF	16.9 U	21.9 U	11.4 U	59.3 U	65.6 U	8.76 J	66.3	13.3 UJ	83.8 U	
TOTAL HPCDD	50.7	111	26.7	322	375	25.6 U	28.6 U	26.1 UJ	41.9 U	
TOTAL HPCDF	26.4 U	36.2 U	7.97 U	92.7 U	96.1 U	25.6 U	7.46	26.1 UJ	41.9 U	
TOTAL HXCDD	30.7 U	15 U	16.2 U	86.3 U	95.9 U	21.5 J	25.9 U	26.1 UJ	41.9 U	
TOTAL HXCDF	2.74 U	1.1 U	1.73 U	6.33 U	7.21 U	25.6 U	19.2 J	26.1 UJ	41.9 U	
TOTAL PECDD	1 U	1.1 U	1.1 U	1.4 U	8.78 U	25.6 UJ	25.9 U	26.1 UJ	41.9 U	
TOTAL PECDF	2.51 U	1.86 U	1.1 U	6.78 U	10.6 U	25.6 U	16.7 U	26.1 U	41.9 U	
TOTAL TCDD	0.24 U	0.2 U	0.2 U	0.25 U	5.29	5.1 U	41.3 U	5.2 U	8.4 U	
TOTAL TCDF	2.15 U	1.62 U	0.4 U	7.64 U	13 U	11 U	18.5 U	12.5 U	8.4 U	
Polyaromatic Hydrocarbons (ug/kg)										
1,6,7-TRIMETHYLNAPHTHALENE	15.5 J	8.2 J	16.9 J	17.7	19.5	1.67 J	2.13 J	1.76 J	4.4 J	4.0 J
1-METHYLNAPHTHALENE	20.7 U	7.41 U	19.4 U	17.7 U	22.7 U	6.23 U	4.95 U	5.56 U	7.9	7.1
1-METHYLPHENANTHRENE	58.8	46.1 J	48.2	88.7	45.3	3.33	4.63	4.11	6.6	5.4 J
2,6-DIMETHYLNAPHTHALENE	12.2	9.33 J	19.8	18.3	24.2	3.75	3.35	3.74	3.7 J	3.8 J
2-METHYLNAPHTHALENE	26.7 U	10.7 U	31.8 U	24.5	20.9 U	9.95 U	8.58 U	9.78 U	9.9	9.2
ACENAPHTHENE	10.4 J	15.1 J	18 J	26.6 U	16.3 J	1.83 J	2.48 J	2.56 J	1.4 J	0.5 J
ACENAPHTHYLENE	84.9 J	74.6 J	119 J	117	101 J	20.2	16.8	15.5	0.6 J	0.6 J
ANTHRACENE	138	280 J	205	340 J	190	25.3 J	41 J	39.1	2 J	1.7 J
BENZO(A)ANTHRACENE	409	489 J	587	515	398	18.3	25.1	25.1	4.7	4.8
BENZO(A)PYRENE	433 J	446 J	773 J	744	479 J	18.3	25	23.8	4.9 J	4.5 J
BENZO(B)FLUORANTHENE	541	472 J	831	687	541	28.7	39.3	35.9	3.3 J	4.9 J
BENZO(E)PYRENE	269 J	216 J	428 J	343	268 J	21.6	28.4	28.4	4.5 J	4.5 J
BENZO(G,H,I)PERYLENE	268 J	208 J	455 J	335	280	8.71	12.2	11.4	2.1 J	3.0 J
BENZO(K)FLUORANTHENE	211	136 J	257	256	153	7.24	9.32	7.8	3.2 J	3.5 J
BIPHENYL	4 U	3.42 U	11.6 J	7.28 U	5.71 U	5.79 U	7.32 U	8 U	1.4 J	1.3 J
CHRYSENE	455	430 J	585	603	424	29.9 J	43.5 J	41.6	11.6	11.8
DIBENZO(A,H)ANTHRACENE	68.8	46.5 J	91.9	105	53.9	1.35 J	1.93 J	1.69 J	0.1 J	0.2 J
DIBENZOTHIOPHENE	23.7 J	28.2 J	33.7 J	32.5 J	28.2	1.16 U	2.12 U	1.96 U	0.7 J	0.7 J
FLUORANTHENE	770	1177 J	989	1099	909	44	69.9	70.3	29.4 J	28 J
FLUORENE	21	55.2 J	65.3	59.1	48.3	3.15 J	4.73	3.78 J	2.6 J	1.9 J
INDENO(1,2,3-CD)PYRENE	329 J	229 J	461 J	384	284 J	5.06 J	7.74 J	6.51 J	2 J	1.8 J
NAPHTHALENE	27.4 U	20.2 U	64.9 U	47.1 U	31.7 U	15.5 U	13.6 U	17.5 U	13.6	13
PERYLENE	43.6 J	61.5 J	107 J	92.3	71.4	8.48 J	7.91 J	9.05 J	1.5 J	1.8 J
PHENANTHRENE	222	357 J	374	509	377	13.2 U	23 U	22.3 U	5.6	5.3 J
PYRENE	666	949 J	874	872	748	43.9	68.9	66.7	15.3	14.5
Pesticides /PCBs (ug/kg)										
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.01 U	0.02 U	0.11 U	0.1 U	0.55 U	0.32 U	0.38 U	7.41	8.04
1,2,4,5-TETRACHLOROBENZENE	0.33 U	0.1 U	0.12 U	0.3 U	0.44 U	2.5 U	2.8 U	2.7 U	0.3 J	1.02 U
2,4'-DDD	1.8	2.3	2.6	2.3	2 J	2.8	3.1	3.1	0.23 U	0.24 U
2,4'-DDE	0.075 J	0.079 U	0.072 J	0.11	0.082 J	0.55	0.54	0.7	0.32 U	0.33 U
2,4'-DDT	0.055	0.051	0.023 U	0.025 U	0.025 UJ	1.6	6.7	6.5	0.30 U	0.31 U
4,4'-DDD	2.2	1.5	0.15 J	1.1 J	0.84 UJ	5	6.5	6.8	0.28 U	0.09 J
4,4'-DDE	0.45	0.38	0.24 J	1.1 J	1.1 UJ	6.7	8.3	7.7	4.65 J	2.3 J
4,4'-DDT	0.45	0.18	0.42	0.66 U	0.46 UJ	5.9 U	3.5 U	3.5 U	0.43 UJ	0.45 UJ
ALDRIN	4.3	1.3	5.4	0.19	7.6 UJ	0.061 J	0.24 U	0.24 U	0.38 U	0.39 U
ALPHA-BHC	0.068	0.054 J	0.054 J	0.074	0.085 UJ	0.6	0.51	0.58	0.36	0.27 J
ALPHA-CHLORDANE	0.36	0.068	0.22 J	0.44 J	0.28 UJ	2.3	2.5	2.7	49.47 J	17.87 J
BETA-BHC	0.19 U	0.19 U	0.21 U	0.22 U	0.2 J	0.15 U	0.16 U	0.16 U	1.69 J	0.25 UJ
CHLORPYRIFOS	0.063 J	0.067 J	0.025 J	0.14 J	0.1 J	1.5 U	0.93 J	0.98 J	2.43 U	2.51 U
CIS-NONACHLOR	0.2	0.082	0.078	0.11	0.087 UJ	0.82	1.4	1.2	0.25 U	0.26 U
DELTA-BHC	0.032 J	0.009 J	0.043 J	0.049 U	0.075 UJ	0.09 U	0.096 U	0.96 U	0.15 UJ	0.15 UJ
DIELDRIN	0.11	0.065 U	0.069 U	0.04 U	0.14 UJ	2.5	1.8	2	1.22	1.95
ENDOSULFAN II	1.8	0.47	1.8	2.3	1.5 UJ	0.94	0.46	0.4	0.28 UJ	0.29 UJ

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02									
	Sediment					Mussel			Lobster [1]	
Parameters	199A	299A	399A	399A-DUP	499A	399A	499A	499A-DUP[6]	199AM	199AM-DUP
ENDRIN	0.13 U	0.16	0.14 U	0.15 U	0.15 UJ	0.88	0.68	0.62	1.54 J	0.80 UJ
GAMMA-BHC (LINDANE)	0.38 U	0.24 U	0.24 U	0.51 U	0.54 U	0.17 U	0.17 U	0.044 U	0.79	0.75
GAMMA-CHLORDANE	0.14	0.17	0.082 J	0.18 J	0.25 J	1.3	0.66	0.76	0.29 U	0.30 U
HEPTACHLOR	0.039 J	0.032 J	0.18 U	0.38	0.17 J	0.26 U	0.28 U	0.28 U	0.43 U	0.44 U
HEPTACHLOR EPOXIDE	0.22 U	0.13 U	0.35 U	0.13	0.36 U	0.67	0.57	0.75	0.30 U	0.31 U
HEXACHLOROBENZENE	0.16 U	0.43 U	0.35 U	4.7	71 J	0.13 J	0.51	0.6	0.37 UJ	1.44 J
MIREX	0.073	0.029 U	0.14 J	0.33 J	0.17 J	1.8	2.9	3	0.68 U	0.70 U
OXYCHLORDANE	0.014 U	0.036	0.038	0.025	0.017 UJ	0.19 U	0.21 U	0.21 U	0.31 J	0.33 U
PCB-101/90	0.51	0.56	0.22 J	1.6 U	1.2 J	10	12	11	0.88 J	0.86 J
PCB-105	0.3 J	0.2 J	0.15 J	0.7 J	0.69 J	4.1	5	5.4	0.53 J	1.49 J
PCB-114	0.17 U	0.17 U	0.18 U	0.2 U	0.2 UJ	0.63 U	0.67 U	0.67 U	1.04 U	1.07 U
PCB-118	0.41	0.61	0.44	1.7 U	1.1 J	6.6	6.6	6.5	2.82	3.68
PCB-126	0.69 U	0.018 J	0.74 U	0.034 J	0.8 UJ	0.21 J	0.31 J	2.7 U	0.1 J	0.07 J
PCB-128	0.67	0.25	0.5	1.3 J	1 J	0.53	3	3.4	0.79 U	0.43 J
PCB-138 /160	1.7	0.66	0.82 J	2.9 U	2.7 J	12 U	16 U	17 U	2.62	3.09
PCB-149/123	0.53	0.41	0.25	1.3 J	0.92 J	7.5 U	8.3 U	8.1 U	1.04 U	1.07 U
PCB-153/132	0.78	0.54	0.35	1.6 U	1.4 J	15 U	20 U	18 U	2.36	3.51
PCB-156	1.41	0.67	1.33	0.2 U	1.46 J	0.93	0.43 J	0.67 U	7.36 J	1.15 J
PCB-167	0.45	1.5	2.2 J	1.3 U	1.5 J	1.2	2	2	0.45 J	1.07 U
PCB-169	0.69 U	0.69 U	0.74 U	0.2 U	0.8 UJ	0.024 J	0.099 J	2.7 U	0.04 J	4.27 U
PCB-170/190	10	3.9	9.4	14	10 J	0.63 U	0.67 U	0.67 U	1.04 U	1.07 U
PCB-18/17	0.11	0.086 U	0.092 U	0.098 U	0.21 J	1.3 U	2.6 U	2.8 U	36.13 J	11.23 J
PCB-180	0.65	0.54	0.28	1.1 U	0.88 J	6.3 U	6.4 U	5.9 U	1.1 U	0.53 J
PCB-187	2.7	0.56	1.2	0.19 U	2.3 J	6 U	9.5 U	9.5 U	0.75	0.63 J
PCB-189	0.17 U	0.064 J	0.18 U	0.2	0.2 UJ	0.63 U	0.67 U	0.67 U	1.04 U	1.07 U
PCB-195/208	0.05 U	0.12	0.054 U	0.23	0.13 J	0.53 U	0.11 J	0.13 J	0.86 U	0.89 U
PCB-201/157/173	0.28	0.34	0.35	0.32	0.24 J	0.47 J	0.46 J	0.52 U	0.89 U	0.92 U
PCB-206	0.68	0.19	0.37 J	1.1 J	0.92 J	0.55 U	0.58 U	0.58 U	0.79 UJ	0.82 UJ
PCB-209	0.19	0.1	0.21 J	0.46 J	0.51 J	0.71 U	0.76 U	0.76 U	1.17 U	0.06 J
PCB-28	0.38	0.3	0.6 J	1.1 J	0.99 J	1.4	2	2.3	0.82 U	0.84 U
PCB-44	0.082 J	0.085 J	0.042 J	0.29 U	0.2 J	3.1	3.2	3.7	0.60 U	0.62 U
PCB-52	0.13	0.77	0.21 J	1.3 J	2.4 J	3.8	5.7	6.2	0.98 J	0.73 UJ
PCB-66	0.2	0.12 J	0.95 J	0.52	0.26 J	1.7	2.3	2.3	0.99 U	0.22 J
PCB-77	0.06 U	0.18 J	0.02 U	0.098 J	0.10 U	1.4 J	1.4 J	2.7 U	4.14 U	0.37 J
PCB-8/5	0.36	0.25 J	0.3 J	0.27 J	0.68 J	0.72 J	0.75 J	0.096 J	1.4 J	0.74 J
PCB-81	0.69 U	0.009 J	0.03 J	0.007 J	0.04 J	0.81 J	0.83 J	2.7 U	4.14 U	4.27 U
PENTACHLOROANISOLE	0.06 U	0.04 U	0.05 U	0.073 J	0.08 U	0.59	0.34	0.35	0.55	0.53
PENTACHLOROBENZENE	0.14	0.14	0.08 U	0.21	0.19 J	0.75	0.65	0.71	1.93	1.68
TRANS-NONACHLOR	0.16	0.036 U	0.038 U	0.041 U	0.041 UJ	2	3.1	3.2	0.18 U	0.12 J
Metals (mg/kg)										
ALUMINUM	47291	46580	51028	52561	53243	230 J	229 J		9.07 J	8.39 J
ARSENIC	6.7	7.1	5.1	6.2	7.5	6.8 J	7.8 J		6.76	7.37
CADMIUM	0.14	0.09	0.19	0.25	0.24	1.8	1.6		0.0416 J	0.0398 J
CHROMIUM	43.4	32.2	41.2	60.8	63.1	2	3		0.193 U	0.199 U
COPPER	13.8	8.1	51.7	22.8 J	20.3	7.2	6.6		36.4	34
IRON	17067	11047	14547	17389	17753	421	603		11.6	9.5
LEAD	53.6 J	35.8 J	47.7 J	142 J	65.3 J	4	6.9		0.792 J	0.298 J
MANGANESE	843	370	418	390	393	17.5	9.5		3.23	2.63
MERCURY	0.08 J	0.06 J	0.39 J	0.22 J	0.19 J	0.27	0.4	0.384 J	0.821	0.856
NICKEL	19.7	15	15.5	18.4	19.7	1	1.4		0.193 U	0.252 U
SILVER	0.09	0.08	0.11	0.66	0.22	0.06 J	0.04 J		1.11 J	0.929 J
ZINC	67.3	40.8	102	72	73.5	109	98.5		105	93.4
Miscellaneous Parameters (%)										
LIPID						3.9	4.0		2.1	2.4
TOTAL ORGANIC CARBON	1.97	0.53	1.21	1.63	1.53					

Notes:

RF-2 includes the following samples:
OU4-SD-R02-199A
OU4-SD-R02-299A
OU4-SD-R02-399A
OU4-FD-005-099A (duplicate of OU4-SD-R02-399A)
OU4-SD-R02-499A
OU4-MU-R02-399A
OU4-MU-R02-499A
OU4-MU-R02-499A-FD
OU4-LJ-R02-199AM -
OU4-LJ-R02-199AM-D

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster [1]
Parameters	199A	299A	399A	499A	399A	499A	199AM
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	18.5	87.8	5.79	90.1 UJ	23.3 U	18 U	37.8 U
1,2,3,4,6,7,8-HPCDF	3.26 U	22.5 U	1.5 U	22.2 U	23.3 U	17.7 UJ	37.8 U
1,2,3,4,7,8,9-HPCDF	2.4 U	1.4 U	1.5 U	1.2 U	23.3 U	17.7 UJ	37.8 U
1,2,3,4,7,8-HXCDD	2.4 U	0.67 J	1.5 U	0.87 J	3.07 J	17.7 UJ	37.8 U
1,2,3,4,7,8-HXCDF	2.4 U	1.4 U	1.5 U	1.34 U	23.3 U	17.7 UJ	37.8 U
1,2,3,6,7,8-HXCDD	2.4 U	4.84	1.5 U	4.65	3.72 J	17.7 UJ	37.8 U
1,2,3,6,7,8-HXCDF	2.4 U	1.4 U	1.5 U	1.2 U	23.3 U	17.7 UJ	37.8 U
1,2,3,7,8,9-HXCDD	2.4 U	3.94 U	1.5 U	2.54 U	0.88 J	17.7 UJ	37.8 U
1,2,3,7,8,9-HXCDF	2.4 U	1.4 U	1.5 U	1.2 U	23.3 U	17.7 UJ	37.8 U
1,2,3,7,8-PECDD	2.4 U	1.4 U	1.5 U	1.2 U	23.3 U	17.7 UJ	37.8 U
1,2,3,7,8-PECDF	2.4 U	1.4 U	1.5 U	1.2 U	23.3 U	17.7 UJ	37.8 U
2,3,4,6,7,8-HXCDF	2.4 U	1.4 U	1.5 U	1.48 U	23.3 U	17.7 UJ	37.8 U
2,3,4,7,8-PECDF	2.4 U	1.4 U	1.5 U	1.2 U	23.3 U	17.7 UJ	37.8 U
2,3,7,8-TCDD	0.5 U	0.3 U	0.3 U	0.2 U	4.7 U	3.5 U	7.6 U
2,3,7,8-TCDF	0.5 U	1.54 U	0.3 U	0.87 U	5.06 U	5.27 U	7.6 U
OCDD	355 U	647 U	32.9 U	716 U	78.2	35.4 UJ	75.6 U
OCDF	4.9 U	35.9 U	3.1 U	39.3 U	24.5 UJ	35.4 UJ	75.6 U
TOTAL HPCDD	18.5	87.8	5.79	90.1 UJ	23.3 U	17.7 UJ	37.8 U
TOTAL HPCDF	6.05 U	57.2 U	1.5 U	57.1 U	5.84 J	17.7 UJ	37.8 U
TOTAL HXCDD	2.4 U	49.9 U	1.5 U	51 U	12.2 J	17.7 UJ	37.8 U
TOTAL HXCDF	2.4 U	2.12 U	1.5 U	3.6 U	23.3 U	17.7 UJ	37.8 U
TOTAL PECDD	2.4 U	1.4 U	1.5 U	3 U	23.3 U	17.7 UJ	37.8 U
TOTAL PECDF	2.4 U	1.4 U	1.5 U	0.9 U	23.3 U	17.7 UJ	37.8 U
TOTAL TCDD	0.5 U	0.3 U	0.3 U	2.9	52.3 U	48.2 U	7.6 U
TOTAL TCDF	0.5 U	4.4 U	0.3 U	2.5 U	10.1 U	11.4 U	7.6 U
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	52.6	47.5	46	8.6	2.02 J	1.47 J	5.0 J
1-METHYLNAPHTHALENE	7.06 U	30.4 U	32.8 U	12.4 U	6.45 U	2.81 U	6.0
1-METHYLPHENANTHRENE	32.3	169	139	52.1	2.79 J	2.07 J	10.1
2,6-DIMETHYLNAPHTHALENE	13.6 J	32.7	31.7	12.9	3.57	2.14 J	3.4 J
2-METHYLNAPHTHALENE	22.9 U	35.7 U	44.8 U	15.9 U	10.8 U	4.1 U	7.4
ACENAPHTHENE	2.76 J	79.8	38.7	35.9	1.62 J	1.17 J	1.6 J
ACENAPHTHYLENE	5.9 J	206	76.2	56.6	9.38	8.75	1.7 J
ANTHRACENE	116 J	1392 J	1047 J	176 J	22.8 J	23.5 J	25.2
BENZO(A)ANTHRACENE	276	1949	1098	499	13.8	12.1	47.6
BENZO(A)PYRENE	290	2515	1188	677	14.8	10.9	26.3
BENZO(B)FLUORANTHENE	285	2138	976	670	20.4	15.2	16.5
BENZO(E)PYRENE	129	990	454	315	15.9	14.4	15
BENZO(G,H,I)PERYLENE	118	1026	435	353	5.94	5.72	9.4 J
BENZO(K)FLUORANTHENE	92.7	620	399	209	4.14	3.59	28.1 J
BIPHENYL	6.47 U	11.6 U	8.99 U	14.1	3.21 U	2.2 U	1.3 J
CHRYSENE	240	1702	879	477	22.9 J	22 J	42.9
DIBENZO(A,H)ANTHRACENE	31.1	262	128	119	0.77 J	0.64 J	0.3 J
DIBENZOTHIOPHENE	39.4 J	104 J	75.8 J	24.6 J	0.9 U	0.66 U	4.4
FLUORANTHENE	515	3324	2538	787	36.8	36.1	119 J
FLUORENE	10.2 J	167	121	55.6	2.51 J	1.87 J	7 J
INDENO(1,2,3-CD)PYRENE	131	1164	522	440	3.06 J	3.14 J	9.2 J
NAPHTHALENE	14.4 U	101 U	123 U	31.8 U	12.4 U	6.53 U	12
PERYLENE	67.1	352	238	90.6	7.15 J	6.23 J	10.4 J
PHENANTHRENE	175	1583	1225	394	9.58 U	8.18 U	63.6
PYRENE	419	2921	2039	648	33.9	33.6	79.2
Pesticides /PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	1.1 U	0.16 U	0.25 U	0.092 U	0.32 U	0.32 U	14.91
1,2,4,5-TETRACHLOROBENZENE	4.9 U	0.31 U	0.61 U	0.1 U	2.6 U	2 U	0.09 J
2,4'-DDD	2.2	5.6	5.4	1.7	2.5	2.2	0.23 U
2,4'-DDE	0.55	0.053 J	0.77	0.083 U	0.66	0.3	0.32 U
2,4'-DDT	0.045 U	0.026 U	0.019 J	0.034	1.7	1.6	0.30 U
4,4'-DDD	0.45	1.1	0.54	0.32	5	5.4	0.28 U
4,4'-DDE	0.7	0.95	1.4	0.98	6.5	6.3	2.38
4,4'-DDT	0.19 U	0.5 U	0.82 U	0.3 U	12 J	7.2 J	0.09 J
ALDRIN	0.12 U	0.069 U	0.071 U	0.06 U	0.23 U	0.17 U	0.38 U
ALPHA-BHC	0.29	0.095	0.13	0.093	0.58	0.47	0.29
ALPHA-CHLORDANE	0.14 U	0.13	0.42	0.25	2.1	1.8	0.28 U
BETA-BHC	0.24 J	0.23 U	0.24 U	0.2 U	0.14 U	0.11 U	0.24 U
CHLORPYRIFOS	0.71	0.23 J	0.28 J	0.15 J	1.1 J	0.88 J	2.44 U
CIS-NONACHLOR	0.06 U	0.19	0.14	0.22	0.59	1	0.25 U
DELTA-BHC	0.14	0.14	0.3	0.21	0.089 U	0.068 U	0.15 UJ

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster [1]
Parameters	199A	299A	399A	499A	399A	499A	199AM
DIELDRIN	0.37 U	0.19 U	0.1 U	0.09 U	1.9	1.4	1.56
ENDOSULFAN II	1.9	1.5	1.5	0.98	0.65	0.33	0.28 UJ
ENDRIN	0.27 U	0.15 U	0.16 U	0.14 U	0.62	0.38	0.77 U
GAMMA-BHC (LINDANE)	1.5 U	0.6 U	1 U	1.2 U	0.21 U	0.13 U	0.23 U
GAMMA-CHLORDANE	0.026 J	0.36	0.08 U	0.14	0.49	0.42	0.29 U
HEPTACHLOR	0.083 J	0.24	0.35	0.18	0.26 U	0.2 U	0.43 U
HEPTACHLOR EPOXIDE	0.087	0.034 U	0.036 U	0.093	1.2	0.63	0.30 U
HEXACHLOROBENZENE	0.091 U	0.052 U	0.009 J	0.045 U	0.38	0.35	0.35 J
MIREX	0.21	0.088	0.036 U	0.047	2.1	1.6	0.68 U
OXYCHLORDANE	0.03 U	0.16	0.018 U	0.025	0.52	0.077 J	1.96
PCB-101/90	0.23 U	0.42 U	1.7 U	1.3 U	8.9	8.1	2.04
PCB-105	0.04 J	0.34 J	0.3 J	0.15 J	3.3	3.4	0.77 J
PCB-114	0.36 U	0.21 U	0.21 U	0.18 U	0.62 U	0.48 U	1.04 U
PCB-118	0.41 U	0.87 U	0.44 U	0.55 U	6.1	6.7	1.33 J
PCB-126	0.01 J	0.007 J	0.21 U	0.18 U	0.061 J	0.26 J	0.17 J
PCB-128	2.2	1.3	1.1	0.8	1.7	2	0.79 U
PCB-138 /160	1.5 U	2.2 U	1.7 U	2 U	13 U	13 U	1.78
PCB-149/123	0.22 U	0.96 U	0.75 U	0.72 U	5.4 U	5.3 U	1.04 U
PCB-153/132	0.2 U	0.81 U	0.87 U	0.83 U	15 U	15 U	2.69
PCB-156	0.36 U	0.21 U	0.21 U	0.18 U	0.71	1	01.04 U
PCB-167	2.3	4.4	2.1	1.1	0.8	1.4	1.04 U
PCB-169	0.007 J	0.21 U	0.014 J	0.18 U	0.16 J	0.48 U	4.14 U
PCB-170/190	3.8 U	9.9	6.3	11	0.62 U	0.48 U	1.04 U
PCB-18/17	0.18 U	0.1 U	0.11 U	0.09 U	2.3 U	1.3 U	2.71 U
PCB-180	0.2 U	0.34 U	0.76 U	0.49 U	6.5 U	6.8 U	0.77 J
PCB-187	0.35 U	0.2 U	0.24 U	0.17 U	7.1 U	6.6 U	0.45 J
PCB-189	0.36 U	0.21 U	0.21 U	0.2	0.62 U	0.48 U	1.04 U
PCB-195/208	0.11 U	0.06 U	0.32	0.16	0.52 U	0.079 J	0.03 J
PCB-201/157/173	0.35	0.32	0.08	0.17	0.26 J	0.44	0.89 U
PCB-206	0.19	0.52	0.95	0.58	0.54 U	0.41 U	0.80 UJ
PCB-209	0.17 U	0.28	0.52	0.25	0.064 J	0.54 U	1.17 U
PCB-28	0.33 J	1.1	0.87	1.2	2.1	1.4	0.82 U
PCB-44	0.32 U	0.21 U	0.092 U	0.16 U	1.5 U	1.4 U	0.60 U
PCB-52	0.27 U	0.13 J	0.47	0.12 J	4	3.4	0.70 U
PCB-66	0.64	1.2	0.81	0.16	1.6	1.7	0.14 J
PCB-77	0.14 J	0.13 J	0.082 J	0.071 J	0.13 J	0.98 J	4.14 U
PCB-8/5	0.66 U	0.38 U	0.39 U	1.2	1.2	1.1	1.74
PCB-81	0.044 J	0.073 J	0.047 J	0.035 J	0.42 J	0.49 J	4.14 U
PENTACHLOROANISOLE	0.27 J	0.057 J	0.25 J	0.1 J	0.42	0.76	0.35
PENTACHLOROBENZENE	0.15 U	0.14	0.16	0.077	0.67	0.55	0.23 J
TRANS-NONACHLOR	0.076 U	0.043 U	0.044 U	0.038 U	2	1.8	0.21
Metals (mg/kg)							
ALUMINUM	52579	53610	55027	54206	260 J	199 J	5.11 J
ARSENIC	8.8	6.1	6.7	7.4	7 J	7.1 J	19.9
CADMIUM	0.17	0.24	0.27	0.21	1.9	1.6	0.0404 J
CHROMIUM	62.6	56.1	60.3	67.3	2.6	1.8	0.202 U
COPPER	18.4	12.2	18.2	12.6	6.3	7.2	33.9
IRON	20073	15406	17527	17976	477	376	6.52
LEAD	79.3 J	38.4 J	39.7 J	37.6 J	3.1	2.8	0.0910 U
MANGANESE	335	391	388	579	9.3	9.8	2.65
MERCURY	0.13 J	1.5 J	0.15 J	0.13 J	0.32	0.29	0.504
NICKEL	24.5	17.5	19.1	20.1	1.2	1.1	0.202 U
SILVER	0.06	0.17	0.18	0.17	0.06 J	0.06 J	1.11 J
ZINC	59.4	60.7	65.4	59.9	110	105	90.7
Miscellaneous Parameters (%)							
LIPID					9.1	5.2	2.7
TOTAL ORGANIC CARBON	4.14 J	1.54	1.36	0.78			

Notes:

RF-3 includes the following samples:
OU4-SD-R03-199A
OU4-SD-R03-299A
OU4-SD-R03-399A
OU4-SD-R03-499A
OU4-MU-R03-399A
OU4-MU-R03-499A
OU4-LJ-R03-199AM

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04							
	Sediment					Mussel		Lobster [1]
Parameters	199A	299A	399A	399A-DUP[2]	499A	399A	499A	199AM
Dioxins/Furans (ng/kg)								
1,2,3,4,6,7,8-HPCDD	22.2	7.83 UJ	9.36	9.82	29	23.9 UR	21.7 U	37.2 U
1,2,3,4,6,7,8-HPCDF	6.44 U	1.77 U	2.06 U	2.53 UJ	6.76 U	23.9 UR	21.7 U	37.2 U
1,2,3,4,7,8,9-HPCDF	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
1,2,3,4,7,8-HXCDD	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
1,2,3,4,7,8-HXCDF	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
1,2,3,6,7,8-HXCDD	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
1,2,3,6,7,8-HXCDF	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
1,2,3,7,8,9-HXCDD	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
1,2,3,7,8,9-HXCDF	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
1,2,3,7,8-PECDD	1.8 U	1.1 U	1 UJ	1.1 U	1 UJ	23.9 UJ	21.7 U	37.2 U
1,2,3,7,8-PECDF	1.8 U	1.1 U	1 UJ	1.1 U	1 UJ	23.9 U	21.7 U	37.2 U
2,3,4,6,7,8-HXCDF	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
2,3,4,7,8-PECDF	1.8 U	1.1 U	1 UJ	1.1 U	1 UJ	23.9 UJ	21.7 U	37.2 U
2,3,7,8-TCDD	0.4 U	0.2 U	0.2 UJ	0.2 U	0.2 UJ	4.8 U	4.3 U	7.4 U
2,3,7,8-TCDF	0.49 U	0.2 U	0.2 U	0.2 U	0.2 UJ	4.8 U	4.3 U	7.4 U
OCDD	128 U	73.4 U	145 U	160 U	155 U	47.9 UR	43.4 U	74.4 U
OCDF	13 U	3.19 U	4.68 U	4.4 U	10.4 U	47.9 UR	43.4 U	74.4 U
TOTAL HPCDD	21.8	18	23.6 J	9.82	29	23.9 UR	13 J	37.2 U
TOTAL HPCDF	15.9 U	3.99 U	2.06 U	2.53 U	15.2 U	23.9 UR	21.7 U	37.2 U
TOTAL HXCDD	9.78 U	1.1 U	1 UJ	1.1 UJ	6.62 U	23.9 UR	21.7 U	37.2 U
TOTAL HXCDF	1.8 U	1.1 U	1 UJ	1.1 UJ	1 UJ	23.9 UR	21.7 U	37.2 U
TOTAL PECDD	1.8 U	1.1 U	1 UJ	1.1 U	1 UJ	23.9 UR	21.7 U	37.2 U
TOTAL PECDF	1.8 U	1.1 U	1 UJ	1.1 U	1 UJ	23.9 UJ	21.7 U	7.3 J
TOTAL TCDD	0.4 U	0.2 U	0.2 UJ	0.2 U	1 UJ	41.1 U	31.7 U	7.4 U
TOTAL TCDF	0.49 U	0.2 U	0.2 UJ	0.2 U	0.2 UJ	6.1 U	10.2 U	7.4 U
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	3.1	0.19 J	0.6 J	0.31 J	0.64 J	1.41 J	1.63 J	6.0
1-METHYLNAPHTHALENE	5.25 U	0.52 U	0.44 U	0.45 U	1.02 U	4.83 U	4.19 U	13.7
1-METHYLPHENANTHRENE	15.8	0.54	1.91	1.21	1.59	1.95 J	2.12 J	11.3
2,6-DIMETHYLNAPHTHALENE	4	1.36	1.49 J	0.7 J	1.15 J	2.56 J	2.83	4.2 J
2-METHYLNAPHTHALENE	7.78 U	0.82 U	0.74 U	0.74 U	1.59 U	7.87 U	7.66 U	18.5
ACENAPHTHENE	4.9	0.19 J	0.3 J	0.25 J	0.4	0.69 J	0.82 J	1.2 J
ACENAPHTHYLENE	28.1	1.69	4.51	3.05	4.53	6.3	5.64	1.3 J
ANTHRACENE	70.6 J	2.26 J	6.86 J	5.61 J	6.74 J	13.3 U	14.3 U	17
BENZO(A)ANTHRACENE	191	3.05	12.9	4.19	9.28	8.12	7.44	32.9
BENZO(A)PYRENE	258	5.21	14.3	7.66	17.3	8.55	7.62	26.3
BENZO(B)FLUORANTHENE	229	5.81	15.3	8.77	18.6	12.5	12.8	29.5
BENZO(E)PYRENE	115	2.99	6.85	4.57	10.3	10.4	8.8	12.2
BENZO(G,H,I)PERYLENE	123	3.36	6.78	4.42	10.4	4.56 J	3.98 J	6.2 J
BENZO(K)FLUORANTHENE	87.4	2.41	6.12	2.96	7.38	3.44 J	2.95 J	13 J
BIPHENYL	7.55 U	4.49 U	1.41 U	0.88 U	1.16 U	4.26 U	5.41 U	1.6 J
CHRYSENE	181	3.91 U	12.2	6.97 U	12.4	15.4 J	13.6 J	47.4
DIBENZO(A,H)ANTHRACENE	32.7	0.82	1.67	1.01	2.44	0.54 J	0.46 J	0.2 J
DIBENZOTHIOPHENE	6.37 J	0.38 J	1.04 J	0.54 J	0.86 J	0.62 U	0.73 U	5.5
FLUORANTHENE	297	6.49	30.6	12.1	19.9	23.4	22.9	145.2 J
FLUORENE	9.38	0.6	1.3	0.64	1.47	1.94 J	2.3 J	4.6 J
INDENO(1,2,3-CD)PYRENE	152	3.59	7.55	4.78	11.7	2.24 J	2.03 J	8.0 J
NAPHTHALENE	17.4 U	3.28 U	1.63 U	1.39 U	3.03 U	12.4 U	13.7 U	21.6
PERYLENE	33.5	1.67	5.01	2.62	4.32	3.98 J	3.8 J	6.3 J
PHENANTHRENE	83.2	3.05	13	5.84	8.4	6.51 U	7.54 U	54.1
PYRENE	241	5.84	23.4	11.5	20	18.7	19.3	89.7
Pesticides /PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.24 U	0.2 U	0.034 U	0.027 U	0.024 U	0.31 U	0.81 U	7.11
1,2,4,5-TETRACHLOROBENZENE	0.9 U	0.59 U	0.1 U	0.045 U	0.11 U	2.4 U	3.1 U	0.1 J
2,4'-DDD	0.78	0.049 U	0.057 U	0.052 U	0.07	2.1	2.3	0.25 U
2,4'-DDE	0.17	0.26	0.079 U	0.072 U	0.072 U	0.49	0.69	0.35 U
2,4'-DDT	0.11	0.018 U	0.022 U	0.02 U	0.02 U	1.6	1.4	0.33 U
4,4'-DDD	2.4	0.041 J	0.049 J	0.051	0.18	4.4	4.7	0.31 U
4,4'-DDE	1.9	0.049	0.071	0.075	0.23	5.4	5.4	4.21
4,4'-DDT	0.35 U	0.039 U	0.013 U	0.013 U	0.072 U	7 J	7.1 J	0.47 UJ
ALDRIN	0.14	0.049 U	0.019 J	0.019 J	0.021 J	0.22 U	0.098 J	0.18 J
ALPHA-BHC	0.096	0.056	0.037 J	0.014 J	0.047 J	0.45	0.48	0.51
ALPHA-CHLORDANE	0.25	0.033 J	0.058 J	0.065	0.055 J	2	1.9	1.82
BETA-BHC	0.23 U	0.17 U	0.067 J	0.032 J	0.18 U	0.14 U	0.14 U	0.26 U
CHLORPYRIFOS	0.022 J	0.23 U	0.27 U	0.015 J	0.014 J	1.4 U	1.1 J	2.65 U
CIS-NONACHLOR	0.034 U	0.007 J	0.011 J	0.008 J	0.013 J	0.93	0.92	0.15 J
DELTA-BHC	0.19	0.073	0.043 U	0.039 U	0.007 J	0.087 U	0.085 U	0.16 UJ
DIELDRIN	0.13 U	0.055 U	0.01 U	0.059 U	0.059 U	1.6	1.6	1.13
ENDOSULFAN II	0.38	0.042 J	0.086 U	0.078 U	0.079 U	0.38	0.48	0.31 UJ
ENDRIN	0.023 J	0.11 U	0.077 J	0.12 U	0.12 U	0.57	0.37 J	0.84 U
GAMMA-BHC (LINDANE)	0.83 U	0.36 U	0.58 U	0.14 U	0.15 U	0.14 U	0.33 U	0.73
GAMMA-CHLORDANE	0.2	0.055 U	0.19 J	0.059 UJ	0.12	0.36	0.41	0.32 U
HEPTACHLOR	0.24	0.065 J	0.062 J	0.059 J	0.15 U	0.25 U	0.24 U	0.46 U
HEPTACHLOR EPOXIDE	0.034 U	0.036	0.059 J	0.014 J	0.041	0.14 J	0.45	0.32 U
HEXACHLOROBENZENE	0.019 J	0.021 J	0.023 J	0.039 U	0.006 J	0.26	0.24	0.4 J
MIREX	0.034 U	0.025 U	0.029 U	0.026 U	0.026 U	2	1.9	0.74 U
OXYCHLORDANE	0.017 U	0.012 U	0.014 U	0.013 U	0.013 U	0.19 U	0.18 U	0.68
PCB-101/90	3.6 U	0.078 U	0.046 U	0.12 U	0.15 U	6.8	6.8	3.38
PCB-105	1.9	0.015 J	0.024 J	0.039 J	0.053 J	2.8	2.6	1.25
PCB-114	0.21 U	0.15 U	0.17 U	0.16 U	0.16 U	0.61 U	0.6 U	1.13 U
PCB-118	3.2 U	0.038 U	0.034 U	0.073 U	0.074 U	4.3 U	3.9 U	2.68
PCB-126	0.009 J	0.006 J	0.17 U	0.009 J	0.2 J	0.39 J	0.53 J	0.07 J
PCB-128	1.4	0.037 U	0.018 J	0.023 J	0.036 J	1.5	2.1	0.87 U
PCB-138 /160	4.1 U	0.37 U	0.12 U	0.15 U	0.2 U	10 U	9.9 U	4.04
PCB-149/123	1.3 U	0.021 U	0.062 U	0.073 U	0.12 U	4.9 U	4.3 U	1.13 U

TABLE B-1

SUMMARY OF ROUND 1 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 1 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04							
	Sediment					Mussel		Lobster [1]
Parameters	199A	299A	399A	399A-DUP[2]	499A	399A	499A	199AM
PCB-153/132	2.4 U	0.11 U	0.12 U	0.14 U	0.21 U	11 U	10 U	5.6
PCB-156	0.21 U	0.15 U	0.05 J	0.16 U	0.03 J	0.37 J	0.6 U	1.13 U
PCB-167	0.87	0.15 U	0.033 J	0.013 J	0.028 J	0.65	1.3	0.2 J
PCB-169	0.21 U	0.15 U	0.17 U	0.006 J	0.16 U	0.42 J	0.12 J	0.02 J
PCB-170/190	3 U	0.14 U	0.26 U	0.24 U	0.41 U	0.61 U	0.6 U	1.42
PCB-18/17	0.78 U	0.074 U	0.29 U	0.054 U	0.079 U	1.5 U	1.6 U	2.95 U
PCB-180	1.1 U	0.08 U	0.07 U	0.07 U	0.09 U	3.9 U	3.4 U	1.57
PCB-187	0.65 U	0.041 U	0.017 U	0.022 U	0.039 U	6.2 U	6 U	1.31
PCB-189	0.062 J	0.15 U	0.17 U	0.16 U	0.16 U	0.61 U	0.6 U	1.13 U
PCB-195/208	0.15	0.043 U	0.004 J	0.046 U	0.02 J	0.11 J	0.079 J	0.1 J
PCB-201/157/173	0.38	0.01	0.02 U	0.02 U	0.02 U	0.28 J	0.33 J	0.97 U
PCB-206	0.33	0.048 J	0.046 J	0.036 J	0.045 J	0.53 U	0.51 U	0.87 UJ
PCB-209	0.13	0.07	0.033 J	0.051 J	0.083	0.69 U	0.67 U	1.27 U
PCB-28	1	0.48	0.21	0.16 J	0.17 J	1.5	1.6	0.89 U
PCB-44	0.96 U	0.039 U	0.048 U	0.064 U	0.038 U	1.4 U	1.2 U	0.66 U
PCB-52	2.6	0.093 J	0.13 U	0.044 J	0.043 J	1.7	1.5	0.77 U
PCB-66	0.79	0.1 U	0.12 U	0.11 U	0.11 U	1.6	1.5	0.3 J
PCB-77	0.036 J	0.042 J	0.051 J	0.16 U	0.046 J	1.3 J	0.97 J	4.51 U
PCB-8/5	0.88	0.16 J	0.048 J	0.29 J	0.21 J	0.62 J	0.67 J	2.88
PCB-81	0.017 J	0.15 U	0.007 J	0.16 U	0.009 J	0.93 J	0.84 J	4.51 U
PENTACHLOROANISOLE	0.085 J	0.034 J	0.015 J	0.014 J	0.01 J	0.36	0.48	0.35
PENTACHLOROBENZENE	0.16	0.17	0.034 J	0.02 J	0.013 J	0.56	0.69	0.89
TRANS-NONACHLOR	0.32	0.031 U	0.015 J	0.006 J	0.033 U	2.4	1.6	0.19 J
Metals (mg/kg)								
ALUMINUM	50043	52620	46536	43224	43053	134 J	131 J	3.12 J
ARSENIC	4.1	3.6	1.5	1.9	1.4 U	7.2 J	7 J	9.22
CADMIUM	0.09	0.04	0.07	0.08	0.07	2.1	1.6	0.0344 U
CHROMIUM	54.1	35.9	32.2	33.8	29	1.6	2	0.203 U
COPPER	7.9	3.2	2.7	3.4 J	3	7.5	7	50.6
IRON	12786	10300	9954	10775	8596	296	296	7.58
LEAD	32.6 J	21.9 J	17.1 J	18 J	19.3 J	3.6	3.2	0.182 J
MANGANESE	408	316	446	455	356	6.4	6.9	2.2
MERCURY	0.07 J	0.03 J	0.01 J	0.02 J	0.03 J	0.27	0.29	0.0304 U
NICKEL	18.6	13.4	11.7	12.6	11.2	1.1	1.1	0.203 U
SILVER	0.07	0.02	0.02	0.04	0.03	0.06 J	0.05 J	1.52 J
ZINC	36.7	23.9	21.7	24.2	20	112	117	106
Miscellaneous Parameters (%)								
LIPID						4.0	5.6	3.3
TOTAL ORGANIC CARBON	2.03	0.24	0.27	0.26	0.22			

Notes:

RF-4 includes the following samples:

OU4-SD-R04-199A
OU4-SD-R04-299A
OU4-SD-R04-399A
OU4-FD-004-099A (duplicate of OU4-SD-R04-399A)
OU4-SD-R04-499A
OU4-MU-R04-399A
OU4-MU-R04-499A
OU4-LJ-R04-199AM

(1) - The alkylated PAHs and percent moisture results of the lobster muscle (tail and claw) without the intestines are presented in Appendices G.3 and G.4
The results of the lobster muscle samples with the intestine are presented in Appendices G.5 and G.6
The results of the tomalley samples are presented in Appendices G.7 and G.8

(2) - These duplicate samples were not analyzed for metals

(3) - These duplicate samples were only analyzed for metals (excluding mercury)

(4) - These duplicate samples were only analyzed for mercury

(5) - These duplicate samples were only analyzed for metals

(6) - This duplicate sample was only analyzed for organics and mercury

- All results are presented in dry weight
- Alkylated PAH results for the sediment are presented in Table 3-3
- Grain size and percent moisture results for the sediment are presented in Table 3-5
- AVS and SEM data are presented in Tables 3-6 and 3-7
- Alkylated PAH results for the mussels are presented in Appendix G.1. Percent moisture is presented in Appendix G.2.

Qualifiers:

J = Positive result is estimated as a result of a value below the CRQL or a technical noncompliance.
U = Value is a nondetected result as reported by the laboratory and should not be considered present.
UJ = Nondetected result is considered to be estimated as a result of technical noncompliances.
UR = Compound was rejected due to severe technical noncompliances or as a result of calibration RRF noncompliances.

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01							
	Sediment				Mussel		Lobster	
Parameters	100B	200B	300B	300B-DUP	200B	300B	100B	100B-DUP
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	28.9	25.8	85.7 J	22.6 J	5.3	8.6	1.6 J	1.9 J
1-METHYLNAPHTHALENE	47.2	49.5	282 J	27.9 J	7.2	9.5	22.3	22
1-METHYLPHENANTHRENE	397	123	445 J	143 J	10.3	9.5	3 J	5.6 J
2,6-DIMETHYLNAPHTHALENE	32.4	36.3	151 J	23.1 J	6.4	10.4	1.6 J	10.4 J
2-METHYLNAPHTHALENE	40.6	79.1	379 J	59.5 J	11.7	15.5	11.6	12.4
ACENAPHTHENE	27.7	108	889 J	89.8 J	13.3	15.4	4.5 J	4.6 J
ACENAPHTHYLENE	295	160	544 J	198 J	20.3	37.4	7.6	7.7
ANTHRACENE	276	614	2650 J	499 J	37.8	65.1	5.5	7.9
BENZO(A)ANTHRACENE	451	1250	3120 J	1100 J	21.7	27.5	8.5 J	17 J
BENZO(A)PYRENE	739	1540	3840 J	1177 J	17.8 J	19.7 J	21.5 J	39.4 J
BENZO(B)FLUORANTHENE	706	1260	3080 J	913 J	35.6	46.5	11.7	18.5
BENZO(E)PYRENE	581 J	872 J	1820 J	631 J	28.4	41.3	14.8	19.3
BENZO(G,H,I)PERYLENE	575	965	1640 J	643 J	16.6	23.2	14.8	16.7
BENZO(K)FLUORANTHENE	128	463	1080 J	287 J	7.7	11.4	3.7 J	7 J
BIPHENYL	15.9 J	20 J	118 J	16.3 J	3.9	5.5	3 J	3.6 J
CHRYSENE	821	1090	2820 J	794 J	42.5	52.9	14.5	22.2
DIBENZO(A,H)ANTHRACENE	148	313	489 J	197 J	3.1 J	4 J	1.2 J	1 J
DIBENZOTHIOPHENE	16.5 J	58.6 J	349 J	36.6 J	3	3.5	0.8 J	0.9 J
FLUORANTHENE	1120	1530	6550 J	1268 J	75.2	96.2	19	26.7
FLUORENE	187 J	182 J	1660 J	169 J	15.9 J	23.9 J	7.3	9.2
INDENO(1,2,3-CD)PYRENE	452	938	1730 J	579 J	14.1	17.6	9.3 J	11.5 J
NAPHTHALENE	41.2	116	769 J	124 J	15.7	9.8	19.6	23.8
PERYLENE	55.4	128	564 J	87.1 J	12.5	18.2	6.7 J	12 J
PHENANTHRENE	1580 J	1070 J	5930 J	730 J	39.7	43.8	18	22.8
PYRENE	1900	1390	5690 J	1469 J	63.7	87.6	27.4	44.1
Pesticides/PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.01 J	0.25	0.09 J	0.25 U	1.8	1.3 J	1.8 J	0.08 J
1,2,4,5-TETRACHLOROBENZENE	0.54	0.34 J	0.54	0.33 J	0.48 U	0.72 U	1.3 U	1.1 U
2,4'-DDD	12	58	8.2	28 J	3.9	3.4 J	0.22 U	0.26 U
2,4'-DDE	0.39	2.2	0.19	0.76 J	3.9	3.9 J	0.66 J	1.2 J
2,4'-DDT	1.6	25	3.4	13 J	2.4	3.3 J	0.28 U	0.33 U
4,4'-DDD	18	153	14	73 J	5.5	6.4 J	0.61 J	0.31 UJ
4,4'-DDE	3	59	3.2	8.5 J	30	24 J	2.5 J	1.2 J
4,4'-DDT	2.6	190	15	56 J	0.78	1.4 J	2.4 J	0.48 UJ
ALDRIN	0.058 U	0.055 U	0.065 U	3.9	1.5	0.54 J	0.35 U	0.42 U
ALPHA-BHC	0.16	0.13	0.17	0.1	1.7	2.3 J	0.25 UJ	0.5 J
ALPHA-CHLORDANE	4.1	16	1.5	1.5	1.6	4.6 J	0.26 U	0.31 U
BETA-BHC	0.44	0.18 U	2.2	0.1 J	1.5	1.1 J	0.14 J	0.27 U
CHLORPYRIFOS	0.28 U	0.26 U	0.31 U	0.34 U	1.4 U	1.6 UJ	7.4 U	13 U
CIS-NONACHLOR	1.2	1.8	0.38	0.27	3.1	1.8 J	0.24 U	0.29 U
DELTA-BHC	0.03 J	0.041 U	0.05 J	0.051 U	0.087 U	0.1 UJ	0.14 U	0.17 U
DIELDRIN	0.73	21	0.44	1.3 J	1.6	1.1 J	3.7 J	1.5 J
ENDOSULFAN II	4.4	3.2	3.8	0.29	1.1	2.7 J	0.26 U	0.31 U
ENDRIN	0.12 J	0.89	0.16	0.14 J	0.45 U	0.52 UJ	0.72 U	0.86 U
GAMMA-BHC (LINDANE)	0.57	0.53	0.41	0.11 J	1.3	0.8 UJ	0.85	1.1
GAMMA-CHLORDANE	1.4	15	0.21	0.081 U	2.3	3.1 UJ	0.16 J	0.33 U
HEPTACHLOR	0.38	0.75	0.27	0.19 J	0.21 J	0.24 J	0.39 U	0.47 U
HEPTACHLOR EPOXIDE	0.029 U	0.027 U	0.032 U	0.04 U	1.5	1.5 J	0.28 U	0.33 U
HEXACHLOROBENZENE	0.01 J	0.07	0.04 J	0.051 U	0.91	0.6 J	0.19 J	0.39 J
MIREX	0.56	1.2	1.7	0.04 UJ	0.6	1.9 J	0.63 U	0.76 U
OXYCHLORDANE	0.65 J	1.2 J	0.81 J	0.68	0.74	0.45 J	1.5 J	0.43 J
PCB-101/90	1.1	2.8	1.4	1.9	7.6 U	11 U	1.9 J	0.99 UJ
PCB-105	0.39 J	1.4	0.65 J	0.63 J	2.9	3.4 J	0.35 J	0.74 J
PCB-114	0.18 U	0.16 U	0.19 U	0.21 U	0.61 U	0.69 UJ	0.96 U	1.2 U
PCB-118	1	3.1	2.6	2	5.5	5.4 UJ	2	2.8
PCB-126	0.08 J	0.45	0.04 J	0.14 J	0.99	1.6 UJ	0.34 J	3.6 J
PCB-128	1.4	1.7	1.7	0.79 J	1.4	1.4 UJ	0.29 J	0.54 J
PCB-138/160	1.5	3.4	2.4	2.3	15 U	16 U	2.8	3.3
PCB-149/123	1.2	1.2	1.1	1.2	4.7 U	5.3 U	0.96 U	0.37 J
PCB-153/132	1.6	2.4	1.6	2.1	14 U	15 U	3 U	4.3 U
PCB-156	1.6	1.3	3	0.55 J	1.1	2.4 J	0.96 U	1.2 U
PCB-167	0.28	0.28	1.4	3 J	0.33 J	0.69 UJ	0.1 J	1.2 U
PCB-169	0.12 J	0.08 J	0.1 J	0.21 U	0.57 J	0.85 J	0.96 U	1.2 U
PCB-170/190	36 J	26 J	28 J	10 J	0.89	3.4 J	2 U	2.7 U
PCB-18/17	0.088 U	0.082 U	0.097 U	1.2 J	4.2	5.8 J	2.5 U	0.68 J
PCB-180	0.81 J	1.5 J	1.3 J	1.3	11 U	14 U	0.74 J	1.5 J
PCB-187	0.57	0.69	0.5	0.73	6.3 U	6 U	0.98	1
PCB-189	0.93	0.75	0.98	0.49 J	0.61 U	0.69 UJ	0.96 U	1.2 U
PCB-195/208	1.2	1.2	0.72	0.42	0.5 U	0.47 J	0.8 U	0.96 U

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01							
	Sediment				Mussel		Lobster	
Parameters	100B	200B	300B	300B-DUP	200B	300B	100B	100B-DUP
PCB-201/157/173	0.83	0.65	1.14	0.59	3.13	2.45 J	0.8 U	0.73 U
PCB-206	0.41	0.4	0.37	0.42	0.52 U	0.6 UJ	0.83 U	1 U
PCB-209	2.1	0.93	0.38	0.41	0.54 J	1.5 J	1.1 U	0.27 J
PCB-28	0.95	0.66	1.1	1.1	3	3.7 J	0.76 U	0.92 U
PCB-44	0.5	0.79	0.87	0.69	6.7	12 J	0.56 U	0.1 J
PCB-52	0.32	2.5	0.64	1.1 J	10	13 J	0.74 J	0.79 UJ
PCB-66	0.49	0.44	1.8	0.37 J	2.4	2.7 J	0.41 J	0.37 J
PCB-77	0.41	0.39	0.29	0.08 J	0.8	1 J	0.53 J	1.2 U
PCB-8/5	2.1	1.4	3.3	0.8 J	5.2	2.6 J	1.6 U	1.9 U
PCB-81	0.42	0.31	0.15 J	0.21 U	2.1	2.3 J	0.69 J	1.2 U
PENTACHLOROANISOLE	0.06 J	0.68	0.12 J	0.14 J	2.1	2.7 J	0.27 J	0.35
PENTACHLOROBENZENE	0.13	0.17	0.03 J	0.48 J	2.4 U	2.4 U	0.32 UJ	0.49 J
TRANS-NONACHLOR	1.1	5.5	0.6	0.86	1.6	2.6 J	0.17 U	0.2 U
Metals (mg/kg)								
ALUMINUM	53900	49100	52500	53800	299	274	5.5	5.9
ARSENIC	12.2	10.3	13.2	13.1	8.4	10.4	14.2	14.2
CADMIUM	0.3	0.13	0.32	0.34	1.4	1.5	0.05	0.05
CHROMIUM	93.1	54.3	93.4	93.7	1.8	1.8	0.47 U	0.2 U
COPPER	43.7	44.3	200	150	7.1	7.8	63.7	63.1
IRON	24400	25300	26300	27600	558 J	461 J	8.5	10.3
LEAD	77.2	174	209	182	3.4	3.9	10.2	10.7
MANGANESE	740	1260	551	559	11.6	13.4	4 J	4.3 J
MERCURY	0.25	0.13	0.31	0.24	0.25	0.27	0.68	0.73
NICKEL	29.6	24.8	30.5	29.4	1.6	1.4	0.47 U	0.42 U
SILVER	0.41	0.18	0.36	0.49	0.05 J	0.04 J	0.28	0.27
ZINC	191	108	166	205	86.8	107	137	136
Miscellaneous Parameters (%)								
PERCENT LIPIDS					11.6	15.5	1.3	1.4
TOTAL ORGANIC CARBON	1.73	1.89	2.21	2.3				

Notes:

MS-1 includes the following samples:

OU4-SD-M01-100B
OU4-SD-M01-200B
OU4-SD-M01-300B
OU4-FD-003-000B (duplicate of OU4-SD-M01-300B)
OU4-MU-M01-200B
OU4-MU-M01-300B
OU4-LJ-M01-100B
OU4-LJ-M01-100B-FD

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	200B	300B	100B
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	14.7	9.45	8.2	4.6	3.9	1.3 J
1-METHYLNAPHTHALENE	14.5	11.4	15	10.5	5.9	5.8
1-METHYLPHENANTHRENE	45.8	38.3	47.4 J	7.7	7	1.8 J
2,6-DIMETHYLNAPHTHALENE	15.3	10.5	11.6	7.3	4.5	0.9 J
2-METHYLNAPHTHALENE	23.4	20.8	23.2	17.6	9.4	6.9
ACENAPHTHENE	17.9	15.9	23.4	10.9 J	12.4 J	2.3 J
ACENAPHTHYLENE	79.5 J	75.6	70.2	17.8 J	20	1.7 J
ANTHRACENE	191 J	190	161	37.5 J	40	3.2 J
BENZO(A)ANTHRACENE	318	326 J	227	17.7	18.5	5.9
BENZO(A)PYRENE	384	338 J	321	14.4	17.6	12.3
BENZO(B)FLUORANTHENE	371	287 J	360	28.1	31.5	10.9 J
BENZO(E)PYRENE	210 J	159 J	190	22.7	27.9	9.7
BENZO(G,H,I)PERYLENE	203	172 J	175	13.9	16.1	8.2 J
BENZO(K)FLUORANTHENE	123	104 J	104	10.9	11.6	3.8 J
BIPHENYL	6.39 J	4.26 J	7.3 J	4.6	2.7 J	1.6 J
CHRYSENE	321	299	299	38.6	40.7	14.5
DIBENZO(A,H)ANTHRACENE	63.1	53.1 J	46.5	3.9 J	2.8 J	0.7 J
DIBENZOTHIOPHENE	13.6 J	13 J	15 J	2.3	2.8	1 J
FLUORANTHENE	441 J	590	607 J	63.1	87.3	26.9
FLUORENE	40.8 J	34.6 J	39.5	14.9 J	13.9 J	4.4 J
INDENO(1,2,3-CD)PYRENE	209	181 J	44.9 J	10.5 J	13.4	7 J
NAPHTHALENE	34.3	30.9	42.3	17.9	11.1	13.6
PERYLENE	98.9	63.3	83.7 J	12.8	15.9	5.6 J
PHENANTHRENE	171 J	209 J	320	31	42.7	13.3
PYRENE	470 J	513	499 J	52	67.7	22.4
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.21 J	0.18 J	0.33 J	0.58	1.1	12
1,2,4,5-TETRACHLOROBENZENE	0.46 J	0.37 J	2	1.4	0.84 U	1.3 U
2,4'-DDD	1.8	3.3	2.6 U	0.16 U	1.4	2.3 J
2,4'-DDE	0.19	0.24	1.4	4.2	0.15 J	0.33 UJ
2,4'-DDT	0.14	2.3 J	0.84	1.8	2.3	0.15 J
4,4'-DDD	2.2	6.3 J	7.2 U	1.3	3.2	0.25 J
4,4'-DDE	1.2	5.2 J	10	7.2	10	3.6
4,4'-DDT	0.85	10	3.5 U	0.21 J	0.75	7.6 J
ALDRIN	0.068 U	0.053 U	0.96	2.5	1.4	0.38 U
ALPHA-BHC	0.13	0.09	0.06 J	0.97	0.84	0.27 U
ALPHA-CHLORDANE	0.6	0.53	0.31	10	1.6	0.29 U
BETA-BHC	0.46	0.64	1	2	3.4	0.24 U
CHLORPYRIFOS	0.32 U	0.25 U	0.71	1.7 U	1.5 U	7.4 U
CIS-NONACHLOR	0.19	0.16	2.5	5.2	0.93	0.05 J
DELTA-BHC	0.06	0.03 J	0.15	0.1 UJ	0.093 U	0.15 U
DIELDRIN	0.03 J	0.69	0.87	0.11 J	0.95	1.7 J
ENDOSULFAN II	1.2	1.2	1.6	0.19 U	0.43	0.29 U
ENDRIN	0.15 U	0.12 UJ	0.27 U	4.1	0.48 U	0.78 U
GAMMA-BHC (LINDANE)	0.14 J	0.21 J	0.32 J	1.6 U	0.71	1.1
GAMMA-CHLORDANE	0.1	0.18	0.43	1.8	1.1	0.3 U
HEPTACHLOR	0.08 J	0.12 J	0.26 J	0.09 J	0.24 J	0.43 U
HEPTACHLOR EPOXIDE	0.034 U	0.027 U	0.059 U	3.3	0.34	0.3 U
HEXACHLOROBENZENE	0.07	0.04 J	0.088 U	0.82	0.38	0.29 J
MIREX	0.23	0.04	0.83	0.46 U	0.42 U	1.2 J
OXYCHLORDANE	0.04 J	0.06 J	0.08 J	0.21 U	0.11 J	0.87 J
PCB-101/90	2.1	0.68 J	1.4	6.7	7.7 U	0.86 J
PCB-105	1.4	0.41 J	2.3	4.9	3.6	0.77 J
PCB-114	0.2 U	0.16 U	0.35 U	0.71 U	0.65 U	1.1 U
PCB-118	2.1	0.93	4.7	6.2	6.1	3
PCB-126	0.1 J	0.05 J	0.17 J	0.1 J	1.4	0.74 J
PCB-128	0.79	0.46 J	1.9	2.7	1.8	0.67 J
PCB-138/160	2.9	1.4	2.8 U	16	17 U	3.8
PCB-149/123	1.2	0.68	4	7.4	5.3 U	0.21 J
PCB-153/132	2.1	0.93	5.4	12 U	16 U	6 U
PCB-156	0.66	0.54	3	4	1.2	0.37 J
PCB-167	0.17 J	0.16 U	1.1	3	0.74	0.22 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02					
	Sediment			Mussel		Lobster
Parameters	**100B**	**200B**	**300B**	**200B**	**300B**	**100B**
PCB-169	0.1 J	0.21	0.11 J	0.02 J	1.1	0.11 J
PCB-170/190	22 J	8.8 J	2.3 J	3.6 U	0.68	2.2 U
PCB-18/17	0.1 U	0.08 U	0.18 U	1.8 U	1.9	0.53 J
PCB-180	1.1 J	0.57 J	4.2	11 U	10 U	1.7
PCB-187	0.73	0.33	2.2	5.8 U	5.5 U	1.6
PCB-189	0.28	0.22	0.42	0.71 U	0.65 U	1.1 U
PCB-195/208	0.36	0.18 J	0.98	0.59 U	0.54 U	0.13 J
PCB-201/157/173	0.53	0.25	0.56	3.63	0.49 U	0.25 J
PCB-206	0.28	0.12 J	1.4 U	0.61 U	0.56 U	0.1 J
PCB-209	0.64	0.48 J	1.1 U	0.62 J	0.48 J	1.2 U
PCB-28	2.1	0.92 J	10	2	0.84	0.87
PCB-44	0.35	0.18	1	3.5	1.6	0.61 U
PCB-52	0.87	0.42	3.3	4	4.5	0.96
PCB-66	0.2	0.22	0.5	6.5	1.4	0.66 J
PCB-77	0.28	0.27	1.5 U	0.71 U	1	1.1 U
PCB-8/5	0.66	0.5	2.1	3.3	2.1	1.7 U
PCB-81	0.22	0.19	0.21 J	0.09 J	2	1.4
PENTACHLOROANISOLE	0.12 J	0.05 J	0.16 J	1.5	1.6	0.38
PENTACHLOROBENZENE	0.17	0.07 J	0.62	3.5 U	0.91 U	0.24 J
TRANS-NONACHLOR	0.27	0.29	0.62	1.9	1.3	0.25
Metals (mg/kg)						
ALUMINUM	53200	59200	53400	354	308	5.9
ARSENIC	10.7	12.4	13.7	10	9.4	14.6
CADMIUM	0.49	0.29	0.6	1.5	1.4	0.03
CHROMIUM	73.4	85.8	127	2.3	2.1	0.49 U
COPPER	64.6	50.6	46.1	7.5	7.6	56.9
IRON	20400	28300	20500	646 J	612 J	15.1
LEAD	202	170	94.7	4.3	4.1	0.18
MANGANESE	386	621	365	12	13.1	2.6 J
MERCURY	0.27	1	0.35	0.3	0.27	8.2
NICKEL	25.8	35.3	27.1	2	1.6	0.49 U
SILVER	0.92	0.33	1.7 J	0.04 J	0.05 J	0.27
ZINC	378	127	101	90	80.1	111
Miscellaneous Parameters (%)						
PERCENT LIPIDS				11.1	9	1.8
TOTAL ORGANIC CARBON	2.15	4.54	2.91			

Notes:
MS-2 includes the following samples:

OU4-SD-M02-100B
OU4-SD-M02-200B
OU4-SD-M02-300B
OU4-MU-M02-200B
OU4-MU-M02-300B
OU4-LJ-M02-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03						
	Sediment			Mussel			Lobster
Parameters	100B	200B	300B	100B	200B	200B-DUP[1]	100B
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	16.2	15.5	12.2	4.2	4		1 J
1-METHYLNAPHTHALENE	25.6	17.5	16	7.9	7		5 J
1-METHYLPHENANTHRENE	116	70.9	62.6	6.6	3.9		1.1 J
2,6-DIMETHYLNAPHTHALENE	17.3	17	15.9	4.5	4.3		1.3 J
2-METHYLNAPHTHALENE	36.2	29.6	26.4	11.8	10.4		5.8 J
ACENAPHTHENE	113	47.2	45.3	12.3 J	9.3 J		4 J
ACENAPHTHYLENE	143	78	88.4	19.2 J	14.6		0.9 J
ANTHRACENE	621	281	247	38.4 J	33.4		1.7 J
BENZO(A)ANTHRACENE	944	520	460	15.8	13		4.2
BENZO(A)PYRENE	1005	591 J	567 J	12.9	13.5		8
BENZO(B)FLUORANTHENE	1002	682	563	34.2	28.6		9.5 J
BENZO(E)PYRENE	529 J	332	311	27.4	21.8		6.5 J
BENZO(G,H,I)PERYLENE	496	381	321	16.4	13.7		5.7 J
BENZO(K)FLUORANTHENE	421	158	212	7.9	7.3		3 J
BIPHENYL	10.2 J	6.86 J	8.15 J	2.8 J	3.8		2 J
CHRYSENE	972	532	470	38.2	34.1		9.1
DIBENZO(A,H)ANTHRACENE	165	120 J	104 J	3.3 J	2.7 J		0.5 J
DIBENZOTHIOPHENE	45.6 J	25.1 J	18.8 J	2.2	1.8 J		1 J
FLUORANTHENE	1810	952	697	72.4	65		17.7
FLUORENE	176 J	78.6 J	74.3 J	13.6 J	9.6 J		4.7 J
INDENO(1,2,3-CD)PYRENE	558	413	347	13.3 J	10.5		5.2 J
NAPHTHALENE	65.4	39.6	49	12	16.5		12.3
PERYLENE	188 J	134	106	11.1	10.6		6.2 J
PHENANTHRENE	885 J	423 J	311 J	28.6	25.9		10.7
PYRENE	1520	841	691	60.2	49.5		19
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.9	0.51	1.5	2.6	2		3.6
1,2,4,5-TETRACHLOROBENZENE	1.8	0.64	1.6	0.73	2.4 U		0.83 U
2,4'-DDD	7.8	3.2	3	0.14 U	0.99		0.001 J
2,4'-DDE	0.14 U	0.11 U	0.1 U	0.2 U	0.49		0.93 J
2,4'-DDT	2.7	0.49	0.21	2.1	1		0.57
4,4'-DDD	20	5.1	4.5	4.8	2.8		0.22 J
4,4'-DDE	5.3	3	1.8	9.6	6.2		2.4
4,4'-DDT	6	1.3	1.2	0.62	0.92 J		2.3 J
ALDRIN	0.1 U	0.079 U	0.075 U	2.6	0.5		0.41 U
ALPHA-BHC	0.2	0.58	0.24	1.4	0.48		0.29 U
ALPHA-CHLORDANE	0.56	0.65	0.53	15	1.4		0.31 U
BETA-BHC	3.1	0.91	1	7.3	25		0.26 U
CHLORPYRIFOS	0.5 U	0.38 U	0.36 U	6.2	5.5 U		4.8 U
CIS-NONACHLOR	1.7	0.38	0.25	14	3.1		0.16 J
DELTA-BHC	0.079 U	0.15	0.13	0.27	0.087 UJ		0.16 U
DIELDRIN	1.3	1.5	0.21	0.64	0.3		1.8 J
ENDOSULFAN II	2.1	0.85	1.6	1.4	0.48		0.31 U
ENDRIN	0.24 U	0.18 U	0.17 U	3.4	0.54		0.85 U
GAMMA-BHC (LINDANE)	0.48	0.37	0.22 J	0.69 U	1.1		0.92
GAMMA-CHLORDANE	0.44	0.26	0.24	0.77	1.1		0.33 U
HEPTACHLOR	0.68	0.51	0.27	0.26 U	0.42		0.46 U
HEPTACHLOR EPOXIDE	0.052 U	0.04 U	0.037 U	2	0.05 J		0.33 U
HEXACHLOROBENZENE	0.04 J	0.09	0.05 J	0.42	1.3		0.22 J
MIREX	0.06	0.29	0.04	0.41 U	0.4 U		0.75 U
OXYCHLORDANE	0.13 J	0.32 J	0.08 J	0.78	0.18 U		1.7 J
PCB-101/90	38	5.8	4.6	8	6.2		3.2
PCB-105	9.5	2.8	1.9	8.5	2.2		0.45 J
PCB-114	0.31 U	0.24 U	0.23 U	0.63 U	0.61 U		1.1 U
PCB-118	4.3	3.1	2.9	9	4.2		2.5
PCB-126	9.8	8.7	1	0.13 J	0.18 J		0.17 J
PCB-128	4.1	1.4	1.6	3.2	2.3		0.88
PCB-138/160	89	20	9.2	44	17		9.8
PCB-149/123	47	8.6	4.8	21	6.2		4.9
PCB-153/132	97	17	9.2	51 U	18		14 U
PCB-156	4.6	2.5	3	1.6	1.7		1.1 U
PCB-167	2.2	1	0.92	6	1.7		0.46 J
PCB-169	2.4	0.46	0.34	0.02 J	0.61 U		1.1 U

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03						
	Sediment			Mussel			Lobster
Parameters	100B	200B	300B	100B	200B	200B-DUP(1)	100B
PCB-170/190	47 J	37 J	18 J	3.7 U	1.2 U		4.3 U
PCB-18/17	0.16 U	0.12 U	0.11 U	1.6 U	1.1 J		1.1 J
PCB-180	45 J	20 J	7 J	22 U	9		9.1
PCB-187	25	16	4.2	22 U	5.2		5.7
PCB-189	0.78	0.44	0.29	0.93	0.37 J		0.08 J
PCB-195/208	3.5	3.9	1	0.18 J	2.1		0.58 J
PCB-201/157/173	2.62	1.99	0.75	1.32	1.94		1.19
PCB-206	2.2	6.6	0.92	0.54 U	0.06 J		0.2 J
PCB-209	1.7	2.6	0.77	0.58 J	0.15 J		1.3 U
PCB-28	1.4	2.2	1.4	1.8	2.2		0.9 U
PCB-44	0.6	0.62	0.32	5.8	1.6		0.66 U
PCB-52	10	3.6	1.7	8.4	6.7		0.77 U
PCB-66	0.35	0.5	0.51	4.8	0.24 J		0.41 J
PCB-77	5	0.67	0.66	0.63 U	0.61 U		0.24 J
PCB-8/5	0.14 J	0.04 J	0.13 J	3.4	3.3		1.8 U
PCB-81	6	3.5	0.91	0.63 U	0.52 J		0.68 J
PENTACHLOROANISOLE	0.21 J	0.18 J	0.15 J	1.5	1.5		0.42
PENTACHLOROBENZENE	0.27	0.15	0.29	4.7 U	0.2 U		0.37 U
TRANS-NONACHLOR	0.4	0.2	0.06	3.1	0.79		0.2 U
Metals (mg/kg)							
ALUMINUM	64600	60600	58500	411	500 J	529	4.6
ARSENIC	17.2	18.6	10.7	9.8	9.1	9.4	19.1
CADMIUM	0.6	0.79	0.46	1.6	1.5	1.6	0.03
CHROMIUM	135	137	87.4	2.9	3.9	3.9	0.51 U
COPPER	185	1090	106	9.6	17.6	17.6	35.2
IRON	32900	39900	21100	716 J	946	956	9.3
LEAD	133	229	80.6	4.2	5.5	5.3	0.15
MANGANESE	451	469	409	12.8	16.6	16.9	3.2 J
MERCURY	0.62	0.75	0.48	0.29	0.32	0.3	0.5
NICKEL	45.3	79	26.5	3.4	3.5	3.4	0.65 J
SILVER	1.1	1.7	0.98	0.04 J	0.07 J	0.07	0.19
ZINC	234	650	138	99.8	107	108	107

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03						
	Sediment			Mussel			Lobster
Parameters	100B	200B	300B	100B	200B	200B-DUP[1]	100B
Miscellaneous Parameters (%)							
PERCENT LIPIDS				10.9	6.3		1.6
TOTAL ORGANIC CARBON	3.12	2.09	1.81				

Notes:
MS-3 includes the following samples:

OU4-SD-M03-100B
OU4-SD-M03-200B
OU4-SD-M03-300B
OU4-MU-M03-100B
OU4-MU-M03-200B
OU4-MU-M03-200B-FD
OU4-LJ-M03-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04				
	Sediment			Mussel	Lobster
Parameters	100B	200B	300B	100B	100B
Polyaromatic Hydrocarbons (ug/kg)					
1,6,7-TRIMETHYLNAPHTHALENE	27.9	7.33	1.5	3.8 J	0.8 J
1-METHYLNAPHTHALENE	75.1	9.43	1.9	5.5	2 J
1-METHYLPHENANTHRENE	112 J	42.4	4.8	5.6	1.2 J
2,6-DIMETHYLNAPHTHALENE	46.4	13.1	2.1	4.3	0.8 J
2-METHYLNAPHTHALENE	127	17.1	3.3	9.2	3.4 J
ACENAPHTHENE	59.5	14	3.9	7.6 J	1.7 J
ACENAPHTHYLENE	345	61.4	9.4	18.6	0.7 J
ANTHRACENE	715	160	24.9	38.1	1.4 J
BENZO(A)ANTHRACENE	1190	252	36.8	16.1	2.1 J
BENZO(A)PYRENE	1120	321 J	46.7	18.2	5.2 J
BENZO(B)FLUORANTHENE	1260	276	49.1 J	34.3	6.1 J
BENZO(E)PYRENE	624	165	26.6 J	29.2	6.8 J
BENZO(G,H,I)PERYLENE	772	155	28	19	7.3 J
BENZO(K)FLUORANTHENE	274	106	17.7	12.1	2.2 J
BIPHENYL	17.9 J	6 J	1.1 J	2.7 J	1.8 J
CHRYSENE	1151	214	44.6	36.1	7.5
DIBENZO(A,H)ANTHRACENE	272	48.4 J	7.4	3.3 J	1 J
DIBENZOTHIOPHENE	45.7 J	8.88 J	1.6	1.7 J	0.6 J
FLUORANTHENE	1820 J	404	89.6	62.9	12
FLUORENE	157	37.2 J	4.2	10.5 J	2.5 J
INDENO(1,2,3-CD)PYRENE	883 J	164	27.5 J	15.8	5.2 J
NAPHTHALENE	164	32	3.4	11.2	8 J
PERYLENE	149 J	86.3	9.1 J	18.1	6.2 J
PHENANTHRENE	697	123 J	24.6	25.1	5.6 J
PYRENE	1500 J	456	75 J	55.8	11.5
Pesticides/PCBs (ug/kg)					
1,2,3,4-TETRACHLOROBENZENE	0.32	0.11 J	0.42	0.99	8.6
1,2,4,5-TETRACHLOROBENZENE	1.2	1.2	0.16 J	0.95 U	1.5 U
2,4'-DDD	16	1.7	13	1.7	0.27 U
2,4'-DDE	0.63	0.71	3.4	0.11 J	0.38 UJ
2,4'-DDT	1.9	0.033 U	34	2.9	0.32 J
4,4'-DDD	38	1.1	28	3.2	0.33 U
4,4'-DDE	11	0.51	138	9	2.8
4,4'-DDT	4.1 U	0.59	174	1.1	0.5 U
ALDRIN	0.055 U	0.089 U	0.05 U	0.65	0.43 U
ALPHA-BHC	0.18	0.27	0.08	0.84	0.28 J
ALPHA-CHLORDANE	1.4	0.12	0.13	0.93	0.33 U
BETA-BHC	0.19 U	3.1	0.41	9	0.12 J
CHLORPYRIFOS	0.26 U	0.42 U	0.24 U	1.7 U	5.4 U
CIS-NONACHLOR	0.54	0.16	1	0.92	0.3 U
DELTA-BHC	0.041 U	0.32	0.05	0.1 U	0.22
DIELDRIN	0.062 U	0.06 J	0.11	0.74	1.9 J
ENDOSULFAN II	1.7	0.69	0.16	0.58	1.8
ENDRIN	0.12 U	0.2 U	0.11 U	0.54 U	1.8 J
GAMMA-BHC (LINDANE)	0.13 J	0.07 J	0.2 U	0.52	0.33
GAMMA-CHLORDANE	0.54	0.15	0.06	1.3	0.35 U
HEPTACHLOR	0.61	0.26 U	0.02 J	0.37	0.49 U
HEPTACHLOR EPOXIDE	0.028 U	0.045 U	0.025 U	0.21 U	0.35 U
HEXACHLOROBENZENE	0.08	0.067 U	0.1	0.33	0.43 U
MIREX	0.16	0.04 J	0.025 U	0.48 U	0.79 U
OXYCHLORDANE	0.65 J	0.27 J	0.013 UJ	1	1.4 J
PCB-101/90	22	1.4	1.1	7.5 U	1 U
PCB-105	5.1	0.57 J	1.7	3.4	0.89 J
PCB-114	0.17 U	0.27 U	0.15 U	0.73 U	1.2 U
PCB-118	7.1	1.2	1.4	5.4	3.5
PCB-126	4.1	0.42	0.08 J	1.2	0.94 J
PCB-128	2.3	0.39	0.89	1.7	0.61 J
PCB-138/160	33	1.7	8.2	19 U	4.1
PCB-149/123	22	0.9	4.9	7.9 U	0.14 J
PCB-153/132	31	1.7	9.6	22 U	6.3 U
PCB-156	6.4	0.41	2	1.8	1.2 U
PCB-167	0.33	0.28	0.45	1.5	0.43 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04				
	Sediment			Mussel	Lobster
Parameters	**100B**	**200B**	**300B**	**100B**	**100B**
PCB-169	0.12 J	0.38	0.07 J	1.2	0.16 J
PCB-170/190	5.9 J	6.2 U	6 J	0.95	2.8 U
PCB-18/17	0.13	0.13 U	0.076 U	3.2	1.7 J
PCB-180	27	1.2 J	10	11 U	1.9
PCB-187	22	0.74	5.7	10 U	1.9
PCB-189	0.71	0.17 J	0.22	0.73 U	1.2 U
PCB-195/208	5.3	0.16	1.1	0.6 U	0.12 J
PCB-201/157/173	1.95	0.35	0.39	1.1	1.19
PCB-206	11	0.05 J	1.1	0.63 U	0.1 J
PCB-209	13	0.37	0.41 U	0.45 J	1.4 U
PCB-28	1	2.1	0.14 J	2.8	1.6
PCB-44	1.7	0.39	0.09 J	3	0.7 U
PCB-52	5	1.1	0.19	7.6	0.25 J
PCB-66	1.3	0.2	0.11 U	1	1 J
PCB-77	0.17 U	1.1	0.19 U	0.39 J	1.2 U
PCB-8/5	1.5	0.79	0.43	1.3	1.7 J
PCB-81	2.6	0.56	0.17	1.9	1.1 J
PENTACHLOROANISOLE	0.17 J	0.14 J	0.06 J	1.4	0.46
PENTACHLOROBENZENE	0.11	0.2	0.08	0.77 U	0.1 J
TRANS-NONACHLOR	0.46	0.04 J	0.27	1	0.21 U
Metals (mg/kg)					
ALUMINUM	40900	60300	46600	348	13.8
ARSENIC	19.7	9.2	13.7	9.5	22.8
CADMIUM	1	0.25	0.06	1.9	0.03
CHROMIUM	132	74.9	67.8	2.5	0.52 U
COPPER	1780	59.5	393	27.9	22.3
IRON	48700	20500	23800	651 J	25.3
LEAD	316	46.5	145	7.6	0.12
MANGANESE	505	400	810	13	2.8 J
MERCURY	3.6	0.27	0.39	0.48	0.58
NICKEL	193	23.3	158	3.2	0.52 U
SILVER	3.2 J	0.31	0.09 J	0.18 J	0.13
ZINC	1510	79.9	138	151	72.6
Miscellaneous Parameters (%)					
PERCENT LIPIDS				8.9	1.5
TOTAL ORGANIC CARBON	1.13	1.92	0.69		

Notes:
MS-4 includes the following samples:

OU4-SD-M04-100B
OU4-SD-M04-200B
OU4-SD-M04-300B
OU4-MU-M04-100B
OU4-LJ-M04-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05							
	Sediment				Mussel			Lobster
Parameters	100B	100B-DUP	200B	300B	100B	100B-DUP	300B	100B
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	10.6 J	29.4 J	17.1	6.3	3.4 J	7.3 J	5.4	0.9 J
1-METHYLNAPHTHALENE	13.9	20.7	25.6	8.8	6.4	9	8.6	5.7
1-METHYLPHENANTHRENE	27.5 J	90.9 J	56.2	19.8	5.2	9 J	6.9	1.7 J
2,6-DIMETHYLNAPHTHALENE	13.5 J	27.9 J	21.7	8.6	3.9	6.3	6.1	0.9 J
2-METHYLNAPHTHALENE	22.6	28.8	38.2	14.3	9	13.6	12.6	6.7
ACENAPHTHENE	24.2 J	58.9 J	32.7	22.9	10 J	13.6 J	14 J	2 J
ACENAPHTHYLENE	73.1 J	126 J	80.8	56.7	16.2	21.6 J	24.3	0.8 J
ANTHRACENE	177 J	511 J	271	142	31.8	38.4 J	45.5	1.2 J
BENZO(A)ANTHRACENE	300 J	702 J	411	245	12.2	15.7	15.9	2.4 J
BENZO(A)PYRENE	435	684	477 J	345	9.4	12.6	14.3	6.5 J
BENZO(B)FLUORANTHENE	422 J	692 J	419	305 J	22.8	30.8	28.9	6 J
BENZO(E)PYRENE	223 J	372	236	182 J	21.7	27.6	29.3	5.3 J
BENZO(G,H,I)PERYLENE	212	322	219	169	11.8	13.2	15	4.9 J
BENZO(K)FLUORANTHENE	120 J	250 J	166	107	9.2	11.5	9.4	2.3 J
BIPHENYL	6.6 J	11	7.62 J	4.1 J	3.2 J	4.2	3.4 J	1.3 J
CHRYSENE	338 J	797 J	446	254	32.8	36.1	46.2	6.4
DIBENZO(A,H)ANTHRACENE	60.4 J	103 J	68.7 J	48.9	1.6 J	2.2 J	2.4 J	0.5 J
DIBENZOTHIOPHENE	13 J	34.1 J	18.4 J	10.5	1.9 J	2.5	2.8	0.6 J
FLUORANTHENE	532 J	1661 J	703	401	58.2	62.3	88.7	12.2
FLUORENE	45.4 J	125 J	88 J	37.2	10.4 J	12	14.6 J	3.1 J
INDENO(1,2,3-CD)PYRENE	230 J	363 J	239	182 J	8.6 J	10.9 J	10.9 J	4.2 J
NAPHTHALENE	40.8	50.1	43.9	23.6	12 J	21.5 J	13.5	14.9
PERYLENE	84.7 J	199 J	109	48 J	12.5	12.9	16.9	5.5 J
PHENANTHRENE	218 J	498 J	330 J	181	23.9	29.7	37.1	5.1
PYRENE	502 J	1393 J	643	375 J	44.9	53.9	63	11.6
Pesticides/PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.23 J	0.13 J	0.53	0.26	1.5	1.9	1.7	7.3
1,2,4,5-TETRACHLOROBENZENE	1.7	1.5	0.17 J	0.66	1.7 U	1.9	2.1 U	1.4 U
2,4'-DDD	2.8 U	3.9	3	1.6 U	2.5 J	0.16 UJ	3.5	1.3 J
2,4'-DDE	0.62 J	0.19 J	0.68	0.09	0.27 J	3.2 J	0.36	0.38 J
2,4'-DDT	0.73 J	0.039 UJ	0.06	0.35 U	3.3	2.2	2.8	0.13 J
4,4'-DDD	5 U	2.7	2.5	2.3 U	3	2.9	5.3	0.28 U
4,4'-DDE	4.5	1.2 J	1.1	1.3 U	8.4 J	7.3	12	1.6
4,4'-DDT	5.7 U	1.1	2.8	1.5 U	1.5 J	0.79 J	1	6 J
ALDRIN	0.08 J	0.1 U	0.098 U	0.061 U	1.3	0.25 UJ	0.15 J	0.37 U
ALPHA-BHC	0.1	0.3 J	0.27	0.1	0.97	1	1.1	0.1 J
ALPHA-CHLORDANE	0.78	0.64	0.26	0.24	2 J	10 J	2.2	0.28 U
BETA-BHC	2.5	2.6	3.1	1.2	1.3 J	2.4 J	8.6	0.24 U
CHLORPYRIFOS	1.1 J	0.49 UJ	0.47 U	0.29 U	1.8 UJ	9.1 J	1.8 U	6.2 U
CIS-NONACHLOR	0.33	0.31	0.19	0.4	1.1 J	7.3 J	2	0.25 U
DELTA-BHC	0.065 U	0.05 J	0.073 U	0.06	0.11 UJ	0.12 J	0.11 U	0.15 U
DIELDRIN	0.4 J	0.05 J	0.001 J	0.24	0.94	1.3	1.3	1.5 J
ENDOSULFAN II	1.2	2	1.2	0.87	0.7 J	1.8 J	0.89	0.28 U
ENDRIN	0.2 U	0.23 U	0.22 U	0.14 U	0.57 U	0.53 U	0.55 U	0.76 U
GAMMA-BHC (LINDANE)	0.13 J	0.38 J	0.61	0.29	0.31	1.5 U	1	0.94
GAMMA-CHLORDANE	0.52 J	0.26 J	0.24	0.05 J	0.73 J	1.8 J	1.9	0.3 U
HEPTACHLOR	0.25 U	0.03 J	0.28 U	0.14 J	0.4	0.32	0.23 J	0.42 U
HEPTACHLOR EPOXIDE	0.044 U	0.052 U	0.049 U	0.031 U	0.56 J	0.2 UJ	0.44	0.3 U
HEXACHLOROBENZENE	0.065 UJ	3.3 J	0.073 U	0.046 U	0.94	0.78	0.68	0.21 J
MIREX	0.26 J	0.1 J	0.28	0.11	0.5 UJ	0.46 UJ	0.49 U	0.64 J
OXYCHLORDANE	0.06 J	0.39 J	0.04 J	0.08 J	0.42	0.51	0.23 U	0.69 J
PCB-101/90	2 J	3.5 J	2.2	0.78	7.4 U	13	9.2 U	1.3
PCB-105	1.3	1.8	0.9 J	0.64 J	2.9 J	7.2 J	4.2	0.46 J
PCB-114	0.26 U	0.31 U	0.29 U	0.18 U	0.77 U	0.71 U	0.74 U	1 U
PCB-118	2.2	3.4	1.9	0.9	5.8 J	11 J	8.5	1.8
PCB-126	0.14 J	0.3 J	0.25 J	0.15 J	1.8 J	0.36 J	1.4	0.95 J
PCB-128	0.55 J	1.1 J	0.28	0.3	1.5 J	3.3 J	2.5	0.4 J
PCB-138/160	2.6 J	4.8 J	2.5	2 U	16 U	22	19 U	4.1
PCB-149/123	0.9 J	2.5 J	0.96	1.4	4.6 U	8.4	6.8 U	0.68 J
PCB-153/132	3.2	4.3	2.2	2.2	13 U	19 U	19 U	4.6 U
PCB-156	1.7 J	0.31 UJ	0.56	0.95	1 J	2.2 J	1.7	0.3 J
PCB-167	0.23 J	2.6 J	2.3	0.18 J	0.54 J	2.2 J	1.1	0.15 J
PCB-169	0.19 J	0.2 J	0.17 J	0.17 J	1.2 J	0.09 J	1.1	0.27 J
PCB-170/190	0.83 J	29 J	12 U	0.54 J	1.2	1.8 U	1.2	2 U
PCB-18/17	0.13 UJ	0.69 J	0.15 U	0.092 U	4	2.9	4	0.46 J
PCB-180	1.4 U	3.6 J	1.5 J	1.2 U	9.8 U	16 U	14 U	2.1
PCB-187	1.2 J	2.3 J	0.96	1	4.9 U	7.2 U	7 U	1.8
PCB-189	0.41 J	0.17 J	0.57	0.16 J	0.77 U	0.71 U	0.74 U	1 U

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05							
	Sediment				Mussel			Lobster
Parameters	100B	100B-DUP	200B	300B	100B	100B-DUP	300B	100B
PCB-195/208	0.49	0.79	0.38	0.32	0.64 U	0.59 U	0.62 U	0.17 J
PCB-201/157/173	0.11	1.16 J	0.49	0.33	0.7 J	0.54 UJ	2.4	0.78 U
PCB-206	0.87 U	1.8	0.13 J	0.33 U	0.66 U	0.61 U	0.64 U	0.11 J
PCB-209	1.2	1.3	1	0.64 U	0.59 J	0.5 J	0.56 J	0.08 J
PCB-28	1.7 J	4.8 J	3	0.77	2.8	4.5	2.8	0.97
PCB-44	2.5	1.9	0.56	1.1	4.1	4	1.6	0.2 J
PCB-52	0.82 J	3.8 J	3.1	0.19	6.1	6.9	7.3	0.85
PCB-66	0.48 J	0.81 J	0.54	0.12 J	2.1 J	4.7 J	2	0.57 J
PCB-77	1.1 U	0.62	0.87	0.44 U	1.3 UJ	0.71 UJ	1.9	1 U
PCB-8/5	1.1 J	2.2 J	2.4	0.34 J	1.8	2.6	2.9	1.7 U
PCB-81	0.4	0.56	0.39	0.13 J	2.3 J	0.14 J	2.3	1 U
PENTACHLOROANISOLE	0.2 J	0.19 J	0.5 J	0.07 J	1.9	2.3	2.7	0.24 J
PENTACHLOROBENZENE	0.32 J	0.19 J	0.19	0.33	2.3 U	3.3	1.6 U	0.22 J
TRANS-NONACHLOR	0.59 J	0.11 J	0.26	0.07	2.1	2.7	2.3	0.03 J
Metals (mg/kg)								
ALUMINUM	66100	67000	62700	53300	274	247	292	7.8
ARSENIC	14.6	14.2	12.3	6.9	8.7	8.8	9.6	13.6
CADMIUM	0.55	0.53	0.57	0.64	2.1	2.2	2.1	0.03
CHROMIUM	121	118	101	72.7	2.3	2.1	2.1	0.51 U
COPPER	63.9	61.8	38.5	22.7	8.9	8.7	8.1	64.3
IRON	29400	29300	26400	17800	504 J	456 J	575 J	13.8
LEAD	135	130	48.8	46.7	15.3	13.8	4	0.34
MANGANESE	433	431	400	602	12	11.5	13.4	3.1 J
MERCURY	0.62	0.57	0.35	0.28	0.46	0.45	0.28	0.56
NICKEL	33.7	33.1	28.6	27.5	2	1.8	2.2	0.51 J
SILVER	1 J	0.53	0.41	0.45 J	0.05 J	0.05 J	0.1 J	0.29
ZINC	151	150	109	79	93.3	92.5	98.1	94.9
Miscellaneous Parameters (%)								
PERCENT LIPIDS					8.6	14.8	14.8	1.4
TOTAL ORGANIC CARBON	1.36	2.65	2.36	0.7				

Notes:

MS-5 includes the following samples:

OU4-SD-M05-100B
OU4-FD-001-000B (duplicate of OU4-SD-M05-100B)
OU4-SD-M05-200B
OU4-SD-M05-300B
OU4-MU-M05-100B
OU4-MU-M05-100B-FD
OU4-MU-M05-300B
OU4-LJ-M05-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06							
	Sediment			Mussel				Lobster
Parameters	100B	200B	300B	100B	200B	300B	300B-DUP(1)	100B
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	3.1	10.8	1.3	3.8	3	3.6 J		1 J
1-METHYLNAPHTHALENE	4.4	14.1	1.6 J	5.8	5.4	5.9		6.5
1-METHYLPHENANTHRENE	25.5	36.2	5.2	5.3	4.1	6.1		1.1 J
2,6-DIMETHYLNAPHTHALENE	4.6	15.4	2	4.4	4.1	3.9 J		0.8 J
2-METHYLNAPHTHALENE	7.6	24.6	2.4	8.7	8.1	8.4		7
ACENAPHTHENE	16.5	18	4.7	13.6 J	7.8 J	13.6 J		1.6 J
ACENAPHTHYLENE	26.4	97.3	4.6	17.6	11.9	12.2		0.9 J
ANTHRACENE	87.9	186	18.9	34.2	22.4	28.8		1.3 J
BENZO(A)ANTHRACENE	269	470	34.3	17.5	8.7	18.9		1.9 J
BENZO(A)PYRENE	434	649 J	42.7	17.4	8.3	19.5		7.1
BENZO(B)FLUORANTHENE	474 J	524	44.3	36.9	19.8	33.4		5.2 J
BENZO(E)PYRENE	253 J	331	23.9	30.2	16.4	25.5		3.7 J
BENZO(G,H,I)PERYLENE	242	300	22.1	16.9	8.4	14.7		3.7 J
BENZO(K)FLUORANTHENE	162	131	14.7	12.1	4.2	11.8		2.5 J
BIPHENYL	2.7 J	6.84 J	1.2	2.5 J	3.7	3.4 J		1.4 J
CHRYSENE	387	461	33.6	51	21.8	44		5.3
DIBENZO(A,H)ANTHRACENE	69.6	89.4 J	5.6	2.8 J	1.5 J	3 J		0.5 J
DIBENZOTHIOPHENE	13.7	10.8 J	2.2	2.8	1.6	2.4 J		0.7 J
FLUORANTHENE	661	455	80.3	107	42.4	86.6		11.6
FLUORENE	34.6	48.5 J	7.1	11.5 J	8 J	10.8 J		2.9 J
INDENO(1,2,3-CD)PYRENE	268 J	289	24.7 J	14.6	6.8 J	13.4 J		4 J
NAPHTHALENE	12.8	44.1	3.9	10.6	12.4	13.6		17
PERYLENE	51 J	103	8.6 J	14.2	8.6	16.7		3.9 J
PHENANTHRENE	260	164 J	38.5	40	18.9	34.1		5.6
PYRENE	522 J	513	68.2	73.5	35.9	57.1		10.5
Pesticides/PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.18 J	0.06 J	0.16 J	0.6	1.9	3.1		1.4
1,2,4,5-TETRACHLOROBENZENE	0.3 J	1.4	0.16 J	0.95 U	2.5 U	0.46 U		0.96 U
2,4'-DDD	1.2 U	2.4	0.24 U	2.2	0.88	1.9		0.22 U
2,4'-DDE	0.09	0.52	0.32	0.22	0.41	0.76		0.31 UJ
2,4'-DDT	0.08 U	0.04	0.08 U	1.5	0.15 U	1.1		0.29 U
4,4'-DDD	1 U	1.5	0.42 U	2.9	2	4.3		0.27 U
4,4'-DDE	0.71 U	0.73	1.9	8.2	4.9	5.3		0.79
4,4'-DDT	0.71 U	1.3	0.78 U	0.79	0.4 J	0.86		1.5 J
ALDRIN	0.058 U	0.095 U	0.056 U	0.45	0.37	1.3		0.36 U
ALPHA-BHC	0.065 U	0.22	0.03 J	0.81	0.58	0.47		0.08 J
ALPHA-CHLORDANE	0.27	0.26	0.12	1.8	1.7	1.7		0.27 U
BETA-BHC	0.19 U	1.3	0.19 U	1.5	0.12 U	3.5		0.23 U
CHLORPYRIFOS	0.27 U	0.45 U	0.27 U	1.5 U	4.6 U	2.1 U		6.2 U
CIS-NONACHLOR	0.13	0.25	0.17	1.5	1.9	1.8		0.25 U
DELTA-BHC	0.03 J	0.071 U	0.02 J	0.09 U	0.073 U	0.13 U		0.14 U
DIELDRIN	0.17	0.02 J	0.05 J	0.99	0.45	0.75		1.5 J
ENDOSULFAN II	0.74	1	0.15	1.1	0.32	0.57		0.27 U
ENDRIN	0.13 U	0.21 U	0.13 U	0.46 U	0.38 U	0.67 U		0.74 U
GAMMA-BHC (LINDANE)	0.14 J	0.35 J	0.22 U	0.68	1.4	0.59		0.76
GAMMA-CHLORDANE	0.08	0.11	0.03 J	1.9	1.9	1.5		0.29 U
HEPTACHLOR	0.05 J	0.27 U	0.09 J	0.37	0.57	0.69		0.41 U
HEPTACHLOR EPOXIDE	0.029 U	0.047 U	0.028 U	0.51	0.15 U	0.3		0.29 U
HEXACHLOROBENZENE	0.02 J	0.05 J	0.042 U	0.6	1.2	0.9		0.24 J
MIREX	0.21	0.25	0.028 U	0.41 U	0.33 U	0.59 U		0.66 U
OXYCHLORDANE	0.11 J	0.04 J	0.17 J	0.48	0.15 U	0.31		0.38 J
PCB-101/90	0.65	1.4	0.52	7.3 U	5.6	6.7 U		0.64 J
PCB-105	0.37 J	0.85 J	0.26 J	3	1.5	3		0.22 J
PCB-114	0.17 U	0.28 U	0.17 U	0.62 U	0.5 U	0.91 U		1 U
PCB-118	0.61	1.3	0.4	6.4	3.1	5.2		0.98 J
PCB-126	0.1 J	0.25 J	0.08 J	1.3	0.12 J	1.6		0.82 J
PCB-128	0.14	0.24	0.23	2.9	1.4	1.4		0.2 J
PCB-138/160	1.2 U	2	0.21 U	16 U	11	16 U		1.4 J
PCB-149/123	0.74	0.93	0.33	5.5 U	2.4	6.3 U		1 U
PCB-153/132	1.1 U	1.5	0.66 U	16 U	12	13 U		2.2 U
PCB-156	0.36	0.52	0.33	1.3	1.9	1.1		1 U
PCB-167	0.08 J	2.6	0.13 J	0.9	0.91	0.95		1 U
PCB-169	0.12 J	0.21 J	0.04 J	0.79	0.03 J	1.7		1 U
PCB-170/190	0.57 J	8 U	0.5 J	1.6	1 U	1.4		1.2 U
PCB-18/17	0.086 U	0.14 U	0.06 J	3.8	0.55 J	3.9		2.6 U
PCB-180	0.85 U	0.97 J	0.4 U	11 U	7.2	8.9 U		0.52 J
PCB-187	0.44	0.65	0.21	5.5 U	1.6	4.8 U		0.65 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06							
	Sediment			Mussel				Lobster
Parameters	100B	200B	300B	100B	200B	300B	300B-DUP(1)	100B
PCB-189	0.08 J	0.13 J	0.17 U	0.62 U	0.5 U	0.91 U		1 U
PCB-195/208	0.24	0.22	0.05 J	0.52 U	0.18 J	0.75 U		0.83 U
PCB-201/157/173	0.05	0.32	0.02 U	1.04	1.38	0.69 U		0.76 U
PCB-206	0.4 U	0.07 J	0.13 U	0.54 U	0.44 U	0.78 U		0.86 U
PCB-209	0.43 U	1.1	0.4 U	0.48 J	0.19 J	0.45 J		1.1 U
PCB-28	0.52	3.6	0.46	2.1	2.1	0.33 J		0.79 U
PCB-44	0.31	0.25 J	0.36	1.1	1.2	1.5		0.58 U
PCB-52	0.39	1.6	0.08 J	5.3	3.5	3.6		0.81
PCB-66	0.06 J	0.37	0.06 J	2	0.6	1.5		0.26 J
PCB-77	0.04 U	1.2	0.89 U	0.56 J	0.16 J	0.9		1 U
PCB-8/5	0.27 J	0.95	0.49	1	1.7	0.89 J		1.6 U
PCB-81	0.05 J	0.4	0.11 J	1.9	0.36 J	2.6		1.3
PENTACHLOROANISOLE	0.06 J	0.15 J	0.04 J	1.8	1.4	1.3		0.24 J
PENTACHLOROBENZENE	0.09	0.2	0.09	1.5 U	0.17 U	1.9 U		0.15 J
TRANS-NONACHLOR	0.03 J	0.24	0.035 U	1.9	0.92	1.3		0.18 U
Metals (mg/kg)								
ALUMINUM	46500	61000	47600	494	375 J	366	375	6.1
ARSENIC	6.9	10.4	17.8	8.5	8.1	10.6	10.3	15.8
CADMIUM	0.24	0.66	0.07	1.4	1.4	1.6	1.7	0.04
CHROMIUM	61.6	88.6	57.5	2.5	2.3	2.4	2.5	0.49 U
COPPER	14.8	27.9	16.1	8	9	8.1	7.9	47.4
IRON	17000	24300	20800	747 J	640	696 J	708	8.1
LEAD	36.7	45.7	19	3.6	4.1	3.2	3.1	0.07 U
MANGANESE	765	399	551	16.2	15.5	16.3	16.6	3.7 J
MERCURY	0.27	0.22	0.02	0.27	0.28	0.3	0.28	0.65
NICKEL	21.3	27.2	36.9	1.7	1.6	1.7	1.7	0.7 J
SILVER	0.13 J	0.34	0.03 J	0.05 J	0.09 J	0.07 J	0.08	0.28
ZINC	56.6	100	41.2	89.9	105	82.9	85	124
Miscellaneous Parameters (%)								
PERCENT LIPIDS				9.6	6.7	7.1		1.4
TOTAL ORGANIC CARBON	0.47	2.09	0.52					

Notes:
MS-6 includes the following samples:

OU4-SD-M06-100B
OU4-SD-M06-200B
OU4-SD-M06-300B
OU4-MU-M06-100B
OU4-MU-M06-200B
OU4-MU-M06-300B
OU4-MU-M06-300B-FD
OU4-LJ-M06-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	100B	300B	100B
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8-HPCDD	92.2 J	45.2	43.8 J	38.2 UJ	28.8 U	18.1 U
1,2,3,4,6,7,8-HPCDF	25.8 J	12.6	11.7 J	11.9 J	28.8 U	18.1 U
1,2,3,4,7,8,9-HPCDF	1.3 U	0.6 U	0.6 U	38.2 UJ	28.8 U	18.1 U
1,2,3,4,7,8-HXCDD	1.6 UJ	2.5 U	0.7 J	38.2 UJ	28.8 U	18.1 U
1,2,3,4,7,8-HXCDF	1.5 J	0.9 J	0.4 J	38.2 UJ	28.8 U	18.1 U
1,2,3,6,7,8-HXCDD	3.7 J	2.7	2.4 J	38.2 UJ	28.8 U	18.1 U
1,2,3,6,7,8-HXCDF	1.4 U	2.5 U	0.2 J	38.2 UJ	28.8 U	18.1 U
1,2,3,7,8,9-HXCDD	1.6 UJ	2.5 U	1.5 U	38.2 UJ	28.8 U	18.1 U
1,2,3,7,8,9-HXCDF	1.6 UJ	2.5 U	0.1 U	38.2 UJ	28.8 U	18.1 U
1,2,3,7,8-PECDD	1.6 UJ	2.5 U	1.7 U	38.2 UJ	28.8 U	18.1 U
1,2,3,7,8-PECDF	0.9 U	0.3 U	0.3 U	38.2 UJ	28.8 U	18.1 U
2,3,4,6,7,8-HXCDF	1.1 J	0.8 U	0.4 U	4.5 J	28.8 U	18.1 U
2,3,4,7,8-PECDF	1.1 U	2.5 U	0.2 J	5.9 J	28.8 U	18.1 U
2,3,7,8-TCDD	0.3 UJ	0.5 U	0.1 J	7.6 UJ	5.8 U	3.6 U
2,3,7,8-TCDF	0.3 UJ	0.9	1 J	2.6 J	5.8 U	3.6 U
OCDD	807 J	366	352 J	76.3 UJ	143	36.3 U
OCDF	45.1 J	22.1	23.6 J	76.3 UJ	58 U	36.3 U
TOTAL DIOXINS	1068 J	470	479	263 J	234	36.3 U
TOTAL FURANS	124 J	62	56.4	42.3 J	44.5	36.3 U
TOTAL HPCDD	208 J	101	99.8	47.9 J	37.8	18.1 U
TOTAL HPCDF	65.6 J	30.8	27.3	11.9 J	17	18.1 U
TOTAL HXCDD	52.5 J	2.7 U	25.1	5.3 U	23	18.1 U
TOTAL HXCDF	11.7 J	7.9	4.1	4.5 U	4.5	18.1 U
TOTAL PECDD	1.6 UJ	2.5 U	1.7 U	6.1 J	28.8 U	18.1 U
TOTAL PECDF	2 U	0.3 U	0.5 U	5.9 U	5.5	18.1 U
TOTAL TCDD	0.3 UJ	0.5 U	2.4	7.6 UJ	29.8	3.6 U
TOTAL TCDF	0.3 UJ	0.9	1	2.6 U	17.5	3.6 U
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	3.9	11.9	6.4 J	3.5 J	3.9	0.75 J
1-METHYLNAPHTHALENE	5.4	13.1	8.1 J	5.2	5.7	2.01 J
1-METHYLPHENANTHRENE	14.4	57.2	20.8	4.5	5	1.47 J
2,6-DIMETHYLNAPHTHALENE	5.4	18	5.6 J	4.3	4.7	0.47 J
2-METHYLNAPHTHALENE	9.1	20.4	10.9 J	8	9.3	2.56 J
ACENAPHTHENE	11.9	22.1	11.1 J	11.5 J	10.5 J	1.07 J
ACENAPHTHYLENE	30.7	74	56 J	15.9	19.7	0.42 J
ANTHRACENE	91.7	168	65.6	30.3	38	0.77 J
BENZO(A)ANTHRACENE	180	267	94.6	11	13.1	2.5 J
BENZO(A)PYRENE	241	381	130	9.4	11.4	8.33
BENZO(B)FLUORANTHENE	229 J	373	115	20.7	24.6	7.69 J
BENZO(E)PYRENE	126 J	188	60.5	19.2	22.5	5.65 J
BENZO(G,H,I)PERYLENE	126	180	55.4	11.9	12.5	4.94 J
BENZO(K)FLUORANTHENE	79.3	97.8	34.6	8.1	9.5	4.38 J
BIPHENYL	2.7 J	6.1	3.1 J	2.5 J	2.6 J	0.72 J
CHRYSENE	194	277	87.6	30.3	31.7	8.31
DIBENZO(A,H)ANTHRACENE	34.5	50.5	15.1	1.7 J	2.1 J	0.89 J
DIBENZOTHIOPHENE	7.5	13	4.2	1.9 J	2.2	0.44 J
FLUORANTHENE	344	537	183	55	59.9	7.97
FLUORENE	22.7	42	22.2 J	8.5 J	11.8 J	1.07 J
INDENO(1,2,3-CD)PYRENE	134 J	194 J	64.4 J	8.4 J	9.3 J	6.34 J
NAPHTHALENE	16.3	36.1	21.5 J	9.5	10.3	4.72 J
PERYLENE	73.4 J	74.8 J	21.9 J	12.4	12.6	3.05 J
PHENANTHRENE	134	205	73.5	24	28	3.95 J
PYRENE	310 J	494	174	41.2	46.1	10.6
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.27	0.25 J	0.03 J	1.3	1.7	0.97
1,2,4,5-TETRACHLOROBENZENE	1.7	1.2	0.71	0.77 U	0.61 U	0.96 U
2,4'-DDD	2.1	1.1 U	0.15 U	1.8	0.92	0.23 U
2,4'-DDE	0.17	0.43	0.16	0.16 J	0.81	0.32 UJ
2,4'-DDT	0.32 U	0.13 U	0.01 U	2.5	2.5	0.29 U
4,4'-DDD	4.6 U	1.9 U	0.39 U	3.8	3.4	0.28 U
4,4'-DDE	3.5	1.1 U	0.15 U	7.8	6.4	1.2
4,4'-DDT	2.1 U	1.3 U	0.56 U	0.99	1.7	0.42 U

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	100B	300B	100B
ALDRIN	0.059 U	0.1 U	0.06 J	0.5	1.6	0.37 U
ALPHA-BHC	0.09	0.07 J	0.04 J	0.9	1.6	0.26 U
ALPHA-CHLORDANE	0.24	0.3	0.07 J	1.8	1.6	0.28 U
BETA-BHC	0.51	2	1.5	5	7	0.24 U
CHLORPYRIFOS	0.28 U	0.49 U	0.44 U	1.6 U	1.5 U	6.3 U
CIS-NONACHLOR	0.16	0.14	0.14	2.4	4.1	0.25 U
DELTA-BHC	0.044 U	0.078 U	0.04 J	0.096 U	0.091 U	0.15 U
DIELDRIN	0.39	0.07 J	0.1 J	0.85	1	1.4 J
ENDOSULFAN II	0.62	0.82	0.18	1.7	2.3	0.28 U
ENDRIN	0.13 U	0.23 U	0.21 U	0.49 U	0.47 U	0.76 U
GAMMA-BHC (LINDANE)	0.09 J	0.12 J	0.37 U	0.85	1.1	0.4
GAMMA-CHLORDANE	0.24	0.15	0.03 J	1.4	2.2	0.29 U
HEPTACHLOR	0.17 U	0.16 J	0.27 U	0.84	0.15 J	0.41 U
HEPTACHLOR EPOXIDE	0.029 U	0.02 J	0.047 U	0.52	0.99	0.29 U
HEXACHLOROBENZENE	0.044 U	0.08	0.07 U	1.1	1	0.08 J
MIREX	0.13	0.26	0.047 U	0.44 U	0.51	0.67 U
OXYCHLORDANE	0.08 J	0.026 UJ	0.023 UJ	0.2 U	0.53	1.5 J
PCB-101/90	1.7	1.6	0.26	5.5 U	7.5 U	0.62 J
PCB-105	0.83	2.1	0.34 J	2.8	3.2	0.45 J
PCB-114	0.18 U	0.31 U	0.28 U	0.66 U	0.63 U	1 U
PCB-118	1.7	1.2	0.25	4.7	5.2	1.8
PCB-126	0.02 J	0.15 J	0.29	1	0.66	0.36 J
PCB-128	0.44	0.3	0.11	2.1	4.4	0.33 J
PCB-138/160	2.1	2.7 U	0.23 U	12 U	14 U	2.2
PCB-149/123	0.79	0.68	0.09 J	5.1 U	4.9 U	0.06 J
PCB-153/132	2.1	9.5	2.7 U	11 U	13 U	3 U
PCB-156	1	1.3	0.23 J	1	1.8	1 U
PCB-167	0.18	0.17 J	0.12 J	0.38 J	1.2	1 U
PCB-169	0.09 J	0.19 J	0.13 J	0.82	1.5	0.09 J
PCB-170/190	0.28 J	0.78 J	0.27 J	0.87	1.3	1.5 U
PCB-18/17	0.86	0.16 U	0.14 U	2.6	3.9	0.49 J
PCB-180	1.2 U	1 U	0.27 U	8.5 U	10 U	0.91 J
PCB-187	1	0.77	0.13 J	4.2 U	5.3 U	1
PCB-189	0.2	0.39	0.17 J	0.66 U	0.63 U	1 U
PCB-195/208	0.72	0.43	0.11	0.55 U	0.53 U	0.85 U
PCB-201/157/173	0.26	0.14	0.02 J	1.03	1.07	0.77 U
PCB-206	1.9	0.95 U	0.23 U	0.57 U	0.55 U	0.08 J
PCB-209	0.73 U	0.91 U	0.13 U	0.32 J	0.48 J	1.1 U
PCB-28	3.1	1.2	0.15 J	2.9	3.1	0.8 U
PCB-44	0.92	1.3	0.48	1.4	4.9	0.59 U
PCB-52	1.2	0.76	0.27	4.6	9.5	2
PCB-66	0.85	0.79	0.2 U	2.1	2.7	0.47 J
PCB-77	0.46 U	0.18 U	2.4 U	0.59 J	0.53 J	1 U
PCB-8/5	0.86	0.3 J	0.01 J	2.3	3	1.6 U
PCB-81	0.09 J	0.39	0.18 J	1.6	1.5	1
PENTACHLOROANISOLE	0.12 J	0.17 J	0.05 J	1.8	2	0.36
PENTACHLOROBENZENE	0.21	0.16	0.05 J	1.6 U	2.3 U	0.06 J
TRANS-NONACHLOR	0.15	0.19	0.058 U	1	1.6	1.2
Metals (mg/kg)						
ALUMINUM	50500	66600	59600	360	245	11.8
ARSENIC	10.5	13.3	10.5	10.6	8.7	15.3
CADMIUM	0.27	0.61	0.41	1.4	1.8	0.03
CHROMIUM	73.6	122	87.1	2.3	1.6	0.5 U
COPPER	47.5	35.4	23.2	8.3	7.4	44.6
IRON	17700	29100	22500	659 J	424 J	16.2
LEAD	43.2	51.4	44.4	3.4	4.2	0.2
MANGANESE	352	423	397	14.5	10.6	2.8 J
MERCURY	0.13	0.49	0.38	0.27	0.27	0.52
NICKEL	25.7	31.9	24.6	1.7	1.8	0.5 U
SILVER	0.2 J	0.52 J	0.3 J	0.07 J	0.07 J	0.26
ZINC	83.5	119	89.7	89.1	102	100
Miscellaneous Parameters (%)						
PERCENT LIPIDS				9.9	10.3	1.7

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	100B	300B	100B
TOTAL ORGANIC CARBON	0.98	1.97	1.48			

Notes:
MS-7 includes the following samples:

OU4-SD-M07-100B
OU4-SD-M07-200B
OU4-SD-M07-300B
OU4-MU-M07-100B
OU4-MU-M07-300B
OU4-LJ-M07-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08									
	Sediment					Mussel			Lobster	
Parameters	100B	200B	300B	300B-DUP	400B	100B	200B	300B	100B	100B-DUP[1]
Dioxins/Furans (ng/kg)										
1,2,3,4,6,7,8-HPCDD	139 J	16.9	17.3 J	10.7	14.9 J	36.8 J	40.7	47.8	18.7 U	
1,2,3,4,6,7,8-HPCDF	40.2 J	6.1	8.6 J	3.8 U	4.6 U	12.6 J	19.1 U	9.6 J	18.7 U	
1,2,3,4,7,8,9-HPCDF	2.4 U	1.5 U	0.8 U	0.03 U	1.3 UJ	5.5 J	19.1 U	30.6 U	18.7 U	
1,2,3,4,7,8-HXCDD	1.5 J	0.1 J	1.1 UJ	0.2 J	0.5 J	34.4 U	19.1 U	30.6 U	18.7 U	
1,2,3,4,7,8-HXCDF	3.7 J	1.5 U	1.5 J	1.4 J	1.3 UJ	34.4 U	19.1 U	30.6 U	18.7 U	
1,2,3,6,7,8-HXCDD	7.7 J	0.9 J	0.9 J	1.4 U	1.3 UJ	4.1 U	1.5 J	30.6 U	18.7 U	
1,2,3,6,7,8-HXCDF	2.9 U	1.5 U	1.3 U	0.5 U	1.3 UJ	34.4 U	19.1 U	30.6 U	18.7 U	
1,2,3,7,8,9-HXCDD	4.3 J	0.5 U	0.9 J	0.2 J	1.3 UJ	2.5 J	19.1 U	0.6 J	18.7 U	
1,2,3,7,8,9-HXCDF	0.9 J	1.5 U	1.1 UJ	0.05 J	1.3 UJ	34.4 U	19.1 U	30.6 U	18.7 U	
1,2,3,7,8-PECDD	1.1 J	1.5 U	0.4 J	1.4 U	1.3 UJ	1.7 J	19.1 UJ	0.6 J	18.7 U	
1,2,3,7,8-PECDF	2.4 U	0.3 U	1.3 U	0.6 U	1.3 UJ	9.5 J	9.6 J	30.6 U	18.7 U	
2,3,4,6,7,8-HXCDF	4.1 J	1.5 U	1.6 J	0.5 J	1.3 UJ	34.4 U	19.1 U	30.6 U	18.7 U	
2,3,4,7,8-PECDF	2.6 U	0.4 J	1.9 U	0.7 U	0.4 J	2.9 J	19.1 UJ	6.8 J	18.7 U	
2,3,7,8-TCDD	0.3 J	0.3 U	0.2 UJ	0.3 U	0.27 UJ	6.9 U	3.8 UJ	1.4 J	3.7 U	
2,3,7,8-TCDF	2.8 U	0.4	1.2 U	1 U	0.27 UJ	6.9 U	5.2 J	14.1	3.7 U	
OCDD	1141 J	122	140 J	86.2	102 J	175 J	229	251	37.4 U	
OCDF	58.4 J	8.8	8.6 J	5.7	7.2 J	20 J	19.2 J	61.2 U	37.4 U	
TOTAL DIOXINS	1607 J	165	185 J	114	147 J	220 J	355	355	37.4 U	
TOTAL FURANS	179 J	26.8	51.3 J	23.7 J	22.1 J	126 J	92.7	104	37.4 U	
TOTAL HPCDD	373 J	37.2	42.6 J	27.1	40.1 J	36.8 J	101	81.6	18.7 U	
TOTAL HPCDF	91.7 J	12.5	15.9 J	7.3 U	10.3 J	18 J	25.5	9.6	18.7 U	
TOTAL HXCDD	84.9 J	6.1	1.8 J	0.5 J	4.7 J	6.6 U	1.5 J	14.5	18.7 U	
TOTAL HXCDF	48.7 J	4.4	12.9 J	6.6 J	4.3 U	18.4 U	19.1 U	9.9	18.7 U	
TOTAL PECDD	1.1 J	1.5 U	0.4 J	1.4 U	1.3 UJ	1.7 J	19.1 UJ	0.6 J	18.7 U	
TOTAL PECDF	23.6 J	0.7 U	9.7 U	3.1 U	0.4 J	32.2 U	22.1 J	8.8	18.7 U	
TOTAL TCDD	7.7 J	0.3 U	0.4 J	0.3 UJ	0.27 UJ	6.9 U	23.6 J	7.2	3.7 U	
TOTAL TCDF	15.3 J	0.4	4.2 U	1 U	0.27 UJ	37.7 J	25.8 J	75.4	3.7 U	
Polyaromatic Hydrocarbons (ug/kg)										
1,6,7-TRIMETHYLNAPHTHALENE	14	18.6	2.9 J	7.54 J	10.7	5.6	3.5 J	4.4	0.5 J	
1-METHYLNAPHTHALENE	16.1	20.2	7.9	8.94	20	7.9	5.6 J	6.2	5.8	
1-METHYLPHENANTHRENE	28.1	84.2 J	12.6 J	59.3 J	42.3	5.2	4	6.9	1.5 J	
2,6-DIMETHYLNAPHTHALENE	14.8	18.3	5.6	7.57	16.3	5.3	4.6	5.4	1.5 J	
2-METHYLNAPHTHALENE	26.8	31.7	15.5	14.8	29.9	11.2	9.3 J	10.4	6.3 J	
ACENAPHTHENE	40.9	43.8	6.3 J	24.2 J	59.7 J	15.3 J	8.7	12.1	1.7 J	
ACENAPHTHYLENE	67	88.6	21.8 J	99.1 J	91.1 J	17.9	15.3	22.9	1 J	
ANTHRACENE	225	276	74.9 J	387 J	302 J	39.2	30.5	42.5	1.2 J	
BENZO(A)ANTHRACENE	342	418	101 J	520 J	478 J	12	11.4	21.6	2.2 J	
BENZO(A)PYRENE	375	580	112 J	436 J	567	10.8	12.7 J	23.5 J	7.4	
BENZO(B)FLUORANTHENE	452 J	550	151 J	601 J	596	23.9	22.6	40.5	6.2 J	
BENZO(E)PYRENE	231 J	310	80.2 J	267 J	326	21.2	20.1	32.3	6.1 J	
BENZO(G,H,I)PERYLENE	243	276	75.9 J	220 J	313	13.2	13.3	22.2	4.8 J	
BENZO(K)FLUORANTHENE	163	189	37.5 J	147 J	213	8.3	7.9	14.8	2.9 J	
BIPHENYL	7.3 J	8 J	2.6 J	2.86 J	8.1 J	3.2 J	2.4 J	3.1 J	2.1 J	
CHRYSENE	410	459	149 J	592 J	530	34.7	25.8	47.8	6.8	
DIBENZO(A,H)ANTHRACENE	74.8	88.2	22.7 J	73 J	95.8	2.2 J	2.3 J	4.1 J	0.4 J	
DIBENZOTHIOPHENE	14.2	20.9 J	4.5 J	16.7 J	21.1	2.9	1.7 J	2.2	0.6 J	
FLUORANTHENE	617	52.1 J	372 J	1375 J	956 J	67.5	49.5	83.1	13.7	
FLUORENE	55.7	76.7	9.3 J	38.5 J	79.3 J	15.3 J	8.8 J	12.7 J	3.3 J	
INDENO(1,2,3-CD)PYRENE	255 J	293 J	71.6 J	265 J	346	9.5 J	10.5 J	18.8	4.5 J	
NAPHTHALENE	33.6	57.2	14.3	14.4	45	12.6	10.6 J	11.7	15.8	
PERYLENE	64.4 J	95.1 J	30.8 J	64.4 J	166 J	12.3	11.7 J	15.3	6 J	
PHENANTHRENE	255	363	82.8 J	329 J	396	29.9	21.4	33.7	6.3	
PYRENE	615 J	720 J	293 J	1260 J	853 J	51.6	39.8	68.4	11.5	
Pesticides/PCBs (ug/kg)										
1,2,3,4-TETRACHLOROBENZENE	0.49	0.12 J	0.16 UJ	0.2 J	0.23 J	1	1.3	1.7	2.3	
1,2,4,5-TETRACHLOROBENZENE	1	1.2	0.42	0.3 J	0.82	0.8 U	1.5 U	0.42 U	1.5 U	
2,4'-DDD	36	4.8	12	17	10	13	1.2	5.7	0.24 U	
2,4'-DDE	1.3	0.11 J	0.61	0.99	0.46	0.27	0.17 J	0.71	0.34 UJ	
2,4'-DDT	6.5	0.89	15 J	37 J	2.2	2	1.8	2.8	0.31 U	
4,4'-DDD	120	11 U	24 J	52 J	24	29	3.3	17	0.63 J	
4,4'-DDE	22	3.1	14 J	28 J	7.6	14	7.1	12	4	
4,4'-DDT	285	3.4 U	51 J	134 J	11	2	1.5	3.4	4.1 J	
ALDRIN	0.056 U	0.02 J	0.12 J	0.045 UJ	6.1	0.28	1.9	1.2	0.39 U	
ALPHA-BHC	0.15	0.1	0.04 J	0.07	0.2	0.59	0.83	1.5	0.16 J	
ALPHA-CHLORDANE	2.8	0.46	2.1	2.4	0.68	1.9	0.58	1.9	0.29 U	
BETA-BHC	0.67	1.9	0.15 UJ	0.22 J	1.2	1.7	5	4.1	0.25 U	
CHLORPYRIFOS	0.27 U	0.39 U	0.21 U	0.21 U	0.37 U	1.5 U	1.5 U	1.5 U	8.9 U	
CIS-NONACHLOR	0.74	0.34	0.41 J	0.72 J	0.53	0.79	1.6	6.1	0.02 J	
DELTA-BHC	0.01 J	0.2	0.034 U	0.033 U	0.26	0.09 U	0.095 U	0.091 U	0.16 U	
DIELDRIN	0.94	0.3	0.41 J	0.15 J	0.34	0.73	1	1.1	3 J	
ENDOSULFAN II	1.3	1.9	0.54 J	2.4 J	0.97	1.1	0.59	0.91	0.29 U	
ENDRIN	0.15	0.18 U	0.1 U	0.1 U	0.18 U	0.47 U	0.36 J	1.1	0.8 U	
GAMMA-BHC (LINDANE)	0.12 J	0.25 J	0.21	0.16 J	0.23 J	0.46	0.4	1.1	0.64	
GAMMA-CHLORDANE	4.4	0.24	2.4	2	0.091 U	1.4	1.4	2.5	0.31 U	
HEPTACHLOR	0.12 J	0.17 J	0.13 U	0.12 J	0.22 U	0.26	0.12 J	0.08 J	11 J	
HEPTACHLOR EPOXIDE	0.028 U	0.041 U	0.022 U	0.022 U	0.04 U	0.27	1	0.46	0.31 U	
HEXACHLOROBENZENE	0.14	0.062 U	0.12	0.11	0.13	0.25	0.39	0.81	0.32 J	
MIREX	0.2	0.19	0.11	0.14	0.04 U	0.41 U	0.51	0.42 U	0.71 U	
OXYCHLORDANE	0.27 J	0.1 J	0.011 UJ	0.28 J	0.16 U	0.27	0.41	0.56	1.3 J	
PCB-101/90	14	6.3	5.1	7	6.5	10 U	5.4 U	8.4 U	0.83 J	

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08									
	Sediment					Mussel			Lobster	
Parameters	100B	200B	300B	300B-DUP	400B	100B	200B	300B	100B	100B-DUP[1]
PCB-105	5.2	2.6	2.9	3.8	3.3	4.3	3.4	3.9	0.77 J	
PCB-114	0.17 U	0.25 U	0.13 U	0.13 U	0.23 U	0.63 U	0.66 U	0.63 U	1.1 U	
PCB-118	8	6.2	2.1	2.2	4.3	6.8	4.2	5.5	3.1	
PCB-126	0.06 J	0.12 J	0.03 J	0.06 J	0.13 J	0.92	0.83	1.5	0.43 J	
PCB-128	2.7	1.7	1.3	2.1	2	3.2	2.9	2.3	0.53 J	
PCB-138/160	20	8.9	14 J	33 J	12	18 U	15 U	18 U	6.3	
PCB-149/123	11	3.8	10 J	18 J	7.2	8.7 U	5.7 U	6.3 U	0.15 J	
PCB-153/132	22	15	18 J	40 J	13	20 U	14 U	17 U	4.7 U	
PCB-156	5.9	3.1	3.1 J	0.13 UJ	1.1	1.5	1.1	1.7	0.35 J	
PCB-167	1.3	0.5	0.5 J	1.9 J	1.9	1.6	0.93	0.62 J	1.1 U	
PCB-169	0.13 J	0.14 J	0.04 J	0.11 J	0.23 U	0.89	1.1	0.86	0.1 J	
PCB-170/190	2.6 J	1.1 J	15 J	54 J	29 J	1.1	0.99	1.3	1.8 U	
PCB-18/17	0.92	0.12 U	0.55 J	0.067 UJ	0.65	2.5	2.8	3.4	0.4 J	
PCB-180	14	4.8	16 J	43 J	12	11 U	8.4 U	11 U	1.4	
PCB-187	8.7	3.2	7.9 J	18 J	7.4	7.8 U	5.8 U	7.7 U	1.6	
PCB-189	0.39	0.39	0.32 J	0.66 J	0.42	0.63 U	0.66 U	0.63 U	1.1 U	
PCB-195/208	3.8	1.4	1.7 J	3.7 J	2.3	0.52 U	0.55 U	0.53 U	0.13 J	
PCB-201/157/173	0.93	0.58	0.73 J	1.54 J	1.06	0.66	0.54	0.72	0.82 U	
PCB-206	7.6	2.8	2	3.2	4.3	0.54 U	0.57 U	0.55 U	0.14 J	
PCB-209	2.3	1.3	0.59 U	0.77	1.5	0.3 J	0.38 J	0.45 J	1.2 U	
PCB-28	3.2	1.9	0.29	0.35	1.8	2.5	2.1	3.5	3	
PCB-44	3.1	2.3	0.85 J	0.46 J	1.6	3.2	2.8	5.2	0.17 J	
PCB-52	6	3.2	1.5	1.3	2.2	7	8.3	9.8	1.4	
PCB-66	3.3	0.9	0.63	0.67	1.1	1.6	1.9	2.5	2.2	
PCB-77	0.47 U	1.6 U	0.14 U	0.62	0.08 J	0.86	0.42 J	0.98	0.42 J	
PCB-8/5	0.75	0.53	0.09 J	0.17 J	1.6	1	1.2	2.5	1.7 U	
PCB-81	0.17	0.25	0.07 J	0.26	0.23 U	1.9	1.5	2.1	0.87 J	
PENTACHLOROANISOLE	0.25 J	0.14 J	0.11 J	0.13 J	0.42 J	1.4	1.4	1.9	0.24 J	
PENTACHLOROBENZENE	0.21	0.12	0.17	0.11	0.46	1 U	1.7 U	1.5 U	0.57	
TRANS-NONACHLOR	2.1	0.3	1.4	1.5	0.77	1.7	0.87	1.5	0.11 J	
Metals (mg/kg)										
ALUMINUM	53800	62500	45700	44500	59300	407	480	532	5.4	6.1
ARSENIC	11.6	10.8	12.1	10.8	10.4	9	8.4	7.7	24.6	24.7
CADMIUM	0.38	0.5	0.24	0.2	0.43	1.3	1.3	1.4	0.06	0.07
CHROMIUM	161	105	120	127	121	2.3	2.7	3	0.48 U	0.14 U
COPPER	455	77.5	441 J	1070 J	157	9	8	11	64.3	62.7
IRON	46100	24000	50200	46800	33600	682 J	721 J	944 J	13.2	10.4
LEAD	245	66.2	207	207	104	4.2	5.6	4.1	0.07 U	0.11
MANGANESE	557	402	924	890	456	13.1	15.6	14.9	2.5 J	3.6 J
MERCURY	0.21	0.38	0.09	0.12	0.24	0.25	0.26	0.26	0.55	0.56
NICKEL	92.8	31.2	124	137	52.9	2	1.9	3.2	0.52 J	0.39 U
SILVER	0.69	0.54 J	0.27	0.44	0.59	0.04 J	0.09 J	0.05 J	0.35	0.35
ZINC	701	146	904	923	293	84.6	97.1	-91.7	110	98.7
Miscellaneous Parameters (%)										
PERCENT LIPIDS						7.5	7.7	5.2	2.6	
TOTAL ORGANIC CARBON	1.04	1.63	0.28	0.81	1.88					

Notes:

MS-8 includes the following samples:

OU4-SD-M08-100B
OU4-SD-M08-200B
OU4-SD-M08-300B
OU4-FD-002-000B (duplicate of OU4-SD-M08-300B)
OU4-SD-M08-400B
OU4-MU-M08-100B
OU4-MU-M08-200B
OU4-MU-M08-300B
OU4-LJ-M08-100B
OU4-LJ-M08-100B-FD

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	100B	200B	100B
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	20.4 J	16.7 J	346	27.4 J	57 J	23.7 J	13.8 U
1,2,3,4,6,7,8-HPCDF	102 J	13.8 J	122	9.1 J	14.9 J	7 J	13.8 U
1,2,3,4,7,8,9-HPCDF	7.3 J	1.1 U	4.4	1.6 UJ	37.4 UJ	20.1 UJ	13.8 U
1,2,3,4,7,8-HXCDD	1 J	0.5 J	3.3	1.6 UJ	37.4 UJ	20.1 UJ	13.8 U
1,2,3,4,7,8-HXCDF	15.2 J	2.9 J	6.4	1.2 U	37.4 UJ	20.1 UJ	13.8 U
1,2,3,6,7,8-HXCDD	2.1 J	1.1 J	14.2	1.6 UJ	2.8 J	20.1 UJ	13.8 U
1,2,3,6,7,8-HXCDF	13.2 J	2.7 U	6.9	0.9 J	37.4 UJ	20.1 UJ	13.8 U
1,2,3,7,8,9-HXCDD	1.2 J	0.6 J	9.6	1.6 UJ	2.4 J	20.1 UJ	13.8 U
1,2,3,7,8,9-HXCDF	1.4 UJ	0.2 J	1.5 J	1.6 UJ	37.4 UJ	20.1 UJ	13.8 U
1,2,3,7,8-PECDD	0.9 J	1.1 UJ	3.1 U	1.6 UJ	37.4 UJ	20.1 UJ	13.8 U
1,2,3,7,8-PECDF	4.7 U	1.6 U	2.8 U	1.4 J	16 J	5.1 J	13.8 U
2,3,4,6,7,8-HXCDF	16.3 J	3.4 J	8.3	1.3 J	37.4 UJ	20.1 UJ	13.8 U
2,3,4,7,8-PECDF	8.2 J	3 U	6.8	1.6 UJ	7.2 J	8.3 J	13.8 U
2,3,7,8-TCDD	0.3 UJ	0.2 J	0.6 U	0.32 UJ	7.5 UJ	4.04 UJ	2.8 U
2,3,7,8-TCDF	3.9 U	0.8 U	3.3	1.8 J	33.3 J	19.5 J	2.8 U
OCDD	94.6 J	108 J	3172	168 J	303 J	124 J	27.5 U
OCDF	32 J	10.1 J	178	10.7 J	74.8 UJ	40.2 UJ	27.5 U
TOTAL DIOXINS	149 J	161 J	4152	253 J	448 J	288 J	27.5 U
TOTAL FURANS	365 J	79.8 J	619	50.6 J	98.2 J	96.5 J	27.5 U
TOTAL HPCDD	46.3 J	37.8 J	784	69.9 J	114 J	74.2 J	13.8 U
TOTAL HPCDF	125 J	21 J	260	18 J	13.4 J	9.6 J	13.8 U
TOTAL HXCDD	4.4 J	13.1 J	197	13.8 J	27.8 J	15 J	13.8 U
TOTAL HXCDF	110 J	19.1 J	124	14.3 J	37.4 UJ	20.1 UJ	13.8 U
TOTAL PECDD	0.9 J	1.1 UJ	3.1 U	1.6 UJ	37.4 UJ	20.1 UJ	13.8 U
TOTAL PECDF	59.7 J	21.7 J	46	1.4 J	33.2 J	18.3 J	13.8 U
TOTAL TCDD	3.2 J	2.1 J	0.6 U	1.1 J	34.4 J	28.7 J	2.8 U
TOTAL TCDF	38.9 J	7.9 U	10.7	6.2 J	57.8 J	50 J	2.8 U
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	0.64 J	11.7	11.3	6.7	3.6 J	3.4	1.1 J
1-METHYLNAPHTHALENE	1.11 J	2.41	15.2	12.6 J	6.3	5.6	3.9 J
1-METHYLPHENANTHRENE	1.63	29.4	50.2	47.7 J	11.2	6	1.9 J
2,6-DIMETHYLNAPHTHALENE	1.19 J	4.51	16.2	9.9	4.5	4.2	1.1 J
2-METHYLNAPHTHALENE	1.85 J	4.41	23.1	20.5 J	10.2	9.6	4.7 J
ACENAPHTHENE	0.8	3.66	51.6 J	49.2 J	12.8	10.7	2.5 J
ACENAPHTHYLENE	5.38	9.1	61.4 J	41.5 J	23.8	15.9	0.9 J
ANTHRACENE	11.8	78.9	208 J	243 J	57.1	35.6	1.7 J
BENZO(A)ANTHRACENE	10.1	117	352	361 J	31.9	16	2.9 J
BENZO(A)PYRENE	9.88	105	432	412 J	30.5 J	13.8 J	8.7
BENZO(B)FLUORANTHENE	17.7 J	98.5 J	424	419 J	50.2	28.4	7.9 J
BENZO(E)PYRENE	9.44	53.4	233	230 J	40	22.5	6.3 J
BENZO(G,H,I)PERYLENE	6.87	44.4	226	211	26.9	12.4	5.5 J
BENZO(K)FLUORANTHENE	6.34	33.3	154	152 J	19	6.4	3.6 J
BIPHENYL	1.08	1.38	7.7 J	5.9 J	2.6 J	2.4 J	1.5 J
CHRYSENE	12.2	91.4	340	403 J	52	32.6	7.8
DIBENZO(A,H)ANTHRACENE	2.04	16	65.5	61.6 J	5.3 J	2.2 J	0.5 J
DIBENZOTHIOPHENE	0.48	4.89	19.6	18.3 J	2.8	2.4	0.6 J
FLUORANTHENE	14.8	203	725 J	717 J	130	85	14.6
FLUORENE	1.65	15.4	68.8 J	66.2 J	13 J	10.5 J	3.7 J
INDENO(1,2,3-CD)PYRENE	7.4 J	49.2 J	236	219 J	23.9	10.2	5.3 J
NAPHTHALENE	3.14	5.95	37.8	39.6 J	13	10.3	10.4
PERYLENE	2.72	18.7	96.2 J	108	19.9	11.7	7.3 J
PHENANTHRENE	7.41	74	334	361 J	56.4	36.9	7.3
PYRENE	13.4	177	649 J	665 J	98.5	65.2	16.8
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.42	0.21	0.78	0.32	1.4	1	2.4
1,2,4,5-TETRACHLOROBENZENE	0.93	0.33 J	0.68 J	0.5 J	1.1 U	0.44 U	1.3 U
2,4'-DDD	0.11	1	2.7	2.7	4.7	0.95	0.92 J
2,4'-DDE	0.05 J	0.16	0.5	0.3	0.71	0.26	0.31 UJ
2,4'-DDT	0.28	0.94	0.22	1.1	3.4	1.1	0.14 J
4,4'-DDD	0.28	1.5	2.7	3.3 J	5	3.4	0.27 U
4,4'-DDE	0.2	1	3.1	2	9.3	6.1	2
4,4'-DDT	0.6	2.4	1.3	3.6 J	1.6	0.56	2.9 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	100B	200B	100B
ALDRIN	0.046 U	0.048 U	4.1	3.6	3.3	0.46	0.35 U
ALPHA-BHC	0.03 J	0.05	0.38	0.1	1.1	0.84	0.14 J
ALPHA-CHLORDANE	0.07	0.23	0.99	0.25	1.8	1.9	0.27 U
BETA-BHC	0.28	0.16 U	0.58	0.53	8.4	9.3	0.23 U
CHLORPYRIFOS	0.22 U	0.23 U	0.59 U	0.33 U	1.8 U	1.2 U	6 U
CIS-NONACHLOR	0.07	0.21	0.25	0.3	5.5	1.8	0.04 J
DELTA-BHC	0.035 U	0.03 J	0.26	0.04 J	0.11 J	0.071 U	0.14 U
DIELDRIN	0.001 J	0.01 J	0.18	0.081 U	1.2	1.2	2.7 J
ENDOSULFAN II	0.11	0.77	0.64	0.7	2	1.2	0.27 U
ENDRIN	0.1 U	0.11 U	0.28 U	0.16 U	1.4	0.37 U	0.73 U
GAMMA-BHC (LINDANE)	0.19 U	0.01 J	0.14 J	0.23 J	0.59	1.3	0.62
GAMMA-CHLORDANE	0.02 J	0.28	0.14 U	0.081 U	2	2.1	0.28 U
HEPTACHLOR	0.03 J	0.14	0.11 J	0.2 U	0.14 J	0.09 J	0.4 U
HEPTACHLOR EPOXIDE	0.15	0.024 U	0.061 U	0.04 U	1.1	0.33	0.28 U
HEXACHLOROBENZENE	1.2	0.08	0.3	0.051 U	0.68	0.4	0.3 J
MIREX	0.023 U	0.12	0.061 U	0.04 U	0.5 U	0.33 U	0.65 U
OXYCHLORDANE	0.012 UJ	0.012 UJ	0.07 U	0.07 U	1.4	0.26	0.55 J
PCB-101/90	0.93	2.6	4.2	3.7	12 U	7.3 U	1.8
PCB-105	0.6 J	1.6	2	1.9	6.3	3.2	0.51 J
PCB-114	0.14 U	0.14 U	0.37 U	0.21 U	0.77 U	0.5 U	0.98 U
PCB-118	0.73	2.2	3.3	2.9	7.5	5.4	2.3
PCB-126	0.14 J	0.08 J	0.09 J	0.04 J	0.97	0.87	0.54 J
PCB-128	0.27	0.89	0.98	1.2	4.1	1.5	0.46 J
PCB-138/160	1.2	3.7	5.4	4.1	31 U	14 U	3.9
PCB-149/123	0.6	1.8	2.3	3.1	19 U	4 U	0.66 J
PCB-153/132	1	2.9	4.3	5	28 U	12 U	5 U
PCB-156	0.14 U	0.14 U	0.47	0.47	1.6	1.3	0.33 J
PCB-167	0.16	0.53	0.4	1.3	1.5	0.28 J	0.16 J
PCB-169	0.13 J	0.09 J	0.37 U	0.21 U	1.4	0.86	0.1 J
PCB-170/190	1.4 U	3.2 U	13 J	31 J	3.9	18	2.1 U
PCB-18/17	0.1 J	0.072 U	1	0.82	4.1	2.3	0.53 J
PCB-180	0.78 J	1.4 J	4.1	3.4	15 U	11 U	2
PCB-187	0.91	1.2	3.1	2.8	15 U	5 U	1.7
PCB-189	0.2	0.14 J	0.27 J	0.21 J	0.77 U	0.5 U	0.98 U
PCB-195/208	1.6	0.8	3.4	1.8 J	0.64 U	0.41 U	0.15 J
PCB-201/157/173	0.26	0.2	0.9	0.7	1.26	1.23	0.75 U
PCB-206	4.1	1.9	7.3	3.3 J	0.66 U	0.43 U	0.08 J
PCB-209	1.1	0.56	3.3	0.99 J	0.58 J	0.93	1.1 U
PCB-28	0.32	0.45	2.5	1.8	3.5	3.1	0.78 U
PCB-44	0.28	0.42	0.8	1.6	5.1	3	0.57 U
PCB-52	0.63	1.2	2.9	1.4	11	8.6	0.98
PCB-66	0.2	0.34	0.89	0.75	4.5	2.5	0.45 J
PCB-77	0.32	0.67	0.1 J	0.05 J	0.67 J	0.31 J	0.21 J
PCB-8/5	0.2 J	0.38	2.2	0.57	1.4	1.5	1.6 U
PCB-81	0.18	0.19	0.02 J	0.21 U	2.2	1.3	0.46 J
PENTACHLOROANISOLE	0.06 J	0.06 J	0.29 J	0.21 J	1.7	1.7	0.37
PENTACHLOROBENZENE	1.2	0.15	0.54	0.17	1.7 U	0.62 U	0.26 J
TRANS-NONACHLOR	0.02 J	0.16	0.52	0.23	1.9	1.6	0.17 U
Metals (mg/kg)							
ALUMINUM	51200	46500	66500	69300	268	529	4.2
ARSENIC	12.6	7.4	14.3	15.9	9	9.3	20.8
CADMIUM	0.31	0.27	0.68	0.68	1.8	1.5	0.07
CHROMIUM	133	69.2	136	138	2.2	2.5	0.51 U
COPPER	511	207	73.3	152	10	11.2	45.5
IRON	43900	30100	31700	38200	475 J	878 J	9.3
LEAD	188	142	100	162	3.1	4.2	0.12
MANGANESE	1160	946	436	552	19.4	16.3	2.6 J
MERCURY	0.17	0.08	0.35	0.3	0.29	0.27	0.98
NICKEL	160	61.5	38.6	50.2	3.1	2.9	0.51 U
SILVER	0.7	0.42	0.66 J	0.75	0.15 J	0.06 J	0.27
ZINC	484	225	166	246	98.1	111	85
Miscellaneous Parameters (%)							
PERCENT LIPIDS					10.9	7.8	1.8

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	100B	200B	100B
TOTAL ORGANIC CARBON	0.28	0.54	2.14	2.56			

Notes:
MS-9 includes the following samples:

OU4-SD-M09-100B
OU4-SD-M09-200B
OU4-SD-M09-300B
OU4-SD-M09-400B
OU4-MU-M09-100B
OU4-MU-M09-200B
OU4-LJ-M09-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	100B	100B-DUP	200B	300B	100B	100B-DUP	200B	300B	100B
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HPCDD	27.2	26.4 J	93.3	36.5	50.2 J	32.5	21.9 J	30.2	1.3 U
1,2,3,4,6,7,8-HPCDF	8.4	7.5 J	42.6	9.5	13 J	34.7 U	6.4 J	6.1 J	17 UJ
1,2,3,4,7,8,9-HPCDF	0.3 U	0.7 U	1.1 J	0.4 U	29.2 UJ	34.7 U	27.9 UJ	27 U	17 UJ
1,2,3,4,7,8-HXCDD	0.8 J	2.1 UJ	1.1 U	2.5 U	0.7 J	34.7 U	27.9 UJ	27 U	17 UJ
1,2,3,4,7,8-HXCDF	1.1 U	2.1 UJ	5.1	0.3 J	29.2 UJ	34.7 U	27.9 UJ	1.8 J	17 UJ
1,2,3,6,7,8-HXCDD	1.7	1.2 J	4.4	1.3 J	29.2 UJ	34.7 U	27.9 UJ	27 U	17 UJ
1,2,3,6,7,8-HXCDF	1.1 U	0.3 U	1.9	0.2 J	29.2 UJ	34.7 U	27.9 UJ	27 U	2 U
1,2,3,7,8,9-HXCDD	1.1 U	2.1 UJ	3.1 U	2.5 U	29.2 UJ	34.7 U	1.9 J	27 U	17 UJ
1,2,3,7,8,9-HXCDF	1.1 U	2.1 UJ	1.1 U	0.1 J	29.2 UJ	34.7 U	27.9 UJ	27 U	17 UJ
1,2,3,7,8-PECDD	1.1 U	2.1 UJ	1.1 U	2.5 U	29.2 UJ	34.7 U	27.9 UJ	0.7 J	2 U
1,2,3,7,8-PECDF	0.7 U	2.1 UJ	1.2 U	2.5 U	7.7 J	34.7 U	2.8 J	4.3 J	2 U
2,3,4,6,7,8-HXCDF	0.5 U	0.6 J	2.3 U	0.5 U	29.2 UJ	34.7 U	27.9 UJ	27 U	2 J
2,3,4,7,8-PECDF	1.1 U	1.2 UJ	0.9 J	0.1 J	3.1 J	34.7 U	27.9 UJ	6.3 J	1.5 U
2,3,7,8-TCDD	0.2 UJ	0.3 J	0.2	0.5 U	5.85 UJ	6.9 U	5.56 UJ	5.41 UJ	3.4 UJ
2,3,7,8-TCDF	0.6 J	0.4 UJ	1.6	0.6	5.85 UJ	6.9 U	5.56 UJ	18.9 J	2.8 U
OCDD	275	199 J	896	289	318 J	69.3 U	125 J	163	9.1 J
OCDF	11.4	9.7 J	54.6	18.1	22.5 J	69.3 U	55.8 UJ	54.1 U	6.1 J
TOTAL DIOXINS	360	226 J	1190	376	390 J	32.5 J	1440 J	231	20.5 J
TOTAL FURANS	48	28.9 J	198	51	61 J	9.8 J	176 J	58.7	19.9 J
TOTAL HPCDD	73.2 J	26.4 J	233	75	100 J	32.5 J	356 J	67.1	1.3 U
TOTAL HPCDF	19.1	18.3 J	84.1	21.6	32.6 J	34.7 U	47.7 J	19	17 UJ
TOTAL HXCDD	10.7 J	1.2 J	57.9	10.8	0.6 J	34.7 U	132 J	27 U	8.2 J
TOTAL HXCDF	11.7 J	0.9 U	42.5	10.7	29.2 UJ	34.7 U	13.1 J	10.1	4 U
TOTAL PECDD	1.1 U	2.1 UJ	1.1 U	2.5 U	29.2 UJ	34.7 U	27.9 UJ	0.7 J	2 U
TOTAL PECDF	5.2 J	2.1 UJ	11.7	0.1 U	9.2 J	34.7 U	66.6 J	10.6 J	5.8 U
TOTAL TCDD	1.3 J	0.3 J	6.2	1.4	18 J	6.9 U	13.8 J	5.41 UJ	3.4 UJ
TOTAL TCDF	0.6 J	0.4 UJ	4.6	0.6	5.85 UJ	9.8 J	48.8 J	18.9 J	4 U
Polyaromatic Hydrocarbons (ug/kg)									
1,6,7-TRIMETHYLNAPHTHALENE	5.6	6.7	56.6	10.7	3.4	3.9	3.3 J	3.6 J	1.1 J
1-METHYLNAPHTHALENE	6.8	11	23.3	12.1	5.8	6.1	6.2	6.7	4.1 J
1-METHYLPHENANTHRENE	29.3 J	23 J	143 J	32.4 J	4.8	6.8	5.2	5.9	2 J
2,6-DIMETHYLNAPHTHALENE	7.2	11.3	51	10.7	3.8	4.7	4.9	5.2	1.3 J
2-METHYLNAPHTHALENE	12.6	21.3	30.1	22	8.9	10.3	10.7	11.3	4.8 J
ACENAPHTHENE	19.1	11.6	112	20.2	9.5 J	11.5	6.7 J	8.6	1.9 J
ACENAPHTHYLENE	16.4	35.5	237	93.5	12.5	14.7	15	13.6	0.2 J
ANTHRACENE	119	111	1650	1130	24.9	31.6	27.3	32	1.1 J
BENZO(A)ANTHRACENE	163 J	151	1640	386	8.7	12.6	14.1	12.4	2.6 J
BENZO(A)PYRENE	200 J	161	1750	407	7	8.9	12.3	12 J	11
BENZO(B)FLUORANTHENE	186 J	135	1440	388	15.7	21.5	27.1	25	9.9 J
BENZO(E)PYRENE	99.7 J	77.9	773	213	15.1	19.1	22.5	19.9	7.4 J
BENZO(G,H,I)PERYLENE	96.7 J	71.6	779	162	7.8	10.3	12	11.1	6 J
BENZO(K)FLUORANTHENE	56.5 J	47	564	152	5.8	5.8	10	9	3.9 J
BIPHENYL	3.6 J	5 J	20.9 J	5.9 J	2.3 J	2.5 J	2.8 J	3 J	1.6 J
CHRYSENE	154 J	117	1350	414	23.8	29.4	32	29.7	10.5
DIBENZO(A,H)ANTHRACENE	26.4 J	21.9	254	48	1.4 J	2.1 J	2.5 J	2.1 J	0.5 J
DIBENZOTHIOPHENE	9.3 J	7.4 J	105 J	10.5 J	1.5 J	1.9	2.1	1.6 J	0.6 J
FLUORANTHENE	361 J	261 J	2630 J	642 J	43.6	55.6	54.7	51.3	16.9
FLUORENE	29.8	24.2	386	82	8.7 J	9.8	10.7 J	10.1 J	3.2 J
INDENO(1,2,3-CD)PYRENE	103 J	77 J	971 J	182 J	5.9 J	7.6 J	10.6	9.5 J	7.1 J
NAPHTHALENE	48.8	47.4	88	38.6	10	9.8	9.9	12.3	12.3
PERYLENE	39.6 J	29.3 J	285 J	63.2 J	10.3	9.5	10.8	10.4	6.2 J
PHENANTHRENE	152	102	1620	223	19.4	25.5	28.7	21.6	7.9
PYRENE	310 J	246 J	2070 J	568 J	32.5	41.6	43.4	43.1	16.5
Pesticides/PCBs (ug/kg)									
1,2,3,4-TETRACHLOROBENZENE	0.18 J	0.48 J	0.06 J	0.05 J	3.7	4.5	3.4	3	2.2
1,2,4,5-TETRACHLOROBENZENE	0.46 J	0.45 J	0.45 J	0.66 J	0.5 U	0.59 U	0.51 U	1.1 U	1.2 U
2,4'-DDD	9	46	2.2 U	2.2 U	14	16	1.1	1.8	0.64 J
2,4'-DDE	0.28	0.43	0.11	0.46	0.35	0.31	0.14 J	0.44	1.4 J
2,4'-DDT	3	3.2	0.38 U	0.28 U	5.6	5.1	0.99	2.5	0.23 J
4,4'-DDD	18 J	144 J	4 U	3.3 U	22	24	3	2.9	0.32 J
4,4'-DDE	5.2	8.1	0.8 U	0.69 U	12	14	7.6	6.5	2.8
4,4'-DDT	15 U	9.8 U	1.8 U	3.6 U	1.7	1.7	0.5	1.9	2.8 J
ALDRIN	0.067 U	0.07 U	0.069 U	0.07 J	0.83	0.22 U	1.8	3.3	0.42 U
ALPHA-BHC	0.05 J	0.11 J	0.2	0.16	0.6	0.63	0.85	1.4	0.3 U
ALPHA-CHLORDANE	4.6 J	25 J	0.36	0.38	4.5	5.2	1.9	0.9	0.31 U
BETA-BHC	0.57	0.82	1.3	2.1	4.1	4.3	2.1	8	0.27 U
CHLORPYRIFOS	0.32 UJ	2.5 J	0.33 U	0.59 U	1.4 U	1.4 U	1.4 U	1.6 U	6.7 U
CIS-NONACHLOR	0.88 J	2.2 J	0.19	0.23	1.6 J	6.2	0.71	5.5	0.29 U
DELTA-BHC	0.02 J	0.053 UJ	0.052 U	0.17	0.083 U	0.086 U	0.089 U	0.098 U	0.17 U
DIELDRIN	0.28 J	0.58 J	0.26	0.14 U	1.4	1.1	0.72	0.92	2.1 J
ENDOSULFAN II	0.19	0.3	1.2	0.56	2.2	1.9	0.46	4	0.35
ENDRIN	0.15 U	0.16 U	0.16 U	0.28 U	1.1	1.4	0.46 U	0.51 U	0.86 U
GAMMA-BHC (LINDANE)	0.27 UJ	0.16 J	0.21 J	0.14 J	0.27	0.32	0.31	0.96	0.69
GAMMA-CHLORDANE	7.5 J	35 J	0.13	0.16	3.6	4.4	1.8	1.5	0.16 J
HEPTACHLOR	0.15 J	0.57 J	0.12 J	0.19 J	0.59	0.61	0.32	0.13 J	0.47 U
HEPTACHLOR EPOXIDE	0.033 U	0.035 U	0.035 U	0.063 U	0.2 J	1.8	0.54	0.8	0.33 U
HEXACHLOROBENZENE	0.02 J	0.15 J	0.02 J	0.094 U	0.86	1.1	0.55	0.43	0.25 J
MIREX	0.07	0.09	0.81	0.03 J	0.38 U	0.38 J	0.12 J	0.45 U	0.13 J
OXYCHLORDANE	0.017 UJ	0.7 J	0.24 J	0.04 J	0.65	0.71	0.25	0.32	0.45 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	100B	100B-DUP	200B	300B	100B	100B-DUP	200B	300B	100B
PCB-101/90	0.76 J	2 J	0.92	2	5.6 U	6.6 U	8.2 U	11 U	0.99 U
PCB-105	0.6 J	1.5 J	0.58 J	0.57 J	2.5	2.6	2.9	4.7	0.79 J
PCB-114	0.2 U	0.21 U	0.21 U	0.38 U	0.58 U	0.6 U	0.62 U	0.68 U	1.2 U
PCB-118	1.1 J	2.9 J	2.5	0.93	4.3	4.4	5.9	7.7	3.8
PCB-126	0.05 J	0.1 J	0.13 J	0.12 J	0.73	1.1	1	0.72	0.87 J
PCB-128	0.23 J	0.7 J	0.37	0.17	1.7	1.8	1.4	3	0.77 J
PCB-138/160	1.4 U	3.2	1.4 U	1 U	7.4 U	7.5 U	14 U	16 U	4.2
PCB-149/123	0.67 J	1.7 J	0.68	0.49	4.3 U	4.3 U	3.3 U	8.2 U	1.2 U
PCB-153/132	1.1 U	2.6	1.2 U	5.2	8.9 U	9.6 U	12 U	12 U	4.6 U
PCB-156	0.33 J	1.2 J	1.6	0.37 J	1.2	1.3	1.2	0.95	1.2 U
PCB-167	0.12 J	0.32 J	0.58	0.12 J	0.61	0.65	0.43 J	0.71	0.23 J
PCB-169	0.06 J	0.05 J	0.12 J	0.13 J	0.55 J	0.63	0.56 J	0.61 J	1.2 U
PCB-170/190	0.37 J	5.1 J	8.9	12 J	0.96	0.95	0.85	1.4	2 U
PCB-18/17	0.1 U	0.11 U	0.1 U	0.19 U	3.5	3.7	1.7	4.5	1.1 J
PCB-180	0.8 U	1.3 U	1.4	0.73 U	7.6 U	9 U	11 U	7.7 U	1.8
PCB-187	0.52 J	1.1 J	0.47	0.31 J	3.3 U	3.6 U	4.2 U	3.9 U	2.9
PCB-189	0.15 J	0.2 J	0.4	0.13 J	0.58 U	0.6 U	0.62 U	0.68 U	1.2 U
PCB-195/208	0.11 J	0.27 J	0.28	0.18	0.48 U	0.5 U	0.51 U	0.57 U	2.2
PCB-201/157/173	0.07	0.11	0.14	0.14	0.44 U	0.44 U	0.47 U	1.5	1.02
PCB-206	0.22 U	0.44 U	0.54	0.42 U	0.5 U	0.52 U	0.53 U	0.59 U	5.4
PCB-209	0.52 U	0.47 U	0.81	0.53 U	0.42 J	0.44 J	0.53 J	0.28 J	0.65 J
PCB-28	0.58	0.64	3	0.63	2.6	2.4	0.97	2.1	1.1
PCB-44	0.35 J	0.18 UJ	0.53	0.87	3.2	3.1	1	6.3	0.68 U
PCB-52	0.47 J	1.6 J	0.87	1.3	7.9	9.7	3.5	13	0.79 U
PCB-66	0.06 J	0.4 J	1.3	0.21 J	1.2	1.2	1.3	3.6	0.53 J
PCB-77	0.41 U	0.69 U	0.59 U	0.93 U	0.55 J	1	0.52 J	0.24 J	1.2 U
PCB-8/5	0.1 J	0.23 J	2.8	0.36 J	1.1	0.93 J	1.1	1.7	1.9 U
PCB-81	0.09 J	0.21 J	0.03 J	0.05 J	1.2	1.6	1.2	1.1	1 J
PENTACHLOROANISOLE	0.07 J	0.34 J	0.08 J	0.12 J	2.3	2.1	1	1.4	0.47
PENTACHLOROBENZENE	0.11	0.07 J	0.04 J	0.1 J	1.1 U	1.3 U	1.4 U	0.97 U	0.38 U
TRANS-NONACHLOR	3.8 J	11 J	0.22	0.52	2.2	2.1	1.6	0.88	1.9
Metals (mg/kg)									
ALUMINUM	45600	44800	51000	61000	350	292	301	525	4.5
ARSENIC	7.5	7.4	8.8	13.8	8.2	8.2	8.9	10.1	17.1
CADMIUM	0.16	0.17	0.22	0.52	1.7	1.7	3	2.1	0.05
CHROMIUM	57	56.6	56.7	98	2	2.1	2	2.9	0.52 U
COPPER	27.2	28.1	33.7	31.2	8.8	8.4	8.5	11.4	34.6
IRON	18900	18600	16300	27000	541 J	485 J	519 J	787 J	12.3
LEAD	67.5	46.8	55.9	55.2	3	3.1	8.6	9.4	0.17
MANGANESE	488	406	430	400	16	15.5	312	28.3	3.3 J
MERCURY	0.1	0.08	0.16	0.23	0.23	0.22	0.37	0.33	0.5
NICKEL	28.9	28.8	20.5	28.7	1.8	1.9	3.4	1.9	0.52 U
SILVER	0.15 J	0.14	0.17 J	0.38 J	0.07 J	0.07 J	0.55 J	0.29 J	0.21
ZINC	92.2	109	75.7	122	108	108	404	130	93
Miscellaneous Parameters (%)									
PERCENT LIPIDS					7.5	10.3	10	7.5	1.9
TOTAL ORGANIC CARBON	1.66	1.8	1.15	1.75					

Notes:

MS-10 includes the following samples:

OU4-SD-M10-100B
OU4-FD-004-000B (duplicate of OU4-SD-M10-100B)
OU4-SD-M10-200B
OU4-SD-M10-300B
OU4-MU-M10-100B
OU4-MU-M10-100B-FD
OU4-MU-M10-200B
OU4-MU-M10-300B
OU4-LJ-M10-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11						
	Sediment	Mussel				Lobster	
Parameters	300B	100B	200B	200B-DUP	300B	100B	100B-DUP
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	97.3 J	29.3 J	19 J	20 U	23.8 J	1.2 U	17.6 UJ
1,2,3,4,6,7,8-HPCDF	59.6 J	9 J	5.5 J	20 U	7.2 J	19.9 UJ	17.6 UJ
1,2,3,4,7,8,9-HPCDF	1.6 UJ	16 UJ	20.1 U	20 U	24.4 U	19.9 UJ	0.3 U
1,2,3,4,7,8-HXCDD	1.6 UJ	0.6 J	20.1 U	20 U	24.4 U	19.9 UJ	17.6 UJ
1,2,3,4,7,8-HXCDF	12.4 J	16 UJ	20.1 U	20 U	24.4 U	19.9 UJ	17.6 UJ
1,2,3,6,7,8-HXCDD	8.3 J	16 UJ	20.1 U	20 U	2 J	19.9 UJ	17.6 UJ
1,2,3,6,7,8-HXCDF	10 J	16 UJ	20.1 U	20 U	24.4 U	19.9 UJ	17.6 UJ
1,2,3,7,8,9-HXCDD	6.2 J	16 UJ	20.1 U	20 U	24.4 U	19.9 UJ	17.6 UJ
1,2,3,7,8,9-HXCDF	1.6 UJ	16 UJ	20.1 U	20 U	24.4 U	19.9 UJ	17.6 UJ
1,2,3,7,8-PECDD	1.6 UJ	16 UJ	20.1 UJ	20 U	24.4 UJ	19.9 UJ	17.6 UJ
1,2,3,7,8-PECDF	7.2 J	12.8 J	3.8 J	20 U	9.4 J	19.9 UJ	0.5 U
2,3,4,6,7,8-HXCDF	15.8 J	16 UJ	20.1 U	20 U	24.4 U	19.9 UJ	17.6 UJ
2,3,4,7,8-PECDF	11.6 J	7.2 J	6.2 J	20 U	24.4 UJ	1.1 U	0.6 U
2,3,7,8-TCDD	0.31 UJ	0.3 J	4.04 UJ	4 U	4.85 UJ	4 UJ	1.8 J
2,3,7,8-TCDF	0.31 UJ	14.9 J	15.6	4 U	4.4 J	4 UJ	3.5 UJ
OCDD	367 J	183 J	109	112	143	6.3 J	7.6 J
OCDF	35.5 J	31.9 UJ	5.9 J	6.2 U	48.5 U	39.8 UJ	35.2 UJ
TOTAL DIOXINS	663 J	263 J	163	138 J	201	7.6 J	9.4 J
TOTAL FURANS	343 J	98.5 J	49.9 J	4 J	38	1.1 J	5.6 J
TOTAL HPCDD	213 J	69.6 J	46.9	26.6 J	55.6	1.2 U	17.6 UJ
TOTAL HPCDF	87.8 J	9 J	5.5	20 U	21.5	19.9 UJ	0.3 U
TOTAL HXCDD	72.9 J	10.7 J	7.2	20 U	2 J	19.9 UJ	17.6 UJ
TOTAL HXCDF	84.7 J	16 UJ	5.5	20 U	24.4 U	19.9 UJ	17.6 UJ
TOTAL PECDD	1.6 UJ	16 UJ	20.1 UJ	20 U	24.4 UJ	19.9 UJ	17.6 UJ
TOTAL PECDF	54.1 J	20 J	10 J	20 U	9.4 J	1.1 U	5.3 U
TOTAL TCDD	10.3 J	0.3 J	4.04 UJ	4 U	4.85 UJ	4 UJ	1.8 J
TOTAL TCDF	81.1 J	69.6 J	28.9 J	4 J	7 J	4 UJ	3.5 UJ
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	17.2	5	4.3 J	2.3 J	7	1.3 J	1.3 J
1-METHYLNAPHTHALENE	23.4	6.1	5.9	5.9	8.4	4.4 J	5.6 J
1-METHYLPHENANTHRENE	55	9.1	6.3	4.2	5.7	1.2 J	1.5 J
2,6-DIMETHYLNAPHTHALENE	26.8	4.2	3.9	3.1	6.7	1.1 J	1.8 J
2-METHYLNAPHTHALENE	49.6	9.4	8.5	8.3	12.5	4.4 J	5.2 J
ACENAPHTHENE	16.9 J	7.2 J	8.3 J	10.3 J	8.3 J	1.6 J	2.1 J
ACENAPHTHYLENE	47.7 J	12.6	12.2	9.1 J	15.4	0.5 J	0.4 J
ANTHRACENE	214 J	25.8	24.4	23.5 J	29.7	2.2 J	2.1 J
BENZO(A)ANTHRACENE	283	9.5	10.4	13.3	11.1	5.5	4.9
BENZO(A)PYRENE	334	8.9	10.9 J	6.5	11.5	17.2	15.4
BENZO(B)FLUORANTHENE	309	20.8	22.2	15.5	24.9	18.3	11.7 J
BENZO(E)PYRENE	167	16	17.6	12.9	21.6	10	6.3 J
BENZO(G,H,I)PERYLENE	174	9.3	10	5.5	10.8	8 J	5.5 J
BENZO(K)FLUORANTHENE	103	4.9	5.9	5.3	5.5	7.3 J	5.1 J
BIPHENYL	13.8 J	3.6	3.1	4.2	3.6	1.6 J	3 J
CHRYSENE	285	22.3	24.1	22.8	28.7	13.7	10.1
DIBENZO(A,H)ANTHRACENE	53.9	1.6 J	2 J	1 J	2.1 J	0.5 J	0.2 J
DIBENZOTHIOPHENE	19	1.8	1.8	2	2.1	0.8 J	0.7 J
FLUORANTHENE	541 J	36.9	42.8	62.7	46.7	33.5	28.1
FLUORENE	52.7 J	8.3 J	7.8 J	13.5	9.8 J	3.5 J	3.8 J
INDENO(1,2,3-CD)PYRENE	185	8 J	8.5 J	4.3 J	7.5 J	10.4 J	6.2 J
NAPHTHALENE	64.8	13.4	12.6	16	14.4	12.1	14.1
PERYLENE	65.5 J	8.6	8.9 J	4.6 J	12	6.2 J	7 J
PHENANTHRENE	251	20.3	22.5	36.7	22.8	9	7.6
PYRENE	483 J	32.6	36.7	42.4	39.3	25.2	20
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.64	0.71	0.55	0.75	0.29	8.6	1.9
1,2,4,5-TETRACHLOROBENZENE	1.6	2.5 U	3.8 U	0.07 J	1.2 U	1.9 U	0.5 U
2,4'-DDD	1.6	2	0.86 J	0.12 UJ	1.5	0.57 J	0.85 J
2,4'-DDE	0.7	0.68	0.62 J	0.15 J	0.63	1.9 J	0.21 J
2,4'-DDT	0.76	1	0.63 J	0.33 J	1.7	0.38	0.28 U
4,4'-DDD	2.7	2.1	2.2 J	0.94 J	3.4	0.2 J	0.26 U
4,4'-DDE	0.94	5.6	4.7	3.7	6.1	3.4	2.2
4,4'-DDT	11	0.84 J	0.62 J	0.11 J	0.13 J	1.8 J	0.4 U
ALDRIN	1.9	0.43	0.31	0.48	0.82	0.43 U	0.29 J
ALPHA-BHC	0.09	0.87	0.88 J	0.37 J	0.79	0.56	0.37

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11						
	Sediment	Mussel				Lobster	
Parameters	300B	100B	200B	200B-DUP	300B	100B	100B-DUP
ALPHA-CHLORDANE	1.5	1.6	1.8 J	0.5 J	2.4	0.33 U	0.26 U
BETA-BHC	0.52	0.11 U	0.86 J	3.4 J	2	0.06 J	0.22 U
CHLORPYRIFOS	0.27 U	4.5 U	5 U	1.2 U	5.2 U	8 U	33 U
CIS-NONACHLOR	0.61	2.8	2.2 J	1.3 J	1.9	0.3 U	0.06 J
DELTA-BHC	0.04 U	0.07 U	0.074 U	0.075 U	0.088 U	0.17 U	0.14 U
DIELDRIN	2.8	0.61	0.64	0.9	0.63	1.9 J	3.8 J
ENDOSULFAN II	0.81	0.19	0.59	0.48	1.5	0.24 J	0.26 U
ENDRIN	0.13 U	0.36 U	0.38 U	0.39 U	3.4	0.89 U	0.72 U
GAMMA-BHC (LINDANE)	0.19 J	2.1	0.56	1.6 U	1.1	1.5	0.75
GAMMA-CHLORDANE	0.061 U	1.7	1.6 J	0.91 J	2.8	0.35 U	0.28 U
HEPTACHLOR	3.2	0.15 J	0.08 J	0.21 U	0.62	0.49 U	0.39 U
HEPTACHLOR EPOXIDE	0.03 U	0.14	0.18 J	0.45 J	0.18 U	0.35 U	0.28 U
HEXACHLOROBENZENE	0.29	0.61	0.28 J	0.49 J	0.73	0.36 J	0.42
MIREX	0.03 U	0.32 U	0.34 U	0.34 U	0.4 U	0.55 J	0.63 U
OXYCHLORDANE	0.1 U	0.15 U	0.16 U	0.16 U	0.19 U	0.81 J	1.2 J
PCB-101/90	24	12	9.4 J	3.9 J	7.5	1 U	0.87
PCB-105	7.9	3.3	2.4	1.9	2.4	0.96	0.54 J
PCB-114	0.17 U	0.49 U	0.52 U	0.52 U	0.61 U	1.2 U	0.96 U
PCB-118	15	9	5.9 J	2.2 J	6.7	4.7	2.9
PCB-126	0.18	0.02 J	0.18 J	0.24 J	0.21 J	0.75 J	5.1
PCB-128	3.4	4	3.7 J	0.67 J	3.2	1.1	0.56 J
PCB-138/160	30	22	15	9.7	18	8.2	4.8
PCB-149/123	7.2	7.8	5.2	3.8	6.4	1.1 J	1.6
PCB-153/132	17	24	14	8.8 U	17	9.7 U	8 U
PCB-156	0.86	2.7	1.8 J	0.51 J	2.3	0.16 J	0.96 U
PCB-167	1.2	2.5	1.9 J	0.31 J	1.9	0.69 J	0.36 J
PCB-169	0.01 J	0.02 J	0.03 J	0.52 U	0.61 U	1.2 U	5.1
PCB-170/190	7.7 J	2.2 U	0.9 U	1.5 U	1.2 U	6.3 U	3.5 U
PCB-18/17	0.21	2.3	1.1 J	5.4 J	1.6 U	1.4 J	2.5 U
PCB-180	13	12	8.4	5.8 U	9.6	8.8	5.2
PCB-187	13	4.4	2.1	4.8 U	2.5	4.2	3
PCB-189	0.37	0.62	0.52 U	0.52 U	0.41 J	0.14 J	0.96 U
PCB-195/208	3.2	2.3	0.27 J	0.43 U	0.33 J	0.85 J	0.35 J
PCB-201/157/173	1.44	2.58	1.77	1.73	1.9	0.21 J	0.21 J
PCB-206	6.9	0.05 J	0.45 U	0.45 U	0.53 U	0.59 J	0.17 J
PCB-209	1.3	0.45 J	0.2 J	0.27 J	0.63 J	0.26 J	0.11 J
PCB-28	1.6	2.5	2.3	2.8	3	0.96	0.76 U
PCB-44	3.1	4.1	3.8	2.6	3.7	0.7 U	0.14 J
PCB-52	9.1	5	4.2 J	2.7	8.4	0.82 U	0.46 J
PCB-66	2.7	0.34 J	0.7	1.2 J	0.63	0.59 J	0.35 J
PCB-77	1.1	0.26 J	0.52 U	0.52 U	0.61 U	1.2 U	2
PCB-8/5	1.1	2	1.5 J	0.49 J	0.06 J	1.9 U	0.11 J
PCB-81	0.17 U	0.32 J	0.27 J	0.1 J	0.59 J	0.59 J	4.7
PENTACHLOROANISOLE	0.2 J	1.4	0.95	0.8	1.2	0.38	0.41
PENTACHLOROBENZENE	0.63	0.16 U	0.17 U	2.1	0.87 U	0.29 J	0.36
TRANS-NONACHLOR	0.38	1.7	1.2	1.1	1.3	2	0.17 U
Metals (mg/kg)							
ALUMINUM	44100	262 J	269 J	279 J	241 J	3.8	4
ARSENIC	10.9	6.8	6.9	7.2	7.5	24	23.5
CADMIUM	0.98	1.5	1.7	1.8	1.3	0.06	0.07
CHROMIUM	132	1.6	2.1	2.5	1.5	0.5 U	0.18 U
COPPER	541	8.3	8.4	9	8.3	77.3	76.9
IRON	35000	444	432	472	395	7.9	20.6
LEAD	554	7.6	21.7	22.8	2.4	0.24	0.04 U
MANGANESE	578	18.7	16.5	17.2	17.9	6 J	5.9 J
MERCURY	1	0.17	0.3	0.34	0.18	1.1	1
NICKEL	75.5	1.8	1.6	1.9	1.5	0.59 J	1.1 J
SILVER	2.6	0.05 J	0.03 J	0.03 J	0.06 J	0.32	0.33
ZINC	489	117	114	119	88.2	108	109

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11						
	Sediment	Mussel				Lobster	
Parameters	300B	100B	200B	200B-DUP	300B	100B	100B-DUP
Miscellaneous Parameters (%)							
PERCENT LIPIDS		7.4	7.3	4.1	9.2	1.9	1.4
TOTAL ORGANIC CARBON	1.34						

Notes:
MS-11 includes the following samples:

OU4-SD-M11-300B
OU4-MU-M11-100B
OU4-MU-M11-200B
OU4-MU-M11-200B-FD
OU4-MU-M11-300B
OU4-LJ-M11-100B
OU4-LJ-M11-100B-FD

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12								
	Sediment					Mussel			Lobster
Parameters	100B	200B	200B-DUP	300B	300B-DUP	100B	200B	200B-DUP	100B
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HPCDD	162	57.2	36.7 J	40.8 J	186 J	24 J	30.4 J	88.8 U	16.4 UJ
1,2,3,4,6,7,8-HPCDF	41.2	18.4	9.3 J	11.3 J	42.3 J	6.7 J	5.5 J	65.8 U	1.1 U
1,2,3,4,7,8,9-HPCDF	2.4 U	0.9 U	2.4 U	2.4 U	1.7 J	29.1 U	23.8 UJ	55.4 U	0.3 U
1,2,3,4,7,8-HXCDD	1.4 J	2.2 U	2.4 UJ	2.4 U	2.1 J	29.1 U	23.8 UJ	27.7 J	16.4 UJ
1,2,3,4,7,8-HXCDF	2.9	1.3 J	1.2 U	2.4 U	2.6 U	29.1 U	23.8 UJ	59.4 J	16.4 UJ
1,2,3,6,7,8-HXCDD	5.8	2.2 U	2.4 UJ	2.4 UJ	8.1 J	29.1 U	23.8 UJ	37.7 J	16.4 UJ
1,2,3,6,7,8-HXCDF	1.6 U	1.3 J	0.8 J	2.4 U	1.5 J	29.1 U	23.8 UJ	53 U	16.4 UJ
1,2,3,7,8,9-HXCDD	1.8	1 U	2.4 UJ	2.4 UJ	4.1 J	29.1 U	23.8 UJ	48 J	16.4 UJ
1,2,3,7,8,9-HXCDF	1.4 U	2.2 U	2.4 U	2.4 U	2.4 U	29.1 U	23.8 UJ	53.6 U	16.4 UJ
1,2,3,7,8-PECDD	1 J	2.2 U	2.4 U	2.4 U	2.4 U	29.1 UJ	1.4 J	62.1 U	16.4 UJ
1,2,3,7,8-PECDF	1.4 U	0.8 U	2.4 U	2.4 U	1.8 J	1.9 J	23.8 UJ	43.1 U	0.9 U
2,3,4,6,7,8-HXCDF	2.6	0.7 U	2.4 UJ	2.4 UJ	2.8 J	29.1 U	23.8 UJ	26.7 J	16.4 J
2,3,4,7,8-PECDF	2 U	0.9 J	2.4 U	2.4 U	1.7 J	29.1 UJ	2.4 J	55 U	1.2 U
2,3,7,8-TCDD	0.3 U	0.4 U	0.48 U	0.47 U	0.48 U	5.81 UJ	4.75 UJ	12.7 J	3.3 UJ
2,3,7,8-TCDF	4.5 U	1.4	0.48 U	0.47 UJ	2.5 J	3.4 J	3.7 J	11.1 U	1.7 U
OCDD	1564	494	275 J	265 J	1460 J	114	140 J	368 J	5.4 J
OCDF	76.1	34.5	15.2	22.3	65.4	58.1 U	47.5 UJ	178 J	32.7 UJ
TOTAL DIOXINS	2280	644	372 J	319 J	2150 J	176	187 J	652 J	12.5 J
TOTAL FURANS	247	93.3	40.8 J	61.2 J	224 J	38.9	21.7 J	616 J	10.2 J
TOTAL HPCDD	631	145	96.1 J	40.8 J	585 J	51.5	30.4 J	88.8 U	16.4 UJ
TOTAL HPCDF	109	43	23.6 J	34.7	101	19.6	5.5 J	121 U	1.5 U
TOTAL HXCDD	80	1 U	2.4 UJ	13.7 J	92 J	29.1 U	23.8 UJ	113 J	5 J
TOTAL HXCDF	40.2	11.9	2 U	4.2 U	42.8 J	4.8	23.8 UJ	193 U	4 U
TOTAL PECDD	1 J	2.2 U	2.4 UJ	2.4 U	2.4 U	29.1 UJ	1.4 J	62.1 U	16.4 UJ
TOTAL PECDF	14.4 U	2.6 U	2.4 U	2.4 UJ	8 J	7.9 J	5.5 J	98.1 U	2.1 U
TOTAL TCDD	4.1	3.8	1.7 J	0.47 UJ	9.7 J	10.4 J	15.3 J	19.5 J	2.1 J
TOTAL TCDF	7.5 U	1.4	0.48 U	0.47 UJ	6.7 J	6.7 J	10.7 J	25.7 U	2.7 U
Polyaromatic Hydrocarbons (ug/kg)									
1,6,7-TRIMETHYLNAPHTHALENE	25.4	26	22	16.2 J	17.8	5.4	5.7	6.3	1 J
1-METHYLNAPHTHALENE	112	137 J	68.5 J	15.6 J	18.6	8.9	11	17.8	3.4 J
1-METHYLPHENANTHRENE	240	246	199	66.8 J	112	18.3	12.1	10.2	1.8 J
2,6-DIMETHYLNAPHTHALENE	40.7	41.8	32.8	15.2 J	21.5	6.6	7.2	6.3	1.2 J
2-METHYLNAPHTHALENE	149	187 J	93.9 J	23.3 J	31.2	13.6	16.7	20.4	4.9 J
ACENAPHTHENE	682	565	567 J	51.8 J	49.9	30.8 J	18.1 J	19.5 J	2.9 J
ACENAPHTHYLENE	116	98.4	88.3 J	64.1 J	95.9	24.1	21.8 J	40.7 J	1.2 J
ANTHRACENE	1220	1140	1016 J	258 J	582	100	60.5	56.1 J	6.2
BENZO(A)ANTHRACENE	2170	2180	1727	440 J	1150	51.8	28.4	21.3	14.8
BENZO(A)PYRENE	2290 J	2290 J	1883	448 J	955	37.5	15.6	19.8	34.4
BENZO(B)FLUORANTHENE	2500	2240	1809	657 J	1120 J	60.5	36.8	39.1	29.5
BENZO(E)PYRENE	1240	1180	935	283 J	484 J	38.8	29.9	36	16.5
BENZO(G,H,I)PERYLENE	1270	1230	949	249 J	447 J	23.3	14.9	22.8	14.9
BENZO(K)FLUORANTHENE	511	807	664	150 J	283	15.8	9.1	14.1	12
BIPHENYL	23.5 J	27 J	23.3 J	6.9 J	8.7 J	5	7.8	6.3	1.5 J
CHRYSENE	2030	1860	1624	605 J	855 J	71.7	45.2	51.5	29.5
DIBENZO(A,H)ANTHRACENE	459 J	433 J	336	78.1 J	152	5.4 J	2.5 J	3.7 J	1.1 J
DIBENZOTHIOPHENE	155 J	155 J	140	23.6 J	29.4	7	4.5 J	2.5 J	1.4 J
FLUORANTHENE	3460	3470	3262 J	1324 J	1972	247	145	96	62.5
FLUORENE	680 J	666 J	634 J	70 J	121	36.5 J	32 J	20.4	4.3 J
INDENO(1,2,3-CD)PYRENE	1560	1480	1134	283 J	515 J	23.2	12.5	17.3 J	17.1 J
NAPHTHALENE	293	397 J	219 J	36.1 J	52.5 J	22.4	21.6 J	42 J	13.4
PERYLENE	219	313	291 J	95.4 J	131	16.6	15.3	17.6	12.1 J
PHENANTHRENE	2550 J	2520 J	2357	339 J	538 J	130	84.6 J	35 J	20.7
PYRENE	2920	2840	2599 J	1021 J	1505	166	102	73.8	45.7
Pesticides/PCBs (ug/kg)									
1,2,3,4-TETRACHLOROBENZENE	0.02 J	0.08 J	0.05 J	0.35	0.3 U	1.1	0.51 J	1.4 J	9.1
1,2,4,5-TETRACHLOROBENZENE	0.34 J	0.06 J	0.81 J	1.2 J	0.16 J	2.4 U	3 U	0.45 J	0.96 U
2,4'-DDD	4.4	4	3.6	2 J	0.64 J	2.8	3.1	2.9	1.8 J
2,4'-DDE	0.28	0.32	0.25	0.26	0.2	0.72	0.48 J	4.2 J	0.15 J
2,4'-DDT	0.56	0.86	1	0.1	0.03 U	1.5	2.8 J	1.5 J	0.31 U
4,4'-DDD	2.3	1.9	1.6	1.5 J	0.62 J	2.9	3.2	3.5	0.19 J
4,4'-DDE	1.5	0.72	1	1.2 J	0.54 J	6.2	6.3 J	10 J	2.3
4,4'-DDT	2.4	2.3	2.6	0.85 J	0.16 J	0.35 J	0.61 J	0.97 J	3.3 J
ALDRIN	0.074 U	0.08 U	21 J	6.4 J	0.091 UJ	1.4	0.73 J	0.35 UJ	0.17 J
ALPHA-BHC	0.48	0.13	0.09	0.06 J	0.14 J	0.78	0.93 J	1.6 J	0.31
ALPHA-CHLORDANE	0.94	0.48	0.2 J	0.28 J	0.04 J	1.7	2.4 J	11 J	0.29 U
BETA-BHC	0.86	1.9	1.2	1.6 J	0.29 UJ	14	4.2 J	7 J	0.07 J
CHLORPYRIFOS	0.35 U	0.38 U	0.34 U	0.45 U	0.4 U	5.4 U	5.3 U	11	2.5 U
CIS-NONACHLOR	0.38	0.21	0.89 J	0.24 J	0.12 J	3	2.9 J	6.7 J	0.07 J
DELTA-BHC	0.055 U-	0.06 U	0.051 U	0.071 U	0.061 U	0.086 U	0.082 UJ	0.24 J	0.15 U
DIELDRIN	0.22	0.02 J	0.22 J	0.1 UJ	0.29 J	0.66	0.69	0.6	2.5 J
ENDOSULFAN II	3	3.1	2.1	1.5 J	0.15 J	1.7	1.8 J	0.9 J	0.29 U
ENDRIN	0.17 U	0.18 U	0.16 U	0.21 U	0.19 U	2.9	1.9 J	0.72 UJ	0.79 U
GAMMA-BHC (LINDANE)	0.3 U	0.32 U	0.29 U	0.46 J	0.04 J	2.5	0.8	1.2 U	1.3
GAMMA-CHLORDANE	0.083 U	0.26	0.22 J	0.33 J	0.08 J	1.9	0.98 J	2 J	0.23 J
HEPTACHLOR	0.21 U	0.41	0.2 UJ	0.27 U	0.24 U	0.32	0.19 J	0.29 J	0.44 U
HEPTACHLOR EPOXIDE	0.037 U	0.04 U	0.04 U	0.051 U	0.04 U	0.17 U	0.16 UJ	0.28 UJ	0.31 U
HEXACHLOROBENZENE	0.055 U	4.9	0.051 U	0.071 UJ	0.13 J	0.89	0.87	0.99	0.22 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12								
	Sediment					Mussel			Lobster
Parameters	100B	200B	200B-DUP	300B	300B-DUP	100B	200B	200B-DUP	100B
MIREX	0.36	0.39	0.04 UJ	0.051 U	0.04 U	0.39 U	0.37 UJ	1.2 J	0.23 J
OXYCHLORDANE	0.38 J	0.22 J	0.87 J	0.18 U	0.12 J	0.18 U	0.17 UJ	0.44 J	0.59 J
PCB-101/90	3.6	2.8	9.6 J	2.8	2.1	6.4	8.6	8.7	0.91 U
PCB-105	1.7	0.98 J	5.1 J	1.3	1.1	2.4	2.8	4.4	1.2
PCB-114	0.22 U	0.24 U	0.21 U	0.28 U	0.26 U	0.6 U	0.57 U	0.97 U	1.1 U
PCB-118	4.8	2.7	4.1	1.8	2.1	6.5	6.1	7.6	5.1
PCB-126	0.11 J	0.14 J	0.21 J	0.18 J	0.01 J	0.13 J	0.07 J	0.38 J	0.24 J
PCB-128	1.1	1.1	3.5 J	0.74 J	0.32 J	3	3.5	2.4	0.69 J
PCB-138/160	4	3.4	32 J	4.4 J	2.4 J	18	19	22	4.5
PCB-149/123	2.1	2.1	22 J	2.9 J	1.2 J	6.5	9.1	7.5	0.19 J
PCB-153/132	3.9	3.4	43 J	4.2 J	2.4 J	19	21	17 U	6.3 U
PCB-156	5	3.8	3	0.7 J	0.31 J	2.6	2	2.6	1 J
PCB-167	2	1.3	2	1.8 J	0.27 J	2	2.2	2	0.43 J
PCB-169	0.34	0.23 J	0.21 U	0.28 U	0.01 J	0.6 U	0.01 J	0.03 J	1.1 U
PCB-170/190	63 J	46 J	31 J	44 J	1.5 U	1.4 U	2.4 U	2 U	2 U
PCB-18/17	2.8 J	0.12 U	1.3 J	1.7	0.13 U	1.6 U	2.8	2.8	0.25 J
PCB-180	3.6 J	2.2 J	35 J	3.4 J	2 J	9.3	13	17 U	2.1
PCB-187	2.5	1.4	20 J	2.2 J	1.1 J	6.6	7.7	9.5 U	1.7
PCB-189	0.6	0.47	1.1 J	0.35 J	0.09 J	0.6 U	0.31 J	0.97 U	1.1 U
PCB-195/208	2.2	0.92	4.1 J	0.88 J	0.4 J	2	0.82	0.81 UJ	0.16 J
PCB-201/157/173	1.69	1.19	1.56	0.67	0.52	2.46	3.19 J	0.75 J	0.81 U
PCB-206	3.7	1.2	2.1 J	1.1 J	0.24 J	0.51 U	0.32 J	0.84 U	0.13 J
PCB-209	1.6	0.55	0.07 J	0.79	0.71	0.29 J	0.41 J	0.88 J	1.2 U
PCB-28	7.2	1.4	2	2.8 J	1.4 J	2.6	3.1 J	0.87 J	0.4 J
PCB-44	3.3	1	1.5	0.54	0.43	5.8	4.9	4.9	0.12 J
PCB-52	5.3	1.2	2.2 J	1.2	1.6	9.1	10	11	0.42 J
PCB-66	5	0.27	0.98 J	0.3	0.33	2.2	0.86 J	6.6 J	0.68 J
PCB-77	0.63	0.69	0.21 UJ	0.28 U	0.03 J	0.12 J	0.13 J	0.97 U	1.1 U
PCB-8/5	2.1	3.2	1.5 J	0.21 J	0.28 J	2.8	1.9	3.1	0.57 J
PCB-81	0.25	0.31	0.21 UJ	0.02 J	0.03 J	0.36 J	0.36 J	0.25 J	0.92 J
PENTACHLOROANISOLE	0.1 J	0.17 J	0.13 J	0.12 J	0.04 J	1.6	2.2	2.6	0.5
PENTACHLOROBENZENE	0.1	0.07 J	0.11	0.18	0.27 U	1.1 U	0.83 U	3.7	0.63
TRANS-NONACHLOR	0.52	0.19	0.22	0.45 J	0.09 J	0.96	1.6 J	2.9 J	0.07 J
Metals (mg/kg)									
ALUMINUM	55700	54300	60600	56700	56600	358 J	303 J	293 J	7
ARSENIC	7.7	7.2	6.7	13.1	11.9	7.7	7.2	7.4	16.5
CADMIUM	0.6	0.24	0.21	0.38	0.35	1.1	1.2	1.2	0.07
CHROMIUM	86.1	59.7	74.3	128	97.1	2.4	1.7	1.7	0.53 U
COPPER	87.9	34.5	40.2	111	79.6	8.4	7.7	7.6	61
IRON	21400	15800	19300	27500	27600	687	490	476	14.6
LEAD	118	56.5	54.4	124	107	3.9	3	2.9	0.08 U
MANGANESE	449	422	542	439	415	14.5	18.8	18.3	7.8 J
MERCURY	0.38	0.16	0.16	1 J	0.3 J	0.21	0.21	0.22	0.93
NICKEL	39.8	22.7	22.9	39.8	34.7	2.1	1.9	2	0.93 J
SILVER	0.65	0.2	0.21	0.43	0.41	0.04 J	0.04 J	0.04 J	0.26
ZINC	343	117	141	165	162	97.7	93.7	94	112
Miscellaneous Parameters (%)									
PERCENT LIPIDS						8.2	8.9	14.3	1.8
TOTAL ORGANIC CARBON	1.4	1.14	1.14	1.8	1.68				

Notes:

MS-12 includes the following samples:

OU4-SD-M12-100B
OU4-SD-M12-200B
OU4-FD-005-000B (duplicate of OU4-SD-M12-200B)
OU4-SD-M12-300B
OU4-FD-006-000B (duplicate of OU4-SD-M12-300B)
OU4-MU-M12-100B
OU4-MU-M12-200B
OU4-MU-M12-200B-FD
OU4-LJ-M12-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	100B	300B	100B
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	201	32.5	33.6	7.6	4.9	1 J
1-METHYLNAPHTHALENE	147	25.2	23.1	13.6	9.2 J	2.1 J
1-METHYLPHENANTHRENE	663	91.2	124	21.4	12.2	2.1 J
2,6-DIMETHYLNAPHTHALENE	383	30.6	27.9	9.6	5.7	1.3 J
2-METHYLNAPHTHALENE	231	38.2	39.8	20.7	12.5 J	3.5 J
ACENAPHTHENE	2682 J	62.6	93.3	30.9 J	14.5 J	3.6 J
ACENAPHTHYLENE	212 J	188	119	55	31	1.3 J
ANTHRACENE	2269 J	625	749	136	67.1	13.6
BENZO(A)ANTHRACENE	2398	856	1010	61.2	34.6	17.5
BENZO(A)PYRENE	1752	894	915	41.5	23.2	40.5
BENZO(B)FLUORANTHENE	1809	967	988	93.8	47.5	33.8
BENZO(E)PYRENE	860	466 J	494 J	67.8	36.2	15.9
BENZO(G,H,I)PERYLENE	554	393	428	34.6	18.6	14.5
BENZO(K)FLUORANTHENE	561	263	358	25.3	12.6	11
BIPHENYL	186 J	12.7	14.9	5.5	5.6	1.9 J
CHRYSENE	2095	865	1030	107	49.9	37.2
DIBENZO(A,H)ANTHRACENE	243	124 J	141 J	7	3.2 J	1.2 J
DIBENZOTHIOPHENE	420	37.1	46.6	6.6	3.4	1.1 J
FLUORANTHENE	5763 J	1706	1830	312	137	111
FLUORENE	3752 J	156	287	32.2 J	17.9 J	6.3 J
INDENO(1,2,3-CD)PYRENE	710	437 J	486 J	31.3	16.6	18.3 J
NAPHTHALENE	74.5	59.1	68.5	28.2	20.8 J	10.7
PERYLENE	197 J	167	171	31.9	16.9 J	12.1 J
PHENANTHRENE	5800	522 J	844 J	109	65.3	18.3
PYRENE	4383 J	1449	1630	217	100	75.6
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.44 U	0.09 J	0.03 J	1.1	0.99	7.5
1,2,4,5-TETRACHLOROBENZENE	0.95	0.54 J	0.81	3.6 U	0.65 U	0.87 U
2,4'-DDD	3.2	0.46	2.5	4.1	0.61	2 J
2,4'-DDE	0.21	0.13 J	0.23	0.42	0.18 U	0.3 J
2,4'-DDT	0.18	0.04 U	0.04 U	3	0.91	0.36 U
4,4'-DDD	1.6	0.93	2.2	5.2	2.7	0.21 J
4,4'-DDE	0.23	0.67	1	12	4.2	2.6
4,4'-DDT	1.2	0.77	0.69	1.7 J	1.1 J	3.6 J
ALDRIN	8.9	0.11 U	0.1 U	0.71	1.3	0.28 J
ALPHA-BHC	0.41	0.09 J	0.11 J	0.48	0.7	0.29 J
ALPHA-CHLORDANE	0.33	0.39	0.76	2.6	2	0.34 U
BETA-BHC	1.7	0.39 U	0.35 U	4.6	0.13 U	0.29 U
CHLORPYRIFOS	0.06 J	0.03 J	0.5 U	7.9 U	1.3 U	22 U
CIS-NONACHLOR	0.42	0.18	0.35	4.4	1.4	0.31 U
DELTA-BHC	0.091 U	0.091 U	0.081 U	0.095 U	0.082 U	0.18 U
DIELDRIN	0.12 J	0.43	0.52	1.6	0.16 U	2.3 J
ENDOSULFAN II	0.45	0.11 J	1.1	1.7	0.6	0.34 U
ENDRIN	0.27 U	0.26 U	0.23 U	2.5	0.42 U	0.92 U
GAMMA-BHC (LINDANE)	0.5 U	0.47 U	0.41 U	2.7	0.21	1.2
GAMMA-CHLORDANE	0.14 U	0.19	0.12 U	3.3	0.69	0.3 J
HEPTACHLOR	0.35 U	0.33 U	0.29 U	0.23 J	0.23 U	0.5 U
HEPTACHLOR EPOXIDE	0.061 U	0.061 U	0.051 U	0.64	0.16 U	0.36 U
HEXACHLOROBENZENE	0.01 J	0.1	0.11	0.82	0.2	0.49
MIREX	0.24	0.061 U	0.051 U	0.43 U	0.37 U	0.21 J
OXYCHLORDANE	1.5 J	0.1	0.38	0.2 U	0.17 U	0.84 J
PCB-101/90	0.79	1.8	3.6	9.4	5	1.1 U
PCB-105	0.55 J	1.1 J	1.6	3.4	2.9	1.5
PCB-114	0.37 U	0.34 U	0.31 U	0.66 U	0.57 U	1.2 U
PCB-118	3	2.2	3.6	9.5	3.9	5.2
PCB-126	0.5	0.06 J	0.04 J	0.1 J	0.03 J	0.95 J
PCB-128	0.47	0.24	0.87	4	1.8	0.92 J
PCB-138/160	1.1	3	5	23	12	4.8
PCB-149/123	0.66	0.85	2.1	9.8	5.7	0.11 J
PCB-153/132	1.1	2.2	4.7	24	15	6.8 U
PCB-156	2.6	0.24 J	0.41	4	0.62	1.2 U
PCB-167	1.5	0.35	0.57	2.2	1.1	0.58 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	100B	300B	100B
PCB-169	0.37 U	0.35 U	0.31 U	0.02 J	0.03 J	0.39 J
PCB-170/190	19 J	0.9 J	22 J	1.6 U	0.57 U	1.9 U
PCB-18/17	1.6	0.17 U	1.9	1.7 U	1.5 U	3.2 U
PCB-180	1.2	1.7	3.6	18	8.1	2
PCB-187	0.36	1.1	2.4	6.9	1.6	1.8
PCB-189	0.4	0.3 J	0.33	0.66 U	0.21 J	1.2 U
PCB-195/208	0.59	0.49	1	0.64	0.08 J	0.16 J
PCB-201/157/173	1.24	0.19	0.83	2.37	1.59	0.94 U
PCB-206	0.23	0.84	1.4	0.57 U	0.49 U	0.16 J
PCB-209	0.44	1.4	2	1	0.22 J	0.23 J
PCB-28	1	3.7	5	3.3	0.26 J	0.18 J
PCB-44	0.39	0.47	1.5	5.7	0.33 U	0.13 J
PCB-52	1.3	2	3	13	5.1	0.84 U
PCB-66	0.09 J	0.55	1.6	1.3	0.2 J	0.79 J
PCB-77	0.37 U	0.08 J	0.13 J	0.66 U	0.57 U	1.2 U
PCB-8/5	8.3	1.1	1.8	0.7 J	0.76 J	0.45 J
PCB-81	0.18 J	0.02 J	0.11 J	0.45 J	0.47 J	1.8
PENTACHLOROANISOLE	0.14 J	0.14 J	0.17 J	2.7	1.1	0.5
PENTACHLOROBENZENE	0.11 J	0.73 U	0.45 U	0.62 U	0.56 U	0.68
TRANS-NONACHLOR	0.08	0.1	0.23	2	2	0.22 U
Metals (mg/kg)						
ALUMINUM	61400	60000	60300	351 J	316 J	7.1
ARSENIC	16.8	13.7	14.5	7.2	7.1	17.6
CADMIUM	1.4	0.5	0.73	1.8	1.6	0.1
CHROMIUM	116	105	116	2.2	2	0.55 U
COPPER	53.8	51.6	119	9.9	8.4	56
IRON	33900	30100	34100	574	529	14.3
LEAD	50.7	49.2	85	2.9	2.9	0.08 U
MANGANESE	470	442	436	19.1	18.8	6.3 J
MERCURY	0.26	0.24	0.34	0.28	0.22	0.6
NICKEL	32.8	31.1	34.5	1.8	1.8	0.56 J
SILVER	0.72	0.44	0.66	0.04 J	0.03 J	0.24
ZINC	157	153	232	120	84.5	111
Miscellaneous Parameters (%)						
PERCENT LIPIDS				13.3	8.5	1.6
TOTAL ORGANIC CARBON	1.95	2.23	2.4			

Notes:
MS-13 includes the following samples:

OU4-SD-M13-100B
OU4-SD-M13-200B
OU4-SD-M13-300B
OU4-MU-M13-100B
OU4-MU-M13-300B
OU4-LJ-M13-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	100B	200B	100B
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	9.9 J	21.1	24.7	4.2	3.3	1.1 J
1-METHYLNAPHTHALENE	17.8 J	20.3	19.7	7.5	7.8	2.4 J
1-METHYLPHENANTHRENE	44.6 J	125	111	6.9	5.6	1.1 J
2,6-DIMETHYLNAPHTHALENE	13.6 J	20.8	22.8	4.7	4.8	1.6 J
2-METHYLNAPHTHALENE	30.4 J	34.4	33.4	11	12.3	4.7 J
ACENAPHTHENE	16 J	28.6	32.1	11.3 J	8.5 J	2.1 J
ACENAPHTHYLENE	115 J	103	173	16.1	17	0.7 J
ANTHRACENE	197 J	409	396	31.8	30.3	1.4 J
BENZO(A)ANTHRACENE	320 J	824	910	12.3	19.3	1.5 J
BENZO(A)PYRENE	444 J	1130	1200	11.8	24.3	2.4 J
BENZO(B)FLUORANTHENE	408 J	896	986	24.2	26.4	2.5 J
BENZO(E)PYRENE	252 J	552 J	608 J	19.7	23.4	4.5 J
BENZO(G,H,I)PERYLENE	254 J	625	595	10.8	14.4	4.5 J
BENZO(K)FLUORANTHENE	159 J	327	239	5.7	8	1 J
BIPHENYL	7.5 J	12.2	10.7	4.4	3.2	1.7 J
CHRYSENE	339 J	737	772	28.6	29.8	6.7
DIBENZO(A,H)ANTHRACENE	75.5 J	198 J	179	1.7 J	3.2 J	0.3 J
DIBENZOTHIOPHENE	13.7 J	27.9	22.7	1.7 J	1.5 J	0.6 J
FLUORANTHENE	533 J	1100	761	46.3	47.4	12.2
FLUORENE	44 J	107	98.8	9.9 J	9.6 J	3.5 J
INDENO(1,2,3-CD)PYRENE	247 J	645 J	567 J	8.1 J	12	1.7 J
NAPHTHALENE	54.1 J	69	62	17.6	15	9.8
PERYLENE	98.9 J	92.4	149	11.2	11.7	4.7 J
PHENANTHRENE	182 J	506 J	354 J	21.3	19.9	7.2
PYRENE	514 J	1220	847	39.8	45	7
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.55	0.24 U	0.11 J	0.45	2	0.07 J
1,2,4,5-TETRACHLOROBENZENE	4.2	0.27 J	0.88	1.9 U	2.7 U	0.92 U
2,4'-DDD	2.5	1.7	0.34	0.34	0.69	0.87 J
2,4'-DDE	0.22	0.091 U	0.41	0.69	0.5	0.33 UJ
2,4'-DDT	0.06	0.03 U	0.19	0.71	2.4	0.79
4,4'-DDD	1.9	1.2	0.47	2.3	2.9	0.59 J
4,4'-DDE	9	0.51	0.28	5.7	4.4	7.4
4,4'-DDT	0.96	0.5	0.67	0.12 J	0.41 J	2.3 J
ALDRIN	4.8	0.071 U	0.1 U	0.21 J	0.72	0.26 J
ALPHA-BHC	0.16	0.5	0.02 J	0.38	0.49	0.38
ALPHA-CHLORDANE	0.55	0.11	0.1 J	1.6	2.2	0.29 U
BETA-BHC	0.32 U	0.17 J	0.34 U	1.7	2.8	0.25 U
CHLORPYRIFOS	0.06 J	0.32 U	0.49 U	3.6 U	5.6 U	34 U
CIS-NONACHLOR	1	0.2	0.19	0.76	2.5	0.22 J
DELTA-BHC	0.071 U	0.051 U	0.081 U	0.085 U	0.075 U	0.15 U
DIELDRIN	0.11 U	0.06 J	0.13	0.1 J	0.65	3.6 J
ENDOSULFAN II	0.41	1.3 J	0.22	0.83	1.7	0.29 U
ENDRIN	0.22 U	0.15 U	0.07 J	0.57	1.7	0.79 U
GAMMA-BHC (LINDANE)	0.02 J	0.27 U	0.41 U	0.63	0.83	1
GAMMA-CHLORDANE	0.11 U	0.081 U	0.07 J	1.9	1.3	0.25 J
HEPTACHLOR	0.28 U	0.19 U	0.29 U	0.25	0.2 J	0.44 U
HEPTACHLOR EPOXIDE	0.051 U	0.03 U	0.051 U	0.46	0.15 U	0.31 U
HEXACHLOROBENZENE	0.07 J	0.02 J	0.04 J	0.39	0.68	0.49
MIREX	0.051 U	0.03 U	0.051 U	0.39 U	0.34 U	0.13 J
OXYCHLORDANE	0.1 U	0.54	0.03 U	0.18 U	0.16 U	1.7 J
PCB-101/90	2.2	0.91	6.1	4.1	5.9	0.25 J
PCB-105	1.4	0.6 J	3.8	2	1.5	1.6
PCB-114	0.29 U	0.2 U	0.3 U	0.59 U	0.52 U	1.1 U
PCB-118	3.4	2.1	5.6	4.2	3.9	7.9
PCB-126	0.14 J	0.02 J	0.02 J	0.11 J	0.3 J	0.71 J
PCB-128	1.3	0.54	1.2	2.5	3.2	1.3
PCB-138/160	3.7	1.8	4.8	13	10	10
PCB-149/123	1.5	0.62	1.8	4	4.7	0.92 J
PCB-153/132	4.5	1.3	3.2	15	10	16 U
PCB-156	0.66	0.15 J	0.32	1.4	1.7	1.1 U
PCB-167	2.3	0.62	0.4	1.2	2.7	0.66 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster
Parameters	100B	200B	300B	100B	200B	100B
PCB-169	0.29 U	0.03 J	0.05 J	0.59 U	0.05 J	0.18 J
PCB-170/190	13 J	7 J	1.7 U	0.23 U	1.3 U	3.7 U
PCB-18/17	0.97	0.1 U	0.15 U	1.5 U	0.84 J	0.34 J
PCB-180	2	0.95	1.2	8.3	7.5	6.4
PCB-187	1.4	0.4	0.59	1.2	1.8	6
PCB-189	0.14 J	0.05 J	0.05 J	0.59 U	0.52 U	1.1 U
PCB-195/208	0.86	0.31	0.18	0.34 J	0.6	0.57 J
PCB-201/157/173	0.46	0.43	0.04 U	1.83	1.07	0.58 J
PCB-206	1.7	0.38	0.1 J	0.51 U	0.45 U	0.59 J
PCB-209	0.91	0.87	0.43	0.15 J	0.32 J	0.27 J
PCB-28	1.1	1.4	0.6	0.78	2.5	0.84 J
PCB-44	0.64	0.11 J	1.6	1.5	2.9	0.1 J
PCB-52	1.1	0.55	3.8	6.7	7	0.73 U
PCB-66	1.8	0.43 J	1.1	0.24 J	1.1	1.4
PCB-77	0.36	0.06 J	0.18 J	0.06 J	0.52 U	1.1 U
PCB-8/5	1.4	2.2	0.31 J	0.09 J	1.2	0.27 J
PCB-81	0.01 J	0.07 J	0.01 J	0.24 J	0.65	1 J
PENTACHLOROANISOLE	0.13 J	0.05 J	0.06 J	0.89	1.2	0.69
PENTACHLOROBENZENE	0.2	0.29 U	0.51 U	1.5 U	1.1 U	0.68
TRANS-NONACHLOR	0.28	0.04 U	0.03 J	1.6	2.5	1.1
Metals (mg/kg)						
ALUMINUM	59300	59500	59300	434 J	324 J	5.4
ARSENIC	10.6	8.6	11	8.5	8	12.6
CADMIUM	0.48	0.38	0.47	1.3	1.3	0.22
CHROMIUM	79.7	72.9	96	2.7	2	0.49 U
COPPER	59.7	28.6	31	8.7	7.8	42.6
IRON	23200	20600	24700	786	630	7.9
LEAD	185	52.6	44.1	2.8	3	0.11
MANGANESE	364	430	397	15.3	12.5	3.8 J
MERCURY	0.55	0.24	0.29	0.3	0.29	0.78
NICKEL	29.7	20.3	27.3	2.2	1.9	0.49 U
SILVER	0.24	0.22	0.37	0.08 J	0.05 J	0.17
ZINC	116	92.5	110	87.7	91.3	90.8
Miscellaneous Parameters (%)						
PERCENT LIPIDS				7.2	7.1	2.8
TOTAL ORGANIC CARBON	3.31	2.18	2.4			

Notes:
MS-14 includes the following samples:

OU4-SD-M14-100B
OU4-SD-M14-200B
OU4-SD-M14-300B
OU4-MU-M14-100B
OU4-MU-M14-200B
OU4-LJ-M14-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	87 J	22.7	18.7	108	33.9 J	53.6 J	27.5 U
1,2,3,4,6,7,8-HPCDF	29.1 J	6.9	5.9	21.3	7 J	9.3 J	34.4 U
1,2,3,4,7,8,9-HPCDF	3.7 UJ	1.6 U	1.4 U	1.8 U	18.4 UJ	35 U	33.5 U
1,2,3,4,7,8-HXCDD	3.7 UJ	1.6 U	1.4 U	1.8 U	18.4 UJ	35 U	29.1 J
1,2,3,4,7,8-HXCDF	1.9 U	1.6 U	1.4 U	1.8 U	18.4 UJ	35 U	28.3 J
1,2,3,6,7,8-HXCDD	5.4 J	1.6 U	0.8 J	1.8 U	18.4 UJ	2.1 U	27.5 J
1,2,3,6,7,8-HXCDF	3.7 UJ	1.6 U	1.4 U	1.8 U	18.4 UJ	35 U	26 U
1,2,3,7,8,9-HXCDD	3.7 UJ	1.6 U	1.4 U	1.9	0.7 J	35 U	24 J
1,2,3,7,8,9-HXCDF	3.7 UJ	1.6 U	1.4 U	1.8 U	18.4 UJ	35 U	25.4 U
1,2,3,7,8-PECDD	3.7 UJ	1.6 U	1.4 U	1.8 U	0.9 J	35 U	28.8 U
1,2,3,7,8-PECDF	1.4 J	0.3 J	1.4 U	1.8 U	3.8 J	8.5 J	19 U
2,3,4,6,7,8-HXCDF	3.7 UJ	1.6 U	1.4 U	1.8 U	18.4 UJ	0.9 J	20 J
2,3,4,7,8-PECDF	0.8 J	1.6 U	1.4 U	1.8 U	0.8 J	1.5 J	21.2 U
2,3,7,8-TCDD	0.74 UJ	0.31 U	0.27 U	0.35 U	3.68 UJ	0.6 U	5.7 J
2,3,7,8-TCDF	2.1 J	0.31 U	0.27 U	0.35 U	4.5 J	6.6 J	7.1 U
OCDD	600 J	96.9	168	844	165 J	232 J	79.9 J
OCDF	27.9 J	8.9	8.2	31.1	14.9 J	20 J	74 J
TOTAL DIOXINS	839 J	159	220	1240	279 J	378 J	223 J
TOTAL FURANS	120 J	28.8	25.2	99.5	46.8 J	157 J	261 J
TOTAL HPCDD	207 J	51.1	42.3	332	73.2 J	117 J	27.5 U
TOTAL HPCDF	61.8 J	14.9	13.2	50.7	7 J	27.9 J	37.9 U
TOTAL HXCDD	29.9 J	10.6	8.7	52.7	0.7 J	28.7 U	80.5 J
TOTAL HXCDF	17.9 J	4.8 U	3.8 U	17.8	18.4 UJ	28.3 U	99.7 U
TOTAL PECDD	3.7 UJ	1.6 U	1.4 U	3.4 U	0.9 J	35 U	28.8 U
TOTAL PECDF	10.2 J	0.3 J	1.4 U	1.8 U	4.6 J	35.5 U	40.2 U
TOTAL TCDD	2.8 J	0.31 U	1.2	2.7	38.5 J	0.6 U	5.7 J
TOTAL TCDF	2.1 J	0.31 U	0.27 U	0.35 U	20.3 J	45.1 J	8.9 U
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	9.1	1.5	7.9	5.4	4.2	3.4 J	3.3 J
1-METHYLNAPHTHALENE	15.3 J	1.8	1.4 J	4.9	11	6.6	3.8 J
1-METHYLPHENANTHRENE	45.1 J	3.4	23.2	46.1	9.1	3.4	2.6 J
2,6-DIMETHYLNAPHTHALENE	12.9 J	2	2.9	7.7	6.1	4.7	1.3 J
2-METHYLNAPHTHALENE	24.7 J	2.7	2.5	6.6	17.4	9.8	5 J
ACENAPHTHENE	22.7 J	1.6	2.1	18.6	8 J	8.5 J	2.4 J
ACENAPHTHYLENE	92 J	8.4	9.3	65.4	26.4	22.1	0.3 J
ANTHRACENE	146 J	13.1	38.8	115	50.8	43	1.4 J
BENZO(A)ANTHRACENE	281 J	23.7	88.2	155	17.2	15.3	2.8 J
BENZO(A)PYRENE	464 J	34.9	78.6	206	19.6	12.1	5.2 J
BENZO(B)FLUORANTHENE	421 J	33.3	74.3	251 J	38.5	29.2	5 J
BENZO(E)PYRENE	251 J	18.6 J	37.1 J	130 J	32	26.6	4.5 J
BENZO(G,H,I)PERYLENE	249 J	18.2	27.4	101 J	16.9	12.6	3.7 J
BENZO(K)FLUORANTHENE	164 J	9.1	22.9	88	11.6	7.8	2 J
BIPHENYL	9.2 J	1	1	3 J	4.1	3.8	1.7 J
CHRYSENE	307 J	23.9	69.7	288 J	35.5	30.4	8.5
DIBENZO(A,H)ANTHRACENE	70.8 J	4.9	11.8	28.4	3 J	2.1 J	0.5 J
DIBENZOTHIOPHENE	15.5 J	1.2	2.4	30	2	1.9	0.9 J
FLUORANTHENE	461 J	37.1	97.3	951	57.3	53.3	13.3
FLUORENE	46.9 J	3.4	10.2	55.1	16.6 J	10.4 J	3.8 J
INDENO(1,2,3-CD)PYRENE	259 J	18.2 J	29.8 J	112 J	14.5	9 J	2.5 J
NAPHTHALENE	48.4 J	3.6	4.4	12.6 J	16.5	11.5	10.3
PERYLENE	59 J	10	12.7	31.6	19.1	15.2	5.5 J
PHENANTHRENE	179 J	15.1 J	39.2 J	603 J	25.2	23.6	8.7
PYRENE	458 J	39.8	89.4	668	62.1	50.8	13.2
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.17 J	0.07 J	0.08 J	0.07 J	0.61	1.6	12
1,2,4,5-TETRACHLOROBENZENE	0.03 J	0.44 J	0.47	0.17 J	3 U	3.4 U	0.66 U
2,4'-DDD	0.86 J	0.07	0.051 U	0.19	0.76	0.97	1.4 J
2,4'-DDE	0.59 J	0.15	0.2	0.081 U	0.15 U	0.73	0.39 J
2,4'-DDT	0.061 UJ	0.02 U	0.02 J	0.02 U	1.1	1.4	0.39
4,4'-DDD	0.92 J	0.09	0.08	0.26	3.4	3.4	0.11 J
4,4'-DDE	1.4 J	0.11	0.08	0.28	7.8	7.9	3.3
4,4'-DDT	0.71 J	0.08	0.03 J	0.16	0.52 J	0.26 J	1.6 J

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
ALDRIN	0.15 UJ	0.061 U	0.051 U	0.06 U	0.44	0.74	0.29 J
ALPHA-BHC	0.04 J	0.04 J	0.02 J	0.03 J	0.77	0.55	0.28 J
ALPHA-CHLORDANE	0.34 J	0.04 J	0.04 J	0.06 J	3	3.2	0.3 U
BETA-BHC	0.52 UJ	0.2 U	0.18 U	0.19 U	2	0.96	0.26 U
CHLORPYRIFOS	0.72 UJ	0.28 U	0.01 J	0.27 U	4.7 U	4 U	42 U
CIS-NONACHLOR	0.58 J	0.05	0.02 J	0.14	1.3	1.8	0.14 J
DELTA-BHC	0.11 UJ	0.04 U	0.04 U	0.04 U	0.04 J	0.087 U	0.21
DIELDRIN	0.41 J	0.071 U	0.061 U	0.07	1.3	1.2	3.2 J
ENDOSULFAN II	0.82 J	0.04 J	0.04 J	0.14	0.99	1.6	0.3 U
ENDRIN	0.34 UJ	0.13 U	0.12 U	0.13 U	0.79	0.47	0.83 U
GAMMA-BHC (LINDANE)	0.61 UJ	0.24 U	0.21 U	0.22 U	1	1.7	0.98
GAMMA-CHLORDANE	0.21 J	0.03 J	0.02 J	0.03 J	0.51	2.9	0.3 J
HEPTACHLOR	0.05 J	0.02 J	0.05 J	0.16 U	0.19 U	0.63	0.46 U
HEPTACHLOR EPOXIDE	0.071 UJ	0.03 U	0.03 U	0.03 U	0.67	0.36	0.32 U
HEXACHLOROBENZENE	0.11 UJ	0.04 U	0.04 U	0.07	0.42	0.67	0.34 J
MIREX	0.071 UJ	0.03 U	0.03 U	0.03 U	0.31 U	0.4 U	0.44 J
OXYCHLORDANE	0.04 UJ	0.01 U	0.01 U	0.01 U	0.14 U	0.18 U	1.3 J
PCB-101/90	1.4 J	0.19	0.21	0.32	8.4	8.2	0.96 U
PCB-105	0.77 J	0.1 J	0.04 J	0.19 J	2.3	2.3	0.85 J
PCB-114	0.46 UJ	0.18 U	0.16 U	0.17 U	0.48 U	0.61 U	1.1 U
PCB-118	1.6 J	0.19	0.13	0.51	5.3	6	4.3
PCB-126	0.03 J	0.02 J	0.03 J	0.02 J	0.16 J	0.19 J	0.63 J
PCB-128	0.37 J	0.04 U	0.04 U	0.05	3.2	3.1	0.68 J
PCB-138/160	1.2 J	0.19	0.17	0.55	12	15	4.5
PCB-149/123	0.72 J	0.06 J	0.04 J	0.18	4.6	6.1	0.24 J
PCB-153/132	1.7 J	0.25	0.17	0.43	13	15	6.6 U
PCB-156	0.51 J	0.18 U	0.16 U	0.09 J	1.9	2.2	1.1 U
PCB-167	0.15 J	0.18 U	0.16 U	0.06 J	2.1	1.6	0.42 J
PCB-169	0.09 J	0.02 J	0.04 J	0.17 U	0.48 U	0.04 J	1.1 U
PCB-170/190	2.6 UJ	1 J	0.76 J	0.97 U	1.2 U	1.4 U	1.5 U
PCB-18/17	0.22 UJ	0.091 U	0.081 U	0.081 U	1.2 U	1.6 U	0.81 J
PCB-180	0.87 J	0.15 U	0.11 U	0.3	12	11	1.8
PCB-187	0.55 J	0.09 J	0.04 J	0.14 J	2.9	3.4	2.1
PCB-189	0.46 UJ	0.18 U	0.16 U	0.06 J	0.48 U	0.61 U	1.1 U
PCB-195/208	0.31 J	0.04 J	0.02 J	0.12	0.41	0.3 J	0.16 J
PCB-201/157/173	0.27 J	0.02 U	0.02 U	0.13	0.36 U	0.46 U	0.15 J
PCB-206	0.33 J	0.081 U	0.071 U	0.07 J	0.41 U	0.52 U	0.19 J
PCB-209	0.82 J	0.19	0.19	0.34	0.57	0.4 J	0.24 J
PCB-28	2.9 J	0.75	0.42	1	3.1	2.3	0.64 J
PCB-44	1.3 J	0.09 J	0.12 J	0.13 J	0.74	3.6	0.65 U
PCB-52	0.45 J	0.35	0.14	0.23	8.4	9.3	0.76 U
PCB-66	0.32 J	0.12 U	0.11 U	0.06 J	1.1	0.91	0.77 J
PCB-77	0.33 J	0.06 J	0.06 J	0.03 J	0.48 U	0.61 U	1.1 U
PCB-8/5	0.42 J	0.37	0.34	0.3 J	0.74 J	2.2	0.25 J
PCB-81	0.01 J	0.18 U	0.01 J	0.17 U	0.32 J	0.61 U	1.1 U
PENTACHLOROANISOLE	0.14 J	0.02 J	0.03 J	0.03 J	1.9	1.6	0.46
PENTACHLOROBENZENE	0.5 U	0.25 U	0.21 U	0.21 U	1.3 U	1.5 U	0.51
TRANS-NONACHLOR	0.35 J	0.02 J	0.03 U	0.1	0.084 U	3.3	0.33
Metals (mg/kg)							
ALUMINUM	59600	42000	43700	46400	300 J	264 J	6.3
ARSENIC	10.5	3.1	3.9	5.7	7.4	8.9	17.1
CADMIUM	0.47	0.12	0.2	0.16	1.6	1.3	0.07
CHROMIUM	96.3	22.3	30.9	41.7	2.3	2.1	0.5 U
COPPER	26.1	3.6	6.2	7.8	9.2	8.4	47.2
IRON	29000	8300	14900	12200	500	515	8.5
LEAD	72.4	17.2	19.8	22	2.3	2.3	0.07 U
MANGANESE	416	445	1110	327	15.8	9.8	5.6 J
MERCURY	0.4	0.04	0.06	0.08	0.24	0.33	1.1
NICKEL	26.7	9.2	11.1	13.1	1.8	2.2	0.5 U
SILVER	0.28	0.08	0.09	0.13	0.08 J	0.07 J	0.29
ZINC	110	23.6	33.2	40.2	98.7	84.1	99.9
Miscellaneous Parameters (%)							
PERCENT LIPIDS					7.5	7.8	2.2

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
TOTAL ORGANIC CARBON	3.91	0.45	0.35	0.84			

Notes:
RF-1 includes the following samples:

OU4-SD-R01-100B
OU4-SD-R01-200B
OU4-SD-R01-300B
OU4-SD-R01-400B
OU4-MU-R01-300B
OU4-MU-R01-400B
OU4-LJ-R01-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	29.1	79	42.2	140	29.8	25.5 U	20.7 UJ
1,2,3,4,6,7,8-HPCDF	7.5	22.1	13.2	42	21.5 U	25.5 U	20.7 UJ
1,2,3,4,7,8,9-HPCDF	1.1 J	1.2 U	0.6 J	1.9 U	21.5 U	25.5 U	20.7 UJ
1,2,3,4,7,8-HXCDD	0.8 U	1.2 U	1.4 U	1.9 U	21.5 U	25.5 U	20.7 UJ
1,2,3,4,7,8-HXCDF	0.7 J	1 U	0.7 U	2.1 U	21.5 U	25.5 U	20.7 UJ
1,2,3,6,7,8-HXCDD	1.9	3.4	2.2	6.5	21.5 U	25.5 U	20.7 UJ
1,2,3,6,7,8-HXCDF	0.6 J	1.2 U	0.6 J	1.6 J	21.5 U	25.5 U	20.7 UJ
1,2,3,7,8,9-HXCDD	1.1 J	2.1	1.3 J	1.9 U	21.5 U	25.5 U	20.7 UJ
1,2,3,7,8,9-HXCDF	0.3 J	1.2 U	1.4 U	1.9 U	21.5 U	25.5 U	20.7 UJ
1,2,3,7,8-PECDD	0.7 J	1.2 U	1.4 U	1.9 U	21.5 U	25.5 U	20.7 UJ
1,2,3,7,8-PECDF	0.9 U	1.2 U	1.4 U	2	21.5 U	25.5 U	20.7 UJ
2,3,4,6,7,8-HXCDF	1.6 U	1.2 U	1.4 U	1.9 U	21.5 U	25.5 U	20.7 UJ
2,3,4,7,8-PECDF	0.4 U	1.2 U	1.4 U	1.9 U	21.5 U	25.5 U	20.7 UJ
2,3,7,8-TCDD	0.2 J	0.25 U	0.2 J	0.39 U	4.3 U	5.1 U	0.2 J
2,3,7,8-TCDF	0.3 U	0.25 U	0.29 U	2	4.3 U	5.1 U	2.3 U
OCDD	217	698	409	1220	87.4	132	41.3 UJ
OCDF	9.4	30.8	17.1	55.8	43 U	51.1 U	41.3 UJ
TOTAL DIOXINS	255	226	529	1610	117 J	156 J	0.2 J
TOTAL FURANS	42.4	107	64.4	230	14.4 J	10.3 J	4.1 J
TOTAL HPCDD	29.1	182	94	314	30.1 J	23.7 J	20.7 UJ
TOTAL HPCDF	16	50.5	30.4	99.3	21.5 U	10.3 J	20.7 UJ
TOTAL HXCDD	3.8	41.2	23.1	71.2	21.5 U	25.5 U	20.7 UJ
TOTAL HXCDF	6.3	19.9	11.5	43.7	21.5 U	2.99 U	20.7 UJ
TOTAL PECDD	4.8	1.2 U	1.4 U	1.9 U	21.5 U	25.5 U	20.7 UJ
TOTAL PECDF	8.2	3.6	5.3	21.2	21.5 U	25.5 U	20.7 UJ
TOTAL TCDD	0.2 J	2.3	2.8	0.39 U	4.3 U	5.1 U	0.2 J
TOTAL TCDF	2.4	2.2	0.29 U	10	14.4 J	5.1 U	4.1 U
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	10	10.3	8.4	10.5	3.6	3.7 J	1 J
1-METHYLNAPHTHALENE	14.5	7.5	7.8	11.1	6.1	12.6	3.4 J
1-METHYLPHENANTHRENE	57.3	38.4	26.1	47.8	6.5	6.9	0.8 J
2,6-DIMETHYLNAPHTHALENE	10.1	8.2	8.3	10.6	4.8	6.6	1.3 J
2-METHYLNAPHTHALENE	18.6	10.3	11.7	17.5	8.3	24.7	3.7 J
ACENAPHTHENE	22.7 J	20.9	11.5	14.3	10.5 J	11.1 J	1.7 J
ACENAPHTHYLENE	86.3 J	43	52.4	74.2	17.5	21.7	0.3 J
ANTHRACENE	206 J	225	116	222	35.6	41.2	1 J
BENZO(A)ANTHRACENE	479	333	291	315	14.6	19	6.2
BENZO(A)PYRENE	680 J	396	379	403	11.7	18.3	13.2
BENZO(B)FLUORANTHENE	728 J	343 J	365 J	403 J	23.7	34.9	12.3
BENZO(E)PYRENE	375	180 J	195 J	211 J	21	27.5	6.4 J
BENZO(G,H,I)PERYLENE	377 J	171 J	173 J	198 J	12.9	18.4	5.9 J
BENZO(K)FLUORANTHENE	196	137	132	144	6.1	10	5.2 J
BIPHENYL	4.3	3.7 J	3.4 J	4.9 J	3.3	3.8	1.6 J
CHRYSENE	529	287 J	300 J	357 J	27.9	40.5	15.6
DIBENZO(A,H)ANTHRACENE	119 J	54	56.3	63.9	1.9 J	3.7 J	0.5 J
DIBENZOTHIOPHENE	20 J	14.8	9.8	14.7	2.1	2.1 J	0.6 J
FLUORANTHENE	921	572	457	621	51.3	63.4	32.9
FLUORENE	45.3 J	42.5	31.3	45.4	12.1 J	11.1 J	2.9 J
INDENO(1,2,3-CD)PYRENE	445 J	194 J	196 J	225 J	8.6 J	13.8	7.2 J
NAPHTHALENE	26	18.5 J	19.2 J	29.5 J	11.5	19.8	10.7
PERYLENE	106	68.3	49.1	66.5	12.2	13.3	7.8 J
PHENANTHRENE	369	207 J	170 J	200 J	27.3	28.7	6.9
PYRENE	772	527	397	548	43.3	51.1	31.4
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.24 J	0.2 U	0.24 U	0.14 J	0.39	4	14
1,2,4,5-TETRACHLOROBENZENE	0.41 J	0.19 J	0.16 J	0.24 J	3.3 U	8.9 U	0.87 U
2,4'-DDD	0.071 U	1.9	0.34	0.86	0.41	0.86	1.4 J
2,4'-DDE	0.1 U	0.081 U	0.08 J	0.21	0.33	0.63	0.35 J
2,4'-DDT	0.11	0.98	0.03 U	0.03 U	0.8	2.2	0.38
4,4'-DDD	0.6	3.5	0.45	4.2	2.3	3.2	0.19 J
4,4'-DDE	0.4	0.76	0.25	0.96	5.5	6.3	3.4
4,4'-DDT	0.75	0.18	0.47	12	0.17 J	0.64 J	0.45 U

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
ALDRIN	0.071 U	0.061 U	0.071 U	0.071 U	0.15 J	0.84	0.39 J
ALPHA-BHC	0.06 J	0.26	0.02 J	0.07 J	0.44	0.52	1
ALPHA-CHLORDANE	0.44	0.26	0.21	0.07 J	1.6	2.4	0.3 U
BETA-BHC	0.15 J	0.19 U	0.26	0.23 U	2	11	0.28
CHLORPYRIFOS	0.33 U	0.27 U	0.32 U	0.33 U	4.9 U	5.2 U	18 U
CIS-NONACHLOR	1.3	0.42	0.24	0.15	1.1	3.1	0.13 J
DELTA-BHC	0.051 U	0.04 U	0.051 U	0.051 U	0.081 U	0.099 U	0.16 U
DIELDRIN	0.68	0.48	0.081 U	0.4	0.75	0.8	2.9 J
ENDOSULFAN II	0.48	0.51	0.16	0.07 J	1.2	1.4	0.3 U
ENDRIN	0.16 U	0.13 U	0.15 U	0.16 U	1.2	0.71	0.81 U
GAMMA-BHC (LINDANE)	0.28 U	0.03 J	0.05 J	0.08 J	0.75	1.6	0.82
GAMMA-CHLORDANE	0.1	0.04 J	0.07 J	0.12	2.1	2.4	0.31 U
HEPTACHLOR	0.06 J	0.06 J	0.19 J	0.2 U	0.48	0.73	0.44 U
HEPTACHLOR EPOXIDE	0.03 U	0.03 U	0.03 U	0.03 U	0.21	0.74	0.31 U
HEXACHLOROBENZENE	0.07	0.04 U	0.02 J	12	0.43	0.79	0.44
MIREX	0.03 U	0.03 U	0.03 U	0.03 U	0.37 U	0.45 U	0.05 J
OXYCHLORDANE	0.05	0.36	0.02 U	0.02 U	0.17 U	0.21 U	1.2 J
PCB-101/90	0.37	21	0.47	1.4	4.3	6.5	0.67 J
PCB-105	0.41 J	12	0.19 J	0.73 J	1.4	2	1.1
PCB-114	0.21 U	0.17 U	0.2 U	0.21 U	0.56 U	0.69 U	1.1 U
PCB-118	0.89	22	0.6	1.5	4.5	4.3	4.6
PCB-126	0.03 J	0.01 J	0.03 J	0.03 J	0.16 J	0.23 J	1.3
PCB-128	0.17	5	0.03 J	0.27	1.8	3.4	0.79 J
PCB-138/160	0.77	18	0.56	1.8	12	13	4.8
PCB-149/123	0.42	4.6	0.15 J	0.56	5	3.9	0.78 J
PCB-153/132	1.1	12	0.46	2	13	12	7.2 U
PCB-156	0.21 J	1.4	0.11 J	0.3	2	3	1.1 U
PCB-167	0.12 J	1.6	0.07 J	0.17 J	1.1	2.2	0.35 J
PCB-169	0.21 U	0.17 U	0.03 J	0.21 U	0.56 U	0.03 J	0.12 J
PCB-170/190	1.2 U	0.97 U	1.2 U	0.54 J	0.18 U	1.5 U	1.9 U
PCB-18/17	0.1 U	0.081 U	0.1 U	0.1 U	1.5 U	1.8 U	0.62 J
PCB-180	0.95	2.4	0.49	0.99	11	10	3
PCB-187	0.49	0.7	0.13 J	0.7	1.1	2.5	2.3
PCB-189	0.31	0.21	0.07 J	0.19 J	0.56 U	0.24 J	1.1 U
PCB-195/208	0.25	0.24	0.12	0.51	0.12 J	2.7	0.19 J
PCB-201/157/173	0.4	0.35	0.26	0.46	1.26	2.19	0.12 J
PCB-206	0.12	0.05 J	0.091 U	0.68	0.49 U	0.6 U	0.13 J
PCB-209	0.82	1.1	0.46	1	0.14 J	0.54 J	0.24 J
PCB-28	1.6	0.99	0.99	1.6	1.2	2.3	0.95
PCB-44	0.22	3.1	0.22	0.27	2.4	3.9	0.31 J
PCB-52	5.6	7.8	1.4	1.8	7.2	8.3	0.79
PCB-66	0.24	3.1	0.15	0.21	0.6	1.8	0.62 J
PCB-77	0.06 J	0.03 J	0.1 J	0.07 J	0.56 U	0.69 U	1.1 U
PCB-8/5	0.94	1.2	0.24 J	0.34 J	0.75 J	2.8	1.8 U
PCB-81	0.03 J	0.17 U	0.11 J	0.21 U	0.4	0.8	1.2
PENTACHLOROANISOLE	0.16 J	0.02 J	0.06 J	0.06 J	1.1	1.6	0.42
PENTACHLOROBENZENE	0.41 U	0.2 U	0.24 U	0.38 U	0.87 U	1.4 U	0.53
TRANS-NONACHLOR	0.24	0.19	0.04 U	0.18	1.4	2.7	0.37
Metals (mg/kg)							
ALUMINUM	49300	46600	45700	54300	293 J	314 J	8.8
ARSENIC	10.9	3.6	4.1	7.2	9.4	11.4	13.9
CADMIUM	0.17	0.13	0.17	0.28	1.3	1.2	0.03
CHROMIUM	52.9	38.2	39.5	72.2	1.8	2.5	0.52 U
COPPER	16.8	9.3	8.8	21.8	7.7	8.7	46
IRON	21000	11500	13200	19300	493	940	15 J
LEAD	59.5	29.6	25	87.8	2.6	4.6	0.64
MANGANESE	1040	380	449	399	11.4	11.8	7.4 J
MERCURY	0.13	0.11	0.07	0.19	0.3	0.41	1
NICKEL	23.7	20.3	15	21.1	1.6	2.1	0.69
SILVER	0.1	0.15	0.09	0.26	0.05 J	0.06 J	0.17
ZINC	70.3	42.7	60.9	89.7	94.3	95.3	129

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
Miscellaneous Parameters (%)							
PERCENT LIPIDS					.7	8.9	2.1
TOTAL ORGANIC CARBON	2.19	0.56	0.6	1.07			

Notes:
RF-2 includes the following samples:

OU4-SD-R02-100B
OU4-SD-R02-200B
OU4-SD-R02-300B
OU4-SD-R02-400B
OU4-MU-R02-300B
OU4-MU-R02-400B
OU4-LJ-R02-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	20.8	50.3	45.9	43.2	24.6 J	19.5 J	15.2 UJ
1,2,3,4,6,7,8-HPCDF	3.3 U	14.5	13.7	11.5	7.5 J	3.4 J	15.2 UJ
1,2,3,4,7,8,9-HPCDF	2.8 U	0.6 U	0.6 U	0.4 U	22.7 UJ	23.3 UJ	15.2 UJ
1,2,3,4,7,8-HXCDD	0.2 J	0.5 J	0.3 J	1.1 U	22.7 UJ	23.3 UJ	15.2 UJ
1,2,3,4,7,8-HXCDF	0.5 J	1.1 J	0.4 J	0.5 J	22.7 UJ	23.3 UJ	15.2 UJ
1,2,3,6,7,8-HXCDD	0.9 J	2.8	2.1	1.3	1.8 J	23.3 UJ	15.2 UJ
1,2,3,6,7,8-HXCDF	2.8 U	0.7 U	0.5 U	0.4 J	22.7 UJ	0.65 J	15.2 UJ
1,2,3,7,8,9-HXCDD	0.9 J	1.6 J	1 J	1.1 U	22.7 UJ	23.3 UJ	15.2 UJ
1,2,3,7,8,9-HXCDF	0.1 J	0.3 J	1.4 U	1.1 U	22.7 UJ	23.3 UJ	15.2 UJ
1,2,3,7,8-PECDD	0.3 J	0.4 J	0.2 J	0.1 J	22.7 UJ	23.3 UJ	15.2 UJ
1,2,3,7,8-PECDF	0.5 U	1.3 U	1.3 U	0.1 U	2 J	23.3 UJ	15.2 UJ
2,3,4,6,7,8-HXCDF	0.6 J	1.3 J	0.8 J	0.4 U	22.7 UJ	23.3 UJ	15.2 UJ
2,3,4,7,8-PECDF	1.3 U	0.7 U	0.6 U	0.3 J	22.7 UJ	23.3 UJ	15.2 UJ
2,3,7,8-TCDD	0.1 J	0.3 J	0.03 J	0.2 U	4.55 UJ	4.66 UJ	3 UJ
2,3,7,8-TCDF	2.5 U	3.1 U	2 U	0.4	2.9 J	4.66 UJ	3 UJ
OCDD	1323	345	347	754	179 J	115 J	30.4 UJ
OCDF	2.8 J	21.7	18.1	19.6	45.5 UJ	46.6 UJ	30.4 UJ
TOTAL DIOXINS	1381	486	474	875	285 J	392 J	30.4 UJ
TOTAL FURANS	16.5	96	74	56.5	35.8 J	63.3 J	1.3 J
TOTAL HPCDD	55.8	117	110	104	59.2 J	117 J	15.2 UJ
TOTAL HPCDF	3.3 U	35.7	32.6	25.8	7.5 J	39.6 J	15.2 UJ
TOTAL HXCDD	2 J	19.9	14.6	14.6	23.2 J	20.1 J	15.2 UJ
TOTAL HXCDF	3.2 U	19.1	16.2	10.4	5.9 J	14.7 J	15.2 UJ
TOTAL PECDD	0.3 J	0.4 J	0.2 J	0.1 J	22.7 UJ	23.3 UJ	15.2 UJ
TOTAL PECDF	2.6 U	10.5 U	3.2 U	0.4 U	2 J	3.4 J	15.2 UJ
TOTAL TCDD	0.1 J	4.2	2.4	2.2	23.2 J	4.66 UJ	3 UJ
TOTAL TCDF	4.5 U	9 U	3.9 U	0.4	20.4 J	5.7 J	1.3 U
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	9.7	41.5	58	5 J	6.4	7.3	2.1 J
1-METHYLNAPHTHALENE	4.5	16.8	35.6	5.4 J	4.6	7.5	4.6 J
1-METHYLPHENANTHRENE	34.6	240	368	24.9 J	15.7	14.9	3 J
2,6-DIMETHYLNAPHTHALENE	6.1	21.4	35.1	5.8 J	4	5.5	2.1 J
2-METHYLNAPHTHALENE	8.4	24.5	39.2	8.6 J	6.5	12.3	5.2 J
ACENAPHTHENE	4.2 J	68 J	154 J	16.4 J	7.6 J	14.1 J	2.1 J
ACENAPHTHYLENE	8.7 J	93.4 J	85.8 J	27.8 J	14.3	18.9	1 J
ANTHRACENE	44.2 J	989 J	912 J	80.4 J	31.4	39.6	2.4 J
BENZO(A)ANTHRACENE	110	1421	1084	217 J	11.5	12.6	5.3
BENZO(A)PYRENE	116	1588	1204	282 J	9.9	11.6	15.7
BENZO(B)FLUORANTHENE	112 J	1352 J	950 J	259 J	22.3	23.8	14.1
BENZO(E)PYRENE	57.4	704	527	142 J	18.8	21.1	11.6
BENZO(G,H,I)PERYLENE	44.1	702	532	136 J	11	12.8	9.6 J
BENZO(K)FLUORANTHENE	45.7	449	371	102 J	5.3	6.3	4.4 J
BIPHENYL	2.9 J	8.3 J	8.7 J	2.4 J	3.2	4.3	3.4 J
CHRYSENE	97.4	1120	910	213 J	26.4	30.4	9.8
DIBENZO(A,H)ANTHRACENE	17.5	229	180	42.9 J	2.1 J	1.9 J	1.3 J
DIBENZOTHIOPHENE	6.8	57.3	69.5	10 J	2.5	4	1 J
FLUORANTHENE	192 J	2160 J	1900 J	440 J	45.3	69.3	21.5
FLUORENE	14.8 J	165 J	249 J	25.1 J	8.7 J	20.2 J	4.4 J
INDENO(1,2,3-CD)PYRENE	50 J	848	609	151 J	8.8	9.8	8.8 J
NAPHTHALENE	12.4	55.7	62.3	15.9 J	8.8	15	15
PERYLENE	23.7	214 J	191 J	68.6 J	9.8	11.6	26.2
PHENANTHRENE	49.5	964	1300	189 J	23.9	54.7	9.2
PYRENE	168 J	1810 J	1873 J	377 J	39.6	55	20.6
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.02 J	0.26 U	0.1 J	0.21	0.39	0.46	0.16 J
1,2,4,5-TETRACHLOROBENZENE	0.15 J	0.52 J	0.32 J	0.57	1.1 U	1.7 U	2.3
2,4'-DDD	1.2	5.5	4.2	1.2	1.4	1.8	0.24 U
2,4'-DDE	0.09 J	0.1 U	0.1 U	0.28	0.33	0.47	0.3 J
2,4'-DDT	0.07	0.1	0.07	0.07	1.3	0.96	0.21 J
4,4'-DDD	0.45	1.6	1.6	0.46	2.7	2.4	0.29 U
4,4'-DDE	0.8	0.69	0.62	0.34	5.1	5.4	3.2
4,4'-DDT	0.15	0.73	1.6	0.42	0.34 J	1.6 J	0.44 U

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
ALDRIN	1.1	5.3	5.2	2.6	0.58	0.56	0.38 U
ALPHA-BHC	0.19	0.28	0.23	0.09	0.86	0.82	0.28
ALPHA-CHLORDANE	0.04 J	0.4	0.14	0.08	1.3	1.4	3.2
BETA-BHC	0.27 U	0.34	0.26	0.39	2.6	7	0.24 U
CHLORPYRIFOS	0.03 J	0.36 U	0.34 U	0.04 J	2.1 U	4.5 U	2.5 U
CIS-NONACHLOR	0.72	0.26	0.25	0.07	1.8	1.2	0.26 U
DELTA-BHC	0.05 J	0.02 J	0.051 U	0.1	0.061 U	0.072 U	0.86
DIELDRIN	0.03 J	0.07 J	0.081 U	0.17	0.47	0.54	1.8
ENDOSULFAN II	0.08 J	0.12	0.25	0.36	0.86	0.64	0.29 U
ENDRIN	0.18 U	0.17 U	0.16 U	0.12 U	0.79	0.71	0.78 U
GAMMA-BHC (LINDANE)	0.24 J	0.25 J	0.29 U	0.04 J	1.3	1.9	1.5 U
GAMMA-CHLORDANE	0.091 U	0.081 U	0.081 U	0.061 U	1.5	2.3	0.3 U
HEPTACHLOR	0.23 U	0.07 J	0.21 U	0.16 U	1	0.67	0.43 U
HEPTACHLOR EPOXIDE	0.04 U	0.04 U	0.04 U	0.03 U	0.72	1	0.3 U
HEXACHLOROBENZENE	0.061 U	0.061 U	0.051 U	0.04 U	0.66	0.61	0.38 U
MIREX	0.04 U	0.63	0.52	0.03 U	0.28 U	0.33 U	0.69 U
OXYCHLORDANE	0.04 U	0.99 J	0.51 J	0.07 U	0.13 U	0.71	1.2
PCB-101/90	0.04 U	0.81	1.4	0.42	4.8	4.3	2.4
PCB-105	0.07 J	0.42 J	0.78 J	0.11 J	1.6	1.7	1.2
PCB-114	0.24 U	0.23 U	0.22 U	0.16 U	0.43 U	0.5 U	1.1 U
PCB-118	0.14	2.6	2.1	0.44	3.8	2.9	1.1 J
PCB-126	0.25	0.18 J	0.47	0.13 J	0.07 J	0.1 J	0.38 J
PCB-128	1	1.1	0.54	0.06	2.2	2.7	0.53 J
PCB-138/160	0.28	2.4	1.8	0.45	9.3	12	4.8
PCB-149/123	0.01 J	0.79	0.8	0.17	4	2.5	0.71 J
PCB-153/132	0.24	1.1	1.4	0.34	11	10	5.3 U
PCB-156	0.24 J	0.52	0.31	0.13 J	1.5	3.5	1.1 U
PCB-167	0.52	1.5	0.82	0.15 J	1	1.7	0.2 J
PCB-169	0.24 U	0.23 U	0.22 U	0.16 U	0.43 U	0.5 U	0.08 J
PCB-170/190	2.2 J	10 J	8.7 J	7.8 J	2.3 U	1 U	1.3 U
PCB-18/17	0.49	0.11 U	0.62	0.77	1.1	1.3 U	2.7 U
PCB-180	0.51	1.1	0.91	0.29	8.7	9	1.5 U
PCB-187	0.14 J	0.51	0.41	0.16	2.3	1.9	1.4 U
PCB-189	0.21 J	0.31	0.26	0.08 J	0.43 U	0.5 U	1.1 U
PCB-195/208	0.05 J	0.66	0.29	0.13	0.38	1.1	0.87 U
PCB-201/157/173	0.18	1.04	0.56	0.23	2.56	1.83	0.8 U
PCB-206	0.11 U	0.3	0.59	0.071 U	0.27 J	0.43 U	0.91 U
PCB-209	0.35	0.33	0.53	0.31	0.61	0.48 J	1.2 U
PCB-28	0.18 J	1.8	2.3	0.35	1.7	2.7	0.83 U
PCB-44	0.13 J	0.2 U	0.24	0.21	3.1	4.7	1.5
PCB-52	0.59	1.4	1.7	0.12 U	3.7	5.6	3.8
PCB-66	0.18	0.41	0.23	0.12	0.97	0.85	0.17 J
PCB-77	0.01 J	0.23 U	0.22 U	0.16 U	0.04 J	0.5 U	1.1 U
PCB-8/5	1	3.7	4.5	0.07 J	0.93	1.9	0.92 J
PCB-81	0.01 J	0.23 U	0.22 U	0.07 J	0.19 J	0.47 J	0.23 J
PENTACHLOROANISOLE	0.12 J	0.09 J	0.2 J	0.09 J	1.7	1.7	0.29 J
PENTACHLOROBENZENE	0.17	0.36	0.27	0.07	1.7 U	2.5 U	1.8 U
TRANS-NONACHLOR	0.06	0.32	0.34	0.05	1.2	1.3	0.23
Metals (mg/kg)							
ALUMINUM	57200	53000	53800	51400	388 J	428 J	8.8
ARSENIC	13.6	8.4	8.2	7.4	7	8.6	17.9
CADMIUM	0.44	0.38	0.37	0.18	1.3	1.3	0.03
CHROMIUM	67.2	68.7	71.8	65	2.4	2.5	0.51 U
COPPER	26.1	17.4	17.1	12.2	7.3	8.1	46.1
IRON	25500	17500	17500	19700	617	695	12.2 J
LEAD	63.7	39.4	41.2	29.6	3	3.1	0.16
MANGANESE	453	353	361	740	12.3	15.5	2.6 J
MERCURY	0.13	0.22	0.14	0.23	0.21	0.24	0.69
NICKEL	38.2	20.3	20.2	23.3	1.9	2.1	0.56
SILVER	0.33	0.22	0.25	0.17	0.06 J	0.06 J	0.28
ZINC	82.6	71.9	95.2	61.7	105	92	106
Miscellaneous Parameters (%)							
PERCENT LIPIDS					7.2	7.3	2.2

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
TOTAL ORGANIC CARBON	3.17	2.16	2.02	0.69			

Notes:
RS-3 includes the following samples:

OU4-SD-R03-100B
OU4-SD-R03-200B
OU4-SD-R03-300B
OU4-SD-R03-400B
OU4-MU-R03-300B
OU4-MU-R03-400B
OU4-LJ-R03-100B

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	133	10.1	15.8	16.3	45.4 J	19.5 J	43.4 UJ
1,2,3,4,6,7,8-HPCDF	43.3	3.3	4.1	5.8	27.4 UJ	3.4 J	43.4 UJ
1,2,3,4,7,8,9-HPCDF	0.7 U	1 U	1.5 U	1.4 U	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,4,7,8-HXCDD	0.7 J	0.2 J	0.2 J	0.2 J	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,4,7,8-HXCDF	0.9 J	0.1 J	0.1 J	0.3 J	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,6,7,8-HXCDD	3.7	0.2 J	1.5 U	0.9 J	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,6,7,8-HXCDF	2.6 U	1 U	1.5 U	0.2 J	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,7,8,9-HXCDD	2.4 U	0.3 U	0.4 U	1.4 U	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,7,8,9-HXCDF	2.6 U	1 U	1.5 U	1.4 U	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,7,8-PECDD	2.6 U	0.1 J	1.5 U	0.1 J	27.4 UJ	21.6 UJ	43.4 UJ
1,2,3,7,8-PECDF	0.7 U	0.03 U	1.5 U	1.4 U	27.4 UJ	1.7 J	43.4 UJ
2,3,4,6,7,8-HXCDF	2 U	1 U	1.5 U	0.3 U	27.4 UJ	21.6 UJ	43.4 UJ
2,3,4,7,8-PECDF	0.6 J	1 U	0.1 J	1.4 U	27.4 UJ	0.3 J	43.4 UJ
2,3,7,8-TCDD	0.5 U	0.2 U	0.3 U	0.3 U	5.51 UJ	4.31 UJ	0.3 J
2,3,7,8-TCDF	0.5 U	0.2	0.3 U	0.2 J	5.51 UJ	4.31 UJ	8.7 UJ
OCDD	1014	115	269	139	220 J	115 J	8.7 UJ
OCDF	70.4	4.2	6.3	7.6	14.8 J	43.1 UJ	86.8 UJ
TOTAL DIOXINS	1352	145	335	183	265 J	43.1 UJ	15.2 J
TOTAL FURANS	202	11.2	14.9	23.5	18.3 J	7.33 UJ	86.8 UJ
TOTAL HPCDD	275	25.1	44.4	37.9	45.4 J	115 J	5.9 U
TOTAL HPCDF	94.9	6.6	8.4	12.2	27.4 UJ	21.6 UJ	43.4 UJ
TOTAL HXCDD	62.6	4.4	16.1	5.7	27.4 UJ	21.6 UJ	9 J
TOTAL HXCDF	31.6	0.1 U	0.1 U	3.5	27.4 UJ	21.6 UJ	43.4 UJ
TOTAL PECDD	2.6 U	0.1 J	1.5 U	0.1 J	27.4 UJ	21.6 UJ	43.4 UJ
TOTAL PECDF	5	0.03 U	0.1 U	1.4 U	27.4 UJ	20.2 J	43.4 UJ
TOTAL TCDD	0.5 U	0.2 U	5.7	0.5	5.51 UJ	4.31 UJ	0.3 J
TOTAL TCDF	0.5 U	0.2	0.3 U	0.2 J	3.5 J	4.31 UJ	8.7 UJ
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	2.2	0.6 J	0.4 J	0.5 J	4.5	4.7	1.3 J
1-METHYLNAPHTHALENE	3.7	0.7 J	0.6 J	0.7 J	6.4	5.5	8.9
1-METHYLPHENANTHRENE	10.9	2.5 J	1.2	2.7	7.6	8.5	0.9 J
2,6-DIMETHYLNAPHTHALENE	2.6	1.6 J	1.5	1 J	4.4	4.9	3.9 J
2-METHYLNAPHTHALENE	5.1	0.9 J	1 J	1.2 J	9.6	8.3	10.3
ACENAPHTHENE	5.3 J	0.7 J	0.7 J	0.8 J	9 J	10.1 J	1.6 J
ACENAPHTHYLENE	17.5 J	2.7 J	2.5 J	4.7 J	13.5	13.3	1 J
ANTHRACENE	34.3 J	5.1 J	4.7 J	8.5 J	25.5	25.1	0.8 J
BENZO(A)ANTHRACENE	60.8	5.8 J	4.8	9.5	9.7	10.1	1.2 J
BENZO(A)PYRENE	90.3	9.2 J	9.5	16.2	8.7	9	2.3 J
BENZO(B)FLUORANTHENE	90 J	10.4 J	12 J	19.3 J	17.1	18	2.8 J
BENZO(E)PYRENE	49.1	5.3 J	6.1	10	15.6	15.5	0.1 J
BENZO(G,H,I)PERYLENE	48.5	5.5 J	6.3	10.3	8.2	8.6	1.2 J
BENZO(K)FLUORANTHENE	31.7	3 J	3.2	5.3	4.6	4.5	1.2 J
BIPHENYL	1.9 J	0.7 J	0.7 J	0.8 J	3.7	2.4 J	6.3
CHRYSENE	68.3	7.4 J	7.7	13.1	23.2	23.6	3.3 J
DIBENZO(A,H)ANTHRACENE	13.5	1.3 J	1.4	2.4	1.4 J	1.4 J	0.4 J
DIBENZOTHIOPHENE	2.9	0.6 J	0.4 J	0.7	1.7	1.9	0.5 J
FLUORANTHENE	120 J	16.2 J	13.7 J	25.8 J	42.1	43.1	9.5
FLUORENE	9.4 J	1.5 J	1.2 J	2.3 J	8.8 J	9.2 J	4 J
INDENO(1,2,3-CD)PYRENE	49.6	6 J	7	11.5	6.3 J	6.8 J	1.5 J
NAPHTHALENE	9.1	1.8 J	2.2 J	2.3	14.4	11.7	25.2
PERYLENE	18.5 J	2.5 J	3.4 J	4.5 J	7.7 J	6.7 J	2.5 J
PHENANTHRENE	45.7	8.4 J	5.1	10.6	19.3	21.3	6.1
PYRENE	105 J	15.2 J	12.4 J	25.4 J	32.3	33.3	7.8
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.08 J	0.02 J	0.04 J	0.17 U	0.94	0.42	6.4
1,2,4,5-TETRACHLOROBENZENE	0.42 J	0.03 J	0.02 J	0.01 J	1.9 U	1.9 U	2.2
2,4'-DDD	0.49	0.02 J	0.05 J	0.11	1.9	2.2	0.25 U
2,4'-DDE	0.091 U	0.36	0.28	0.19	0.72	0.34	0.34 U
2,4'-DDT	0.12	0.02 U	0.09	0.1	1.7	1.5	0.32 U
4,4'-DDD	0.62	0.04 U	0.17	0.27	2.8	3.3	0.3 U
4,4'-DDE	1.5	0.06	0.12	0.13	4.9	5.2	2
4,4'-DDT	0.45	0.03 J	0.12	0.05	0.33 J	0.49 J	0.46 U

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
ALDRIN	0.98	0.15	0.15	0.32	0.94	0.81	0.39 U
ALPHA-BHC	0.13	0.1	0.04 J	0.03 J	0.78	0.9	0.6
ALPHA-CHLORDANE	0.09	0.061 U	0.04 J	0.09	1.8	1.8	3.4
BETA-BHC	0.14 J	0.15 J	0.17 U	0.09 J	4.7	5	0.25 U
CHLORPYRIFOS	0.32 U	0.24 U	0.24 U	0.02 J	3.5 U	3.5 U	2.6 U
CIS-NONACHLOR	0.07	0.02 J	0.04	0.07	2	4.3	0.27 U
DELTA-BHC	0.051 U	0.04 U	0.04	0.04 U	0.076 U	0.07 U	0.31
DIELDRIN	0.081 U	0.061 U	0.061 U	0.061 U	0.44	0.68	0.73
ENDOSULFAN II	0.38	0.05 J	0.05 J	0.03 J	1.1	1.3	0.3 U
ENDRIN	0.15 U	0.11 U	0.11 U	0.11 U	1.4	1.5	0.82 U
GAMMA-BHC (LINDANE)	0.01 J	0.03 J	0.04 J	0.04 J	2.2	0.9	1.1 U
GAMMA-CHLORDANE	0.11	0.061 U	0.03 J	0.01 J	1.8	1.6	0.32 U
HEPTACHLOR	0.19 U	0.14 U	0.14 U	0.14 U	0.22 U	0.2 U	0.45 U
HEPTACHLOR EPOXIDE	0.03 U	0.02 U	0.03 U	0.02 U	0.33	0.33	0.32 U
HEXACHLOROBENZENE	0.051 U	0.04 U	0.04 U	0.04 U	1.5	0.68	0.52
MIREX	0.03 U	0.02 U	0.03 U	0.02 U	0.35 U	0.32 U	0.72 U
OXYCHLORDANE	0.1 U	0.35 J	0.01 UJ	0.01 UJ	0.16 U	0.15 U	0.62
PCB-101/90	1.2	0.46	0.42	0.27	4.5	4.2	2.9
PCB-105	0.58 J	0.04 J	0.04 J	0.05 J	1.4	1.5	0.2 J
PCB-114	0.2 U	0.15 U	0.15 U	0.15 U	0.53 U	0.48 U	1.1 U
PCB-118	1.1	0.08 J	0.13	0.14	2.5	3.3	0.9 J
PCB-126	0.2 U	0.01 J	0.15 U	0.15 U	0.26 J	0.04 J	0.38 J
PCB-128	0.33	0.04 U	0.04 U	0.04	3.1	2.8	0.17 J
PCB-138/160	0.57	0.15	0.18	0.15	9.6	10	1.6 J
PCB-149/123	0.41	0.02 J	0.06 J	0.04 J	2	3.1	0.31 J
PCB-153/132	0.94	0.13	0.21	0.19	9	9.7	1.9 U
PCB-156	0.21	0.15 U	0.15 U	0.02 J	2.4	2.2	1.1 U
PCB-167	0.12 J	0.07 J	0.15 U	0.1 J	2.2	1.6	1.1 U
PCB-169	0.2 U	0.15 U	0.15 U	0.15 U	0.02 J	0.03 J	1.1 U
PCB-170/190	3.7 J	0.59 J	0.73 J	0.94 J	1.1 U	0.81 U	1.3 U
PCB-18/17	0.45	0.11	0.38	0.071 U	1.4 U	1.3 U	2.9 U
PCB-180	0.39	0.05	0.02 U	0.08	7	8.1	0.55 U
PCB-187	0.19 J	0.13 J	0.13 J	0.09 J	1.4	1.7	0.59 U
PCB-189	0.12 J	0.01 J	0.15 U	0.15 U	0.88	0.73	1.1 U
PCB-195/208	0.14	0.04 U	0.01 J	0.02 J	1.2	1.2	0.91 U
PCB-201/157/173	0.09	0.07	0.02 U	0.05	1.25	1.7	0.83 U
PCB-206	0.08 J	0.071 U	0.071 U	0.05 J	0.46 U	0.42 U	0.95 U
PCB-209	0.27	0.09	0.05 J	0.03 J	0.15 J	0.5 J	1.2 U
PCB-28	0.75	0.36	0.38	0.12 J	2.6	3	0.87 U
PCB-44	0.38	0.08 J	0.07 J	0.07 J	2.1	1.7	1
PCB-52	0.15 U	0.11 U	0.09 J	0.16	7.5	7.1	2.7
PCB-66	0.25	0.01 J	0.24	0.01 J	0.81	0.79	1.1 U
PCB-77	0.2 U	0.02 J	0.15 U	0.03 J	0.53 U	0.48 U	1.1 U
PCB-8/5	0.76	0.15 J	0.19 J	0.08 J	1.1	1.4	1.7 J
PCB-81	0.2 U	0.15 U	0.15 U	0.07 J	0.76	0.32 J	0.37 J
PENTACHLOROANISOLE	0.11 J	0.03 J	0.06 J	0.03 J	1.6	1.6	0.29 J
PENTACHLOROBENZENE	0.1	0.06 J	0.11	0.04 J	4.1 U	2.6 U	1.8 U
TRANS-NONACHLOR	0.22	0.04	0.23	0.03 U	1.7	1.6	0.19 U
Metals (mg/kg)							
ALUMINUM	47800	46600	41600	42200	369 J	376 J	3.7
ARSENIC	4.9	3.8	2.6	1.7	8.1	7.9	16.3
CADMIUM	0.15	0.08	0.08	0.08	1.2	1.3	0.03
CHROMIUM	61.2	55.5	38.2	30.9	2.2	2.4	0.51 U
COPPER	9.4	4.7	3.8	3.2	7.8	8.3	75.1
IRON	12900	14200	10500	8610	604	625	5.9 J
LEAD	31.8	14.5	13.3	13.1	3	3.4	0.07 U
MANGANESE	328	767	424	340	13.3	12.4	3.8 J
MERCURY	0.19	0.03	0.03	0.03	0.24	0.27	1
NICKEL	18.3	18.2	13.8	11.3	1.9	2	0.51 U
SILVER	0.15	0.05	0.05	0.05	0.05 J	0.05 J	0.47
ZINC	38.3	28.9	25.3	20.9	92.8	103	92.5

TABLE B-2

SUMMARY OF ROUND 2 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLE FOR EACH MONITORING AND REFERENCE STATION
ROUND 2 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04						
	Sediment				Mussel		Lobster
Parameters	100B	200B	300B	400B	300B	400B	100B
Miscellaneous Parameters (%)							
PERCENT LIPIDS					8.3	8.1	1.8
TOTAL ORGANIC CARBON	1.98	0.3	0.26	0.29			

Notes:
RS-4 includes the following samples:

OU4-SD-R04-100B
OU4-SD-R04-200B
OU4-SD-R04-300B
OU4-SD-R04-400B
OU4-MU-R04-300B
OU4-MU-R04-400B
OU4-LJ-R04-100B

(1) - These duplicate samples were only analyzed for metals

- All results are presented in dry weight
- Alkylated PAH results for the sediment are presented in Table 3-3
- Grain size and percent moisture results for the sediment are presented in Table 3-5
- AVS and SEM data are presented in Tables 3-6 and 3-7
- Alkylated PAH results for the mussels are presented in Appendix G.3. Percent moisture is presented in Appendix G.4.
- Alkylated PAH results for the lobsters are presented in Appendix G.5. Percent moisture is presented in Appendix G.6.

Qualifiers:
J = Positive result is estimated as a result of a value below the CRQL or a technical noncompliance.
U = Value is a nondetected result as reported by the laboratory and should not be considered present.
UJ = Nondetected result is considered to be estimated as a result of technical noncompliances.
UR = Compound was rejected due to severe technical noncompliances or as a result of calibration RRF noncompliances.

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01							
	Sediment				Mussel		Lobster	
Parameters	100A	200A	300A	300A-DUP	200A	300A	100A	100A-DUP
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	56.5 J	8.56	32.2 J	22.1	3.4 J	3.46 J	1.06 J	0.98 J
1-METHYLNAPHTHALENE	123 J	36.2 J	97.2 J	47.4 J	5.1 J	5.76	3.3 J	3.43 J
1-METHYLPHENANTHRENE	382 J	39.8	234 J	216	5.8	3.46 J	1.12 J	0.89 J
2,6-DIMETHYLNAPHTHALENE	76 J	16.6	47.2 J	28.8	3.6 J	4.53 J	1.16 J	1.03 J
2-METHYLNAPHTHALENE	143 J	58.4 J	126 J	92.7	8.3 J	8.71	4.98 J	4.34 J
ACENAPHTHENE	766 J	9.63	84.2 J	64.6	8.5 J	8.33 J	1.74 J	1.48 J
ACENAPHTHYLENE	151 J	114	449 J	453 J	17.3 J	19.7 J	0.78 J	0.92 J
ANTHRACENE	1471 J	146	846 J	385 J	28.6	27 J	2.61 J	2.16 J
BENZO(A)ANTHRACENE	2137 J	276	1200 J	1549 J	30.2	27.5	6.13 J	5.73 J
BENZO(A)PYRENE	2729 J	127 J	2041 J	2071 J	23.7	21.8 J	7.31 J	5.47 J
BENZO(B)FLUORANTHENE	2293 J	490 J	1291 J	2442 J	35.7 J	36.5	8.17	7.14
BENZO(E)PYRENE	1370 J	339 J	1243 J	2062	37 J	39.6	4.94 J	5.17 J
BENZO(G,H,I)PERYLENE	1111 J	416 J	1153 J	1713 J	19.6	21.4	3.74 J	3.85 J
BENZO(K)FLUORANTHENE	893 J	160	490 J	417	15.8 J	11.6	4.11 J	3.83 J
BIPHENYL	45.2 J	9.82 J	34.8 J	25.3 J	1.5 J	1.89 J	1.9 J	1.75 J
CHRYSENE	2001 J	320	1280 J	1502	40.3 J	36.6	11.3	9.37 J
DIBENZO(A,H)ANTHRACENE	226 J	94.9 J	196 J	392 J	2.4 J	2.59	0.27 J	0.36 J
DIBENZOTHIOPHENE	210 J	8.83	40.4 J	26.9	1.4 J	1.1 J	0.57 J	0.61 J
FLUORANTHENE	5746 J	369	1825 J	1295 J	57.2	57.2	17.6	16.6
FLUORENE	761 J	21.5	215 J	133	5.6 J	8.34 J	2.78 J	2 J
INDENO(1,2,3-CD)PYRENE	1107 J	362 J	809 J	1371 J	12.9 J	14.1	3.31 J	3.26 J
NAPHTHALENE	247 J	63.9	158 J	168	9.3 J	8.8 J	7.3 J	5.99 J
PERYLENE	468 J	58	354 J	218	13.9 J	13.4 J	3.57 J	4.14 J
PHENANTHRENE	4906 J	164	1101 J	514 J	13.7	15.9	8.36 J	7.3 J
PYRENE	5126 J	349 J	2840 J	2433 J	61.6	66.8	14.2	13.1
Pesticides/PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.02 U	0.28 U	0.04 U	0.26 U	0.22 U	0.38 J	15	13
1,2,4,5-TETRACHLOROBENZENE	0.42 J	1	0.6	1.9 U	0.36 U	2.2 U	0.32 J	0.1 J
2,4'-DDD	11	11	8.9	8.9	4.2	2	0.57 J	0.47 UJ
2,4'-DDE	0.18 J	0.66 J	0.03 J	0.27 J	0.46 J	0.48 U	0.67 U	0.65 U
2,4'-DDT	2	18	1.5	2	1.1	3.5	0.23 J	0.6 U
4,4'-DDD	20	37	11	11	7.7	4.4	0.22 J	0.57 U
4,4'-DDE	3.7	20	4.2	4.4	15	12	3.1	2.6
4,4'-DDT	15	87	12 J	21 J	6.2 J	8.8	0.89 UJ	0.87 UJ
ALDRIN	0.062 U	0.05 U	0.074 U	0.076 U	0.03 J	0.22 J	0.77 U	0.75 U
ALPHA-BHC	0.06 J	0.03 J	0.06 J	0.25 J	0.32	0.66 U	0.55 U	0.53 U
ALPHA-CHLORDANE	2.4	3.1	3.6	3.4	2.2	1.1	0.58 U	0.57 U
BETA-BHC	1.8	0.09 J	1.8 J	0.26 UJ	4.6 U	0.35 U	0.1 J	0.27 J
CHLORPYRIFOS	0.3 U	0.24 U	0.35 U	0.48 U	2.2 U	3.6 U	5 U	4.9 U
CIS-NONACHLOR	0.39	0.37	0.89	1.4	0.78	0.71	0.25 J	0.52 U
DELTA-BHC	0.047 U	0.037 U	0.08 J	0.057 UJ	0.13 U	0.22 U	0.09 J	0.3 U
DIELDRIN	13	32	0.083 UJ	0.28 J	2.3 J	0.59	2.9 J	2.2 J
ENDOSULFAN II	3.2	0.88	5.3 J	0.93 J	0.18 J	0.14 J	0.58 U	0.57 U
ENDRIN	0.36	0.63	0.14 J	0.17 U	0.7 U	1.1 U	1.6 U	1.6 U
GAMMA-BHC (LINDANE)	0.25	0.2 U	0.43 J	0.3 UJ	0.13 J	0.34 U	0.48 U	0.47 U
GAMMA-CHLORDANE	1.7	3.7	2.2	2.9	1.5	0.65	0.25 J	0.6 U
HEPTACHLOR	0.04 J	0.42	0.31	0.22	0.38 U	0.41 J	0.88 U	0.85 U
HEPTACHLOR EPOXIDE	0.031 U	0.02 U	0.037 U	0.038 U	0.27 U	0.44 U	0.24 J	0.6 U
HEXACHLOROBENZENE	0.047 U	0.08	0.055 U	0.04 J	0.2 J	0.55 U	0.51 J	0.07 J
MIREX	0.031 U	0.025 U	0.037 U	0.038 U	0.61 U	1 U	0.33 J	1.4 U
OXYCHLORDANE	0.36	0.04	0.82 J	0.36 J	0.28 U	0.46 U	1.3 J	0.56 J
PCB-101/90	1.1	0.7	1	1.2	7.7	6.2	0.9 J	0.67 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01							
	Sediment				Mussel		Lobster	
Parameters	100A	200A	300A	300A-DUP	200A	300A	100A	100A-DUP
PCB-105	0.64 J	0.52 J	0.48 J	0.25 J	2.9 J	2.6	2	1.3 J
PCB-114	0.19 U	0.15 U	0.22 U	0.23 U	0.94 U	1.5 U	2.1 U	2.1 U
PCB-118	1.3	0.57	1.5	1.9	6.8	5.3	6.8	5.6
PCB-126	0.19 U	0.15 U	0.22 U	0.23 U	0.94 UJ	1.5 U	0.64 J	2.1 UR
PCB-128	0.64	0.26	1.7 J	0.34 J	1.8	1.3	1.2 J	0.88 J
PCB-138/160	2.2	1.3	3	2	12	10 U	5.4 U	5.5 U
PCB-149/123	2.2	1.1	2.6 J	1.4 J	7.2	6.8	2.1 U	0.18 J
PCB-153/132	2.8	0.99	2.7	2.8	16 U	14	7.6 U	8.3 U
PCB-156	2.1	0.64	0.22 UJ	1.7 J	0.94 U	0.56 J	2.1 U	0.31 J
PCB-167	1.4	0.26	9.1	5.5	1.1	0.88 J	0.39 J	0.27 J
PCB-169	0.01 U	0.15 U	0.12 U	0.09 U	0.08 U	0.06 U	2.1 U	0.25 J
PCB-170/190	34 J	14 J	28 J	24 J	0.52 U	0.37 U	1.5 U	1.6 U
PCB-18/17	0.06 J	0.03 J	0.11 U	0.11 U	2.4 U	4 U	5.6 J	5.8
PCB-180	1.3	0.8	1.1	1.4	5.6 U	4.7	2.1 U	3.4 U
PCB-187	1.2	0.43	0.89	0.55	5.5	5.1	2.6 J	4.8 J
PCB-189	0.97	0.32	1.5	1	0.94 U	1.5 U	2.1 U	2.1 U
PCB-195/208	2.1	0.32	1.7 J	0.97 J	0.78 U	1.3 U	0.47 J	0.23 J
PCB-201/157/173	1.29	0.25	1.17 J	1.07	0.38 J	0.06 J	0.33 J	1.6 U
PCB-206	4.6	0.24	1.3	0.17 J	0.81 U	1.3 U	0.47 J	0.18 J
PCB-209	2.3	0.64	2.2	2.6	1.1 U	1.7 U	0.44 J	2.4 U
PCB-28	0.4	0.02 J	0.55	0.75	0.93	0.8 J	0.34 J	1.7 U
PCB-44	0.11 J	0.15	0.37	0.32	0.81 U	0.71 J	0.38 U	1.2 U
PCB-52	0.74	0.74	0.71	1	2.3	1.9	1.3 J	1.4 U
PCB-66	2.4	0.18	1.8	1.1	1.1	0.89 J	0.8 J	0.6 J
PCB-77	0.24 U	0.06 U	0.22 U	0.13 U	0.2 J	0.21 U	2.1 U	2.1 U
PCB-8/5	0.41	0.26 J	0.42 J	0.72 J	1.5	15 U	1.3 J	0.72 J
PCB-81	0.21	0.03 J	0.39	0.25 J	0.94 U	1.5 U	2.1 U	2.1 U
PENTACHLOROANISOLE	0.1 U	0.11 U	0.07 U	0.1 U	0.7 U	2 U	0.47 U	0.33 U
PENTACHLOROBENZENE	0.08 U	0.07 U	0.14 U	0.32 U	0.44 U	1.9 U	0.64 U	0.42 U
TRANS-NONACHLOR	0.73	1.3	0.79	1	1.7	0.92	0.4 J	0.1 J
Metals (mg/kg)								
ALUMINUM	45561	45582	50667	51496	380	319	3.21 U	3.44 U
ARSENIC	10.5	14.4	15.7	15.6	5.46	6.48	4.53 J	3.91 J
CADMIUM	0.24	0.15	0.35	0.31 J	1.74	1.47	0.0427	0.0354
CHROMIUM	56.4	49.5	66.9	92.6	4.19	2.79	0.7	0.55 U
COPPER	35.2	26.1	36.8	58.3 J	29.5 J	8.76	46.1	48.9
IRON	19561	34775	23076	23607 J	896	513	5.09 J	8.87 J
LEAD	62.5	99.5	137	102 J	6.46	6.31 J	0.12 U	0.62
MANGANESE	590	1503	387	600	12.4	10.9	3.19	2.74
MERCURY	0.28	0.0851 U	0.28	0.26	0.27	0.28	0.62	0.68
NICKEL	12.9 J	20.2 J	15.2 J	24.4 J	4.37 U	3.53 U	1.97 U	2.11 U
SILVER	2.3	3.56	2.96	3.84	0.34 U	0.3095 U	0.85 J	0.78 J
ZINC	54.5	61.9	90.8	93 J	106 J	86.3	94.2 J	97.3 J
Miscellaneous Parameters (%)								
% LIPID					4.9	5.3	3.4	2.6
TOTAL ORGANIC CARBON	1.13 J	0.58 J	1.52 J	1.93 J				

Notes:

MS-1 includes the following samples:
OU4-SD-M01-100A
OU4-SD-M01-200A
OU4-SD-M01-300A
OU4-FD-001-000A (duplicate of OU4-SD-M01-300A)
OU4-MU-M01-200A
OU4-MU-M01-300A
OU4-LJ-M01-100A
OU4-LJ-M01-100A-LD

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	200A	300A	100A
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	1.93	10.8	4.36	2.04 J	2.5 J	2.8 J	0.74 J
1-METHYLNAPHTHALENE	3.42 J	25.1 J	9.67 J	2.87 J	5.1 J	4.7 J	2.37 J
1-METHYLPHENANTHRENE	6.71	28	26.2	1.46 J	4.6 J	5	0.85 J
2,6-DIMETHYLNAPHTHALENE	2.72	17.8	6	2.23 J	3.1 J	3.3 J	0.9 J
2-METHYLNAPHTHALENE	4.86 J	49.2 J	12.7 J	4.81 J	7 J	6.2 J	3.87 J
ACENAPHTHENE	2.38 J	15.8 J	14.8 J	1.67 J	9.9 J	8.6 J	1.21 J
ACENAPHTHYLENE	12.7	79.2	45.8	7.87 J	13.7 J	14.2 J	0.64 J
ANTHRACENE	21.9	110	82.7	15.6 J	23.5	25.1	1.26 J
BENZO(A)ANTHRACENE	32.6	265	159	10.2	18.1	15.9	7.86 J
BENZO(A)PYRENE	46 J	98.5 J	52.5 J	4.89 J	14.1	11	11.3
BENZO(B)FLUORANTHENE	63.4 J	393 J	240 J	18.7	24.8 J	24.8 J	13.5
BENZO(E)PYRENE	33.3 J	225	119	17.6	27.5 J	24.3 J	9.37
BENZO(G,H,I)PERYLENE	33 J	257 J	114 J	7.15	13.2	11.9	5.28 J
BENZO(K)FLUORANTHENE	17.8	125	85	7.78	11.9 J	9.2 J	6.2 J
BIPHENYL	1.38 J	7.16 J	3.5 J	1.59 J	1.9 J	2.4 J	1.29 J
CHRYSENE	36.7	298	163	14.9	31.7 J	27.2 J	16.4
DIBENZO(A,H)ANTHRACENE	7 J	57.6 J	28.4 J	0.31 J	1.1 J	1.1 J	0.45 J
DIBENZOTHIOPHENE	1.93	13.9	7.54	0.58 J	1.2 J	0.9 J	0.42 J
FLUORANTHENE	52.7	345	255	25.1	50.3	43.7	15.7
FLUORENE	4.85	33.1	22.3	3.2 J	5.5 J	6 J	1.62 J
INDENO(1,2,3-CD)PYRENE	33.5	247	121	4.74	8.1 J	5.8 J	8.54 J
NAPHTHALENE	7.43	60.5 J	19.8	5.17 J	10.9 J	5.4 J	5.25 J
PERYLENE	19.9	69.4	43.7	8.05 J	13 J	8.5 J	5.13 J
PHENANTHRENE	24.8	192	125	5.45 J	15.4	11.9	3.83 J
PYRENE	51.8 U	322 J	209 J	27.2	44	42.7	14.2
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.04 U	0.19 U	0.75	0.46	0.22 U	0.28 U	11
1,2,4,5-TETRACHLOROBENZENE	0.09 U	0.34 U	1.7	2.4 U	0.37 U	1.1 U	0.19 J
2,4'-DDD	0.22	2.4	1.5	0.88	2.3	2.9	0.43 U
2,4'-DDE	0.079 U	0.09 J	0.15 U	0.44 U	0.24 J	0.25 J	0.6 U
2,4'-DDT	0.32	3.2	0.1	1.6	1.8	2.1	0.56 U
4,4'-DDD	0.36	4.6	3.6	1.4	4.5	2.5	0.53 U
4,4'-DDE	0.29	4.5	4.6	4.1	9.9	11	3.1
4,4'-DDT	1.6	24	0.76	0.86	2.4 J	2.2 J	0.8 U
ALDRIN	0.057 U	0.053 U	0.11 U	0.18 J	0.13 J	0.4 U	0.7 U
ALPHA-BHC	0.03 J	0.04 J	0.03 J	0.27 U	0.21 J	0.24 J	0.49 U
ALPHA-CHLORDANE	0.065 U	0.4	0.08 J	0.55	1.3	1.2	0.53 U
BETA-BHC	1.1	0.37	1.1	0.88	1.1 U	3 U	0.45 U
CHLORPYRIFOS	0.27 U	0.25 U	0.53 U	3.3 U	2.6 U	2.6 U	4.5 U
CIS-NONACHLOR	0.03 J	0.14	0.42	0.63	1.2	1	0.48 U
DELTA-BHC	0.043 U	0.04 U	0.084 U	0.2 U	0.16 U	0.16 U	0.28 U
DIELDRIN	0.065 U	2.6	0.13 U	0.36 J	0.9 J	0.75 J	2 J
ENDOSULFAN II	0.09	1	0.58	0.19 J	0.26 J	0.12 J	0.53 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	200A	300A	100A
ENDRIN	0.13 U	0.12 U	0.25 U	1.1 U	0.82 U	0.82 U	1.4 U
GAMMA-BHC (LINDANE)	0.23 U	0.09 J	0.45 U	0.1 J	0.12 J	0.12 J	0.43 U
GAMMA-CHLORDANE	0.06 J	0.18	0.19	0.2 J	0.35	0.4	0.56 U
HEPTACHLOR	0.17 U	0.15 U	0.32 U	0.28 J	0.45 U	0.45 U	0.79 U
HEPTACHLOR EPOXIDE	0.029 U	0.027 U	0.056 U	0.41 U	0.32 U	0.32 U	0.56 U
HEXACHLOROBENZENE	0.02 J	0.04 J	0.12	0.38 J	0.19 J	0.16 J	0.24 J
MIREX	0.029 U	0.027 U	0.056 U	0.93 U	0.73 U	0.72 U	1.3 U
OXYCHLORDANE	0.014 U	0.02	0.028 U	0.43 U	0.34 U	0.33 U	0.62
PCB-101/90	0.27	0.85	2.1	5.8	8.3	7.4	0.7 J
PCB-105	0.15 J	0.49 J	1.2 J	2.1	2.9 J	3.4 J	0.81 J
PCB-114	0.17 U	0.16 U	0.34 U	1.4 U	1.1 U	1.1 U	1.9 U
PCB-118	0.16	0.76	1.6	4.5	8	6.6	3.2
PCB-126	0.17 U	0.16 U	0.34 U	1.4 U	1.1 UJ	1.1 UJ	1.9 U
PCB-128	0.05	0.25	0.97	1.1	2.1	2	0.63 J
PCB-138/160	0.44	1.5	1.9	8.7 U	14	13	3.7
PCB-149/123	0.22	1.1	3.	5.5	7.8	7.6	0.11 J
PCB-153/132	0.42	1.4	2.8	12	19	16 U	5.4 U
PCB-156	0.11 J	0.53	0.5	0.26 J	1.1 U	0.94 J	1.9 U
PCB-167	0.2	1.3	1.9	0.53 J	1.1	1 J	1.9 U
PCB-169	0.02 U	0.01 U	0.04 U	0.09 U	0.15 U	1.1 U	0.32 J
PCB-170/190	2.4 J	11 J	8.6 J	0.4 U	0.37 U	0.31 U	1.1 U
PCB-18/17	0.06 J	0.08 J	0.17	3.7 U	0.57 J	0.51 J	3.8 J
PCB-180	0.29	0.56	1.7	3.7	5.7 U	5.5 U	1.6 U
PCB-187	0.17	0.47	0.61	4.3	6.5	5.9	1.6
PCB-189	0.04 J	0.33	0.12 J	1.4 U	1.1 U	1.1 U	1.9 U
PCB-195/208	0.07	0.2	0.38	1.2 U	0.92 U	0.92 U	0.16 J
PCB-201/157/173	0.01 J	0.2	0.17	1.1 U	0.47 J	0.29 J	1.5 U
PCB-206	0.08 J	0.23	0.41	1.2 U	0.96 U	0.95 U	0.17 J
PCB-209	0.15	0.42	0.3	1.6 U	1.2 U	1.2 U	2.2 U
PCB-28	0.13 J	0.21	0.2 J	0.82 J	0.98	1	0.14 J
PCB-44	0.06 J	0.17	0.59	0.58 J	1 U	0.82 U	0.1 U
PCB-52	0.34	0.63	0.73	2.3	2.6	1.8 U	0.14 J
PCB-66	0.04 J	0.42	0.42	0.67 J	1.5	0.95 J	0.6 J
PCB-77	0.01 U	0.05 U	0.04 U	0.23 U	0.07 J	1.4	0.29 U
PCB-8/5	0.29 J	0.29 J	0.48 J	18 U	2.3	4.4	0.43 J
PCB-81	0.17 U	0.01 J	0.01 J	1.4 U	1.1 U	1.1 U	1.9 U
PENTACHLOROANISOLE	0.03 U	0.03 U	0.08 U	2.1 U	0.85 U	1.3 U	0.24 U
PENTACHLOROBENZENE	0.08 U	0.09 U	0.31 U	1.7 U	0.61 U	0.65 U	0.44 U
TRANS-NONACHLOR	0.02 J	0.22	0.24	0.58	0.95	1	0.1 J
Metals (mg/kg)							
ALUMINUM	59723	51651	53293	196	277	718	3.28 U
ARSENIC	14.4	13.6	17.7	6.09	5.79	6.3	4.01 J
CADMIUM	0.0984	0.3	0.41	1.55	1.81	1.66	0.0338
CHROMIUM	58.3	72.9	135	2.31	3.68	8.82	0.59

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02						
	Sediment			Mussel			Lobster
Parameters	**100A**	**200A**	**300A**	**100A**	**200A**	**300A**	**100A**
COPPER	39.2	68.2	36.9	25.2	6.69 J	13.6 J	43.7
IRON	31319	26704	23473	313	602	1210	8.77 J
LEAD	35.9	146	87.9	5.53 J	5.25	5.28	0.12 U
MANGANESE	780	437	333	10.3	9.11	16.6	2.49
MERCURY	0.0962 U	1.06	0.31	0.29	0.35	0.21	0.66
NICKEL	22.8 J	28.2 J	24.1 J	2.23 U	3.15 U	9.09	2.01 U
SILVER	3.46	3.27	4.07	0.37 U	0.32 U	0.29 U	0.86 J
ZINC	63.7	84.6	89.6	101	91.4 J	95.7 J	86.7 J
Miscellaneous Parameters (%)							
% LIPID				3.2	4.7	5.7	2.9
TOTAL ORGANIC CARBON	0.41 J	2.72 J	3.99 J				

Notes:

MS-2 includes the following samples:

OU4-SD-M02-100A
OU4-SD-M02-200A
OU4-SD-M02-300A
OU4-MU-M02-100A
OU4-MU-M02-200A
OU4-MU-M02-300A
OU4-LJ-M02-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03					
	Sediment			Mussel		Lobster
Parameters	100A	200A	300A	100A	200A	100A
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	10.7	6.61	10.5	1.59 J	2.25 J	1.05 J
1-METHYLNAPHTHALENE	27.1 J	16.8 J	27.3 J	2.59 J	2.96 J	3.39 J
1-METHYLPHENANTHRENE	41.3	33.7	59	1.99 J	2.05 J	0.89 J
2,6-DIMETHYLNAPHTHALENE	16.8	13.1	13.5	2.24 J	3.23 J	0.98 J
2-METHYLNAPHTHALENE	42.1 J	32.6 J	38.1 J	5.03	5.53	5.42 J
ACENAPHTHENE	46.3 J	22.1 J	65.3 J	3.48 J	4.51 J	1.21 J
ACENAPHTHYLENE	153	63.2	62	8.54 J	10.4 J	0.87 J
ANTHRACENE	274 J	126 J	182 J	16.8 J	21 J	1.67 J
BENZO(A)ANTHRACENE	408	273	298	12.8	15.6	3.29 J
BENZO(A)PYRENE	96.9 J	228 J	142 J	9.93 J	9.77 J	3.53 J
BENZO(B)FLUORANTHENE	814	536	445	21.4	27.1	6.15
BENZO(E)PYRENE	420	297	214	18.4	21.1	5.3 J
BENZO(G,H,I)PERYLENE	386 J	338 J	210 J	10 J	11.8 J	3.57 J
BENZO(K)FLUORANTHENE	214	162	127	8.22	10.4	3.45 J
BIPHENYL	8.71 J	6.48 J	7.58 J	1.62 J	1.12 J	1.47 J
CHRYSENE	611	304	272	21.6	23.9	9.39
DIBENZO(A,H)ANTHRACENE	94.4 J	77.4 J	56 J	1.83 J	1.74 J	0.16 J
DIBENZOTHIOPHENE	20.4	12.3	17.6	0.64 J	0.67 J	0.38 J
FLUORANTHENE	1089 J	468 J	591 J	35.7	44.2	12.5
FLUORENE	62 J	33.5 J	73.1 J	3.33 J	3.83 J	1.96 J
INDENO(1,2,3-CD)PYRENE	454 J	370 J	228 J	8.18 J	9.51 J	2.4 J
NAPHTHALENE	63	37.2	82.7	4.93 J	5.07 J	7.21 J
PERYLENE	122	91	102	6.61	8.4	3.14 J
PHENANTHRENE	343	196	336	10.2	10.5	3.38 J
PYRENE	1023	491	550	30.3	37.2	11.2
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.44 U	0.2 U	0.14 U	0.23 J	0.38	13
1,2,4,5-TETRACHLOROBENZENE	3 U	1.2 U	1.1 U	1.9 U	1.1 U	0.19 J
2,4'-DDD	11	1.9	2	1.2	1.1	0.4 U
2,4'-DDE	0.23	0.1	0.096 U	0.37 U	0.31 U	0.55 U
2,4'-DDT	1.1	0.75	0.13	2.8	2	0.51 U
4,4'-DDD	24	3.7	1.5	3.5	2.3	0.48 U
4,4'-DDE	6.9	1.9	0.93	4.2	4.4	2.4
4,4'-DDT	4	1.7	0.66	2.7	1.6	0.74 UJ
ALDRIN	0.05 J	0.01 J	0.02 J	0.43 U	0.36 U	0.64 U
ALPHA-BHC	0.18	0.1	0.04 J	0.41 U	0.33 U	0.45 U
ALPHA-CHLORDANE	0.66	0.98	0.22	0.7	0.83	0.48 U
BETA-BHC	1.3	0.18 U	0.24 U	7.9	7.2	0.61
CHLORPYRIFOS	1.2 U	3.2 U	0.31 U	2.8 U	2.3 U	4.2 U
CIS-NONACHLOR	0.97	0.41	0.21	1.1	0.65	0.44 U
DELTA-BHC	0.07 J	0.039 U	0.03 J	0.17 U	0.14 U	0.26 U
DIELDRIN	2.6	1	0.1	0.35	0.36	1.8 J
ENDOSULFAN II	1.2	0.68	1.2	0.32 U	0.41	0.48 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03					
	Sediment			Mussel		Lobster
Parameters	100A	200A	300A	100A	200A	100A
ENDRIN	0.21 U	0.12 U	0.16 U	0.88 U	0.74 U	1.3 U
GAMMA-BHC (LINDANE)	0.38 U	0.21 U	0.28 U	0.03 J	0.08 J	0.4 U
GAMMA-CHLORDANE	0.11 U	0.059 U	0.078 U	0.26 J	0.24 J	0.51 U
HEPTACHLOR	0.97	0.37	0.2 U	0.48 U	0.4 U	0.72 U
HEPTACHLOR EPOXIDE	0.047 U	0.026 U	0.035 U	0.34 U	0.28 U	0.51 U
HEXACHLOROBENZENE	8.5	0.05	0.052 U	0.3 J	0.19 J	0.18 J
MIREX	0.047 U	0.026 U	0.035 U	0.78 U	0.65 U	1.2 U
OXYCHLORDANE	0.04	0.013 U	0.07	0.36 U	0.3 U	0.78
PCB-101/90	10	5.5	2.4	14	8.4	0.74 J
PCB-105	4.9	2.7	1.3	6.9	4.4	0.57 J
PCB-114	0.28 U	0.16 U	0.21 U	1.2 U	0.99 U	1.8 U
PCB-118	2.6	1.8	2.2	5.7	6.1	2.7
PCB-126	3.9	0.16 U	0.21 U	1.2 U	0.99 U	1.8 UR
PCB-128	2.9	1.3	0.94	2.7	1.5	0.53 J
PCB-138/160	26	10	5.1	35 U	16 U	3.3 U
PCB-149/123	20	8.2	2.3	28	11	0.11 J
PCB-153/132	30	12	4	52	22	4.9 U
PCB-156	4.1	1.5	0.92	1.2 U	0.87 J	1.8 U
PCB-167	1.6	0.62	0.23	2.2	0.42 J	1.8 U
PCB-169	0.23 U	0.04 U	0.06 U	0.07 U	0.99 U	0.42 J
PCB-170/190	6.1 J	2.6 J	1.1 J	1.8 U	1.1 U	0.7 U
PCB-18/17	0.86	0.078 U	0.65	3.1 U	2.6 U	1.1 J
PCB-180	26	10	3.1	12	7.9	1.5 U
PCB-187	19	11	1.6	22	14	1.6
PCB-189	0.93	0.33	0.23	0.33 J	0.09 J	1.8 U
PCB-195/208	4.9	2.6	0.55	0.99 U	0.12 J	0.15 J
PCB-201/157/173	2.89	1.11	0.32	1	1.1	1.4 U
PCB-206	4.5	3.5	0.69	1 U	0.23 J	0.15 J
PCB-209	2.5	1.2	0.83	1.3 U	1.1 U	2 U
PCB-28	0.96	0.43	0.57	1.2	0.97	0.1 J
PCB-44	0.67	0.23	0.47	0.65 J	0.62	0.09 U
PCB-52	0.21 U	2	1.6	4.3	2.8	0.44 J
PCB-66	2.1	0.47	0.48	0.42 J	0.59 J	0.43 J
PCB-77	0.14 J	0.16 U	0.06 J	1.2 U	0.21 U	1.8 U
PCB-8/5	0.52 U	0.12 J	0.38 U	10 U	2.5 U	0.35 J
PCB-81	1.8	1.5	0.11 U	1.2 U	0.99 U	1.8 U
PENTACHLOROANISOLE	0.16 U	0.16 U	0.11 U	1.8 U	0.62 U	0.3 U
PENTACHLOROBENZENE	0.24 U	0.12 U	0.087 U	1.8 U	0.5 U	0.39 U
TRANS-NONACHLOR	0.27	0.12	0.06	0.49	0.61	0.31 U
Metals (mg/kg)						
ALUMINUM	60547	39791	51612	266	296	3.23 U
ARSENIC	19.9	19.9	11.5	5.41	6.09	3.45 J
CADMIUM	0.66	0.64	0.45	1.91	2.16	0.0237
CHROMIUM	110	125	57.6	3.67	5.34	0.77

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03					
	Sediment			Mussel		Lobster
Parameters	**100A**	**200A**	**300A**	**100A**	**200A**	**100A**
COPPER	186 J	1902 J	27.2 J	28.9	101	61
IRON	35582 J	44337 J	19576 J	866	1106	10.9 J
LEAD	164	292	51.5	20.9 J	21.2 J	0.31 U
MANGANESE	354	446	331	11.1	11.9	5.18
MERCURY	0.52	0.52	0.17	0.53	0.35	0.55
NICKEL	39.4 J	102 J	14.5 J	8.32	7.86	3.87 U
SILVER	4.56 J	3.77 J	3.34 J	0.42 J	0.36 J	1.34 J
ZINC	196 J	647 J	63.7 J	170	284	90.5 J
Miscellaneous Parameters (%)						
% LIPID				3.1	3.5	2.8
TOTAL ORGANIC CARBON	2.5 J	0.64 J	1.31 J			

Notes:

MS-3 includes the following samples:

OU4-SD-M03-100A
OU4-SD-M03-200A
OU4-SD-M03-300A
OU4-MU-M03-100A
OU4-MU-M03-200A
OU4-LJ-M03-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04				
	Sediment			Mussel	Lobster
Parameters	100A	200A	300A	100A	100A
Polyaromatic Hydrocarbons (ug/kg)					
1,6,7-TRIMETHYLNAPHTHALENE	21.4	10.1	1.73	1.74 J	1.17 J
1-METHYLNAPHTHALENE	48.7 J	15.2 J	3 J	2.51 J	1.81 J
1-METHYLPHENANTHRENE	148	26.6	9.88	2.04 J	1.87 J
2,6-DIMETHYLNAPHTHALENE	38	12.8	2.33	2.73 J	1.3 J
2-METHYLNAPHTHALENE	90.6 J	23.6 J	4.95 J	4.86	2.6 J
ACENAPHTHENE	77.4 J	18	2.53	4.11 J	1.89 J
ACENAPHTHYLENE	216	78.1	17.8	10.9 J	0.59 J
ANTHRACENE	621 J	123 J	28.5 J	20.4 J	4.93 J
BENZO(A)ANTHRACENE	1430	236	181	11.2	10.1 J
BENZO(A)PYRENE	1874 J	131 J	32.9 J	8.09 J	11.3
BENZO(B)FLUORANTHENE	2182	386	284	18.3	13.6
BENZO(E)PYRENE	1054	201	146	17.1	12.1
BENZO(G,H,I)PERYLENE	1047 J	209	149	10.2 J	6.23
BENZO(K)FLUORANTHENE	686	103	94.4	6.66	6.06 J
BIPHENYL	13.3 J	5.67 J	1.41 J	1.23 J	1.88 J
CHRYSENE	1251	243	196	16.4	17
DIBENZO(A,H)ANTHRACENE	334 J	53.4	40.8	1.45 J	0.98 J
DIBENZOTHIOPHENE	47.7	12.7	2.49	0.57 J	0.64 J
FLUORANTHENE	2632 J	415	339	31.3	21.1
FLUORENE	137 J	32.2	5.04	3.7 J	3.11 J
INDENO(1,2,3-CD)PYRENE	277 J	228	170	7.54	6.37
NAPHTHALENE	129	37.1	6.87	5.14 J	3.84 J
PERYLENE	154	93.1	54.2	7.64	6.59
PHENANTHRENE	1030	179	55.1	8.41	9.93 J
PYRENE	2009	394	318	28.8	19.4
Pesticides/PCBs (ug/kg)					
1,2,3,4-TETRACHLOROBENZENE	0.49 U	0.12 U	0.35 U	0.38	10
1,2,4,5-TETRACHLOROBENZENE	1.2 U	1.3 U	0.86 U	2	0.79 J
2,4'-DDD	9.5	1.4	12	1.5	0.45 U
2,4'-DDE	0.81	0.15	1.9	0.4 U	0.63 U
2,4'-DDT	23	0.05	18	1.1	0.58 U
4,4'-DDD	30	1.3	41	3	0.55 U
4,4'-DDE	20	1.1	114	5.5	3.7
4,4'-DDT	104	0.74	77	2	0.84 UJ
ALDRIN	0.055 U	0.05 J	0.049 U	0.46 U	0.73 U
ALPHA-BHC	0.12	0.14	0.05 J	0.26 J	0.52 U
ALPHA-CHLORDANE	1.2	0.42	0.24	0.68	0.55 U
BETA-BHC	0.19 U	0.29 U	0.17 U	1.3	0.1 J
CHLORPYRIFOS	0.59 U	1.8 U	0.37 U	3 U	4.8 U
CIS-NONACHLOR	0.41	0.23	1.1	0.72	0.5 U
DELTA-BHC	0.042 U	0.09	0.05	0.18 U	0.29 U
DIELDRIN	4.2	0.04 J	0.2	0.37	1.7 J
ENDOSULFAN II	2.2	0.69	0.37	0.54	0.12 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04				
	Sediment			Mussel	Lobster
Parameters	100A	200A	300A	100A	100A
ENDRIN	0.12 U	0.19 U	0.11 U	0.95 U	1.5 U
GAMMA-BHC (LINDANE)	0.22 U	0.35	0.07 J	0.14 J	0.45 U
GAMMA-CHLORDANE	0.062 U	0.096 U	0.055 U	0.28 J	0.58 U
HEPTACHLOR	0.63	0.25 U	0.14 U	0.52 U	0.83 U
HEPTACHLOR EPOXIDE	0.028 U	0.043 U	0.025 U	0.37 U	0.58 U
HEXACHLOROBENZENE	0.12	0.16	0.05	0.05 J	0.2 J
MIREX	0.16	0.043 U	0.06	0.84 U	1.3 U
OXYCHLORDANE	0.08	0.07	0.03	0.39 U	0.56 J
PCB-101/90	5.6	1.3	0.99	9.9	1.7 J
PCB-105	0.71 J	0.44 J	0.48 J	3.8	0.9 J
PCB-114	0.17 U	0.26 U	0.15 U	1.3 U	2 U
PCB-118	2	1.7	0.45	6.6	4.3
PCB-126	6.5	0.26 U	0.34 J	1.3 U	2 UR
PCB-128	1.7	0.55	1.1	1.7	0.76 J
PCB-138/160	19	3	7.7	19	6.2 U
PCB-149/123	6.3	1.2	4.9	14	0.71 J
PCB-153/132	11	2.9	9.7	28	8.9 U
PCB-156	1.5	0.59	0.92	0.94 J	2 U
PCB-167	0.77	0.21 J	0.49	0.49 J	2 U
PCB-169	0.03 U	0.17 U	0.07 U	1.3 U	2 U
PCB-170/190	2.3 J	0.98 J	3.9 J	1.3	1.6 U
PCB-18/17	0.083 U	1.1	0.074 U	3.3 U	2.1 J
PCB-180	11	2.2	9.1	7.9	3.6 U
PCB-187	11	1.2	5.4	14	4.5
PCB-189	0.45	0.29	0.42	0.12 J	2 U
PCB-195/208	5.1	0.48	1.5	1.1 U	0.32 J
PCB-201/157/173	1.34	0.44	0.68	1.4	1.6 U
PCB-206	8.9	0.59	1.7	1.1 U	0.36 J
PCB-209	11	0.8	0.74	1.4 U	2.3 U
PCB-28	0.21 U	0.53 U	0.28 U	1.3	0.16 J
PCB-44	0.11 J	0.49	0.14	0.85	0.12 U
PCB-52	5.4	1.6	0.43	5.6	0.92 J
PCB-66	0.12 U	0.22	0.06 J	1 J	0.77 J
PCB-77	0.15 J	0.06 J	0.03 J	1.3 U	0.52 U
PCB-8/5	0.31 U	0.4 J	0.32	7.5	3.3 U
PCB-81	3.6	0.26 U	0.14 U	1.3 U	2 U
PENTACHLOROANISOLE	0.2 U	0.12 U	0.07 U	1.7	0.28 U
PENTACHLOROBENZENE	0.2 U	0.24 U	0.1 U	2	0.28 U
TRANS-NONACHLOR	0.06	0.05 J	0.16	0.77	0.36 U
Metals (mg/kg)					
ALUMINUM	36081	56241	44541	507	5.95 U
ARSENIC	27.6	14.3	17.9	7.6	3 J
CADMIUM	0.91	0.56	0.13	1.81	0.0209
CHROMIUM	107	67.6	56.6	4.62	0.82

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04				
	Sediment			Mussel	Lobster
Parameters	**100A**	**200A**	**300A**	**100A**	**100A**
COPPER	20507 J	33.1 J	118 J	25.7	38.8
IRON	89742 J	23080 J	24920 J	1057	17.2 J
LEAD	788	58.2	123	11.4 J	0.14 U
MANGANESE	665	313	556	13.3	4.62
MERCURY	2.41	0.38	0.1749 U	0.44	0.63
NICKEL	197 J	16.6 J	25.1 J	4.95 U	3.25 U
SILVER	8.11 J	3.13 J	3.19 J	0.5 J	1.14 J
ZINC	2633 J	63.4 J	42.1 J	150	81 J
Miscellaneous Parameters (%)					
% LIPID				2.8	2.4
TOTAL ORGANIC CARBON	1.84 J	1.83 J	0.62 J		

Notes:

MS-4 includes the following samples:

OU4-SD-M04-100A
OU4-SD-M04-200A
OU4-SD-M04-300A
OU4-MU-M04-100A
OU4-LJ-M04-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05						
	Sediment				Mussel		Lobster
Parameters	100A	100A-DUP	200A	300A	100A	300A	100A
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	6.47 J	13.4 J	12.7	8.31	1.79 J	1.78 J	1.1 J
1-METHYLNAPHTHALENE	12.7 J	25.4 J	26.4 J	15.8 J	2.96 J	3.4 J	2.05 J
1-METHYLPHENANTHRENE	22.5	36.3	48.8	29.1	4.68	1.91 J	1.33 J
2,6-DIMETHYLNAPHTHALENE	8.44 J	15.9 J	15.4	9.63	2.55 J	2.68 J	1.06 J
2-METHYLNAPHTHALENE	19.7 J	38.2 J	37.7 J	21.2 J	5.08	6.41	3.32 J
ACENAPHTHENE	13.9 J	26.5 J	17.1	16.1	7.63 J	5.27 J	1.36 J
ACENAPHTHYLENE	46.2 J	107 J	103	70.9	12.8 J	8.32 J	0.56 J
ANTHRACENE	62.9 J	175 J	173 J	99.3 J	34.3 J	16.1 J	1.73 J
BENZO(A)ANTHRACENE	181 J	365 J	315	242	74.1	8.39	4.31 J
BENZO(A)PYRENE	209 J	106 J	149 J	202 J	82.2 J	6.39 J	7.1 J
BENZO(B)FLUORANTHENE	303 J	574 J	493	343	103	14.1	7.53
BENZO(E)PYRENE	173 J	290 J	264	183	59.2	13.9	8.45
BENZO(G,H,I)PERYLENE	156 J	285 J	267	194	52.9 J	8.23 J	6.03
BENZO(K)FLUORANTHENE	113 J	209 J	162	129	46.3	5.68	4.46 J
BIPHENYL	5.01 J	8.19	7.33 J	4.35 J	1.38 J	1.56 J	1.46 J
CHRYSENE	140 J	377 J	306	228	78.7	14.8	12.8
DIBENZO(A,H)ANTHRACENE	33.7 J	73.7 J	64.9	51.1	10.6	1.13 J	0.04 J
DIBENZOTHIOPHENE	8.37 J	17.5 J	14.1	11	1.69 J	0.57 J	0.67 J
FLUORANTHENE	351 J	731 J	544	403	147	25.8	15.4
FLUORENE	18.7 J	42.8 J	41 J	31 J	6.97 J	3.33 J	1.78 J
INDENO(1,2,3-CD)PYRENE	158 J	326 J	289	211	56.6	5.73	5.42
NAPHTHALENE	40.2	57.4	55.7	32.8	5.5 J	5.8 J	4.25 J
PERYLENE	54.4 J	137 J	114	75.7	25.9	6.08	5.58 J
PHENANTHRENE	145 J	294 J	203	179	40.3	7.51	3.87 J
PYRENE	311 J	667 J	512	398	117	22.2	10.8
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.09 U	0.46 U	0.07 U	0.07 U	0.51	1.1	7.9
1,2,4,5-TETRACHLOROBENZENE	1.2 U	1 U	1.5 U	0.57 U	1.8	3	0.2 J
2,4'-DDD	1.3 J	2.6 J	1.5	1.3	2	1.1	0.48 U
2,4'-DDE	0.14 J	0.46 J	0.31	0.06 J	0.32 U	0.35 U	0.66 U
2,4'-DDT	0.08 J	0.18 J	0.04	0.13	2.5	0.86	0.61 U
4,4'-DDD	1.3 J	2.2 J	1.6	1.3	2.7	2.1	0.58 U
4,4'-DDE	1.2 J	2.3 J	1	1.1	4.6	4.7	5
4,4'-DDT	1.3 J	0.71 J	0.88	0.53	2.7	1.1	0.88 UJ
ALDRIN	0.02 J	0.05 J	0.05 J	0.01 J	0.37 U	0.41 U	0.77 U
ALPHA-BHC	0.06 J	0.17 J	0.14	0.05 J	0.36	0.28 J	0.54 U
ALPHA-CHLORDANE	0.19 J	0.41 J	0.33	0.22	0.93	0.72	0.58 U
BETA-BHC	0.34 U	0.34 U	0.36 U	0.19 U	6.9	0.64	0.22 J
CHLORPYRIFOS	1.4 U	0.48 U	1.5 U	0.62 U	2.4 U	2.7 U	5 U
CIS-NONACHLOR	0.29	0.32	0.17	0.1	0.82	0.63	0.53 U
DELTA-BHC	0.04 J	0.075 U	0.079 U	0.02 J	0.15 U	0.16 U	0.31 U
DIELDRIN	0.06 J	0.1 J	0.04 J	0.03 J	0.38	0.41	2.2 J
ENDOSULFAN II	0.62	0.65	0.95	0.42	0.28 J	0.2 J	0.58 U
ENDRIN	0.23 U	0.23 U	0.24 U	0.13 U	0.76 U	0.85 U	1.6 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05						
	Sediment				Mussel		Lobster
Parameters	100A	100A-DUP	200A	300A	100A	300A	100A
GAMMA-BHC (LINDANE)	0.14 J	0.4 U	0.42 U	0.23 U	0.14 J	0.09 J	0.48 U
GAMMA-CHLORDANE	0.11 U	0.09 J	0.12 U	0.064 U	0.27 J	0.21 J	0.61 U
HEPTACHLOR	0.29 UJ	0.48 J	0.3 U	0.16 U	0.41 U	0.46 U	0.87 U
HEPTACHLOR EPOXIDE	0.051 U	0.05 U	0.053 U	0.028 U	0.29 U	0.33 U	0.61 U
HEXACHLOROBENZENE	0.076 U	0.075 U	0.24	0.042 U	0.22 J	0.14 J	0.3 J
MIREX	0.051 U	0.05 U	0.053 U	0.028 U	0.67 U	0.75 U	1.4 U
OXYCHLORDANE	0.02 J	0.08 J	0.14	0.03	0.31 U	0.35 U	0.7
PCB-101/90	0.99 J	2.1 J	1.6	0.49	7	6.6	1.4 J
PCB-105	0.38 J	0.71 J	0.67 J	0.22 J	3.1	2.3	1.8
PCB-114	0.3 U	0.3 UJ	0.32 U	0.17 U	1 U	1.1 U	2.1 U
PCB-118	0.99 J	1.7	1.6	0.48	5.5	4.4	7.3
PCB-126	0.15 U	0.3 U	0.32 U	0.17 U	1 U	1.1 U	2.1 UR
PCB-128	0.37 J	0.69 J	0.58	0.09	1.5	1.2	1.4 J
PCB-138/160	1.5 J	2.5 J	2.5	1.2	11	11	8
PCB-149/123	0.73 J	1.7 J	1.2	0.78	6.1	6.5	0.29 J
PCB-153/132	1.5 J	3.3 J	2.4	1.2	13	14	11 U
PCB-156	0.41	0.34	0.57	0.28	0.55 J	0.58 J	2.1 U
PCB-167	0.13 J	1.7 J	0.23 J	0.02 J	0.94 J	0.8 J	0.48 J
PCB-169	0.4 J	0.3 U	0.32 U	0.02 U	0.34 J	0.08 J	0.1 J
PCB-170/190	0.68 J	1.7 UJ	1.1 J	0.97 U	0.43 J	0.5 J	1.6 U
PCB-18/17	0.15 UJ	1 J	0.59	0.085 U	2.7 U	3 U	6.2
PCB-180	0.78	1.1	1.9	0.6	5.1	6.8	3.5 U
PCB-187	0.44 J	0.92 J	1.1	0.58	6.9	9.6	3.8
PCB-189	0.26 J	0.41	0.37	0.05 J	1 U	1.1 U	2.1 U
PCB-195/208	0.28 J	0.49 J	0.47	0.23	0.05 J	0.21 J	0.32 J
PCB-201/157/173	0.3	0.21	0.48	0.21	0.29 J	0.11 J	1.6 U
PCB-206	0.28 J	0.58 J	0.39	0.24	0.88 U	0.98 U	0.3 J
PCB-209	0.41 J	1.1 J	0.82	0.59	1.1 U	1.3 U	2.4 U
PCB-28	0.51 U	0.85 J	0.49 U	0.45	1.2	1.1	0.28 J
PCB-44	0.27	0.2 J	0.66	0.1 J	0.7	0.71	1.2 U
PCB-52	0.6 J	1.1 J	0.95	0.32	2.9	2.9	0.81 J
PCB-66	0.19 J	0.44 J	0.36	0.08 J	0.61 J	0.9 J	1.2 J
PCB-77	0.04 J	0.12 J	0.02 J	0.03 J	0.63 J	0.86 J	0.31 U
PCB-8/5	0.16 J	0.9 J	0.95	0.07 J	3.7	4.5	0.57 J
PCB-81	0.3 U	0.03 U	0.32 U	0.07 U	1 U	0.13 J	2.1 U
PENTACHLOROANISOLE	0.1 U	0.18 U	0.19 U	0.03 U	0.58	1.1	0.19 U
PENTACHLOROBENZENE	0.22 U	0.24 U	0.22 U	0.06 U	1	1.8	0.31 U
TRANS-NONACHLOR	0.13 J	0.54 J	0.14	0.01 J	0.7	0.74	0.18 J
Metals (mg/kg)							
ALUMINUM	62766	58894	60457	57212	641	269	4.52 U
ARSENIC	18.3	18.9	14	14.1	6.56	5.95	4.89 J
CADMIUM	0.59	0.57	0.63	0.56	2.85	1.75	0.04
CHROMIUM	97.7	92.5	88.8	87.6	6.9	2.74	0.72 U
COPPER	65 J	57.3	33 J	31.4 J	20.4	6.09	52.5
IRON	33256 J	30611	30228 J	28333 J	1027	612	9.55 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05						
	Sediment				Mussel		Lobster
Parameters	**100A**	**100A-DUP**	**200A**	**300A**	**100A**	**300A**	**100A**
LEAD	116	118	66.6	65	103 J	5.75 J	0.22 U
MANGANESE	358	350	345	356	16.3	9.38	2
MERCURY	0.37	0.39	0.19	0.1878 U	2.31	0.27	0.6
NICKEL	25.4 J	25.9 J	25.1 J	22.8 J	3.9 U	1.76 U	2.99 U
SILVER	4.43 J	3.95	4.38 J	4.11 J	0.31 U	0.29 U	0.49 J
ZINC	95.9 J	116	97.4 J	71.9 J	198	97.1	89.1 J
Miscellaneous Parameters (%)							
% LIPID					3.8	4.1	2.8
TOTAL ORGANIC CARBON	2.57 J	2.47 J	2.59 J	0.57 J			

Notes:

MS-5 includes the following samples:

OU4-SD-M05-100A
OU4-FD-002-000A (duplicate of OU4-SD-M05-100A)
OU4-SD-M05-200A
OU4-SD-M05-300A
OU4-MU-M05-100A
OU4-MU-M05-300A
OU4-LJ-M05-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	200A	300A	100A
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	5.51	13	0.6	1.61 J	2.64 J	1.74 J	1.09 J
1-METHYLNAPHTHALENE	9.15 J	20.8 J	0.85 J	2.9 J	5.04	2.35 J	2.74 J
1-METHYLPHENANTHRENE	31.6	53.3	1.43	1.77 J	1.97 J	1.51 J	0.6 J
2,6-DIMETHYLNAPHTHALENE	10.8	17.9	0.68 J	2.37 J	3.63 J	2.05 J	1.03 J
2-METHYLNAPHTHALENE	18.2 J	33.1 J	1.33 J	5.59	9.17	4.11 J	4.08 J
ACENAPHTHENE	11 J	19.4	0.56	3.24 J	4.93 J	1.73 J	0.86 J
ACENAPHTHYLENE	41.6	116	4.58	6.54 J	10.8 J	6.87 J	0.7 J
ANTHRACENE	83.5	192 J	5.55 J	12.3 J	20.4 J	12.6 J	1.34 J
BENZO(A)ANTHRACENE	233	375	10.9	11.6	11.4	9.24	1.85 J
BENZO(A)PYRENE	113 J	86.6 J	16.3 J	9.23 J	11.4 J	8.71 J	2.92 J
BENZO(B)FLUORANTHENE	438 J	525	15.8	22.5	25.7	13.4	4.4 J
BENZO(E)PYRENE	210	310	10.4	18.3	23.1	11.7	3.9 J
BENZO(G,H,I)PERYLENE	225 J	327	11	10.5	12.1	7.18	3.54 J
BENZO(K)FLUORANTHENE	149	142	6.69	8.45	9.37	6.41	2.18 J
BIPHENYL	4.56 J	8.12 J	0.75 J	1.43 J	1.27 J	1.62 J	1.62 J
CHRYSENE	249	398	11.6	21.3	21.3	13.6	5.58 J
DIBENZO(A,H)ANTHRACENE	47.1 J	80	2.12	1.44 J	1.55 J	1.05 J	0.21 J
DIBENZOTHIOPHENE	11.7	15.3	0.59	0.92 J	0.75 J	0.57 J	0.32 J
FLUORANTHENE	488	603	20.4	38.7	36.2	27.2	8.28
FLUORENE	22.3	44.7 J	1.41 J	3.59 J	4.54 J	3.6 J	1.59 J
INDENO(1,2,3-CD)PYRENE	237	345	10.9	8.99	9.66	5.42	0.06 J
NAPHTHALENE	21.5	48.2	2.14 J	6.29 J	8.69 J	4.36 J	4.76 J
PERYLENE	72.5	140	3.38	6.73 J	9.58 J	5.3 J	3.18 J
PHENANTHRENE	193	228	7.73	10.3	9.65	9.22	3.06 J
PYRENE	436 J	628	17.6	31.8	34.1	23.4	6.52
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.11 U	0.01 U	0.22 U	1.1	0.66	1.6	1.3
1,2,4,5-TETRACHLOROBENZENE	0.29 U	0.87 U	0.08 U	2.5	1.5	2.1	0.02 J
2,4'-DDD	9.9	2.1	0.09	5.9	2	0.67	0.39 U
2,4'-DDE	0.12 J	0.28	0.075 U	0.15 J	0.51	0.48 U	0.54 U
2,4'-DDT	0.46	0.03 J	0.04	1.8	1.1	0.99	0.5 U
4,4'-DDD	17	2.1	0.13	15	4.4	1.8	0.47 U
4,4'-DDE	2.1	1.3	0.83	4	4.6	2.8	1.2
4,4'-DDT	12	0.91	0.03 J	7	2.8	0.59 J	0.72 UJ
ALDRIN	0.054 U	0.02 J	0.054 U	0.08 J	0.35 U	0.55 U	0.63 U
ALPHA-BHC	0.02 J	0.16	0.03 J	0.15 J	0.19 J	0.43	0.45 U
ALPHA-CHLORDANE	0.19	0.15	0.061 U	0.44	0.89	0.5	0.47 U
BETA-BHC	0.21	0.36 U	0.18 U	1.8	0.79	2.9	0.29 J
CHLORPYRIFOS	0.25 U	0.75 U	1.8 U	2.9 U	2.3 U	3.6 U	4.1 U
CIS-NONACHLOR	0.06	0.09	0.08	0.39	0.6	0.35 J	0.43 U
DELTA-BHC	0.04 U	0.19	0.03 J	0.18 U	0.14 U	0.22 U	0.25 U
DIELDRIN	0.06 U	0.06 J	0.061 U	0.3 J	0.46	0.31 J	1.4 J
ENDOSULFAN II	0.62	0.24	0.01 J	0.09 J	0.13 J	0.42 U	0.47 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	200A	300A	100A
ENDRIN	0.12 U	0.24 U	0.12 U	0.91 U	0.72 U	1.1 U	1.3 U
GAMMA-BHC (LINDANE)	0.06 J	0.42 U	0.13 J	0.28 U	0.13 J	0.34 U	0.39 U
GAMMA-CHLORDANE	0.04 J	0.15	0.061 U	0.18 J	0.24 J	0.17 J	0.5 U
HEPTACHLOR	0.15 U	0.04 J	0.04 J	0.33 J	0.39 U	0.79	0.71 U
HEPTACHLOR EPOXIDE	0.027 U	0.053 U	0.027 U	0.35 U	0.28 U	0.44 U	0.5 U
HEXACHLOROBENZENE	0.02 J	0.18	0.041 U	0.44 U	0.07 J	0.55 U	0.06 J
MIREX	0.027 U	0.053 U	0.03	0.81 U	0.63 U	1 U	1.1 U
OXYCHLORDANE	0.08	0.08	0.014 U	0.37 U	0.04 J	0.46 U	0.35 J
PCB-101/90	0.99	1.1	0.09	4.3	7.6	4	1.5 U
PCB-105	0.49 J	0.63 J	0.1 J	1.5	2.8	1.3	0.61 J
PCB-114	0.16 U	0.32 U	0.16 U	1.2 U	0.97 U	1.5 U	1.7 U
PCB-118	0.7	1.7	0.17	3.5	5.9	2.9	2.1 J
PCB-126	0.16 U	0.32 U	0.16 U	1.2 U	0.97 U	0.13 J	1.7 UR
PCB-128	0.25	0.97	0.18	0.89 J	1.5	0.81 J	0.36 J
PCB-138/160	1.6	2.2	0.29 U	7.1	14	6.3	2.6 U
PCB-149/123	1.5	1.1	0.18	4.4	5.9	3.1	1.7 U
PCB-153/132	1.8	2.4	0.36 U	10	18	8.4	3.9 U
PCB-156	0.48	0.65	0.12 J	0.45 J	0.6 J	0.28 J	1.7 U
PCB-167	0.96	0.07 J	0.11 J	0.61 J	0.99	1.5 U	1.7 U
PCB-169	0.01 U	0.07 U	0.08 U	0.07 J	0.97 U	1.5 U	1.7 U
PCB-170/190	13 J	1.8 U	0.93 U	0.35 J	2.4	0.32 J	0.33 U
PCB-18/17	0.08	0.16 U	0.51	0.26 J	2.5 U	4 U	0.85 J
PCB-180	1.1	1.4	0.25	3.3	8.6	2.9	1.1 U
PCB-187	0.88	0.98	0.16 U	4.8	12	3.3	1.2
PCB-189	0.11 J	0.26 J	0.01 J	1.2 U	0.97 U	1.5 U	1.7 U
PCB-195/208	0.4	0.35	0.04 J	1 U	0.35 J	1.3 U	1.4 U
PCB-201/157/173	0.15	0.44	0.14	0.94 U	0.38 J	1.2 U	1.3 U
PCB-206	0.4	0.5	0.075 U	1.1 U	0.09 J	1.3 U	0.16 J
PCB-209	0.67	0.85	0.03 J	1.4 U	1.1 U	1.7 U	2 U
PCB-28	0.22	0.43 U	0.18 U	0.89 J	0.84	0.21 J	0.19 J
PCB-44	0.16	0.52	0.66	0.62 J	0.67	0.55 J	1 U
PCB-52	0.96	0.95	0.12 J	1.9	1.8	1.8	1.2 U
PCB-66	0.31	0.49	0.04 J	0.62 J	0.92 J	0.59 J	0.34 J
PCB-77	0.09 U	0.09 J	0.01 J	0.75 J	0.13 J	0.5 J	1.7 U
PCB-8/5	0.28 J	0.71	0.05 J	10	7.8	26	2.8 U
PCB-81	0.16 U	0.32 U	0.16 U	1.2 U	0.97 U	0.36 J	0.18 J
PENTACHLOROANISOLE	0.03 U	0.22 U	0.05 U	1.7	1.3	2.2	0.17 U
PENTACHLOROBENZENE	0.07 U	0.3 U	0.1 U	2	1.2	2.1	0.32 U
TRANS-NONACHLOR	0.07	0.14	0.034 U	0.34	0.81	0.43	0.31 U
Metals (mg/kg)							
ALUMINUM	38825	54597	44154	386	302	465	2.85 U
ARSENIC	7.97	13.3	17.4	6.03	5.38	8.03	4.96 J
CADMIUM	0.31	0.49	0.18	1.03	1.77	1.25	0.0231
CHROMIUM	44.2	77	51.9	2.92	2.78	4.59	0.56

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06						
	Sediment			Mussel			Lobster
Parameters	**100A**	**200A**	**300A**	**100A**	**200A**	**300A**	**100A**
COPPER	13.9	30.5 J	12.7 J	5.65	6.94	6.63	41.3
IRON	15498	25798 J	22841 J	735	536	1074	21.2 J
LEAD	49.1	64.7	25.9	6.25 J	5.38 J	6.32 J	0.26 U
MANGANESE	417	341	797	10.4	9.04	14.3	1.65
MERCURY	0.26	0.35	0.1694 U	0.26	0.3	0.29	0.59
NICKEL	14.8 J	18.1 J	27.4 J	1.83 U	2.53 U	2 U	2.47 U
SILVER	2.33	4 J	3.72 J	0.3 U	0.32 U	0.33 U	1.01 J
ZINC	46.7	63.3 J	28.5 J	98.5	96.1	72.7	93.1 J
Miscellaneous Parameters (%)							
% LIPID				8.8	3.2	2.5	2.5
TOTAL ORGANIC CARBON	0.53 J	2.27 J	0.36 J				

Notes:

MS-6 includes the following samples:

OU4-SD-M06-100A
OU4-SD-M06-200A
OU4-SD-M06-300A
OU4-MU-M06-100A
OU4-MU-M06-200A
OU4-MU-M06-300A
OU4-LJ-M06-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	100A	200A	300A	100A	300A	100A
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8-HPCDD	84	16.2	9.46	18 J	9.1 J	5.5 J
1,2,3,4,6,7,8-HPCDF	22.1	4.55	2.48	24.4 U	26.9 U	22.3 U
1,2,3,4,7,8,9-HPCDF	0.98 J	0.1 J	1.95 U	24.4 UJ	26.9 U	22.3 U
1,2,3,4,7,8-HXCDD	1.07	0.12 J	1.95 U	24.4 U	26.9 U	22.3 U
1,2,3,4,7,8-HXCDF	1.32	0.26 J	0.11 J	24.4 U	26.9 U	22.3 U
1,2,3,6,7,8-HXCDD	4	0.68 J	1.95 U	24.4 U	26.9 U	22.3 U
1,2,3,6,7,8-HXCDF	1 J	0.14 J	0.14 J	24.4 U	26.9 U	22.3 U
1,2,3,7,8,9-HXCDD	2.35	0.42 J	0.12 J	24.4 U	26.9 U	22.3 U
1,2,3,7,8,9-HXCDF	1.02 U	1.61 U	1.95 U	24.4 U	26.9 U	22.3 U
1,2,3,7,8-PECDD	0.44 J	0.06 J	1.95 U	24.4 U	26.9 U	22.3 U
1,2,3,7,8-PECDF	0.62 U	0.09 U	0.2 U	24.4 U	10.2 J	22.3 U
2,3,4,6,7,8-HXCDF	0.93 J	0.26 J	0.12 J	24.4 U	26.9 U	22.3 U
2,3,4,7,8-PECDF	1.02 U	1.61 U	0.14 J	24.4 U	26.9 U	22.3 U
2,3,7,8-TCDD	0.76	0.32 U	0.11 J	4.88 UR	5.38 UR	4.46 U
2,3,7,8-TCDF	1.22	0.3 J	0.23 J	6.2 J	5.38 U	1.84 J
OCDD	716	124	67.4	48.8 U	53.8 U	28.6 J
OCDF	29.1	6.88	3.9 U	48.8 U	53.8 U	44.6 U
TOTAL DIOXINS	972	166	93	79.7 J	32.7 J	34 J
TOTAL FURANS	112	24.7	8.48	19.3 J	53 J	1.84 U
TOTAL HPCDD	198	37.5	21.2	31.1 J	9.1 J	5.5 J
TOTAL HPCDF	51.6	10.5	6.4	24.4 U	26.9 U	22.3 U
TOTAL HXCDD	48.4	4.62	3.17	24.4 U	6.2 J	22.3 U
TOTAL HXCDF	23.2	5.14	1.51 J	24.4 U	26.9 U	22.3 U
TOTAL PECDD	0.44 J	0.06 J	1.95 U	24.4 U	26.9 U	22.3 U
TOTAL PECDF	6.26	1.17 U	0.34 U	24.4 U	10.2 J	22.3 U
TOTAL TCDD	8.43 U	0.5 U	1.21 U	48.6 J	17.5 J	4.46 U
TOTAL TCDF	2.26	1.06	0.23 J	19.3 J	42.8 J	1.84 J
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	4.12	12.5	12.4	1.6 J	1.45 J	0.74 J
1-METHYLNAPHTHALENE	5.69 J	18 J	16 J	3.7 J	3.09 J	2.38 J
1-METHYLPHENANTHRENE	20.4	62.2	33.3	4 J	1.28 J	0.74 J
2,6-DIMETHYLNAPHTHALENE	4.88	18.2	13.9	2.4 J	2.13 J	1.31 J
2-METHYLNAPHTHALENE	9.35 J	27.3 J	24.2 J	5.9 J	5.37	3.79 J
ACENAPHTHENE	9.66 J	32	19.8	8.9 J	3.06 J	1.64 J
ACENAPHTHYLENE	23.8	94.4	60.5	12 J	6.49 J	0.71 J
ANTHRACENE	56.5	169 J	95.3 J	20.3	11.3 J	1.24 J
BENZO(A)ANTHRACENE	163	340	216	20.8	7.48	8.3 J
BENZO(A)PYRENE	85.6 J	339 J	118 J	17.6	4.98 J	13.3
BENZO(B)FLUORANTHENE	224 J	669	355	32.4	13.8	15.5
BENZO(E)PYRENE	115	223	167	30.4 J	12.7	10.6
BENZO(G,H,I)PERYLENE	121 J	274	170	15.5	6.23	6.75
BENZO(K)FLUORANTHENE	63.6	76.4	99	15.4	6.12	5.42 J
BIPHENYL	2.47 J	8.19 J	5.81 J	2.2 J	1.29 J	1.56 J
CHRYSENE	169	353	243	35.1 J	12.2	17
DIBENZO(A,H)ANTHRACENE	29.7 J	86.2	44.2	2.1 J	0.66 J	1.44 J
DIBENZOTHIOPHENE	6.81	17.6	12.6	1.5 J	0.4 J	0.44 J
FLUORANTHENE	310	649	412	59.3	19.6	16.1
FLUORENE	15.7	89.9 J	33.4 J	6.8 J	2.91 J	1.68 J
INDENO(1,2,3-CD)PYRENE	129	73	190	12.1 J	4.72	10.5
NAPHTHALENE	14	49.4	38.7	7.5 J	6.58 J	5.98 J
PERYLENE	42.1	246	82.6	14.2 J	6.32 J	7.04
PHENANTHRENE	117	282	189	20.1	5.28 J	4.11 J
PYRENE	268 J	608	390	51.2	19.7	15.1
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.11 U	0.32 U	0.42 U	0.19 U	0.57	9.1
1,2,4,5-TETRACHLOROBENZENE	0.61	1.9 U	1.4 U	1.3 U	1.9	0.06 J
2,4'-DDD	1.2	1.9	1.7	2.5	0.57	0.49 U
2,4'-DDE	0.07 J	0.19	0.11 J	0.22 J	0.37 U	0.68 U
2,4'-DDT	0.37	0.1	0.04	0.58	0.51	0.62 U
4,4'-DDD	1.8	2.5	1.6	3	1.2	0.59 U
4,4'-DDE	2.1	1.7	1	9.2	2.8	2.3
4,4'-DDT	1.7	1.1	0.5	1.6 J	0.48 J	0.9 UJ
ALDRIN	0.056 U	0.089 U	0.083 U	0.08 J	0.11 J	0.78 U
ALPHA-BHC	0.02 J	0.11	0.12	0.2 J	0.15 J	0.56 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	100A	200A	300A	100A	300A	100A
ALPHA-CHLORDANE	0.06 J	0.39	0.52	1.1	0.51	0.59 U
BETA-BHC	0.37	0.3 U	0.28 U	1.3 U	0.74	0.59
CHLORPYRIFOS	0.27 U	1.2 U	0.47 U	2.9 U	2.8 U	5.1 U
CIS-NONACHLOR	0.07	0.35	0.14	1	0.39	0.54 U
DELTA-BHC	0.07	0.11	0.05 J	0.18 U	0.17 U	0.31 U
DIELDRIN	0.32	0.1 U	0.093 U	0.83 J	0.28 J	1.8 J
ENDOSULFAN II	0.28	1.2	0.76	0.21 J	0.09 J	0.59 U
ENDRIN	0.13 U	0.2 U	0.19 U	0.91 U	0.87 U	1.6 U
GAMMA-BHC (LINDANE)	0.23 U	0.35 U	0.33 U	0.13 J	0.02 J	0.49 U
GAMMA-CHLORDANE	0.12	0.1 U	0.13	0.38	0.16 J	0.62 U
HEPTACHLOR	0.16 U	0.25 U	0.24 U	0.5 U	0.48 U	0.88 U
HEPTACHLOR EPOXIDE	0.028 U	0.044 U	0.041 U	0.35 U	0.34 U	0.62 U
HEXACHLOROBENZENE	0.03 J	0.02 J	0.062 U	0.11 J	0.42 U	0.2 J
MIREX	0.028 U	0.044 U	0.041 U	0.8 U	0.77 U	1.4 U
OXYCHLORDANE	0.05	0.1	0.04	0.37 U	0.36 U	0.6 J
PCB-101/90	1.2	1.6	1.1	7.6	4	1.9 U
PCB-105	0.68 J	0.78 J	0.59 J	3.7 J	1.9	0.61 J
PCB-114	0.17 U	0.27 U	0.25 U	1.2 U	1.2 U	2.2 U
PCB-118	1.1	2.2	1.3	7.8	3.7	2.5 J
PCB-126	0.17 U	0.27 U	0.25 U	1.2 UJ	1.2 U	2.2 UR
PCB-128	0.27	0.72	0.52	2	0.84 J	0.46 J
PCB-138/160	1.5	3.2	2.2	12	6.4	2.9 U
PCB-149/123	0.98	1.4	0.83	6.6	3.9	0.14 J
PCB-153/132	1.4	2.4	1.6	17 U	8.8	4.6 U
PCB-156	0.35	0.6	0.53	0.97 J	0.41 J	2.2 U
PCB-167	0.92	0.22 J	0.24 J	1 J	0.45 J	2.2 U
PCB-169	0.01 U	0.16 U	0.06 U	1.2 U	1.2 U	0.03 J
PCB-170/190	6.9 J	1.5 U	1.4 U	0.38 U	0.29 J	0.28 U
PCB-18/17	0.4	0.7	0.78	3.2 U	3.1 U	7.8
PCB-180	0.73	1.5	1.2	5.2 U	2.4	1.4 U
PCB-187	0.71	1.3	0.8	5.9	3.2	1.8
PCB-189	0.1 J	0.42	0.19 J	1.2 U	1.2 U	2.2 U
PCB-195/208	0.35	0.67	0.42	1 U	0.98 U	1.8 U
PCB-201/157/173	0.14	0.6	0.69	0.28 J	0.9 U	1.7 U
PCB-206	0.7	1.2	0.59	1.1 U	1 U	1.2 J
PCB-209	0.35	1.1	0.82	1.4 U	1.3 U	2.4 U
PCB-28	0.99	0.87	0.93	1	0.64 J	1.7 U
PCB-44	0.6	0.48	0.34	0.93 U	0.46 J	1.3 U
PCB-52	1	0.84	0.79	2.1 U	1.2	1.5 U
PCB-66	0.75	0.44	0.3	1.3	0.51 J	0.24 J
PCB-77	0.03 U	0.03 J	0.01 J	0.67 J	0.88 J	0.24 U
PCB-8/5	0.48	0.35 J	0.44 J	4.1	6	0.42 J
PCB-81	0.17 U	0.27 U	0.25 U	1.2 U	1 J	2.2 U
PENTACHLOROANISOLE	0.04 U	0.14 U	0.1 U	0.98 U	1	0.25 U
PENTACHLOROBENZENE	0.12 U	0.31 U	0.13 U	0.54 U	0.99	0.33 U
TRANS-NONACHLOR	0.06	0.23	0.12	0.99	0.44	0.38 U
Metals (mg/kg)						
ALUMINUM	44008	56383	54179	303	337	3.23 U
ARSENIC	10.7	14.7	13.3	5.7	8.08	3.91 J
CADMIUM	0.27	0.65	0.42	1.37	1.31	0.0478
CHROMIUM	53.5	93.7	78.9	3.72	2.47	0.64
COPPER	18.3	35.8 J	19.9 J	6.03 J	5.94	58.4
IRON	17994	27688 J	23382 J	621	486	10.4 J
LEAD	51.1	70.2	52.5	3.87	4.96 J	0.47 U
MANGANESE	282	327	356	8.63	8.65	2.42
MERCURY	0.0926 U	0.25	0.22	0.25	0.25	0.54
NICKEL	18.8 J	19.5 J	15.9 J	3.79 U	2.05 U	1.98 U
SILVER	2.73	3.95 J	3.51 J	0.29 U	0.34 U	1.29 J
ZINC	54.3	75.5 J	50.1 J	81.3 J	90.3	93 J
Miscellaneous Parameters (%)						
% LIPID				6.2	2.5	2.5
TOTAL ORGANIC CARBON	0.77 J	2.09 J	1.67 J			

Notes:
MS-7 includes the following samples: OU4-SD-M07-100A, OU4-SD-M07-200A, OU4-SD-M07-300A, OU4-MU-M07-100A, OU4-MU-M07-300A, OU4-LJ-M07-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08							
	Sediment				Mussel			Lobster
Parameters	100A	100A-DUP	200A	300A	100A	200A	300A	100A
Dioxins/Furans (ng/kg)								
1,2,3,4,6,7,8-HPCDD	117 J	114 U	17.7	7.62	20.9 J	17.3 J	27.3 UR	1.59 J
1,2,3,4,6,7,8-HPCDF	32.8 J	32.7 U	4.42	4.47	20.7 U	26.2 U	27.3 U	13.5 U
1,2,3,4,7,8,9-HPCDF	2.12	1.9	2.22 U	0.2 J	20.7 UJ	26.2 UJ	27.3 UJ	13.5 U
1,2,3,4,7,8-HXCDD	1.2	1.4	2.22 U	0.23 J	20.7 U	26.2 U	27.3 U	13.5 UJ
1,2,3,4,7,8-HXCDF	3.28	3.3	0.37 J	1 U	20.7 U	26.2 U	27.3 U	13.5 U
1,2,3,6,7,8-HXCDD	5.17	6	0.49 J	0.28 J	20.7 U	26.2 U	27.3 U	13.5 UJ
1,2,3,6,7,8-HXCDF	2.33	2.7	2.22 U	1 U	20.7 U	26.2 U	27.3 U	13.5 U
1,2,3,7,8,9-HXCDD	3.64 J	0.97 UJ	0.5 J	1 U	20.7 U	26.2 U	27.3 U	13.5 UJ
1,2,3,7,8,9-HXCDF	0.91 U	0.97 U	2.22 U	1 U	20.7 U	26.2 U	27.3 U	13.5 U
1,2,3,7,8-PECDD	1.1 J	0.97 UJ	0.06 J	1 UJ	20.7 U	26.2 U	27.3 U	13.5 UJ
1,2,3,7,8-PECDF	1.71 U	2.3 J	0.25 U	0.4 U	20.7 U	26.2 U	27.3 U	13.5 U
2,3,4,6,7,8-HXCDF	3.2	3.9	0.2 J	1 U	20.7 U	26.2 U	27.3 U	13.5 U
2,3,4,7,8-PECDF	2.24 J	0.97 UJ	2.22 U	1 UJ	20.7 U	26.2 U	27.3 U	13.5 U
2,3,7,8-TCDD	0.5 J	0.19 UJ	0.07 J	0.2 UJ	4.13 UR	5.24 UR	5.46 UR	2.7 U
2,3,7,8-TCDF	2.53	3.4 J	0.36 J	0.35 J	4.13 U	5.24 U	5.46 U	3.02 J
OCDD	957	960	125	64.3	41.3 U	52.4 U	95.3 J	27 U
OCDF	44.3	50.4 U	7.8	4.06	41.3 U	52.4 U	54.6 U	1.44 U
TOTAL DIOXINS	1378	1355	170	85.1	91.4 J	74.7 J	146 J	1.59 J
TOTAL FURANS	217	232 U	22.3	22.3	17 J	37.8 J	54.6 U	4.46 U
TOTAL HPCDD	336 J	321 U	40.3	19.2	33.5 J	19.7 J	27.3 U	1.59 J
TOTAL HPCDF	75.4	79.1 U	11.3	4.67	20.7 U	26.2 U	27.3 U	13.5 U
TOTAL HXCDD	73	67.4	4.81	0.51 J	20.9 J	17.3 J	27.3 U	13.5 U
TOTAL HXCDF	50.6	48.3	0.57 J	4.59	17 J	37.8 J	27.3 U	13.5 U
TOTAL PECDD	1.1	0.97 UJ	0.06 J	1 UJ	20.7 U	26.2 U	27.3 U	13.5 U
TOTAL PECDF	31.3	29.6 J	1.19 U	7.44 J	20.7 U	26.2 U	27.3 U	13.5 U
TOTAL TCDD	11.5 J	6.8 J	0.07 U	1.08 U	37.1 J	37.7 J	51.1 J	2.7 U
TOTAL TCDF	15.5	24.7 J	1.48	1.54 J	4.13 U	5.24 U	5.46 U	3.02 J
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	12.6	10.4	12.1	1.89	3.3 J	2.8 J	1.7 J	2.84 J
1-METHYLNAPHTHALENE	29.2 J	22.1 J	21.4 J	3.71 J	5.5 J	4.9 J	3.6 J	3.74 J
1-METHYLPHENANTHRENE	44.5 J	42.7	55.7	5.9	9.1	4.3 J	5.1 J	4 J
2,6-DIMETHYLNAPHTHALENE	18	16.9	16.9	3.1	2.9 J	3.3 J	2 J	4.18 J
2-METHYLNAPHTHALENE	45.3 J	37.6	33.5 J	7.26 J	6.7 J	6.4 J	4.6 J	7.81
ACENAPHTHENE	43.2 J	55.9	31.3	7.15 J	27.4 J	10 J	6.9 J	4.89 J
ACENAPHTHYLENE	83.1	90.9 J	87.3	21.5	14.3 J	19.6 J	9.8 J	6.9 J
ANTHRACENE	214	212	180 J	43.5	45	31.9	18.5	13.7 J
BENZO(A)ANTHRACENE	427	379 J	327	73.8	75	20.3	18.4	19.3
BENZO(A)PYRENE	370 J	575 J	157 J	32.5 J	76.7	17.8	16.3	13.6
BENZO(B)FLUORANTHENE	690 J	712 J	507	136 J	116	44.9	35.5	31.1
BENZO(E)PYRENE	367	348	258	79.7	70.2 J	44.6 J	24.6 J	26.4
BENZO(G,H,I)PERYLENE	344 J	304 J	269	82.7 J	53.6	20.2	15.1	11.7
BENZO(K)FLUORANTHENE	199	214	159	44	47.4	23.1	13.9	11.5
BIPHENYL	7.82 J	7.76 J	7.6 J	1.84 J	2.7 J	2.6 J	2.3 J	2.58 J
CHRYSENE	476 J	452	344	118	106 J	48.2 J	34.2 J	27.9
DIBENZO(A,H)ANTHRACENE	84.4 J	83.5 J	71.1	19.2 J	6.7 J	3 J	1.2 J	1.38 J
DIBENZOTHIOPHENE	17.9 J	22.1	17.6	3.72	10.2	1.4 J	1.6 J	1.15 J
FLUORANTHENE	790 J	810 J	663	172	263	66.6	57.9	49.3
FLUORENE	47.6 J	76	50 J	8.14	28.6 J	6.3 J	5.3 J	8.09 J
INDENO(1,2,3-CD)PYRENE	346 J	354	296	76	51.6 J	14.6 J	11.3 J	8.45
NAPHTHALENE	41.6 J	41.2	48.1	8.71 J	12.5 J	9.7 J	9.5 J	5.87 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08							
	Sediment				Mussel			Lobster
Parameters	100A	100A-DUP	200A	300A	100A	200A	300A	100A
PERYLENE	71.5 J	106	135	21.6 J	27.5 J	21 J	10.9 J	15
PHENANTHRENE	293 J	420	292	81.7	165	15	22.6	18.4
PYRENE	717 J	683 J	611	147 J	200	67.5	54.4	49.1
Pesticides/PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.21 U	0.42 J	0.28 U	0.06 U	0.3 U	0.43 U	0.17 U	0.48 J
1,2,4,5-TETRACHLOROBENZENE	0.64	0.93 U	1.2 U	0.03 U	3.4 U	2.2 U	1.3 U	0.31 J
2,4'-DDD	31 J	43	3.7	14	26	6.6	7.2	2.2 J
2,4'-DDE	1 J	2.2 J	0.19	0.5 J	0.72	1	0.27 J	0.54 U
2,4'-DDT	3.8	5.9	0.17	15	4.1	2.2	2.2	0.87
4,4'-DDD	80 J	105	5.6	38	58	15	15	2.2 J
4,4'-DDE	17 J	17	2.4	11	22	16	11	7.9
4,4'-DDT	13 J	32 J	2	70	11	2.9	5.7	0.94 J
ALDRIN	0.056 U	0.058 U	0.07 J	0.042 U	0.37 U	0.5 U	0.52 U	0.63 U
ALPHA-BHC	0.05 J	0.1	0.07 J	0.02 J	0.17 J	0.47	0.33 J	0.45 U
ALPHA-CHLORDANE	1.5	2.3	0.49	0.72	1.4	2.4	0.98	0.88 J
BETA-BHC	0.21 J	0.2 UJ	0.27 U	0.14 U	1.2 U	1.7 U	1.2 U	1.6
CHLORPYRIFOS	0.27 U	1.2 U	0.87 U	0.2 U	2.4 U	3.3 U	3.4 U	4.1 U
CIS-NONACHLOR	0.46	0.68 J	0.35	0.2	0.85	1.4	0.94	1.4 J
DELTA-BHC	0.042 U	0.044 U	0.05 J	0.032 U	0.15 U	0.2 U	0.21 U	0.25 U
DIELDRIN	0.063 UJ	0.25 J	0.13	0.048 U	1	1.3	0.6	0.97 J
ENDOSULFAN II	0.47	0.4	1.1	0.16	0.48	0.26 J	0.2 J	0.23 J
ENDRIN	0.13 U	0.13 U	0.18 U	0.096 U	0.76 U	1 U	1.1 U	1.3 U
GAMMA-BHC (LINDANE)	0.22 U	0.23 U	0.33 U	0.17 U	0.08 J	0.17 J	0.1 J	0.09 J
GAMMA-CHLORDANE	2.1	2.2	0.17	0.98	1.2	0.94	0.61	0.38 J
HEPTACHLOR	0.05 J	0.17 U	0.23 U	0.12 U	0.41 U	0.57 U	0.59 U	0.71 U
HEPTACHLOR EPOXIDE	0.028 U	0.029 U	0.041 U	0.021 U	0.29 U	0.4 U	0.42 U	0.5 U
HEXACHLOROBENZENE	0.04 J	0.04 J	0.11	0.02 J	0.17 J	0.26 J	0.14 J	0.23 J
MIREX	0.02 J	0.029 U	0.041 U	0.021 U	0.67 U	0.92 U	0.95 U	1.1 U
OXYCHLORDANE	0.37 J	0.02 J	0.08	0.011 U	0.31 U	0.43 U	0.44 U	0.53 UJ
PCB-101/90	41 J	12 J	2.1	2.4	14	17	8.9	8 J
PCB-105	22 J	2.3 J	1.2	1.8 J	6.6	6.4	4.6	2.9 J
PCB-114	0.17 U	0.18 U	0.24 U	0.13 U	1 U	1.4 U	1.5 U	1.7 U
PCB-118	32 J	6.1 J	2.3	0.88	13	15	7.7	7.7 J
PCB-126	0.17 U	0.18 U	0.24 U	0.13 U	1 U	1.4 U	1.5 U	1.7 UR
PCB-128	9.2 J	2 J	0.85	0.59	3.6	4.1	2.2	2 J
PCB-138/160	39 J	13 J	4.3	6.1	24	27	17	13 J
PCB-149/123	19 J	8.1 J	2.4	5.7	16	16	11	6.7 J
PCB-153/132	35 J	15 J	3.6	6.5	33	37	22	18 J
PCB-156	6.1 J	2.2 J	0.98	0.7	1.7	1.5	0.16 J	0.89 J
PCB-167	2.9 J	1.5 J	2	0.33	1.8	2	1.2 J	0.82 J
PCB-169	0.01 U	0.02 U	0.06 U	0.02 U	1 U	0.17 U	0.52 U	0.03 J
PCB-170/190	43 J	1.3 J	1.4 U	6.9 J	1.2 U	0.83 U	0.87 U	0.4 U
PCB-18/17	1.3 J	2.7 J	1.4	0.12	0.1 J	0.56 J	3.8 U	4.6 UJ
PCB-180	17 J	8.5 J	3.4	6.3	7.1	9.8	6	6.1 J
PCB-187	9.2 J	5.4 J	2.4	3.6	11	13	8.7	6.6 J
PCB-189	0.49	0.39	0.22 J	0.21	1 U	1.4 U	1.5 U	1.7 U
PCB-195/208	6 J	5	1.5	1	0.85 U	1.2 U	1.2 U	1.4 U
PCB-201/157/173	1.21	0.98	0.69	0.3	0.73 J	1.1	0.52 J	0.16 J
PCB-206	15 J	10	2.7	1.6	0.88 U	1.2 U	1.3 U	1.5 U
PCB-209	2.9 J	4.1	1.7	0.51	1.1 U	1.6 U	1.6 U	2 U
PCB-28	1.5	1.2	0.98	0.22	0.86	1.8	0.63 J	0.83 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08							
	Sediment				Mussel			Lobster
Parameters	100A	100A-DUP	200A	300A	100A	200A	300A	100A
PCB-44	9.7 J	1.8 J	0.48	0.32	1.5 U	1.7 U	0.85 J	0.71 U
PCB-52	27 J	4.2 J	1.6	0.59	4	3.8	1.9	1.9
PCB-66	6.4 J	1.3 J	0.42	0.25	1.7	2.1	1 J	1 J
PCB-77	0.18 U	0.09 U	0.05 J	0.02 U	0.41 J	0.2 J	0.47 J	0.18 U
PCB-8/5	0.56 J	0.34 U	0.45 U	0.17 J	5	3.6	3.4	17 J
PCB-81	0.1 J	0.13 J	0.24 U	0.13 U	0.28 J	1.4 U	1.5 U	1.7 U
PENTACHLOROANISOLE	0.13 U	0.17 J	0.14 U	0.24 J	0.89 U	1 U	0.58 U	3.8 J
PENTACHLOROBENZENE	0.1 U	0.33 U	0.15 U	0.05 U	0.64 U	1.2 U	0.88 U	0.8 U
TRANS-NONACHLOR	1	1.5	0.22	0.48	1.6	1.9	0.96	1.1 J
Metals (mg/kg)								
ALUMINUM	51430	46339	51595	56262	467	333	511	3.18 U
ARSENIC	12.5	13.8	13.6	13.1	5.8	6.61	4.53	4.64 J
CADMIUM	0.32	0.31 J	0.57	0.14	1.44	1.57	1.33	0.0187
CHROMIUM	141	132	85.8	155	6.23	4.7	6.28	0.51 U
COPPER	280	341 J	118 J	407	10.2 J	7.12 J	6.46 J	46.2
IRON	55844	42097 J	26387 J	80067	1078	515	760	13.4 J
LEAD	183	218 J	78.3	164	9.52	6.78	4.29	0.17 U
MANGANESE	357	422	334	958	13.3	11.2	17	1.62
MERCURY	0.19	0.73	0.26	0.0953 U	0.23	0.25	0.23	0.66
NICKEL	55.2 J	98 J	25.2 J	130 J	5.11 U	4.09 U	2.51 U	1.95 U
SILVER	4.51	4.19	4.18 J	4.46	0.32 U	0.38 U	0.34 U	1.13 J
ZINC	486	497 J	90 J	738	95.3 J	93.4 J	92.7 J	81 J
Miscellaneous Parameters (%)								
% LIPID					4.6	8.2	3.7	3
TOTAL ORGANIC CARBON	0.88 J	0.87 J	2.01 J	0.2 J				

Notes:

MS-8 includes the following samples:
OU4-SD-M08-100A
OU4-FD-003-000A (duplicate of OU4-SD-M08-100A)
OU4-SD-M08-200A
OU4-SD-M08-300A
OU4-MU-M08-100A
OU4-MU-M08-200A
OU4-MU-M08-300A
OU4-LJ-M08-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	300A-DUP	100A	200A	100A
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	22.6 U	119	10.9 J	370 J	31.3 J	32.2 J	4.22 J
1,2,3,4,6,7,8-HPCDF	21.5 U	36.6	3.03 J	116 J	7.13 J	10.1 J	13.7 U
1,2,3,4,7,8,9-HPCDF	1.5 J	1.79	0.08 J	5.47 J	22.8 U	32.5 U	13.7 U
1,2,3,4,7,8-HXCDD	1.3 J	1.32 U	2.44 UJ	5.43 J	1.84 J	32.5 UJ	13.7 UJ
1,2,3,4,7,8-HXCDF	6.9 J	3.92	2.44 UJ	9.06 J	22.8 U	32.5 U	13.7 U
1,2,3,6,7,8-HXCDD	2.6 J	6.17	2.44 UJ	17.7 J	2.48 J	32.5 UJ	13.7 UJ
1,2,3,6,7,8-HXCDF	5.3 J	3.37	2.44 UJ	8.34 J	22.8 U	32.5 U	13.7 U
1,2,3,7,8,9-HXCDD	1.8 J	3.7	2.44 UJ	11 J	22.8 UJ	32.5 UJ	13.7 UJ
1,2,3,7,8,9-HXCDF	0.66 UJ	0.19 J	2.44 U	0.89 J	22.8 U	32.5 U	13.7 U
1,2,3,7,8-PECDD	0.66 UJ	1.47	2.44 UJ	5.81 J	22.8 UJ	32.5 UJ	13.7 UJ
1,2,3,7,8-PECDF	2.7 J	2.36	0.15 U	4.78 J	5.84 J	2.06 J	13.7 U
2,3,4,6,7,8-HXCDF	8.1 J	4.57	0.18 J	10.3 J	22.8 U	32.5 U	13.7 U
2,3,4,7,8-PECDF	6.3 J	3.16	2.44 U	7.58 J	22.8 U	2.05 J	13.7 U
2,3,7,8-TCDD	0.13 UJ	0.35	0.49 U	1.81 J	4.57 U	6.49 U	2.74 U
2,3,7,8-TCDF	2 J	3.67	0.34 J	9.22 J	4.57 U	8.14 J	2.74 U
OCDD	128 U	934	71.7 J	3150 J	165 J	168 J	4.53 J
OCDF	11.4 U	48.7	3.98 J	130 J	11.7 U	64.9 U	27.4 U
TOTAL DIOXINS	239 U	1304	101 J	4263 J	316 J	271 J	8.75 J
TOTAL FURANS	150 U	247	14.8 J	733 J	36.4 U	12.3 U	27.4 U
TOTAL HPCDD	54.4 U	290	23.5 J	829 J	74.5 J	88.1 J	4.22 J
TOTAL HPCDF	32.3 U	78.7	6.49 J	246 J	7.13 J	32.5 U	13.7 U
TOTAL HXCDD	35.3 J	78.1	4.87 J	228 J	4.31 J	15 J	13.7 U
TOTAL HXCDF	41.6 J	61.2	3.24 J	128 J	11.7 U	32.5 U	13.7 U
TOTAL PECDD	20 J	1.47	2.44 U	25.1 J	22.8 U	32.5 U	13.7 U
TOTAL PECDF	24.8 J	22.7	0.15 U	81.8 J	5.84 J	4.11 J	13.7 U
TOTAL TCDD	1.7 J	0.35 U	0.88 U	31 J	72.2 J	6.49 U	2.74 U
TOTAL TCDF	39.6 J	35.9	0.97 J	147 J	4.57 U	8.14 J	2.74 U
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	9.54	7.11	14.4 J	16.7	2.6 J	1.4 J	1.49 J
1-METHYLNAPHTHALENE	47.6 J	16.3 J	32.9 J	34.4 J	4.2 J	1.66 J	3.35 J
1-METHYLPHENANTHRENE	6.96	26.4	44.8 J	56.2	6.6	3.48 J	1.23 J
2,6-DIMETHYLNAPHTHALENE	22.7	11.2	21.4 J	24.7	2.7 J	1.33 J	1.57 J
2-METHYLNAPHTHALENE	50.7	27.6 J	49.2 J	51.7 J	6.1 J	2.83 J	4.77 J
ACENAPHTHENE	2.23	33 J	76.8 J	91.5	7.7 J	5.13 J	1.48 J
ACENAPHTHYLENE	6.81 J	54.9	101 J	125	18.2 J	4.43 J	0.25 J
ANTHRACENE	13.3	128	224 J	291	37.3	10.5 J	2.08 J
BENZO(A)ANTHRACENE	25.1 J	304	479 J	655	30	16.7	13
BENZO(A)PYRENE	43.4 J	124 J	102 J	274 J	18.7	16.6 J	23.6
BENZO(B)FLUORANTHENE	51.6 J	437 J	803 J	1023 J	41.7	32.7	21.9
BENZO(E)PYRENE	27.1	239	421 J	522	38.3 J	23.6	14.5
BENZO(G,H,I)PERYLENE	26.4 J	261 J	418 J	538 J	18	15.9 J	10.3
BENZO(K)FLUORANTHENE	14.4	167	271 J	347	20.4	11.3 J	11.7
BIPHENYL	3.89 J	5.97 J	10.9	12.4 J	1.5 J	1.86 J	1.74 J
CHRYSENE	36.3	327	548 J	659	44.2 J	26.6	22.3

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	300A-DUP	100A	200A	100A
DIBENZO(A,H)ANTHRACENE	6.44 J	63.9 J	110 J	124 J	2.1 J	2.47 J	0.34 J
DIBENZOTHIOPHENE	2.19	12.7	30.3 J	32.7	1.4 J	0.65 J	0.72 J
FLUORANTHENE	54.7 J	492	1024 J	1216	89.1	35.3	23.6
FLUORENE	6.72	35.6	87.9 J	114	6.8 J	3.05 J	2.31 J
INDENO(1,2,3-CD)PYRENE	26.6	271	466 J	548 J	13.5 J	13	14.4 J
NAPHTHALENE	50.9	30 J	77.3 J	72	9.2 J	4.69 J	7.21 J
PERYLENE	9.21	91.1	206 J	213	22.2 J	10.3	9.92
PHENANTHRENE	28.7	224	497 J	604	22	9.24	6.15 J
PYRENE	43.2 J	468 J	947 J	1129 J	87.4	35.7	22.7
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.29	0.18 U	0.24 U	0.44 U	0.28 U	0.53	6.9
1,2,4,5-TETRACHLOROBENZENE	0.84 U	0.7	1.8 U	1.3	1.1 U	0.24 J	0.93 U
2,4'-DDD	0.33	2.2	3.1	4.3	4.9	2.1	0.43 U
2,4'-DDE	0.1	0.09 J	0.3	0.33 J	0.26 J	0.27 J	0.6 UJ
2,4'-DDT	0.28	0.55	0.38 J	0.98 J	3.3	0.35 J	0.55 U
4,4'-DDD	0.49	3.9	3.4	4.4	7.9	2.3	0.52 U
4,4'-DDE	0.37	1.9	3.3	3	13	5.1	1.5
4,4'-DDT	1.4	3.1	2.3	3.4	4.8	1.1 J	0.8 UJ
ALDRIN	0.044 U	0.064 U	0.11 U	0.11 U	0.35 U	0.5 U	0.69 U
ALPHA-BHC	0.03 U	0.06 J	0.24 J	0.1 J	0.25 J	0.36 U	0.49 U
ALPHA-CHLORDANE	1	0.55	0.7	0.73	2	0.74	0.52 U
BETA-BHC	0.15 U	0.24	0.37 UJ	1.4 J	8.6	0.32 U	0.44 U
CHLORPYRIFOS	0.91 U	0.3 U	1.6 U	4.2 J	2.3 U	3.3 U	4.5 U
CIS-NONACHLOR	0.23	0.17	0.35	0.25	1.9	0.13 J	0.47 U
DELTA-BHC	0.01 J	0.06	0.14	0.21	0.14 U	0.2 U	0.28 U
DIELDRIN	0.01 J	0.072 U	0.12 U	0.12 U	1.3	0.79 J	1.2 J
ENDOSULFAN II	0.03 J	0.53	2	1.5	0.3	0.26 J	0.52 U
ENDRIN	0.1 U	0.14 U	0.25 U	0.24 U	0.73 U	1 U	1.4 U
GAMMA-BHC (LINDANE)	0.18 U	0.26 U	0.44 U	0.43 U	0.14 J	0.04 J	0.43 U
GAMMA-CHLORDANE	1.4	0.62	0.39	0.33	0.94	0.38 J	0.55 U
HEPTACHLOR	0.12 J	0.18 U	0.32 U	0.31 U	0.4 U	0.57 U	0.78 U
HEPTACHLOR EPOXIDE	0.05	0.032 U	0.055 U	0.054 U	0.28 U	0.4 U	0.55 U
HEXACHLOROBENZENE	0.13	0.15	0.24	0.34	0.31 J	0.07 J	0.18 J
MIREX	0.022 U	0.032 U	0.055 UJ	0.054 U	0.65 U	0.91 U	1.3 U
OXYCHLORDANE	0.011 U	0.016 U	0.24	0.08 J	0.3 U	0.42 U	0.27 J
PCB-101/90	1.3	2.8	3.7	4.3	12	7.5	0.48 J
PCB-105	0.43 J	1.8 J	1.5	2.5 J	6.5	3.7	0.43 J
PCB-114	0.13 U	0.19 U	0.33 U	0.32 U	0.98 U	1.4 U	1.9 U
PCB-118	0.85	1.9	4	2.9	11	6.2	1.9 J
PCB-126	0.13 U	0.19 U	0.33 U	0.32 U	0.98 U	1.4 UR	1.9 U
PCB-128	0.32	0.7	1.5	1.2	3.6	1.8	0.34 J
PCB-138/160	1.8	4.5	7.2	6.4	22	13	2.5 U
PCB-149/123	1.1	3.1	4	4.9	16	8.1	0.13 J
PCB-153/132	1.9	3.8	7.3	5.8	29	15	3.4 U
PCB-156	0.31	1.6	1.9 J	1.6 J	0.98 U	1.2 J	1.9 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	300A-DUP	100A	200A	100A
PCB-167	0.21	1	0.42 J	2.3 J	1.8	0.86 J	1.9 U
PCB-169	0.04 U	0.06 U	0.05 U	0.32 U	0.98 U	1.4 U	1.9 U
PCB-170/190	0.17 J	10 J	1.1 J	22 J	1.1 U	0.4 U	0.57 U
PCB-18/17	0.28	0.21	1.2 J	0.64 J	0.95 J	3.6 U	1.6 J
PCB-180	1.3	4.2	5.7	4.6	9.5	3.6 U	1.1 U
PCB-187	1	2.8	4.1	3.7	11	6.2	1.2 J
PCB-189	0.12 J	0.25	0.63 J	0.37 J	0.17 J	1.4 U	1.9 U
PCB-195/208	0.81	2.7	4.3 J	2.5 J	0.82 U	1.2 U	1.6 U
PCB-201/157/173	0.26	0.69	1.45 J	0.82 J	0.84	0.3 J	1.5 U
PCB-206	1.7	9	12 J	5.2 J	0.85 U	1.2 U	1.7 U
PCB-209	0.45	1.9	4.3 J	1.8 J	1.1 U	1.6 U	0.16 J
PCB-28	0.59	1.6	2.1	2.6	1.2	0.56 J	0.44 U
PCB-44	0.84	1.1	1.3 J	5.2 J	1.4 U	0.89 U	1.1 U
PCB-52	0.74	1.2	3.2	2.7	3.7	1.8	1.3 U
PCB-66	0.52	0.75	1.2	1.5	1.6	0.91 J	1.8 U
PCB-77	0.01 U	0.08 U	0.05 J	0.16 U	0.33 J	1.4 U	1.9 U
PCB-8/5	0.15 U	0.51	0.58 J	1.3 J	1.6 J	5.3 J	3 J
PCB-81	0.02 J	0.11 J	0.1 U	0.13 J	0.98 U	1.4 U	1.9 U
PENTACHLOROANISOLE	0.1 U	0.12 U	0.25 U	0.25 U	0.81 U	1.2 U	0.26 U
PENTACHLOROBENZENE	0.21 U	0.2 U	0.48 U	0.49 U	0.74 U	0.23 U	3 U
TRANS-NONACHLOR	0.56	0.31	0.33	0.4	1.7	0.76	0.1 J
Metals (mg/kg)							
ALUMINUM	45148	52761	61780	59116	1175	599	19.1 U
ARSENIC	17.1	13.7	19	18	5.19	7.35	5.13 J
CADMIUM	0.43 J	0.46	0.82	0.82	1.41	1.65	0.0394
CHROMIUM	115	76.9	118	110	7.43	6.6	0.95
COPPER	413 J	101	76.9 J	79	52.5 J	8.39 J	37.5
IRON	43601 J	31552	34799 J	32379	1877	980	13.2 J
LEAD	87.7 J	97.7	100	99.4	7.28	7.33	2.26
MANGANESE	592	389	359	346	73.9	12.2	1.66
MERCURY	0.12	0.25	0.31	0.33	0.24	0.29	0.5
NICKEL	72.3 J	32.4 J	31.5 J	34.1 J	12.9	1.88 U	1.94 U
SILVER	3.93	3.33	7 J	4.36	0.74 J	0.31 U	0.8 J
ZINC	106 J	208	114 J	139	126 J	104 J	101 J
Miscellaneous Parameters (%)							
% LIPID					6.3	3.2	2.3
TOTAL ORGANIC CARBON	1.03 J	1.48 J	2.9 J	2.67 J			

Notes:

MS-9 includes the following samples:

OU4-SD-M09-100A
OU4-SD-M09-200A
OU4-SD-M09-300A
OU4-FD-004-000A (duplicate of OU4-SD-M09-300A)
OU4-MU-M09-100A
OU4-MU-M09-200A
OU4-LJ-M09-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	100A	100A-DUP	200A	300A	100A	100A-DUP	200A	300A	100A
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HPCDD	13 J	35.3 U	1.37 U	1.76 U	24.8 U	13.1 J	32.5 U	23.9 U	14.3 U
1,2,3,4,6,7,8-HPCDF	3.89 J	8.9 U	1.37 U	10.3 U	2.55 J	40 UJ	32.5 U	23.9 U	14.3 U
1,2,3,4,7,8,9-HPCDF	1.17 UJ	1.56 UJ	1.37 U	1.76 U	24.8 U	40 UJ	32.5 U	23.9 U	14.3 U
1,2,3,4,7,8-HXCDD	0.16 J	1.56 UJ	1.37 U	1.76 U	24.8 UJ	40 UJ	32.5 UJ	23.9 UJ	14.3 UJ
1,2,3,4,7,8-HXCDF	0.39 J	1.56 UJ	1.37 U	1.76 U	24.8 U	40 U	32.5 U	23.9 U	14.3 U
1,2,3,6,7,8-HXCDD	1.3 J	1.9 J	1.37 U	1.76 U	0.99 J	40 UJ	32.5 UJ	23.9 UJ	14.3 UJ
1,2,3,6,7,8-HXCDF	1.17 UJ	1.56 UJ	1.37 U	1.76 U	24.8 U	40 U	32.5 U	23.9 U	14.3 U
1,2,3,7,8,9-HXCDD	0.23 J	1.56 UJ	1.37 U	1.76 U	24.8 UJ	40 UJ	32.5 UJ	23.9 UJ	14.3 UJ
1,2,3,7,8,9-HXCDF	1.17 UJ	1.56 UJ	1.37 U	1.76 U	24.8 U	40 U	32.5 U	23.9 U	14.3 U
1,2,3,7,8-PECDD	0.08 J	1.56 UJ	1.37 U	1.76 U	24.8 UJ	40 UJ	32.5 UJ	23.9 UJ	14.3 UJ
1,2,3,7,8-PECDF	0.39 U	2.1 J	1.37 U	1.76 U	24.8 U	40 UJ	32.5 U	23.9 U	14.3 U
2,3,4,6,7,8-HXCDF	0.21 J	1.56 UJ	1.37 U	1.76 U	24.8 U	2.88 J	32.5 U	23.9 U	14.3 U
2,3,4,7,8-PECDF	0.34 U	1.56 UJ	1.37 U	1.76 U	24.8 U	40 UJ	32.5 U	23.9 U	14.3 U
2,3,7,8-TCDD	0.23 U	0.31 UJ	0.27 U	0.35 U	4.95 U	8 UJ	6.49 U	4.78 U	2.87 U
2,3,7,8-TCDF	0.72	1 J	0.27 U	0.7	4.95 U	4.95 J	6.49 U	4.78 U	2.87 U
OCDD	97.5 J	324 U	12.5 U	345 U	81 J	112 J	128 J	102 J	7.64 J
OCDF	6.95 J	12.8 U	8.1 U	21.9 U	49.5 U	80 U	64.9 U	47.8 U	28.7 U
TOTAL DIOXINS	144 J	427 U	13.1 U	428 U	104 J	131 U	128 J	102 J	7.64 J
TOTAL FURANS	36.7 J	61.6 U	15.1 U	57.4 U	2.55 U	7.83 U	64.9 U	47.8 U	28.7 U
TOTAL HPCDD	31 J	82.4 U	1.37 U	61 U	24.8 U	13.1 J	32.5 U	23.9 U	14.3 U
TOTAL HPCDF	9.17 J	19.3 U	1.37 U	23.5 U	2.55 J	40 U	32.5 U	23.9 U	14.3 U
TOTAL HXCDD	13.2 J	16.9 J	0.5 J	21.4	0.99 J	6.17 U	32.5 U	23.9 U	14.3 U
TOTAL HXCDF	9.64 J	2 J	5.2	9.4	24.8 U	2.88 J	32.5 U	23.9 U	14.3 U
TOTAL PECDD	0.08 J	1.56 UJ	1.37 U	1.76 U	24.8 U	40 UJ	32.5 U	23.9 U	14.3 U
TOTAL PECDF	8.84 J	19.7 J	1.3 J	2	24.8 U	40 UJ	32.5 U	23.9 U	14.3 U
TOTAL TCDD	2.05 U	3.2 J	0.27 U	1	22.5 J	8 UJ	6.49 U	4.78 U	2.87 UJ
TOTAL TCDF	2.13 J	7.7 J	0.5	0.7	4.95 U	4.95 J	6.49 U	4.78 U	2.87 U
Polyaromatic Hydrocarbons (ug/kg)									
1,6,7-TRIMETHYLNAPHTHALENE	4.09	3.55	29.6	12.5	1.38 J	1.92 J	1.86 J	3.31 J	1.57 J
1-METHYLNAPHTHALENE	9.11 J	8.45 J	25.4 J	18.5 J	1.31 J	2.67 J	1.56 J	2.18 J	4.73 J
1-METHYLPHENANTHRENE	11.3 J	23.2 J	111	30.7	1.66 J	2.6 J	2.76 J	6.93	1.4 J
2,6-DIMETHYLNAPHTHALENE	7.43	5.86	24.3	17.1	1.28 J	2.22 J	1.99 J	2.57 J	2.04 J
2-METHYLNAPHTHALENE	20.5 J	15.9	30.1 J	29 J	2.27 J	4.44	2.88 J	3.48 J	5.51 J
ACENAPHTHENE	3.98 J	10.3 J	45.5	20.1 J	1.56 J	3.62 J	2.1 J	5.86 J	1.14 J
ACENAPHTHYLENE	23.5	29.5 J	114	135	3.25 J	8.02 J	5.47 J	7.32	0.73 J
ANTHRACENE	43 J	77 J	494	251	6.6 J	14 J	9.36 J	24.8 J	2.09 J
BENZO(A)ANTHRACENE	103 J	211 J	835	383 J	9.54	13.3	12.7	36.3	6.45 J
BENZO(A)PYRENE	60.2 J	373 J	697 J	230 J	10.3 J	13.7	12.8 J	29.8 J	14.1
BENZO(B)FLUORANTHENE	163 J	305 J	856 J	610 J	17	20.4	22.7	56.7	10.3
BENZO(E)PYRENE	95.4 J	171	430	322 J	13.4	18.3	22.8	43.6	7.12
BENZO(G,H,I)PERYLENE	94.6 J	153 J	478	278 J	7.79	12.5	8.46	22.9	6.6
BENZO(K)FLUORANTHENE	43.9 J	115 J	317	250 J	6.27 J	11 J	7.6	22.4	4.01 J
BIPHENYL	3.3 J	2.75 J	7.25 J	7.42	1.58 J	1.88 J	1.63 J	2.48 J	1.83 J
CHRYSENE	109 J	185 J	625	478 J	14.9	21	21.9	61.4	11.4
DIBENZO(A,H)ANTHRACENE	23.9 J	45.2 J	121 J	67.4 J	1.44 J	1.8 J	1.38 J	3.95	0.27 J
DIBENZOTHIOPHENE	6.12	9.23	39.5	13.2	0.83 J	1.07 J	0.58 J	2.18	0.46 J
FLUORANTHENE	194 J	354 J	1395	400	25.6	42.3	32	87.3	19.4
FLUORENE	12.2 J	22.7 J	117	39.4	2.64 J	5.85 J	3.63 J	8.67 J	2.2 J
INDENO(1,2,3-CD)PYRENE	88.5 J	168 J	562	296	6.78	9.83 J	7.96	20.7	6.7 J
NAPHTHALENE	24.2 J	25.9	56.6	45.4 J	3.04 J	5.46 J	3.1 J	3.73 J	8.15 J
PERYLENE	30.7	42.7	150	94.1	5.75	8.1	9.36	15.4	5.05 J
PHENANTHRENE	103 J	175 J	710	202	10.9	15.7 J	8.12	34.9	4.97 J
PYRENE	156 J	276 J	1188 J	616 J	23.3	37.5	30.7	78.6	15.2
Pesticides/PCBs (ug/kg)									
1,2,3,4-TETRACHLOROBENZENE	0.2 U	0.21 U	0.06 U	0.08 U	0.22 J	0.39 J	0.12 J	0.31	9.4

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	100A	100A-DUP	200A	300A	100A	100A-DUP	200A	300A	100A
1,2,4,5-TETRACHLOROBENZENE	0.07 U	0.74 U	0.17 U	1.1	0.26 J	2.6 U	0.28 J	0.55 J	0.14 U
2,4'-DDD	7.4	8.4	3.1	4.2	4.7	5.3	2.2	8.7	0.42 U
2,4'-DDE	0.18 J	0.9 J	0.15 J	0.27 J	0.49	0.56 J	0.25 J	0.33 U	0.59 UJ
2,4'-DDT	3	4.9	0.05	0.71	9.3	9.6	0.86	4.8	0.54 U
4,4'-DDD	15	21	7.2	24	7.1	6.5	3.9	18	0.51 U
4,4'-DDE	6.2	8.8	1.8	3.8	8.4	11	7	21	1.3
4,4'-DDT	12 J	28 J	0.58	66	15 J	19 J	1.7 J	9.4 J	0.78 UJ
ALDRIN	0.057 U	0.01 J	0.066 U	0.097 U	0.4 U	0.09 J	0.49 U	0.38 U	0.68 U
ALPHA-BHC	0.03 J	0.11 J	0.05 J	0.07 J	0.29 UJ	0.41 J	0.35 U	0.27 U	0.48 U
ALPHA-CHLORDANE	5.2	6.1	0.33	0.36	2.3	3.3	1.1	1.9	0.51 U
BETA-BHC	0.16 J	0.2 U	0.55	0.64	0.92 J	28 J	1.2	1.1	0.44 U
CHLORPYRIFOS	0.27 U	0.62 U	0.32 U	0.46 U	2.6 U	2.8 U	3.2 U	2.5 U	4.4 U
CIS-NONACHLOR	0.44	0.56	0.11	0.13	0.08 J	0.45 J	0.09 J	0.21 J	0.47 U
DELTA-BHC	0.042 U	0.045 U	0.1	0.15	0.16 U	0.05 J	0.2 U	0.15 U	0.27 U
DIELDRIN	0.15	0.2	0.11	0.05 J	0.5 J	0.47 J	0.89 J	1.6 J	1.2 J
ENDOSULFAN II	0.09	0.06 J	0.68	0.78	0.16 J	0.33 U	0.15 J	0.59	0.51 U
ENDRIN	0.13 U	0.14 U	0.15 U	0.22 U	0.84 U	0.9 U	1 U	0.79 U	1.4 U
GAMMA-BHC (LINDANE)	0.23 U	0.24 U	0.09 J	0.39 U	0.25 U	0.14 J	0.09 J	0.08 J	0.42 U
GAMMA-CHLORDANE	5.9	6.2	0.3	0.48	1.8	2.4	0.51	0.71	0.54 U
HEPTACHLOR	0.2 J	0.37 J	0.19 U	0.28 U	0.23 J	0.25 J	0.56 U	0.43 U	0.77 U
HEPTACHLOR EPOXIDE	0.01 J	0.03 U	0.033 U	0.048 U	0.32 U	0.35 U	0.39 U	0.31 U	0.54 U
HEXACHLOROBENZENE	0.042 UJ	0.06 J	0.05 U	0.18	0.05 J	0.38 J	0.12 J	0.15 J	0.18 J
MIREX	0.028 U	0.03 U	0.033 U	0.048 U	0.74 U	0.79 U	0.9 U	0.7 U	1.2 U
OXYCHLORDANE	0.08 J	0.015 UJ	0.19	0.024 U	0.34 U	0.37 U	0.42 U	0.32 U	0.35 J
PCB-101/90	1.8	2.1	1.4	3.6	4.1	4.5	7.5	39	1.4 J
PCB-105	1.1 J	0.49 J	1 J	1.7 J	1.4	1.2	2.7	16	0.42 J
PCB-114	0.17 U	0.18 U	0.2 U	0.29 U	1.1 U	1.2 U	1.4 U	1.1 U	1.9 U
PCB-118	2	1.3	1.5	2.7	3.8	4.8	7.2	32	1.8 J
PCB-126	0.17 U	0.18 U	0.2 U	0.29 U	1.1 UR	1.2 U	1.4 UR	1.1 UR	1.9 U
PCB-128	0.44	0.32	0.54	0.76	0.91	1.2	1.6	6.9	0.37 J
PCB-138/160	2.3	1.9	2.2	4.2	5.6 U	7.1 U	10	33	2.6 U
PCB-149/123	1.2	1.3	1.5	2.5	3.3	3.6	4.6	0.59 J	0.1 J
PCB-153/132	1.9	1.9	2.1	4.3	7.6 U	9.6 U	13 U	33	3.6 U
PCB-156	0.3	0.23	0.28	0.83	0.5 J	0.71 J	0.87 J	2	1.9 U
PCB-167	0.4	0.34	4.8	1.7	0.4 J	0.66 J	0.72 J	2.2	1.9 U
PCB-169	0.03 U	0.02 U	0.2 U	0.04 U	1.1 U	1.2 U	0.05 J	1.1 U	1.9 U
PCB-170/190	3.3 J	4.4 J	8.5 J	16 J	0.22 U	0.27 U	0.24 U	0.75 U	1.4 U
PCB-18/17	0.085 U	0.091 U	0.1 U	0.2	2.9 U	3.2 U	3.6 U	2.8 U	0.63 J
PCB-180	0.67	0.84	1.4	1.6	2.7 U	3.4 U	5.5	7.4	1 U
PCB-187	0.53	0.45	0.89	1.5	2.5	3	4.6	6.9	1 J
PCB-189	0.17 U	0.18 U	0.18 J	0.21 J	1.1 U	1.2 U	1.4 U	1.1 U	1.9 U
PCB-195/208	0.09	0.14	0.35	0.48	0.94 U	1 U	1.1 U	0.88 U	1.6 U
PCB-201/157/173	0.02124 UJ	0.1 J	0.15	0.22	0.86 U	0.93 U	0.12 J	0.36 J	1.4 U
PCB-206	0.2 J	0.083 UJ	0.13	0.66	0.97 U	1 U	1.2 U	0.92 U	1.6 U
PCB-209	0.3 J	0.54 J	0.4	1.3	1.3 U	1.4 U	1.5 U	1.2 U	2.1 U
PCB-28	0.19 J	0.2 U	0.81	0.88	0.37 J	0.68 U	0.63 J	0.81 J	0.5 U
PCB-44	0.33 J	0.16 UJ	0.26	0.58	0.41 U	0.68 U	0.86 U	5.2	1.1 U
PCB-52	0.87	0.74	0.63	1.2	1.3	1.9	1.8	15	1.3 U
PCB-66	0.19 J	0.09 J	0.78	0.86	0.37 J	0.23 J	0.83 J	2.4	1.8 U
PCB-77	0.02 U	0.04 U	0.04 U	0.09 U	1.1 U	1.2 U	1.4 U	0.38 U	1.9 U
PCB-8/5	0.2 J	0.33 U	0.6	0.66	7.7 J	3.2 J	3.7	2.7	1.6 J
PCB-81	0.03 J	0.18 U	0.05 J	0.29 U	1.1 U	1.2 U	1.4 U	1.1 U	1.9 U
PENTACHLOROANISOLE	0.09 U	0.2 J	0.05 U	0.11 U	1.5 U	0.63 U	1.3 U	1 U	0.26 U
PENTACHLOROBENZENE	0.07 U	0.13 U	0.07 U	0.27 U	0.57 U	2.4 U	0.42 U	0.6 U	3.2 U
TRANS-NONACHLOR	2.4	2.7	0.1	0.16	1.3	1.7	1.1	1.4	0.14 J

Metals (mg/kg)

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	100A	100A-DUP	200A	300A	100A	100A-DUP	200A	300A	100A
ALUMINUM	43299	38397	45463	53658	454	547 J	215	250	3.15 U
ARSENIC	9	8.57	10.7	17.6	6.68	6.8	5	4.17	3.82 J
CADMIUM	0.14 J	0.15 J	0.24 J	0.58 J	1.36	1.43	2.05	2.11	0.0256
CHROMIUM	43.5	38.6	54	84.9	5.9	5.38	3.02 U	3.14 U	1.63
COPPER	18.8 J	20.6 J	20 J	36.6 J	41.5 J	6.41 J	5.09 J	6.32 J	39.2
IRON	22122 J	14164 J	19096 J	31849 J	1118	941	320	420	11.3 J
LEAD	64.7 J	98.6 J	79 J	105 J	8.19	5.75	3.37	9.14	0.13 U
MANGANESE	404	337	331	329	13.9	18.4	11.6	11	2.57
MERCURY	0.0974 U	0.0898	0.17	0.21	0.19	0.2	0.25	0.27	0.49
NICKEL	24.2 J	18.3 J	19.4 J	22.9 J	3.86 U	5.33 U	2.02 U	2.38 U	1.93 U
SILVER	2.51	2.21	3.09	4.11	0.32 U	0.88 U	0.31 U	0.29 U	1.08 J
ZINC	32.9 U	59.8 J	52.9 J	117 J	128 J	90.9	80.9 J	90.3 J	92.2 J
Miscellaneous Parameters (%)									
% LIPID					2.4	3.4	6.1	7.9	3.4
TOTAL ORGANIC CARBON	0.61 J	0.91 J	0.87 J	1.92 J					

Notes:

MS-10 includes the following samples:
OU4-SD-M10-100A
OU4-FD-005-000A (duplicate of OU4-SD-M10-100A)
OU4-SD-M10-200A
OU4-SD-M10-300A
OU4-MU-M10-100A
OU4-MU-M10-100A-LD
OU4-MU-M10-200A
OU4-MU-M10-300A
OU4-LJ-M10-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11						
	Sediment	Mussel				Lobster	
Parameters	300A	100A	200A	200A-DUP	300A	100A	100A-DUP
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	56.7 U	43.9 UR	28.4 UR	42.7 U	27.6 UR	15.6 U	21.7 U
1,2,3,4,6,7,8-HPCDF	130 U	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 U	21.7 UJ
1,2,3,4,7,8,9-HPCDF	6.9	43.9 U	28.4 U	42.7 UJ	27.6 UJ	15.6 U	21.7 UJ
1,2,3,4,7,8-HXCDD	4.3	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 UJ	21.7 UJ
1,2,3,4,7,8-HXCDF	1.13 U	43.9 U	28.4 U	42.7 U	27.6 U	15.6 U	21.7 U
1,2,3,6,7,8-HXCDD	7.8	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 UJ	21.7 UJ
1,2,3,6,7,8-HXCDF	33.2	43.9 U	28.4 U	42.7 U	27.6 U	15.6 U	21.7 U
1,2,3,7,8,9-HXCDD	7.4	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 UJ	21.7 UJ
1,2,3,7,8,9-HXCDF	1.13 U	43.9 U	28.4 U	42.7 U	27.6 U	15.6 U	21.7 U
1,2,3,7,8-PECDD	1.13 U	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 UJ	21.7 UJ
1,2,3,7,8-PECDF	17.8	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 U	21.7 UJ
2,3,4,6,7,8-HXCDF	39.4	43.9 U	28.4 U	42.7 U	27.6 U	15.6 U	21.7 U
2,3,4,7,8-PECDF	41.3	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 U	21.7 UJ
2,3,7,8-TCDD	0.23 U	8.77 UR	5.68 UR	8.55 UJ	5.52 UR	3.13 U	4.35 UJ
2,3,7,8-TCDF	17.5	8.77 U	5.68 UJ	9.93 J	5.52 U	3.13 U	4.35 UJ
OCDD	262 U	87.7 U	135 J	87.5 J	55.2 U	31.3 U	5.16 J
OCDF	40.3 U	87.7 U	56.8 U	85.5 U	55.2 U	31.3 U	43.5 U
TOTAL DIOXINS	444 U	23.9 J	171 J	120 U	23.4 J	31.3 U	5.16 U
TOTAL FURANS	947	107 J	40.6 J	9.93 U	12.7 J	31.3 U	43.5 U
TOTAL HPCDD	121 U	43.9 U	28.4 U	42.7 U	27.6 U	15.6 U	21.7 U
TOTAL HPCDF	159	43.9 U	28.4 U	42.7 U	27.6 U	15.6 U	21.7 U
TOTAL HXCDD	49.9	43.9 U	13.3 J	42.7 U	27.6 U	15.6 U	21.7 U
TOTAL HXCDF	166	42.7 J	20.1 J	42.7 U	27.6 U	15.6 U	21.7 U
TOTAL PECDD	1.13 U	43.9 U	28.4 U	42.7 UJ	27.6 U	15.6 U	21.7 UJ
TOTAL PECDF	296	39.7 J	28.4 U	42.7 UJ	27.6 U	15.6 U	21.7 UJ
TOTAL TCDD	10.6	23.9 J	23.3 J	32.7 J	23.4 J	3.13 U	4.35 UJ
TOTAL TCDF	286	24.1 J	20.6 J	9.93 J	12.7 J	3.13 U	4.35 UJ
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	9.95	2.5 J	3.4 J	2.06 J	2.4 J	0.81 J	0.71 J
1-METHYLNAPHTHALENE	17.3 J	6.4 J	9 J	2.68 J	5.3 J	2.98 J	1.94 J
1-METHYLPHENANTHRENE	31.9	3.5 J	4.9 J	2.01 J	4.9 J	0.52 J	0.5 J
2,6-DIMETHYLNAPHTHALENE	18.4	3 J	3.4 J	2.19 J	2.7 J	1.63 J	0.96 J
2-METHYLNAPHTHALENE	38.7	8.6 J	11.5 J	4.65 J	7.2 J	3.67 J	2.74 J
ACENAPHTHENE	4.75	6.8 J	8.2 J	5.98 J	11.9 J	0.65 J	0.35 J
ACENAPHTHYLENE	21.1 J	9.3 J	16.7 J	11.1 J	8.4 J	0.56 J	0.47 J
ANTHRACENE	66.9	13.3 J	24.6 J	19.5 J	22.6 J	0.61 J	0.68 J
BENZO(A)ANTHRACENE	142 J	7.3 J	15.8 J	14.4	15.6 J	1.46 J	1.74 J
BENZO(A)PYRENE	233 J	5	10.3	9.16	13.6 J	1.88 J	0.92 J
BENZO(B)FLUORANTHENE	221 J	10.3 J	21.2 J	22.8	23.2 J	1.9 J	3.13 J
BENZO(E)PYRENE	102	13.3 J	27.2 J	21.1	18.8 J	3.11 J	3.07 J
BENZO(G,H,I)PERYLENE	90.9 J	4.6	11.5	10.5	10.4 J	2.63 J	3.02 J
BENZO(K)FLUORANTHENE	56.2	5 J	7.6 J	9.39	10.2 J	1.4 J	5.15 J
BIPHENYL	8.8 J	3.2 J	3.3 J	1.63 J	2.3 J	2.07 J	1.57 J
CHRYSENE	192	13.9 J	25 J	22.2	23.1 J	3.05 J	4.82 J
DIBENZO(A,H)ANTHRACENE	27 J	0.9 J	0.9 J	1.44 J	1.1 J	0.09 J	0.23 J
DIBENZOTHIOPHENE	8.17	1 J	0.8 J	0.67 J	2.1 J	0.44 J	0.3 J
FLUORANTHENE	239 J	22.2	39.8	35.7	55.7 J	6.42 J	6.96 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11						
	Sediment	Mussel				Lobster	
Parameters	300A	100A	200A	200A-DUP	300A	100A	100A-DUP
FLUORENE	16.6	6 J	7.1 J	4.86 J	8.3 J	1.93 J	1.17 J
INDENO(1,2,3-CD)PYRENE	113	2.9 J	6.6 J	7.18 J	7.7 J	1.39 J	1.9 J
NAPHTHALENE	49.4	14 J	17.9 J	6.28 J	12.3 J	5.09 J	4.68 J
PERYLENE	29.9	14.8 J	18.7 J	9.69 J	31.1 J	3.25 J	2.66 J
PHENANTHRENE	123	6.2	8.5	9.47 J	32.6 J	2.73 J	2.86 J
PYRENE	197 J	22.1	38.3	32.2	47.2	5.06 J	5.6 J
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.65	0.14 U	0.19 U	0.46 J	0.17 U	3.5	8.2
1,2,4,5-TETRACHLOROBENZENE	1.8 U	0.41 U	0.64 U	3.9 U	0.63 U	1.5 U	0.36 J
2,4'-DDD	1	1.2 J	2.3	2.5	1.2	0.44 U	0.46 U
2,4'-DDE	0.41	0.1 J	0.43 UJ	0.72 J	0.39 UJ	0.61 UJ	0.64 U
2,4'-DDT	0.85	0.33	2.9	2.2	1.4	0.56 U	0.59 U
4,4'-DDD	1.2	2.2 J	3.1	2.7	2	0.53 U	0.56 U
4,4'-DDE	0.85	4	10	7.3	5.8	1.8	2.8
4,4'-DDT	0.74	0.83 J	1.4 J	1.2 J	1 J	0.81 UJ	0.85 UJ
ALDRIN	0.046 U	0.35 U	0.49 U	0.17 J	0.45 U	0.7 U	0.74 U
ALPHA-BHC	0.04 U	0.22 J	0.38	0.39	0.38	1	0.52 U
ALPHA-CHLORDANE	1.2	0.66 J	1.3	1.2	1.1	0.53 U	0.56 U
BETA-BHC	0.16 U	0.25 U	3.4 U	8.7 J	0.98 U	0.22 J	0.16 J
CHLORPYRIFOS	0.53 U	2.3 U	3.2 U	2.9 U	3 U	4.6 U	4.8 U
CIS-NONACHLOR	0.58	0.86 J	3	3.2	1.2	0.48 U	0.51 U
DELTA-BHC	0.034 U	0.14 U	0.2 U	0.14 J	0.18 U	0.28 U	0.29 U
DIELDRIN	2.7	0.6 J	1.6 J	0.98 J	0.82 J	1.1 J	2.2 J
ENDOSULFAN II	0.17	0.25 J	0.93	0.98	0.26 J	0.53 U	0.56 U
ENDRIN	0.1 U	0.73 U	1 U	0.91 U	0.94 U	1.5 U	1.5 U
GAMMA-BHC (LINDANE)	0.18 U	0.22 U	0.14 J	0.15 J	0.16 J	0.44 U	0.46 U
GAMMA-CHLORDANE	0.27	0.25 J	0.51	0.57	0.3 J	0.56 U	0.59 U
HEPTACHLOR	0.58	0.4 U	0.56 U	0.14 J	0.51 U	0.8 U	0.83 U
HEPTACHLOR EPOXIDE	0.023 U	0.28 U	0.39 U	0.35 U	0.36 U	0.56 U	0.59 U
HEXACHLOROBENZENE	0.35	0.08 J	0.32 J	0.39 J	0.17 J	0.32 J	0.27 J
MIREX	0.023 U	0.65 U	0.89 U	0.81 U	0.82 U	1.3 U	1.3 U
OXYCHLORDANE	0.011 U	0.3 UJ	0.41 U	0.37 U	0.38 U	0.83	0.66
PCB-101/90	13	7.8 J	36	28	10	1.7 U	1.7 U
PCB-105	2.9	3.4 J	15 J	5.8 J	5.6 J	0.43 J	0.77 J
PCB-114	0.14 U	0.98 U	1.4 U	1.2 U	1.3 U	1.9 U	2 U
PCB-118	6.9	7.9 J	33	26	12	2.4 J	3
PCB-126	0.14 U	0.98 UJ	1.4 UJ	1.2 U	2.2 J	1.9 U	2 UR
PCB-128	2.4	2 J	9.9	7.6	2.8	0.48 J	0.5 J
PCB-138/160	21	11 J	46	36	15	3.1 U	3.4 U
PCB-149/123	6.6	6.2 J	24	15	7.2	0.1 J	0.13 J
PCB-153/132	17	13 J	45	36	18	4.4 U	5.5 U
PCB-156	1.5	0.92 J	2.8 J	5.1 J	1.5	1.9 U	2 U
PCB-167	0.71	0.7 J	3.3	2.7	1.2 J	0.35 J	2 U
PCB-169	0.14 U	0.18 U	0.38 U	1.2 U	0.16 U	1.9 U	2 U
PCB-170/190	5.6 J	0.34 U	0.74 U	1 U	0.47 U	0.8 U	0.6 U
PCB-18/17	0.15	2.6 UJ	3.6 U	3.2 U	0.48 J	5.1 U	9.2
PCB-180	10	5.6 J	10 J	6.4 U	6.4 U	1 U	1.3 U
PCB-187	9.7	3.8 J	8.5	6.1	6.5	1.4	1.7

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11						
	Sediment	Mussel				Lobster	
Parameters	300A	100A	200A	200A-DUP	300A	100A	100A-DUP
PCB-189	0.3	0.98 U	1.4 U	1.2 U	1.3 U	1.9 U	2 U
PCB-195/208	2	0.82 U	1.1 U	1 U	1 U	1.6 U	1.7 U
PCB-201/157/173	1.25	0.19 J	1 U	0.98	0.46 J	1.5 U	1.6 U
PCB-206	3.1	0.85 U	1.2 U	1.1 U	1.1 U	1.7 U	1.8 U
PCB-209	1	1.1 U	1.5 U	1.4 U	1.4 U	2.2 U	2.3 U
PCB-28	0.51	0.66 J	1.1 J	1.1 U	0.73 J	0.61 U	1.6 U
PCB-44	0.82	0.68 U	2 U	1.9 U	1 U	1.1 U	1.2 U
PCB-52	3.4	2 U	6.1	4.2	3	1.3 U	0.04 J
PCB-66	0.89	0.93 J	2.3 J	1.1 J	1.5	0.39 J	0.33 J
PCB-77	0.14 U	0.63 J	1.1 J	1.2 U	1.3 U	1.9 U	0.75 U
PCB-8/5	0.15 U	2.2 J	8 J	0.06 J	7.6	3.1 J	0.86 J
PCB-81	2.9	0.98 U	0.74 J	1.2 U	1.3 U	1.9 U	2 U
PENTACHLOROANISOLE	0.35 J	0.89 U	1.7 U	0.88 U	1.6 U	0.24 U	0.26 U
PENTACHLOROBENZENE	0.66 U	0.64 U	1.3 U	2.5 U	1.1 U	4 U	0.48 U
TRANS-NONACHLOR	0.29	0.77 J	1.4	1.1	0.88	0.11 J	0.36 U
Metals (mg/kg)							
ALUMINUM	34560	174	233	260 J	631	2.74 U	6.53 U
ARSENIC	17.9	5.9	5.45	7.01	6.61	4.66 J	4.85 J
CADMIUM	0.87 J	2.22	1.98	1.85	1.72	0.0442	0.043
CHROMIUM	104	2.85	2.28	3.08	3.91	1.06	0.82
COPPER	1479 J	6.98	7.85	8.02	8.36	38.5	37.9
IRON	45637 J	300	347	448	1686	8.08 J	16.2 J
LEAD	1265 J	11.1 J	28.3 J	40.2	8.05 J	0.14 U	0.15 U
MANGANESE	843	11.4	14.7	15.7	20.9	3.34	4.18
MERCURY	1.14	0.22	0.3	0.4	0.21 U	0.52	0.5
NICKEL	56.2 J	3.96 U	1.85 U	2.12 U	3.62 U	1.68 U	1.97 U
SILVER	7.02	0.65 U	0.31 U	0.35 U	0.3 U	0.75 J	1.02 J
ZINC	524 J	73.8	105	121	79.5	94.1 J	94.9 J
Miscellaneous Parameters (%)							
% LIPID		4.1	6.5	5.6	4.7	1.8	2.3
TOTAL ORGANIC CARBON	0.26 J						

Notes:

MS-11 includes the following samples:
OU4-SD-M11-300A
OU4-MU-M11-100A
OU4-MU-M11-200A
OU4-MU-M11-200A-LD
OU4-MU-M11-300A
OU4-LJ-M11-100A
OU4-LJ-M11-100A-LD

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12							
	Sediment				Mussel			Lobster
Parameters	100A	200A	200A-DUP	300A	100A	100A-DUP	200A	100A
Dioxins/Furans (ng/kg)								
1,2,3,4,6,7,8-HPCDD	366	13 J	207 J	11.9	12.6 J	38.8 U	27.6 UR	1.26 U
1,2,3,4,6,7,8-HPCDF	86.9 U	3.31 J	53.3 J	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 U
1,2,3,4,7,8,9-HPCDF	5.9	1.65 UJ	2 J	1.69 U	31.1 UJ	38.8 UJ	27.6 UJ	15.2 U
1,2,3,4,7,8-HXCDD	1.76 U	1.65 UJ	3.1 J	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 UJ
1,2,3,4,7,8-HXCDF	6.2	1.65 UJ	4.38 J	1.69 U	31.1 U	38.8 U	27.6 U	15.2 U
1,2,3,6,7,8-HXCDD	14.4	1.65 UJ	9.55 J	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 UJ
1,2,3,6,7,8-HXCDF	4.8	1.65 U	1.42 U	1.69 U	31.1 U	38.8 U	27.6 U	15.2 U
1,2,3,7,8,9-HXCDD	8.3	1.65 UJ	6.98 J	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 UJ
1,2,3,7,8,9-HXCDF	1.76 U	1.65 U	1.12 J	1.69 U	31.1 U	38.8 U	27.6 U	15.2 U
1,2,3,7,8-PECDD	1.76 U	1.65 U	1.42 U	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 UJ
1,2,3,7,8-PECDF	1.76 U	1.65 U	1.42 U	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 U
2,3,4,6,7,8-HXCDF	1.76 U	1.65 UJ	4.84 J	1.69 U	31.1 U	38.8 U	27.6 U	15.2 U
2,3,4,7,8-PECDF	1.76 U	1.65 U	1.42 U	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 U
2,3,7,8-TCDD	0.35 U	0.33 U	0.28 U	0.34 U	6.21 UR	7.75 UJ	5.52 UR	3.05 U
2,3,7,8-TCDF	0.35 U	0.33 U	0.28 U	0.34 U	8.3 J	7.75 UJ	5.52 U	3.05 U
OCDD	3173	138 J	1540 J	92.1	97.5 J	107 J	148 J	30.5 U
OCDF	187 U	9.24 J	69.3 J	6.19	62.1 J	77.5 U	55.2 U	0.12 U
TOTAL DIOXINS	4306	217 J	2320 J	137	143 J	185 U	234 J	30.5 U
TOTAL FURANS	576	21.3 J	282 J	13.9	53.9 J	77.5 U	55.2 U	30.5 U
TOTAL HPCDD	1029	74.1 J	616 J	38.9	45.1 J	38.8 U	86.2 J	15.2 U
TOTAL HPCDF	227	9.2 J	110 J	4.49	31.1 U	38.8 U	27.6 U	15.2 U
TOTAL HXCDD	100	5.16 J	157 J	6.17	31.1 U	38.8 U	27.6 U	15.2 U
TOTAL HXCDF	108	1.52 J	67.4 J	2.95	31.1 U	38.8 U	27.6 U	15.2 U
TOTAL PECDD	1.76 U	1.65 U	1.42 U	1.69 U	31.1 U	38.8 UJ	27.6 U	15.2 U
TOTAL PECDF	39.3	1.35 J	27.2 J	1.69 U	17.1 J	38.8 UJ	27.6 U	15.2 U
TOTAL TCDD	3.8	0.33 UJ	6.09 J	0.34 U	6.21 UJ	78.5 J	5.52 U	3.05 U
TOTAL TCDF	15	0.33 UJ	7.58 J	0.27 J	26.9 J	7.75 UJ	5.52 UJ	3.05 U
Polyaromatic Hydrocarbons (ug/kg)								
1,6,7-TRIMETHYLNAPHTHALENE	54.9	32.1	35.5	11.5	10.5 J	5.68 J	3.7 J	1.09 J
1-METHYLNAPHTHALENE	251	118 J	115	25.2 J	45.3 J	22.1 J	9 J	7.78 J
1-METHYLPHENANTHRENE	550	266 J	346	70.4	71.8 J	30.7 J	15.2	1.16 J
2,6-DIMETHYLNAPHTHALENE	113	59.3 J	60.7	19	19.4	11.8	4.6 J	1.84 J
2-METHYLNAPHTHALENE	317	153	153	36.1	64.1 J	34 J	12.4 J	9.88 J
ACENAPHTHENE	2561	1239 J	1032 J	133	390 J	213 J	31.1 J	2.3 J
ACENAPHTHYLENE	303 J	191 J	242 J	84.6	87.9 J	27.3 J	39.4 J	1.02 J
ANTHRACENE	2205	1031	1075	196	498 J	195 J	120	2.15 J
BENZO(A)ANTHRACENE	5833	3620	3230	438 J	566 J	196 J	108	2.79 J
BENZO(A)PYRENE	8467	4055 J	3903 J	692	514 J	162 J	45.3	2.48 J
BENZO(B)FLUORANTHENE	7235	4172	4334	795 J	752 J	246 J	95.4 J	3.55 J
BENZO(E)PYRENE	3370 J	2126 J	1978 J	361 J	372 J	131 J	69.1 J	1.93 J
BENZO(G,H,I)PERYLENE	3248	2123 J	1875	343 J	273	86.7 J	22.3	1.6 J
BENZO(K)FLUORANTHENE	2332	1852	1364 J	203	275 J	101 J	45.1 J	0.87 J
BIPHENYL	66.8 J	42.6 J	41	11.1	18.6	11.2	3.6 J	1.84 J
CHRYSENE	6585	3317	3310 J	511	686 J	263 J	112 J	4.87 J
DIBENZO(A,H)ANTHRACENE	790	540	475	97.5	52.7 J	16.7 J	3.9 J	0.07 J
DIBENZOTHIOPHENE	481	279	276	33.5	63.3 J	25.2 J	6.8	0.86 J
FLUORANTHENE	13836.81 J	8200	8280	843 J	1884 J	768 J	292	19.9
FLUORENE	2434	1057	1055	117	276 J	158 J	32.5 J	3.72 J
INDENO(1,2,3-CD)PYRENE	3740	2234	2322 J	411 J	326 J	96.9 J	19.2 J	1.28 J
NAPHTHALENE	582	354	327	70.5	140 J	70.3 J	20.6 J	10.2 J
PERYLENE	1016	848 J	653	112	104 J	46.9 J	14.8 J	1.35 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12							
	Sediment				Mussel			Lobster
Parameters	100A	200A	200A-DUP	300A	100A	100A-DUP	200A	100A
PHENANTHRENE	9952 J	5883 J	5511	552	1227 J	559 J	113	8.77 J
PYRENE	11419.54 J	6639 J	6641	790 J	1435 J	556 J	263	11.6
Pesticides/PCBs (ug/kg)								
1,2,3,4-TETRACHLOROBENZENE	0.08 J	0.06 J	0.17 J	0.01 J	0.18 U	0.5 J	0.15 U	6.2
1,2,4,5-TETRACHLOROBENZENE	1.3 U	1 U	2.8 J	0.83 U	0.79 U	1.6 U	0.84 U	0.68 U
2,4'-DDD	7.4	7.1	5.8	1.9	23 J	2.1 J	6.6	0.45 U
2,4'-DDE	0.099 U	0.1 U	0.098 U	0.11 U	0.43 UJ	0.25 J	0.4 UJ	0.63 UJ
2,4'-DDT	0.43	0.17 J	0.34 J	0.16	2.5 J	1.2 J	1.5	0.58 U
4,4'-DDD	5	1.8	2.4	1.2	5 J	1.9 J	2.8	0.55 U
4,4'-DDE	3.1	1.2	1.3	0.97	9.3 J	5.5 J	6.4	0.87
4,4'-DDT	2.8	0.98	0.9 J	0.86	1.2 J	0.82	1.2 J	0.83 UJ
ALDRIN	0.072 U	0.05 J	0.03 J	0.02 J	0.5 U	0.13 J	0.11 J	0.72 U
ALPHA-BHC	0.23	0.2	0.22 J	0.23	0.51	0.76	0.35	0.51 U
ALPHA-CHLORDANE	1.6	0.68	0.92 J	0.49	1.4	1.7	1	0.55 U
BETA-BHC	0.24 U	0.25 U	0.24 U	0.26 U	1.5 U	5.4 J	1.5 U	0.47 U
CHLORPYRIFOS	0.34 U	0.76 U	0.34 U	1.4 U	3.2 U	2.8 U	3 U	4.7 U
CIS-NONACHLOR	0.67	0.37	0.5 J	0.33	2	1.3	1.7	0.5 U
DELTA-BHC	0.054 U	0.055 U	0.054 U	0.059 U	0.2 U	0.17 U	0.18 U	0.29 U
DIELDRIN	0.33	0.08 J	0.08 UJ	0.05 J	1.5 J	0.51 J	0.89 J	1.2 J
ENDOSULFAN II	0.35	0.4 J	0.11 UJ	0.26	1.4 J	0.33 UJ	0.48	0.55 U
ENDRIN	0.16 U	0.16 U	0.16 U	0.18 U	1 U	0.89 U	0.95 U	1.5 U
GAMMA-BHC (LINDANE)	0.29 U	0.29 U	0.29 U	0.31 U	0.31 U	0.11 J	0.29 U	0.08 J
GAMMA-CHLORDANE	0.081 U	0.15 J	0.08 UJ	0.22	0.41	0.62	0.39	0.58 U
HEPTACHLOR	0.21 U	0.21 U	0.21 U	0.23 U	0.56 U	0.24 J	0.52 U	0.82 U
HEPTACHLOR EPOXIDE	0.036 U	0.036 U	0.036 U	0.039 U	0.4 U	0.35 U	0.37 U	0.58 U
HEXACHLOROBENZENE	0.054 U	0.055 U	0.01 J	0.059 U	0.23 J	0.25 J	0.22 J	0.19 J
MIREX	0.036 U	0.036 U	0.036 U	0.039 U	0.91 U	0.79 U	0.84 U	1.3 U
OXYCHLORDANE	0.72	0.018 UJ	0.31 J	0.05	0.42 U	0.36 U	0.39 U	0.25 J
PCB-101/90	7.9	4.1	6.7	2.9	19	12	15	1.7 U
PCB-105	2	0.9 J	3.8 J	0.91 J	8.8 J	2.8 J	6.5 J	0.23 J
PCB-114	0.22 U	0.22 U	0.21 U	0.24 U	1.4 U	1.2 U	1.3 U	2 U
PCB-118	10	4.5	5.1	2.3	17 J	9.7 J	7.8	1.1 J
PCB-126	0.15 J	0.22 U	0.21 U	0.24 U	1.4 UJ	1.2 U	1.3 UJ	2 U
PCB-128	1.8	1.1	1.3	0.97	4.4	2.8	3.4	1.5 U
PCB-138/160	9.2	7.6 J	15 J	6.5	30	19	30	1.7 U
PCB-149/123	4.9	5 J	9.7 J	3.8	21 J	11 J	25	0.07 J
PCB-153/132	12	12 J	25 J	7.9	42	28	43	2.2 U
PCB-156	9.9	2.3	2.1 J	1.1	2.8 J	1.3 J	2.7	2 U
PCB-167	3.2	1.8	2.5	0.54	2.7 J	1.5 J	1.9	2 U
PCB-169	0.22 U	0.03 U	0.01 U	0.01 U	1.4 U	1.2 U	0.06 U	0.03 J
PCB-170/190	98 J	57 J	68 J	1.4 J	2.3 U	1 U	1.6 U	0.99 U
PCB-18/17	2.5	0.11 UJ	1 J	0.12 U	5 J	3.1 UJ	3.3 U	0.34 J
PCB-180	8.6	11	17	6.5	13 J	7 U	12 J	0.58 U
PCB-187	6.6	5.6 J	11 J	4.1	21 J	13 J	18	0.57 J
PCB-189	0.75	0.77	0.82	0.35	1.4 U	1.2 U	0.21 J	2 U
PCB-195/208	6.4	3.3	3.4 J	1.4	0.28 J	0.12 J	1.1 U	1.7 U
PCB-201/157/173	4.13	2.46	2.06	0.84	2	1.7	1.9	1.5 U
PCB-206	11	4.4	5.3 J	1.7	1.2 U	1 U	1.1 U	1.7 U
PCB-209	34	2.2	1.6	2.3	1.6 U	0.89 J	1.4 U	2.3 U
PCB-28	4.3	2	1.9	1	3.5 J	2.7 U	1.4	0.56 U
PCB-44	3.5	1.3	1.9	0.78	4.1 U	3.3 U	1.3 U	1.2 U
PCB-52	6.4	3.4	2.2	1.7	7	4.7	3.3	1.4 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12							
	Sediment				Mussel			Lobster
Parameters	**100A**	**200A**	**200A-DUP**	**300A**	**100A**	**100A-DUP**	**200A**	**100A**
PCB-66	7.8	2.6	2.1	1.2	6.3 J	3.2 J	2.3	0.14 J
PCB-77	0.17 U	0.2 U	0.02 J	0.05 U	2.8 J	1.2 UJ	0.46 J	2 U
PCB-8/5	7.8	2.1	2.2	0.71	6.1 J	2.3 J	6.1	0.51 J
PCB-81	0.18 J	0.21 J	0.32	0.24 U	0.26 J	0.11 J	1.3 U	2 U
PENTACHLOROANISOLE	0.09 U	0.56 U	0.08 U	0.15 U	0.88 U	0.46 U	0.76 U	0.27 U
PENTACHLOROBENZENE	0.27 U	0.35 U	0.53 U	0.3 U	0.78 U	2.8 U	0.72 U	4.5 U
TRANS-NONACHLOR	0.48	0.046 UJ	0.05 J	0.13	0.95	1.2	0.76	0.1 J
Metals (mg/kg)								
ALUMINUM	47914	44621	50651	51367	325	345 J	291	3 U
ARSENIC	14.9	10.7	10.8	18.6	6.84	7.48	5.62	4.92 J
CADMIUM	0.59 J	0.27 J	0.33 J	0.57 J	1.16	1.22	1.35	0.0419
CHROMIUM	125	77.5	100	93.2	3.23	4.21	3.17	0.54
COPPER	375 J	128 J	254 J	76.5 J	11.8	9.16	9.19	47.7
IRON	30833 J	17959 J	29130 J	23639 J	857	811	530	9.61 J
LEAD	330 J	142 J	204 J	201 J	12.8 J	9.6	9.59 J	0.13 U
MANGANESE	442	328	432	370	15.3	15	24.9	3.04
MERCURY	0.64	0.29	0.32	0.48	0.24	0.28	0.27	0.48
NICKEL	72.8 J	28.1 J	50 J	28.4 J	2.2 U	4.76 U	1.97 U	1.83 U
SILVER	3.88	3.21	3.48	3.85	0.32 U	0.52 U	0.32 U	1.16 J
ZINC	1497 J	399 J	1164 J	189 J	120	98.4	85	91.3 J
Miscellaneous Parameters (%)								
% LIPID					5.8	2.6	4.1	2.3
TOTAL ORGANIC CARBON	1.38 J	1.17 J	1.22 J	1.42 J				

Notes:

MS-12 includes the following samples:
OU4-SD-M12-100A
OU4-SD-M12-200A
OU4-FD-006-000A (duplicate of OU4-SD-M12-200A)
OU4-SD-M12-300A
OU4-MU-M12-100A
OU4-MU-M12-100A-LD
OU4-MU-M12-200A
OU4-LJ-M12-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	100A-DUP	300A	100A
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	65.4 J	18	22.8	105	94.1	5.6 J	1.94 J
1-METHYLNAPHTHALENE	22.3 J	27.5 J	23.9 J	109	88.7	16.5	10.2 J
1-METHYLPHENANTHRENE	508 J	63.3	51.8	553	457	7.93	6.24 J
2,6-DIMETHYLNAPHTHALENE	48 J	21.5	22.2	154	130	10.6	2.76 J
2-METHYLNAPHTHALENE	29.8 J	40.2 J	37.8 J	161	130	31.5	14.5 J
ACENAPHTHENE	1033 J	29 J	71.4 J	1269 J	1093 J	11.4 J	6.71 J
ACENAPHTHYLENE	215 J	150	131	180	289 J	31.4 J	1.11 J
ANTHRACENE	1283 J	340	359	1996 J	2022 J	74.8 J	10.8 J
BENZO(A)ANTHRACENE	1778 J	631	585	4333	3540	65.9	33.3
BENZO(A)PYRENE	1321 J	150 J	160 J	3461 J	2835	25.6 J	16.2
BENZO(B)FLUORANTHENE	1461 J	1008 J	949 J	4479	3622	87.5	28.6
BENZO(E)PYRENE	764 J	518	509	2075	1681	67.7	15.3
BENZO(G,H,I)PERYLENE	426 J	417 J	433 J	907	793	21.3	5.6
BENZO(K)FLUORANTHENE	475 J	298	324	131	1198 J	29.1	9.63
BIPHENYL	13.4 J	9.12	13	86.9	72.7	2.19 J	2.21 J
CHRYSENE	1733 J	867	684	4976	4491	76.6	41.4
DIBENZO(A,H)ANTHRACENE	106 J	109 J	113 J	353	273	2.91	0.7 J
DIBENZOTHIOPHENE	269 J	20.2	29.9	239	199 J	3.47	3.06 J
FLUORANTHENE	8447 J	1075	1256	8955	7958	186	127
FLUORENE	834 J	65	116	1870 J	1668 J	21 J	10.8 J
INDENO(1,2,3-CD)PYRENE	425 J	435	488	1207	985 J	18.3	8.12 J
NAPHTHALENE	84.2 J	50 J	60.1 J	128 J	104 J	22.2 J	15.4 J
PERYLENE	270 J	134	174	563	522	23.4 J	9.55
PHENANTHRENE	4389 J	289	359	6561	5222 J	78.2	62.5 J
PYRENE	5957 J	946 J	1166 J	5747	5246	152	89
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.1 U	0.07 U	0.93	0.52	0.48	0.26 J	9.2
1,2,4,5-TETRACHLOROBENZENE	0.44 U	0.5 U	0.87 J	0.31 J	4.8 U	2.5	0.58 U
2,4'-DDD	6.6	1.8	2.3	364 J	1.4 J	2.5	0.67
2,4'-DDE	0.16 U	0.08 J	0.17 U	0.34 UJ	0.6 J	0.79	0.59 UJ
2,4'-DDT	0.08	0.05	0.05	0.33 J	1.4 J	1	0.54 U
4,4'-DDD	1.4	0.98	2	4.3	3.5	2.2	0.51 U
4,4'-DDE	1.5	1	1.3	11	8	7.1	2.4
4,4'-DDT	2.4	0.79	0.62	3.5 J	1.3 J	2.7	0.78 UJ
ALDRIN	0.12 U	0.1 U	0.12 U	0.39 UJ	0.59 J	0.39 U	0.68 U
ALPHA-BHC	0.05 J	0.05 J	0.06 J	2	1.7	0.45	0.48 U
ALPHA-CHLORDANE	1.3	0.48	0.33	3.2 J	1.7 J	1.4	0.51 U
BETA-BHC	0.3 J	1.8	1.3	6.3	8	1.1	0.44 U
CHLORPYRIFOS	0.56 U	0.48 U	0.58 U	2.6 U	2.5 U	2.6 U	4.4 U
CIS-NONACHLOR	0.31	0.15	0.18	2	2.1	1.3	0.47 U
DELTA-BHC	0.088 U	0.08	0.11	0.16 U	0.03 J	0.16 U	0.27 U
DIELDRIN	0.13 U	0.04 J	0.04 J	0.31 UR	0.3 U	0.69	1.7 J
ENDOSULFAN II	3.8	0.87	0.76	6.3 J	1.4 J	0.15 J	0.51 U
ENDRIN	0.26 U	0.23 U	0.27 U	0.81 U	0.8 U	0.81 U	1.4 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	100A-DUP	300A	100A
GAMMA-BHC (LINDANE)	0.25 J	0.4 U	0.49 U	0.24 U	0.18 J	0.05 J	0.05 J
GAMMA-CHLORDANE	0.13 U	0.06 J	0.09 J	0.31 UJ	0.82 J	0.51	0.54 U
HEPTACHLOR	0.34 U	0.29 U	0.35 U	0.44 U	0.31 J	0.45 U	0.77 U
HEPTACHLOR EPOXIDE	0.058 U	0.05 U	0.061 U	0.31 U	0.31 U	0.32 U	0.54 U
HEXACHLOROBENZENE	0.63	0.07 J	0.25	0.63 J	0.13 J	0.27 J	0.25 J
MIREX	0.058 U	0.05 U	0.061 U	0.71 U	0.06 J	0.72 U	1.2 U
OXYCHLORDANE	0.029 U	0.12	0.24	19 J	1.5 J	0.08 J	0.11 J
PCB-101/90	2.3	1.5	3.7	16	10	13	0.63 J
PCB-105	1.1 J	0.93 J	2 J	6.5 J	2.4 J	4.8	0.75 J
PCB-114	0.35 U	0.3 U	0.36 U	1.1 U	1.1 U	1.1 U	1.9 U
PCB-118	1.9	1.4	3	24 J	12 J	11	3.2
PCB-126	0.35 U	0.3 U	0.36 U	1.1 UR	1.1 U	1.1 U	1.9 U
PCB-128	0.77	0.49	0.94	3.1	2.9	2.5	0.58 J
PCB-138/160	4.2	2.5	5.5	21	17	17	3.8 U
PCB-149/123	3.8	1.4	4.3	11	10	9.2	0.25 J
PCB-153/132	4.4	2.1	5.8	26	23	22	5.8 U
PCB-156	2.8	1.3	1.5	1.7	2.2	0.66 J	1.9 U
PCB-167	2.4	2	2	5.9 J	2.7 J	1.6	1.9 U
PCB-169	0.09 U	0.3 U	0.04 U	1.1 U	1.1 U	0.12 J	1.9 U
PCB-170/190	65 J	20 J	24 J	49 J	16 J	0.43 J	1.5 U
PCB-18/17	0.92	0.13 J	1.9	38 J	2.8 UJ	0.37 J	0.84 J
PCB-180	2.9	1.4	4.2	11 J	8 U	7.9	2.8 U
PCB-187	1.6	1.4	2.9	11	8.3	7.8	8.1
PCB-189	0.56	0.47	0.3 J	1.1 U	0.72 J	1.1 U	1.9 U
PCB-195/208	1.6	0.69	1	1.1 J	0.65 J	0.91 U	8.1
PCB-201/157/173	1.3	0.36	0.43	1.1 J	2.2 J	0.52 J	1.5 U
PCB-206	1.3	0.54	1.6	0.94 U	0.93 U	0.95 U	19
PCB-209	1.5	0.95	1.4	1.2 U	1.2 U	1.2 U	4.2
PCB-28	1.5	0.78	3.4	3.7	5.2 U	2.9	0.81 U
PCB-44	0.79	0.39	1.8	2.4 U	2.2 U	2.8	0.27 J
PCB-52	2.9	1.2	4	4.8 J	8.8 J	5.7	1.3 U
PCB-66	1.3	0.5	1.7	6.2 J	2.7 J	3.8	0.63 J
PCB-77	0.28 U	0.05 U	0.08 U	0.53 U	1.1 U	0.3 J	1.9 U
PCB-8/5	1.2	0.68	1.9	36 J	1.7 UJ	7.5	0.54 J
PCB-81	0.31 J	0.3 U	0.36 U	0.25 J	0.17 J	1.1 U	1.9 U
PENTACHLOROANISOLE	0.24 U	0.09 U	0.19 U	3.1 U	0.85 U	1.1	0.27 U
PENTACHLOROBENZENE	0.22 U	0.23 U	0.33 U	0.86 U	2.8 U	1.8	3.9 U
TRANS-NONACHLOR	0.1	0.05 J	0.05 J	1.5	1.2	1.4	0.33 U
Metals (mg/kg)							
ALUMINUM	56558	54863	56930	415	457 J	288	19.9 U
ARSENIC	18.7	17.3	20.6	4.19	4.97	4.01	3.31 J
CADMIUM	0.48 J	0.58 J	0.59 J	1.42	1.48	1.51	0.0329
CHROMIUM	84.1	81.7	104	3.74	3.04	2.39	0.98
COPPER	44.5 J	35.7 J	87.3 J	32.8 J	34.5 J	6.98	60.5
IRON	33229 J	30133 J	35859 J	675	745	399	27.7 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	**100A**	**200A**	**300A**	**100A**	**100A-DUP**	**300A**	**100A**
LEAD	70.7 J	63.5 J	88.4 J	4.55	4.59	3.19 J	1.5
MANGANESE	360	346	365	49.9	50.4	13.9	6.07
MERCURY	0.19	0.35	0.23	0.26	0.27	0.21	0.61
NICKEL	24.9 J	22.9 J	28.8 J	4.74 U	3.49 U	0.3 U	1.94 U
SILVER	3.44	3.92	3.9	0.32 U	0.45 U	1.33 U	0.84 J
ZINC	107 J	94.1 J	147 J	129 J	121	81.6	98.6 J
Miscellaneous Parameters (%)							
% LIPID				7.4	4.6	6.4	2.1
TOTAL ORGANIC CARBON	2.18 J	1.73 J	2.13 J				

Notes:

MS-13 includes the following samples:
OU4-SD-M13-100A
OU4-SD-M13-200A
OU4-SD-M13-300A
OU4-MU-M13-100A
OU4-MU-M13-100A-LD
OU4-MU-M13-300A
OU4-LJ-M13-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster
Parameters	100A	200A	300A	100A	200A	100A
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	9.08	57.9	25.3	0.89 J	2.18 J	1.63 J
1-METHYLNAPHTHALENE	18.9 J	304 J	22.6 J	4.09 J	3.21 J	13 J
1-METHYLPHENANTHRENE	57	1257	109	3.04 J	2.55 J	2.68 J
2,6-DIMETHYLNAPHTHALENE	16	73.9	22.2	0.93 J	3.03 J	2.32 J
2-METHYLNAPHTHALENE	35.8 J	353 J	34.4	5.84	6.06	18.3 J
ACENAPHTHENE	15.3 J	100 J	32.5	1.55 J	3.72 J	4 J
ACENAPHTHYLENE	117	189	130 J	0.14 J	13.3 J	2.61 J
ANTHRACENE	166	433	353	5.49 J	23.9 J	6.55 J
BENZO(A)ANTHRACENE	321	838	511 J	19.2	20.8	12.4
BENZO(A)PYRENE	182 J	359 J	742 J	20.5 J	15.1 J	17.3
BENZO(B)FLUORANTHENE	524 J	880 J	625	22.8	28.6	15.6
BENZO(E)PYRENE	335	590	288	11.9	27.8	9.83
BENZO(G,H,I)PERYLENE	310 J	540 J	279	6.88	11.8	6.28
BENZO(K)FLUORANTHENE	137	291	248	9.41 J	10	7.54
BIPHENYL	8.56	20.5	9.21 J	2.14 J	1.42 J	2.81 J
CHRYSENE	331	738	533	26.7	23.6	19.4
DIBENZO(A,H)ANTHRACENE	71.9 J	135 J	69.8 J	1.73 J	1.42 J	0.23 J
DIBENZOTHIOPHENE	15.5	24.4	27.1	0.94 J	0.65 J	1.71 J
FLUORANTHENE	518	967	919	43.4	45.7	37.9
FLUORENE	34.9	142	84.5	2.98 J	4.96 J	8.22 J
INDENO(1,2,3-CD)PYRENE	349	504	337 J	8.9	8.44	5.78 J
NAPHTHALENE	55.7 J	367 J	64	8.84 J	6.31 J	16.3 J
PERYLENE	86.7	111	173 J	6.4	13.9 J	6.24
PHENANTHRENE	188	1253	468	15.7	8.92	24.5 J
PYRENE	502 J	1169 J	856	32.4	58.1	34.4
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.24 U	0.23 U	0.16 J	13	0.41	1.9
1,2,4,5-TETRACHLOROBENZENE	0.89	1	2.6 U	0.81 J	2.2	0.84 U
2,4'-DDD	1.2	1.3	2.1	0.32 U	0.72	0.44 U
2,4'-DDE	0.13 U	0.099 U	0.1 J	0.44 U	1	0.62 UJ
2,4'-DDT	0.04	0.05	0.17	0.41 U	0.99	0.57 U
4,4'-DDD	0.44	0.38	2	0.31 J	1.4	0.07 J
4,4'-DDE	2.6	0.37	1.5	5.3	4.8	2
4,4'-DDT	0.65	0.19	1.4	0.59 UJ	0.72	0.83 UJ
ALDRIN	0.093 U	0.072 U	0.04 J	0.51 U	0.22 J	0.71 U
ALPHA-BHC	0.04 J	0.03 J	0.32	0.36 U	0.42	0.51 U
ALPHA-CHLORDANE	0.15	0.13	0.64	0.38 U	1.4	0.23 J
BETA-BHC	0.08 J	0.44	0.32 U	0.43	1.7	0.46 U
CHLORPYRIFOS	0.44 U	0.34 U	1.2 U	3.3 U	2.6 U	4.7 U
CIS-NONACHLOR	0.07	0.04	0.25	0.35 U	0.81	0.49 U
DELTA-BHC	0.07 U	0.03 J	0.072 U	0.2 U	0.16 U	0.29 U
DIELDRIN	0.1 U	0.09	0.14	2.5 J	0.52	1.3 J
ENDOSULFAN II	1.1	0.91	0.23	0.38 U	0.21 J	0.54 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster
Parameters	100A	200A	300A	100A	200A	100A
ENDRIN	0.21 U	0.16 U	0.22 U	1 U	0.82 U	1.5 U
GAMMA-BHC (LINDANE)	0.37 U	0.29 U	0.38 U	0.32 U	0.07 J	0.44 U
GAMMA-CHLORDANE	0.03 J	0.081 U	0.18	0.41 U	0.39	0.57 U
HEPTACHLOR	0.08 J	0.21 U	0.27 U	0.57 U	0.45 U	0.81 U
HEPTACHLOR EPOXIDE	0.047 U	0.036 U	0.048 U	0.09 J	0.32 U	0.57 U
HEXACHLOROBENZENE	0.08	0.04 J	0.072 U	0.08 J	0.57	0.19 J
MIREX	0.047 U	0.036 U	0.048 U	0.92 U	0.72 U	1.3 U
OXYCHLORDANE	0.16	0.18	0.25	3.3	0.05 J	0.49 J
PCB-101/90	0.86	0.34	2.3	0.71 J	9	0.53 J
PCB-105	0.42 J	0.2 J	0.97 J	1 J	2.6	0.52 J
PCB-114	0.28 U	0.22 U	0.29 U	1.4 U	1.1 U	2 U
PCB-118	1.3	0.36	2.9	3.4	8	2.7 J
PCB-126	0.28 U	0.22 U	0.29 U	1.4 UR	1.1 U	2 U
PCB-128	0.07 J	0.24	0.71	0.63 J	1.5	0.44 J
PCB-138/160	0.79	0.86	3.5	5.2 U	10	2.8 U
PCB-149/123	0.76	0.63	1.7	0.32 J	4.6	0.1 J
PCB-153/132	1.5	0.57	3.3	7 U	15	4 U
PCB-156	0.64	0.37	1.1	1.4 U	0.54 J	2 U
PCB-167	1.7	2.4	0.23 J	1.4 U	1.1 J	2 U
PCB-169	0.09 U	0.06 U	0.03 U	1.4 U	0.73 J	2 U
PCB-170/190	13 J	6 J	11 J	0.49 U	0.31 J	0.64 U
PCB-18/17	0.34	0.04 J	0.16	1.3 J	2.9 U	5.2 U
PCB-180	0.57	0.31	1.8	2.5 U	5.5	0.99 U
PCB-187	0.31	0.3	1.2	2.7	5.2	1 J
PCB-189	0.19 J	0.3	0.11 J	1.4 U	1.1 U	2 U
PCB-195/208	0.44	0.18	0.58	0.27 J	0.92 U	1.7 U
PCB-201/157/173	0.22	0.15	0.77	1.1 U	0.24 J	1.5 U
PCB-206	0.61	0.24	0.75	0.33 J	0.95 U	1.7 U
PCB-209	0.54	0.32	1.3	1.6 U	1.2 U	2.2 U
PCB-28	0.29 J	0.2 J	1	1.1 U	1.2	0.61 U
PCB-44	0.37	0.01 J	0.68	0.82 U	0.87	1.2 U
PCB-52	0.22	0.23	1.7	0.96 U	2.1	1.4 U
PCB-66	0.54	0.64	0.76	0.39 J	0.99 J	0.45 J
PCB-77	0.08 U	0.02 U	0.71 U	1.4 U	0.28 J	0.41 J
PCB-8/5	1.2	0.33 J	2.1	0.35 J	11	2.2 J
PCB-81	0.28 U	0.03 J	0.29 U	1.4 U	1.1 U	0.25 J
PENTACHLOROANISOLE	0.08 U	0.04 U	0.15 U	0.22 U	1.5	0.3 U
PENTACHLOROBENZENE	0.22 U	0.1 U	0.3 U	0.39 U	1.3	3.9 U
TRANS-NONACHLOR	0.18	0.045 U	0.16	0.25 U	0.97	0.2 J
Metals (mg/kg)						
ALUMINUM	49074	48057	50238	304	252	2.91 U
ARSENIC	11.6	11.1	12.3	6.61	4.79	3.43 J
CADMIUM	0.32 J	0.33 J	0.45 J	1.29	1.67	0.0386
CHROMIUM	65.4	53.3	92.1	3.37 U	2.33	0.62

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster
Parameters	**100A**	**200A**	**300A**	**100A**	**200A**	**100A**
COPPER	44 J	16.3 J	28.9 J	7.85 J	6.01	48.5
IRON	20920 J	18299 J	24139 J	609	388	8.45 J
LEAD	94.3 J	53.7 J	67.1 J	3.81	4.45 J	0.13 U
MANGANESE	340	297	307	10.6	11.7	9.3
MERCURY	0.34	0.26	0.24	0.31	0.31	0.66
NICKEL	22.5 J	16.6 J	24.7 J	1.8 U	1.93 U	1.79 U
SILVER	3.43	2.83	3.31	0.3 U	0.32 U	0.92 J
ZINC	60.4 J	58.7 J	77.3 J	94.4 J	101	90.7 J
Miscellaneous Parameters (%)						
% LIPID				5.8	4.8	1.9
TOTAL ORGANIC CARBON	4.64 J	1.61 J	2.1 J			

Notes:

MS-14 includes the following samples:

OU4-SD-M14-100A
OU4-SD-M14-200A
OU4-SD-M14-300A
OU4-MU-M14-100A
OU4-MU-M14-200A
OU4-LJ-M14-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	28	6.88 J	4	56	25.9 UR	20.1 J	13.2 U
1,2,3,4,6,7,8-HPCDF	9.49	2.21 J	1.28	14.5	25.9 U	25.1 U	13.2 U
1,2,3,4,7,8,9-HPCDF	0.09 J	0.43 J	1.07 U	0.75 J	25.9 UJ	25.1 U	13.2 U
1,2,3,4,7,8-HXCDD	2.05 U	1.16 UJ	1.07 U	0.55 J	25.9 U	25.1 U	13.2 UJ
1,2,3,4,7,8-HXCDF	2.05 U	1.16 UJ	1.07 U	0.66 J	25.9 U	25.1 U	13.2 U
1,2,3,6,7,8-HXCDD	1.47 J	1.16 UJ	1.07 U	2.39	25.9 U	25.1 U	13.2 UJ
1,2,3,6,7,8-HXCDF	0.4 J	1.16 UJ	1.07 U	0.48 J	25.9 U	25.1 U	13.2 U
1,2,3,7,8,9-HXCDD	0.98 J	1.16 UJ	1.07 U	1.76	25.9 U	25.1 U	13.2 UJ
1,2,3,7,8,9-HXCDF	2.05 U	1.16 UJ	1.07 U	0.08 J	25.9 U	25.1 U	13.2 U
1,2,3,7,8-PECDD	2.05 U	1.16 UJ	1.07 U	0.35 J	25.9 U	25.1 U	13.2 UJ
1,2,3,7,8-PECDF	0.5 U	1.16 UJ	1.07 U	0.33 U	25.9 U	25.1 U	13.2 U
2,3,4,6,7,8-HXCDF	2.05 U	1.16 UJ	1.07 U	0.87	25.9 U	25.1 U	13.2 U
2,3,4,7,8-PECDF	0.67 U	1.16 UJ	1.07 U	0.32 U	25.9 U	25.1 U	13.2 U
2,3,7,8-TCDD	0.41 U	0.23 UJ	0.21 U	0.26	5.18 UR	5.03 UR	2.63 U
2,3,7,8-TCDF	1.26	0.23 UJ	0.21 U	0.81	9.2 J	5.03 U	1.77 J
OCDD	160	48.8 J	27.2	543	89.8 J	96.2 J	6.41 J
OCDF	7.77	3.48 J	2.14	22.4	51.8 U	50.3 U	26.3 U
TOTAL DIOXINS	261	69.4 J	36	690	89.8 J	184 J	15.2 J
TOTAL FURANS	50.7	6.11 J	4.1	78.5	54.9 J	71 J	1.77 U
TOTAL HPCDD	79	17.4 J	8.79	134	25.9 U	65.9 J	8.78 J
TOTAL HPCDF	19.3	2.63 J	1.28	33.5	25.9 U	25.1 U	13.2 U
TOTAL HXCDD	22.2	3.24 J	1.07 U	5.71	25.9 U	25.1 U	13.2 U
TOTAL HXCDF	14.7	1.16 UJ	0.68 J	15	25.9 U	25.1 U	13.2 U
TOTAL PECDD	2.05 U	1.16 UJ	1.07 U	1.75	25.9 U	25.1 U	13.2 U
TOTAL PECDF	3.99	1.16 UJ	1.07 U	4.75	27.6 J	42.3 J	13.2 U
TOTAL TCDD	0.41 U	0.23 UJ	0.21 U	5.69 U	5.18 U	21.6 J	2.63 U
TOTAL TCDF	4.86	0.23 UJ	0.21 U	2.9	27.3 J	28.7 J	1.77 J
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	9.06	1.02	0.65	2.72	1.7 J	2.37 J	0.72 J
1-METHYLNAPHTHALENE	18.3 J	1.6 J	1.04 J	4.77 J	5.6 J	6.01	5.81 J
1-METHYLPHENANTHRENE	61.9	3.44	2.78	13.1	2.9 J	2.3 J	0.6 J
2,6-DIMETHYLNAPHTHALENE	13.4	1.55	1.1 J	3.35	1.9 J	3.14 J	2.2 J
2-METHYLNAPHTHALENE	30.8 J	2.6 J	1.57 J	7.34 J	6.5 J	9.58	7.27
ACENAPHTHENE	20.4 J	1.87	0.67	3.85 J	4.6 J	2.29 J	1.16 J
ACENAPHTHYLENE	155	7.82	5.27	34.6	15.6 J	18.1 J	0.84 J
ANTHRACENE	146 J	12.2	10.7	35.7 J	25.9	38.8 J	0.81 J
BENZO(A)ANTHRACENE	407	19.2 J	18.2 J	92.3	14.3	28.7	1.7 J
BENZO(A)PYRENE	127 J	35.3	25.2	104 J	11.6	15.6 J	2.14 J
BENZO(B)FLUORANTHENE	551	32.3 J	23 J	128	27.1 J	44.2	3.09 J
BENZO(E)PYRENE	329	16.9 J	11.9 J	70.5	33.5 J	34.1	3.03 J
BENZO(G,H,I)PERYLENE	317	18.5 J	11.7 J	70	10	13.9	1.85 J
BENZO(K)FLUORANTHENE	214	11.2	6.63	40	9.1 J	16.9	2.31 J
BIPHENYL	9.27	0.98 J	0.49 J	2.23	2.1 J	1.93 J	2.12 J
CHRYSENE	415	22.4	18.3	93.3	32.8 J	57.6	5.16 J
DIBENZO(A,H)ANTHRACENE	77.8	4.26	2.69	16.6	1.3 J	2.1	0.07 J
DIBENZOTHIOPHENE	17	0.98	0.72	2.82	0.7 J	0.72 J	0.38 J
FLUORANTHENE	566	25.8 J	39.3 J	121	45.5	48	11.4
FLUORENE	40.1	2.95	2.05	7.45	4.1 J	8.34 J	1.78 J
INDENO(1,2,3-CD)PYRENE	346	20.6 J	13.9 J	76.5	5.7 J	11.2	0.71 J
NAPHTHALENE	58.1	5.47	3.14 J	13.2	11.5 J	8.74 J	7.86 J
PERYLENE	91	10.7	5.71	29.8	23.4 J	15.5 J	3.55 J
PHENANTHRENE	183	13	13.1	37.4	5.4 J	9.23	3.05 J
PYRENE	634	24.6 J	34.3 J	127	55.8	51.3	10.3
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.42 U	0.04 J	0.19 U	0.01 U	0.2 U	0.58	7.1
1,2,4,5-TETRACHLOROBENZENE	1 U	0.53 U	0.53 U	0.43 U	1.1 U	2.4	0.73 U
2,4'-DDD	2.2	0.26	0.07	0.48	1.9	1.2	0.41 U
2,4'-DDE	0.07 J	0.05 J	0.07	0.08	0.28 J	0.36 U	0.58 UJ
2,4'-DDT	0.01 J	0.57	0.02 U	0.07	0.47	1.8	0.53 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
4,4'-DDD	0.77	0.38	0.04 J	0.31	3.1	1.7	0.5 U
4,4'-DDE	0.83	0.3	0.05	0.31	8.6	5.8	2
4,4'-DDT	1.2	1.7	0.033 U	0.13	0.83 J	0.74	0.77 UJ
ALDRIN	0.03 J	0.01 J	0.01 J	0.02 J	0.42 U	0.24 J	0.67 U
ALPHA-BHC	0.07 J	0.02 U	0.02 U	0.04 J	0.32	0.33	0.47 U
ALPHA-CHLORDANE	0.33	0.01 J	0.06 U	0.2	1.1	0.82	0.21 J
BETA-BHC	0.4 U	0.18 U	0.18 U	0.18 U	0.51 U	0.42	0.43 U
CHLORPYRIFOS	1.2 U	0.65 U	0.43 U	0.3 U	2.8 U	2.7 U	4.3 U
CIS-NONACHLOR	0.21	0.03 J	0.02 J	0.12	1.4	1.2	0.46 U
DELTA-BHC	0.18	0.02 J	0.01 J	0.03 J	0.17 U	0.17 U	0.27 U
DIELDRIN	0.14	0.061 U	0.06 U	0.02 J	0.96 J	0.53	1.4 J
ENDOSULFAN II	0.8	0.081 U	0.08 U	0.19	0.22 J	0.08 J	0.5 U
ENDRIN	0.27 U	0.12 U	0.12 U	0.12 U	0.87 U	0.87 U	1.4 U
GAMMA-BHC (LINDANE)	0.39 J	0.08 J	0.21 U	0.22 U	0.26 U	0.26 U	0.41 U
GAMMA-CHLORDANE	0.13 U	0.04 J	0.06 U	0.03 J	0.56	0.41	0.53 U
HEPTACHLOR	0.34 U	0.16 U	0.15 U	0.04 J	0.48 U	0.27 J	0.75 U
HEPTACHLOR EPOXIDE	0.059 U	0.027 U	0.027 U	0.027 U	0.34 U	0.34 U	0.53 U
HEXACHLOROBENZENE	0.089 U	0.25	0.04 U	0.03 J	0.18 J	0.36 J	0.17 J
MIREX	0.059 U	0.027 U	0.027 U	0.027 U	0.77 U	0.77 U	1.2 U
OXYCHLORDANE	0.06	0.013 U	0.013 U	0.013 U	0.36 U	0.35 U	0.61
PCB-101/90	0.51	0.22	0.05	0.35	8.2	7.1	0.9 J
PCB-105	0.17 J	0.09 J	0.02 J	0.14 J	3.9 J	2.7	0.56 J
PCB-114	0.36 U	0.16 U	0.16 U	0.16 U	1.2 U	1.2 U	1.8 U
PCB-118	0.59	0.2	0.07 J	0.36	9.7	8.3	2.6 J
PCB-126	0.36 U	0.16 U	0.16 U	0.16 U	1.2 UJ	1.2 U	1.8 U
PCB-128	0.03 J	0.06	0.01 J	0.06	2.1	1.7	0.45 J
PCB-138/160	0.62 U	0.31	0.15	0.76	13	12	3.4 U
PCB-149/123	0.38	0.11 U	0.04 U	0.25	6.3	5.5	0.25 J
PCB-153/132	0.67 U	0.3 U	0.16 U	0.59	16	16	4.5 U
PCB-156	0.43	0.05 J	0.02 J	0.15 J	1.2 J	0.59 J	1.8 U
PCB-167	3.1	0.02 J	0.02 J	0.7	1.1 J	1.1 J	1.8 U
PCB-169	0.08 U	0.01 U	0.02 U	0.04 U	1.2 U	1.2 U	1.8 U
PCB-170/190	2 U	0.79 J	0.54 J	0.92 U	0.37 U	0.22 J	0.93 U
PCB-18/17	0.18 U	0.09	0.08 U	0.36	0.27 J	3.1 U	4.8 U
PCB-180	0.4	0.14 U	0.11 U	0.23	6.8 J	5.9	1.3 U
PCB-187	0.09 J	0.07 J	0.1 J	0.17	5.2	5.7	1.9
PCB-189	0.36 J	0.16 U	0.16 U	0.11 J	1.2 U	1.2 U	1.8 U
PCB-195/208	0.32	0.08	0.03 J	0.09	0.98 U	0.97 U	1.5 U
PCB-201/157/173	0.59	0.02022 U	0.02	0.09	0.3 J	0.34 J	1.4 U
PCB-206	0.36	0.074 U	0.073 U	0.05 J	1 U	1 U	1.6 U
PCB-209	0.77	0.08	0.07 J	0.34	1.3 U	1.3 U	2.1 U
PCB-28	0.7 U	0.09 U	0.03 U	0.19 U	0.66 J	0.97	0.59 U
PCB-44	0.33	0.09 J	0.04 J	0.13 J	0.81 U	0.72	0.15 J
PCB-52	0.92	0.09 J	0.03 J	0.32	2.1 U	3.1	1.3 U
PCB-66	0.18 J	0.11 U	0.11 U	0.05 J	1.6	1 J	0.44 J
PCB-77	0.01 J	0.01 U	0.02 U	0.01 J	1.2 U	0.23 J	0.08 J
PCB-8/5	0.65 U	0.08 U	0.05 U	0.11 J	4.2	21	1.8 J
PCB-81	0.36 U	0.16 U	0.16 U	0.16 U	1.2 U	1.2 U	1.8 U
PENTACHLOROANISOLE	0.12 U	0.02 U	0.02 U	0.08 U	0.66 U	2.4	0.29 U
PENTACHLOROBENZENE	0.08 U	0.16 U	0.12 U	0.06 U	0.73 U	1.9	5 U
TRANS-NONACHLOR	0.27	0.034 U	0.033 U	0.03 J	1.2	0.9	0.16 J
Metals (mg/kg)							
ALUMINUM	49202	36205	38101	41501	315	338	3.04 U
ARSENIC	13.8	4.72	6.47	9.91	5.09	5.95	4.52 J
CADMIUM	0.53	0.0689 J	0.0954 J	0.21	1.54	1.29	0.0248
CHROMIUM	69.4	19.3	28.8	30.9	3.09	3.82	0.62
COPPER	21.1 J	3.41 J	6.75 J	6.58	5.33	7.34	55.4
IRON	23744 J	8866 J	11209 J	12014	478	696	24.9 J
LEAD	96.6	21 J	47 J	28.8	2.76 J	3.2 J	0.11 U
MANGANESE	335	438	336	322	16.8	10.8	3.82

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	**100A**	**200A**	**300A**	**400A**	**300A**	**400A**	**100A**
MERCURY	0.31	0.0862 U	0.0669 U	0.1	0.29	0.28	0.96
NICKEL	17.5 J	4.73 U	8.5 U	8.51 J	1.83 U	2.41 U	1.86 U
SILVER	3.88 J	2.17	2.34	1.86	0.49 J	0.32 U	1.63 J
ZINC	85.1 J	13.4 J	21.8 J	29.6	70.4	76.8	95.3 J
Miscellaneous Parameters (%)							
% LIPID					1.7	3.5	2
TOTAL ORGANIC CARBON	3.24 J	0.22 J	0.2 J	0.64 J			

Notes:
RF-1 includes the following samples:
OU4-SD-R01-100A
OU4-SD-R01-200A
OU4-SD-R01-300A
OU4-SD-R01-400A
OU4-MU-R01-300A
OU4-MU-R01-400A
OU4-LJ-R01-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02					
	Sediment				Mussel	Lobster
Parameters	100A	200A	300A	400A	300A	100A
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8-HPCDD	29 U	7.67	22.6	2.13 U	22.9 UR	13.3 U
1,2,3,4,6,7,8-HPCDF	7.3 U	1.85	6.31	2.13 U	22.9 U	13.3 U
1,2,3,4,7,8,9-HPCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 UJ	13.3 U
1,2,3,4,7,8-HXCDD	0.91 UJ	1 U	0.45 J	2.13 U	22.9 U	13.3 UJ
1,2,3,4,7,8-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	13.3 U
1,2,3,6,7,8-HXCDD	0.91 UJ	1 U	0.68 J	2.13 U	22.9 U	13.3 UJ
1,2,3,6,7,8-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	13.3 U
1,2,3,7,8,9-HXCDD	0.91 UJ	1 U	0.83 J	2.13 U	22.9 U	13.3 UJ
1,2,3,7,8,9-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	13.3 U
1,2,3,7,8-PECDD	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	13.3 UJ
1,2,3,7,8-PECDF	1.2 J	1 U	0.94 J	2.13 U	22.9 U	13.3 U
2,3,4,6,7,8-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	13.3 U
2,3,4,7,8-PECDF	0.91 UJ	1 U	1.23 J	2.13 U	22.9 U	13.3 U
2,3,7,8-TCDD	0.18 UJ	0.2 U	0.26 U	0.43 U	4.59 UR	2.66 U
2,3,7,8-TCDF	0.18 UJ	0.24	0.26 U	0.43 U	4.59 U	2.87 J
OCDD	257 U	53.1	524	52 U	45.9 U	26.6 U
OCDF	1.82 UJ	3.22	7.68	4.5 U	45.9 U	26.6 U
TOTAL DIOXINS	333 U	74.1	601	62.1 U	71.8 J	4.11 J
TOTAL FURANS	45.5 U	11.8	26.9	5.5 U	23.2 J	2.87 U
TOTAL HPCDD	64.5 U	17.8	57.8	8.2 U	33.2 J	13.3 U
TOTAL HPCDF	14.4 U	4.83	6.31	2.13 U	22.9 U	13.3 U
TOTAL HXCDD	10.3 J	3.14	16.6	1.9 J	22.9 U	13.3 U
TOTAL HXCDF	8.7 J	1.63	5.65	1 J	23.2 J	13.3 U
TOTAL PECDD	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	13.3 U
TOTAL PECDF	6.1 J	1.88	3.18	2.13 U	22.9 U	13.3 U
TOTAL TCDD	1.2 J	0.2 U	1.72	0.43 U	38.6 J	4.11 J
TOTAL TCDF	3.4 J	0.24	4.11	0.43 U	4.59 U	2.87 J
Polyaromatic Hydrocarbons (ug/kg)						
1,6,7-TRIMETHYLNAPHTHALENE	12	9.89	17.1	15.7	2.4 J	1.07 J
1-METHYLNAPHTHALENE	19.4 J	9.53 J	35.7	35.2 J	6.7 J	4.22 J
1-METHYLPHENANTHRENE	93.6	44.7	102	94.7	3 J	1.18 J
2,6-DIMETHYLNAPHTHALENE	11.2	8.76	28.4	19.3	2.9 J	1.71 J
2-METHYLNAPHTHALENE	24.8	15.4	73.9	53.7	8.8 J	6.23 J
ACENAPHTHENE	16.3	22.1	36 J	26.3	6.3 J	1.02 J
ACENAPHTHYLENE	164 J	63.5	180	163 J	18.6 J	0.74 J
ANTHRACENE	294	146	355	295	28	1.22 J
BENZO(A)ANTHRACENE	599 J	344 J	715	506 J	22.7	4.73 J
BENZO(A)PYRENE	831 J	496	797	338 J	18.2	8.32
BENZO(B)FLUORANTHENE	899	465 J	1227	896	37.9 J	10.1
BENZO(E)PYRENE	506	210 J	558 J	400	39.9 J	7.01
BENZO(G,H,I)PERYLENE	415	189 J	438	357	13.5	3.56 J
BENZO(K)FLUORANTHENE	327	116	258 J	189	18.4 J	3.98 J
BIPHENYL	4.97 J	3.88	16.8	10.1 J	2.5 J	2.03 J
CHRYSENE	667	285	665	625	38.7 J	15.1
DIBENZO(A,H)ANTHRACENE	123 J	55.6	131	96.1 J	1.6 J	0.24 J
DIBENZOTHIOPHENE	24.5	14.6	44.8	22.6	1.1 J	0.35 J
FLUORANTHENE	1155	414 J	1396 J	860	61.7	20.7
FLUORENE	50.2	47.2	111	53.7	5.6 J	1.76 J
INDENO(1,2,3-CD)PYRENE	467 J	229 J	561	419 J	9.8 J	3.42 J
NAPHTHALENE	28.4	33.3	155	79.9	11.5 J	8.48 J
PERYLENE	108 J	101	192	104 J	19.4 J	4.51 J
PHENANTHRENE	440	269	345	342	10.8	3.43 J
PYRENE	950	367 J	1285 J	818	69.7	18.6
Pesticides/PCBs (ug/kg)						
1,2,3,4-TETRACHLOROBENZENE	0.03 J	0.19 J	0.19 J	0.18 J	0.13 U	3.9
1,2,4,5-TETRACHLOROBENZENE	0.98 U	0.59 U	2.4	1.6 U	0.76 U	0.48 U
2,4'-DDD	1.2	1	3	2.3	2	0.41 U
2,4'-DDE	0.04 J	0.05 J	0.097 U	0.04 J	0.11 J	0.57 UJ

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02					
	Sediment				Mussel	Lobster
Parameters	100A	200A	300A	400A	300A	100A
2,4'-DDT	0.32	0.01 J	0.026 U	0.07	1	0.19 J
4,4'-DDD	0.49	0.61	0.48	1.3	3.1	0.49 U
4,4'-DDE	0.81	0.21	0.29	1.6	6.5	3.9
4,4'-DDT	2.4	0.35	0.17 J	1.1	0.93 J	0.76 UJ
ALDRIN	0.054 U	0.01 J	0.03 J	0.075 U	0.39 U	0.65 U
ALPHA-BHC	0.16	0.1	0.12 J	0.2	0.31	0.46 U
ALPHA-CHLORDANE	0.75	0.21	0.52 J	0.75	0.99	0.49 U
BETA-BHC	0.37	0.18 U	0.24 U	0.25 U	1.3 U	0.42 U
CHLORPYRIFOS	0.75 U	0.52 U	0.33 U	0.64 U	2.6 U	4.3 U
CIS-NONACHLOR	0.08	0.08	0.21 J	0.34	1.1	0.1 J
DELTA-BHC	0.04 U	0.041 U	0.053 U	0.056 U	0.16 U	0.26 U
DIELDRIN	0.02 J	0.21	0.079 U	0.05 J	0.82 J	1.8 J
ENDOSULFAN II	0.12	0.06 J	0.33	0.16	0.19 J	0.49 U
ENDRIN	0.12 U	0.12 U	0.16 U	0.17 U	0.81 U	1.4 U
GAMMA-BHC (LINDANE)	0.21 U	0.22 U	0.28 U	0.3 U	0.08 J	0.41 U
GAMMA-CHLORDANE	0.43	0.07	0.079 U	0.39	0.42	0.52 U
HEPTACHLOR	0.07 J	0.16 U	0.2 U	0.57	0.45 U	0.74 U
HEPTACHLOR EPOXIDE	0.027 U	0.027 U	0.035 U	0.037 U	0.32 U	0.52 U
HEXACHLOROBENZENE	0.04 U	0.041 U	0.05 J	0.056 U	0.21 J	0.27 J
MIREX	0.027 U	0.027 U	0.035 U	0.037 U	0.72 U	1.2 U
OXYCHLORDANE	0.09	0.08	0.08	0.07	0.33 U	0.86
PCB-101/90	0.6	0.91	0.79	3.1	7.7	0.42 J
PCB-105	0.33 J	0.37 J	0.25 J	1.4	2.9 J	1.2 J
PCB-114	0.16 U	0.16 U	0.21 U	0.22 U	1.1 U	1.8 U
PCB-118	0.74	0.95	0.83	3.6	9.2	5
PCB-126	0.16 U	0.16 U	0.21 U	0.22 U	1.1 UJ	1.8 U
PCB-128	0.19	0.2	0.053 U	1.1	2	0.91 J
PCB-138/160	1.3	0.91	0.42 U	4.7	13	5.6 U
PCB-149/123	0.84	0.43	0.24	1.9	5.6	0.15 J
PCB-153/132	1.2	0.91	0.2 U	4.3	17	7.4 U
PCB-156	0.6	0.35	0.87 J	1.1	1.1 U	1.8 U
PCB-167	0.16 J	0.09 J	3.1	0.38	1.1	0.55 J
PCB-169	0.03 U	0.16 U	0.01 U	0.04 U	1.1 U	0.05 J
PCB-170/190	10 J	3.7 J	9 J	15 J	0.37 U	0.82 U
PCB-18/17	0.08 U	0.081 U	0.11 U	0.11 U	0.48 J	0.88 J
PCB-180	0.98	0.48	0.14 U	1.4	7.9 J	1.8 U
PCB-187	0.5	0.14 J	0.16 J	1	6	2.4
PCB-189	0.15 J	0.09 J	0.18 J	0.36	1.1 U	1.8 U
PCB-195/208	0.34	0.11	0.08 J	0.47	0.91 U	0.16 J
PCB-201/157/173	0.33	0.27	0.37	0.58	0.31 J	1.4 U
PCB-206	0.02 J	0.04 J	0.17 J	0.59	0.95 U	0.07 J
PCB-209	0.61	0.17	0.27	1.1	1.2 U	2 U
PCB-28	0.45	0.24	0.24 U	1	0.66 J	0.05 U
PCB-44	0.2	0.21	0.18 U	0.4	0.82 U	0.63 J
PCB-52	13	0.59	0.05 J	3.1	2.3 U	1.2 U
PCB-66	0.2	0.39	0.44	1.3	1.4	0.81 J
PCB-77	0.14 U	0.03 U	0.01 J	0.55 U	0.23 J	1.8 U
PCB-8/5	0.62	0.24 U	0.2 U	0.36 U	6	1.4 J
PCB-81	0.02 J	0.03 J	0.21 U	0.22 U	1.1 U	1.8 U
PENTACHLOROANISOLE	0.39 J	0.07 U	0.04 U	0.15 U	0.89 U	0.24 U
PENTACHLOROBENZENE	0.4 U	0.22 U	0.6 U	0.34 U	0.99 U	2.5 U
TRANS-NONACHLOR	0.31	0.07	0.07 J	0.23	0.94	0.18 J
Metals (mg/kg)						
ALUMINUM	44541	49863	46164	55986	353	3.1 U
ARSENIC	8.56	11.8	9.4	14.8	4.22	4.13 J
CADMIUM	0.12 J	0.33 J	0.26 J	0.44 J	1.22	0.0202
CHROMIUM	37.2	51.6	64	86.1	3.79	0.61
COPPER	13.9 J	29.2 J	12.8 J	28.3 J	8.3 J	31.8
IRON	15229 J	21926 J	18220 J	25988 J	563	9.56 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02					
	Sediment				Mussel	Lobster
Parameters	**100A**	**200A**	**300A**	**400A**	**300A**	**100A**
LEAD	86.1 J	88.6 J	45.2 J	107 J	3.54	0.15 U
MANGANESE	217	380	401	367	12.6	3.8
MERCURY	0.0756 U	0.23	0.4	0.28	0.26	0.74
NICKEL	16.6 J	17.3 J	14.9 J	24.6 J	5.03 U	1.9 U
SILVER	1.98	3.15	3.15	4.15	0.29 U	0.8 J
ZINC	64 J	70.7 J	34.6 J	75.3 J	87.9 J	84.2 J
Miscellaneous Parameters (%)						
% LIPID					4.5	1.6
TOTAL ORGANIC CARBON	0.88 J	0.48 J	1.54 J	2 J		

Notes:

RF-2 includes the following samples:

OU4-SD-R02-100A
OU4-SD-R02-200A
OU4-SD-R02-300A
OU4-SD-R02-400A
OU4-MU-R02-300A
OU4-LJ-R02-100A

Sample OU4-MU-R02-400A was removed from the dataset because there was a laboratory error with this sample. See Section 3.2.3 of this Baseline Report.

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	320 J	4.6 U	84.6 U	147	13.7 J	22.5 UR	11.9 U
1,2,3,4,6,7,8-HPCDF	79.4 J	1.6 U	21.8 U	37.1	24.9 U	22.5 U	11.9 U
1,2,3,4,7,8,9-HPCDF	2.24 J	1.62 UJ	1.12 U	1.44 U	24.9 UJ	22.5 UJ	11.9 U
1,2,3,4,7,8-HXCDD	7.91 U	1.62 UJ	1.12 U	1.44 U	24.9 U	22.5 U	11.9 UJ
1,2,3,4,7,8-HXCDF	7.91 U	1.62 UJ	1.12 U	1.44 U	24.9 U	22.5 U	11.9 U
1,2,3,6,7,8-HXCDD	13 J	1.62 UJ	1.12 U	6.64	24.9 U	22.5 U	11.9 UJ
1,2,3,6,7,8-HXCDF	3.38 J	1.62 UJ	1.12 U	1.66	24.9 U	22.5 U	11.9 U
1,2,3,7,8,9-HXCDD	4.93 J	1.62 UJ	1.12 U	1.44 U	24.9 U	22.5 U	11.9 UJ
1,2,3,7,8,9-HXCDF	7.91 U	1.62 UJ	1.12 U	1.44 U	24.9 U	22.5 U	11.9 U
1,2,3,7,8-PECDD	1.7 J	1.62 UJ	0.8 J	1.44 U	24.9 U	22.5 U	11.9 UJ
1,2,3,7,8-PECDF	2.34 J	1.62 UJ	1.12 U	1.07 J	24.9 U	22.5 U	11.9 U
2,3,4,6,7,8-HXCDF	5.19 J	1.62 UJ	1.12 U	1.44 U	24.9 U	22.5 U	11.9 U
2,3,4,7,8-PECDF	2.84 J	1.62 UJ	1.12 U	1.44 U	24.9 U	22.5 U	11.9 U
2,3,7,8-TCDD	1.58 U	0.32 UJ	0.22 U	0.29 U	4.98 UR	4.5 UR	0.37 J
2,3,7,8-TCDF	6 J	0.32 UJ	1.2	1.43	7.5 J	4.5 U	1.33 R
OCDD	2410 J	47.5 U	945	1437	89.9 J	45 U	23.8 U
OCDF	98.7 J	3.24 UJ	43.7 U	63.5	49.8 U	45 U	0.19 U
TOTAL DIOXINS	3274 J	59 U	1193	1882	104 J	68.2 J	0.37 J
TOTAL FURANS	368 J	4.4 U	104 U	205	7.5 J	39.4 J	1.52 U
TOTAL HPCDD	694 J	10.3 U	203	345	13.7 J	22.5 U	11.9 U
TOTAL HPCDF	170 J	3.4 U	50.9 U	83.6	24.9 U	22.5 U	11.9 U
TOTAL HXCDD	162 J	1.1 J	40.6	93	24.9 U	22.5 U	11.9 U
TOTAL HXCDF	57.8 J	1 J	1.12 U	35.8	24.9 U	21.9 J	11.9 U
TOTAL PECDD	1.7 J	1.62 UJ	0.8 J	3.41	24.9 U	22.5 U	11.9 U
TOTAL PECDF	27.4 J	1.62 UJ	3.5	17.2	24.9 U	22.5 U	11.9 U
TOTAL TCDD	6.56 J	0.32 UJ	4.5	3.38	4.98 U	68.2 J	0.37 J
TOTAL TCDF	13.8 J	0.32 UJ	5.6	5.43	7.5 J	17.5 J	1.33 J
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	8.78	30.2	14.6 J	13.1 J	5.8 J	5.4 J	1.15 J
1-METHYLNAPHTHALENE	13.6 J	18.5 J	26.5 J	10.2 J	8 J	6.3 J	3.4 J
1-METHYLPHENANTHRENE	65.6	161	67.3 J	90.6 J	6.4	7.6	1.5 J
2,6-DIMETHYLNAPHTHALENE	9.69	20.7	13.5 J	9.11 J	5.3 J	4 J	1.53 J
2-METHYLNAPHTHALENE	16.3 J	29.3	27.4 J	14.8 J	11.4 J	8.3 J	4.95 J
ACENAPHTHENE	79.8 J	38.9	49.5 J	27.3 J	5.3 J	7.5 J	0.72 J
ACENAPHTHYLENE	65.1	124 J	43.4 J	87 J	14.6 J	18.6 J	0.67 J
ANTHRACENE	136 J	402	152 J	181 J	24.2	34.8	1.39 J
BENZO(A)ANTHRACENE	700	714 J	308 J	499 J	13.1	17.3	4.94 J
BENZO(A)PYRENE	429 J	838 J	428 J	721 J	9.7	13.8	8.07
BENZO(B)FLUORANTHENE	1281	795	399 J	671 J	26.1 J	27.4 J	7.25
BENZO(E)PYRENE	616	375	186 J	309 J	26.8 J	32.3 J	4.95 J
BENZO(G,H,I)PERYLENE	578	353	156 J	269 J	9.1	12.9	2.8 J
BENZO(K)FLUORANTHENE	318	211	99.9 J	192 J	9.2 J	9.8 J	4.67 J
BIPHENYL	5.27	8.4 J	4.91 J	4.02 J	2.8 J	2 J	1.82 J
CHRYSENE	809	583	282 J	431 J	26.1 J	34.6 J	11.2
DIBENZO(A,H)ANTHRACENE	141	92.9 J	45.7 J	68.5 J	0.3 J	0.9 J	0.07 J
DIBENZOTHIOPHENE	36.3	43.1	25.2 J	19.3 J	1.6 J	1.4 J	0.4 J
FLUORANTHENE	1669	1094	461 J	943 J	51.7	64.5	16.5
FLUORENE	99.8	114	73.9 J	49.8 J	5.9 J	7 J	1.91 J
INDENO(1,2,3-CD)PYRENE	692	461 J	184 J	345 J	5.1 J	7.5 J	2.72 J
NAPHTHALENE	26.3	52.1	37.1 J	28.8 J	14 J	11.3 J	6.15 J
PERYLENE	185	164 J	78.3 J	133 J	15.4 J	19.1 J	4.14 J
PHENANTHRENE	691	670	414 J	367 J	11	13.9	4.11 J
PYRENE	1357	933	448 J	812 J	50.6	60.6	14.3
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.64 U	0.12 J	0.05 J	0.46	0.16 U	0.25 U	13
1,2,4,5-TETRACHLOROBENZENE	4.3 U	1.6 U	1.1 U	3.1	0.93 U	0.8 U	0.71 U
2,4'-DDD	5.2 J	2.4	1.4	2.4	1.7	2.3	0.41 U
2,4'-DDE	0.8 J	0.14	0.16	0.081 U	0.24 J	0.17 J	0.58 UJ
2,4'-DDT	0.44 J	0.03 J	0.01 J	0.02 J	0.22 J	0.52	0.53 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
4,4'-DDD	4 J	1.1	0.54	0.71	2.9	4.5	0.5 U
4,4'-DDE	9.7 J	0.6	0.46	0.75	6.8	10	1.8
4,4'-DDT	2.1 J	0.27	0.28	0.44 J	0.77 J	1.5 J	0.77 UJ
ALDRIN	0.82 J	0.02 J	0.04 J	0.12	0.07 J	0.09 J	0.67 U
ALPHA-BHC	0.11 J	0.2	0.08 U	0.15 J	0.38	0.42	0.47 U
ALPHA-CHLORDANE	0.76 J	0.67	0.28	0.33 J	1.1	1.5	0.5 U
BETA-BHC	0.46 UJ	0.24 U	0.21 U	0.2 U	0.83 U	3.2 U	0.43 U
CHLORPYRIFOS	2.8 U	0.99 U	0.61 U	0.28 U	2.7 U	2.7 U	4.3 U
CIS-NONACHLOR	2 J	0.31	0.11	0.22 J	0.86	1.5	0.13 J
DELTA-BHC	0.1 UJ	0.054 U	0.02 J	0.044 U	0.17 U	0.17 U	0.27 U
DIELDRIN	0.15 UJ	0.1	0.01 J	0.066 U	0.85 J	1.1 J	1.4 J
ENDOSULFAN II	2.3 J	0.66	0.095 U	0.64	0.14 J	0.08 J	0.5 U
ENDRIN	0.45 J	0.16 U	0.14 U	0.13 U	0.86 U	0.87 U	1.4 U
GAMMA-BHC (LINDANE)	0.78 J	0.29 U	0.25 U	0.24 U	0.12 J	0.16 J	0.41 U
GAMMA-CHLORDANE	0.38 J	0.13	0.06 J	0.066 U	0.4	0.57	0.53 U
HEPTACHLOR	0.17 J	0.12 J	0.09 J	0.17 U	0.47 U	0.48 U	0.75 U
HEPTACHLOR EPOXIDE	0.068 UJ	0.036 U	0.032 U	0.029 U	0.33 U	0.34 U	0.53 U
HEXACHLOROBENZENE	0.1 UJ	0.054 U	0.047 U	0.03 J	0.24 J	0.19 J	0.15 J
MIREX	0.51 J	0.036 U	0.032 U	0.029 U	0.76 U	0.77 U	1.2 U
OXYCHLORDANE	0.41 J	0.47	0.11	0.05	0.35 U	0.35 U	1.6
PCB-101/90	3.2 J	2	0.51	1.5	7	9.6	0.38 J
PCB-105	2 J	0.94	0.19 J	0.75 J	2.7 J	3.8 J	0.54 J
PCB-114	0.41 UJ	0.21 U	0.19 U	0.18 U	1.2 U	1.2 U	1.8 U
PCB-118	4 J	2.6	0.78	1.3	6.5	11	1.7 J
PCB-126	0.41 UJ	0.21 U	0.19 U	0.18 U	1.2 UJ	1.6 J	1.8 U
PCB-128	3.2 J	0.57	0.13	0.22	1.7	2.6	0.37 J
PCB-138/160	2.6 J	2.1	0.75	1.5	11	17	2.2 U
PCB-149/123	2.5 J	1.3	0.29	0.73	4.7	7.3 U	0.12 J
PCB-153/132	4.6 J	2	0.78	1.3	14	21	0.29 U
PCB-156	1.7 J	0.71	0.46	0.37 J	0.19 J	1.2 U	0.32 J
PCB-167	1.2 J	0.22	0.04 J	2.3	0.96 J	1.4	1.8 U
PCB-169	0.11 U	0.03 U	0.02 U	0.01 U	1.2 U	0.11 U	1.8 U
PCB-170/190	2.3 UJ	8.9 J	6.1 J	13 J	0.6 U	0.46 U	0.64 U
PCB-18/17	5.4 J	0.27	0.43	0.088 U	0.57 J	1.2 J	4.8 U
PCB-180	2.3 J	1.1	0.53	0.64	7.2 J	11 J	0.81 U
PCB-187	1.3 J	0.46	0.29	0.46	6.3	7.3	1 J
PCB-189	0.45 J	0.29	0.11 J	0.24	1.2 U	1.2 U	1.8 U
PCB-195/208	1.2 J	0.27	0.19	0.27 J	0.97 U	0.97 U	1.5 U
PCB-201/157/173	1.41 J	0.57	0.24	0.49	0.89 U	0.43 J	1.4 U
PCB-206	0.44 J	0.15	0.09	0.28 J	1 U	1 U	1.6 U
PCB-209	0.78 J	0.62	0.4	1	1.3 U	1.3 U	2.1 U
PCB-28	0.95 J	0.59	0.19 J	0.14 U	0.7 J	0.81 J	0.52 U
PCB-44	1.3 J	0.17 J	0.1 J	0.64	0.75 U	0.93 U	0.08 U
PCB-52	5.2 J	1.1	0.49	0.38	1.9 U	2.7 U	1.3 U
PCB-66	1.4 J	0.41	0.19	0.34	1.1	1.2	0.32 J
PCB-77	0.07 J	0.01 U	0.06 U	0.03 J	1.2 U	0.68 J	1.8 U
PCB-8/5	2.4 J	1.9	0.45	0.32 U	3.6	3.9	0.52 J
PCB-81	0.41 UJ	0.02 J	0.19 J	0.18 U	0.14 J	1.2 U	1.8 U
PENTACHLOROANISOLE	0.52 U	0.55 U	0.07 U	0.06 U	0.61 U	1.1 U	0.25 U
PENTACHLOROBENZENE	0.62 U	0.28 U	0.25 U	0.62 U	0.89 U	0.38 U	4.1 U
TRANS-NONACHLOR	1 J	0.28	0.04 J	0.13 J	1.1	1.4	0.22 J
Metals (mg/kg)							
ALUMINUM	41983	46959	48769	44345	280	477	6.9 U
ARSENIC	14.4	11.1	10.2	10.3	4.63	5.27	4.15 J
CADMIUM	0.81	0.33 J	0.23 J	0.24 J	1.51	1.14	0.0332
CHROMIUM	89.3	54.8	60.6	62.4	3.5 U	4.88	0.87
COPPER	24.5	13.7 J	10.5 J	12.5 J	19.8 J	15.4 J	41.6
IRON	20001	18147 J	18435 J	18770 J	382	805	14.8 J
LEAD	82.9	50.7 J	38.4 J	42.2 J	3.95	3.39	0.42 U
MANGANESE	343	299	396	463	9.4	14.1	2.34

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	**100A**	**200A**	**300A**	**400A**	**300A**	**400A**	**100A**
MERCURY	0.26	0.13	0.1	0.14	0.29	0.22	0.74
NICKEL	21.5 J	15.5 J	17.2 J	16.4 J	3.53 U	5.4 U	2.12 U
SILVER	2.64	2.82	2.78	3.23	0.33 U	0.33 U	0.72 J
ZINC	90.2	47.8 J	40.6 J	34.6 J	95.8 J	86.4 J	77.1 J
Miscellaneous Parameters (%)							
% LIPID					4.7	7	2.6
TOTAL ORGANIC CARBON	5.69 J	1.17 J	0.99 J	0.84 J			

Notes:
RF-3 includes the following samples:
OU4-SD-R03-100A
OU4-SD-R03-200A
OU4-SD-R03-300A
OU4-SD-R03-400A
OU4-MU-R03-300A
OU4-MU-R03-400A
OU4-LJ-R03-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	81.6	7.8 U	4.8 U	4.5 U	22.1 UR	21.9 U	4.35 U
1,2,3,4,6,7,8-HPCDF	23.2	2.3 U	1.08 U	0.98 U	22.1 U	21.9 U	2.85 U
1,2,3,4,7,8,9-HPCDF	1.07 J	1.03 U	1.08 U	0.98 U	22.1 UJ	21.9 U	18.7 U
1,2,3,4,7,8-HXCDD	0.86 J	1.03 U	1.08 U	0.98 U	22.1 U	21.9 UJ	18.7 U
1,2,3,4,7,8-HXCDF	1.45 J	1.03 U	1.08 U	0.98 U	22.1 U	21.9 U	18.7 U
1,2,3,6,7,8-HXCDD	3.52	1.03 U	1.08 U	0.98 U	22.1 U	21.9 UJ	18.7 U
1,2,3,6,7,8-HXCDF	0.98 J	1.03 U	1.08 U	0.98 U	22.1 U	21.9 U	18.7 U
1,2,3,7,8,9-HXCDD	3.32	1.03 U	1.08 U	0.98 U	22.1 U	21.9 UJ	18.7 U
1,2,3,7,8,9-HXCDF	0.17 J	1.03 U	1.08 U	0.98 U	22.1 U	21.9 U	18.7 U
1,2,3,7,8-PECDD	0.5 J	1.03 U	1.08 U	0.98 U	22.1 U	21.9 UJ	18.7 U
1,2,3,7,8-PECDF	2.05 U	1.03 U	1.08 U	0.98 U	22.1 U	8.25 J	1.78 U
2,3,4,6,7,8-HXCDF	0.54 J	1.03 U	1.08 U	0.98 U	22.1 U	21.9 U	18.7 U
2,3,4,7,8-PECDF	2.05 U	1.03 U	1.08 U	0.98 U	22.1 U	21.9 U	18.7 U
2,3,7,8-TCDD	0.7	0.21 U	0.22 U	0.2 U	4.42 UR	4.39 U	3.75 U
2,3,7,8-TCDF	1.15	0.21 U	0.2	0.2 U	4.42 U	4.39 U	3.75 U
OCDD	633	78.8 U	42.1 U	34 U	79.4 J	43.9 U	16.1 U
OCDF	33.7	2.06 U	2.2 U	1.96 U	44.2 U	43.9 U	6.51 U
TOTAL DIOXINS	861	97.5 U	55.3 U	44.5 U	137 J	29 J	26.09 J
TOTAL FURANS	116	6.5 U	4.7 U	1.5 U	44.5 J	8.25 U	17.77 J
TOTAL HPCDD	177	17.9 U	10.8 U	10.3 U	22.1 U	21.9 U	9.98 U
TOTAL HPCDF	50.2	4.5 U	1.5 U	1.5 U	22.1 U	21.9 U	2.85 U
TOTAL HXCDD	44.8	1.03 U	1.7	0.98 U	22.1 U	21.9 U	18.7 U
TOTAL HXCDF	24.4	1.8	1.08 U	0.98 U	13.7 J	21.9 U	5.38 U
TOTAL PECDD	0.5 J	1.03 U	1.08 U	0.98 U	22.1 U	21.9 U	18.7 U
TOTAL PECDF	3.95	0.3 J	0.6 J	0.98 U	15.2 J	8.25 J	1.78 U
TOTAL TCDD	5.96 U	0.8	0.8	0.2 J	57.5 J	29 J	3.75 U
TOTAL TCDF	3.39	0.21 U	0.5	0.2 U	15.6 J	4.39 U	1.24 J
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	1.8	0.32	0.4	0.47	3.2 J	3.94 J	1.52 J
1-METHYLNAPHTHALENE	3.34 J	0.69 J	0.65 J	0.81 J	4.5 J	3.21	9.13 J
1-METHYLPHENANTHRENE	7.49	0.89	1.2	1.3	5.2	5.43	0.62 J
2,6-DIMETHYLNAPHTHALENE	3.16	1.34	1.64	0.82 J	3.6 J	4.32 J	1.63 J
2-METHYLNAPHTHALENE	4.66 J	1.11 J	1 J	1.33 J	6.5 J	6.84	10.2 J
ACENAPHTHENE	3.88 J	0.24 J	0.24 J	0.45 J	5.2 J	2.42 J	0.71 J
ACENAPHTHYLENE	16.1	1.84	2.68	2.46	8.3 J	4.77 J	0.64 J
ANTHRACENE	22.4 J	2.35	3.25	3.33	13.6	11.4 J	0.84 J
BENZO(A)ANTHRACENE	53.9	2.82 J	5.49 J	5.65 J	9.3	13.5	1.17 J
BENZO(A)PYRENE	71.7 J	5.01 J	7.68 J	6.86 J	5.4	10.8	1.63 J
BENZO(B)FLUORANTHENE	93	6.31 J	9.11 J	7.43 J	15 J	20.4	2.75 J
BENZO(E)PYRENE	47	3.4	4.47	3.97	16.2 J	17.8	1.8 J
BENZO(G,H,I)PERYLENE	47.1	3.61 U	4.78 U	4.17 U	7.9	9.71 J	0.73 J
BENZO(K)FLUORANTHENE	29.4	1.86	2.62	1.94	4.6 J	8.4 J	2.31 J
BIPHENYL	1.68	0.41 J	0.41 J	0.56 J	1.7 J	2.61 J	1.34 J
CHRYSENE	59.2	4.01	6.73	6.63	17.3 J	22.2	4.83 J
DIBENZO(A,H)ANTHRACENE	10.8	0.59 J	0.91 J	0.72 J	0.6 J	1.3 J	0.08 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
DIBENZOTHIOPHENE	2.44	0.27	0.35	0.37	1 J	0.81 J	0.36 J
FLUORANTHENE	102	6.11 J	8.82 J	12.9 J	30.1	32.8	9.78
FLUORENE	6.61	0.75	0.93	0.94	4.3 J	4.44 J	2.15 J
INDENO(1,2,3-CD)PYRENE	55.6	3.62	5.09	4.01	4.3 J	7.02 J	0.73 J
NAPHTHALENE	7.78	1.77 J	1.63 J	1.96 J	8.6 J	4.33 J	9.05 J
PERYLENE	15.4	2.52 J	4.02	2.86 J	10.4 J	7.18 J	1.97 J
PHENANTHRENE	45.8	3.21	3.9	3.89	8	11.1	3.99 J
PYRENE	95.4	6.28 J	8.13 J	11.4 J	26.9	28.5	7.84
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.43 U	0.18 U	0.17 U	0.02 J	0.17 U	0.03 J	13
1,2,4,5-TETRACHLOROBENZENE	2.8 U	0.56 U	0.43 U	0.53 U	0.33 U	0.65 J	0.7 U
2,4'-DDD	0.4	0.05 U	0.04 J	0.055 U	1.2	1.6	0.42 U
2,4'-DDE	0.09	0.11	0.08	0.15	0.15 J	0.39	0.59 UJ
2,4'-DDT	0.3	0.08	0.04	0.02	0.27 J	0.7	0.54 U
4,4'-DDD	0.68	0.19	0.14	0.16	1.7	2.1	0.51 U
4,4'-DDE	1.3	0.08	0.1	0.15	5.1	6.5	3.4
4,4'-DDT	0.43	0.01 J	0.031 U	0.035 U	0.56 J	0.51	0.78 UJ
ALDRIN	0.18	0.05 U	0.05 U	0.055 U	0.05 J	0.35 U	0.68 U
ALPHA-BHC	0.03 J	0.04 U	0.06 U	0.03 U	0.27 J	0.25 U	0.48 U
ALPHA-CHLORDANE	0.16	0.1	0.09	0.062 U	0.94	0.74	0.21 J
BETA-BHC	0.2 U	0.17 U	0.17 U	0.19 U	0.98 U	1.5	0.44 U
CHLORPYRIFOS	1.1 U	0.47 U	0.42 U	0.46 U	2.8 U	2.3 U	4.4 U
CIS-NONACHLOR	0.06	0.03	0.02 J	0.01 J	0.56	0.95	0.47 U
DELTA-BHC	0.045 U	0.01 J	0.02 J	0.03 J	0.17 U	0.14 U	0.27 U
DIELDRIN	0.067 U	0.057 U	0.056 U	0.062 U	0.61 J	0.03 J	1.3 J
ENDOSULFAN II	0.28	0.075 U	0.074 U	0.083 U	0.17 J	0.12 J	0.51 U
ENDRIN	0.13 U	0.11 U	0.11 U	0.12 U	0.9 U	0.73 U	1.4 U
GAMMA-BHC (LINDANE)	0.09 J	0.2 U	0.2 U	0.22 U	0.09 J	0.11 J	0.42 U
GAMMA-CHLORDANE	0.02 J	0.057 U	0.02 J	0.02 J	0.26 J	0.25 J	0.54 U
HEPTACHLOR	0.35	0.02 J	0.03 J	0.04 J	0.49 U	0.4 U	0.77 U
HEPTACHLOR EPOXIDE	0.03 U	0.025 U	0.025 U	0.028 U	0.35 U	0.28 U	0.54 U
HEXACHLOROBENZENE	0.045 U	0.038 U	0.037 U	0.041 U	0.1 J	0.17 J	0.25 J
MIREX	0.05	0.025 U	0.025 U	0.028 U	0.79 U	0.64 U	1.2 U
OXYCHLORDANE	0.015 U	0.013 U	0.012 U	0.014 U	0.37 U	0.3 U	0.69
PCB-101/90	0.73	0.2	0.15	0.06	4.8	5	0.48 J
PCB-105	0.28 J	0.02 J	0.02 J	0.02 J	2 J	2.2	1.1 J
PCB-114	0.18 U	0.15 U	0.15 U	0.17 U	1.2 U	0.98 U	1.9 U
PCB-118	0.66	0.05 J	0.06 J	0.05 J	4.5	5	3.9
PCB-126	0.18 U	0.15 U	0.15 U	0.17 U	1.2 UJ	0.98 U	1.9 U
PCB-128	0.42	0.038 U	0.01 J	0.041 U	1.2	1.3	0.68 J
PCB-138/160	0.32 U	0.17 U	0.16 U	0.12 U	7.5	8.4	4.4 U
PCB-149/123	0.72	0.09 J	0.05 J	0.04 J	3.8 U	4.4	0.12 J
PCB-153/132	0.99	0.13 U	0.13 U	0.1 U	9.7 U	10	5.6 U
PCB-156	0.12 J	0.01 J	0.03 J	0.02 J	1.2 U	0.47 J	0.59 J
PCB-167	0.2	0.15 U	0.05 J	0.17 U	0.72 J	0.64 J	0.32 J
PCB-169	0.18 U	0.01 U	0.15 U	0.17 U	0.16 U	0.13 J	1.9 U

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
PCB-170/190	1 U	0.48 J	0.54 J	0.48 J	0.27 U	0.26 J	0.88 U
PCB-18/17	1.3	0.075 U	0.074 U	0.083 U	0.55 J	2.6 U	4.9 U
PCB-180	0.41	0.07 U	0.09 U	0.06 U	3.4 U	3.9	1.3 U
PCB-187	0.15 J	0.03 J	0.03 J	0.02 J	3.4	3.7	1.6
PCB-189	0.18 U	0.15 U	0.15 U	0.17 U	1.2 U	0.98 U	1.9 U
PCB-195/208	0.16	0.01 J	0.01 J	0.048 U	1 U	0.81 U	0.14 J
PCB-201/157/173	0.09	0.02 U	0.02 U	0.02 U	0.93 U	0.75 U	1.4 U
PCB-206	0.15	0.069 U	0.068 U	0.076 U	1 U	0.85 U	0.12 J
PCB-209	0.3	0.24	0.24	0.07 J	1.4 U	1.1 U	2.1 U
PCB-28	0.35 U	0.06 U	0.17 U	0.19 U	0.43 J	0.55 J	0.5 U
PCB-44	0.53	0.04 J	0.04 J	0.02 J	0.55 U	0.46 J	1.1 U
PCB-52	0.78	0.16	0.11 J	0.19	1.1 U	1.6	1.3 U
PCB-66	0.2	0.11 U	0.11 U	0.12 U	0.65 J	0.64 J	0.53 J
PCB-77	0.01 J	0.01 U	0.02 U	0.01 U	0.31 J	0.98 U	1.9 U
PCB-8/5	1.8	0.1 U	0.11 U	0.03 U	2.8	3.7	0.87 J
PCB-81	0.18 U	0.15 U	0.02 J	0.17 U	1.2 U	0.12 J	1.9 U
PENTACHLOROANISOLE	0.08 U	0.02 U	0.04 U	0.04 U	0.47 U	1.6	0.23 U
PENTACHLOROBENZENE	0.29 U	0.12 U	0.13 U	0.17 U	0.32 U	0.48	2.7 U
TRANS-NONACHLOR	0.78	0.09	0.03 J	0.03	0.75	0.85	0.2 J
Metals (mg/kg)							
ALUMINUM	44211	41040	46199	35399	218	579	3.19 U
ARSENIC	8.7	5.36	6.3	3.32	5.38	5.01	4.11 J
CADMIUM	0.25	0.0532 J	0.0845 J	0.0841 J	1.65	1.26	0.0282
CHROMIUM	51.3	31.5	37	25.3	3.21 U	5.17	0.67
COPPER	8.47	2.54 J	3.01 J	2.1 J	14.5 J	33 J	41.4
IRON	15978	11176 J	14785 J	7086 J	387	808	10.7 J
LEAD	53.6	16.2 J	18.4 J	16.1 J	4.2	5.19	0.66
MANGANESE	316	266	272	277	8.08	15.4	1.66
MERCURY	0.13	0.0798 U	0.0839 U	0.0946 U	0.34	0.28	0.64
NICKEL	10.5 J	11.5 J	20.8 J	9.17 U	1.85 U	2.24 U	1.96 U
SILVER	2.37	1.69	2.03	1.54 U	0.3 U	0.29 U	1.03 J
ZINC	34.8	17.1 U	24 U	14.7 J	87.4 J	105 J	101 J
Miscellaneous Parameters (%)							
% LIPID					3.8	4.9	2.3
TOTAL ORGANIC CARBON	1.82 J	0.21 J	0.19 J	0.15 J			

Notes:

RF-4 includes the following samples:

OU4-SD-R04-100A
OU4-SD-R04-200A
OU4-SD-R04-300A
OU4-SD-R04-400A
OU4-MU-R04-300A
OU4-MU-R04-400A
OU4-LJ-R04-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 04						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A

- All results are presented in dry weight
- Alkylated PAH results for the sediment are presented in Table 3-3
- Grain size and percent moisture results for the sediment are presented in Table 3-5
- AVS and SEM data are presented in Tables 3-6 and 3-7
- Alkylated PAH results for the mussels are presented in Appendix G.1. Percent moisture is presented in Appendix G.2.
- Alkylated PAH results for the lobsters are presented in Appendix G.3. Percent moisture is presented in Appendix G.4.

Qualifiers:
J = Positive result is estimated as a result of a value below the CRQL or a technical noncompliance.
U = Value is a nondetected result as reported by the laboratory and should not be considered present.
UJ = Nondetected result is considered to be estimated as a result of technical noncompliances.
UR = Compound was rejected due to severe technical noncompliances or as a result of calibration RRF noncompliances.

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 01							
	Sediment				Mussel		Lobster	
Parameters	101B	201B	301B	301B-DUP	201B	301B	101B	101B-DUP
Polyaromatic Hydrocarbons (NG/G)								
1,1-BIPHENYL	8.8	12.5	94	91.1 J	6.1 J	6.2 J	9.80 J	5.50 J
1-METHYLNAPHTHALENE	26.7	29.8	234.4	237.8 J	9 J	17.1 J	6.40	4.90 J
1-METHYLPHENANTHRENE	39.2	146.7	742	749.4 J	14.5 J	25.4 J	4.20 J	4.00 J
2,3,5-TRIMETHYLNAPHTHALENE	7.2	18.4	88.9 J	116 J	6.1 J	15.9	2.00 J	1.70 J
2,6-DIMETHYLNAPHTHALENE	14	26.1	94.3	109.6 J	6.8 J	8.8	2.20 J	1.50 J
2-METHYLNAPHTHALENE	38.8	38.7	347.2 J	292.2 J	12.1 J	10.2 J	7.80	5.90 J
ACENAPHTHENE	59.7 J	73	1591.2 J	203.1 J	5.3 J	18.3 J	2.80 J	2.30 J
ACENAPHTHYLENE	75.5 J	218.7	796.2	1434.8 J	23.4 J	29.2 J	0.40 J	1.60 J
ANTHRACENE	215.3 J	532.5	3471.3 J	1572.5 J	46.9 J	53.8 J	5.30 J	5.50 J
BENZO(A)ANTHRACENE	334.8	784.9	4259.3 J	4132.4 J	16	38.3 J	13.1	12.4
BENZO(A)PYRENE	601.4 J	1159.1	5956.5	6132.2 J	13.5	21.8	41.6 J	40.6
BENZO(B)FLUORANTHENE	540.4	886.7	4612.6 J	4192.5 J	25.5	21.9 J	22.6	22.7
BENZO(E)PYRENE	312.2 J	509.7	2776.3 J	3428 J	30.7 J	30.3 J	17.2	16.6
BENZO(G,H,I)PERYLENE	290.1 J	499.5	2306.2 J	2800.7 J	11.1 J	10.6 J	17.1 J	16.1
BENZO(K)FLUORANTHENE	137.4 J	271.2	1656.2 J	967.9 J	7.3 J	10.9 J	8.70	8.10
CHRYSENE	336.3 J	713.5 J	4073.5	3628.7 J	44.8	50.3	22.0	20.6
DIBENZO(A,H)ANTHRACENE	67.9 J	105.3 J	362.6 J	635.9 J	1.3 J	1 J	1.30 J	1.10 J
DIBENZOTHIOPHENE	14.8	41.2 J	374.6 J	96 J	2.5 J	3.5	1.20 J	0.90 J
FLUORANTHENE	486.6	1759.3	11714.1 J	6348.1 J	101.9	101	38.6	34.4
FLUORENE	73.1 J	138.5 J	2109 J	590.1 J	14.4 J	17.7 J	6.40 J	4.90 J
INDENO(1,2,3-CD)PYRENE	302 J	487 J	1948.3 J	2504.4 J	7.6	6.3	20.5 J	20.7
NAPHTHALENE	54.6	63.7	709.6	595.2 J	16.3 J	13.6 J	10.3 J	12.2 J
PERYLENE	78.7	96.1 J	410.2	69.9 J	14.5	8.4	9.30	8.30
PHENANTHRENE	307.3	965.5	9222.8 J	2523.5 J	45.6 J	49 J	19.2	16.5
PYRENE	488.9	1571.4	10886	11052.6 J	73 J	149.9 J	38.0	34.5
Pesticides/PCB's (NG/G)								
1,2,3,4-TETRACHLOROBENZENE	0.080 J	0.040 J	0.21 UJ	0.060 J	0.31 J	9.3 J	33 J	75 J
1,2,4,5-TETRACHLOROBENZENE	0.55 U	0.26 U	1.1 U	0.58 J	1.4 U	1.1 U	0.84 U	0.80 U
2,4'-DDD	21	19	7.6 J	51 J	3.4 J	1.4 J	1.9 U	1.8 U
2,4'-DDE	0.74	1.5	0.12 J	0.91 J	1.4	0.70 J	0.46 U	0.44 U
2,4'-DDT	1.6	20	6.9 J	0.074 UJ	2.7 J	1.3 J	0.46 UJ	0.44 U
4,4'-DDD	43	35	13 J	27 J	6.3	2.8	0.51 U	0.49 U
4,4'-DDE	8.5	22	2.9 J	9.9 J	14	6.8	3.9	3.6
4,4'-DDT	41	173	27 J	56 J	7.0	2.9	0.38 UJ	0.36 U
ALDRIN	0.51	0.080	32 J	31 J	0.29 U	0.21 U	0.32 U	0.31 U
ALPHA-BHC	0.23	0.060 J	0.12 J	0.10 J	0.91	0.93	0.32 U	0.31 U
ALPHA-CHLORDANE	4.9	3.5	4.0 J	9.8 J	2.4	1.4	0.11 U	0.10 U
BETA-BHC	0.11 J	0.34	0.060 J	0.22 UJ	0.71 U	0.53 U	0.84 U	0.80 U
CHLORPYRIFOS	0.12 U	0.065 U	0.13 UJ	0.14 UJ	0.35 U	1.2	1.3	1.4
CIS-NONACHLOR	0.69	0.60	0.76 J	5.5 J	1.3	0.84	0.35 U	0.34 U
DELTA-BHC	0.040 J	0.050	0.070 UJ	0.074 UJ	0.26 U	0.19 U	0.30 U	0.28 U
DIELDRIN	4.4	9.9	0.46 J	0.50 J	3.4	1.2 J	2.6 J	2.6
ENDOSULFAN II	0.16 U	3.1	0.16 UJ	5.9 J	0.26 U	0.19 U	0.30 U	0.28 U
ENDRIN	0.068 U	0.056 U	0.070 UJ	0.074 UJ	0.30 U	0.22 U	0.35 U	0.34 U
GAMMA-BHC (LINDANE)	0.27	0.16 J	0.15 UJ	0.16 UJ	0.46 U	1.3	1.5	1.3
GAMMA-CHLORDANE	5.7	3.5	0.32 J	0.037 UJ	1.7	0.71 J	0.16 U	0.15 U
HEPTACHLOR	0.17 U	0.46	0.36 J	0.19 UJ	0.28 U	0.21 U	0.32 U	0.31 U
HEPTACHLOR EPOXIDE	0.056 U	0.056 U	0.058 UJ	1.6 J	1.6 U	1.2 U	1.9 U	1.8 U
HEXACHLOROBENZENE	0.056 U	0.047 U	0.058 UJ	0.062 UJ	0.23 J	0.20 J	0.38 U	0.36 U
MIREX	0.090 U	0.98	0.093 UJ	0.099 UJ	0.60 U	0.45 U	0.70 U	0.67 U
OXYCHLORDANE	0.30	0.019 U	0.058 UJ	0.062 UJ	0.95 J	0.36 U	0.69	0.71
PCB-101/90	1.4	0.63	0.81 J	0.39 J	8.5	5.8	0.73 U	0.70 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 01							
	Sediment				Mussel		Lobster	
Parameters	101B	201B	301B	301B-DUP	201B	301B	101B	101B-DUP
PCB-105	0.41 J	0.22	0.87 J	6.4 J	2.6	1.4 J	0.65 J	0.57 J
PCB-114	0.44 U	0.065 U	0.45 U	0.48 UJ	0.94 U	0.70 U	1.1 U	1.1 U
PCB-118	1.0	0.78	2.1 J	0.43 UJ	7.1	4.0 J	2.5	2.2
PCB-126	0.27 UJ	0.22 U	0.28 UJ	0.30 UJ	0.020 J	0.010 U	3.4 UJ	3.2 U
PCB-128	0.71	1.0	2.3 J	4.1 J	1.6	0.74	0.40 J	0.40 J
PCB-149/123	1.2 J	0.90 U	2.0 J	8.1 J	7.7	5.3	1.1 U	1.1 U
PCB-153/132	2.0	0.96 U	2.3 J	26 J	20	11	4.5	4.4
PCB-156	3.0 J	3.5	0.45 UR	0.48 UJ	1.0 J	0.85	1.1 U	1.1 U
PCB-167	2.0	2.3	8.5 J	84 J	0.56 J	0.24 J	1.1 U	1.1 U
PCB-169	0.030 J	0.010 J	0.21 J	0.21 J	0.13 J	0.070 U	0.060 J	3.2 U
PCB-170/190	16 J	18	0.97 UJ	100 J	0.25 J	0.23 J	1.7 U	1.7 U
PCB-18/17	0.090 U	0.12 U	0.093 UJ	0.47 J	1.1	1.7 J	1.1 U	1.1 U
PCB-180	1.2 J	0.90 U	1.2 J	3.6 J	9.0 J	4.8 U	2.8 J	1.3 J
PCB-187	3.6	6.4	16	15 J	5.7	3.5	1.3 J	1.2 J
PCB-189	0.54	0.67	0.45 UJ	23 J	0.95 UJ	0.70 U	1.1 U	1.1 U
PCB-195/208	0.14 U	0.55	0.14 U	0.15 UJ	0.093 U	0.069 U	0.11 U	0.10 U
PCB-201/157/173	0.84	0.39	15 J	0.48 UJ	0.95 UJ	0.70 UJ	1.1 U	1.1 U
PCB-206	1.0	0.26	2.3	2.1 J	0.39 U	0.29 U	0.46 U	0.44 U
PCB-209	0.08 U	0.4 J	0.08 U	0.086 UJ	0.26 U	0.19 U	0.30 U	0.28 U
PCB-28	0.39	0.084 U	0.31 U	0.33 UJ	0.49 J	4.0 J	0.11 J	0.19 J
PCB-44	0.29	0.15 U	0.11 J	0.16 UJ	1.5	0.85 U	1.6 U	1.5 U
PCB-52	0.49	0.27	0.11	0.11 UJ	4.2	3.5 J	1.1 U	1.1 U
PCB-66	0.32	0.88	0.74 J	2.2 J	1.6	0.56	0.78 J	0.52 J
PCB-77	0.050 J	0.020 U	0.28 U	0.30 UJ	0.060 J	2.14 U	0.010 J	0.010 J
PCB-8/5	0.19 U	0.73	0.18 U	0.21 UJ	3.0	7.1 U	0.57 U	0.54 U
PCB-81	0.27 U	0.22 U	0.63 J	0.49 J	0.020 J	2.14 U	3.4 U	3.2 U
PCB138 /160	1.9	1.5 U	6.3	1.5 UJ	12	6.8 U	3.5	2.7
PENTACHLOROANISOLE	0.050 U	0.090 U	0.040 U	0.20 J	2.3	2.9	0.31 J	0.26 J
PENTACHLOROBENZENE	0.10 U	0.11	0.10 UJ	0.11 UJ	0.95	1.2	0.39 J	0.54 U
TRANS-NONACHLOR	1.9	1.9	0.49 J	1.6 J	2.3	1.3	0.30 U	0.28 U
Metals (UG/G)								
ALUMINUM	42995.97	38697.5	41808.9	38682.46	251 J	196.32 J	2.7 U	2.9 U
ARSENIC	9.6	19.49	11.89	11.129	8.79	8.73	19.7	20.9
CADMIUM	0.1858 U	0.54	0.1849 U	0.1875 U	1.05	0.97	0.04 U	0.14
CHROMIUM	67.32	60.79	74.14	83.13	3.58 U	4.46	1.2 U	0.46 U
COPPER	24.81	43.12	101.46 J	60.33 J	6.14	5.79	45.1	46.2
IRON	19925.35	26062.26	23187.23	19798.35	434.66	429.88	6.6 U	6.0
LEAD	62.84	452.96	268.7 J	122.94 J	3.44	3.08	0.47	0.49
MANGANESE	351.75	401.17	292.99	296.02	11.1	9.65	4.0 J	2.5 J
MERCURY	0.13 J	0.06 J	0.24 J	0.16 J	0.2	0.21	0.65	0.64
NICKEL	18.68	29.35	19.52	21.9	1.81 U	1.73 U	1.67 U	1.8 U
SILVER	0.28	0.15	0.31	0.26 J	0.06 U	0.06 J	0.72	0.79
ZINC	73.96 J	111.27	83.43 J	108.42	77.94	82.22	106	99.3
Miscellaneous Parameters (%)								
LIPIDS					10.8	6.7	2.80	2.60
TOTAL ORGANIC CARBON	0.97 J	0.63 J	2.25 J	1.48 J				

Notes:

MS01 includes the following samples:
OU4-SD-MS01-101B
OU4-SD-MS01-201B
OU4-SD-MS01-301B
OU4-SD-MS01-301B-FD
OU4-LJ-MS01-101B
OU4-LJ-MS01-101B-FD
OU4-MU-MS01-201B
OU4-MU-MS01-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 02						
	Sediment			Mussel			Lobster
Parameters	101B	201B	301B	101B	201B	301B	101B
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	7.3	10.6	4.8	5.1 J	4.4 J	5.7 J	4.50 J
1-METHYLNAPHTHALENE	22.3	33.7	11.7	5.7 J	4.5 J	10.2 J	3.80 J
1-METHYLPHENANTHRENE	36.8	87.5	40.2	11.3 J	8.2 J	17.3 J	0.80 J
2,3,5-TRIMETHYLNAPHTHALENE	7.8	29.5	5	4.9 J	4 J	8.8	1.00 J
2,6-DIMETHYLNAPHTHALENE	22.3	29.9	7.9	4.6 J	4.4 J	9.4 J	1.40 J
2-METHYLNAPHTHALENE	24.9	47.9	17.3	9.4 J	6.4 J	15.9 J	5.00 J
ACENAPHTHENE	13.6	45.6	21.4	3.4 J	6.2 J	9.8 J	1.60 J
ACENAPHTHYLENE	70.7	68.5	81.4	18.1 J	13.6 J	31.2 J	0.20 J
ANTHRACENE	152.1	257.7	184	44.9 J	29 J	70.1 J	2.10 J
BENZO(A)ANTHRACENE	210.8	331.7	248.8	42.2	13.1	21.2	2.20 J
BENZO(A)PYRENE	373.5	444	385.6	50	11.1	18.4	6.70 J
BENZO(B)FLUORANTHENE	335.9	373.8	339.7	57.4	21.5	36.1	6.60
BENZO(E)PYRENE	167	182.1	165.4	43.4 J	21.4 J	41 J	5.70
BENZO(G,H,I)PERYLENE	158.5	174.7	152.3	24.8 J	8.5 J	15.6 J	6.20 J
BENZO(K)FLUORANTHENE	80.1	105.2	106.3	19.8 J	6.1 J	12.3 J	2.10 J
CHRYSENE	200.3 J	316.9 J	241.3 J	54	30.7	63.7	6.80 J
DIBENZO(A,H)ANTHRACENE	35.7 J	44.7 J	37.3 J	3.5	0.9 J	1.8 J	0.50 J
DIBENZOTHIOPHENE	11.5 J	28.7 J	10.4 J	2.5 J	2.8	4.3	0.50 J
FLUORANTHENE	383.4	556.1	611.8	133.5	86.6 U	149	9.20
FLUORENE	32.8 J	102 J	37.9 J	14.2 J	16.7 J	25.5 J	3.10 J
INDENO(1,2,3-CD)PYRENE	172.2 J	188.4 J	179.2 J	24.2	6.3	11.1	5.10 J
NAPHTHALENE	38.2	59.6	30.1	12.2 J	7.5 J	17.9 J	7.90 J
PERYLENE	71.1 J	51.8 J	52.1 J	19.2	10.3	15.7 J	3.40 J
PHENANTHRENE	148.6	452.5	182.2	44.5 J	51.1 J	73.9 J	6.50 J
PYRENE	401.7	488.1	452.9	99.3 J	57.3 U	92.4 J	6.80
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	0.076 U	0.11 J	0.23	1.6	1.1	4.5	40
1,2,4,5-TETRACHLOROBENZENE	0.29 U	0.25 U	1.7	2.7 U	0.41 U	1.6 U	0.67 U
2,4'-DDD	2.5	3.2 J	8.1	0.90 J	1.8 J	1.8 J	1.5 U
2,4'-DDE	0.31	0.27 J	0.77	1.2	0.58	0.74	0.37 U
2,4'-DDT	0.34	2.7 J	1.5	1.7 J	2.1 J	1.3 J	0.37 UJ
4,4'-DDD	1.6	3.5 J	33	2.0	2.5	3.4	0.41 U
4,4'-DDE	1.8	4.3 J	35	6.3	8.0	10	2.3
4,4'-DDT	4.7	10 J	11	1.6	2.4	2.1	0.30 UJ
ALDRIN	0.11	0.030 J	0.12	0.33 U	0.23 U	0.24 U	0.26 U
ALPHA-BHC	0.11 U	0.064 U	0.18	0.92	0.65	0.70	0.26 U
ALPHA-CHLORDANE	0.22	0.46 J	1.7	1.7	1.2	1.8	0.10
BETA-BHC	0.18 U	0.13 U	0.34	0.84 U	0.59 U	0.63 U	0.67 U
CHLORPYRIFOS	0.11 U	0.030 J	0.14 U	1.8	1.2	1.5	1.1
CIS-NONACHLOR	0.13	0.64 J	0.58	1.0	1.1	1.3	0.28 U
DELTA-BHC	0.076 U	0.045 U	0.050 J	0.30 U	0.19 J	0.17 J	0.24 U
DIELDRIN	0.091 U	2.5 J	0.75	0.93 J	0.94	1.4	1.6 J
ENDOSULFAN II	0.61	1.3 J	0.88	0.30 U	0.21 U	0.22 U	0.24 U
ENDRIN	0.091 U	0.055 U	0.12 U	0.34 U	0.25 U	0.27 U	0.28 U
GAMMA-BHC (LINDANE)	0.62 U	0.37 U	0.79 U	0.54 U	0.38 U	0.41 U	0.97
GAMMA-CHLORDANE	0.045 U	0.17 J	1.8	0.90	0.68	1.2	0.13 U
HEPTACHLOR	0.36	0.22 J	0.33	0.32 U	0.37	0.39	0.26 U
HEPTACHLOR EPOXIDE	0.10	0.055 U	0.12 U	1.9 U	1.3 U	1.4 U	1.5 U
HEXACHLOROBENZENE	0.076 U	0.045 U	0.097 U	0.38 U	0.27 U	0.42	0.30 U
MIREX	0.045 U	0.027 U	0.13	0.70 U	0.49 U	0.53 U	0.56 U
OXYCHLORDANE	0.030 U	0.018 U	0.010 J	1.6 J	0.66 J	0.45 J	1.1
PCB-101/90	2.1	16 J	3.5	5.2	5.7	9.1	0.59 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 02						
	Sediment			Mussel			Lobster
Parameters	101B	201B	301B	101B	201B	301B	101B
PCB-105	0.90	7.1 J	1.7	2.0	2.0	2.2	0.68 J
PCB-114	0.11 U	0.064 U	0.14 U	1.1 U	0.78 U	0.84 U	0.89 U
PCB-118	1.5	8.3 J	3.1	4.3	4.8	6.5	1.7
PCB-126	0.36 U	0.060 U	0.46 U	0.030 J	0.040 J	0.010 J	2.7 UJ
PCB-128	0.62	2.9 J	1.7	0.92	1.3	1.9	0.35 J
PCB-149/123	1.8	70 J	3.4	5.1	6.5	8.2	0.89 U
PCB-153/132	2.7 U	128 J	6.0	14	15	19	3.6
PCB-156	1.5	3.3 J	1.4	0.59 J	0.67 J	1.2 J	0.89 U
PCB-167	0.90	1.9 J	1.2	1.1 U	0.60 J	0.84	0.89 U
PCB-169	0.010 J	0.010 J	0.010 J	0.060 J	0.20 J	0.090 J	0.070 J
PCB-170/190	6.1	40 J	7.2	0.31 J	0.32 J	0.18 J	0.31 J
PCB-18/17	0.20 U	0.21 J	1.3	1.6	0.63 J	0.97	0.23 J
PCB-180	1.2 U	380 J	4.4	6.6 J	5.8 J	7.7 J	1.0 J
PCB-187	1.3	305 J	2.8	3.8	4.7	5.9	1.1 J
PCB-189	0.11 U	0.54 J	0.12 J	1.1 U	0.78 UJ	0.84 U	0.89 U
PCB-195/208	0.51	126 J	1.2	0.11 U	0.076 U	0.082 U	0.087 U
PCB-201/157/173	0.030 U	55 J	0.41	1.1 UJ	0.78 UJ	0.84 UJ	0.89 U
PCB-206	0.87	258 J	3.5	0.46 U	0.32 U	0.35 U	0.37 U
PCB-209	0.9 J	23.3 J	0.55 J	0.31 U	0.21 U	0.23 U	0.24 U
PCB-28	0.14 U	0.082 U	0.17 U	3.4	0.83	1.3	0.70 U
PCB-44	0.14 J	1.7 J	0.96	0.43 J	0.51 J	1.1 J	0.13 J
PCB-52	0.63	4.5 J	0.52	1.1 U	3.2	3.2	0.91 U
PCB-66	0.41	1.6 J	0.88	0.87	0.77	0.84	0.35 U
PCB-77	0.030 U	0.050 U	0.050 U	0.090 J	0.010 J	0.020 J	2.7 U
PCB-8/5	0.20	0.52 J	1.4	12	5.2	12	0.46 U
PCB-81	0.010 U	0.060 U	0.46 U	0.010 J	0.010 J	2.5 U	2.7 U
PCB138 /160	2.9	36 J	6.0	8.2	9.6	12	2.1
PENTACHLOROANISOLE	0.14 U	0.050 U	0.15 U	3.3	2.8	3.5	0.23 J
PENTACHLOROBENZENE	0.091 U	0.13 J	0.13	1.0	0.98	0.76	0.46 U
TRANS-NONACHLOR	0.050 J	0.29 J	1.1	1.3	1.1	1.7	0.24 U
Metals (UG/G)							
ALUMINUM	55487.02	46482.1	52218.82	180.58 J	220.77 J	329.55 J	2.2 U
ARSENIC	14.21	14.0	13.17	8.79	9.96	8.79	18.1
CADMIUM	0.1785 U	0.87	1.33	1.74	1.15	1.03	0.04 U
CHROMIUM	96.79	74.0	180.38	4.01 U	3.63 U	4.30	0.92 U
COPPER	32.83	53.38	38.81	26.34	10.26	18.5	32.3
IRON	30339.17	31752.07	27406.04	321.21	442.16	664.6	11.4
LEAD	73.08	146.04	80.52	4.13	3.99	3.91	0.41
MANGANESE	374.71	273.75	349.2	10.82	9.88	12.2	4.2 J
MERCURY	0.25 J	0.74 J	0.33 J	0.26	0.25	0.19	0.68
NICKEL	27.79	37.1	29.59	1.8784 U	3.30 J	1.7421 U	1.67 U
SILVER	0.47	0.24	1.1	0.06 U	0.06 U	0.06 J	0.87
ZINC	100.71	99.29	95.64	93.12	77.23	75.22	112
Miscellaneous Parameters (%)							
LIPIDS				8.5	8.4	10.4	2.80
TOTAL ORGANIC CARBON	1.88 J	2.2 J	3.56 J				

Notes:

MS02 includes the following samples:
OU4-SD-MS02-101B
OU4-SD-MS02-201B
OU4-SD-MS02-301B
OU4-LJ-MS02-101B
OU4-MU-MS02-101B
OU4-MU-MS02-201B
OU4-MU-MS02-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 03						
	Sediment			Mussel			Lobster
Parameters	101B	201B	301B	101B	201B	201B-DUP	101B
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	10.7	5.2	4.6	4.2 J	4.1 J	5.3 J	3.80 J
1-METHYLNAPHTHALENE	26.4	12.3	10.8 J	5.7 J	5.3 J	7 J	4.00 J
1-METHYLPHENANTHRENE	81.1	60.7	27.8	9.9 J	8.5 J	10.8	1.30 J
2,3,5-TRIMETHYLNAPHTHALENE	10.9	8.2	5.7	4.7 J	4 J	3.5 J	1.10 J
2,6-DIMETHYLNAPHTHALENE	19.5	13	8.4	5.1 J	4.8 J	5.5 J	1.10 J
2-METHYLNAPHTHALENE	42.5	21.8	16.6 J	9.2 J	9.4 J	11.5	4.40 J
ACENAPHTHENE	69.7	21.7	13.8	3.8 J	3.1 J	3.8 J	1.30 J
ACENAPHTHYLENE	151.6	74	54.1	18.8 J	15.2 J	19.7 J	0.20 J
ANTHRACENE	575.9	265.8	141.6	35.7 J	33.1 J	41.1	1.70 J
BENZO(A)ANTHRACENE	753.5	366.4	234.2	16.3	12.3 J	16.6 J	4.90 J
BENZO(A)PYRENE	1028.3	531.8 J	378.5 J	16.5 J	13.3 J	17	6.90 J
BENZO(B)FLUORANTHENE	1162.4	509.4	332.3	29.7	24.2	28.4	9.80
BENZO(E)PYRENE	515.7	250.9	160.5	29.5 J	25.6 J	32	5.30 J
BENZO(G,H,I)PERYLENE	437.5	255.6	156.5	13.7	10.4	13.3	4.50 J
BENZO(K)FLUORANTHENE	332.8	164.7	111.6	8.2	7.1	7.9	2.60 J
CHRYSENE	986.8 J	376.7 J	247.6 J	43.5	36.4 J	47.2 J	8.20 J
DIBENZO(A,H)ANTHRACENE	101.9 J	56.1 J	36 J	1.9 J	1.2 J	1.5 J	0.30 J
DIBENZOTHIOPHENE	32.8 J	22 J	9 J	2.3 J	1.8 J	2.2 J	0.60 J
FLUORANTHENE	1566.1	762.1	363.7	82.2 U	87.1	103.3	16.4
FLUORENE	83 J	51.1 J	30.6 J	13 J	11.4 J	13.3	3.10 J
INDENO(1,2,3-CD)PYRENE	506.6 J	279.6 J	175.6 J	10.7	7.5 J	9.7 J	5.30 J
NAPHTHALENE	66.8	29.4	27.9 J	9.8 J	13.3	16.4	7.70 J
PERYLENE	137.9 J	71.4 J	59.5 J	10.4	8.4	10.7	4.00 J
PHENANTHRENE	686.9	388.7	168.5	36 J	32.2 J	38	6.70 J
PYRENE	1461.3	765.1	351.8	55.9 U	57.1 U	69.3	17.3
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	0.54	0.13	0.34	4.7 J	1.2 J	4.7 J	10
1,2,4,5-TETRACHLOROBENZENE	0.91	1.1	0.34 U	1.9 U	2.8 U	0.99 U	0.84 U
2,4'-DDD	13	2.6	2.7	2.0 J	2.0 J	1.9	1.9 U
2,4'-DDE	0.12 U	0.081 U	0.93	0.92	1.1 J	0.65 J	0.46 U
2,4'-DDT	1.3	0.26	0.040 J	2.0 J	1.7 J	2.5 J	0.46 UJ
4,4'-DDD	31	3.1	1.7	4.1	3.7	3.6	0.76
4,4'-DDE	6.6	1.7	1.0	8.5	8.7	8.8	2.5
4,4'-DDT	5.1	1.4	0.67	2.8	2.5	2.4	0.38 UJ
ALDRIN	0.11	0.070	0.060	0.22 U	0.25 U	0.23 U	0.33 U
ALPHA-BHC	0.060 J	0.081 U	0.10	0.57	0.89	0.67	0.33 U
ALPHA-CHLORDANE	0.99	0.64	0.35	1.7	1.6	1.5	0.11 U
BETA-BHC	0.32	0.14 U	0.10 U	1.6	0.65 U	0.60 U	0.84 U
CHLORPYRIFOS	0.12 U	0.081 U	0.095 U	2.2	0.31 U	3.8	1.6
CIS-NONACHLOR	1.1	0.22	0.14	2.5	1.6	1.5	0.35 U
DELTA-BHC	0.44	0.10	0.068 U	0.32	0.23 U	0.15 J	0.30 U
DIELDRIN	0.11 U	0.070 U	0.082 U	1.2 J	1.3 J	0.96 J	1.6 J
ENDOSULFAN II	1.6	0.67	0.57	0.20 U	0.23 U	0.21 U	0.30 U
ENDRIN	0.11 U	0.070 U	0.10	0.24 U	0.29	0.25 U	0.35 U
GAMMA-BHC (LINDANE)	0.72 U	0.47 U	0.56 U	0.37 U	0.47 J	0.69 J	1.3
GAMMA-CHLORDANE	0.69	0.16	0.18	0.96	1.4	1.1	0.16 U
HEPTACHLOR	1.9	0.76	0.19	0.22 U	0.25 U	0.23 U	0.33 U
HEPTACHLOR EPOXIDE	0.080 J	0.12	0.030 J	0.060 J	0.10 J	1.4 U	1.9 U
HEXACHLOROBENZENE	0.088 U	0.030 J	0.068 U	0.34	0.20 J	0.46	0.38 U
MIREX	0.12	0.035 U	0.070	0.48 U	0.55 U	0.50 U	0.71 U
OXYCHLORDANE	0.070	0.023 U	0.027 U	0.50 J	0.44 U	0.41	0.49 J
PCB-101/90	17	4.0	2.9	23	12	12	0.73 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 03						
	Sediment			Mussel			Lobster
Parameters	**101B**	**201B**	**301B**	**101B**	**201B**	**201B-DUP**	**101B**
PCB-105	5.2	1.2	1.2	3.9 J	2.8	2.8	0.54 J
PCB-114	0.12 U	0.081 U	0.095 U	0.75 U	0.86 U	0.79 U	1.1 U
PCB-118	3.4	1.3	1.1	8.1	7.8	7.3	2.2
PCB-126	1.1	0.28	0.33 U	0.020 J	0.020 J	2.41 U	3.39 UJ
PCB-128	3.8	0.91	0.66	3.8	1.8	1.7	0.40 J
PCB-149/123	37	5.3	3.0	43	13	13	1.1 U
PCB-153/132	68	8.2	4.4	87	28	28	4.4
PCB-156	3.6	0.83	0.67	2.9 J	1.4 J	0.60 J	1.1 U
PCB-167	0.12 U	0.081 U	1.2	2.0	0.57 J	0.55 J	1.1 U
PCB-169	0.42 U	0.020 J	0.030 J	0.020 J	0.24 J	0.080 J	0.010 J
PCB-170/190	27	12	7.1	2.8 J	0.54 J	0.34 J	0.35 J
PCB-18/17	0.23 U	0.15 U	0.64	0.53 J	1.2	1.6	1.1 U
PCB-180	53	9.3	3.2	21 J	9.1 J	8.9	1.2 J
PCB-187	32	8.0	2.3	31	12	12	1.2 J
PCB-189	1.0	0.20	0.070 J	0.23 J	0.86 U	0.79 U	1.1 U
PCB-195/208	5.5	1.9	0.40	0.27	0.084 U	0.077 U	0.11 U
PCB-201/157/173	1.9	0.83	0.27	1.6 J	1.1 J	1.0	1.1 U
PCB-206	4.4	3.0	0.73	0.31 U	0.36 U	0.33 U	0.46 U
PCB-209	1.9 J	0.92 J	0.32 J	0.21 U	0.24 U	0.22 U	0.30 U
PCB-28	0.16 U	0.10 U	0.29	1.6 J	0.32 J	0.62 U	0.87 U
PCB-44	0.33	0.20	0.060 J	1.0 J	1.5	1.5	0.64 J
PCB-52	5.9	1.8	0.48	7.4	6.1	5.4	1.1 U
PCB-66	0.64	0.36	0.21	0.53 J	0.48 J	0.95 J	0.44 U
PCB-77	0.42 U	0.28 U	0.33 U	0.070 J	0.040 J	0.010 J	3.39 U
PCB-8/5	0.41	0.43	0.50	8.4	1.6 J	4.8 J	0.57 U
PCB-81	0.50	0.33	0.010 U	0.020 J	0.010 J	0.010 J	3.4 U
PCB138 /160	52	9.3	4.1	53	18	17	2.6
PENTACHLOROANISOLE	0.28 J	0.13 U	0.14 U	3.7	1.7 J	3.0 J	0.21 J
PENTACHLOROBENZENE	0.080 J	0.080	0.060 J	0.76	0.52	0.64	0.030 J
TRANS-NONACHLOR	0.34	0.13	0.17	2.3	1.6	1.6	0.30 U
Metals (UG/G)							
ALUMINUM	55126.55	47522.36	52640.4	391.75 J	247.94 J	273.11 J	3.3 U
ARSENIC	17.15	15.56	10.41	9.56	9.89	10.15	22.0
CADMIUM	0.1834 U	0.84	0.85	1.09	0.95	1	0.03 U
CHROMIUM	116.41	93.57	70.34	3.91 U	5.72	4.77	0.96 U
COPPER	182.44	564.18	29.96	9.76	56.67	59.32	37.4
IRON	33216.49	38680.8	21368.34	649.96	617.16	683.15	12.4
LEAD	126.69	183.83	50.93	4.91	6.02	6.69	0.25
MANGANESE	387.63	338.61	307.95	13.18	11.23	11.95	3.5 J
MERCURY	0.49 J	0.39 J	0.19 J	0.23	0.21	0.22	0.53
NICKEL	43.13	62.66	19.07	2.35 J	4.58	4.23 U	1.63 U
SILVER	1.4	14.4	0.51	0.06 J	0.06 U	0.14 U	1.0
ZINC	216.68	472.93	83.51	79.23	108.51	106.87	87.0
Miscellaneous Parameters (%)							
LIPIDS				9	8	10	3.40
TOTAL ORGANIC CARBON	2.21 J	0.93 J	1.25 J				

Notes:

MS03 includes the following samples:
OU4-SD-MS03-101B
OU4-SD-MS03-201B
OU4-SD-MS03-301B
OU4-LJ-MS03-101B
OU4-MU-MS03-101B
OU4-MU-MS03-201B
OU4-MU-MS03-201B-FD

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 04					
	Sediment				Mussel	Lobster
Parameters	101B	101B-DUP	201B	301B	101B	101B
Polyaromatic Hydrocarbons (NG/G)						
1,1-BIPHENYL	25.8 J	51.5 J	6	0.9	5.2 J	4.30 J
1-METHYLNAPHTHALENE	88.6 J	109.6 J	11.1	1.8 J	5.2 J	3.20 J
1-METHYLPHENANTHRENE	282.2 J	474.9 J	33.4	5.8	5.8 J	1.10 J
2,3,5-TRIMETHYLNAPHTHALENE	25.6 J	73.5 J	6.2	0.9	4.7 J	1.20 J
2,6-DIMETHYLNAPHTHALENE	61.3 J	126.9 J	9.7	1.5	5.3 J	1.20 J
2-METHYLNAPHTHALENE	139.7 J	199.2	18.7	2.7 J	9 J	4.00 J
ACENAPHTHENE	384.8	460.2	11.8	2.6	3.1 J	1.90 J
ACENAPHTHYLENE	217.1 J	556.8 J	53.1	7.7	19.1 J	0.20 J
ANTHRACENE	2408 J	5921.3 J	151.9	22.2	38.4 J	1.70 J
BENZO(A)ANTHRACENE	2483.9 J	4812.4 J	218.8	52.9	17.5	4.60 J
BENZO(A)PYRENE	3059.2 J	6008.3 J	364.2 J	82.5 J	17.3 J	8.40 J
BENZO(B)FLUORANTHENE	2692.2 J	5490.9 J	301.6	80.9	32.7	7.90
BENZO(E)PYRENE	1136.7 J	2587.1 J	147.9	38.4	32 J	8.50
BENZO(G,H,I)PERYLENE	1133.9 J	2612.1 J	144.4	42	13.3	8.40 J
BENZO(K)FLUORANTHENE	743.2 J	1851.1 J	82.1	24.9	8.7	2.70 J
CHRYSENE	1848.8 J	3919.9 J	203.2 J	52.1 J	44.4	8.40 J
DIBENZO(A,H)ANTHRACENE	319 J	811.7 J	34.9 J	9.4 J	1.7 J	0.50 J
DIBENZOTHIOPHENE	158 J	344.6 J	8.9 J	1.8 J	1.9 J	0.50 J
FLUORANTHENE	5850.4 J	16098.2 J	313.9	98.7	92	11.1
FLUORENE	556.5 J	1221.1 J	30.5 J	4.2 J	13.8 J	3.00 J
INDENO(1,2,3-CD)PYRENE	1379.9 J	3509.1 J	159.9 J	46.1 J	10.6	5.90 J
NAPHTHALENE	197.9 J	268.6	31.6	3.3	10.1 J	6.60 J
PERYLENE	226.3 J	435.1 J	61.8 J	13.1 J	11.8	6.40
PHENANTHRENE	3454.9 J	8961.3 J	142.8	38.3	34.1 J	6.10 J
PYRENE	4332.9 J	12102.2 J	313.9	79.9	62.5 U	8.90
Pesticides/PCB's (NG/G)						
1,2,3,4-TETRACHLOROBENZENE	0.020 J	0.11 J	0.080	0.040 J	6.0 J	33
1,2,4,5-TETRACHLOROBENZENE	0.51	0.80 U	1.1	0.22 U	0.60 U	0.85 U
2,4'-DDD	27	23 J	2.3	13	3.1 J	1.9 U
2,4'-DDE	0.076 UJ	5.3 J	0.53	2.6	0.68	0.47 U
2,4'-DDT	5.8 J	11 J	0.063 U	21	2.1 J	0.47 UJ
4,4'-DDD	31	35 J	1.1	30	4.0	0.52 U
4,4'-DDE	9.0 J	15 J	0.74	95	11	1.8
4,4'-DDT	28	41 J	0.61	71	2.9	0.38 UJ
ALDRIN	0.022 UJ	10	0.10	0.010 J	0.23 U	0.33 U
ALPHA-BHC	0.10	0.060	0.090 J	0.065 U	1.2	0.33 U
ALPHA-CHLORDANE	1.1	1.3 J	0.21	0.12	2.2	0.11 U
BETA-BHC	0.15 UJ	0.31	0.15 U	0.040 U	1.0	0.85 U
CHLORPYRIFOS	0.076 UJ	0.43	0.11 U	0.065 U	4.3	1.6
CIS-NONACHLOR	0.51 J	0.91 J	0.23	0.046 U	1.3	0.36 U
DELTA-BHC	0.10	0.063 U	0.16	0.010 J	0.85	0.30 U
DIELDRIN	2.4 J	4.1	0.094 U	0.50	1.1	0.87 J
ENDOSULFAN II	2.2 J	0.15 UJ	0.31	0.12	0.21 U	0.30 U
ENDRIN	0.065 U	0.063 U	0.094 U	0.055 U	3.8	0.36 U
GAMMA-BHC (LINDANE)	0.45 U	0.14 U	0.64 U	0.030 J	0.33 J	0.76
GAMMA-CHLORDANE	0.25	0.23 J	0.080	0.060	1.3	0.16 U
HEPTACHLOR	1.1 J	0.31 J	0.42	0.090	0.23 U	0.33 U
HEPTACHLOR EPOXIDE	0.065 U	0.052 UJ	0.040 J	0.055 U	0.28 J	1.9 U
HEXACHLOROBENZENE	0.24	0.15	0.078 U	0.046 U	1.5	0.38 U
MIREX	0.19 J	0.34	0.11	0.028 U	0.50 U	0.71 U
OXYCHLORDANE	0.13 J	0.020 J	0.031 U	0.018 U	0.49 J	0.54 J
PCB-101/90	6.9	5.6 J	2.2	1.4	10	0.74 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 04					
	Sediment				Mussel	Lobster
Parameters	**101B**	**101B-DUP**	**201B**	**301B**	**101B**	**101B**
PCB-105	2.6 J	1.1 J	2.3	1.7	4.0	0.70 J
PCB-114	0.076 U	0.41 U	0.11 U	0.065 U	0.79 U	1.1 U
PCB-118	4.1	2.8 J	1.1	0.51	5.6	1.6
PCB-126	0.73 J	3.0 J	0.38 U	0.22 U	0.010 J	0.010 J
PCB-128	2.3	1.6 J	0.92	1.0	1.9	0.40 J
PCB-149/123	12	15 J	6.0	6.5	14	1.1 U
PCB-153/132	22	24 J	12	10	33	4.8
PCB-156	3.6	3.1 J	1.2	0.64	1.4 J	1.1 U
PCB-167	5.2	7.5 J	1.3	0.55	1.0	1.1 U
PCB-169	0.010 J	0.090 J	0.010 J	0.010 J	0.20 J	0.030 J
PCB-170/190	22	20 J	8.7	6.6	0.55 J	0.59 J
PCB-18/17	0.14 U	0.084 UJ	0.20 U	0.12 U	0.29 J	1.1 U
PCB-180	18	17 J	15	12	12 J	1.9 J
PCB-187	16	19	7.4	6.6	14	1.7 J
PCB-189	0.60	0.52 J	0.22	0.35	0.79 U	1.1 U
PCB-195/208	4.4	3.9	1.7	1.6	0.26	0.11 U
PCB-201/157/173	1.4	0.99 J	0.66	0.48	0.99 J	1.1 U
PCB-206	6.4	7.3	1.2	1.3	0.33 U	0.47 U
PCB-209	6.53 J	9.15	0.44 J	0.75 J	0.64	0.30 U
PCB-28	0.040 J	0.28 U	0.23	0.070 J	1.9	0.88 U
PCB-44	0.36 J	0.11 J	0.25 U	0.040 J	1.2	0.24 J
PCB-52	2.5	1.8	0.62	0.080	6.5	1.2 U
PCB-66	0.67	0.41 J	0.31	0.050	0.83	0.44 U
PCB-77	0.26 U	0.23 J	0.060 U	0.22 U	0.010 J	0.010 J
PCB-8/5	0.44 J	0.17 U	0.35	0.23	8.2	0.58 U
PCB-81	0.41 J	1.8	0.38 U	0.22 U	0.020 J	3.4 U
PCB138 /160	24	32	9.9	11	19	2.7
PENTACHLOROANISOLE	0.22 J	0.18 J	0.090 U	0.040 U	2.9	0.22 J
PENTACHLOROBENZENE	0.18	0.12	0.060 J	0.040 J	2.0	0.58 U
TRANS-NONACHLOR	0.29	0.19 J	0.040 J	0.12	1.7	0.30 U
Metals (UG/G)						
ALUMINUM	34118.02	34168.21	53787.01	43057.59	275.45 J	21.6 U
ARSENIC	22.559	24.41	11.374	12.36	9.81	15.5
CADMIUM	1.46	1.07	0.188 U	0.186 U	1.11	0.04 U
CHROMIUM	178.91	168.82	91.96	85.57	5.82	5.2
COPPER	2224.58	2679.63	34.15	242.88	18.33	24.5
IRON	62912.57	72570.05	23568.69	22868.18	561.96	27.3
LEAD	521.56	402.34	62.28	156.07	6.54	0.11 J
MANGANESE	408.65	431.89	347.94	531.65	12.13	9.3 J
MERCURY	3.69 J	4.74 J	0.34 J	0.33 J	0.31	0.55
NICKEL	281.72	312.82	22.26	38.72	2.20 J	1.64 U
SILVER	5.6 J	2.5 J	0.47 J	0.11 J	0.08 J	0.51
ZINC	1988.29	1967.53 J	95.85	115.59	93.67	87.8
Miscellaneous Parameters (%)						
LIPIDS					11.2	3.30
TOTAL ORGANIC CARBON	1.78 J	4.17 J	1.89 J	0.37 J		

Notes:

MS04 includes the following samples:
OU4-SD-MS04-101B
OU4-SD-MS04-101B-FD
OU4-SD-MS04-201B
OU4-SD-MS04-301B
OU4-LJ-MS04-101B
OU4-MU-MS04-101B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 05					
	Sediment			Mussel		Lobster
Parameters	101B	201B	301B	101B	301B	101B
Polyaromatic Hydrocarbons (NG/G)						
1,1-BIPHENYL	8.6	3.1	4.2	5 J	3.8 J	6.40 J
1-METHYLNAPHTHALENE	17.9	9	11.3	4.1 J	4.1 J	3.90 J
1-METHYLPHENANTHRENE	31	30.3	38.4	8.4 J	6.4 J	0.70 J
2,3,5-TRIMETHYLNAPHTHALENE	6.5	6.7	4.6	3.5 J	3.3 J	1.10 J
2,6-DIMETHYLNAPHTHALENE	16.8	6.5	8.2	3.5 J	3.2 J	1.40 J
2-METHYLNAPHTHALENE	26.4	12.6	17.8	6.8 J	6.4 J	5.20 J
ACENAPHTHENE	14.9	13	45.8	3 J	2.2 J	1.80 J
ACENAPHTHYLENE	53.3	67.1	55.7	14.4 J	13.4 J	0.20 J
ANTHRACENE	129.5	168.9	203.2	28.4 J	25.8 J	1.40 J
BENZO(A)ANTHRACENE	253.5	221.2	317.2	14.5	7.6	2.10 J
BENZO(A)PYRENE	407.1 J	361.4 J	480.6 J	14.5 J	5.8 J	3.70 J
BENZO(B)FLUORANTHENE	329.9	298.7	395.8	25.4	14.3	4.40 J
BENZO(E)PYRENE	157.7	149.8	188.8	23.1 J	16.9 J	3.40 J
BENZO(G,H,I)PERYLENE	152.9	134.4	178.5	10.3	6.2	3.90 J
BENZO(K)FLUORANTHENE	100.4	86	103.3	7.5	4.6	3.90 J
CHRYSENE	251.7 J	223 J	271.6 J	35.3	25.2	3.80 J
DIBENZO(A,H)ANTHRACENE	38 J	35.1 J	44.5 J	1.2 J	0.7 J	0.10 J
DIBENZOTHIOPHENE	9 J	8.2 J	16.2 J	1.5 J	1.4 J	0.60 J
FLUORANTHENE	433.7	418.9	550.1	70.2 U	53.9 U	6.90 J
FLUORENE	31.6 J	32.8 J	64.4 J	7.8 J	8.6 J	3.50 J
INDENO(1,2,3-CD)PYRENE	174.9 J	150.8 J	203.7 J	8.2	4.2	3.10 J
NAPHTHALENE	30	22.4	30	8.1 J	7.9 J	7.50 J
PERYLENE	57.2 J	52.7 J	56.4 J	8.2	7.4	2.30 J
PHENANTHRENE	189.7	174.8	355.6	25.2 J	21.5 J	5.40 J
PYRENE	387.3	366.2	481.2	46.5 U	32.4 U	4.90 J
Pesticides/PCB's (NG/G)						
1,2,3,4-TETRACHLOROBENZENE	0.17	0.030 J	0.070	0.85	0.85	5.4
1,2,4,5-TETRACHLOROBENZENE	0.35	0.14 U	0.40	1.9 U	1.2 U	0.10 J
2,4'-DDD	2.2	1.9	2.3	1.8 J	1.6 J	1.9 U
2,4'-DDE	0.94	0.64	0.29	0.77	1.8	0.48 U
2,4'-DDT	0.13	0.030 J	0.10	2.4 J	1.2 J	0.48 UJ
4,4'-DDD	1.0	0.48	2.2	3.3	2.7	0.54 U
4,4'-DDE	1.5	0.68	1.1	8.5	7.6	1.7
4,4'-DDT	1.7	0.81	0.98	2.9	1.9	0.40 UJ
ALDRIN	0.19	0.039 U	0.030	0.20 U	0.20 U	0.34 U
ALPHA-BHC	0.040 J	0.14 U	0.077 U	0.62	0.59	0.34 U
ALPHA-CHLORDANE	0.64	0.20	0.14	1.6	1.7	0.11 U
BETA-BHC	0.22 U	0.10 U	0.080 U	0.52 U	1.1	0.87 U
CHLORPYRIFOS	0.14 U	0.060 J	0.010 J	1.0	0.85	1.4
CIS-NONACHLOR	0.36	0.040 J	0.070	1.7	1.1	0.37 U
DELTA-BHC	0.050 J	0.097 U	0.030 J	0.12 J	0.18 U	0.31 U
DIELDRIN	0.070 J	0.12 U	0.066 U	1.0	0.84	0.94 J
ENDOSULFAN II	0.40	0.060 J	0.46	0.18 U	0.18 U	0.31 U
ENDRIN	0.12 U	0.12 U	0.066 U	0.22 U	0.21 U	0.37 U
GAMMA-BHC (LINDANE)	0.82 U	0.80 U	0.45 U	0.34 U	0.33 U	0.83
GAMMA-CHLORDANE	0.21	0.058 U	0.040	0.83	0.89	0.17 U
HEPTACHLOR	0.34	0.16 U	0.14	0.20 U	0.20 U	0.34 U
HEPTACHLOR EPOXIDE	0.12 U	0.18	0.040 J	1.2 U	1.2 U	2.0 U
HEXACHLOROBENZENE	0.010 J	0.030 J	0.055 U	0.13 J	0.16 J	0.40 U
MIREX	0.060 U	0.058 U	0.010 J	0.44 U	0.43 U	0.73 U
OXYCHLORDANE	0.040 U	0.039 U	0.020 J	0.35 U	0.35 U	0.54 J
PCB-101/90	2.2	1.1	0.59	6.2	7.7	0.76 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 05					
	Sediment			Mussel		Lobster
Parameters	**101B**	**201B**	**301B**	**101B**	**301B**	**101B**
PCB-105	0.27	0.26	0.23	1.9	1.4	0.56 J
PCB-114	0.14 U	0.14 U	0.077 U	0.69 U	0.68 U	1.2 U
PCB-118	0.47	0.36	0.53	5.2	5.4	1.3
PCB-126	0.020 U	0.47 U	0.26 U	0.020 J	0.030 J	0.020 J
PCB-128	0.46	0.14	0.26	1.4	1.3	0.62 U
PCB-149/123	0.95 U	0.63 U	1.1 U	6.3	5.5	1.2 U
PCB-153/132	1.7 U	1.4 U	0.44 U	15	13	3.3
PCB-156	1.3	1.2	0.62	1.4 J	0.77 J	1.2 U
PCB-167	0.99	0.82	0.81	0.64 J	0.41 J	1.2 U
PCB-169	0.48 U	0.010 J	0.26 U	2.1 U	2.1 U	0.060 J
PCB-170/190	4.7	4.4	4.6	0.26 J	0.19 J	0.39 J
PCB-18/17	0.88	0.25 U	0.14 U	0.64 J	0.54 J	1.2 U
PCB-180	1.4 U	0.99 U	0.97 U	6.3 J	6.1 J	1.1 J
PCB-187	0.72	0.41	0.74 U	4.5	4.3	0.98 J
PCB-189	0.14 U	0.070 J	0.060 J	0.69 UJ	0.68 U	1.2 U
PCB-195/208	0.24	0.070	0.24	0.067 U	0.066 U	0.11 U
PCB-201/157/173	0.24	0.18	0.17	0.69 UJ	0.68 UJ	1.2 U
PCB-206	0.48	0.18	0.29	0.29 U	0.28 U	0.48 U
PCB-209	0.28 J	0.21 J	0.34 J	0.19 U	0.19 U	0.31 U
PCB-28	0.090 J	0.070 J	0.050 J	0.36 J	0.52 J	0.90 U
PCB-44	0.040 J	0.31 U	0.040 J	0.84 J	1.5	0.22 J
PCB-52	0.39	0.36	0.17	3.7	3.0	1.2 U
PCB-66	0.53	0.70	0.14	0.76	0.80	0.45 U
PCB-77	0.010 U	0.040 U	0.26 U	0.010 J	0.010 J	0.010 J
PCB-8/5	0.13 J	0.36	0.20	2.4	0.86	0.59 U
PCB-81	0.48 U	0.47 U	0.010 U	0.020 J	0.020 J	3.5 U
PCB138 /160	2.0	1.4	1.4 U	9.0	9.0	2.0
PENTACHLOROANISOLE	0.36 J	0.090 U	0.040 U	1.4	1.4	0.28 J
PENTACHLOROBENZENE	0.15	0.070 J	0.050 J	0.42	0.45	0.59 U
TRANS-NONACHLOR	0.13 J	0.14 U	0.090	1.4	2.4	0.31 U
Metals (UG/G)						
ALUMINUM	57340.52	54131.3	44042.89	238.08 J	293.09 J	3.5 U
ARSENIC	13.314	12.163	5.652	9.6	9.4	18.8
CADMIUM	0.25 J	0.21 J	0.19 J	1.92	1.12	0.04 U
CHROMIUM	118.98	112.81	78.81	5.96	4.41	0.95 U
COPPER	51.25	31.76	14.74	16.97	5.89	39.0
IRON	30075.6	28113.78	17250.76	589.7	566.8	12.9
LEAD	107.62	63.51	42.95	117.92	3.15	0.29
MANGANESE	388.67	367.5	394.08	13.69	11.02	2.0 J
MERCURY	0.39 J	0.22 J	0.18 J	1.18	0.14	0.53
NICKEL	28.72	25.69	21.56	2.56 J	1.673 U	1.67 U
SILVER	0.62 J	0.66 J	0.43 J	0.10 J	0.06 U	0.94
ZINC	130.62	111.23	59.52	133.58	72.02	120
Miscellaneous Parameters (%)						
LIPIDS				7.9	7.9	2.80
TOTAL ORGANIC CARBON	2.63 J	2.85 J	0.60 J			

Notes:

MS05 includes the following samples:
OU4-SD-MS05-101B
OU4-SD-MS05-201B
OU4-SD-MS05-301B
OU4-LJ-MS05-101B
OU4-MU-MS05-101B
OU4-MU-MS05-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 06						
	Sediment			Mussel			Lobster
Parameters	101B	201B	301B	101B	201B	301B	101B
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	7	6.7	1.3	2.8 J	2.7 J	4 J	6.50 J
1-METHYLNAPHTHALENE	13.1	14.4	2.4	4.8 J	5 J	3.8 J	4.30 J
1-METHYLPHENANTHRENE	59.3	101.5	7.2	6.8 J	5.5 J	7.2 J	1.80 J
2,3,5-TRIMETHYLNAPHTHALENE	6.1	13	1.7	3.6 J	3.7 J	3.2 J	1.70 J
2,6-DIMETHYLNAPHTHALENE	11.9	12.9	2.4	3.7 J	3.5 J	3.9 J	1.80 J
2-METHYLNAPHTHALENE	22.8	23.3	4.4	6.6 J	7.7 J	7.6 J	5.40 J
ACENAPHTHENE	35.3	19.4	5	2.6 J	1.9 J	2.4 J	2.00 J
ACENAPHTHYLENE	78.8	135.8	11.1	12 J	12.1 J	15.8 J	0.20 J
ANTHRACENE	291.2	352	34.8	24.9 J	21.8 J	29.4 J	2.10 J
BENZO(A)ANTHRACENE	538.3	554.7	45.3	11.1	8.4	11.1	2.40 J
BENZO(A)PYRENE	886.7 J	795.5 J	70.6 J	7.5 J	6.9 J	13.9 J	5.40 J
BENZO(B)FLUORANTHENE	860.9	587.7	73.9	24.4	16.5	25.5	4.90 J
BENZO(E)PYRENE	392	300.6	36.5	25.9 J	18.2 J	26.5 J	4.00 J
BENZO(G,H,I)PERYLENE	381.6	274.1	34.3	8.3	6.5	11.2	4.70
BENZO(K)FLUORANTHENE	265	167.8	18.6	8.1	5.8	9.5	2.30 J
CHRYSENE	569.2 J	433.5 J	51.1 J	39.6	26.5	40	5.10 J
DIBENZO(A,H)ANTHRACENE	91.7 J	67.5 J	7.7 J	0.8 J	0.7 J	1.1 J	1.10 J
DIBENZOTHIOPHENE	29.7 J	15.1 J	4 J	1.6 J	1.3 J	1.9 J	1.10 J
FLUORANTHENE	1220.4	657.9	98.6	74.9 U	54.4 U	90.4 U	7.30
FLUORENE	81.1 J	56.1 J	9.8 J	8.1 J	11.1 J	10.5 J	3.80 J
INDENO(1,2,3-CD)PYRENE	454.2 J	297.8 J	38.4 J	6.1	5	8.2	4.80 J
NAPHTHALENE	33.1	40	5.7	7.3 J	7.8 J	8.2 J	7.90 J
PERYLENE	101.4 J	90.2 J	13.1 J	8.1	6.7	8.2	4.00 J
PHENANTHRENE	605.7	281.5	52.1	26.1 J	21.5 J	33 J	6.50 J
PYRENE	1053.1	741.1	83.3	46.3 U	34.5 U	50.7 U	5.70
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	0.44	0.020 J	0.18	1.2	4.2	7.2	9.0
1,2,4,5-TETRACHLOROBENZENE	0.49 U	0.29 U	0.090 U	2.0 U	1.4 U	8.0	0.71 U
2,4'-DDD	10	4.2	0.96	2.2 J	2.3 J	2.8 J	1.6 U
2,4'-DDE	0.58	0.14 U	0.30	1.6	0.24 J	0.89	0.39 UJ
2,4'-DDT	0.61	0.080 U	0.042 U	1.6 J	0.24 J	0.57 J	0.39 U
4,4'-DDD	21	1.3	1.7	4.4	2.3	3.0	0.43 U
4,4'-DDE	2.8	1.1	11	7.9	5.2	8.1	1.0
4,4'-DDT	4.9	1.2	1.8	1.8	1.0	2.0	0.32 UJ
ALDRIN	0.043 U	0.040 U	0.020 J	0.22 U	0.22 U	0.22 U	0.27 U
ALPHA-BHC	0.15 U	0.14 U	0.073 U	0.64	0.68	1.2	0.27 U
ALPHA-CHLORDANE	0.43	0.39	0.13	2.6	0.75	1.4	0.092 U
BETA-BHC	0.20 U	0.11 U	0.13 U	0.57 U	1.2	0.58 U	0.71 U
CHLORPYRIFOS	0.15 U	0.14 U	0.073 U	3.1	1.6	2.0	1.6
CIS-NONACHLOR	0.16	0.14	0.11	0.88	0.82	1.0	0.30 U
DELTA-BHC	0.090 J	0.100 U	0.052 U	1.2	0.85	0.22	0.25 U
DIELDRIN	0.21	0.12 U	0.38	0.83	0.66 J	1.2	1.1 J
ENDOSULFAN II	0.94	1.3	0.12	0.20 U	0.20 U	0.21 U	0.25 U
ENDRIN	0.13 U	0.050 J	0.063 U	0.18 J	0.20 J	3.4	0.30 U
GAMMA-BHC (LINDANE)	0.89 U	0.82 U	0.43 U	0.37 U	0.36 U	0.20 J	1.1
GAMMA-CHLORDANE	0.020 J	0.040 J	0.030	0.96	1.4	1.9	0.14 U
HEPTACHLOR	0.24	0.12 J	0.55	0.26	1.5	0.22 U	0.27 U
HEPTACHLOR EPOXIDE	0.13 U	0.030 J	0.16	0.59 J	1.3 U	1.3 U	1.6 U
HEXACHLOROBENZENE	0.11 U	0.36	0.070	1.4	0.33	0.28	0.32 U
MIREX	0.020 J	0.040 J	0.031 U	0.48 U	0.47 U	0.48 U	0.59 U
OXYCHLORDANE	0.070	0.080	0.021 U	1.5 J	0.95 J	0.82 J	0.36 J
PCB-101/90	2.2	1.5	1.3	7.0	6.3	9.1	0.62 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 06						
	Sediment			Mussel			Lobster
Parameters	**101B**	**201B**	**301B**	**101B**	**201B**	**301B**	**101B**
PCB-105	0.62	0.53	0.37	1.8	1.4	2.1	0.33 J
PCB-114	0.15 U	0.14 U	0.073 U	0.75 U	0.75 U	0.76 U	0.94 U
PCB-118	1.6	1.3	0.72	3.6	3.2	5.4	0.78
PCB-126	0.52 U	0.48 U	0.030 U	0.030 J	0.050 J	0.030 J	2.9 UJ
PCB-128	0.77	0.53	0.65	1.0	1.0	1.1	0.50 U
PCB-149/123	2.2	1.5 U	1.3	5.6	5.7	7.0	0.94 U
PCB-153/132	3.7	2.2 U	2.3 U	14	9.8	14	1.8
PCB-156	1.5	1.3	0.31	1.1 J	0.51 J	0.56 J	0.94 U
PCB-167	1.6	2.3	0.50	0.56 J	0.59 J	0.77	0.94 U
PCB-169	0.010 J	0.48 U	0.25 U	2.3 U	2.3 U	2.3 U	0.020 J
PCB-170/190	18	6.6	1.8	0.18 J	0.22 J	0.25 J	0.16 J
PCB-18/17	0.28 U	0.56	0.27	1.8	1.4	2.3	0.94 U
PCB-180	2.6 U	2.1 U	1.4 U	6.0 J	5.2 J	7.6 J	0.47 J
PCB-187	1.9 U	2.6	0.97 U	4.4	3.5	5.4	0.50 J
PCB-189	0.22	0.030 J	0.030 J	0.75 U	0.75 U	0.76 U	0.94 U
PCB-195/208	0.50	8.6	0.22	0.50	0.13	0.075 U	0.092 U
PCB-201/157/173	0.37	1.0	0.13	0.75 UJ	0.63 J	0.76 UJ	0.94 U
PCB-206	0.65	21	0.33	0.31 U	0.31 U	0.32 U	0.39 U
PCB-209	0.95 J	6.22 J	0.21 J	0.21 U	0.21 U	0.21 U	0.25 U
PCB-28	0.14 J	0.12 J	0.20	0.66	0.28 J	0.60 U	0.73 U
PCB-44	0.19 J	0.19 J	0.17 U	0.73 J	0.75 J	1.6	0.16 J
PCB-52	0.37	0.95	0.37	6.5	4.4	6.7	0.96 U
PCB-66	0.49	0.56	0.13	0.59	0.55	0.94	0.37 U
PCB-77	0.050 U	0.040 U	0.020 U	0.010 J	2.28 U	0.020 J	2.9 U
PCB-8/5	0.47	0.64	0.37	6.6	7.1	19	0.48 U
PCB-81	0.52 U	0.48 U	0.060 U	0.020 J	0.020 J	0.040 J	2.9 U
PCB138 /160	3.4	2.3 U	2.6	9.1	7.6	10	1.0
PENTACHLOROANISOLE	0.080 U	0.090 U	0.060 U	2.3	2.9	5.3	0.23 J
PENTACHLOROBENZENE	0.070 J	0.040 J	0.020 J	1.9	1.1	0.57	0.48 U
TRANS-NONACHLOR	0.10 J	0.21	0.050 J	2.1	2.2	2.0	0.25 U
Metals (UG/G)							
ALUMINUM	39631.81	49769.6	47435.5	176.9 J	277.54 J	255.94 J	1.0 U
ARSENIC	7.35	11.41	19.95	9.33	8.71	10.59	19.4
CADMIUM	0.1866 U	0.18413 U	0.1871 U	0.89	1.07	1.09	0.03 U
CHROMIUM	65.73	75.31	113.4	3.81 U	3.75 U	5.28	1.2 U
COPPER	14.36	17.09	24.97	30.16	5.95	5.94	43.1
IRON	15895.06	19811.42	35120.79	394.46	490.36	623.83	8.4 U
LEAD	42.33	49.06	93.54	3.67	2.9	2.58	0.07 J
MANGANESE	350.6	330.61	829.94	11.55	10.98	14.13	3.9 J
MERCURY	0.19 J	0.24 J	0.33 J	0.20	0.20	0.19	0.45
NICKEL	17.19	19.78	57.35	2.11 J	1.8568 U	1.7224 U	1.60 U
SILVER	0.18 J	0.28	0.27	0.06 U	0.07 J	0.06 U	1.1
ZINC	54.46	76.22	97.18	81.16	78.13	63.54	91.2
Miscellaneous Parameters (%)							
LIPIDS				9.9	8.3	10.6	3.80
TOTAL ORGANIC CARBON	0.59 J	1.57 J	1.26 J				

Notes:

MS06 includes the following samples:
OU4-SD-MS06-101B
OU4-SD-MS06-201B
OU4-SD-MS06-301B
OU4-LJ-MS06-101B
OU4-MU-MS06-101B
OU4-MU-MS06-201B
OU4-MU-MS06-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	101B	201B	301B	101B	301B	101B
Dioxins/Furans (PG/G)						
1,2,3,4,6,7,8,9-OCDD	894.6	318.4 U	60.6 U	105 J	53.2 UJ	33.4 UJ
1,2,3,4,6,7,8,9-OCDF	43.8 U	17.5 U	4.0 U	53.8 UJ	53.2 UJ	33.4 UJ
1,2,3,4,6,7,8-HPCDD	93.1 U	39.6 U	8.8 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,4,6,7,8-HPCDF	23.3	10.3	2.1 J	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,4,7,8,9-HPCDF	1.0 J	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,4,7,8-HXCDD	1.0 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,4,7,8-HXCDF	1.1 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,6,7,8-HXCDD	4.0	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,6,7,8-HXCDF	0.8 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,7,8,9-HXCDD	1.7 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,7,8;9-HXCDF	1.7 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,7,8-PECDD	1.7 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
1,2,3,7,8-PECDF	0.8 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
2,3,4,6,7,8-HXCDF	1.9 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
2,3,4,7,8-PECDF	0.4 U	2.9 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
2,3,7,8-TCDD	0.3 U	0.6 U	0.5 U	5.38 UJ	5.32 UJ	3.34 UJ
2,3,7,8-TCDF	0.3 U	1.1 U	0.5 U	5.38 UJ	5.32 UJ	3.34 UJ
TOTAL DIOXINS	1177.9	445.7 U	85.1 U	105 J	53.2 UJ	6.10 U
TOTAL FURANS	127.5 U	52.1 U	12.3 U	53.8 UJ	53.2 UJ	33.4 UJ
TOTAL HPCDD	225.3	105 U	20.3 U	26.9 UJ	26.6 UJ	6.10 J
TOTAL HPCDF	55.1	24.2	4.9	26.9 UJ	26.6 UJ	16.7 UJ
TOTAL HXCDD	50.2 U	20.1 U	4.0 U	26.9 UJ	26.6 UJ	16.7 UJ
TOTAL HXCDF	22.5 U	8.8 U	2.2 U	26.9 UJ	26.6 UJ	16.7 UJ
TOTAL PECDD	7.0 U	2.2 U	2.7 U	26.9 UJ	26.6 UJ	16.7 UJ
TOTAL PECDF	6.0 U	0.5 U	0.7 U	26.9 UJ	26.6 UJ	16.7 UJ
TOTAL TCDD	0.7 U	0.6 U	0.2 U	5.38 UJ	5.32 UJ	3.34 UJ
TOTAL TCDF	0.3 U	1.1 U	0.5 U	5.38 UJ	5.32 UJ	3.34 UJ
Polyaromatic Hydrocarbons (NG/G)						
1,1-BIPHENYL	2.1	7.9	6.9	3.3 J	2.8 J	7.00 J
1-METHYLNAPHTHALENE	4.2	16.8	16.9	3.9 J	4.2 J	4.00 J
1-METHYLPHENANTHRENE	14.8	51.8	45.7	9.9 J	6.2 J	1.10 J
2,3,5-TRIMETHYLNAPHTHALENE	2.3	7.6	8.3	4.1 J	3 J	1.00 J
2,6-DIMETHYLNAPHTHALENE	4.3	14.9	13.3	3.6 J	3.5 J	1.20 J
2-METHYLNAPHTHALENE	6.9	26.4	25.2	6.5 J	7.5 J	4.50 J
ACENAPHTHENE	8	25.8	21.9	1.9 J	1.9 J	1.20 J
ACENAPHTHYLENE	23.1	83.3	70.7	14.2 J	11.9 J	0.20 J
ANTHRACENE	74	273.3	214.8	25.8 J	21.3 J	2.40 J
BENZO(A)ANTHRACENE	108.7	359	331	12.6	9.1	3.80 J
BENZO(A)PYRENE	182.6 J	596.6 J	524.6 J	14.6 J	8.2 J	8.30
BENZO(B)FLUORANTHENE	191.4	497.7	474.5	25.2	17.6	7.10
BENZO(E)PYRENE	85.6	232.2	217.6	23 J	18.7 J	4.90 J
BENZO(G,H,I)PERYLENE	83.4	235.8	217	11.2	8.3	4.70
BENZO(K)FLUORANTHENE	51.6	140.3	105.6	8.6	6.1	2.70 J
CHRYSENE	130.1 J	454.2 J	300.4 J	36.3	26.2	8.60 J
DIBENZO(A,H)ANTHRACENE	18.7 J	53.8 J	49.7 J	1.2 J	0.8 J	0.50 J
DIBENZOTHIOPHENE	6.7 J	16.1 J	13.8 J	2 J	1.4 J	0.50 J
FLUORANTHENE	272	609.9	546.6	66.4 U	52.6 U	9.90
FLUORENE	16.6 J	54.2 J	44.2 J	10.4 J	8.2 J	3.20 J
INDENO(1,2,3-CD)PYRENE	95.4 J	275.5 J	243.5 J	9.1	5.5	5.40 J
NAPHTHALENE	10	41.2	40.7	9.7 J	9.7 J	7.80 J
PERYLENE	30.7 J	96.2 J	77 J	9.5	7.4	3.70 J
PHENANTHRENE	142.6	298.3	249.9	30.9 J	23 J	6.30 J
PYRENE	218.6	574	524.8	47.2 U	33 U	7.60
Pesticides/PCB's (NG/G)						
1,2,3,4-TETRACHLOROBENZENE	0.050	0.060 J	0.13	1.3	0.61 J	26

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	101B	201B	301B	101B	301B	101B
1,2,4,5-TETRACHLOROBENZENE	0.79	0.29 U	1.0	2.0 U	2.4 U	0.78 U
2,4'-DDD	1.4	4.0	3.7	3.2 J	1.4 J	1.7 U
2,4'-DDE	0.25	0.61	0.32	1.6	1.3	0.43 U
2,4'-DDT	0.26	0.075 U	0.27	1.7 J	1.1 J	0.43 UJ
4,4'-DDD	2.2	1.7	3.6	3.5	2.2	0.48 U
4,4'-DDE	2.2	1.5	2.6	9.6	6.8	1.3
4,4'-DDT	1.5	1.2	1.2	3.0	1.6	0.35 UJ
ALDRIN	0.030	0.11	0.032 U	0.27 U	0.26 U	0.30 U
ALPHA-BHC	0.073 U	0.10 J	0.050 J	0.68	0.81	0.30 U
ALPHA-CHLORDANE	0.24	0.22	0.35	2.3	2.1	0.10 U
BETA-BHC	0.060 U	0.13 U	0.10 U	0.70 U	0.76	0.78 U
CHLORPYRIFOS	0.073 U	0.13 U	0.040 J	1.6	1.4	1.5
CIS-NONACHLOR	0.11	0.20	0.25	1.1	0.82	0.33 U
DELTA-BHC	0.020 J	0.51	0.27	0.22 J	0.38	0.28 U
DIELDRIN	0.15	0.030 J	0.030 J	0.89	0.70 J	1.3 J
ENDOSULFAN II	0.40	0.57	1.3	0.25 U	0.24 U	0.28 U
ENDRIN	0.063 U	0.11 U	0.096 U	3.4	0.29 U	0.33 U
GAMMA-BHC (LINDANE)	0.060 J	0.76 U	0.65 U	1.1	0.44 U	1.1
GAMMA-CHLORDANE	0.16	0.20	0.12	0.99	0.85	0.15 U
HEPTACHLOR	0.084 U	0.34	0.17	0.27 U	0.38	0.30 U
HEPTACHLOR EPOXIDE	0.063 U	0.060 J	0.080 J	1.6 U	1.6 U	1.8 U
HEXACHLOROBENZENE	0.030 J	0.093 U	0.29	0.28 J	0.52	0.35 U
MIREX	0.031 U	0.14	0.10	0.59 U	0.57 U	0.65 U
OXYCHLORDANE	0.021 U	0.04 U	0.12	0.47 U	0.38 J	0.53 U
PCB-101/90	1.3	2.2	2.4	8.0	6.0	0.68 U
PCB-105	0.49	0.72	0.93	1.8	1.6	0.58 J
PCB-114	0.073 U	0.13 U	0.11 U	0.92 U	0.90 U	1.0 U
PCB-118	1.0	1.9	2.1	3.7	4.5	1.1
PCB-126	0.25 U	0.45 U	0.38 U	0.020 J	0.030 J	0.010 J
PCB-128	0.47	0.69	0.68	1.2	1.2	0.55 U
PCB-149/123	0.94 U	1.4 U	1.7 U	6.1	5.4	1.0 U
PCB-153/132	1.7 U	2.9 U	2.8 U	15	12	2.2
PCB-156	0.51	1.3	1.2	0.57 J	0.70 J	1.0 U
PCB-167	0.48	1.5	1.3	0.81 J	0.46 J	1.0 U
PCB-169	0.25 U	0.45 U	0.4 U	0.020 J	0.030 J	3.13 U
PCB-170/190	3.9	6.9	8.2	0.18 J	0.19 J	0.18 J
PCB-18/17	0.39	0.99	1.2	1.9	0.57 J	0.15 J
PCB-180	1.4 U	1.4 U	1.4 U	6.4 J	5.5 J	0.49 J
PCB-187	1.7	1.1 U	1.2 U	4.4	3.5	0.55 J
PCB-189	0.040 J	0.13 U	0.060 J	0.92 U	0.90 U	1.0 U
PCB-195/208	5.9	0.48	0.36	0.73	0.088 U	0.10 U
PCB-201/157/173	0.64	0.22	0.22	0.92 UJ	0.90 UJ	1.0 U
PCB-206	15	0.92	0.84	0.38 U	0.37 U	0.43 U
PCB-209	5.47 J	0.9 J	0.56 J	0.26 U	0.25 U	0.28 U
PCB-28	0.24	0.24	0.16	3.3	0.36 J	0.81 U
PCB-44	0.48	0.37	0.49	0.84 J	0.71 J	0.19 J
PCB-52	0.61	0.82	1.1	4.1	6.4	1.1 U
PCB-66	0.49	0.49	0.58	0.65	0.93	0.40 U
PCB-77	0.020 U	0.020 U	0.030 U	0.030 J	2.76 U	3.13 U
PCB-8/5	0.34	0.59	0.57	3.7	9.2	0.53 U
PCB-81	0.25 U	0.45 U	0.38 U	0.010 J	0.020 J	0.010 J
PCB138 /160	1.7 U	3.0 U	3.0	8.7	8.1	1.3
PENTACHLOROANISOLE	0.060 U	0.12 U	0.20 U	1.4	2.8	0.21 J
PENTACHLOROBENZENE	0.040 J	0.11	0.060 J	0.48	0.62	0.53 U
TRANS-NONACHLOR	0.040 J	0.24	0.21	3.0	1.2	0.28 U

Metals (UG/G)

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 07					
	Sediment			Mussel		Lobster
Parameters	**101B**	**201B**	**301B**	**101B**	**301B**	**101B**
ALUMINUM	43044.51	57687.67	60192.58	424.6 J	241.88 J	3.9 U
ARSENIC	10.58	15.05	12.59	9.69	9.57	21.0
CADMIUM	0.1767 U	0.18743 U	0.1864 U	1.24	1.16	0.04 U
CHROMIUM	68.26	125.08	95.88	4.59	4.06 U	1.6 U
COPPER	22.22	30.31	29.08	64.59	5.64	29.5
IRON	17367.24	29639.15	30575.76	661.6	417.78	14.9
LEAD	70.17	42.54	58.52	5.99	2.49	0.07 J
MANGANESE	258.43	411.29	333.84	12.28	13.22	8.7 J
MERCURY	0.1 J	0.17 J	0.25 J	0.21	0.20	0.52
NICKEL	22.59	30.97	22.51	4.87	1.8198 U	1.65 U
SILVER	0.19	0.45	0.46	0.07 J	0.06 U	0.89
ZINC	59.38	109.97	91.34 J	112	71.79	97.1
Miscellaneous Parameters (%)						
LIPIDS				8.8	8.2	3.30
TOTAL ORGANIC CARBON	0.88 J	1.93 J	2.0 J			

Notes:

MS07 includes the following samples:
OU4-SD-MS07-101B
OU4-SD-MS07-201B
OU4-SD-MS07-301B
OU4-LJ-MS07-101B
OU4-MU-MS07-101B
OU4-MU-MS07-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 08									
	Sediment				Mussel				Lobster	
Parameters	101B	101B-DUP	201B	301B	101B	101B-DUP	201B	301B	101B	101B-DUP
Dioxins/Furans (PG/G)										
1,2,3,4,6,7,8,9-OCDD	90.1 U	162 J	104.7 U	80 U	115 J	84.0 UJ	57.8 UJ	54.6 UJ	4.30 U	42.6 UJ
1,2,3,4,6,7,8,9-OCDF	8.7 U	11.3 U	8.1 U	2.2 UJ	87.7 UJ	84.0 UJ	57.8 UJ	54.6 UJ	29.9 UJ	42.6 UJ
1,2,3,4,6,7,8-HPCDD	10.8 U	25.3 J	15.3 U	10.8 U	24.1 J	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,4,6,7,8-HPCDF	3.1 J	5.70 J	4.2	4.7	4.60 J	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,4,7,8,9-HPCDF	0.2 J	0.3 J	1.8 U	0.2 J	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,4,7,8-HXCDD	1.5 U	1.52 UJ	0.3 U	1.1 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,4,7,8-HXCDF	1.5 U	1.52 UJ	0.6 U	1.0 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,6,7,8-HXCDD	1.5 U	1.52 UJ	1.0 J	0.7 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,6,7,8-HXCDF	1.5 U	1.52 UJ	0.6 U	0.8 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,7,8,9-HXCDD	1.5 U	1.52 UJ	0.9 U	1.1 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,7,8,9-HXCDF	1.5 U	1.52 UJ	1.8 U	1.1 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,7,8-PECDD	1.5 U	1.52 UJ	1.8 UJ	1.1 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
1,2,3,7,8-PECDF	1.5 U	0.4 U	1.8 UJ	0.7 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
2,3,4,6,7,8-HXCDF	1.5 U	1.52 UJ	0.9 U	1.1 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
2,3,4,7,8-PECDF	1.5 U	0.5 U	1.8 UJ	1.1 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
2,3,7,8-TCDD	0.3 U	0.3 UJ	0.4 UJ	0.1 U	8.77 UJ	8.40 UJ	5.78 UJ	5.46 UJ	2.99 UJ	4.26 UJ
2,3,7,8-TCDF	0.3 U	0.3 UJ	0.5 U	0.7 U	8.77 UJ	8.40 UJ	5.78 UJ	5.46 UJ	2.99 UJ	4.26 UJ
TOTAL DIOXINS	123 U	238 J	157.4 U	120.4 U	172 J	84.0 UJ	57.8 UJ	145 J	4.30 U	42.6 UJ
TOTAL FURANS	16.3 U	31.8 U	25.9 U	28.8 U	4.60 J	84.0 UJ	57.8 UJ	54.6 UJ	29.9 UJ	42.6 UJ
TOTAL HPCDD	28 U	69.8 J	42.9 U	31.4 U	56.1 J	42.0 UJ	28.9 UJ	22.7 J	14.9 UJ	21.3 UJ
TOTAL HPCDF	3.2	13.7 U	9.4	8.1	4.60 J	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
TOTAL HXCDD	4.9 U	6.30 J	9.8 U	6.5 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
TOTAL HXCDF	11.9 U	4.60 J	5.9 U	9.8 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
TOTAL PECDD	1.5 U	1.52 UJ	1.8 UJ	1.5 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
TOTAL PECDF	0.8 U	2.20 U	1.6 U	10.2 U	43.9 UJ	42.0 UJ	28.9 UJ	27.3 UJ	14.9 UJ	21.3 UJ
TOTAL TCDD	0.3 U	0.3 UJ	0.4 UJ	1 U	8.77 UJ	8.40 UJ	5.78 UJ	5.46 UJ	2.99 UJ	4.26 UJ
TOTAL TCDF	0.3 U	0.3 UJ	0.9 U	0.7 U	8.77 UJ	8.40 UJ	5.78 UJ	5.46 UJ	2.99 UJ	4.26 UJ
Polyaromatic Hydrocarbons (NG/G)										
1,1-BIPHENYL	5.5	5.9	9.6 J	1.8	8.1 U	7.1 U	6.7 U	7.9 U	7.60 J	6.60 J
1-METHYLNAPHTHALENE	18.5	15.1	27.1 J	5.4	8.9 U	8 U	6 U	6.6 U	3.10 J	3.70 J
1-METHYLPHENANTHRENE	24.4	31.4	85.2 J	13.5	20.5 J	22.7	7.8 J	9.8 J	1.30 J	2.10 J
2,3,5-TRIMETHYLNAPHTHALENE	11	8.1	8.9 J	4.1	10.6 J	9.5 J	3.7 J	4.9 J	0.90 J	1.20 J
2,6-DIMETHYLNAPHTHALENE	12.1	13.9	17.4	6.6	6 J	4.8 J	4.4 J	4.9 J	1.40 J	1.30 J
2-METHYLNAPHTHALENE	29.7	26.7	41.9 J	11.9	12.6	11.4 U	10.5 U	10.1 U	4.60 J	5.30 J
ACENAPHTHENE	33.7 J	27.3 J	62.9 J	7	9.7 J	9.5 J	4 J	2.4 J	1.50 J	2.00 J
ACENAPHTHYLENE	81.8 J	50.8	102.4 J	20.5 J	12.8 J	17	10.2 J	10.3 J	0.20 J	0.40 J
ANTHRACENE	267.3 J	218.6 J	410.2 J	66.4 J	34.2 J	39.6	18.8 J	19.1 J	1.70 J	2.20 J
BENZO(A)ANTHRACENE	371	298.2	502.8 J	112.6 J	13.7	14.7	10.8	9.2	7.40 J	8.80 J
BENZO(A)PYRENE	653.7 J	398.3 J	768.7 J	162.5	17.9 J	14.8	9.9 U	10.9 U	12.1	14.5
BENZO(B)FLUORANTHENE	643.1	460.9 J	688.6 J	161.9	20	24.9	19.2	18.9 J	10.2	12.6
BENZO(E)PYRENE	332.3 J	225.8	342.9 J	85.7 J	23	24.6	20.6	18.6 J	6.80 J	7.50
BENZO(G,H,I)PERYLENE	250 J	187.7 J	322.5 J	80.3 J	11.7 J	12.9	7.7 J	9.7 J	5.90	6.80
BENZO(K)FLUORANTHENE	183.1 J	199.9	208.1	46.6 J	10.3	8.3	6.5	7.5	3.70 J	4.10 J
CHRYSENE	372.8 J	288.5	526.3 J	110.6 J	40.6	43.9	35	33.7	11.7	13.0
DIBENZO(A,H)ANTHRACENE	74.4 J	56.3 J	72.7 J	19.3 J	1.3 J	1.7 J	0.7 J	1 J	0.40 J	0.60 J
DIBENZOTHIOPHENE	14.6	11.5	28.8 J	4	3.6 J	3.6 J	1.7 J	1.9 J	1.00 J	1.10 J
FLUORANTHENE	658.8	502.3	1194.4 J	169.1	88.5	93.7	66.4	58.2	31.4	37.6
FLUORENE	52.9 J	39.2 J	92.2 J	8.7	14 J	15	10.1 J	12.5 J	3.40 J	3.90 J
INDENO(1,2,3-CD)PYRENE	288.6 J	253.5 J	348.1 J	80.3 J	7.5 J	10.7 J	5.9	7.3 J	6.10 J	7.60
NAPHTHALENE	41.7	34.5	60.3 J	8.8	14.3 U	13 U	10.8 U	12.6 U	6.40 J	7.10 J
PERYLENE	93.4	63.2	95.7 J	23.9	9.6 J	14.5 J	8.5	8.6	4.50 J	5.00 J
PHENANTHRENE	280.9	226.4	651 J	76.3	33.7	40.1	28.6	27.5	14.6	16.4
PYRENE	677.8	522.8	1090.1 J	152.1	63.7	68.1	42.9	40.8	18.0	21.1

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 08									
	Sediment				Mussel				Lobster	
Parameters	101B	101B-DUP	201B	301B	101B	101B-DUP	201B	301B	101B	101B-DUP
Pesticides/PCB's (NG/G)										
1,2,3,4-TETRACHLOROBENZENE	0.15 J	0.18 J	0.14	0.17	2.5 J	1.4 J	0.18 J	1.0 J	15 J	22 J
1,2,4,5-TETRACHLOROBENZENE	1.1 U	0.37 J	1.2 J	0.60 U	3.7	4.1	1.5	1.5	0.56 J	0.52 J
2,4'-DDD	37 J	43	8.0 J	18	22	19	3.0	4.9	2.0 U	1.8 U
2,4'-DDE	1.3 J	1.2	0.32	0.96	3.1 J	1.6 J	1.4 J	2.3 J	0.49 U	0.44 U
2,4'-DDT	4.7 J	5.7	0.86	36	4.8 J	3.9	3.0 J	5.0 J	0.49 UJ	0.44 U
4,4'-DDD	81 J	97	12	30	49	43	3.5	11	0.55 U	0.49 U
4,4'-DDE	16 J	18	3.9	15	18	16	6.7	9.7	7.2	7.1
4,4'-DDT	17 J	21	3.6	125	11 J	9.8	2.0 J	8.2 J	0.40 UJ	0.36 U
ALDRIN	0.55 J	0.065 UJ	0.029 U	0.93	0.33 U	0.32 U	0.26 U	0.28 U	0.35 U	0.31 U
ALPHA-BHC	0.20 J	0.040 J	0.10 U	0.13	0.33 U	0.32 U	0.26 U	1.9	0.35 U	0.31 U
ALPHA-CHLORDANE	2.4 J	2.8	0.58	3.3	0.11 U	0.11 U	0.088 U	5.1	0.12 U	0.10 U
BETA-BHC	0.18 UJ	0.19 U	0.17 U	0.14 U	2.8	3.2	1.6	1.5	0.89 U	0.81 U
CHLORPYRIFOS	0.11 UJ	0.070 J	0.10 U	0.070 J	0.41 U	0.40 U	0.33 U	0.35 U	1.7 J	1.0 J
CIS-NONACHLOR	1.4 J	1.4	0.45 J	1.2	0.56	0.44	0.46	1.7	0.37 U	0.34 U
DELTA-BHC	0.061 UJ	0.090	0.19	0.048 U	0.76 J	0.50 J	0.86	1.3	0.32 U	0.29 U
DIELDRIN	0.70 J	0.24 J	0.050 J	0.38	0.77 J	0.64 J	0.71 J	0.65 J	1.5 J	1.6
ENDOSULFAN II	0.14 UJ	2.3 J	1.6	0.11 U	0.30 U	0.30 U	0.24 U	0.27	0.32 U	0.29 U
ENDRIN	0.090 J	0.065 U	0.070 J	0.048 U	0.36 U	0.35 U	0.24 J	0.21 J	0.37 U	0.34 U
GAMMA-BHC (LINDANE)	0.13 UJ	0.020 J	0.60 U	0.040 J	0.48 J	0.42 J	0.61	1.2	0.98	1.0
GAMMA-CHLORDANE	2.9 R	3.0	0.59	4.0	5.2 J	3.7 J	4.2	2.8	0.17 U	0.16 U
HEPTACHLOR	0.32 R	0.16 UJ	0.22 J	0.41	4.9	4.0	3.1	3.1	0.35 U	0.31 U
HEPTACHLOR EPOXIDE	0.051 UJ	0.054 U	0.087 U	0.090	1.9 U	1.9 U	1.6 U	1.6 U	2.0 U	1.8 U
HEXACHLOROBENZENE	0.051 UJ	0.040 J	0.073 U	0.10	1.6 J	1.2 J	1.1	1.6	0.40 U	0.36 U
MIREX	0.081 UJ	0.20 J	0.10	0.063 U	0.71 U	0.70 U	0.57 U	0.60 U	0.75 U	0.68 U
OXYCHLORDANE	0.13 J	0.28 J	0.14	0.040 U	0.58 U	0.57 U	0.46 U	0.49 U	0.99	1.2
PCB-101/90	9.7	12	4.8	4.4	11	10	7.6	11	0.23 J	0.40 J
PCB-105	1.8	2.8	1.3	0.58	3.1	2.7	2.1	3.5	0.42 J	0.49 J
PCB-114	0.40 U	0.42 U	0.10 U	0.31 U	1.1 U	1.1 U	0.90 U	0.95 U	1.2 U	1.1 U
PCB-118	5.5	7.4	3.0	1.4	9.7	7.8	5.0	7.0	2.1	2.2
PCB-126	0.18 U	0.26 U	0.010 U	0.070 U	0.060 J	3.4 U	0.010 J	0.010 J	3.60 UJ	0.010 J
PCB-128	2.3	2.8	1.5	1.3	2.8	2.9	1.5	1.9	0.47 J	0.41 J
PCB-149/123	18 J	15	6.6	17 J	11	8.4	4.7	7.0	0.12 J	0.15 J
PCB-153/132	25	26	12 J	19	26	23	14	19	5.8	5.8
PCB-156	2.5 J	2.2	1.9	0.84 J	1.1 UJ	0.36 J	0.76 J	0.95 UJ	1.2 U	1.1 U
PCB-167	1.5	1.0	1.7	0.39	1.2	1.6	0.69 J	1.0	1.2 U	1.1 U
PCB-169	0.020 J	0.26 UJ	0.35 U	0.45 J	0.070 J	3.4 U	0.030 J	0.12 J	3.6 U	0.030 J
PCB-170/190	22 J	22 J	15.1	6.8 J	2.1 U	0.32 U	0.84 U	1.2 U	0.44 J	0.59 J
PCB-18/17	0.81	0.81	1.2	0.090	0.87 J	2.0	1.5 J	5.1 J	1.2 U	1.1 U
PCB-180	22	15	8.3 J	14	7.6 J	6.2	4.6 J	6.9 J	1.8 J	1.8 J
PCB-187	18	13	6.1	8.3	9.0	7.6	4.9	7.7	1.8 J	1.8 J
PCB-189	0.38 J	0.48	0.21	0.31 U	1.1 UJ	0.58 J	0.90 UJ	0.95 UJ	1.2 U	1.1 U
PCB-195/208	5.7 J	11 J	4.9 J	2.0	0.11 U	0.11 U	0.088 U	0.093 U	0.12 U	0.10 U
PCB-201/157/173	1.4	1.9	0.83	0.75	1.4 J	1.4	0.47 J	0.99 J	1.2 U	1.1 U
PCB-206	11 J	23 J	10 J	2.6	0.47 U	0.46 U	0.37 U	0.39 U	0.49 U	0.44 U
PCB-209	2.57 J	7.5 J	3.48 J	0.4	0.31 U	0.30 U	0.25 U	0.26 U	0.32 U	0.29 U
PCB-28	2.1	1.5	0.13 U	0.21 U	0.47 J	0.55 J	0.58 J	0.51 J	0.92 U	0.83 U
PCB-44	1.6	2.0	0.60	0.32	3.0	3.4	0.21 J	2.0	0.22 J	0.29 J
PCB-52	3.3	3.8	1.4	0.59	1.2 U	4.2	0.92 U	3.3	1.2 U	1.1 U
PCB-66	1.3	1.4	0.83	0.25	0.44 U	0.43 U	0.35 U	0.37 U	0.46 U	0.42 U
PCB-77	0.36 J	0.12 J	0.030 U	0.15 J	0.020 J	0.040 J	0.050 J	0.020 J	3.60 U	3.3 U
PCB-8/5	0.51 U	0.52	0.84 J	0.10 U	4.3 U	1.8 U	1.4 U	1.2 U	0.60 U	0.55 U
PCB-81	0.060 J	0.080 J	0.35 U	0.050 J	0.020 J	0.030 J	2.7 U	0.010 J	3.60 U	3.3 U
PCB138 /160	19	19	9.4	15	19	16	11	14	3.4	3.5
PENTACHLOROANISOLE	0.070 U	0.12 J	0.19 U	0.070 J	1.2	1.6	1.2 U	1.6	0.18 J	0.13 J
PENTACHLOROBENZENE	0.091 UJ	0.060 J	0.12 J	0.030 J	1.7 J	0.95 J	0.75	0.44 J	0.60 U	0.55 U
TRANS-NONACHLOR	1.4 J	1.7	0.33	1.9	0.53 J	2.0 J	3.3	2.7	0.32 U	0.29 U
Metals (UG/G)										
ALUMINUM	49162.87	45510.06	60698.61	54239.03	238.83 J	30.1 J	200.69 J	444.76 J	2.4 U	3.3 U
ARSENIC	11.64	10.748	13.95	9.64	10.35	9.61	9.2	9.26	17.5	17.4
CADMIUM	0.35 J	0.51	0.1872 U	0.38	1.17	1.15	1.26	0.88	0.04 U	0.06

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 08									
	Sediment				Mussel				Lobster	
Parameters	**101B**	**101B-DUP**	**201B**	**301B**	**101B**	**101B-DUP**	**201B**	**301B**	**101B**	**101B-DUP**
CHROMIUM	171.43	155.33	119.37	218.9	4.68	2.98 U	3.62 U	5.95	0.83 U	0.52 U
COPPER	419.68	343.42	99.65	433.57	8.78	8.13	6.6	9.99	19.7	22.5
IRON	53152.82	45545.58	32465.97	78944.77	533.27	678	420.38	971.37	9.3	9.8
LEAD	253.95	252.43	104.71	218.8	3.07	3.05	3.3	3.67	0.07 U	0.08 U
MANGANESE	409.31	356.78	336.26	304.54	11.65	10.79	11.09	13.39	1.9 J	2.0
MERCURY	0.31 J	0.23 J	0.45 J	0.06 J	0.20	0.16	0.18	0.21	0.60	0.59
NICKEL	84.89	65.84	30.03	111.52	2.306 U	2.18 U	1.72 J	3.3 J	1.63 U	2.0 U
SILVER	0.82	1.3 J	0.85	0.23	0.08 U	0.07 U	0.06 U	0.07 U	0.76	0.77
ZINC	851.99 J	594.97	154.84 J	698.68 J	77.26	70.79	76.61	72.39	83.5	77.1
Miscellaneous Parameters (%)										
LIPIDS					7	6.8	8.3	7.2	3.60	3.70
TOTAL ORGANIC CARBON	0.85 J	0.85 J	2.53 J	0.29 J						

Notes:

MS08 includes the following samples:
OU4-SD-MS08-101B
OU4-SD-MS08-101B-FD
OU4-SD-MS08-201B
OU4-SD-MS08-301B
OU4-LJ-MS08-101B
OU4-LJ-MS08-101B
OU4-LJ-M08-101B-FD
OU4-MU-MS08-101B
OU4-MU-MS08-101B-FD
OU4-MU-MS08-201B
OU4-MU-MS08-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 09							
	Sediment				Mussel			Lobster
Parameters	101B	201B	301B	301B-DUP	101B	201B	201B-DUP	101B
Dioxins/Furans (PG/G)								
1,2,3,4,6,7,8,9-OCDD	227.3 U	52.8 U	36.1 U	724.5 U	140 J	49.5 UJ	84.0 UJ	22.6 U
1,2,3,4,6,7,8,9-OCDF	25.8 U	4.2 U	3.3 U	52.3 U	39.2 UJ	49.5 UJ	84.0 UJ	19.2 J
1,2,3,4,6,7,8-HPCDD	28.4 U	2.11 U	5.8 U	90.8 U	29.5 J	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,4,6,7,8-HPCDF	14.6	2.0 J	2.7 UJ	26.3 J	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,4,7,8,9-HPCDF	1.3 U	2.11 U	2.7 U	1.2 J	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,4,7,8-HXCDD	0.5 U	2.11 U	2.7 U	1.4 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,4,7,8-HXCDF	3.5 U	2.11 U	2.7 U	3.3 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,6,7,8-HXCDD	2.3	2.11 U	2.7 UJ	4.9 J	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,6,7,8-HXCDF	2.4 U	2.11 U	2.7 U	2.3 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,7,8,9-HXCDD	1.3 U	2.11 U	2.7 U	3.1 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,7,8,9-HXCDF	1.3 U	2.11 U	2.7 U	3.2 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,7,8-PECDD	0.7 U	2.11 UJ	2.7 UJ	3.2 J	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
1,2,3,7,8-PECDF	1.7 U	2.11 U	2.7 U	3.2 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
2,3,4,6,7,8-HXCDF	3.3 U	2.11 U	2.7 U	3.6 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
2,3,4,7,8-PECDF	1.3 U	0.7 U	2.7 U	3.2 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
2,3,7,8-TCDD	0.3 U	0.4 U	0.5 U	0.6 U	3.92 UJ	4.95 UJ	8.40 UJ	3.33 UJ
2,3,7,8-TCDF	0.3 U	0.4 U	0.5 U	2.1 U	5.40 J	4.95 UJ	8.40 UJ	2.60 J
TOTAL DIOXINS	330.7 U	66.2 U	49.2 U	994.2 U	192 J	49.5 UJ	84.0 UJ	22.6 U
TOTAL FURANS	103.3 U	13 U	5.1 U	166.3 U	23.7 J	49.5 UJ	84.0 UJ	29.5 U
TOTAL HPCDD	71.7 U	9.8 U	12 U	213.5 U	29.5 J	24.8 UJ	42.0 UJ	16.7 UJ
TOTAL HPCDF	23.1	4.0	1.8 J	52.3 J	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
TOTAL HXCDD	25 U	2.4 U	0.8 U	51.8 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
TOTAL HXCDF	23.8 U	2.0 U	2.7 U	34 U	19.6 UJ	24.8 UJ	42.0 UJ	7.80 J
TOTAL PECDD	4.4 U	0.6 U	0.3 U	3.1 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
TOTAL PECDF	17.2 U	1.9 U	2.7 U	18.8 U	19.6 UJ	24.8 UJ	42.0 UJ	16.7 UJ
TOTAL TCDD	2.2 U	0.5 U	0.5 U	1.2 U	22.0 J	4.95 UJ	8.40 UJ	3.33 UJ
TOTAL TCDF	13.5 U	0.9 U	0.5 U	8.9 U	15.1 J	4.95 UJ	8.40 UJ	2.60 J
Polyaromatic Hydrocarbons (NG/G)								
1,1-BIPHENYL	2.5	4.5	12.9	8.5	5.8 U	3.5 U		8.00 J
1-METHYLNAPHTHALENE	4.2	11.7	26.1	20.7	7.2 U	9.6 U		7.40
1-METHYLPHENANTHRENE	13.8	35.7	76.3	69.6	8.8 J	7.5 J		1.10 J
2,3,5-TRIMETHYLNAPHTHALENE	2.9	9.2	18.3	13.1	4.6 J	5.4 J		1.40 J
2,6-DIMETHYLNAPHTHALENE	3.5	12.3	34.2	20.4 J	5.6 J	7.6 J		1.90 J
2-METHYLNAPHTHALENE	7.8	18.1	41.9	32.2	12.2 U	19.6		9.50
ACENAPHTHENE	15.9	30.3	79.9 J	64 J	5 J	4.1 J		2.90 J
ACENAPHTHYLENE	15.9 J	46.8 J	96.6	79.8 J	13.4 J	10.7 J		0.20 J
ANTHRACENE	132.9 J	193.5 J	394.9 J	434.6 J	32.8 J	24.4 J		3.30 J
BENZO(A)ANTHRACENE	114.3 J	283.1 J	609.6	533.8	15.4	9.3		7.00 J
BENZO(A)PYRENE	155.1	393.2	873.4 J	760.5 J	17.6 U	9.2 U		12.0
BENZO(B)FLUORANTHENE	165.7	400	887.9 J	743.6	24.5 J	16.5 J		12.6
BENZO(E)PYRENE	79.5 J	194.5 J	438.3 J	347.5 J	24.4 J	20.1 J		8.40
BENZO(G,H,I)PERYLENE	65.6 J	153 J	400.5 J	325.3 J	12.9 J	7.8 J		7.50
BENZO(K)FLUORANTHENE	47.9 J	115.5 J	403.5 J	224.8 J	12.2	5.8		5.00 J
CHRYSENE	184.2	321.6	575.8	521.1 J	37	33.1		13.8
DIBENZO(A,H)ANTHRACENE	16	40.2	121.7 J	81.5 J	1.1 J	0.6 J		0.60 J
DIBENZOTHIOPHENE	5.8	14.2	29.7	30.4	2 J	1.6 J		0.80 J
FLUORANTHENE	233.1	540.4	1131	1039.2	92.7	68.8		14.1
FLUORENE	26.4	40.6	116.1 J	95.4 J	11.8 J	9.9 J		5.30 J
INDENO(1,2,3-CD)PYRENE	73.6	182.2	552.3 J	396.8 J	9.5 J	5.4 J		7.30 J
NAPHTHALENE	10.3	27.2	63.5	48.7	13.9 U	13.7 U		15.8 J
PERYLENE	27.6	70	145.4	125.1	10.5	8.7		6.20
PHENANTHRENE	123.4	257.8	588.8	553.8	40.9	26.6		9.60 J
PYRENE	183.4	468.2	1074.8	911.6	67.4	45.3		10.5

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 09							
	Sediment				Mussel			Lobster
Parameters	101B	201B	301B	301B-DUP	101B	201B	201B-DUP	101B
Pesticides/PCB's (NG/G)								
1,2,3,4-TETRACHLOROBENZENE	0.15 J	0.26 J	0.41 J	0.22 J	0.43 J	0.26 J		22 J
1,2,4,5-TETRACHLOROBENZENE	0.69 U	0.97 U	1.6 J	3.1 U	2.3	1.8		0.91 U
2,4'-DDD	0.43	7.1	5.1 J	3.4 J	2.3	1.9		2.0 U
2,4'-DDE	0.070	0.27	0.43 J	0.43 J	5.0 J	1.3 J		0.50 U
2,4'-DDT	0.60	0.87	0.49 J	0.81 J	4.8 J	4.2 J		0.50 UJ
4,4'-DDD	0.83	2.7	5.1 J	4.0 J	7.4	5.6		0.56 U
4,4'-DDE	0.83	2.0	3.6 J	2.6 J	8.0	6.3		3.2
4,4'-DDT	2.6	4.6	3.3 J	6.2 J	4.3 J	2.5 J		0.41 UJ
ALDRIN	1.3	2.8	0.12 UJ	11 J	0.21 U	0.24 U		0.35 U
ALPHA-BHC	0.030 J	0.13	0.18 J	0.17 J	1.8	2.0		0.35 U
ALPHA-CHLORDANE	0.15	0.40	1.2 J	0.71 J	0.071 U	0.081 U		0.12 U
BETA-BHC	0.17 U	0.17 J	0.37 UJ	0.24 J	2.2	1.4		0.91 U
CHLORPYRIFOS	0.10 U	0.16 U	0.22 UJ	0.21 UJ	0.26 U	0.30 U		1.5
CIS-NONACHLOR	0.14	0.34	0.53 J	0.44 J	3.0	2.1		0.38 U
DELTA-BHC	0.055 U	0.040 J	0.27 J	0.47 J	2.0	1.9		0.32 U
DIELDRIN	0.028 U	0.043 U	0.99 J	0.058 UJ	0.86	0.98		2.4 J
ENDOSULFAN II	0.13 U	0.20 U	2.5 J	0.27 UJ	0.19 U	0.22 U		0.32 U
ENDRIN	0.055 U	0.086 U	0.12 UJ	0.30 J	0.23 U	1.1		0.38 U
GAMMA-BHC (LINDANE)	0.020 J	0.14 J	0.26 UJ	0.29 J	0.40	0.41		1.8
GAMMA-CHLORDANE	0.10	0.29	0.061 UJ	0.36 J	3.6	2.2		0.18 U
HEPTACHLOR	0.070 J	0.37	0.050 J	0.31 J	4.0	4.1		0.35 U
HEPTACHLOR EPOXIDE	0.046 U	0.072 U	0.10 UJ	0.040 J	1.3 U	1.4 U		2.1 U
HEXACHLOROBENZENE	0.13	0.072 U	0.23 J	0.23 J	2.3	2.2		0.41 U
MIREX	0.074 U	0.11 U	0.16 UJ	0.31 J	0.46 U	0.52 U		0.76 U
OXYCHLORDANE	0.046 U	0.18	0.16 J	0.13 J	0.37 U	0.42 U		2.6
PCB-101/90	1.1	2.9	8.2 J	3.4 J	17	7.8		0.79 U
PCB-105	0.36 J	0.97	2.9 J	1.4 J	3.0	3.3		0.84 J
PCB-114	0.36 U	0.56 U	0.79 UJ	0.76 U	0.72 U	0.83 U		1.2 U
PCB-118	0.72	2.4	6.2 J	2.8 J	6.9	5.3		2.9
PCB-126	0.22 UJ	0.030 U	0.19 J	0.47 UJ	0.010 J	0.010 J		0.010 J
PCB-128	0.32	0.83	2.2 J	1.1 J	2.6	1.8		0.57 J
PCB-149/123	1.7 J	3.5 J	7.3 J	3.8 J	11	4.7		1.2 U
PCB-153/132	2.5	5.4	12 J	6.2 J	19	18		5.4
PCB-156	0.62 J	2.2 J	0.79 UJ	2.2 J	0.72 UJ	0.83 UJ		1.2 U
PCB-167	0.19 J	1.2	1.0 J	1.6	1.2	0.88		1.2 U
PCB-169	0.090 J	0.010 J	0.040 J	0.040 J	0.010 J	0.020 J		3.7 U
PCB-170/190	2.3 J	12 J	33 J	16 J	1.3 U	0.28 U		0.57 J
PCB-18/17	0.13	0.11 U	0.91 J	0.16 UJ	2.0 J	1.4 J		1.2 U
PCB-180	2.2	2.7	6.3 J	3.3 J	5.7 J	3.7 J		1.9 J
PCB-187	1.3	2.4	5.2 J	6.8	9.1	5.6		1.9 J
PCB-189	0.030 J	0.14 J	0.44 J	0.21 J	0.72 UJ	0.83 UJ		1.2 U
PCB-195/208	1.5	2.0	6.1 J	2.3 J	0.071 U	0.081 U		0.12 U
PCB-201/157/173	0.36 J	0.59	1.2 J	0.60 J	2.2 J	1.9 J		1.2 U
PCB-206	3.6	3.5	13 J	5.2 J	0.30 U	0.34 U		0.50 U
PCB-209	0.46	1.12	5.2 J	1.34 J	0.20 U	0.23 U		0.32 U
PCB-28	0.82	0.39 U	3.9 J	0.26 J	1.3 J	0.63 J		0.94 U
PCB-44	0.31	0.55	2.7 J	0.62 J	1.0 J	0.52 J		1.7 U
PCB-52	0.47	1.4	4.4 J	1.0 J	2.8	4.6		1.2 U
PCB-66	0.36	1.1	1.6 J	1.2	0.28 U	0.32 U		0.47 U
PCB-77	0.44 J	0.12 J	0.040 J	0.13 J	0.010 J	0.040 J		3.65 U
PCB-8/5	0.15 U	0.66 U	1.3 J	0.50 U	1.4 U	1.8 U		0.62 U
PCB-81	0.22 U	0.030 J	0.49 UJ	0.10 J	2.2 U	2.5 U		3.7 U
PCB138 /160	2.1	4.4	11 J	6.2 J	15	12		3.4
PENTACHLOROANISOLE	0.050 U	0.11 J	0.24 J	0.11 U	1.6 U	1.7		0.27 J
PENTACHLOROBENZENE	0.26	0.13 U	0.31 J	0.18 UJ	0.77	0.54		0.10 J

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 09							
	Sediment				Mussel			Lobster
Parameters	101B	201B	301B	301B-DUP	101B	201B	201B-DUP	101B
TRANS-NONACHLOR	0.050 J	0.12 J	0.67 J	0.50 J	1.9	1.9		0.32 U
Metals (UG/G)								
ALUMINUM	45555.32	53812.49	55578.44	55421.14	429.86 J	252.69 J		4.5 U
ARSENIC	10.15	14.81	14.51	13.97	8.91	10.28		19.3
CADMIUM	0.1819 U	0.1860 U	0.1841 U	0.23 J	1.26	0.85		0.08 U
CHROMIUM	109.69	110.64	119.73	124.15	4.77	2.63		1.7 U
COPPER	227.15	132.21	72.78	82.01	7.64	9.12		24.7
IRON	39738.82	34230.56	32290.84	32874.4	691.1	532.84		13.8
LEAD	164.58	108.52	89.19	94.22	3.62	4.59		0.10 J
MANGANESE	555.65	349.45	361.99	372.02	18.02	13.01		3.1 J
MERCURY	0.15 J	0.26 J	0.32 J	0.34 J	0.23	0.19		0.52
NICKEL	79.08	61.53	33.75	35.72	2.7 J	2.25		1.8 U
SILVER	0.40	0.80	0.83	0.77	0.10 J	0.13		0.83
ZINC	273.03 J	188.4 J	147.13 J	156.3 J	86.36	84.99		92.1
Miscellaneous Parameters (%)								
LIPIDS					8.2	8.1		2.20
TOTAL ORGANIC CARBON	1.21 J	2.52 J	2.18 J	3.18 J				

Notes:

MS09 includes the following samples:
OU4-SD-MS09-101B
OU4-SD-MS09-201B
OU4-SD-MS09-301B
OU4-SD-MS09-301B-FD
OU4-LJ-MS09-101B
OU4-MU-MS09-101B
OU4-MU-MS09-201B
OU4-MU-M09-201B-FD

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	101B	101B-DUP	201B	301B	101B	101B-DUP	201B	301B	101B
Dioxins/Furans (PG/G)									
1,2,3,4,6,7,8,9-OCDD	135.3 U	141 J	30.6 U	1955.7	50.5 UJ		58.1 UJ	67.1 UJ	25.9 UJ
1,2,3,4,6,7,8,9-OCDF	12.1 U	11.0 U	3.8 U	155.2 U	50.5 UJ		58.1 UJ	67.1 UJ	25.9 UJ
1,2,3,4,6,7,8-HPCDD	19.4 U	17.8 J	4.6 U	202.2 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,4,6,7,8-HPCDF	4.2	6.70 J	2.8	55.3	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,4,7,8,9-HPCDF	1.4 U	1.94 UJ	0.2 J	3.0 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,4,7,8-HXCDD	1.4 U	1.94 UJ	1.2 U	2.8 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,4,7,8-HXCDF	0.6 U	1.94 UJ	1.21 U	4.4 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,6,7,8-HXCDD	1.4 U	1.94 UJ	1.2 U	10	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,6,7,8-HXCDF	0.4 U	1.94 UJ	1.2 U	3.0 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,7,8,9-HXCDD	1.4 U	1.94 UJ	1.2 U	5.2 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,7,8,9-HXCDF	1.4 U	1.94 UJ	1.2 U	3.0 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,7,8-PECDD	1.4 J	0.1 J	0.3 U	2.2 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
1,2,3,7,8-PECDF	0.6 U	0.9 U	0.5 U	2.9 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
2,3,4,6,7,8-HXCDF	0.7 U	1.94 UJ	1.2 U	3.8 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
2,3,4,7,8-PECDF	0.6 U	1.94 UJ	1.2 U	2.7 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
2,3,7,8-TCDD	0.27 J	0.2 J	0.2 U	1.7 U	5.05 UJ		5.81 UJ	6.71 UJ	2.59 UJ
2,3,7,8-TCDF	0.8 U	0.8 U	0.2 U	3.3 U	5.05 UJ		5.81 UJ	6.71 UJ	2.59 UJ
TOTAL DIOXINS	195.2 U	190 J	43.3 U	2519.9	17.6 J		58.1 UJ	67.1 UJ	25.9 UJ
TOTAL FURANS	27.9 U	42.5 U	9.5 U	288.5 U	50.5 UJ		58.1 UJ	67.1 UJ	25.9 UJ
TOTAL HPCDD	46.5 U	39.0 J	10.8 U	436.7	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
TOTAL HPCDF	4.2	15.6 U	3.0	55.3	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
TOTAL HXCDD	10.5 U	9.50 J	1.2 U	109.7 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
TOTAL HXCDF	8.7 U	6.7 J	1.4 U	53.2 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
TOTAL PECDD	2.3 U	0.1 J	0.7 U	16.1 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
TOTAL PECDF	2.1 U	8.40 U	1.3 U	16.6 U	25.3 UJ		29.1 UJ	33.6 UJ	13.0 UJ
TOTAL TCDD	0.5 U	0.2 J	0.2 U	1.7 U	17.6 J		5.81 UJ	6.71 UJ	2.59 UJ
TOTAL TCDF	0.8 U	0.8 U	0.2 U	8.1 U	5.05 UJ		5.81 UJ	6.71 UJ	2.59 UJ
Polyaromatic Hydrocarbons (NG/G)									
1,1-BIPHENYL	2.6	2.8	14.4	8.2	6.2 U	6.7 U	4.3 U	3.7 U	6.10 J
1-METHYLNAPHTHALENE	5.6	5.1	38.2	17.3	6 U	6.5 U	5 U	5.5 U	4.50 J
1-METHYLPHENANTHRENE	14.1	15.5	133.8	79.9 J	7.7 J	6.6	5.1 J	6.5 J	2.80 J
2,3,5-TRIMETHYLNAPHTHALENE	3.4	4.1	44.6	20	4.7 J	4.2 J	4.5 J	4.3 J	1.40 J
2,6-DIMETHYLNAPHTHALENE	5.3	6.9	41.8	21.7	5.1 J	4.5 J	4.6 J	3.8 J	1.30 J
2-METHYLNAPHTHALENE	11.9	10.6	44.7	27.9	10.3 U	9.6 U	8.1 U	8.3 U	5.20 J
ACENAPHTHENE	4.4	7.2 J	67.8	21.3 J	2.9 J	2.3 J	4.9 J	3.6 J	2.10 J
ACENAPHTHYLENE	20 J	11.4 J	128.5	145.9 J	11.3 J	10	9.8 J	11.5 J	0.20 J
ANTHRACENE	60.3 J	65.3 J	1540.7 J	623.4 J	23.2 J	21.5	20.2 J	25.2 J	9.20 J
BENZO(A)ANTHRACENE	124.3 J	115.6	970.7	807.6 J	9 J	13 J	7.1 J	8.3 J	14.1
BENZO(A)PYRENE	165.2	154.1 J	1175.3 J	919.4 J	9.4 U	11.9 U	7.6 U	8.3 U	23.1
BENZO(B)FLUORANTHENE	157.7	158 J	975.7	922.5 J	12.1 J	17.7 J	10.9 J	14.6 J	16.9
BENZO(E)PYRENE	86 J	89.1	432.4	395 J	17.7 J	20.4	15.4 J	17.9 J	11.2
BENZO(G,H,I)PERYLENE	72.2 J	76.2 J	404.4 J	312.2 J	5.9 J	8.3 J	4.2 J	5.9 J	10.2
BENZO(K)FLUORANTHENE	43.4 J	37.3	312.8	234 J	5.5	6.5	5.6	6.8	7.00
CHRYSENE	100.2 J	104.5	668.4	711.3 J	31.2	29.9	25.2	31.4	17.4
DIBENZO(A,H)ANTHRACENE	18.6 J	23.7 J	121 J	81.8 J	0.2 J	1.1 J	0.5 J	0.5 J	0.70 J
DIBENZOTHIOPHENE	5.3	6	71.7	20.3 J	1.7 J	1.5 J	1.8 J	1.5 J	1.60 J
FLUORANTHENE	233.6	263.1	2518.9	869.9 J	62.5	62.8	52.1	61.3	38.7
FLUORENE	14.6 J	16.1 J	288.1 J	100.1 J	14.4 J	10.4 J	11.7 J	9.6 J	5.60 J
INDENO(1,2,3-CD)PYRENE	75.6 J	87.7 J	581 J	382.9 J	3.9 J	5.8 J	3.2 J	3.8 J	11.2 J
NAPHTHALENE	22.1	18.9	103.4	44.4 J	14.7 U	12.5 U	9.8 U	10.6 U	7.80 J
PERYLENE	33.2	35.2	271.6	147.2 J	7.3	8.9	6.4	6.7	7.50
PHENANTHRENE	103.6	124.9	1512.5	450 J	27.3	24.7	28.8	23	21.3
PYRENE	182.5	214.1	2039.7	792.1 J	37.2	41.7	33.1	39.5	26.6

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	101B	101B-DUP	201B	301B	101B	101B-DUP	201B	301B	101B
Pesticides/PCB's (NG/G)									
1,2,3,4-TETRACHLOROBENZENE	0.060 J	0.28 J	0.060 J	0.22 J	0.66 J	0.81 J	0.35 J	0.96 J	8.1
1,2,4,5-TETRACHLOROBENZENE	0.59 U	0.070 J	0.12 J	2.0 U	2.2 J	1.3 J	2.2	2.0	0.74 U
2,4'-DDD	12 J	28 J	12 J	3.6	8.0	7.5	1.7	3.3	1.6 U
2,4'-DDE	0.40 J	0.80 J	0.077 UJ	0.26	3.3 J	2.3 J	2.2 J	2.6 J	0.40 U
2,4'-DDT	6.8	11 J	0.92 J	0.52	15 J	13	7.7 J	5.3 J	0.40 UJ
4,4'-DDD	25 J	54 J	12 J	4.6	13	12	4.7	7.1	0.45 U
4,4'-DDE	9.3	15 J	2.3 J	1.9	12	11	7.2	11	0.93
4,4'-DDT	21	32 J	2.3 J	2.2	27 J	24 J	2.4 J	4.6 J	0.33 UJ
ALDRIN	0.16 U	0.068 UJ	0.066 UJ	0.12 U	0.26 U	0.26 U	0.26 U	0.29 U	0.29 U
ALPHA-BHC	0.080	0.080 J	0.060 J	0.28	1.8 J	0.74 J	2.5	2.4	0.29 U
ALPHA-CHLORDANE	7.6 J	15 J	2.0 J	0.27	0.086 U	0.086 U	0.087 U	4.8	0.095 U
BETA-BHC	0.19 U	0.20 UJ	0.20 UJ	0.17 J	1.7	1.9	1.4	1.8	0.74 U
CHLORPYRIFOS	0.12 U	0.12 UJ	0.12 UJ	0.21 U	0.32 U	0.32 U	0.33 U	0.36 U	1.0
CIS-NONACHLOR	1.2 J	2.0 J	0.077 UJ	0.45	1.7 J	1.3 J	2.8	0.66	0.31 U
DELTA-BHC	0.063 U	0.068 UJ	0.066 UJ	0.080 J	1.2	1.1	0.57	1.1	0.26 U
DIELDRIN	0.38	0.45 J	0.31 J	0.058 U	0.81 J	0.73 J	0.89	1.1	1.6 J
ENDOSULFAN II	0.15 UJ	1.9 J	3.5 J	0.27 U	0.24 U	0.24 U	0.24 U	1.6	0.26 U
ENDRIN	0.063 U	0.068 UJ	0.066 UJ	0.24	0.28 U	0.28 U	0.28 U	0.38	0.31 U
GAMMA-BHC (LINDANE)	0.060 J	0.15 J	0.14 UJ	0.38	0.38 J	0.29 J	0.16 J	0.41 J	0.97
GAMMA-CHLORDANE	8.4 J	21 J	0.033 UJ	0.12	5.9	5.4	2.6	1.1	0.14 U
HEPTACHLOR	0.35	0.27 J	0.16 UJ	0.29 U	4.2	3.5	1.6	2.3	0.29 U
HEPTACHLOR EPOXIDE	0.070	0.070 J	0.55 J	0.096 U	1.5 U	1.5 U	1.5 U	1.7 U	1.7 U
HEXACHLOROBENZENE	0.080	0.050 J	0.055 UJ	0.096 U	2.2	1.9	2.9	3.5	0.33 U
MIREX	0.040 J	0.090 J	0.28 J	0.15 U	0.56 U	0.56 U	0.56 U	0.62 U	0.62 U
OXYCHLORDANE	0.060 J	0.41 J	0.055 UJ	0.040 J	0.45 U	0.45 U	0.46 U	0.50 U	0.50 U
PCB-101/90	5.8 J	2.8 J	1.6 J	2.7	11 J	7.7 J	6.6	54	0.64 U
PCB-105	2.0 J	0.87 J	0.65 J	0.89 J	1.5	1.6	3.8	17	0.19 J
PCB-114	0.41 U	0.44 UJ	0.43 UJ	0.75 U	0.88 U	0.88 U	0.89 U	0.98 U	0.97 U
PCB-118	5.7 J	2.4 J	2.6 J	2.0	5.4	5.1	3.9	34	0.76
PCB-126	0.050 U	0.27 UJ	0.26 UJ	0.12 U	2.69 U	0.010 J	0.39 J	0.060 J	2.98 UJ
PCB-128	1.7 J	0.76 J	0.87 J	1.3	1.3	1.3	1.3	6.9	0.52 U
PCB-149/123	4.7 J	3.2 J	1.9 J	7.8 J	2.5	3.1	3.2	15	0.97 U
PCB-153/132	8.9 J	4.4 J	1.9 J	16	9.6	8.9	12	37	1.7
PCB-156	0.34 J	0.44 UJ	0.43 UJ	3.9 J	0.88 UJ	0.88 U	0.89 UJ	0.98 UJ	0.97 U
PCB-167	0.77 J	4.2 J	0.65 J	2.3	0.88	0.68 J	0.53 J	2.9	0.97 U
PCB-169	0.25 U	0.010 J	0.030 J	0.19 J	0.070 J	0.010 J	0.050 J	0.010 J	3.0 U
PCB-170/190	5.3 J	16 J	17 J	22 J	0.27 U	1.1 U	1.2 U	0.53 U	1.5 U
PCB-18/17	0.085 U	0.090 UJ	0.088 UJ	0.15 U	2.7 J	2.1	3.8 J	5.9 J	0.97 U
PCB-180	1.8	1.7 J	0.68 U	16	4.5 J	4.7	6.4 J	7.6 J	0.53 J
PCB-187	2.1	1.4 J	0.59 J	8.9	3.3	4.1	3.1	5.3	0.36 J
PCB-189	0.41 U	0.36 J	0.25 J	0.31 J	0.88 UJ	0.88 U	0.89 UJ	0.98 UJ	0.97 U
PCB-195/208	0.18	0.14 UJ	0.13 UJ	1.4	0.086 U	0.086 U	0.087 U	0.096 U	0.095 U
PCB-201/157/173	0.98 J	0.35 J	0.54 J	0.69 J	1.0 J	0.91	0.89 UJ	0.61 J	0.97 U
PCB-206	0.26	0.27 J	0.56 J	1.6	0.37 U	0.36 U	0.37 U	0.41 U	0.40 U
PCB-209	0.02 J	0.34 J	1.2 J	0.86	0.24 U	0.24 U	0.25 U	0.27 U	0.26 U
PCB-28	0.99 J	0.22 J	1.9 J	0.54	1.6 J	0.52 J	0.81 J	0.95 J	0.76 U
PCB-44	0.80 J	1.5 J	0.62 J	0.32	0.47 J	0.48 J	0.30 J	6.5	0.38 J
PCB-52	0.99 J	1.8 J	1.7 J	0.97	0.91 U	0.90 U	1.9	34	1.00 U
PCB-66	0.18 J	0.079 UJ	1.1 J	0.59	0.35 U	0.34 U	0.35 U	0.38 U	0.38 U
PCB-77	0.070 J	0.10 J	0.080 J	0.40 J	0.020 J	2.67 U	0.050 J	0.050 J	3.0 U
PCB-8/5	0.090 U	0.55 J	0.51 J	0.33 U	4.2 U	3.7 U	1.6 U	1.5 U	0.50 U
PCB-81	0.11 J	0.27 UJ	0.020 J	0.46 U	0.020 J	2.67 U	2.7 U	0.020 J	2.98 U
PCB138 /160	8.5 J	4.1 J	2.2 J	12	8.7	8.3	8.2	37	1.0
PENTACHLOROANISOLE	0.13 J	0.22 J	0.080 U	0.070 U	1.8	1.5	1.6	2.0	0.21 J
PENTACHLOROBENZENE	0.095 U	0.030 J	0.020 J	0.17 U	0.63	0.68	1.1	0.53	0.50 U
TRANS-NONACHLOR	3.2 J	8.1 J	0.53 J	0.020 J	1.8	1.7	1.2	2.9	0.26 U
Metals (UG/G)									
ALUMINUM	37762.04	35351.4	40531.4	52747.18	158.23 J	191.95	195.15 J	214.3 J	2.7 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 10								
	Sediment				Mussel				Lobster
Parameters	**101B**	**101B-DUP**	**201B**	**301B**	**101B**	**101B-DUP**	**201B**	**301B**	**101B**
ARSENIC	8.25	6.581	8.76	13.2	10.18	9.97	8.82	9.09	18.6
CADMIUM	0.1839 U	0.185 U	0.1845 U	0.1859 U	1.35	1.19	1.22	1.96	0.03 U
CHROMIUM	58.64	58.63	63.32	92.84	2.47	2.83	2.69	2.9	2.6 U
COPPER	22.89 J	40.2 J	18.39	26.95	6.50	6.27	16.03	6.27	24.7
IRON	20683.94	17133.36	16330.21	29402.59	442.81	365.63	340.59	396.68	6.7 U
LEAD	46.93	37.23	99.23	55.77	2.38	2.33	2.79	8.39	0.11 J
MANGANESE	204.04	166	228.71	345.07	13.29	12.23	12.06	10.61	12.9 J
MERCURY	0.07 J	0.05 J	0.15 J	0.17 J	0.18	0.18	0.20	0.25	0.38
NICKEL	29.29	36.26	16.29	24.52	2.16 U	1.89 U	1.73	2.12	1.6 U
SILVER	0.16	0.11 J	0.27	0.45	0.07 U	0.06 U	0.06 J	0.26	0.94
ZINC	88.04 J	66.69	69.98 J	102.21 J	83.13	81.33	85.49	82.23	102
Miscellaneous Parameters (%)									
LIPIDS					8.7	8.4	8.9	8.4	3.10
TOTAL ORGANIC CARBON	0.86 J	0.69 J	1.22 J	3.11 J					

Notes:

MS10 includes the following samples:
OU4-SD-MS010-101B
OU4-SD-MS010-101B-FD
OU4-SD-MS010-201B
OU4-SD-MS010-301B
OU4-LJ-MS010-101B
OU4-MU-MS010-101B
OU4-MU-MS010-101B-FD
OU4-MU-MS010-201B
OU4-MU-MS010-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 11				
	Sediment	Mussel			Lobster
Parameters	301B	101B	201B	301B	101B
Dioxins/Furans (PG/G)					
1,2,3,4,6,7,8,9-OCDD	87.1 U	170 J	121 J	46.5 UJ	31.8 UJ
1,2,3,4,6,7,8,9-OCDF	12.3 U	58.8 UJ	56.2 UJ	46.5 UJ	31.8 UJ
1,2,3,4,6,7,8-HPCDD	22.6 U	28.3 J	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,4,6,7,8-HPCDF	11.5	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,4,7,8,9-HPCDF	0.5 J	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,4,7,8-HXCDD	1.5 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,4,7,8-HXCDF	3.3 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,6,7,8-HXCDD	3.7	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,6,7,8-HXCDF	2.1 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,7,8,9-HXCDD	2.6 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,7,8,9-HXCDF	1.5 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,7,8-PECDD	1.5 J	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
1,2,3,7,8-PECDF	2.1 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
2,3,4,6,7,8-HXCDF	2.7 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
2,3,4,7,8-PECDF	5.1 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
2,3,7,8-TCDD	0.3 J	5.88 UJ	5.62 UJ	4.65 UJ	3.18 UJ
2,3,7,8-TCDF	0.3 J	5.88 UJ	5.62 UJ	4.65 UJ	3.18 UJ
TOTAL DIOXINS	180.1 U	220 J	144 J	38.0 J	31.8 UJ
TOTAL FURANS	111.5 U	26.1 J	56.2 UJ	46.5 UJ	31.8 UJ
TOTAL HPCDD	48.6 U	28.3 J	28.1 UJ	15.4 J	15.9 UJ
TOTAL HPCDF	18.9	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
TOTAL HXCDD	32.4 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
TOTAL HXCDF	26.3 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
TOTAL PECDD	7.2 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
TOTAL PECDF	25.9 U	29.4 UJ	28.1 UJ	23.3 UJ	15.9 UJ
TOTAL TCDD	4.8 U	21.3 J	22.8 J	22.7 J	3.18 UJ
TOTAL TCDF	28.2 U	5.88 UJ	5.62 UJ	4.65 UJ	3.18 UJ
Polyaromatic Hydrocarbons (NG/G)					
1,1-BIPHENYL	18.9	6.5 U	12.8 U	2.8 U	5.90 J
1-METHYLNAPHTHALENE	31.5	6.2 U	6.1 U	5.2 U	5.20
1-METHYLPHENANTHRENE	44.2	5.9 J	4 J	4.4 J	2.30 J
2,3,5-TRIMETHYLNAPHTHALENE	14.5	4.1 J	3.2 J	3.6 J	1.20 J
2,6-DIMETHYLNAPHTHALENE	26.5	4.4 J	4.3 J	3.8 J	1.20 J
2-METHYLNAPHTHALENE	68.8	9.6 U	9.4 U	8.6 U	6.20
ACENAPHTHENE	32.8	8 J	3.7 J	2.7 J	1.60 J
ACENAPHTHYLENE	45.3 J	12.5 J	9.6 J	8.9 J	0.20 J
ANTHRACENE	237.3 J	24.5 J	17.2 J	16.6 J	5.00 J
BENZO(A)ANTHRACENE	239.7 J	9.7	8.9	6.1 J	14.5
BENZO(A)PYRENE	310.5	10.9 U	9.9 U	8.6 U	39.5
BENZO(B)FLUORANTHENE	309.1	15.3 J	12.9 J	9.9 J	24.5
BENZO(E)PYRENE	154.9 J	17.8 J	16.1 J	13.8 J	12.6
BENZO(G,H,I)PERYLENE	132.1 J	7.2 J	6 J	4.2 J	11.7
BENZO(K)FLUORANTHENE	77.3 J	9.1	8.5	5.9	10.0
CHRYSENE	214.4 J	35.6	29.3	24.3	20.9
DIBENZO(A,H)ANTHRACENE	36 J	0.7 J	0.2 J	0.3 J	1.00 J
DIBENZOTHIOPHENE	18	1.7 J	1.2 J	1.1 J	1.10 J
FLUORANTHENE	367.8	60.9	41.5	42.1	39.8
FLUORENE	64.9 J	12.1 J	10.3 J	8.2 J	4.40 J
INDENO(1,2,3-CD)PYRENE	154.2 J	4.5 J	2.4 J	1.7 J	17.6 J
NAPHTHALENE	183.9	11.7 U	13.1 U	8.9 U	9.10 J
PERYLENE	58.6	7.2	5.6	5.8	7.90
PHENANTHRENE	279.2	31.8	19	17.9	15.6
PYRENE	309.3	38.8	26.7	24.9	28.1

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 11				
	Sediment	Mussel			Lobster
Parameters	301B	101B	201B	301B	101B
Pesticides/PCB's (NG/G)					
1,2,3,4-TETRACHLOROBENZENE	0.29	0.70 J	1.2	1.1	5.0
1,2,4,5-TETRACHLOROBENZENE	0.82 U	2.0	2.4	2.2	0.51 J
2,4'-DDD	0.99	2.6 J	2.7	1.8	1.5 U
2,4'-DDE	2.6	1.9 J	4.2 J	7.5 J	0.38 U
2,4'-DDT	1.2	2.2	3.9 J	5.2 J	0.38 UJ
4,4'-DDD	1.3	2.9	4.7	5.9	0.42 U
4,4'-DDE	0.94	8.3	6.1	5.7	0.88
4,4'-DDT	9.8	6.5 J	1.3 J	1.2 J	0.31 UJ
ALDRIN	2.8	0.23 U	0.26 U	0.24 U	0.27 U
ALPHA-BHC	0.040 J	1.6	0.26 U	2.8	0.27 U
ALPHA-CHLORDANE	1.2	0.077 U	0.086 U	0.081 U	0.11
BETA-BHC	0.23	1.4	3.5	3.2	0.69 U
CHLORPYRIFOS	0.10 U	0.29 U	0.32 U	0.30 U	1.5
CIS-NONACHLOR	0.60	0.56	2.5	2.0	0.29 U
DELTA-BHC	0.010 J	0.55	0.72	2.2	0.24 U
DIELDRIN	2.7	1.6	1.0	0.77 J	1.1 J
ENDOSULFAN II	0.13 U	0.21 U	0.24 U	0.22 U	0.24 U
ENDRIN	0.057 U	0.25 U	0.28 U	0.26 U	0.29 U
GAMMA-BHC (LINDANE)	0.12 U	0.35 J	0.34 J	0.55	0.76
GAMMA-CHLORDANE	0.11	2.5	2.7	0.12 U	0.13 U
HEPTACHLOR	2.4	1.6	4.3	4.6	0.27 U
HEPTACHLOR EPOXIDE	0.047 U	1.4 U	1.5 U	1.4 U	1.6 U
HEXACHLOROBENZENE	0.22	1.3	1.4	2.5	0.31 U
MIREX	0.076 U	0.50 U	0.56 U	0.52 U	0.58 U
OXYCHLORDANE	0.047 U	0.40 U	0.45 U	0.42 U	0.47 U
PCB-101/90	8.1	15	21	19	0.60 U
PCB-105	2.3	6.6	5.3	2.6	0.67 J
PCB-114	0.37 U	0.79 U	0.88 U	0.83 U	0.91 U
PCB-118	6.2	12	10	6.9	2.4
PCB-126	1.7 J	0.060 J	0.040 J	0.030 J	2.8 UJ
PCB-128	1.8	3.1	5.1	1.9	0.38 J
PCB-149/123	7.4 J	7.4	12	5.1	0.91 U
PCB-153/132	13	18	22	13	2.3
PCB-156	2.8 J	0.67 J	0.46 J	1.0 J	0.53 J
PCB-167	3.2	1.4	2.1	0.92	0.91 U
PCB-169	0.010 J	2.41 U	2.7 U	2.5 U	0.010 J
PCB-170/190	6.3 J	0.52 U	1.1 U	0.75 U	1.4 U
PCB-18/17	0.17	5.5 J	2.0 J	0.62 J	0.91 U
PCB-180	8.9	7.3 J	5.5 J	2.8 J	0.52 J
PCB-187	6.9	5.3	5.4	4.1	0.51 J
PCB-189	0.14 J	0.14 J	0.18 J	0.83 UJ	0.91 U
PCB-195/208	1.9	0.077 U	0.086 U	0.081 U	0.089 U
PCB-201/157/173	1.2	0.66 J	0.88 UJ	2.0 J	0.91 U
PCB-206	3.2	0.33 U	0.36 U	0.34 U	0.38 U
PCB-209	1.0	0.22 U	0.24 U	0.23 U	0.24 U
PCB-28	0.74	0.99 J	0.62 J	0.55 J	0.71 U
PCB-44	0.82	1.3	3.2	4.2	0.23 J
PCB-52	3.4	2.1	0.90 U	0.85 U	0.93 U
PCB-66	0.62	0.31 U	0.34 U	0.32 U	0.36 U
PCB-77	0.23 U	0.030 J	0.020 J	2.51 U	2.8 U
PCB-8/5	0.21 U	2.3 U	0.77 U	3.1 U	0.47 U
PCB-81	2.4	0.010 J	2.67 U	0.010 J	2.8 U
PCB138 /160	14	17	22	12	1.7

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 11				
	Sediment	Mussel			Lobster
Parameters	301B	101B	201B	301B	101B
PENTACHLOROANISOLE	0.13	1.1 U	1.6	1.7	0.17 J
PENTACHLOROBENZENE	0.36	0.71	0.84	0.69	0.47 U
TRANS-NONACHLOR	0.13	1.5	2.4	2.9	0.24 U
Metals (UG/G)					
ALUMINUM	40595.42	269.63 J	160.44 J	433.63 J	2.7 U
ARSENIC	13.34	9.37	8.79	10.86	20.4
CADMIUM	2.0 U	1.34	1.65	1.36	0.08 U
CHROMIUM	214.77	3.25	3.66	5.91	1.8 U
COPPER	747.01	8.96	9.49	7.78	30.0
IRON	64667.59	402.59	311.77	662.36	4.5 U
LEAD	1224.6	7.91	36.32	6.55	0.08 J
MANGANESE	630.99	15.84	14.77	21.11	13.6 J
MERCURY	0.69 J	0.19	0.53	0.14	0.66
NICKEL	104.84	1.53 U	1.66 U	2.29	1.7 U
SILVER	2.2	0.07 J	0.06 U	0.05 U	0.64
ZINC	598.17	91.36	86.95	81.96	97.1
Miscellaneous Parameters (%)					
LIPIDS		10	6.9	6.7	3.10
TOTAL ORGANIC CARBON	0.69 J				

Notes:

MS11 includes the following samples: OU4-SD-MS011-301B
OU4-LJ-MS011-101B
OU4-MU-MS011-101B
OU4-MU-MS011-201B
OU4-MU-MS011-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 12						
	Sediment				Mussel		Lobster
Parameters	101B	201B	201B-DUP	301B	101B	201B	101B
Dioxins/Furans (PG/G)							
1,2,3,4,6,7,8,9-OCDD	2145 J	309.6 U	1437 J	204.4 U	117 U	177 J	13.2 U
1,2,3,4,6,7,8,9-OCDF	139 U	22.1 U	78.9 U	22.3 U	9.10 J	26.3 J	36.2 UJ
1,2,3,4,6,7,8-HPCDD	244 J	27.2 U	145 J	26.1 U	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,4,6,7,8-HPCDF	58.3 J	2.1 UJ	39.1 J	7.0	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,4,7,8,9-HPCDF	1.57 UR	2.1 U	1.70 J	2.4 U	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,4,7,8-HXCDD	1.57 UR	2.1 U	1.50 J	2.4 U	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,4,7,8-HXCDF	1.57 UR	2.1 U	3.70 U	2.4 U	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,6,7,8-HXCDD	1.57 UR	2.1 UJ	6.40 J	1.1 J	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,6,7,8-HXCDF	1.57 UR	2.1 U	1.70 J	2.4 U	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,7,8,9-HXCDD	1.57 UR	2.1 UJ	3.90 J	2.4 U	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,7,8,9-HXCDF	1.57 UR	2.1 U	0.7 J	2.4 U	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,7,8-PECDD	1.57 UR	2.1 UJ	1.40 J	2.4 UJ	26.6 UJ	21.1 UJ	18.1 UJ
1,2,3,7,8-PECDF	1.50 U	0.2 U	1.40 U	2.4 UJ	26.6 UJ	21.1 UJ	18.1 UJ
2,3,4,6,7,8-HXCDF	1.57 UR	2.1 U	2.60 J	2.4 U	26.6 UJ	21.1 UJ	18.1 UJ
2,3,4,7,8-PECDF	1.57 UR	2.1 UJ	2.80 U	2.4 UJ	26.6 UJ	21.1 UJ	18.1 UJ
2,3,7,8-TCDD	0.3 UR	0.4 UJ	0.5 J	0.5 UJ	5.32 UJ	4.22 UJ	3.62 UJ
2,3,7,8-TCDF	0.3 UR	0.4 UJ	2.50 U	0.5 UJ	5.32 UJ	4.22 UJ	3.62 UJ
TOTAL DIOXINS	2929 J	488.3 U	1996 J	291.9 U	117 U	177 J	13.2 U
TOTAL FURANS	314 U	34.8 U	246 U	39.3 U	9.10 U	26.3 J	36.2 UJ
TOTAL HPCDD	677 J	167.7 U	473 J	77.3 U	26.6 UJ	21.1 UJ	18.1 UJ
TOTAL HPCDF	148 J	9.9	96.2 U	9.4	26.6 UJ	21.1 UJ	18.1 UJ
TOTAL HXCDD	107 J	10.6 U	81.3 J	10 U	26.6 UJ	21.1 UJ	18.1 UJ
TOTAL HXCDF	25.5 J	2.4 U	43.9 J	6.1 U	26.6 UJ	21.1 UJ	18.1 UJ
TOTAL PECDD	1.57 UR	0.4 U	1.40 J	0.2 U	26.6 UJ	21.1 UJ	18.1 UJ
TOTAL PECDF	1.50 U	0.3 U	18.6 U	1.6 U	26.6 UJ	21.1 UJ	18.1 UJ
TOTAL TCDD	0.3 UR	0.4 UJ	4.0 J	0.5 UJ	5.32 UJ	4.22 UJ	3.62 UJ
TOTAL TCDF	0.3 UR	0.4 UJ	8.30 U	0.5 UJ	5.32 UJ	4.22 UJ	3.62 UJ
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	47.3 U	71.6	61	18.9	9.7 J	5.7 U	7.60 J
1-METHYLNAPHTHALENE	130.9 U	202.2	176.3	47.3	12.4 J	10.8 U	3.70 J
1-METHYLPHENANTHRENE	340.7	325.9	278	93.4	22.3 J	10.5 J	0.90 J
2,3,5-TRIMETHYLNAPHTHALENE	52.2	63.3 J	39.8	17.7	8.7	5.6 J	1.10 J
2,6-DIMETHYLNAPHTHALENE	115.6	95.5	83.8	27.7	8.4 J	7.6 J	1.40 J
2-METHYLNAPHTHALENE	157.3 J	247.7	257	67.3	17.5 J	20.5	5.00 J
ACENAPHTHENE	1489.9 J	1394.5	1355.6	217.5	92 J	9.4 J	1.60 J
ACENAPHTHYLENE	167.9 U	167	117	102.6 J	22.2 J	15.9 J	0.20 J
ANTHRACENE	2432.2 J	2267.4 J	2733.4 J	497.6 J	152.7 J	47.3 J	1.30 J
BENZO(A)ANTHRACENE	2948.9	2957.4 J	3066.8	846.3 J	70.2 J	24.4	6.60 J
BENZO(A)PYRENE	4549.7 J	3938.2	3750.9 J	996.1	37.8	16.6 U	12.2
BENZO(B)FLUORANTHENE	4187.1	3452 J	3678.1	1092	54.4 J	26.8 J	11.0
BENZO(E)PYRENE	1883.8	1501.6 J	1662.1	441.4 J	43.1 J	30.1 J	6.50
BENZO(G,H,I)PERYLENE	1609.7	1432.1 J	1516.5 J	345.6 J	14.5 J	9.6 J	7.40
BENZO(K)FLUORANTHENE	1439.6	1175.7	1097.6	238.7 J	28.3 J	18.1	3.90 J
CHRYSENE	2831.7	2840.5	2665	765.1 J	107.6	59	9.20
DIBENZO(A,H)ANTHRACENE	463.7	242.1 J	448.9 J	96.9 J	1.5 J	0.9 J	0.40 J
DIBENZOTHIOPHENE	251	225.8	272.7	57	13.1	3	0.50 J
FLUORANTHENE	8175.2	7463.9	7119.2	1608.5	474.1	134.8	14.6
FLUORENE	1245.7 J	1513.1 J	1769.4 J	251.4 J	84 J	17.9 J	3.50 J
INDENO(1,2,3-CD)PYRENE	1938.2	1379.3 J	2009 J	456.6 J	11.6	6.6 J	6.30 J
NAPHTHALENE	267.5 U	508.6	470.4	142.2	29.9 J	18.4 U	8.40 J
PERYLENE	663.5	485.7	496.5	164.3	16.7	11.9	4.10 J
PHENANTHRENE	6166.7	5741.4	6590	1090.3	252 J	57.9	7.90 J
PYRENE	6450.7 U	5631.5	5776	1291.8	288.8 J	96.8	7.70

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 12						
	Sediment				Mussel		Lobster
Parameters	101B	201B	201B-DUP	301B	101B	201B	101B
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	0.15 UJ	0.040 J	0.10 J	0.090 J	17	0.23 J	14
1,2,4,5-TETRACHLOROBENZENE	0.58 U	0.64 U	0.12 J	1.9 U	1.3 U	1.9	0.12 J
2,4'-DDD	5.2 J	26 J	9.4 J	11	1.3 J	1.6	1.6 U
2,4'-DDE	0.059 UJ	0.13	0.096 UJ	0.080 J	0.17 J	5.2 J	0.40 U
2,4'-DDT	0.43 J	0.91 J	0.082 UJ	1.6	2.0 J	3.5 J	0.40 UJ
4,4'-DDD	6.7 J	2.2 J	5.0 J	2.3	2.3	4.5	0.44 U
4,4'-DDE	2.8 J	1.3	0.93 J	1.9	5.9	7.1	2.3
4,4'-DDT	4.9 J	8.1 J	2.8 J	7.3	0.85	2.6 J	0.33 UJ
ALDRIN	0.050 UJ	51 J	0.082 UJ	13	0.26 U	0.20 U	0.28 U
ALPHA-BHC	0.19 J	0.16 J	0.070 J	0.080	1.1	1.8	0.28 U
ALPHA-CHLORDANE	1.2 J	1.4	1.2 J	0.80	1.8	0.068 U	0.094 U
BETA-BHC	0.16 U	0.22 J	0.25 UJ	0.14 J	0.66 U	1.3	0.73 U
CHLORPYRIFOS	0.13 J	0.16 U	0.15 UJ	0.17 U	1.9	0.25 U	1.3
CIS-NONACHLOR	0.58 J	0.58 J	0.33 J	0.65	1.3	2.0	0.30 U
DELTA-BHC	0.77 J	0.085 UJ	0.15 J	0.050 J	0.24 U	0.96	0.26 U
DIELDRIN	1.4 J	0.20	0.12 J	0.42	1.1 J	0.85	2.1 J
ENDOSULFAN II	2.6 J	0.20 UJ	5.5 J	0.21 U	0.24 U	0.19 U	0.28
ENDRIN	0.050 UJ	0.085 U	0.082 UJ	0.091 U	0.28 U	0.22 U	0.30 U
GAMMA-BHC (LINDANE)	0.10 U	0.18 U	0.18 UJ	0.20 U	1.4	0.32 J	1.5
GAMMA-CHLORDANE	0.14 J	0.042 U	0.041 UJ	0.046 U	0.56	1.1	0.14 U
HEPTACHLOR	0.060 J	0.18 J	0.070 J	0.28	0.26 U	3.7	0.28 U
HEPTACHLOR EPOXIDE	0.042 UJ	0.071 U	0.069 UJ	0.076 U	1.5 U	1.2 U	1.7 U
HEXACHLOROBENZENE	0.042 UJ	0.34 J	0.050 J	0.076 U	0.65	1.6	0.33 U
MIREX	2.3 J	0.48 J	0.11 UJ	0.11 J	0.56 U	0.44 U	0.61 U
OXYCHLORDANE	0.042 UJ	0.071 UJ	0.75 J	0.13	0.45 U	0.36 U	0.51
PCB-101/90	9.1	5.3	5.0 J	5.3	9.1	17	2.8
PCB-105	2.7 J	0.75 J	2.0 J	1.3	2.9	3.3	3.0
PCB-114	0.33 U	0.55 U	0.53 UJ	0.59 U	0.88 U	0.70 U	0.96 U
PCB-118	12	2.2 J	4.9 J	3.8	7.0	5.9	9.6
PCB-126	0.030 J	0.34 UJ	0.33 UJ	0.36 J	0.010 U	0.010 J	2.9 UJ
PCB-128	5.7	1.8	2.0 J	1.2	1.5	2.2	1.8
PCB-149/123	8.4	9.8 J	7.1 J	5.0 J	10	9.8	0.74 J
PCB-153/132	27	18	13 J	8.1	23	19	7.9
PCB-156	8.0	7.4 J	6.2 J	3.0 J	1.5	0.90 J	1.7
PCB-167	2.0	1.9	2.3 J	2.3	0.62 J	1.1	0.36 J
PCB-169	0.010 J	0.16 J	0.010 J	0.010 J	0.26 U	0.010 J	2.92 U
PCB-170/190	117	72 J	65 J	27 J	0.33 J	1.4 U	0.77 J
PCB-18/17	2.4	0.11 U	0.11 UJ	2.1	1.7	2.4 J	0.96 U
PCB-180	57	12	9.0 J	4.0	6.5 U	6.6 J	1.9 J
PCB-187	78	33 J	1.1 UJ	7.2	11	11	1.5 J
PCB-189	1.5	0.28 J	0.71 J	0.10 J	0.88 U	0.35 J	0.96 U
PCB-195/208	35	3.3 J	1.0 J	3.5	0.086 U	0.068 U	0.094 U
PCB-201/157/173	12	1.4	1.1 J	0.82	1.0 J	2.3 J	0.96 U
PCB-206	107	5.4	3.4 J	8.1	0.36 U	0.29 U	0.40 U
PCB-209	15.81 J	1.95 J	0.45 J	2.37	0.24 U	0.19 U	0.26 U
PCB-28	8.0	3.0 J	1.4 J	4.4	4.8 J	1.7 J	0.75 U
PCB-44	5.1	1.0	0.85 J	1.8	2.0 U	4.7	0.25 J
PCB-52	7.3	1.1	1.7 J	3.4	4.8 J	0.71 U	0.80 J
PCB-66	8.5	1.1 J	4.0 J	1.3	1.2	0.43	1.0
PCB-77	0.080 U	0.34 U	0.15 J	0.21 J	2.7 U	2.12 U	2.9 U
PCB-8/5	7.4	0.37 U	0.71 J	1.6 U	7.4 U	2.0 U	0.49 U
PCB-81	0.20 UR	3.6 J	0.030 J	0.14 J	0.030 J	2.12 U	2.9 U
PCB138 /160	25	12	10.0 J	7.5	14 U	17	8.0
PENTACHLOROANISOLE	0.15 U	0.16 J	0.090 U	0.26	3.1	1.4 U	0.24 J
PENTACHLOROBENZENE	0.030 J	0.13 U	0.010 J	0.14 U	1.3	0.84	0.020 J

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 12						
	Sediment				Mussel		Lobster
Parameters	**101B**	**201B**	**201B-DUP**	**301B**	**101B**	**201B**	**101B**
TRANS-NONACHLOR	0.16 J	0.070 J	0.12 UJ	0.15	1.0	7.1	0.26 U
Metals (UG/G)							
ALUMINUM	48499.5	49949.43	46112.42	48814.69	222.15 J	307.67 J	2.7 U
ARSENIC	11.857	10.12	9.767	8.6	10.73	8.29	17.6
CADMIUM	0.51	0.188 U	0.74	0.19 U	0.95	1.01	0.04 U
CHROMIUM	157.38	89.25	81.53	102.24	4.1	3.19	1.5 U
COPPER	266.31	90.31	79.01	82.82	6.56	6.76	19.6
IRON	32312.68	23182.2	19617.22	26941.76	502.02	476.78	9.4
LEAD	379.24	102.52	93.96	126.04	4.17	4.27	0.18
MANGANESE	399.19	336.47	346.5	366.42	9.97	15.74	4.8 J
MERCURY	0.74 J	0.24 J	0.20 J	0.27 J	0.17	0.19	0.78
NICKEL	69.09	28.55	26.85	32.71	1.73 U	1.83	1.66 U
SILVER	0.72 J	0.43 J	0.30 J	0.48	0.06 U	0.06 U	0.60
ZINC	1046.47	219.29	243.76	200.24	79.85	87.5	114
Miscellaneous Parameters (%)							
LIPIDS					7.4	7.6	3.40
TOTAL ORGANIC CARBON	1.33 J	2.03 J	2.3 J	1.57 J			

Notes:

MS12 includes the following samples:
OU4-SD-MS012-101B
OU4-SD-MS012-201B
OU4-SD-MS012-201B-FD
OU4-SD-MS012-301B
OU4-LJ-MS012-101B
OU4-MU-MS012-101B
OU4-MU-MS012-201B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	101B	201B	301B	101B	101B-DUP	301B	101B
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	12.9	9.4	9.1	8.3 J	8.3 J	7.9 J	6.40 J
1-METHYLNAPHTHALENE	27.7 J	23.5	19.9	7.1 J	7	5.6 J	3.00 J
1-METHYLPHENANTHRENE	165.3	60.9	68.4	8.2 J	9.3	4.8 J	4.00 J
2,3,5-TRIMETHYLNAPHTHALENE	47 J	26.7	22.9	5.4 J	5.2 J	4.2 J	1.30 J
2,6-DIMETHYLNAPHTHALENE	30.6	21.8	22	4.5 J	4.5 J	3.4 J	1.40 J
2-METHYLNAPHTHALENE	40.7 J	34.7	30.9	11.3 J	11.8	9.8 J	4.40 J
ACENAPHTHENE	357.6	49.4	56	5.9 J	7.7 J	2.6 J	1.50 J
ACENAPHTHYLENE	161.7	133.4 J	102.7 J	17.1 J	18.7	10.9 J	0.20 J
ANTHRACENE	1236.5 J	559.6 J	384.1 J	42.5 J	50.9	23 J	3.80 J
BENZO(A)ANTHRACENE	1274.7 J	719.6 J	515.4 J	25.7 J	29.1	11.7 J	28.0
BENZO(A)PYRENE	1195.7	853.5	696.2	18.6	21	9.8	34.9
BENZO(B)FLUORANTHENE	1373.1 J	807.4	744.9	29.8 J	32.5	12 J	36.0
BENZO(E)PYRENE	590 J	362.8 J	343.3 J	28.4 J	32.2	14.9 J	16.3
BENZO(G,H,I)PERYLENE	407.3 J	271.7 J	9.2 J	8.4 J	10.6	4.4 J	10.5
BENZO(K)FLUORANTHENE	525.9	247.7 J	241.7 J	17.1	19.7	6.6	14.2
CHRYSENE	1491.9	677.5 J	622.4 J	56.2	59.1	24.2	37.3
DIBENZO(A,H)ANTHRACENE	76.1	75.5 J	69 J	1 J	1 J	0.4 J	0.70 J
DIBENZOTHIOPHENE	55.1	28.7	27.7	2.2 J	2.3 J	1.3 J	0.80 J
FLUORANTHENE	3691.1	1429.8	1141.5	121.4	140.3	58.3	70.5
FLUORENE	196.7 J	96.6 J	111.3 J	20.8 J	18.8	11.3 J	3.50 J
INDENO(1,2,3-CD)PYRENE	380.4 J	337 J	349.5 J	7.6 J	7.6	2.8 J	14.1 J
NAPHTHALENE	87.5	51	47.3	15.1 J	12	12.3 J	6.30 J
PERYLENE	208.7	132	124.9	8.8	11.1	6	10.2
PHENANTHRENE	811.4	404	394.6	41 J	47.1	21.6 J	16.3
PYRENE	2601	1140.1	924.3	78.5 J	91.9	38.9 J	39.6
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	0.070 J	0.090 J	0.13 J	14	19	11	12
1,2,4,5-TETRACHLOROBENZENE	1.3 U	1.6 U	2.6 U	1.8 U	1.4 U	2.0 U	0.34 J
2,4'-DDD	8.0	4.0 J	7.7	1.1 J	1.1 J	0.86 J	1.7 U
2,4'-DDE	0.28 J	0.14 UJ	0.080 J	0.89	0.26 J	0.53	0.42 U
2,4'-DDT	0.40	0.19 J	0.87	1.0 J	1.0 J	0.82 J	0.42 UJ
4,4'-DDD	1.4	0.96 J	2.4	2.1	2.3	1.6	0.47 U
4,4'-DDE	1.1	1.1 J	1.5	5.9	7.5	4.2	2.4
4,4'-DDT	5.1	3.0 J	3.0	1.3	1.4	0.67	0.34 UJ
ALDRIN	0.31 U	1.0 J	10	0.24 U	0.25 U	0.23 U	0.29 U
ALPHA-BHC	0.13	0.10 J	0.37	0.73	0.56	0.85	0.29 U
ALPHA-CHLORDANE	0.41	0.54 J	0.63	1.3	1.2	1.3	0.098 U
BETA-BHC	0.17 J	0.20 J	0.030 J	0.63 U	0.97	0.59 U	0.76 U
CHLORPYRIFOS	0.23 U	0.22 UJ	0.25 U	1.5	1.7	1.3	1.2
CIS-NONACHLOR	0.49	0.28 J	0.48	1.1	1.3 J	0.77	0.32 U
DELTA-BHC	0.15	0.10 J	0.080 J	0.27	0.23 U	0.21 U	0.27 U
DIELDRIN	0.062 U	0.16 J	0.26	1.2 J	1.3	0.98 J	1.8 J
ENDOSULFAN II	0.29 U	0.28 UJ	0.32 U	0.22 U	0.23 U	0.21 U	0.27 U
ENDRIN	0.12 U	0.12 UJ	0.14 U	0.26 U	0.27 U	0.25 U	0.32 U
GAMMA-BHC (LINDANE)	0.47	0.26 UJ	0.30 U	0.84	0.95	0.44	0.87
GAMMA-CHLORDANE	0.062 U	0.059 UJ	0.33	0.84	0.90	1.0	0.15 U
HEPTACHLOR	0.21 J	0.11 J	0.060 J	0.24 U	0.25 U	0.23 U	0.29 U
HEPTACHLOR EPOXIDE	0.10 U	0.099 UJ	0.12 U	1.4 U	1.5 U	1.3 U	1.7 U
HEXACHLOROBENZENE	0.10 U	0.099 UJ	0.12 U	0.59	0.24 J	1.4	0.34 U
MIREX	0.17 U	0.16 UJ	0.18 U	0.53 U	0.54 U	0.49 U	0.64 U
OXYCHLORDANE	0.10 U	0.24 J	0.16	2.2 J	1.6 J	0.40 U	0.52 U
PCB-101/90	1.5	1.5	3.8	6.5	4.8	6.1	0.36 J

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	101B	201B	301B	101B	101B-DUP	301B	101B
PCB-105	0.49 J	0.55 J	1.6	1.8	1.9	2.1	0.49 J
PCB-114	0.81 U	0.77 U	0.90 U	0.83 U	0.85 U	0.78 U	1.0 U
PCB-118	1.9	1.8	3.5	5.3	5.7	4.3	2.0
PCB-126	0.50 UJ	0.48 UJ	0.55 UJ	0.010 U	0.02 U	0.02 U	0.010 J
PCB-128	0.55	0.60	1.0	1.4	1.5	0.76	0.32 J
PCB-149/123	1.7 J	1.8 J	3.1 J	7.3	7.6	4.6	0.16 J
PCB-153/132	2.8	2.9	5.7	16	18	10	3.5
PCB-156	2.2 J	0.58 J	2.9 J	0.44 J	0.91	0.62 J	1.0 U
PCB-167	1.6	2.3	3.1	0.68 J	0.77 J	0.29 J	1.0 U
PCB-169	0.040 J	0.080 J	0.020 J	0.23 U	2.6 U	0.010 U	0.010 J
PCB-170/190	16 J	14 J	17 J	0.46 J	0.43 J	1.5 J	1.6 U
PCB-18/17	0.17 U	0.16 U	5.8	1.9	0.60 J	4.5	1.0 U
PCB-180	1.6 J	1.6 J	2.9 J	7.0 U	8.0 U	4.7 U	0.94 J
PCB-187	3.6	4.0	6.4	4.6	5.0	3.0	1.0 J
PCB-189	0.81 U	0.050 J	0.13 J	0.83 U	0.85 UJ	0.78 U	1.0 U
PCB-195/208	0.55	0.47	1.1	0.081 U	0.083 U	0.076 U	0.098 U
PCB-201/157/173	2.3	2.5	2.8	0.83 UJ	0.85 U	0.78 UJ	1.0 U
PCB-206	0.94	0.98	2.2	0.34 U	0.35 U	0.32 U	0.42 U
PCB-209	0.42	0.66	1.51	0.23 U	0.21 U	0.21 U	0.27 U
PCB-28	5.0	3.7	11	0.65 U	0.66 U	9.8 J	0.79 U
PCB-44	0.72	0.33	3.9	1.4 U	1.4 U	4.3 U	0.31 J
PCB-52	1.2	0.83	4.5	6.9 J	6.7	7.8 J	1.0 U
PCB-66	1.2	0.48	4.5	0.91 J	0.63 J	3.3	0.35 J
PCB-77	0.14 J	0.24 J	0.25 J	2.54 U	0.010 U	0.030 U	0.020 J
PCB-8/5	0.76 U	0.32 U	5.2 U	11 U	13 U	14 U	0.52 U
PCB-81	0.070 J	0.16 J	0.55 U	0.01 J	0.01 U	0.010 J	0.010 J
PCB138 /160	2.8	2.6	4.5	10 U	11 U	6.8 U	2.3
PENTACHLOROANISOLE	0.19 J	0.080 U	0.14 U	4.1	3.6	3.7	0.26 J
PENTACHLOROBENZENE	0.19 U	0.18 UJ	0.21 U	1.1 J	0.73	1.0	0.52 U
TRANS-NONACHLOR	0.19 U	0.10 J	0.28	1.2	1.3	0.95	0.27 U
Metals (UG/G)							
ALUMINUM	52038.81	53790.5	53123.26	231.17 J	273.14 J	205.67 J	5.2 U
ARSENIC	13.11	13.26	14.96	7.98	7.91	7.97	33.8
CADMIUM	0.187 U	0.1828 U	0.38 U	1.31	1.37	1.21	0.04 U
CHROMIUM	100.73	99.48	115.45	3.73	4.06	3.17	1.8 U
COPPER	45.26	42.0	63.41	14.84	15.86	6.70	31.4
IRON	31059.54	30135.48	32008.98	437.35	500.86	372.04	12.4
LEAD	61.18	77.2	88.62	2.71	2.82	2.35	0.58
MANGANESE	394.12	391.86	391.27	16.92	18.08	14.68	4.8 J
MERCURY	0.18 J	0.27 J	0.21 J	0.23	0.24	0.20	0.45
NICKEL	24.98	23.77	29.46	1.92 U	1.9	1.75 U	1.71 U
SILVER	0.48	0.41	0.53	0.06 U	0.06 U	0.06 U	1.0
ZINC	112.41	118.67	158.96	98.65	103.52	88.89	123
Miscellaneous Parameters (%)							
LIPIDS				7.3	8.3	5.6	2.90
TOTAL ORGANIC CARBON	2.31 J	2.49 J	2.83 J				

Notes:

MS13 includes the following samples:
OU4-SD-MS013-101B
OU4-SD-MS013-201B
OU4-SD-MS013-301B
OU4-LJ-MS013-101B
OU4-MU-MS013-101B
OU4-MU-MS013-101B-FD
OU4-MU-MS013-301B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster
Parameters	101B	201B	301B	101B	201B	101B
Polyaromatic Hydrocarbons (NG/G)						
1,1-BIPHENYL	12.6	12.4	10.7	3.9 J	8.3 J	6.50 J
1-METHYLNAPHTHALENE	30.3	23.3	25.6	4.4 J	6.8 J	3.00 J
1-METHYLPHENANTHRENE	99.5	95.6	78.3	6.4 J	5.5 J	0.80 J
2,3,5-TRIMETHYLNAPHTHALENE	13.2	20.1	22.8	2.7 J	4.4 J	1.00 J
2,6-DIMETHYLNAPHTHALENE	19.5	23	24.3	3.3 J	4.2 J	1.30 J
2-METHYLNAPHTHALENE	56.7	39.8	38.3	6.6 J	11.3 J	4.40 J
ACENAPHTHENE	24.2 J	41	62.8	2.1 J	3.3 J	1.40 J
ACENAPHTHYLENE	179.4 J	163.9 J	113.1 J	11.7 J	11.3 J	0.20 J
ANTHRACENE	415.6 J	548.6 J	372.5 J	23.3 J	22.8 J	2.00 J
BENZO(A)ANTHRACENE	747.2	618.4 J	400.4 J	11.2	10.8 J	4.50 J
BENZO(A)PYRENE	1192.7 J	1017.7	541.5	9.8 J	10.7	9.40
BENZO(B)FLUORANTHENE	1043.7	842.7	504	17.3	14.3 J	8.90
BENZO(E)PYRENE	534.4 J	414.5 J	229.1 J	18.3 J	17.9 J	6.30
BENZO(G,H,I)PERYLENE	517.6 J	341.3 J	202.8 J	7.8	5.1 J	5.70
BENZO(K)FLUORANTHENE	287 J	211 J	128.5 J	7.2	7.1	3.20 J
CHRYSENE	656.3 J	573.4 J	337.1 J	29.1	24.3	8.00 J
DIBENZO(A,H)ANTHRACENE	125.2 J	90.7 J	50.9 J	0.8 J	0.6 J	0.20 J
DIBENZOTHIOPHENE	27.3	26.5	25.7	1.4 J	1.6 J	0.50 J
FLUORANTHENE	873.8	851.5	759.3	56.2 U	58.5	11.6
FLUORENE	64.6 J	112.9 J	107.7 J	7.1 J	22 J	2.90 J
INDENO(1,2,3-CD)PYRENE	601.8 J	402 J	234.6 J	5	3.8 J	4.90 J
NAPHTHALENE	91.9	69.1	57	8 J	15.1 J	6.50 J
PERYLENE	97.8	86.7	125.8	6.8	7.6	3.80 J
PHENANTHRENE	427.5	488.9	452.9	24.1 J	23.9 J	6.70 J
PYRENE	795.5	909.1	696.2	38 U	45.5 J	10.3
Pesticides/PCB's (NG/G)						
1,2,3,4-TETRACHLOROBENZENE	0.29 J	0.38 J	0.080 J	7.9	7.0	16
1,2,4,5-TETRACHLOROBENZENE	2.5 U	3.0 U	2.3 U	1.2 U	1.2 U	0.38 J
2,4'-DDD	7.0	5.3 J	4.5 J	0.97 J	0.84 J	1.7 U
2,4'-DDE	0.040 J	0.089 U	0.42 J	0.83	0.68	0.41 U
2,4'-DDT	0.080 J	0.49 J	0.21 J	1.6 J	1.0 J	0.41 UJ
4,4'-DDD	1.1	1.4 J	1.5 J	2.4	1.8	0.46 U
4,4'-DDE	1.3	0.86 J	1.3 J	6.3	5.0	2.0
4,4'-DDT	2.3	5.3 J	3.2 J	0.57	0.84	0.34 UJ
ALDRIN	13	0.21 U	8.8 J	0.24 U	0.20 U	0.29 U
ALPHA-BHC	0.11	0.13 J	0.15 J	0.71	0.76	0.29 U
ALPHA-CHLORDANE	0.63	0.42 J	0.65 J	1.9	1.5	0.096 U
BETA-BHC	0.14 J	0.16 J	0.18 J	0.62 U	0.52 U	0.74 U
CHLORPYRIFOS	0.010 J	0.14 UJ	0.20 UJ	2.8	1.9	1.6
CIS-NONACHLOR	0.92	0.18 J	0.18 J	1.4	0.74	0.31 U
DELTA-BHC	0.070 J	0.090 J	0.030 J	0.32	0.26	0.26 U
DIELDRIN	0.052 U	0.11 J	0.16 J	0.71 J	0.97 J	1.4 J
ENDOSULFAN II	0.24 U	0.18 UJ	0.25 UJ	0.22 U	0.19 U	0.26 U
ENDRIN	0.10 U	0.077 UJ	0.12 J	0.26 U	0.22 U	0.31 U
GAMMA-BHC (LINDANE)	0.14 J	0.12 J	0.16 J	0.40 U	0.32 J	2.0
GAMMA-CHLORDANE	0.052 U	0.13 J	0.060 J	0.64	0.87	0.14 U
HEPTACHLOR	0.14 J	0.14 J	0.16 J	0.96	0.20 U	0.29 U
HEPTACHLOR EPOXIDE	0.086 U	0.064 UJ	0.089 UJ	1.4 U	1.2 U	1.7 U
HEXACHLOROBENZENE	0.060 J	0.064 UJ	0.089 UJ	0.28 U	0.24 J	0.34 U
MIREX	0.58	0.10 UJ	0.20 J	0.52 U	0.44 U	0.62 U
OXYCHLORDANE	0.18	0.18 J	0.16 J	0.63 J	0.35 U	0.44 J
PCB-101/90	0.46 J	2.3 J	2.0	7.7	7.3	0.24 J

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Monitoring Station 14					
	Sediment			Mussel		Lobster
Parameters	101B	201B	301B	101B	201B	101B
PCB-105	0.28 J	0.63 J	0.49 J	1.7	2.0	0.76 J
PCB-114	0.67 U	0.50 UJ	0.69 U	0.83 U	0.69 U	0.98 U
PCB-118	0.66	1.9 J	1.8	6.0	3.9	2.7
PCB-126	0.41 UJ	0.31 UJ	0.43 UJ	0.020 J	2.11 U	0.010 J
PCB-128	0.59	0.80 J	0.79	1.2	0.86	0.45 J
PCB-149/123	0.60 J	2.2 J	1.7 J	6.1	4.8	0.040 J
PCB-153/132	1.1 J	3.5 J	3.2	13	11	4.0
PCB-156	3.4 J	1.6 J	2.0 J	0.69 J	0.43 J	0.98 U
PCB-167	3.9	4.5 J	3.7	0.44 J	0.55 J	0.98 U
PCB-169	0.10 J	0.010 J	0.15 J	0.020 J	2.1 U	2.99 U
PCB-170/190	20 J	11 J	13 J	0.11 J	1.6 J	0.34 J
PCB-18/17	0.14 U	0.10 UJ	0.14 U	0.83 U	0.25 J	0.98 U
PCB-180	0.34 J	1.6 J	1.8 J	6.5 J	5.1 U	1.1 J
PCB-187	5.0	4.0 J	4.3	5.6	3.6	1.2 J
PCB-189	0.27 J	0.50 UJ	0.13 J	0.83 U	0.69 U	0.98 U
PCB-195/208	0.21 U	0.81 J	0.48	0.081 U	0.067 U	0.096 U
PCB-201/157/173	0.67 U	0.44 J	2.8	0.71 J	0.69 UJ	0.98 U
PCB-206	1.1	1.5 J	1.2	0.34 U	0.29 U	0.41 U
PCB-209	0.12 U	0.91 J	0.47	0.23 U	0.19 U	0.26 U
PCB-28	0.47 U	1.4 J	0.48 U	1.3	3.2 J	0.77 U
PCB-44	0.22 U	0.20 J	0.24	0.94 J	1.4 U	0.27 J
PCB-52	0.080 J	0.56 J	0.47	3.4	4.6 J	1.0 U
PCB-66	0.28	0.54 J	0.67	1.2	0.3	0.31 J
PCB-77	0.050 J	0.050 J	0.54 J	0.080 J	2.11 U	0.020 J
PCB-8/5	0.78 U	0.31 U	0.42 U	3.3	8.9 U	0.50 U
PCB-81	0.020 J	0.040 J	0.43 U	0.020 J	0.010 J	0.010 J
PCB138 /160	1.3 J	3.4 J	2.7	7.9	7.1 U	2.6
PENTACHLOROANISOLE	0.050 U	0.060 U	0.070 U	2.0	3.0	0.24 J
PENTACHLOROBENZENE	0.16 U	0.11 UJ	0.16 UJ	0.15 J	1.2	0.040 J
TRANS-NONACHLOR	0.16 U	0.11 UJ	0.16 UJ	1.7	1.1	0.15 J
Metals (UG/G)						
ALUMINUM	54799.4	50679.63	51693.95	212.07 J	327.98 J	4.7 U
ARSENIC	8.39	10.68	11.7	9.58	7.78	23.5
CADMIUM	0.1827 U	0.23 U	0.86 U	0.98	0.69	0.04 U
CHROMIUM	82.25	110.17	100.34	4.15	4.28	1.2 U
COPPER	36.59	29.05	26.63	6.08	5.92	37.1
IRON	22747.31	21921.56	27139.75	537.12	546.63	9.6
LEAD	82.09	66.42	59.62	1.74	2.48	0.19
MANGANESE	341.35	360.32	358.54	11.38	13.64	3.9 J
MERCURY	0.39 J	0.39 J	0.20 J	0.22	0.18	0.67
NICKEL	20.27	18.53	21.81	1.8364 U	1.75 U	1.65 U
SILVER	0.21	0.38	0.49	0.07 J	0.06 U	1.2
ZINC	63.77 J	101.48	94.12	61.83	78.82	112
Miscellaneous Parameters (%)						
LIPIDS				7.7	6.8	3.20
TOTAL ORGANIC CARBON	6.08 J	1.77 J	1.92 J			

Notes:

MS14 includes the following samples:
OU4-SD-MS014-101B
OU4-SD-MS014-201B
OU4-SD-MS014-301B
OU4-LJ-MS014-101B
OU4-MU-MS014-101B
OU4-MU-MS014-201B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	101B	201B	301B	401B	301B	401B	101B
Dioxins/Furans (PG/G)							
1,2,3,4,6,7,8,9-OCDD	1450 J	307 J	88.3 J	974 J	156 U	162 U	33.6 UJ
1,2,3,4,6,7,8,9-OCDF	52.5 U	15.4 U	4.90 U	26.0 U	13.8 J	31.2 UJ	33.6 UJ
1,2,3,4,6,7,8-HPCDD	153 J	30.4 J	9.50 J	130 J	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,4,6,7,8-HPCDF	52.1 J	8.60 J	2.90 J	26.0 J	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,4,7,8,9-HPCDF	1.50 J	1.43 UJ	1.47 UJ	1.20 J	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,4,7,8-HXCDD	2.00 J	1.43 UJ	1.47 UJ	4.10 J	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,4,7,8-HXCDF	3.20 U	0.5 U	1.47 UJ	0.9 U	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,6,7,8-HXCDD	7.40 J	1.50 J	1.47 UJ	6.30 J	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,6,7,8-HXCDF	4.07 UJ	0.4 J	1.47 UJ	0.8 J	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,7,8,9-HXCDD	5.10 J	1.00 J	1.47 UJ	1.45 UJ	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,7,8,9-HXCDF	4.07 UJ	1.43 UJ	1.47 UJ	1.45 UJ	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,7,8-PECDD	4.07 UJ	1.43 UJ	1.47 UJ	1.45 UJ	25.4 UJ	15.6 UJ	16.8 UJ
1,2,3,7,8-PECDF	2.00 U	0.3 U	1.47 UJ	1.45 UJ	25.4 UJ	15.6 UJ	16.8 UJ
2,3,4,6,7,8-HXCDF	3.60 J	0.6 J	1.47 UJ	1.60 J	25.4 UJ	15.6 UJ	16.8 UJ
2,3,4,7,8-PECDF	4.07 UJ	1.43 UJ	1.47 UJ	1.45 UJ	25.4 UJ	15.6 UJ	16.8 UJ
2,3,7,8-TCDD	0.8 UJ	0.3 UJ	0.3 UJ	0.3 UJ	5.08 UJ	3.12 UJ	3.36 UJ
2,3,7,8-TCDF	0.8 UJ	0.5 U	0.3 UJ	1.50 U	5.08 UJ	3.12 UJ	3.50 J
TOTAL DIOXINS	1865 J	393 J	112 J	1702 J	191 U	162 U	30.0 U
TOTAL FURANS	220 U	44.8 U	11.2 U	116 U	13.8 U	31.2 UJ	3.50 U
TOTAL HPCDD	339 J	68.6 J	21.4 J	413 J	35.0 J	15.6 UJ	16.8 UJ
TOTAL HPCDF	96.4 U	19.0 U	6.30 U	55.3 U	25.4 UJ	15.6 UJ	16.8 UJ
TOTAL HXCDD	75.8 J	17.4 J	2.20 J	270 J	25.4 UJ	15.6 UJ	30.0 J
TOTAL HXCDF	56.7 J	8.10 J	1.47 UJ	26.3 J	25.4 UJ	15.6 UJ	16.8 UJ
TOTAL PECDD	4.07 UJ	1.43 UJ	1.47 UJ	44.1 J	25.4 UJ	15.6 UJ	16.8 UJ
TOTAL PECDF	14.9 U	1.60 U	1.47 UJ	5.0 U	25.4 UJ	15.6 UJ	16.8 UJ
TOTAL TCDD	0.8 UJ	0.3 UJ	0.3 UJ	0.3 UJ	5.08 UJ	3.12 UJ	3.36 UJ
TOTAL TCDF	0.8 UJ	0.5 U	0.3 UJ	3.0 U	5.08 UJ	3.12 UJ	3.50 J
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	15.7 U	2.7 U	1.1 U	2.4 U	4.5 J	4.5 J	4.00 J
1-METHYLNAPHTHALENE	21.4	2.7 U	1 U	3.3 U	6.4 J	5.7 J	3.90 J
1-METHYLPHENANTHRENE	52.5	12.1	1.6	15.3	6.7 J	4.7 J	1.20 J
2,3,5-TRIMETHYLNAPHTHALENE	8.9	3	0.5 J	2.6 J	5.1 J	5.9 J	1.30 J
2,6-DIMETHYLNAPHTHALENE	20.4	4.7	1.2	4.2 J	4 J	4.6 J	1.50 J
2-METHYLNAPHTHALENE	41.7	4.1	1.7 J	5.1 J	9.5 J	10.1 J	4.90 J
ACENAPHTHENE	23 J	14.6 J	2.2 J	4.5 J	4 J	4.6 J	1.60 J
ACENAPHTHYLENE	140.3 J	20.1 J	3.1 U	71.5 J	16.4 J	18 J	0.20 J
ANTHRACENE	285.2 J	70.1 J	9.8 U	173 J	35.1 J	38.1 J	1.60 J
BENZO(A)ANTHRACENE	354.1	102.4	13.3 U	194.5 U	14.1 J	14.5 J	3.70 J
BENZO(A)PYRENE	764.4 J	182.6 J	24.3 U	356.1 U	15.2	11.8	9.30
BENZO(B)FLUORANTHENE	663.1	161.9	25.9 U	320.1 U	19.7 J	21.1 J	6.80
BENZO(E)PYRENE	333.9	76.9	11.8 U	152.6 U	25.6 J	26.6 J	5.20 J
BENZO(G,H,I)PERYLENE	359.3	74.5	11.5 U	139 U	7.9 J	9.3 J	4.00 J
BENZO(K)FLUORANTHENE	198.2	50.4	6.8 U	108 U	11.8 J	10.4 J	2.50 J
CHRYSENE	317.5	93.6	13.4 U	259.5	34.7	37.3	8.50 J
DIBENZO(A,H)ANTHRACENE	94.6	20.9	3 U	28 U	0.8 J	0.7 J	0.30 J
DIBENZOTHIOPHENE	19	5.6	0.8	3.9	1.8 J	2 J	0.50 J
FLUORANTHENE	585.6	185.9	27.5 U	626.5	78.7	87.3	15.0
FLUORENE	55.7 J	20.7 J	3.1 J	12.3 J	11.8 J	11.9 J	3.40 J
INDENO(1,2,3-CD)PYRENE	407.6	91.7	13.7 U	155.5 U	5.6	5.5	4.10 J
NAPHTHALENE	88.3	7.3 U	2.8 U	11 U	12.3 J	13.4 J	7.60 J
PERYLENE	79.4	27.2 J	4.9 J	50.6	10.5	9.7	4.10 J
PHENANTHRENE	219.2	117	16.2	86.1	25.5 J	29.8 J	8.10 J
PYRENE	579.5	159.9	24.8 U	480.7 U	64.6 J	59.2 J	12.1

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	101B	201B	301B	401B	301B	401B	101B
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	0.28 U	0.050 U	0.030 U	0.15 U	16	17	11
1,2,4,5-TETRACHLOROBENZENE	2.1	0.94	0.33 U	0.17 U	2.2 U	1.3 U	0.88 U
2,4'-DDD	4.0	0.96	0.085 U	3.3	1.5 J	1.9 J	2.0 U
2,4'-DDE	0.11 U	0.15 U	0.043 U	0.14 U	0.29 J	1.4	0.48 U
2,4'-DDT	0.093 U	0.045 U	0.037 U	0.049 U	1.1 J	1.2 J	0.48 UJ
4,4'-DDD	3.3	0.26	0.010 U	0.89	2.8	3.2	0.54 U
4,4'-DDE	2.3	0.50	0.050	0.62	7.9	9.5	2.6
4,4'-DDT	0.21 U	0.70	0.18 U	0.37 U	0.98	1.4	0.40 UJ
ALDRIN	0.093 U	0.040 U	0.010 U	0.049 U	0.24 U	0.21 U	0.34 U
ALPHA-BHC	0.078 U	0.040 J	0.031 U	0.10	0.84	0.76	0.34 U
ALPHA-CHLORDANE	0.19 J	0.060 J	0.040 J	0.27	1.3	1.9	0.11 U
BETA-BHC	0.19 U	0.060 U	0.11 U	0.10 U	0.62 U	1.8	0.88 U
CHLORPYRIFOS	0.17 U	0.65	0.067 U	3.3	1.7	2.0	2.5
CIS-NONACHLOR	0.11 U	0.050 J	0.043 U	0.19	1.5	1.8	0.37 U
DELTA-BHC	0.20	0.080	0.037 U	0.01 J	0.22 U	0.19 U	0.31 U
DIELDRIN	0.30	0.022 U	0.018 U	0.050	1.7 J	0.99 J	1.5 J
ENDOSULFAN II	1.4	0.18	0.085 U	1.1	0.22 U	0.19 U	0.31 U
ENDRIN	0.093 U	0.045 U	0.037 U	0.049 U	0.26 U	0.28	0.37 U
GAMMA-BHC (LINDANE)	1.2	0.040 U	0.030 U	0.25	1.0	0.69	1.1
GAMMA-CHLORDANE	0.047 U	0.070	0.018 U	0.010 J	1.1	1.4	0.17 U
HEPTACHLOR	0.32 J	0.11 J	0.21	0.12 J	0.24 U	0.21 U	0.34 U
HEPTACHLOR EPOXIDE	0.050 J	0.17	0.080	0.030 J	1.4 U	0.090 J	2.0 U
HEXACHLOROBENZENE	0.23	0.037 U	0.031 U	0.030 J	0.29	0.44	0.40 U
MIREX	0.13 J	0.060 U	0.049 U	0.15	0.52 U	0.45 U	0.74 U
OXYCHLORDANE	0.020 J	0.037 U	0.031 U	0.041 U	0.48 J	0.42 J	0.64
PCB-101/90	1.1	0.38 J	0.32 J	0.36 U	6.4	9.3	0.52 J
PCB-105	0.72 U	0.25 U	0.050 U	1.2 J	1.7	2.1	0.56 J
PCB-114	0.61 U	0.29 U	0.24 U	0.32 U	0.82 U	0.70 U	1.2 U
PCB-118	1.3	0.28 J	0.060 J	0.76	5.5	6.6	2.4
PCB-126	0.37 UR	0.18 UR	0.15 UR	0.19 UR	2.49 U	0.010 U	0.030 J
PCB-128	2.6	0.19	0.030 J	1.1	1.3	1.7	0.43 J
PCB-149/123	0.99 U	0.40 U	0.18 U	0.57 U	5.6	6.5	0.18 J
PCB-153/132	0.33 U	0.63 U	0.33 U	0.71 U	15	17	4.2
PCB-156	2.0	0.31 J	0.050 U	1.7	1.3	0.84	1.2 U
PCB-167	4.0	0.27 J	0.24 U	3.5	0.63 J	0.86	1.2 U
PCB-169	0.37 U	0.010 J	0.22 U	0.010 J	0.090 U	0.030 U	0.020 J
PCB-170/190	10	2.2	0.30 U	17	0.29 J	0.23 J	1.8 U
PCB-18/17	2.0	1.0	0.17	0.30	1.2	2.2	1.2 U
PCB-180	1.0 U	0.89 U	0.35 U	0.64 U	7.2 U	9.4 U	1.2 J
PCB-187	2.3 U	0.80 U	0.26 U	2.9	4.2	5.3	1.3 J
PCB-189	0.60 J	0.29 U	0.24 U	0.090 J	0.82 U	0.70 U	1.2 U
PCB-195/208	0.53 U	0.53	0.090 U	0.24 U	0.080 U	0.069 U	0.11 U
PCB-201/157/173	0.61 U	0.21 J	0.040 J	0.20 J	0.82 UJ	0.70 UJ	1.2 U
PCB-206	1.1	1.5	0.26	0.83	0.34 U	0.29 U	0.48 U
PCB-209	0.58 J	0.18 J	0.06 UR	0.26 J	0.23 U	0.19 U	0.31 U
PCB-28	1.4 U	0.72 U	0.16 U	1.2 U	2.9 J	2.0 J	0.91 U
PCB-44	0.16 J	1.9	0.34	0.11 U	1.8 U	1.6 U	0.41 J
PCB-52	0.33	0.067 U	0.055 U	0.073 U	4.8 J	3.9 J	1.2 U
PCB-66	0.26	0.19	0.043 U	0.13	0.26 J	0.33	0.38 J
PCB-77	0.060 U	0.14 U	0.070 U	0.040 U	0.010 U	0.020 U	0.040 J
PCB-8/5	2.3	0.30 U	0.22 U	0.39 U	4.6 U	3.5 U	0.60 U
PCB-81	0.37 UR	0.18 UR	0.010 J	0.040 J	2.5 U	2.1 U	0.030 J
PCB138 /160	3.5 U	1.5 U	0.70 U	2.2 U	9.1	11 U	2.8
PENTACHLOROANISOLE	0.14 U	0.080 U	0.040 U	0.090 U	1.9	2.0	0.35 J
PENTACHLOROBENZENE	0.10 J	0.030 J	0.055 U	0.040 J	1.1	0.56	0.60 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 01						
	Sediment				Mussel		Lobster
Parameters	**101B**	**201B**	**301B**	**401B**	**301B**	**401B**	**101B**
TRANS-NONACHLOR	0.51	0.38	0.10	0.10 J	1.6	3.0	0.31 U
Metals (UG/G)							
ALUMINUM	47508.97	36093.03	30753.28	40826.4	264.15 J	268.56 J	16.3 U
ARSENIC	10.165	6.141	4.918	8.855	7.78	9.87	22.1
CADMIUM	0.37 J	0.1851 U	0.18431 U	0.1863 U	1.06	0.96	0.04 U
CHROMIUM	85.51	36.12	30.34	52.11	3.11	3.94	1.3 U
COPPER	20.02	5.22 U	2.18 U	8.9	6.01	6.26	49.5
IRON	22675.7	8804.33	7654.68	13006.49	506.76	591.52	13.9
LEAD	67.35	23.16	18.82	31.47	2.01	1.91	0.86
MANGANESE	393.53	197.65	145.81	246.1	15.06	13.6	9.5 J
MERCURY	0.31 J	0.06 J	0.0466 UJ	0.14 J	0.18	0.25	0.82
NICKEL	19.44	7.44	7.15	11.07	1.58 U	1.81 U	1.65 U
SILVER	0.30 J	0.14 J	0.11 U	0.21 J	0.07 J	0.07 J	1.4
ZINC	95.68	45.55	23.33	54.34	74.96	69.74	143
Miscellaneous Parameters (%)							
LIPIDS					8.3	9.9	2.60
TOTAL ORGANIC CARBON	4.35 J	0.43 J	0.17 J	0.8 J			

Notes:

RS01 includes the following samples:
OU4-SD-RS01-101B
OU4-SD-RS01-201B
OU4-SD-RS01-301B
OU4-SD-RS01-401B
OU4-LJ-RS01-101B
OU4-MU-RS01-301B
OU4-MU-RS01-401B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	101B	201B	301B	401B	301B	401B	101B
Dioxins/Furans (PG/G)							
1,2,3,4,6,7,8,9-OCDD	737 J	22.4 U	242 J	1857 J	140 U	52.6 UJ	34.0 UJ
1,2,3,4,6,7,8,9-OCDF	15.1 U	1.6 U	9.30 U	87.8 U	46.7 UJ	52.6 UJ	34.0 UJ
1,2,3,4,6,7,8-HPCDD	62.3 J	3.0 U	21.0 J	205 J	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,4,6,7,8-HPCDF	10.3 J	0.8 J	5.70 J	56.2 J	4.50 J	26.3 UJ	17.0 UJ
1,2,3,4,7,8,9-HPCDF	0.6 J	1.1 U	0.3 J	2.30 J	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,4,7,8-HXCDD	1.20 J	1.1 U	0.3 J	2.50 J	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,4,7,8-HXCDF	0.9 U	0.1 U	0.5 U	3.30 U	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,6,7,8-HXCDD	3.70 J	1.1 U	1.10 J	9.00 J	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,6,7,8-HXCDF	0.8 J	0.1 U	0.3 J	2.50 J	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,7,8,9-HXCDD	2.10 J	1.1 U	0.7 J	6.20 J	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,7,8,9-HXCDF	1.08 UJ	1.1 U	0.8 UJ	1.98 UJ	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,7,8-PECDD	1.08 UJ	0.1 U	0.8 UJ	1.90 J	23.4 UJ	26.3 UJ	17.0 UJ
1,2,3,7,8-PECDF	0.5 U	0.1 U	0.3 U	2.10 U	23.4 UJ	26.3 UJ	17.0 UJ
2,3,4,6,7,8-HXCDF	1.30 J	1.1 U	0.6 J	3.90 J	23.4 UJ	26.3 UJ	17.0 UJ
2,3,4,7,8-PECDF	1.08 UJ	1.1 U	0.3 U	1.98 UJ	23.4 UJ	26.3 UJ	17.0 UJ
2,3,7,8-TCDD	0.2 UJ	0.2 U	0.2 UJ	0.4 UJ	4.67 UJ	5.26 UJ	3.40 UJ
2,3,7,8-TCDF	0.8 U	0.1 U	0.4 U	5.90 U	4.67 UJ	5.26 UJ	3.40 UJ
TOTAL DIOXINS	888 J	31.7 U	306 J	2495 J	140 U	52.6 UJ	34.0 UJ
TOTAL FURANS	68.4 U	5.5 U	32.0 U	315 U	4.50 U	52.6 UJ	34.0 UJ
TOTAL HPCDD	126 J	7.5 U	49.9 J	508 J	23.4 UJ	26.3 UJ	17.0 UJ
TOTAL HPCDF	23.0 U	1.8	13.2 U	120 U	4.50 J	26.3 UJ	17.0 UJ
TOTAL HXCDD	24.1 J	1.8 U	12.1 J	121 J	23.4 UJ	26.3 UJ	17.0 UJ
TOTAL HXCDF	19.4 J	1.1 U	6.10 J	61.7 J	23.4 UJ	26.3 UJ	17.0 UJ
TOTAL PECDD	1.08 UJ	0.1 U	1.10 J	9.90 J	23.4 UJ	26.3 UJ	17.0 UJ
TOTAL PECDF	7.40 U	0.5 U	2.20 U	31.1 U	23.4 UJ	26.3 UJ	17.0 UJ
TOTAL TCDD	0.2 UJ	0.2 U	0.2 UJ	0.4 UJ	4.67 UJ	5.26 UJ	3.40 UJ
TOTAL TCDF	3.50 U	0.4 U	1.20 U	14.5 U	4.67 UJ	5.26 UJ	3.40 UJ
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	4 U	2.8	2.9	13.7 U	5.4 J	8.4 J	5.10 J
1-METHYLNAPHTHALENE	11.4 U	6	6.5	21 J	9 J	8.7 J	4.30 J
1-METHYLPHENANTHRENE	48.7	114.2	26.9	70	6.8 J	7.3 J	20.2 J
2,3,5-TRIMETHYLNAPHTHALENE	7.3	11.7	7.4	18.4	6 J	5.7 J	3.00 J
2,6-DIMETHYLNAPHTHALENE	7.7 J	7.2	7.2	23	5.6 J	4.8 J	1.40 J
2-METHYLNAPHTHALENE	13.7 J	9.7	8.1	31.5	13.2 J	13.5 J	5.70
ACENAPHTHENE	44.8 J	14 J	6.5 J	22 J	4.6 J	4 J	2.20 J
ACENAPHTHYLENE	49.5 U	57.3	20.1	142.1 J	12.4 J	17.2 J	0.30 J
ANTHRACENE	260.9 J	208.7 J	84.5 J	327.3 J	28.2 J	36.3 J	4.10 J
BENZO(A)ANTHRACENE	442	308.8	85.6	419.4 J	11.2 J	17.8 J	20.0
BENZO(A)PYRENE	642.8 U	331.1 J	115.4 J	720.8 J	10.1	18.4	18.1
BENZO(B)FLUORANTHENE	631.1	362.9 J	104.2 J	686.8 J	13.9 J	21.8 J	26.2
BENZO(E)PYRENE	318.2 U	153.7	52.1	240.6 J	18.3 J	22.4 J	13.7
BENZO(G,H,I)PERYLENE	291 U	109.4 J	49.4 J	310.4 J	6 J	10.3 J	5.00
BENZO(K)FLUORANTHENE	206.4	176.6	32	179.5 J	8 J	12 J	12.9
CHRYSENE	418.7 U	293	81.3	396.9 J	26.4	37.5	62.0
DIBENZO(A,H)ANTHRACENE	75.7 U	40.7 J	14.3 J	83.9 J	0.6 J	0.9 J	0.30 J
DIBENZOTHIOPHENE	22.9	17	9.5	17.8	1.9 J	1.9 J	6.30
FLUORANTHENE	943.3	808.6	182.6	779.5 J	72	91.6	353
FLUORENE	75.8 J	37.3 J	22.3 J	58.5 J	12.1 J	15 J	9.20 J
INDENO(1,2,3-CD)PYRENE	325.5 U	160.4 J	61.6 J	369.3 J	3.3	6.7	6.40 J
NAPHTHALENE	18.3 U	14.4	11.7	49.7	18.4 J	23.7 J	8.90 J
PERYLENE	103.6	43.9	57.4	87.7 J	8.2	7.3	5.20
PHENANTHRENE	550.4	387	121	294.2 J	31.3 J	35.5 J	209
PYRENE	763.8 U	646.6	175.1	707.6 J	47.5 J	65.1 J	177

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	101B	201B	301B	401B	301B	401B	101B
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	1.0	0.19 UJ	0.18 UJ	0.27 U	14	27	3.4
1,2,4,5-TETRACHLOROBENZENE	1.9	0.10 J	0.070 J	1.0 J	1.4 U	2.2 U	0.30 J
2,4'-DDD	6.5	1.2 J	0.87 J	3.5	1.3 J	1.5 J	1.6 U
2,4'-DDE	0.046 U	0.072 UJ	0.11 J	0.078 U	0.65	1.0	0.39 U
2,4'-DDT	0.15	0.062 UJ	0.059 UJ	0.067 U	1.2 J	1.7 J	0.39 UJ
4,4'-DDD	1.3	0.93 J	0.54 J	1.1	2.5	2.7	0.44 U
4,4'-DDE	0.84	0.47 J	0.28 J	1.2	6.3	6.6	2.4
4,4'-DDT	1.4	0.28 J	0.57 J	1.1	1.1	0.97	0.32 UJ
ALDRIN	0.040 U	0.062 UJ	0.059 UJ	0.067 U	0.23 U	0.26 U	0.28 U
ALPHA-BHC	0.033 U	0.060 J	0.050 J	0.055 U	0.77	0.78	0.28 U
ALPHA-CHLORDANE	1.5	0.11 UJ	0.11 UJ	0.33 J	1.9	1.7	0.092 U
BETA-BHC	0.40	0.19 UJ	0.18 UJ	0.070 U	0.60 U	0.67 U	0.71 U
CHLORPYRIFOS	0.36	0.11 UJ	0.11 UJ	3.6 J	1.4	1.5	1.6
CIS-NONACHLOR	3.2	0.16 J	0.069 UJ	0.36 J	1.1	1.7	0.30 U
DELTA-BHC	0.14	0.062 UJ	0.059 UJ	0.030 J	0.21 U	0.24 U	0.25 U
DIELDRIN	0.18	0.031 UJ	0.030 UJ	0.033 U	1.3 J	0.97 J	1.4 J
ENDOSULFAN II	4.8	1.2 J	0.93 J	2.3	0.21 U	0.24 U	0.25 U
ENDRIN	0.040 U	0.062 UJ	0.059 UJ	0.067 U	0.21 J	0.15 J	0.30 U
GAMMA-BHC (LINDANE)	0.17	0.13 UJ	0.13 UJ	0.23	0.95	1.4	1.5
GAMMA-CHLORDANE	0.18	0.031 UJ	0.030 UJ	0.033 U	0.81	1.0	0.14 U
HEPTACHLOR	0.42	0.12 J	0.15 UJ	0.25 J	0.23 U	0.26 U	0.28 U
HEPTACHLOR EPOXIDE	0.10	0.051 UJ	0.049 UJ	0.055 U	0.18 J	1.5 U	1.6 U
HEXACHLOROBENZENE	0.29	0.16 J	0.049 UJ	0.22 J	0.45	0.30 U	0.32 U
MIREX	0.27	0.082 UJ	0.079 UJ	0.22	0.50 U	0.56 U	0.60 U
OXYCHLORDANE	0.10	0.051 UJ	0.049 UJ	0.055 U	0.40 U	0.45 U	0.48 U
PCB-101/90	15	3.1 J	0.53 J	6.5 J	6.5	7.2	0.62 U
PCB-105	4.4 J	1.3 J	0.21 J	3.4 J	2.0	1.6	0.65 J
PCB-114	0.26 U	0.40 UJ	0.38 UJ	0.43 U	0.79 U	0.88 U	0.95 U
PCB-118	12	2.5 J	0.46 J	7.2 J	5.1	5.1	2.1
PCB-126	0.16 UR	0.25 UJ	0.24 UJ	0.27 UR	2.4 U	0.010 U	0.010 J
PCB-128	4.5	0.71 J	0.20 J	2.8	1.3	1.3	0.32 J
PCB-149/123	6.2	1.9 J	0.72 J	2.7 J	5.6	5.9	0.95 U
PCB-153/132	10	3.1 J	1.3 J	6.2 J	14	14	3.3
PCB-156	5.3	0.40 UJ	0.38 UJ	3.2	1.2	1.0	0.95 U
PCB-167	2.5	0.25 J	0.99 J	2.5	0.66 J	0.66 J	0.95 U
PCB-169	0.010 J	0.090 J	0.24 UJ	0.060 J	0.24 U	0.17 U	0.020 J
PCB-170/190	30	13 J	11 J	13 J	0.19 J	0.27 J	1.5 U
PCB-18/17	0.41	0.082 UJ	0.14 J	0.76	1.4	0.92	0.23 J
PCB-180	2.4 U	0.74 J	0.80 J	2.0 U	9.2 U	6.5 U	0.87 J
PCB-187	9.2	0.42 J	0.55 J	3.5	3.9	4.1	1.1 J
PCB-189	0.58	0.10 J	0.38 UJ	0.22 J	0.79 U	0.88 U	0.95 U
PCB-195/208	0.29	0.18 J	0.17 J	0.40 U	0.077 U	0.086 U	0.092 U
PCB-201/157/173	0.49	0.16 J	0.090 J	0.20 J	0.79 UJ	0.88 UJ	0.95 U
PCB-206	0.75	0.25 J	0.11 J	1.5 J	0.33 U	0.37 U	0.39 U
PCB-209	0.34 J	0.25 J	0.17 J	0.9 J	0.22 U	0.24 U	0.25 U
PCB-28	2.0	0.64 J	0.28 J	1.7 U	3.2 J	2.5 J	0.74 U
PCB-44	1.0	0.93 J	0.13 UJ	1.2	1.4 U	1.3 U	0.25 J
PCB-52	3.9	2.0 J	0.28 J	2.8 J	5.9 J	4.1 J	0.52 J
PCB-66	1.3	0.21 J	0.069 UJ	0.84	0.59	0.87	0.37 U
PCB-77	0.30 U	0.050 U	0.010 J	0.25 U	0.010 U	2.7 U	0.010 J
PCB-8/5	1.4	0.32 J	0.29 U	0.62 U	6.5 U	8.9 U	0.48 U
PCB-81	0.16 UR	0.25 UJ	0.24 UJ	0.39 J	0.020 J	2.7 U	2.9 U
PCB138 /160	24	3.1 J	1.3 J	9.0 U	8.2 U	9.2 U	2.3
PENTACHLOROANISOLE	0.91	0.050 U	0.060 U	0.17 U	2.3	2.5	0.26 J
PENTACHLOROBENZENE	0.62	0.093 UJ	0.089 UJ	0.070 J	1.1	0.74	0.080 J

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	**101B**	**201B**	**301B**	**401B**	**301B**	**401B**	**101B**
TRANS-NONACHLOR	0.42	0.093 UJ	0.089 UJ	0.030 J	1.4	1.7	0.25 U
Metals (UG/G)							
ALUMINUM	37741.39	39296.51	42223.42	51197.29	272.49 J	309.28 J	2.7 U
ARSENIC	10.212	6.04	4.93	11.176	9.29	10.55	19.5
CADMIUM	0.1875 U	0.67 U	0.29 U	0.1863 U	0.94	0.97	0.04 U
CHROMIUM	43.31	50.48	42.46	97.86	3.74	4.39	0.86 U
COPPER	11.32	10.66	6.47	25.84	18.83	5.79	53.4
IRON	13813.73	12561.05	14762.65	26266.05	531.95	723.93	8.9
LEAD	48.78	43.14	28.09	108.07	2.45	4.27	0.28
MANGANESE	249.67	264.37	479.47	360.29	11.39	12.01	8.0 J
MERCURY	0.06 J	0.36 J	0.08 J	0.23 J	0.20	0.26	0.75
NICKEL	14.6	11.46	9.93	22.08	1.50 U	1.78 U	1.7 U
SILVER	0.11 U	0.21	0.11 U	0.46 J	0.07 J	0.06 J	1.0
ZINC	46.07	46.85	28.31	98.2	82.6	70.81	109
Miscellaneous Parameters (%)							
LIPIDS					7.9	7.8	3.50
TOTAL ORGANIC CARBON	1.72 J	0.53 J	0.48 J	2.09 J			

Notes:

RS02 includes the following samples:
OU4-SD-RS02-101B
OU4-SD-RS02-201B
OU4-SD-RS02-301B
OU4-SD-RS02-401B
OU4-LJ-RS02-101B
OU4-MU-RS02-301B
OU4-MU-RS02-401B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	101B	201B	301B	401B	301B	401B	101B
Dioxins/Furans (PG/G)							
1,2,3,4,6,7,8,9-OCDD	1067 J	1260 J	188 J	931 J	56.5 UJ	184 U	29.3 UJ
1,2,3,4,6,7,8,9-OCDF	2.70 U	59.9 U	10.3 U	47.0 U	56.5 UJ	49.5 UJ	29.3 UJ
1,2,3,4,6,7,8-HPCDD	25.6 J	138 J	25.2 J	102 J	28.2 UJ	31.7 J	14.7 UJ
1,2,3,4,6,7,8-HPCDF	3.00 J	43.1 J	7.20 J	31.2 J	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,4,7,8,9-HPCDF	2.37 UJ	1.80 J	0.4 J	1.40 J	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,4,7,8-HXCDD	0.7 J	1.80 J	0.4 J	1.30 J	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,4,7,8-HXCDF	0.6 U	2.50 U	0.5 U	1.80 U	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,6,7,8-HXCDD	1.10 J	6.30 J	1.50 J	4.40 J	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,6,7,8-HXCDF	0.5 J	1.80 J	0.4 J	1.20 J	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,7,8,9-HXCDD	1.00 J	4.00 J	0.8 J	3.00 J	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,7,8,9-HXCDF	2.37 UJ	0.8 J	1.27 UJ	1.14 UJ	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,7,8-PECDD	2.37 UJ	1.59 UJ	1.27 UJ	0.7 J	28.2 UJ	24.8 UJ	14.7 UJ
1,2,3,7,8-PECDF	0.6 U	1.20 U	0.3 U	0.9 U	28.2 UJ	24.8 UJ	14.7 UJ
2,3,4,6,7,8-HXCDF	2.37 UJ	3.00 J	0.7 J	2.10 J	28.2 UJ	24.8 UJ	14.7 UJ
2,3,4,7,8-PECDF	0.9 U	1.50 U	0.3 U	0.9 U	28.2 UJ	24.8 UJ	14.7 UJ
2,3,7,8-TCDD	0.5 UJ	0.5 J	0.1 J	0.2 J	5.65 UJ	4.95 UJ	2.93 UJ
2,3,7,8-TCDF	0.9 U	3.00 U	0.7 U	1.20 U	5.65 UJ	4.95 UJ	2.93 UJ
TOTAL DIOXINS	1148 J	1634 J	275 J	1240 J	56.5 UJ	228 U	29.3 UJ
TOTAL FURANS	14.8 U	229 U	43.4 U	169 U	3.10 J	49.5 UJ	29.3 UJ
TOTAL HPCDD	67.2 J	324 J	69.4 J	239 J	28.2 UJ	31.7 J	14.7 UJ
TOTAL HPCDF	3.00 U	94.1 U	16.6 U	69.2 U	28.2 UJ	24.8 UJ	14.7 UJ
TOTAL HXCDD	13.7 J	43.6 J	16.6 J	58.1 J	28.2 UJ	11.9 J	14.7 UJ
TOTAL HXCDF	3.90 J	47.7 J	10.1 J	34.0 J	28.2 UJ	24.8 UJ	14.7 UJ
TOTAL PECDD	2.37 UJ	5.90 J	1.30 J	11.8 J	28.2 UJ	24.8 UJ	14.7 UJ
TOTAL PECDF	2.60 U	12.0 U	4.10 U	14.0 U	28.2 UJ	24.8 UJ	14.7 UJ
TOTAL TCDD	0.5 UJ	0.5 J	0.1 J	0.2 J	5.65 UJ	4.95 UJ	2.93 UJ
TOTAL TCDF	2.70 U	14.9 U	2.30 U	4.70 U	5.65 UJ	4.95 UJ	2.93 UJ
Polyaromatic Hydrocarbons (NG/G)							
1,1-BIPHENYL	4.3	11.5	9.7	4.8	6.2 J	7.6 J	5.30 J
1-METHYLNAPHTHALENE	5.5	18.5 J	21.4 J	12.3	8 J	9.2 J	2.90 J
1-METHYLPHENANTHRENE	29.4	113.6	147.1	147.7	6.4 J	7.2 J	2.00 J
2,3,5-TRIMETHYLNAPHTHALENE	8.9	38.8	34.9	13.8	6.8 J	8	1.00 J
2,6-DIMETHYLNAPHTHALENE	7.7	26.1	24.7	11.4	6.1 J	7.4 J	1.30 J
2-METHYLNAPHTHALENE	11.3	36 J	31.8 J	17.6	14.5 J	14.4 J	4.20 J
ACENAPHTHENE	6.1 J	34.4	39.6	31.7 J	3.2 J	3.9 J	1.20 J
ACENAPHTHYLENE	12.2	88.9	136.2	54.8	11 J	13.7 J	0.30 J
ANTHRACENE	110.8 J	584.7 J	822.1 J	204.3 J	23.8 J	30.4 J	2.10 J
BENZO(A)ANTHRACENE	254.1	544	765.1	471.9	9.5 J	11.5 J	7.00 J
BENZO(A)PYRENE	336.7 J	663.2 J	985.3 J	695.2 J	9.5	12.2	13.4
BENZO(B)FLUORANTHENE	326.5 J	567.5	798.6	692.9 J	12.3 J	13 J	11.8
BENZO(E)PYRENE	144.4	263	381.5	308.9	15.6 J	17.5 J	7.80
BENZO(G,H,I)PERYLENE	133.1 J	230.2 J	331.5 J	294 J	4.7 J	6.8 J	6.10
BENZO(K)FLUORANTHENE	108	183.7	247.4	237.5	7	6.9 J	4.70 J
CHRYSENE	211.4	402.4	603.1	439.5	26.4	29.2	11.4
DIBENZO(A,H)ANTHRACENE	43.7 J	72.9 J	101.5 J	86 J	0.3 J	0.6 J	0.30 J
DIBENZOTHIOPHENE	8.7	29.2	32.4	17.3	1.9 J	1.8 J	0.70 J
FLUORANTHENE	450	1217.5	1429.7	751.2	62.5	72	18.9
FLUORENE	24.2 J	123.1 J	125.1 J	52.5 J	10.1 J	12.5 J	2.80 J
INDENO(1,2,3-CD)PYRENE	196.3 J	323.1 J	457.1 J	405.9 J	2.6 J	3.3	6.50 J
NAPHTHALENE	16.2	72	71.1	32.7	16.6 J	17.6 J	6.50 J
PERYLENE	51.4	152.2	173.1	57.6	7.8	6.7	5.50
PHENANTHRENE	142.5	599.1	635.5	366.5	24.5 J	27.3 J	9.70
PYRENE	354.1	1097.2	1408.1	710.3	40.6 J	45.5 J	15.6

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	101B	201B	301B	401B	301B	401B	101B
Pesticides/PCB's (NG/G)							
1,2,3,4-TETRACHLOROBENZENE	0.070 J	0.56 J	0.11 J	0.17 J	21	8.8	5.0
1,2,4,5-TETRACHLOROBENZENE	0.25 U	0.64 J	0.51 J	0.11 J	2.0 U	1.5 U	0.34 J
2,4'-DDD	2.5	4.7 J	8.2 J	3.3 J	1.3 J	1.0 J	1.8 U
2,4'-DDE	0.13 U	0.088 UJ	0.11 J	0.084 UJ	1.3	1.1	0.43 U
2,4'-DDT	0.11 U	0.075 UJ	0.081 UJ	0.072 UJ	1.1 J	1.5 J	0.43 UJ
4,4'-DDD	0.79	2.1 J	2.5 J	1.2 J	2.2	2.7	0.48 U
4,4'-DDE	0.37	1.1 J	1.0 J	0.69 J	5.4	7.3	2.2
4,4'-DDT	1.2	1.1 J	0.74 J	0.87 J	1.0	1.1	0.36 UJ
ALDRIN	0.11 U	0.075 UJ	0.081 UJ	0.072 UJ	0.27 U	0.23 U	0.30 U
ALPHA-BHC	0.070 J	0.14 J	0.068 UJ	0.13 J	1.2	1.1	0.30 U
ALPHA-CHLORDANE	0.15 J	0.23 J	0.98 J	0.18 J	1.5	1.9	0.10 U
BETA-BHC	0.25 J	0.23 UJ	0.24 UJ	0.21 UJ	0.69 U	0.60 U	0.79 U
CHLORPYRIFOS	0.21 U	0.14 UJ	0.42 J	0.13 UJ	3.4	3.0	2.5
CIS-NONACHLOR	0.53	0.26 J	0.12 J	0.13 J	0.77	1.3	0.33 U
DELTA-BHC	0.11 U	0.29 J	0.36 J	0.17 J	0.16 J	0.21 U	0.28 U
DIELDRIN	0.057 U	0.038 UJ	0.041 UJ	0.036 UJ	1.3 J	1.4 J	1.9 J
ENDOSULFAN II	2.6	3.3 J	4.7 J	2.8 J	0.24 U	0.21 U	0.28 U
ENDRIN	0.11 U	0.075 UJ	0.081 UJ	0.072 UJ	0.29 U	0.25 U	0.33 U
GAMMA-BHC (LINDANE)	0.75	0.16 UJ	0.18 UJ	0.16 UJ	1.2	1.5	0.83
GAMMA-CHLORDANE	0.057 U	0.038 UJ	0.041 UJ	0.036 UJ	0.99	1.1	0.15 U
HEPTACHLOR	0.29 U	0.19 UJ	0.20 UJ	0.18 UJ	0.27 U	0.23 U	0.30 U
HEPTACHLOR EPOXIDE	0.095 U	0.063 UJ	0.22 J	0.060 UJ	1.6 U	1.4 U	1.8 U
HEXACHLOROBENZENE	0.095 U	0.063 UJ	0.068 UJ	0.050 J	0.53	0.17 J	0.36 U
MIREX	0.39	0.11 J	0.49 J	0.095 UJ	0.58 U	0.50 U	0.66 U
OXYCHLORDANE	0.080 J	0.28 J	0.69 J	0.11 J	0.47 U	0.41 U	0.92
PCB-101/90	0.42 J	3.9 J	1.4 J	1.8 J	7.1	6.9	0.69 U
PCB-105	1.0 U	1.1 J	0.99 J	0.41 J	1.5	2.7	0.57 J
PCB-114	0.74 U	0.49 UJ	0.53 UJ	0.47 UJ	0.91 U	0.79 U	1.0 U
PCB-118	0.28 J	3.2 J	1.8 J	1.5 J	4.1	5.0	1.6
PCB-126	0.46 UJ	0.30 UJ	0.32 UJ	0.29 UJ	0.020 U	0.010 U	3.2 UJ
PCB-128	0.84 J	1.1 J	1.3 J	0.62 J	1.0	1.3	0.33 J
PCB-149/123	0.65 J	3.0 J	1.8 J	2.0 J	4.8	5.6	1.0 U
PCB-153/132	0.070 U	4.5 J	2.0 J	2.5 J	13	14	3.4
PCB-156	0.74 U	0.49 UJ	0.53 UJ	0.47 UJ	0.97	0.70 J	1.0 U
PCB-167	1.2	6.7 J	8.4 J	3.2 J	0.91 U	0.66 J	1.0 U
PCB-169	0.46 U	0.060 J	0.32 UJ	0.010 J	2.8 U	2.4 U	3.2 U
PCB-170/190	10 J	25 J	21 J	48 J	1.8 J	1.4 J	1.6 U
PCB-18/17	0.15 U	0.10 UJ	0.11 UJ	0.095 UJ	0.33 J	1.8	1.0 U
PCB-180	0.44 U	1.4 J	0.80 U	0.87 J	6.0 U	6.9 U	0.92 J
PCB-187	1.5 U	0.60 J	1.0 UJ	0.56 J	3.4	4.2	0.94 J
PCB-189	0.26 J	0.25 J	0.67 J	0.24 J	0.91 U	0.79 U	1.0 U
PCB-195/208	0.39	0.60 J	0.16 J	0.65 J	0.089 U	0.077 U	0.10 U
PCB-201/157/173	0.69 J	0.43 J	0.47 J	0.41 J	0.91 UJ	0.79 UJ	1.0 U
PCB-206	0.11 U	0.54 J	1.3 J	0.39 J	0.38 U	0.33 U	0.43 U
PCB-209	0.43 J	0.43 J	1.4 J	0.51 J	0.25 U	0.22 U	0.28 U
PCB-28	0.28 J	0.64 J	3.6 J	0.14 J	2.4 J	1.1 J	0.81 U
PCB-44	0.25 U	1.0 J	0.56 J	0.16 UJ	1.8 U	1.5 U	0.40 J
PCB-52	0.17 J	2.1 J	0.82 J	0.77 J	5.5 J	7.2 J	0.34 J
PCB-66	0.13 U	0.088 UJ	0.095 UJ	0.020 J	0.83	0.91	0.41 U
PCB-77	0.080 J	0.31 J	0.32 J	0.020 J	0.050 U	0.010 U	0.030 J
PCB-8/5	0.52	0.58 J	0.44 J	0.46 J	12 U	4.3 U	0.53 U
PCB-81	0.060 J	0.020 J	0.16 J	0.010 J	0.010 J	2.42 U	0.010 J
PCB138 /160	1.6 U	4.5 J	2.9 J	2.6 J	7.5 U	8.4 U	2.1
PENTACHLOROANISOLE	0.080 U	0.42 J	0.13 J	0.090 U	2.5	2.5	0.26 J
PENTACHLOROBENZENE	0.010 J	0.11 UJ	0.12 UJ	0.11 UJ	0.81	1.5	0.53 U

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 03						
	Sediment				Mussel		Lobster
Parameters	101B	201B	301B	401B	301B	401B	101B
TRANS-NONACHLOR	0.17 U	0.56 J	0.41 J	0.11 UJ	1.3	1.4	0.28 U
Metals (UG/G)							
ALUMINUM	52904.61	45259.04	47210.25	45048.1	202.73 J	286 J	1.5 U
ARSENIC	9.14	7.54	7.55	8.04	9.53	9.6	17.3
CADMIUM	0.188 U	0.33 U	0.18431 U	0.26 U	0.96	0.93	0.07 U
CHROMIUM	74.45	69.78	67.51	68.42	3.75	4.52	0.96 U
COPPER	16.3	11.6	12.33	11.02	6.07	5.95	21.4
IRON	27264.9	16944.96	16776.52	17866.97	364.75	562.27	9.4
LEAD	60.31	44.39	38.98	50.92	2.60	2.37	0.07 U
MANGANESE	382.9	318.57	327.26	377.54	11.1	12.97	3.4 J
MERCURY	0.10 J	0.19 J	0.20 J	0.14 J	0.19	0.19	0.57
NICKEL	32.56	15.29	15.11	16.8	1.72 J	1.70 J	1.7 U
SILVER	0.11	0.24	0.22	0.26	0.07 J	0.07 J	0.78
ZINC	64.07	53.99	50.7	58.37	79.78	72.24	76.2
Miscellaneous Parameters (%)							
LIPIDS					8.1	9.3	3.40
TOTAL ORGANIC CARBON	4.96 J	1.71 J	1.85 J	0.73 J			

Notes:
RS03 includes the following samples: OU4-SD-RS03-101B
OU4-SD-RS03-201B
OU4-SD-RS03-301B
OU4-SD-RS03-401B
OU4-LJ-RS03-101B
OU4-MU-RS03-301B
OU4-MU-RS03-401B

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 04					
	Sediment				Mussel	
Parameters	101B	201B	301B	401B	301B	401B
Dioxins/Furans (PG/G)						
1,2,3,4,6,7,8,9-OCDD	424 J	88.6 J	23.9 J	19.5 J	125 U	114 U
1,2,3,4,6,7,8,9-OCDF	26.0 U	3.50 U	1.40 U	1.00 U	46.5 UJ	42.7 UJ
1,2,3,4,6,7,8-HPCDD	57.6 J	8.80 J	3.50 J	2.60 J	23.3 UJ	24.8 J
1,2,3,4,6,7,8-HPCDF	17.1 J	2.30 J	1.00 J	1.44 UJ	7.70 J	21.4 UJ
1,2,3,4,7,8,9-HPCDF	0.6 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,4,7,8-HXCDD	1.00 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,4,7,8-HXCDF	0.8 U	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,6,7,8-HXCDD	2.70 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,6,7,8-HXCDF	0.7 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,7,8,9-HXCDD	1.90 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,7,8,9-HXCDF	1.73 UJ	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,7,8-PECDD	0.6 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
1,2,3,7,8-PECDF	0.5 U	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
2,3,4,6,7,8-HXCDF	1.30 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
2,3,4,7,8-PECDF	1.73 UJ	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
2,3,7;8-TCDD	0.3 UJ	0.2 UJ	0.2 UJ	0.3 UJ	4.65 UJ	4.27 UJ
2,3,7,8-TCDF	0.8 U	0.2 U	0.1 U	0.1 U	4.65 UJ	4.27 UJ
TOTAL DIOXINS	576 J	113 J	33.1 J	25.6 J	125 U	138 U
TOTAL FURANS	81.1 U	10.3 U	4.60 U	2.00 U	7.70 U	42.7 UJ
TOTAL HPCDD	123 J	21.9 J	8.20 J	6.20 J	23.3 UJ	24.8 J
TOTAL HPCDF	31.7 U	4.90 U	2.20 U	0.8 U	7.70 J	21.4 UJ
TOTAL HXCDD	28.7 J	2.90 J	0.9 J	1.44 UJ	23.3 UJ	21.4 UJ
TOTAL HXCDF	15.1 J	1.20 J	0.6 J	1.44 UJ	23.3 UJ	21.4 UJ
TOTAL PECDD	0.6 J	1.25 UJ	1.24 UJ	1.44 UJ	23.3 UJ	21.4 UJ
TOTAL PECDF	5.20 U	0.5 U	0.3 U	1.44 UJ	23.3 UJ	21.4 UJ
TOTAL TCDD	0.3 UJ	0.2 UJ	0.0 J	0.3 UJ	4.65 UJ	4.27 UJ
TOTAL TCDF	3.10 U	0.2 U	0.1 U	0.1 U	4.65 UJ	4.27 UJ
Polyaromatic Hydrocarbons (NG/G)						
1,1-BIPHENYL	2.2	0.6	0.8	0.7	6.1 J	4.3 J
1-METHYLNAPHTHALENE	3.6	0.7 J	0.7 J	0.9 J	8.7 J	6.2 J
1-METHYLPHENANTHRENE	8.6	2.1	0.9	1.4	5.9 J	4.6 J
2,3,5-TRIMETHYLNAPHTHALENE	3	0.7	0.6 J	0.7	6.9 J	5.8 J
2,6-DIMETHYLNAPHTHALENE	4.3	3.2	2.6	1.2	5.2 J	4.4 J
2-METHYLNAPHTHALENE	5.8	1.1 J	1.3 J	1.6 J	15.1 J	11.6 J
ACENAPHTHENE	5 J	0.7 J	0.6 J	0.9 J	2.4 J	2.6 J
ACENAPHTHYLENE	13.8	3	1.7	3.4	8.5 J	7.1 J
ANTHRACENE	42.7 J	6.2 J	3.8 J	7.3 J	17.9 J	13.7 J
BENZO(A)ANTHRACENE	71.9	9.7	5.3	9.8	7.4 J	7.4 J
BENZO(A)PYRENE	109.7 J	15.2 J	9 J	12.6 J	7.8	8.6
BENZO(B)FLUORANTHENE	117.4 J	16.1 J	11.3 J	14.8 J	10 J	8.5 J
BENZO(E)PYRENE	51.5	7.7	5.6	7	12.5 J	10.1 J
BENZO(G,H,I)PERYLENE	54.3 J	5.8 J	3.6 J	7.1 J	4.2 J	3 J
BENZO(K)FLUORANTHENE	27.3	4.6	3.1	4.1	5 J	4 J
CHRYSENE	70.6	9.8	5.6	18.9	23.2	18.3
DIBENZO(A,H)ANTHRACENE	14 J	1.9 J	1.2 J	1.6 J	0.4 J	0.3 J
DIBENZOTHIOPHENE	3.2	0.5	0.4 J	0.5	1.4 J	1.1 J
FLUORANTHENE	137.1	20	11.9	25	46.2	36.9
FLUORENE	10.5 J	1.4 J	1.4 J	1.8 J	8.8 J	8.8 J
INDENO(1,2,3-CD)PYRENE	70.7 J	9.2 J	6.9 J	8.3 J	2.8	2.8
NAPHTHALENE	8.8	1.6 J	2 J	2.9	21.1 J	14.6 J
PERYLENE	21.6	4	3.1	3.8	6.5	5
PHENANTHRENE	59.4	8.8	5.5	7.5	19.5 J	15.9 J
PYRENE	115.3	17.5	10.5	23.2	27.8 J	22.2 J

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 04					
	Sediment				Mussel	
Parameters	101B	201B	301B	401B	301B	401B
Pesticides/PCB's (NG/G)						
1,2,3,4-TETRACHLOROBENZENE	0.050 J	0.040 J	0.090 J	0.67 J	27	11
1,2,4,5-TETRACHLOROBENZENE	0.29 J	0.16 J	0.080 J	1.3 J	1.3 U	1.5 U
2,4'-DDD	0.41 J	0.10 J	0.14 UJ	0.13 UJ	0.92 J	1.1 J
2,4'-DDE	0.079 UJ	0.27 J	0.44 J	0.090 J	0.66	1.0
2,4'-DDT	0.068 UJ	0.054 UJ	0.060 UJ	0.056 UJ	1.7 J	1.2 J
4,4'-DDD	0.30 J	0.090 J	0.13 J	0.17 J	2.5	2.1
4,4'-DDE	0.70 J	0.090 J	0.13 J	0.090 J	6.4	5.3
4,4'-DDT	0.41 J	0.040 J	0.25 J	0.19 J	0.98	0.39
ALDRIN	0.068 UJ	0.054 UJ	0.060 UJ	0.056 UJ	0.24 U	0.21 U
ALPHA-BHC	0.040 J	0.060 J	0.050 UJ	0.047 UJ	1.0	0.75
ALPHA-CHLORDANE	0.18 J	0.020 J	0.16 J	0.050 J	1.8	2.4
BETA-BHC	0.20 UJ	0.16 UJ	0.18 UJ	0.17 UJ	0.62 U	0.54 U
CHLORPYRIFOS	0.12 UJ	0.19 J	0.11 UJ	0.10 UJ	2.5	1.7
CIS-NONACHLOR	0.47 J	0.063 UJ	0.070 UJ	0.040 J	1.3	1.4
DELTA-BHC	0.068 UJ	0.054 UJ	0.060 UJ	0.056 UJ	0.21 J	0.19 U
DIELDRIN	0.034 UJ	0.027 UJ	0.030 UJ	0.028 UJ	0.75 J	0.38 J
ENDOSULFAN II	0.25 J	0.080 J	0.080 J	0.070 J	0.22 U	0.19 U
ENDRIN	0.068 UJ	0.054 UJ	0.060 UJ	0.056 UJ	0.26 U	0.23 U
GAMMA-BHC (LINDANE)	0.040 J	0.12 UJ	0.13 UJ	0.14 J	1.3	1.3
GAMMA-CHLORDANE	0.034 UJ	0.027 UJ	0.020 J	0.028 UJ	1.1	0.86
HEPTACHLOR	0.17 UJ	0.13 UJ	0.15 UJ	0.14 UJ	0.24 U	0.21 U
HEPTACHLOR EPOXIDE	0.057 UJ	0.010 J	0.020 J	0.047 UJ	1.4 U	1.2 U
HEXACHLOROBENZENE	0.057 UJ	0.010 J	0.050 UJ	0.047 UJ	0.25 J	0.24 U
MIREX	0.091 UJ	0.072 UJ	0.080 UJ	0.075 UJ	0.52 U	0.45 U
OXYCHLORDANE	0.057 UJ	0.045 UJ	0.050 UJ	0.047 UJ	0.42 U	0.37 U
PCB-101/90	0.77 J	0.40 J	0.83 J	0.23 J	6.8	5.2
PCB-105	0.17 J	0.030 U	0.070 U	0.030 U	2.1	1.7
PCB-114	0.44 UJ	0.35 UJ	0.39 UJ	0.36 UJ	0.81 U	0.72 U
PCB-118	0.43 J	0.080 J	0.16 J	0.060 J	4.2	3.3
PCB-126	0.27 UJ	0.22 UJ	0.24 UJ	0.22 UJ	0.010 U	0.020 U
PCB-128	0.080 J	0.099 UJ	0.11 UJ	0.10 UJ	0.90	0.55
PCB-149/123	0.47 J	0.22 U	0.44 J	0.17 U	5.3	4.3
PCB-153/132	0.71 U	0.31 UJ	0.82 J	0.26 U	11	9.0
PCB-156	0.44 UJ	0.35 UJ	0.39 UJ	0.36 UJ	0.76 J	0.89
PCB-167	0.090 J	0.020 J	0.39 UJ	0.36 UJ	0.34 J	0.29 J
PCB-169	0.27 UJ	0.22 UJ	0.24 UJ	0.010 J	0.020 J	0.090 U
PCB-170/190	5.4 J	0.74 UJ	0.83 UJ	0.77 UJ	1.5 J	1.4 J
PCB-18/17	0.080 J	0.070 J	0.080 UJ	0.075 UJ	2.3	1.3
PCB-180	0.38 U	0.25 U	0.61 U	0.22 U	4.9 U	3.5 U
PCB-187	0.87 UJ	0.15 U	0.35 U	0.11 U	3.5	3.0
PCB-189	0.44 UJ	0.35 UJ	0.39 UJ	0.36 UJ	0.81 UJ	0.72 U
PCB-195/208	0.14 UJ	0.11 UJ	0.12 UJ	0.11 UJ	0.079 U	0.070 U
PCB-201/157/173	0.44 UJ	0.35 UJ	0.39 UJ	0.36 UJ	0.81 UJ	0.72 UJ
PCB-206	0.090 J	0.054 UJ	0.060 UJ	0.25 J	0.34 U	0.30 U
PCB-209	0.11 J	0.063 UJ	0.070 UJ	0.065 UJ	0.23 U	0.20 U
PCB-28	0.15 J	0.14 J	0.27 UJ	0.070 J	0.49 J	0.39 J
PCB-44	0.20 J	0.12 J	0.18 J	0.13 J	0.95 U	0.63 U
PCB-52	0.33 J	0.10 J	0.090 UJ	0.084 UJ	6.1 J	5.3 J
PCB-66	0.070 J	0.063 UJ	0.070 UJ	0.065 UJ	0.59	0.46
PCB-77	0.27 UJ	0.010 J	0.020 J	0.22 UJ	2.49 U	2.18 U
PCB-8/5	0.34 J	0.17 J	0.43 J	0.080 U	5.3 U	7.5 U
PCB-81	0.27 UJ	0.22 UJ	0.24 UJ	0.22 UJ	0.010 J	0.060 J
PCB138 /160	0.89 U	0.52 U	1.0 U	0.44 U	7.7 U	6.0 U
PENTACHLOROANISOLE	0.040 U	0.040 U	0.050 U	0.030 U	2.8	3.3
PENTACHLOROBENZENE	0.030 J	0.081 UJ	0.090 UJ	1.0 J	1.3	0.81

TABLE B-4

SUMMARY OF ROUND 4 ANALYTICAL DATA FOR LOBSTER, MUSSEL, AND SEDIMENT SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 4 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

	Reference Station 04					
	Sediment				Mussel	
Parameters	101B	201B	301B	401B	301B	401B
TRANS-NONACHLOR	0.16 J	0.081 UJ	0.090 UJ	0.084 UJ	1.3	1.3
Metals (UG/G)						
ALUMINUM	42445.49	37945.12	35595.61	34960.34	451.97 J	376.61 J
ARSENIC	5.92	4.66	3.95	4.44	9.89	10.1
CADMIUM	0.187 U	0.181 U	0.187 U	0.186 U	1.13	0.97
CHROMIUM	58.75	47.9	35.0	36.08	11.63	3.71
COPPER	6.46	3.21	2.29	2.76	27.45	5.82
IRON	14816.83	12550.71	8717.68	7357.56	717.05	773.74
LEAD	29.11	18.31	17.38	18.57	3.44	2.56
MANGANESE	358.53	160.38	135.03	141.23	13.13	11.98
MERCURY	0.08 J	0.05 J	0.05 J	0.0513 U	0.27	0.23
NICKEL	14.62	14.92	9.94	7.93	3.26 J	1.61 U
SILVER	0.11 U	0.11 U	0.11 U	0.11 U	0.06 U	0.05 U
ZINC	37.68	25.81	21.65	23.09	90.12	75.81
Miscellaneous Parameters (%)						
LIPIDS					7.1	5.4
TOTAL ORGANIC CARBON	1.56 J	0.28 J	0.25 J	0.25 J		

Notes:

RS04 includes the following samples: OU4-SD-RS04-101B
OU4-SD-RS04-201B
OU4-SD-RS04-301B
OU4-SD-RS04-401B
OU4-MU-RS04-301B
OU4-MU-RS04-401B

- All results are presented in dry weight
- Alkylated PAH results for the sediment are presented in Table 3-3
- Grain size and percent moisture results for the sediment are presented in Table 3-5
- AVS and SEM data are presented in Tables 3-6 and 3-7
- Alkylated PAH results for the mussels are presented in Appendix G.1. Percent moisture is presented in Appendix G.2.
- Alkylated PAH results for the lobsters are presented in Appendix G.3. Percent moisture is presented in Appendix G.4.

Qualifiers:

J = Positive result is estimated as a result of a value below the CRQL or a technical noncompliance.
U = Value is a nondetected result as reported by the laboratory and should not be considered present.
UJ = Nondetected result is considered to be estimated as a result of technical noncompliances.
UR = Compound was rejected due to severe technical noncompliances or as a result of calibration RRF noncompliances.

TABLE B - 5

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED SEDIMENT SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-SD-M01-199A	01	940	448	1388	86	44
OU4-SD-M01-100B	02	5179	2448	7627	38	105
OU4-SD-M01-100A	03	17965	8445	26410	52	117
OU4-SD-M01-101B	04	2316	824	3140	116	62
OU4-SD-M01-299A	01	8204	3074	11278	224	30
OU4-SD-M01-200B	02	7113	2329	9442	487	103
OU4-SD-M01-200A	03	1536	577	2113	174	44
OU4-SD-M01-201B	04	6094	2031	8124	271	64
OU4-SD-M01-399A	01	7360	2605	9965	1228	98
OU4-SD-M01-300B	02	22509	12821	35330	44	99
OU4-SD-M01-300B-D	02	6005	1869	7874	179	57
OU4-SD-M01-300A	03	9382	2979	12361	38	99
OU4-SD-M01-300A-D	03	9242	1810	11052	48	84
OU4-SD-M01-301B	04	37252	18247	55499	58	72
OU4-SD-M01-301B-D	04	31930	7211	39141	145	323
OU4-SD-M02-199A	01	1764	565	2329	8.0	91
OU4-SD-M02-100B	02	1997	558	2555	6.4	81
OU4-SD-M02-100A	03	201	79	280	2.8	11
OU4-SD-M02-101B	04	1605	481	2086	11	42
OU4-SD-M02-299A	01	1678	562	2240	54	29
OU4-SD-M02-200B	02	2119	577	2696	27	35
OU4-SD-M02-200A	03	1386	540	1926	39	40
OU4-SD-M02-201B	04	2182	1034	3215	24	2678
OU4-SD-M02-399A	01	2138	687	2825	131	164
OU4-SD-M02-300B	02	2000	680	2679	19	90
OU4-SD-M02-300A	03	867	323	1190	11	50
OU4-SD-M02-301B	04	1978	554	2532	89	94
OU4-SD-M03-199A	01	3867	1000	4867	51	673
OU4-SD-M03-199A-D	01	3891	1071	4962	47	525
OU4-SD-M03-100B	02	6416	2040	8456	42	758
OU4-SD-M03-100A	03	3322	983	4306	47	289
OU4-SD-M03-101B	04	5898	1676	7574	57	561
OU4-SD-M03-299A	01	4442	1601	6043	20	187
OU4-SD-M03-200B	02	3556	977	4533	13	286
OU4-SD-M03-200A	03	1841	511	2352	10	135
OU4-SD-M03-201B	04	2858	853	3711	9.1	126
OU4-SD-M03-399A	01	2407	572	2978	14	132
OU4-SD-M03-300B	02	2989	841	3830	11	131
OU4-SD-M03-300A	03	1909	839	2748	5.3	56
OU4-SD-M03-301B	04	1612	453	2065	7.0	61
OU4-SD-M04-199A	01	2939	762	3701	31	244
OU4-SD-M04-100B	02	7053	2265	9318	70	391
OU4-SD-M04-100A	03	9530	2301	11831	187	190
OU4-SD-M04-101B	04	17894	7359	25253	101	279
OU4-SD-M04-101B-D	04	43753	17589	61341	130	292
OU4-SD-M04-299A	01	1237	332	1569	4.0	27
OU4-SD-M04-200B	02	1695	445	2140	4.6	34
OU4-SD-M04-200A	03	1472	491	1963	4.7	40
OU4-SD-M04-201B	04	1449	440	1889	5.3	129
OU4-SD-M04-399A	01	1903	242	2145	176	136
OU4-SD-M04-300B	02	300	74	374	390	96
OU4-SD-M04-300A	03	1108	121	1228	264	88
OU4-SD-M04-301B	04	376	81	457	233	110
OU4-SD-M05-199A	01	4928	1061	5989	15	45
OU4-SD-M05-100B	02	2167	601	2769	13	47
OU4-SD-M05-100B-D	02	5340	1398	6738	9.1	144
OU4-SD-M05-100A	03	1226	347	1572	5.3	20
OU4-SD-M05-100A-D	03	2320	741	3061	8.5	41

TABLE B - 5

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED SEDIMENT SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-SD-M05-101B	04	1771	475	2247	7.5	31
OU4-SD-M05-299A	01	1762	407	2169	3.7	22
OU4-SD-M05-200B	02	2749	885	3633	10	59
OU4-SD-M05-200A	03	1891	631	2521	5.3	38
OU4-SD-M05-201B	04	1626	492	2117	4.5	23
OU4-SD-M05-399A	01	1583	389	1972	7.3	39
OU4-SD-M05-300B	02	1669	478	2147	3.6	23
OU4-SD-M05-300A	03	1524	450	1974	4.4	15
OU4-SD-M05-301B	04	2145	773	2918	7.0	19
OU4-SD-M06-199A	01	1511	406	1917	5.2	54
OU4-SD-M06-100B	02	2343	446	2788	1.9	13
OU4-SD-M06-100A	03	1566	391	1957	42	49
OU4-SD-M06-101B	04	4359	1148	5507	40	73
OU4-SD-M06-299A	01	2721	745	3467	5.4	19
OU4-SD-M06-299A-D	01	3283	949	4232	5.8	39
OU4-SD-M06-200B	02	2637	583	3220	6.5	42
OU4-SD-M06-200A	03	2171	681	2852	6.7	34
OU4-SD-M06-201B	04	3250	908	4158	7.9	110
OU4-SD-M06-399A	01	428	93	521	2.8	9.2
OU4-SD-M06-300B	02	265	80	345	3.0	9.2
OU4-SD-M06-300A	03	79	23	102	1.2	6.5
OU4-SD-M06-301B	04	357	123	480	16	24
OU4-SD-M07-199A	01	713	175	888	10	32
OU4-SD-M07-100B	02	1304	316	1620	9.3	43
OU4-SD-M07-100A	03	1025	246	1271	7.2	40
OU4-SD-M07-101B	04	931	281	1212	7.8	80
OU4-SD-M07-299A	01	1595	414	2009	4.2	30
OU4-SD-M07-200B	02	2007	568	2574	3.2	48
OU4-SD-M07-200A	03	2375	744	3119	7.5	42
OU4-SD-M07-201B	04	2648	803	3450	9.0	45
OU4-SD-M07-399A	01	4093	1043	5136	23	71
OU4-SD-M07-300B	02	684	261	945	0.8	8.7
OU4-SD-M07-300A	03	1423	461	1884	5.0	31
OU4-SD-M07-301B	04	2277	667	2945	12	52
OU4-SD-M08-199A	01	3181	949	4130	177	133
OU4-SD-M08-100B	02	2434	704	3138	471	256
OU4-SD-M08-100A	03	2864	768	3632	146	636
OU4-SD-M08-100A-D	03	2983	934	3916	205	192
OU4-SD-M08-101B	04	2809	788	3597	157	308
OU4-SD-M08-101B-D	04	2066	624	2690	186	343
OU4-SD-M08-299A	01	4518	1072	5590	54	148
OU4-SD-M08-200B	02	2317	937	3254	16	128
OU4-SD-M08-200A	03	2173	722	2895	14	64
OU4-SD-M08-201B	04	4155	1421	5576	29	170
OU4-SD-M08-399A	01	3811	1073	4884	375	101
OU4-SD-M08-300B	02	1050	225	1275	117	180
OU4-SD-M08-300B-D	02	4256	907	5163	269	428
OU4-SD-M08-300A	03	563	178	740	149	80
OU4-SD-M08-301B	04	726	200	926	225	154
OU4-SD-M09-199A	01	429	141	570	6.6	53
OU4-SD-M09-100B	02	62	32	94	1.5	31
OU4-SD-M09-100A	03	209	159	369	3.0	30
OU4-SD-M09-101B	04	886	333	1219	5.4	41
OU4-SD-M09-299A	01	1601	435	2036	6.3	50
OU4-SD-M09-200B	02	709	191	901	7.0	48
OU4-SD-M09-200A	03	1779	533	2312	12	103
OU4-SD-M09-201B	04	2047	614	2661	18	89
OU4-SD-M09-399A	01	3065	1125	4190	15	113

TABLE B - 5

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED SEDIMENT SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-SD-M09-300B	02	2564	785	3348	11	129
OU4-SD-M09-300A	03	3210	1113	4323	13	133
OU4-SD-M09-300A-D	03	4057	1349	5406	16	154
OU4-SD-M09-301B	04	4386	1382	5768	18	252
OU4-SD-M09-301B-D	04	3848	1309	5156	17	119
OU4-SD-M10-199A	01	252	79	331	201	30
OU4-SD-M10-100B	02	1214	398	1612	43	15
OU4-SD-M10-100B-D	02	958	353	1311	207	47
OU4-SD-M10-100A	03	646	230	876	44	33
OU4-SD-M10-100A-D	03	1444	356	1801	72	31
OU4-SD-M10-101B	04	824	237	1061	75	91
OU4-SD-M10-101B-D	04	875	254	1130	141	79
OU4-SD-M10-299A	01	7857	2249	10106	6.9	47
OU4-SD-M10-200B	02	9694	4123	13817	4.7	53
OU4-SD-M10-200A	03	4861	1567	6428	13	47
OU4-SD-M10-201B	04	7494	3686	11180	30	71
OU4-SD-M10-399A	01	11462	1354	12816	13	151
OU4-SD-M10-300B	02	2465	1609	4074	5.5	52
OU4-SD-M10-300A	03	2174	722	2896	99	86
OU4-SD-M10-301B	04	4182	1413	5595	13	177
OU4-SD-M11-299A	01	688	259	946	18	312
OU4-SD-M11-399A	01	228	105	332	6.4	127
OU4-SD-M11-300B	02	1980	697	2677	18	320
OU4-SD-M11-300A	03	1030	320	1350	5.1	201
OU4-SD-M11-301B	04	1478	912	2390	17	159
OU4-SD-M12-199A	01	39579	17276	56855	21	261
OU4-SD-M12-100B	02	13329	5690	19019	11	243
OU4-SD-M12-100A	03	46931	18354	65285	19	480
OU4-SD-M12-101B	04	22195	11710	33904	20	1060
OU4-SD-M12-299A	01	5353	1909	7262	4.0	119
OU4-SD-M12-200B	02	13073	5573	18646	10	148
OU4-SD-M12-200B-D	02	11431	4975	16406	10	398
OU4-SD-M12-200A	03	26371	9908	36279	11	250
OU4-SD-M12-200A-D	03	25839	9395	35234	11	349
OU4-SD-M12-201B	04	23074	11840	34913	39	348
OU4-SD-M12-201B-D	04	22827	13293	36120	18	250
OU4-SD-M12-399A	01	6475	2416	8891	5.3	196
OU4-SD-M12-399A-D	01	5795	1934	7729	4.8	147
OU4-SD-M12-300B	02	3916	842	4758	5.9	149
OU4-SD-M12-300B-D	02	6589	1471	8060	2.2	39
OU4-SD-M12-300A	03	3372	1189	4561	5.1	89
OU4-SD-M12-301B	04	5605	2369	7974	24	186
OU4-SD-M13-199A	01	6094	1498	7592	10	72
OU4-SD-M13-100B	02	16634	15021	31655	6.6	83
OU4-SD-M13-100A	03	19342	7868	27210	12	194
OU4-SD-M13-101B	04	10331	2892	13223	16	83
OU4-SD-M13-299A	01	5271	1539	6811	4.9	64
OU4-SD-M13-200B	02	5894	1651	7545	3.0	50
OU4-SD-M13-200A	03	3778	963	4741	4.7	75
OU4-SD-M13-201B	04	4896	1329	6225	9.3	74
OU4-SD-M13-399A	01	4609	1064	5674	9.3	95
OU4-SD-M13-300B	02	6556	2201	8757	6.6	133
OU4-SD-M13-300A	03	3964	1134	5098	6.4	141
OU4-SD-M13-301B	04	3969	1127	5096	16	167
OU4-SD-M14-199A	01	1515	351	1866	5.7	31
OU4-SD-M14-100B	02	2226	639	2864	15	87
OU4-SD-M14-100A	03	1926	613	2539	5.0	47
OU4-SD-M14-101B	04	4391	1260	5651	12	64
OU4-SD-M14-299A	01	4465	1082	5547	4.4	28
OU4-SD-M14-200B	02	5209	1257	6466	4.0	44

TABLE B - 5

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED SEDIMENT SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-SD-M14-200A	03	4206	2837	7043	2.3	23
OU4-SD-M14-201B	04	4061	1464	5525	13	71
OU4-SD-M14-399A	01	2140	512	2652	3.9	37
OU4-SD-M14-300B	02	4669	1149	5818	2.4	71
OU4-SD-M14-300A	03	3631	1166	4797	7.3	73
OU4-SD-M14-301B	04	2785	1204	3990	11	68
OU4-SD-R01-199A	01	2707	521	3228	3.5	19
OU4-SD-R01-100B	02	2042	560	2602	4.5	33
OU4-SD-R01-100A	03	2227	633	2860	5.1	14
OU4-SD-R01-101B	04	2696	853	3549	10	53
OU4-SD-R01-299A	01	352	103	455	0.39	7
OU4-SD-R01-299A-D	01	279	79	358	0.67	5.5
OU4-SD-R01-200B	02	164	48	212	0.51	8.1
OU4-SD-R01-200A	03	132	46	177	3.3	5.1
OU4-SD-R01-201B	04	745	250	996	2.5	22
OU4-SD-R01-399A	01	811	147	958	0.56	5.3
OU4-SD-R01-300B	02	435	107	542	0.44	5.9
OU4-SD-R01-300A	03	138	37	174	0.26	2.8
OU4-SD-R01-301B	04	53	31	84	0.23	4.9
OU4-SD-R01-499A	01	1064	206	1270	2.0	15
OU4-SD-R01-400B	02	2296	876	3173	0.94	11
OU4-SD-R01-400A	03	554	140	694	1.4	9.3
OU4-SD-R01-401B	04	1416	358	1774	5.1	55
OU4-SD-R02-199A	01	2802	503	3305	5.0	40
OU4-SD-R02-100B	02	3500	774	4274	1.9	31
OU4-SD-R02-100A	03	4325	1018	5343	5.3	63
OU4-SD-R02-101B	04	2336	980	3315	10	243
OU4-SD-R02-299A	01	3538	797	4335	4.5	20
OU4-SD-R02-200B	02	2169	567	2736	7.4	222
OU4-SD-R02-200A	03	1962	597	2558	2.2	21
OU4-SD-R02-201B	04	2429	728	3157	2.9	66
OU4-SD-R02-399A	01	3900	830	4730	3.3	32
OU4-SD-R02-399A-D	01	3938	1086	5024	5.0	51
OU4-SD-R02-300B	02	1880	412	2292	1.6	14
OU4-SD-R02-300A	03	4989	1256	6245	4.0	26
OU4-SD-R02-301B	04	654	274	929	2.4	35
OU4-SD-R02-499A	01	3012	759	3771	3.3	55
OU4-SD-R02-400B	02	2308	603	2911	18	33
OU4-SD-R02-400A	03	3243	1014	4257	6.4	88
OU4-SD-R02-401B	04	3108	925	4033	7.0	115
OU4-SD-R03-199A	01	1771	329	2100	4.0	15
OU4-SD-R03-100B	02	701	142	843	2.8	15
OU4-SD-R03-100A	03	5105	1114	6219	22	87
OU4-SD-R03-101B	04	1650	323	1973	5.0	32
OU4-SD-R03-299A	01	12673	3496	16169	8.0	35
OU4-SD-R03-200B	02	8328	2360	10688	8.7	58
OU4-SD-R03-200A	03	4255	1430	5685	4.5	52
OU4-SD-R03-201B	04	3997	1538	5535	9.1	103
OU4-SD-R03-399A	01	7870	2592	10462	8.5	30
OU4-SD-R03-300B	02	7151	2802	9953	8.1	58
OU4-SD-R03-300A	03	1973	797	2770	2.9	25
OU4-SD-R03-301B	04	5293	1861	7154	13	81
OU4-SD-R03-499A	01	3207	742	3949	3.2	37
OU4-SD-R03-400B	02	1572	363	1935	2.8	24
OU4-SD-R03-400A	03	3475	756	4230	4.4	48
OU4-SD-R03-401B	04	3154	760	3914	6.1	124
OU4-SD-R04-199A	01	1201	209	1409	5.5	38
OU4-SD-R04-100B	02	458	126	584	3.2	24
OU4-SD-R04-100A	03	393	107	500	3.2	19
OU4-SD-R04-101B	04	519	146	665	1.9	19

TABLE B - 5

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED SEDIMENT SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-SD-R04-299A	01	23	10	33	0.40	2.9
OU4-SD-R04-200B	02	55	21	76	0.50	5.1
OU4-SD-R04-200A	03	25	11	36	0.50	3.3
OU4-SD-R04-201B	04	74	23	97	0.62	4.5
OU4-SD-R04-399A	01	95	27	122	0.21	2.0
OU4-SD-R04-399A-D	01	40	16	56	0.20	2.4
OU4-SD-R04-300B	02	50	17	67	0.83	6.6
OU4-SD-R04-300A	03	38	14	51	0.42	3.3
OU4-SD-R04-301B	04	44	16	60	1.1	8.6
OU4-SD-R04-499A	01	81	24	105	0.56	2.7
OU4-SD-R04-400B	02	92	30	123	0.85	5.1
OU4-SD-R04-400A	03	44	14	59	0.53	2.7
OU4-SD-R04-401B	#N/A	91	25	117	0.63	3.9

Notes:
Units are in ug/kg.
See Section 4.1.3 for the methods used to calculate these values.

TABLE B - 6

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED MUSSEL SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-MU-M01-299A	1	106	52	158	38	111
OU4-MU-M01-200B	2	224	154	378	46	140
OU4-MU-M01-200A	3	215	91	307	35	113
OU4-MU-M01-201B	4	251	164	415	35	158
OU4-MU-M01-399A	1	170	101	270	31	129
OU4-MU-M01-300B	2	288	211	499	42	167
OU4-MU-M01-300A	3	212	97	309	31	121
OU4-MU-M01-301B	4	362	192	554	16	93
OU4-MU-M02-199A	1	125	91	216	24	147
OU4-MU-M02-100A	3	83	44	126	9.1	111
OU4-MU-M02-101B	4	383	147	529	14	129
OU4-MU-M02-299A	1	106	86	192	27	145
OU4-MU-M02-200B	2	190	148	337	15	148
OU4-MU-M02-200A	3	159	86	245	21	148
OU4-MU-M02-201B	4	128	131	258	17	121
OU4-MU-M02-399A	1	214	92	306	22	148
OU4-MU-M02-300B	2	235	150	384	18	107
OU4-MU-M02-300A	3	142	77	219	21	118
OU4-MU-M02-301B	4	347	244	591	19	168
OU4-MU-M03-199A	1	141	73	214	35	418
OU4-MU-M03-100B	2	203	136	339	17	296
OU4-MU-M03-100A	3	112	52	164	15	297
OU4-MU-M03-101B	4	147	126	274	20	507
OU4-MU-M03-199A-FD	1	146	70	216	37	422
OU4-MU-M03-299A	1	306	156	462	48	695
OU4-MU-M03-200B	2	178	120	298	12	164
OU4-MU-M03-200A	3	132	61	193	12	163
OU4-MU-M03-201B	4	179	118	297	20	207
OU4-MU-M03-201B-FD	4	255	144	399	20	210
OU4-MU-M04-199A	1	102	79	181	30	335
OU4-MU-M04-100B	2	192	120	313	18	132
OU4-MU-M04-100A	3	97	58	155	13	224
OU4-MU-M04-101B	4	204	128	332	24	240
OU4-MU-M05-199A	1	88	48	136	21	137
OU4-MU-M05-100B	2	159	113	272	19	118
OU4-MU-M05-100A	3	510	113	622	15	130
OU4-MU-M05-101B	4	124	94	218	20	117
OU4-MU-M05-100B-D	2	183	150	333	16	210
OU4-MU-M05-399A	1	57	45	102	16	106
OU4-MU-M05-300B	2	231	162	392	25	145
OU4-MU-M05-300A	3	79	53	131	10	139
OU4-MU-M05-301B	4	82	86	168	17	112
OU4-MU-M06-199A	1	148	49	197	17	112
OU4-MU-M06-100B	2	269	136	405	16	116
OU4-MU-M06-100A	3	114	48	162	34	104
OU4-MU-M06-101B	4	120	88	207	20	129
OU4-MU-M06-299A	1	96	59	155	15	109
OU4-MU-M06-200B	2	119	90	208	8.7	108
OU4-MU-M06-200A	3	116	68	184	15	174
OU4-MU-M06-201B	4	87	84	171	11	106
OU4-MU-M06-399A	1	56	30	86	12	63
OU4-MU-M06-300B	2	229	122	351	14	97
OU4-MU-M06-300A	3	83	42	126	7.1	127
OU4-MU-M06-301B	4	137	107	244	17	172
OU4-MU-M07-199A	1	105	58	163	31	120
OU4-MU-M07-100B	2	149	108	256	17	96

TABLE B - 6

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED MUSSEL SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-MU-M07-100A	3	186	82	268	17	123
OU4-MU-M07-101B	4	122	99	221	23	130
OU4-MU-M07-399A	1	115	33	149	24	108
OU4-MU-M07-300B	2	164	128	292	16	134
OU4-MU-M07-300A	3	65	41	106	5.7	87
OU4-MU-M07-301B	4	87	84	171	14	122
OU4-MU-M08-199A	1	133	67	199	112	211
OU4-MU-M08-100B	2	179	141	320	60	135
OU4-MU-M08-100A	3	727	300	1027	122	253
OU4-MU-M08-101B	4	226	124	350	108	194
OU4-MU-M08-199A-FD	1	131	63	194	120	235
OU4-MU-M08-101B-FD	4	237	133	370	93	176
OU4-MU-M08-299A	1	98	55	153	43	130
OU4-MU-M08-200B	2	142	105	246	15	112
OU4-MU-M08-200A	3	223	99	322	44	289
OU4-MU-M08-201B	4	161	82	243	20	110
OU4-MU-M08-399A	1	126	59	185	50	177
OU4-MU-M08-300B	2	249	146	395	42	144
OU4-MU-M08-300A	3	182	77	260	41	179
OU4-MU-M08-301B	4	148	83	232	41	167
OU4-MU-M09-199A	1	115	95	209	18	181
OU4-MU-M09-100B	2	348	186	535	25	206
OU4-MU-M09-100A	3	272	107	379	34	233
OU4-MU-M09-101B	4	222	117	339	32	174
OU4-MU-M09-299A	1	93	31	124	18	95
OU4-MU-M09-200B	2	215	130	344	12	150
OU4-MU-M09-200A	3	133	40	173	11	136
OU4-MU-M09-201B	4	162	102	264	22	132
OU4-MU-M10-199A	1	112	59	171	1321	125
OU4-MU-M10-100B	2	117	94	211	56	93
OU4-MU-M10-100A	3	85	30	115	45	68
OU4-MU-M10-101B	4	145	92	236	78	107
OU4-MU-M10-100B-D	2	150	113	263	61	100
OU4-MU-M10-100A-D	3	130	57	187	52	68
OU4-MU-M10-199A-FD	1	89	57	147	1238	138
OU4-MU-M10-101B-FD	4	154	80	234	70	96
OU4-MU-M10-299A	1	97	53	150	40	111
OU4-MU-M10-200B	2	159	109	268	13	93
OU4-MU-M10-200A	3	111	35	146	16	114
OU4-MU-M10-201B	4	122	84	206	26	108
OU4-MU-M10-399A	1	130	61	192	43	250
OU4-MU-M10-300B	2	151	110	260	16	148
OU4-MU-M10-300A	3	297	89	386	62	407
OU4-MU-M10-301B	4	145	82	228	34	495
OU4-MU-M11-199A	1	98	58	156	19	249
OU4-MU-M11-100B	2	112	97	209	12	222
OU4-MU-M11-100A	3	71	64	136	8.7	125
OU4-MU-M11-101B	4	151	100	251	24	192
OU4-MU-M11-299A	1	140	100	239	23	406
OU4-MU-M11-200B	2	127	96	223	10	151
OU4-MU-M11-200A	3	130	95	225	20	452
OU4-MU-M11-201B	4	112	71	183	23	208
OU4-MU-M11-200B-D	2	149	117	266	5.3	89
OU4-MU-M11-200A-D	3	115	62	177	17	319
OU4-MU-M11-399A	1	126	75	201	21	290
OU4-MU-M11-300B	2	139	113	252	13	171

TABLE B - 6

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED MUSSEL SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-MU-M11-300A	3	156	103	260	12	178
OU4-MU-M11-301B	4	102	63	165	27	141
OU4-MU-M11-399A-FD	1	157	70	228	20	224
OU4-MU-M12-199A	1	1318	763	2080	26	469
OU4-MU-M12-100B	2	579	357	937	14	195
OU4-MU-M12-100A	3	5138	2683	7821	41	376
OU4-MU-M12-101B	4	980	650	1630	13	165
OU4-MU-M12-100A-D	3	1962	1257	3218	12	215
OU4-MU-M12-299A	1	2386	1684	4069	28	544
OU4-MU-M12-200B	2	339	255	594	16	216
OU4-MU-M12-200A	3	824	369	1193	19	307
OU4-MU-M12-201B	4	324	178	502	25	187
OU4-MU-M12-200B-D	2	266	234	500	23	198
OU4-MU-M13-199A	1	3307	1095	4402	32	148
OU4-MU-M13-100B	2	746	412	1158	26	252
OU4-MU-M13-100A	3	27825	12165	39990	383	519
OU4-MU-M13-101B	4	301	154	455	12	122
OU4-MU-M13-100A-D	3	24343	10528	34871	16	230
OU4-MU-M13-101B-FD	4	342	167	509	14	125
OU4-MU-M13-399A	1	865	314	1179	27	115
OU4-MU-M13-300B	2	348	229	577	10	117
OU4-MU-M13-300A	3	509	271	780	16	222
OU4-MU-M13-301B	4	143	92	235	8.7	137
OU4-MU-M14-199A	1	219	132	351	23	178
OU4-MU-M14-100B	2	141	119	260	10	122
OU4-MU-M14-100A	3	144	41	184	6.5	42
OU4-MU-M14-101B	4	98	83	181	13	121
OU4-MU-M14-299A	1	217	85	302	21	182
OU4-MU-M14-200B	2	169	113	282	11	122
OU4-MU-M14-200A	3	165	67	232	10	153
OU4-MU-M14-201B	4	150	110	260	10	100
OU4-MU-R01-399A	1	162	57	220	27	123
OU4-MU-R01-300B	2	195	161	356	14	151
OU4-MU-R01-300A	3	161	74	235	15	150
OU4-MU-R01-301B	4	208	115	323	15	120
OU4-MU-R01-499A	1	171	66	237	26	118
OU4-MU-R01-400B	2	164	129	293	15	170
OU4-MU-R01-400A	3	203	95	298	11	179
OU4-MU-R01-401B	4	211	126	337	19	127
OU4-MU-R02-399A	1	156	70	226	20	107
OU4-MU-R02-300B	2	151	123	274	10	125
OU4-MU-R02-300A	3	213	90	302	14	155
OU4-MU-R02-301B	4	168	120	288	13	114
OU4-MU-R02-499A	1	234	88	322	27	138
OU4-MU-R02-400B	2	196	158	354	14	156
OU4-MU-R02-401B	4	231	145	377	14	111
OU4-MU-R02-499A-FD	1	229	86	315	27	137
OU4-MU-R03-399A	1	123	53	176	28	105
OU4-MU-R03-300B	2	135	101	236	11	115
OU4-MU-R03-300A	3	152	86	238	13	131
OU4-MU-R03-301B	4	149	104	253	12	110
OU4-MU-R03-499A	1	115	45	160	23	101
OU4-MU-R03-400B	2	181	175	356	13	126
OU4-MU-R03-400A	3	192	101	293	19	188
OU4-MU-R03-401B	4	171	120	291	15	115
OU4-MU-R04-399A	1	75	29	104	21	73

TABLE B - 6

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED MUSSEL SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTAL PAHS	TOTAL DDTS	TOTAL PCBS
OU4-MU-R04-300B	2	117	100	218	12	111
OU4-MU-R04-300A	3	90	55	144	9.0	74
OU4-MU-R04-301B	4	113	93	206	13	98
OU4-MU-R04-499A	1	71	30	102	22	71
OU4-MU-R04-400B	2	121	99	220	13	117
OU4-MU-R04-400A	3	109	45	154	12	99
OU4-MU-R04-401B	4	94	74	168	11	81

Notes:
Units are in ug/kg.
See Section 4.1.3 for the methods used to calculate these values.

TABLE B - 7

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED JUVENILE LOBSTER SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTA PAHS	TOTAL DDTS	TOTAL PCBS
OU4-LJ-M01-199AM	1	21	32	52	4.8	47
OU4-LJ-M01-100B	2	92	74	166	6.4	34
OU4-LJ-M01-100B-D	2	150	88	239	3.1	36
OU4-LJ-M01-100A	3	57	29	85	4.9	65
OU4-LJ-M01-100A-D	3	51	24	75	4.2	67
OU4-LJ-M01-101B	4	155	52	207	5.8	41
OU4-LJ-M01-101B-FD	4	144	49	193	5.4	34
OU4-LJ-M02-199AM	1	533	153	686	5.6	122
OU4-LJ-M02-100B	2	83	45	128	14	43
OU4-LJ-M02-100A	3	66	18	84	4.6	43
OU4-LJ-M02-101B	4	32	26	59	3.8	26
OU4-LJ-M03-199AM	1	130	56	186	1.8	30
OU4-LJ-M03-100B	2	59	40	99	6.4	92
OU4-LJ-M03-100A	3	40	22	62	3.7	30
OU4-LJ-M03-101B	4	54	25	79	4.9	33
OU4-LJ-M04-199AM	1	84	49	134	2.2	25
OU4-LJ-M04-100B	2	39	23	63	3.9	51
OU4-LJ-M04-100A	3	80	27	107	5.2	60
OU4-LJ-M04-101B	4	42	24	65	3.7	35
OU4-LJ-M05-199AM	1	27	35	61	2.9	42
OU4-LJ-M05-100B	2	40	34	73	10	39
OU4-LJ-M05-100A	3	50	17	67	6.6	86
OU4-LJ-M05-101B	4	22	25	47	3.6	26
OU4-LJ-M06-199AM	1	100	56	155	2.4	34
OU4-LJ-M06-100B	2	37	36	73	2.8	23
OU4-LJ-M06-100A	3	25	16	42	2.5	29
OU4-LJ-M06-101B	4	27	28	55	2.6	16
OU4-LJ-M07-199AM	1	27	34	61	14	134
OU4-LJ-M07-100B	2	39	15	53	2.0	30
OU4-LJ-M07-100A	3	71	19	90	3.9	50
OU4-LJ-M07-101B	4	39	26	64	3.0	18
OU4-LJ-M08-199AM	1	84	38	121	4.0	39
OU4-LJ-M08-100B	2	42	36	78	9.2	53
OU4-LJ-M08-100A	3	161	66	226	14	181
OU4-LJ-M08-101B	4	81	32	113	9.2	39
OU4-LJ-M08-101B-FD	4	96	37	133	8.9	39
OU4-LJ-M09-199AM	1	31	32	63	6.6	77
OU4-LJ-M09-100B	2	51	31	83	6.3	41
OU4-LJ-M09-100A	3	106	24	130	3.0	34
OU4-LJ-M09-101B	4	58	47	105	5.2	43
OU4-LJ-M10-199AM	1	256	56	312	2.6	40
OU4-LJ-M10-100B	2	58	31	89	8.2	61
OU4-LJ-M10-100A	3	67	25	92	2.7	33
OU4-LJ-M10-101B	4	121	51	172	2.5	17
OU4-LJ-M11-199AM	1	93	42	135	3.1	109
OU4-LJ-M11-199AM-D	1	103	43	146	3.2	115
OU4-LJ-M11-100B	2	96	34	129	8.3	86
OU4-LJ-M11-100B-D	2	79	35	114	3.7	54
OU4-LJ-M11-100A	3	18	15	33	3.3	41
OU4-LJ-M11-100A-D	3	20	13	33	4.4	54
OU4-LJ-M11-101B	4	144	42	186	2.4	24
OU4-LJ-M12-199AM	1	109	90	199	4.3	33
OU4-LJ-M12-100B	2	188	54	242	7.9	46
OU4-LJ-M12-100A	3	42	38	80	2.4	23
OU4-LJ-M12-101B	4	51	28	79	3.9	82
OU4-LJ-M13-199AM	1	343	75	418	3.6	51
OU4-LJ-M13-100B	2	283	57	340	8.9	50
OU4-LJ-M13-100A	3	308	122	429	4.3	110
OU4-LJ-M13-101B	4	211	36	247	4.1	29
OU4-LJ-M14-199AM	1	251	38	289	2.3	25
OU4-LJ-M14-100B	2	30	29	60	12	96
OU4-LJ-M14-100A	3	122	80	202	3.3	38

TABLE B - 7

TOTAL PAHS, DDTS, AND PCBS IN NON-NORMALIZED JUVENILE LOBSTER SAMPLES FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample	Round	HMW PAHs	LMW PAHS	TOTA PAHS	TOTAL DDTS	TOTAL PCBS
OU4-LJ-M14-101B	4	44	24	68	3.7	32
OU4-LJ-R01-199AM	1	22	32	54	3.4	38
OU4-LJ-R01-100B	2	44	32	75	7.2	45
OU4-LJ-R01-100A	3	31	23	54	3.4	40
OU4-LJ-R01-101B	4	49	27	76	4.6	35
OU4-LJ-R02-199AM	1	66	36	102	5.4	105
OU4-LJ-R02-199AM-D	1	64	32	96	3.1	58
OU4-LJ-R02-100B	2	100	27	127	5.9	53
OU4-LJ-R02-100A	3	68	23	91	5.2	47
OU4-LJ-R02-101B	4	630	239	870	4.0	28
OU4-LJ-R03-199AM	1	315	119	434	3.0	32
OU4-LJ-R03-100B	2	74	39	114	4.2	49
OU4-LJ-R03-100A	3	55	20	75	3.2	26
OU4-LJ-R03-101B	4	67	27	93	4.0	27
OU4-LJ-R04-199AM	1	342	118	460	5.1	57
OU4-LJ-R04-100B	2	25	49	74	2.8	35
OU4-LJ-R04-100A	3	25	28	53	4.8	41

Notes:
Units are in ug/kg.
See Section 4.1.3 for the methods used to calculate these values.

TABLE B - 8

NON-NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT SAMPLES AND THEIR IRGS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round	Copper[1] (486 mg/kg)	Nickel[1] (124 mg/kg)	Acenaphthylene[1] (210 ug/kg)	Anthracene[1] (1,236 ug/kg)	Fluorene[1] (500 ug/kg)	High Molecular Weight PAHs[1] (13,057 ug/kg)
OU4-SD-M01-199A	01	47.4	23.5	71.5	99.7	24.7	940
OU4-SD-M01-100B	02	43.7	29.6	295	276	187	5179
OU4-SD-M01-100A	03	35.2	12.9	151	1471	761	17965
OU4-SD-M01-101B	04	24.8	18.7	75.5	215	73.1	2316
OU4-SD-M01-299A	01	29.1	21.7	189	766	202	8204
OU4-SD-M01-200B	02	44.3	24.8	160	614	182	7113
OU4-SD-M01-200A	03	26.1	20.2	114	146	21.5	1536
OU4-SD-M01-201B	04	43.1	29.4	219	533	139	6094
OU4-SD-M01-399A	01	44.1	27.1	166	508	195	7360
OU4-SD-M01-300B	02	200	30.5	544	2650	1660	22509
OU4-SD-M01-300B-D	02	150	29.4	198	499	169	6005
OU4-SD-M01-300A	03	36.8	15.2	449	846	215	9382
OU4-SD-M01-300A-D	03	58.3	24.4	453	385	133	9242
OU4-SD-M01-301B	04	101	19.5	796.2	3471	2109	37252
OU4-SD-M01-301B-D	04	60	21.9	1435	1573	590	31930
OU4-SD-M02-199A	01	31.5	27.6	64.9	161	36	1764
OU4-SD-M02-100B	02	64.6	25.8	79.5	191	41	1997
OU4-SD-M02-100A	03	39.2	22.8	12.7	22	5	201
OU4-SD-M02-101B	04	32.8	27.8	70.7	152	33	1605
OU4-SD-M02-299A	01	30.7	30.9	60.3	118	33	1678
OU4-SD-M02-200B	02	50.6	35.3	75.6	190	34.6	2119
OU4-SD-M02-200A	03	68.2	28.2	79.2	110	33	1386
OU4-SD-M02-201B	04	53.4	37.1	68.5	258	102	2182
OU4-SD-M02-399A	01	43	32.6	67.3	178	44	2138
OU4-SD-M02-300B	02	46.1	27.1	70.2	161	39.5	2000
OU4-SD-M02-300A	03	36.9	24.1	45.8	82.7	22.3	867
OU4-SD-M02-301B	04	38.8	29.6	81.4	184	37.9	1978
OU4-SD-M03-199A	01	173	43.2	107	248	50.7	3867
OU4-SD-M03-199A-D	01	236	47.9	116	314	60.3	3891
OU4-SD-M03-100B	02	185	45.3	143	621	176	6416
OU4-SD-M03-100A	03	186	39.4	153	274	62	3322
OU4-SD-M03-101B	04	182	43.1	152	576	83	5898

TABLE B - 8

NON-NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT SAMPLES AND THEIR IRGS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round	Copper[1] (486 mg/kg)	Nickel[1] (124 mg/kg)	Acenaphthylene[1] (210 ug/kg)	Anthracene[1] (1,236 ug/kg)	Fluorene[1] (500 ug/kg)	High Molecular Weight PAHs[1] (13,057 ug/kg)
OU4-SD-M03-299A	01	3720	85.8	77.3	353	126	4442
OU4-SD-M03-200B	02	1090	79	78	281	78.6	3556
OU4-SD-M03-200A	03	1902	102	63.2	126	33.5	1841
OU4-SD-M03-201B	04	564	62.7	74	266	51.1	2858
OU4-SD-M03-399A	01	125	29.5	62.1	150	33.2	2407
OU4-SD-M03-300B	02	106	26.5	88.4	247	74.3	2989
OU4-SD-M03-300A	03	27.2	14.5	62	182	73.1	1909
OU4-SD-M03-301B	04	30.0	19.1	54.1	141.6	30.6	1612
OU4-SD-M04-199A	01	565	60.6	79.9	197	41.2	2939
OU4-SD-M04-100B	02	1780	193	345	715	157	7053
OU4-SD-M04-100A	03	20507	197	216	621	137	9530
OU4-SD-M04-101B	04	2225	282	217	2408	557	17894
OU4-SD-M04-101B-D	04	2680	313	557	5921	1221	43753
OU4-SD-M04-299A	01	22.4	19.4	53	120	17	1237
OU4-SD-M04-200B	02	59.5	23.3	61.4	160	37.2	1695
OU4-SD-M04-200A	03	33.1	16.6	78.1	123	32.2	1472
OU4-SD-M04-201B	04	34.2	22.3	53.1	151.9	30.5	1449
OU4-SD-M04-399A	01	140	38.9	25.5	61.1	9.45	1903
OU4-SD-M04-300B	02	393	158	9.4	24.9	4.2	300
OU4-SD-M04-300A	03	118	25.1	17.8	28.5	5.04	1108
OU4-SD-M04-301B	04	243	38.72	7.7	22.2	4.2	376
OU4-SD-M05-199A	01	105	32.2	87.2	295	63.3	4928
OU4-SD-M05-100B	02	63.9	33.7	73.1	177	45.4	2167
OU4-SD-M05-100B-D	02	61.8	33.1	126	511	125	5340
OU4-SD-M05-100A	03	65	25.4	46.2	62.9	18.7	1226
OU4-SD-M05-100A-D	03	57.3	25.9	107	175	42.8	2320
OU4-SD-M05-101B	04	51.3	28.7	53.3	130	31.6	1771
OU4-SD-M05-299A	01	32.2	28.9	62.7	123	22.4	1762
OU4-SD-M05-200B	02	38.5	28.6	80.8	271	88	2749
OU4-SD-M05-200A	03	33	25.1	103	173	41	1891
OU4-SD-M05-201B	04	31.8	25.7	67.1	169	32.8	1626
OU4-SD-M05-399A	01	24.4	30.1	55.6	118	23.1	1583

TABLE B - 8

NON-NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT SAMPLES AND THEIR IRGS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round	Copper[1] (486 mg/kg)	Nickel[1] (124 mg/kg)	Acenaphthylene[1] (210 ug/kg)	Anthracene[1] (1,236 ug/kg)	Fluorene[1] (500 ug/kg)	High Molecular Weight PAHs[1] (13,057 ug/kg)
OU4-SD-M05-300B	02	22.7	27.5	56.7	142	37.2	1669
OU4-SD-M05-300A	03	31.4	22.8	70.9	99.3	31	1524
OU4-SD-M05-301B	04	14.7	21.6	55.7	203	64.4	2145
OU4-SD-M06-199A	01	25.1	21.3	70.6	120	25	1511
OU4-SD-M06-100B	02	14.8	21.3	26.4	87.9	34.6	2343
OU4-SD-M06-100A	03	13.9	14.8	41.6	83.5	22.3	1566
OU4-SD-M06-101B	04	14.4	17.2	78.8	291	81.1	4359
OU4-SD-M06-299A	01	26.6	23.2	72.8	260	49.5	2721
OU4-SD-M06-299A-D	01	25.5	24.5	107	252	66.5	3283
OU4-SD-M06-200B	02	27.9	27.2	97.3	186	48.5	2637
OU4-SD-M06-200A	03	30.5	18.1	116	192	44.7	2171
OU4-SD-M06-201B	04	17.1	19.8	136	352	56.1	3250
OU4-SD-M06-399A	01	9.8	26.4	9.81	23.5	5.56	428
OU4-SD-M06-300B	02	16.1	36.9	4.6	18.9	7.1	265
OU4-SD-M06-300A	03	12.7	27.4	4.58	5.55	1.41	79
OU4-SD-M06-301B	04	25.0	57.4	11.1	34.8	9.8	357
OU4-SD-M07-199A	01	20	26	20.5	37.2	9.97	713
OU4-SD-M07-100B	02	47.5	25.7	30.7	91.7	22.7	1304
OU4-SD-M07-100A	03	18.3	18.8	23.8	56.5	15.7	1025
OU4-SD-M07-101B	04	22.2	22.6	23.1	74	16.6	931
OU4-SD-M07-299A	01	31.7	30.6	58.8	121	25.7	1595
OU4-SD-M07-200B	02	35.4	31.9	74	168	42	2007
OU4-SD-M07-200A	03	35.8	19.5	94.4	169	89.9	2375
OU4-SD-M07-201B	04	30.31	31.0	83.3	273	54.2	2648
OU4-SD-M07-399A	01	43.1	25.8	116	280	73.3	4093
OU4-SD-M07-300B	02	23.2	24.6	56	65.6	22.2	684
OU4-SD-M07-300A	03	19.9	15.9	60.5	95.3	33.4	1423
OU4-SD-M07-301B	04	29.1	22.5	70.7	215	44.2	2277
OU4-SD-M08-199A	01	370	83.4	53.9	233	72.4	3181
OU4-SD-M08-100B	02	455	92.8	67	225	55.7	2434
OU4-SD-M08-100A	03	280	55.2	83.1	214	47.6	2864
OU4-SD-M08-100A-D	03	341	98	90.9	212	76	2983

TABLE B - 8

NON-NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT SAMPLES AND THEIR IRGS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round	Copper[1] (486 mg/kg)	Nickel[1] (124 mg/kg)	Acenaphthylene[1] (210 ug/kg)	Anthracene[1] (1,236 ug/kg)	Fluorene[1] (500 ug/kg)	High Molecular Weight PAHs[1] (13,057 ug/kg)
OU4-SD-M08-101B	04	420	84.89	81.8	267	52.9	2809
OU4-SD-M08-101B-D	04	343	65.84	50.8	218.6	39.2	2066
OU4-SD-M08-299A	01	94.8	35.7	108	286	75	4518
OU4-SD-M08-200B	02	77.5	31.2	88.6	276	76.7	2317
OU4-SD-M08-200A	03	118	25.2	87.3	180	50	2173
OU4-SD-M08-201B	04	99.7	30.0	102	410	92.2	4155
OU4-SD-M08-399A	01	282	174	80.4	285	61.7	3811
OU4-SD-M08-300B	02	441	124	21.8	74.9	9.3	1050
OU4-SD-M08-300B-D	02	1070	137	99.1	387	38.5	4256
OU4-SD-M08-300A	03	407	130	21.5	43.5	8.14	563
OU4-SD-M08-301B	04	434	112	20.5	66.4	8.7	726
OU4-SD-M09-199A	01	98	114	5.68	26.1	11.5	429
OU4-SD-M09-100B	02	511	160	5.38	11.8	1.65	62
OU4-SD-M09-100A	03	413	72.3	6.81	13.3	6.72	209
OU4-SD-M09-101B	04	227	79.1	15.9	133	26.4	886
OU4-SD-M09-299A	01	119	41.4	14.1	83	15.4	1601
OU4-SD-M09-200B	02	207	61.5	9.1	78.9	15.4	709
OU4-SD-M09-200A	03	101	32.4	54.9	128	35.6	1779
OU4-SD-M09-201B	04	132	61.5	46.8	194	40.6	2047
OU4-SD-M09-399A	01	106	41.8	66.4	252	80.5	3065
OU4-SD-M09-300B	02	73.3	38.6	61.4	208	68.8	2564
OU4-SD-M09-300A	03	76.9	31.5	101	224	87.9	3210
OU4-SD-M09-300A-D	03	79	34.1	125	291	114	4057
OU4-SD-M09-301B	04	72.8	33.8	96.6	395	116.1	4386
OU4-SD-M09-301B-D	04	82.0	35.7	79.8	435	95.4	3848
OU4-SD-M10-199A	01	21.1	42.4	3.22	13.7	3.78	252
OU4-SD-M10-100B	02	27.2	28.9	16.4	119	29.8	1214
OU4-SD-M10-100B-D	02	28.1	28.8	35.5	111	24.2	958
OU4-SD-M10-100A	03	18.8	24.2	23.5	43	12.2	646
OU4-SD-M10-100A-D	03	20.6	18.3	29.5	77	22.7	1444
OU4-SD-M10-101B	04	22.9	29.3	20	60.3	14.6	824
OU4-SD-M10-101B-D	04	40.2	36.3	11.4	65.3	16.1	875

TABLE B - 8

NON-NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT SAMPLES AND THEIR IRGS FOR ROUNDS 1 THROUGH 4
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round	Copper[1] (486 mg/kg)	Nickel[1] (124 mg/kg)	Acenaphthylene[1] (210 ug/kg)	Anthracene[1] (1,236 ug/kg)	Fluorene[1] (500 ug/kg)	High Molecular Weight PAHs[1] (13,057 ug/kg)
OU4-SD-M10-299A	01	17	21.3	157	806	163	7857
OU4-SD-M10-200B	02	33.7	20.5	237	1650	386	9694
OU4-SD-M10-200A	03	20	19.4	114	494	117	4861
OU4-SD-M10-201B	04	18.4	16.3	128.5	1541	288.1	7494
OU4-SD-M10-399A	01	105	27.5	217	592	66.8	11462
OU4-SD-M10-300B	02	31.2	28.7	93.5	1130	82	2465
OU4-SD-M10-300A	03	36.6	22.9	135	251	39.4	2174
OU4-SD-M10-301B	04	27.0	24.52	145.9	623	100.1	4182
OU4-SD-M11-299A	01	17495	5601	20.1	51.9	10.6	688
OU4-SD-M11-399A	01	139	68.6	7.59	13.1	5.07	228
OU4-SD-M11-300B	02	541	75.5	47.7	214	52.7	1980
OU4-SD-M11-300A	03	1479	56.2	21.1	66.9	16.6	1030
OU4-SD-M11-301B	04	747	105	45.3	237	64.9	1478
OU4-SD-M12-199A	01	162	51.3	217	2880	1393	39579
OU4-SD-M12-100B	02	87.9	39.8	116	1220	680	13329
OU4-SD-M12-100A	03	375	72.8	303	2205	2434	46931
OU4-SD-M12-101B	04	266	69	167.9 U	2432	1246	22195
OU4-SD-M12-299A	01	27.1	24.7	68.9	355	146	5353
OU4-SD-M12-200B	02	34.5	22.7	98.4	1140	666	13073
OU4-SD-M12-200B-D	02	40.2	22.9	88.3	1016	634	11431
OU4-SD-M12-200A	03	128	28.1	191	1031	1057	26371
OU4-SD-M12-200A-D	03	254	50	242	1075	1055	25839
OU4-SD-M12-201B	04	90.3	28.6	167	2267	1513	23074
OU4-SD-M12-201B-D	04	79.0	26.9	117	2733	1769	22827
OU4-SD-M12-399A	01	50.9	27.4	78.5	479	151	6475
OU4-SD-M12-399A-D	01	43.5	26	67.5	318	126	5795
OU4-SD-M12-300B	02	111	39.8	64.1	258	70	3916
OU4-SD-M12-300B-D	02	79.6	34.7	95.9	582	121	6589
OU4-SD-M12-300A	03	76.5	28.4	84.6	196	117	3372
OU4-SD-M12-301B	04	82.8	32.7	103	498	251	5605
OU4-SD-M13-199A	01	46.8	31.5	85.3	453	160	6094
OU4-SD-M13-100B	02	53.8	32.8	212	2269	3752	16634

TABLE B - 8

NON-NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT SAMPLES AND THEIR IRGS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round	Copper[1] (486 mg/kg)	Nickel[1] (124 mg/kg)	Acenaphthylene[1] (210 ug/kg)	Anthracene[1] (1,236 ug/kg)	Fluorene[1] (500 ug/kg)	High Molecular Weight PAHs[1] (13,057 ug/kg)
OU4-SD-M13-100A	03	44.5	24.9	215	1283	834	19342
OU4-SD-M13-101B	04	45.3	25.0	162	1237	197	10331
OU4-SD-M13-299A	01	45.5	37.7	123	463	87.2	5271
OU4-SD-M13-200B	02	51.6	31.1	188	625	156	5894
OU4-SD-M13-200A	03	35.7	22.9	150	340	65	3778
OU4-SD-M13-201B	04	42	23.8	133	560	96.6	4896
OU4-SD-M13-399A	01	61.9	31.3	109	348	93.5	4609
OU4-SD-M13-300B	02	119	34.5	119	749	287	6556
OU4-SD-M13-300A	03	87.3	28.8	131	359	116	3964
OU4-SD-M13-301B	04	63.4	29.5	103	384	111	3969
OU4-SD-M14-199A	01	27.4	26.5	41.6	90.1	23.1	1515
OU4-SD-M14-100B	02	59.7	29.7	115	197	44	2226
OU4-SD-M14-100A	03	44	22.5	117	166	34.9	1926
OU4-SD-M14-101B	04	36.6	20.3	179	416	64.6	4391
OU4-SD-M14-299A	01	24.8	19.3	120	307	73.9	4465
OU4-SD-M14-200B	02	28.6	20.3	103	409	107	5209
OU4-SD-M14-200A	03	16.3	16.6	189	433	142	4206
OU4-SD-M14-201B	04	29.1	18.5	164	549	113	4061
OU4-SD-M14-399A	01	38	27	77.4	145	29.7	2140
OU4-SD-M14-300B	02	31	27.3	173	396	98.8	4669
OU4-SD-M14-300A	03	28.9	24.7	130	353	84.5	3631
OU4-SD-M14-301B	04	26.6	21.8	113	373	108	2785
OU4-SD-R01-199A	01	18.4	19.5	83	139	30.4	2707
OU4-SD-R01-100B	02	26.1	26.7	92	146	46.9	2042
OU4-SD-R01-100A	03	21.1	17.5	155	146	40.1	2227
OU4-SD-R01-101B	04	20.0	19.4	140	285	55.7	2696
OU4-SD-R01-299A	01	4.4	9.1	14.5	29.7	6.5	352
OU4-SD-R01-299A-D	01	4.9	9.8	13	22.4	4.26	279
OU4-SD-R01-200B	02	3.6	9.2	8.4	13.1	3.4	164
OU4-SD-R01-200A	03	3.41	4.73 U	7.82	12.2	2.95	132
OU4-SD-R01-201B	04	5.22 U	7.44	20.1	70.1	20.7	745
OU4-SD-R01-399A	01	4.4	10.3	23.7	39.1	8.03	811

TABLE B - 8

NON-NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT SAMPLES AND THEIR IRGS FOR ROUNDS 1 THROUGH 4
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round	Copper[1] (486 mg/kg)	Nickel[1] (124 mg/kg)	Acenaphthylene[1] (210 ug/kg)	Anthracene[1] (1,236 ug/kg)	Fluorene[1] (500 ug/kg)	High Molecular Weight PAHs[1] (13,057 ug/kg)
OU4-SD-R01-300B	02	6.2	11.1	9.3	38.8	10.2	435
OU4-SD-R01-300A	03	6.75	8.5 U	5.27	10.7	2.05	138
OU4-SD-R01-301B	04	2.18 U	7.15	3.1 U	9.8 U	3.1	53.2
OU4-SD-R01-499A	01	7.9	12.2	38.2	53.7	11.9	1064
OU4-SD-R01-400B	02	7.8	13.1	65.4	115	55.1	2296
OU4-SD-R01-400A	03	6.58	8.51	34.6	35.7	7.45	554
OU4-SD-R01-401B	04	8.9	11.1	71.5	173	12.3	1416
OU4-SD-R02-199A	01	13.8	19.7	84.9	138	21	2802
OU4-SD-R02-100B	02	16.8	23.7	86.3	206	45.3	3500
OU4-SD-R02-100A	03	13.9	16.6	164	294	50.2	4325
OU4-SD-R02-101B	04	11.3	14.6	49.5 U	261	75.8	2336
OU4-SD-R02-299A	01	8.1	15	74.6	280	55.2	3538
OU4-SD-R02-200B	02	9.3	20.3	43	225	42.5	2169
OU4-SD-R02-200A	03	29.2	17.3	63.5	146	47.2	1962
OU4-SD-R02-201B	04	10.7	11.46	57.3	209	37.3	2429
OU4-SD-R02-399A	01	51.7	15.5	119	205	65.3	3900
OU4-SD-R02-399A-D	01	22.8	18.4	117	340	59.1	3938
OU4-SD-R02-300B	02	8.8	15	52.4	116	31.3	1880
OU4-SD-R02-300A	03	12.8	14.9	180	355	111	4989
OU4-SD-R02-301B	04	6.47	9.93	20.1	84.5	22.3	654
OU4-SD-R02-499A	01	20.3	19.7	101	190	48.3	3012
OU4-SD-R02-400B	02	21.8	21.1	74.2	222	45.4	2308
OU4-SD-R02-400A	03	28.3	24.6	163	295	53.7	3243
OU4-SD-R02-401B	04	25.8	22.1	142	327	58.5	3108
OU4-SD-R03-199A	01	18.4	24.5	5.9	116	10.2	1771
OU4-SD-R03-100B	02	26.1	38.2	8.7	44.2	14.8	700.9
OU4-SD-R03-100A	03	24.5	21.5	65.1	136	99.8	5105
OU4-SD-R03-101B	04	16.3	32.56	12.2	111	24.2	1650
OU4-SD-R03-299A	01	12.2	17.5	206	1392	167	12673
OU4-SD-R03-200B	02	17.4	20.3	93.4	989	165	8328
OU4-SD-R03-200A	03	13.7	15.5	124	402	114	4255
OU4-SD-R03-201B	04	11.6	15.29	88.9	585	123	3997

TABLE B - 8

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OU4-SD-R03-399A	01	18.2	19.1	76.2	1047	121	7870
OU4-SD-R03-300B	02	17.1	20.2	85.8	912	249	7151
OU4-SD-R03-300A	03	10.5	17.2	43.4	152	73.9	1973
OU4-SD-R03-301B	04	12	15.11	136	822	125	5293
OU4-SD-R03-499A	01	13	20.1	56.6	176	55.6	3207
OU4-SD-R03-400B	02	12.2	23.3	27.8	80.4	25.1	1572
OU4-SD-R03-400A	03	12.5	16.4	87	181	49.8	3475
OU4-SD-R03-401B	04	11	16.8	54.8	204	52.5	3154
OU4-SD-R04-199A	01	7.9	18.6	28.1	70.6	9.38	1201
OU4-SD-R04-100B	02	9.4	18.3	17.5	34.3	9.4	458
OU4-SD-R04-100A	03	8.47	10.5	16.1	22.4	6.61	393
OU4-SD-R04-101B	04	6.46	14.62	13.8	42.7	10.5	519
OU4-SD-R04-299A	01	3.2	13.4	1.69	2.26	0.6	23.4
OU4-SD-R04-200B	02	4.7	18.2	2.7	5.1	1.5	55.1
OU4-SD-R04-200A	03	2.54	11.5	1.84	2.35	0.75	24.8
OU4-SD-R04-201B	04	3.21	14.92	3	6.2	1.4	74.1
OU4-SD-R04-399A	01	2.7	11.7	4.51	6.86	1.3	95.1
OU4-SD-R04-399A-D	01	3.4	12.6	3.05	5.61	0.64	39.9
OU4-SD-R04-300B	02	3.8	13.8	2.5	4.7	1.2	49.5
OU4-SD-R04-300A	03	3.01	20.8	2.68	3.25	0.93	37.8
OU4-SD-R04-301B	04	2.29	9.94	1.7	3.8	1.4	43.5
OU4-SD-R04-499A	01	3	11.2	4.53	6.74	1.47	81.3
OU4-SD-R04-400B	02	3.2	11.3	4.7	8.5	2.3	92.4
OU4-SD-R04-400A	03	2.1	9.17 U	2.46	3.33	0.94	44.2
OU4-SD-R04-401B	04	2.76	7.93	3.4	7.3	1.8	91.1

Notes:

1 - Values in parantheses are the IRGs

APPENDIX C

COMPARISON OF ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS

TABLE C - 1

HISTORICAL SAMPLES FROM EERA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Area of Concern	Sample Number	Sample ID	Station ID	Sample Date	Phase	Sample Type	Sample Description	Comments
BACK CHANNEL	856-112844-A(1)-BMSL	856	167	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	857-112845-A(1)-BMSL	857	167	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	858-112846-A(1)-BMSL	858	168	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	859-112847-A(1)-BMSL	859	168	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	868-112848-A(3)-BMSL	868	169	7/13/93	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	868-112848-A(1)-BMSL	868	169	7/13/93	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	310-110211-C(1)-CEIMIC	310	18	9/9/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
BACK CHANNEL	310-110211-C(2)-CEIMIC	310	18	9/9/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
BACK CHANNEL	184-110087-A(2)-CEIMIC	184	18	10/3/91	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	184-110087-A(1)-CEIMIC	184	18	10/3/91	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	522-110397-A(1)-CEIMIC	522	18	12/19/91	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	522-110397-A(-1)-ERLN	522	18	12/19/91	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	538-110405-A(-1)-ERLN	538	18	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	538-110405-A(2)-CEIMIC	538	18	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	538-110405-A(1)-BMSL	538	18	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	538-110405-A(1)-CEIMIC	538	18	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	539-110405-B(1)-BMSL	539	18	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	811-110413-A(1)-BMSL	811	18	6/17/92	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	811-110413-A(2)-BMSL	811	18	6/17/92	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	811-110413-A(3)-BMSL	811	18	6/17/92	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	821-110423-A(1)-BMSL	821	18	10/8/92	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	871-110405-A(1)-BMSL	871	18	3/10/92	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	881-110405-B(1)-BMSL	881	18	3/18/92	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	881-110405-B(3)-BMSL	881	18	3/18/92	II	MUSSEL	MUSSEL INDIGENOUS	
BACK CHANNEL	1150-112687-A(1)-BMSL	1150	53	11/4/92	II	SEDIMENT CORE	0-10CM	SALT MARSH SEDIMENT; COMPOSITES FROM 5 CORES; ~0-10CM
BACK CHANNEL	1151-112688-A(1)-BMSL	1151	53	11/4/92	II	SEDIMENT CORE	0-10CM	SALT MARSH SEDIMENT; COMPOSITES FROM 5 CORES; ~0-10CM
CLARK COVE	844-112832-A(1)-BMSL	844	161	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	845-112833-A(1)-BMSL	845	161	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	846-112834-A(1)-BMSL	846	162	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	847-112835-A(1)-BMSL	847	162	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	848-112836-A(1)-BMSL	848	163	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	849-112837-A(1)-BMSL	849	163	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	433-110231-F(1)-CEIMIC	433	3	9/16/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	758-112763-A(1)-ERLN	758	3	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
CLARK COVE	759-112765-A(1)-ERLN	759	3	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
CLARK COVE	760-112766-A(1)-ERLN	760	3	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
CLARK COVE	6-110003-A(-1)-ERLN	6	3	9/18/91	I	SEDIMENT CORE	0-8CM	HORIZON A
CLARK COVE	6-110003-A(-2)-ERLN	6	3	9/18/91	I	SEDIMENT CORE	0-8CM	HORIZON A
CLARK COVE	6-110003-A(-3)-ERLN	6	3	9/18/91	I	SEDIMENT CORE	0-8CM	HORIZON A
CLARK COVE	6-110003-A(1)-CEIMIC	6	3	9/18/91	I	SEDIMENT CORE	0-8CM	HORIZON A
CLARK COVE	1127-111041-A(1)-ERLN	1127	3	12/8/92	II	SEDIMENT CORE	2-4CM	DEEP CORE
CLARK COVE	174-110080-A(1)-BMSL	174	3	9/30/91	I	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	174-110080-A(1)-CEIMIC	174	3	9/30/91	I	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	518-110395-A(1)-CEIMIC	518	3	12/19/91	I	MUSSEL	MUSSEL INDIGENOUS	

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HISTORICAL SAMPLES FROM EERA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Area of Concern	Sample Number	Sample ID	Station ID	Sample Date	Phase	Sample Type	Sample Description	Comments
CLARK COVE	534-110403-A(1)-CEIMIC	534	3	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	809-110411-A(1)-BMSL	809	3	6/17/92	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	819-110421-A(1)-BMSL	819	3	10/8/92	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	878-110080-A(1)-BMSL	878	3	9/30/91	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	878-110080-A(2)-BMSL	878	3	9/30/91	II	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	436-110232-C(1)-CEIMIC	436	5	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	436-110232-C(2)-CEIMIC	436	5	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	10-110005-A(1)-CEIMIC	10	5	9/18/91	I	SEDIMENT CORE	0-10CM	HORIZON A
CLARK COVE	176-110081-A(1)-CEIMIC	176	5	9/30/91	I	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	1100-112946-A(1)-ERLN	1100	7		II	SEDIMENT	SEDIMENT TUB	BIOASSAY SEDIMENT
CLARK COVE	399-110226-B(-1)-ERLN	399	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	399-110226-B(-2)-ERLN	399	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	399-110226-B(-3)-ERLN	399	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	399-110226-B(1)-CEIMIC	399	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	401-110226-D(1)-CEIMIC	401	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	401-110226-D(2)-CEIMIC	401	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	402-110226-E(1)-CEIMIC	402	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	403-110226-F(1)-CEIMIC	403	7	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	755-112760-A(1)-ERLN	755	7	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
CLARK COVE	757-112762-A(1)-ERLN	757	7	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
CLARK COVE	756-112761-A(1)-ERLN	756	7	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
CLARK COVE	15-110007-A(1)-CEIMIC	15	7	9/18/91	I	SEDIMENT CORE	0-8CM	HORIZON A
CLARK COVE	177-110082-A(1)-CEIMIC	177	7	9/30/91	I	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	393-110225-B(-1)-ERLN	393	8	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	393-110225-B(-2)-ERLN	393	8	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	393-110225-B(-3)-ERLN	393	8	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	393-110225-B(1)-CEIMIC	393	8	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	395-110225-D(1)-CEIMIC	395	8	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	396-110225-E(1)-CEIMIC	396	8	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	397-110225-F(1)-CEIMIC	397	8	9/12/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
CLARK COVE	18-110008-A(1)-CEIMIC	18	8	9/18/91	I	SEDIMENT CORE	0-8CM	HORIZON A
CLARK COVE	179-110083-A(1)-CEIMIC	179	8	9/30/91	I	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	179-110083-A(2)-CEIMIC	179	8	9/30/91	I	MUSSEL	MUSSEL INDIGENOUS	
CLARK COVE	875-110083-A(1)-BMSL	875	8	9/30/91	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	352-110218-C(1)-CEIMIC	352	12	9/11/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
DRY DOCKS	28-110012-A(1)-CEIMIC	28	12	9/26/91	I	SEDIMENT CORE	0-8CM	HORIZON A
DRY DOCKS	189-110091-A(2)-CEIMIC	189	12	10/22/91	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	189-110091-A(1)-CEIMIC	189	12	10/22/91	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	764-112771-A(1)-ERLN	764	13 or 12.5	6/18/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
DRY DOCKS	765-112772-A(1)-ERLN	765	13 or 12.5	6/18/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
DRY DOCKS	766-112773-A(1)-ERLN	766	13 or 12.5	6/18/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
DRY DOCKS	190-110092-A(1)-CEIMIC	190	13?	10/22/91	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	510-110391-A(1)-CEIMIC	510	13?	12/17/91	I	MUSSEL	MUSSEL INDIGENOUS	

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HISTORICAL SAMPLES FROM EERA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Area of Concern	Sample Number	Sample ID	Station ID	Sample Date	Phase	Sample Type	Sample Description	Comments
DRY DOCKS	528-110400-A(-1)-ERLN	528	13 or 12.5	3/10/92	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	528-110400-A(1)-BMSL	528	13 or 12.5	3/10/92	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	528-110400-A(1)-CEIMIC	528	13 or 12.5	3/10/92	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	806-110408-A(1)-BMSL	806	13 or 12.5	6/10/92	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	816-110418-A(1)-BMSL	816	13 or 12.5	10/2/92	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	872-110400-A(1)-BMSL	872	13 or 12.5	10/3/91	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	824-112812-A(2)-BMSL	824	152	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	824-112812-A(1)-BMSL	824	152	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	825-112813-A(1)-BMSL	825	152	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	345-110217-B(1)-CEIMIC	345	17	9/10/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
DRY DOCKS	347-110217-D(1)-CEIMIC	347	17	9/10/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
DRY DOCKS	348-110217-E(-1)-ERLN	348	17	9/10/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
DRY DOCKS	348-110217-E(1)-CEIMIC	348	17	9/10/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
DRY DOCKS	349-110217-F(1)-CEIMIC	349	17	9/10/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
DRY DOCKS	762-112768-A(1)-ERLN	762	17	6/18/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
DRY DOCKS	761-112767-A(1)-ERLN	761	17	6/18/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
DRY DOCKS	763-112769-A(1)-ERLN	763	17	6/18/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
DRY DOCKS	1115-111260-A(2)-ERLN	1115	17	11/25/92	II	SEDIMENT CORE	0-2CM	DEEP CORE
DRY DOCKS	1115-111260-A(1)-ERLN	1115	17	11/25/92	II	SEDIMENT CORE	0-2CM	DEEP CORE
DRY DOCKS	45-110017-A(1)-CEIMIC	45	17	9/16/91	I	SEDIMENT CORE	0-8CM	HORIZON A
DRY DOCKS	162-110070-A(1)-CEIMIC	162	17	9/12/91	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	162-110070-A(2)-CEIMIC	162	17	9/12/91	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	512-110392-A(1)-CEIMIC	512	17	12/17/91	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	526-110399-A(1)-CEIMIC	526	17	3/10/92	I	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	807-110409-A(1)-BMSL	807	17	6/11/92	II	MUSSEL	MUSSEL INDIGENOUS	
DRY DOCKS	815-110417-A(1)-BMSL	815	17	10/1/92	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	850-112838-A(1)-BMSL	850	164	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	851-112839-A(1)-BMSL	851	164	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	852-112840-A(1)-BMSL	852	165	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	853-112841-A(3)-BMSL	853	165	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	853-112841-A(1)-BMSL	853	165	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	854-112842-A(1)-BMSL	854	166	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	855-112843-A(1)-BMSL	855	166	6/29/93	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	303-110210-B(1)-CEIMIC	303	19	9/9/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
JAMAICA COVE	305-110210-D(1)-CEIMIC	305	19	9/9/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
JAMAICA COVE	306-110210-E(1)-CEIMIC	306	19	9/9/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
JAMAICA COVE	307-110210-F(1)-CEIMIC	307	19	9/9/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
JAMAICA COVE	753-112756-A(1)-ERLN	753	19	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
JAMAICA COVE	754-112757-A(1)-ERLN	754	19	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
JAMAICA COVE	752-112755-A(1)-ERLN	752	19	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
JAMAICA COVE	48-110019-A(2)-CEIMIC	48	19	9/16/91	I	SEDIMENT CORE	0-8CM	HORIZON A
JAMAICA COVE	48-110019-A(1)-CEIMIC	48	19	9/16/91	I	SEDIMENT CORE	0-8CM	HORIZON A
JAMAICA COVE	1125-111302-A(1)-ERLN	1125	19	12/8/92	II	SEDIMENT CORE	2-4CM	DEEP CORE

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HISTORICAL SAMPLES FROM EERA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Area of Concern	Sample Number	Sample ID	Station ID	Sample Date	Phase	Sample Type	Sample Description	Comments
JAMAICA COVE	172-110078-A(1)-CEIMIC	172	19	9/27/91	I	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	172-110078-A(2)-CEIMIC	172	19	9/27/91	I	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	520-110396-A(2)-CEIMIC	520	19	12/19/91	I	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	520-110396-A(1)-CEIMIC	520	19	12/19/91	I	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	536-110404-A(1)-CEIMIC	536	19	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	536-110404-A(-1)-ERLN	536	19	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	810-110412-A(1)-BMSL	810	19	6/17/92	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	820-110422-A(2)-BMSL	820	19	10/8/92	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	820-110422-A(1)-BMSL	820	19	10/8/92	II	MUSSEL	MUSSEL INDIGENOUS	
JAMAICA COVE	1149-112686-A(1)-BMSL	1149	52	11/4/92	II	SEDIMENT CORE	0-10CM	SALT MARSH SEDIMENT; COMPOSITES FROM 5 CORES; ~0-10CM
PISCATAQUA RIVER REFERENCE STATIONS	340-110216-C(1)-CEIMIC	340	11	9/10/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
PISCATAQUA RIVER REFERENCE STATIONS	170-110076-A(1)-CEIMIC	170	11	9/23/91	I	MUSSEL	MUSSEL INDIGENOUS	
PISCATAQUA RIVER REFERENCE STATIONS	316-110212-C(1)-CEIMIC	316	16	9/10/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
PISCATAQUA RIVER REFERENCE STATIONS	171-110077-A(2)-CEIMIC	171	16	9/23/91	I	MUSSEL	MUSSEL INDIGENOUS	
PISCATAQUA RIVER REFERENCE STATIONS	171-110077-A(1)-CEIMIC	171	16	9/23/91	I	MUSSEL	MUSSEL INDIGENOUS	
PISCATAQUA RIVER REFERENCE STATIONS	524-110398-A(1)-CEIMIC	524	16	3/10/92	I	MUSSEL	MUSSEL INDIGENOUS	
PISCATAQUA RIVER REFERENCE STATIONS	804-110406-A(1)-BMSL	804	16	6/8/93	II	MUSSEL	MUSSEL INDIGENOUS	
PISCATAQUA RIVER REFERENCE STATIONS	804-110406-A(2)-BMSL	804	16	6/8/93	II	MUSSEL	MUSSEL INDIGENOUS	
PISCATAQUA RIVER REFERENCE STATIONS	814-110416-A(1)-BMSL	814	16	9/30/92	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	173-110079-A(1)-CEIMIC	173	10.5	9/27/91	I	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	873-110079-A(1)-BMSL	873	10.5	9/27/91	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	832-112820-A(1)-BMSL	832	156	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	833-112821-A(1)-BMSL	833	156	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	834-112822-A(1)-BMSL	834	157	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	835-112823-A(3)-BMSL	835	157	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	835-112823-A(1)-BMSL	835	157	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	836-112824-A(1)-BMSL	836	158	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
STORAGE YARD (AKA DRMO)	837-112825-A(1)-BMSL	837	158	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	838-112826-A(2)-BMSL	838	159	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	838-112826-A(1)-BMSL	838	159	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	839-112827-A(2)-BMSL	839	159	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	839-112827-A(1)-BMSL	839	159	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	840-112828-A(1)-BMSL	840	160	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	841-112829-A(2)-BMSL	841	160	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	841-112829-A(1)-BMSL	841	160	6/25/93	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	418-110229-C(1)-CEIMIC	418	9	9/16/91	I	SEDIMENT GRAB	SEDIMENT GRAB	
SULLIVAN POINT	749-112751-A(1)-ERLN	749	9	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
SULLIVAN POINT	750-112752-A(1)-ERLN	750	9	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
SULLIVAN POINT	751-112753-A(1)-ERLN	751	9	6/17/93	II	SEDIMENT	0-12CM AVS CORE	DIVER COLLECTED 12 CM DEPTH BY 6 CM DIAMETER CORE
SULLIVAN POINT	180-110084-A(1)-CEIMIC	180	9	9/30/91	I	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	516-110394-A(1)-CEIMIC	516	9	12/19/91	I	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	532-110402-A(1)-CEIMIC	532	9	3/18/92	I	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	808-110410-A(1)-BMSL	808	9	6/17/92	II	MUSSEL	MUSSEL INDIGENOUS	
SULLIVAN POINT	818-110420-A(1)-BMSL	818	9	10/8/92	II	MUSSEL	MUSSEL INDIGENOUS	

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
ACENAPHTHENE	12/12	2.38 J - 45.6	18.4	---	---	---	2/2	3.5-19.5	11.5
ACENAPHTHYLENE	12/12	12.7 - 81.4	64.7	---	---	---	2/2	4.6-52.7	28.7
ANTHRACENE	12/12	21.9 - 257.7	151	---	---	---	4/4	10.7-1800	617
BENZO(A)ANTHRACENE	12/12	32.6 - 331.7	239	---	---	---	4/4	28.8-2000	782
BENZO(A)PYRENE	12/12	46 J - 444	281	---	---	---	4/4	31.4-2300	897
BENZO(B)FLUORANTHENE	12/12	63.4 J - 393 J	315	---	---	---	2/2	46.4-557.5	302
BENZO(E)PYRENE	12/12	33.3 J - 229	172	---	---	---	4/4	25.2-1500	604
BENZO(G,H,I)PERYLENE	12/12	33 J - 257 J	172	---	---	---	4/4	23.6-660	325
BENZO(K)FLUORANTHENE	12/12	17.8 - 125	97.3	---	---	---	2/2	16.9-201.8	109
C1-PHENANTHRENES/ANTHRACENES	12/12	19.7 - 321.5	165	---	---	---	4/4	43.5-3800	1369
C2-PHENANTHRENES/ANTHRACENES	12/12	13.5 - 214.3	122	---	---	---	4/4	34.7-2200	815
C3-PHENANTHRENES/ANTHRACENES	12/12	8.96 - 173	81.3				4/4	12.6-820	340
C4-PHENANTHRENES/ANTHRACENES	12/12	4.98 - 59.3	23.1	---	---	---	3/4	23.8-266.6	87.6
CHRYSENE	12/12	36.7 - 448	265	---	---	---	4/4	37.6-1800	780
DIBENZO(A,H)ANTHRACENE	12/12	7 J - 63.1	43.7	---	---	---	3/4	73.4-230	101
FLUORANTHENE	12/12	52.7 - 611.8	440	---	---	---	4/4	60.7-4200	1681
FLUORENE	12/12	4.85 - 102 J	38.5	---	---	---	4/4	4.1-1100	347
INDENO(1,2,3-CD)PYRENE	12/12	33.5 - 247	164	---	---	---	4/4	26.3-950	436
NAPHTHALENE	9/12	7.43 - 60.5 J	31.7	---	---	---	2/2	4.2-47.2	25.7
PERYLENE	12/12	19.9 - 98.9	62.6	---	---	---	4/4	7.9-610	240
PHENANTHRENE	12/12	24.8 - 452.5	226	---	---	---	4/4	46.1-4400	1589
PYRENE	11/12	209 J - 513	391	---	---	---	4/4	52.3-3400	1366
Pesticides/PCB's (UG/KG)									
2,4'-DDD	11/12	0.22 - 20	4.3	---	---	---	2/2	3.581-3.851	3.7
2,4'-DDE	10/12	0.09 J - 1.7	0.5	---	---	---	0/2	0	0.2
2,4'-DDT	12/12	0.1 - 6.2	1.5	---	---	---	2/2	1.288-1.659	1.5
4,4'-DDD	11/12	0.36 - 56	10.6	---	---	---	2/2	17.723-20.433	19.1
4,4'-DDE	12/12	0.29 - 48	10.3	---	---	---	2/2	4.805-5.975	5.4
4,4'-DDT	11/12	0.76 - 24	8.0	---	---	---	2/2	15.457-18.415	16.9
ALDRIN	4/12	0.03 J - 0.96	0.1	---	---	---	2/2	0.714-0.885	0.8
ALPHA-CHLORDANE	11/12	0.08 J - 2.5	0.7	---	---	---	2/2	1.072-1.49	1.3
GAMMA-BHC (LINDANE)	4/12	0.09 J - 0.32 J	0.2	---	---	---	1/2	0.734	0.5
HEPTACHLOR	9/12	0.032 J - 0.36	0.2	---	---	---	0/2	0	0.3
HEPTACHLOR EPOXIDE	3/12	0.067 - 0.1	0.0	---	---	---	0/2	0	0.0
HEXACHLOROBENZENE	5/12	0.02 J - 0.12	0.0	---	---	---	0/2	0	0.1
MIREX	6/12	0.04 - 0.83	0.2	---	---	---	0/2	0	0.3
PCB-101/90	12/12	0.27 - 16 J	3.3	---	---	---	3/4	0.767-9.45	2.8
PCB-105	12/12	0.15 J - 7.1 J	1.8	---	---	---	4/4	0.795-4.61	1.9
PCB-118	12/12	0.16 - 8.5	2.8	---	---	---	2/4	0.624-0.689	1.0
PCB-128	12/12	0.05 - 3.6 J	1.2	---	---	---	1/4	0.578	0.2
PCB-138/160	11/12	0.44 - 36 J	6.1	---	---	---	3/4	1.289-3.08	1.7
PCB-153/132	11/12	0.42 - 128 J	13.6	---	---	---	4/4	1.598-13.1	5.3
PCB-170/190	12/12	2.3 J - 40 J	11.2	---	---	---	2/4	3.53-4.353	2.1
PCB-18/17	7/12	0.06 J - 1.3	0.3	---	---	---	0/4	0	0.2
PCB-180	11/12	0.29 - 380 J	33.5	---	---	---	2/4	1.327-5.429	1.7

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-187	12/12	0.17 - 305 J	26.6	---	---	---	2/4	0.931-2.369	1.7
PCB-195/208	12/12	0.07 - 126 J	11.3	---	---	---	2/4	0.957-2.26	0.9
PCB-206	11/12	0.08 J - 258 J	23.1	---	---	---	3/4	1.031-3.39	1.4
PCB-209	11/12	0.15 - 23.3 J	2.8	---	---	---	0/4	0	0.2
PCB-28	6/12	0.13 J - 10	1.2	---	---	---	2/4	3.16-7.83	2.9
PCB-44	12/12	0.06 J - 1.7 J	0.5	---	---	---	1/4	0.632	0.2
PCB-52	12/12	0.34 - 4.5 J	1.3	---	---	---	2/4	1.643-2.219	1.0
PCB-66	12/12	0.04 J - 1.6 J	0.6	---	---	---	2/4	1.22-1.536	0.7
PCB-8/5	12/12	0.2 - 2.1	0.7	---	---	---	0/4	0	0.3
TRANS-NONACHLOR	12/12	0.02 J - 1.6	0.4	---	---	---	1/2	0.612	0.5
Inorganics (MG/KG)									
ALUMINUM	12/12	6482.1 - 60784	54482	---	---	---	3/3	20100-64000	48033
ARSENIC	12/12	8.5 - 18	13.4	---	---	---	3/3	7-29.1	19.3
CADMIUM	11/12	0.0984 - 1.33	0.5	---	---	---	3/3	0.15-2	0.9
CHROMIUM	12/12	58.3 - 192	105	---	---	---	3/3	56.2-148	115
COPPER	12/12	30.7 J - 68.2	44.7	---	---	---	3/3	35.1-69.9	49.3
IRON	12/12	0400 - 31752.07	26452	---	---	---	3/3	15300-35000	24767
LEAD	12/12	35.9 - 202	115	---	---	---	3/3	86.6-169.1	116
MANGANESE	12/12	273.75 - 780	427	---	---	---	3/3	169-478	337
MERCURY	11/12	0.25 J - 1.06	0.5	---	---	---	2/3	0.382-0.419	0.3
NICKEL	12/12	22.8 J - 37.1	29.1	---	---	---	3/3	20.1-39.8	29.5
SILVER	12/12	0.15 - 4.07	1.5	---	---	---	3/3	0.21-1.077	0.7
ZINC	12/12	63.7 - 378	126	---	---	---	3/3	76.9-158.8	112

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	4.6 - 10.7	7.0	9/12	7 - 16.8	8.6	---	---	---
1-METHYLNAPHTHALENE	9/12	10.8 J - 27.3 J	18.2	12/12	16.2 - 32.4	23.5	---	---	---
1-METHYLPHENANTHRENE	12/12	27.8 - 116	64.6	12/12	31.9 - 203	76.3	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	5.7 - 20	11.9	12/12	4.2 J - 12	6.5	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	8.4 - 28.1	16.6	12/12	8.8 - 94.8	32.9	---	---	---
2-METHYLNAPHTHALENE	9/12	16.6 J - 42.5	29.2	12/12	19.3 - 37.3	28.7	---	---	---
ACENAPHTHENE	12/12	13.8 - 113	48.8	12/12	13.1 - 126	37.7	---	---	---
ACENAPHTHYLENE	12/12	54.1 - 153	93.2	12/12	39.2 - 116	65.7	---	---	---
ANTHRACENE	12/12	126 J - 621	292	12/12	120 - 811	250	---	---	---
BENZO(A)ANTHRACENE	12/12	234.2 - 944	478	12/12	362 - 1710	663	---	---	---
BENZO(A)PYRENE	12/12	96.9 J - 1028.3	520	12/12	289 - 918	565	---	---	---
BENZO(B)FLUORANTHENE	12/12	332.3 - 1162.4	674	12/12	747 - 2240	1290	---	---	---
BENZO(E)PYRENE	12/12	160.5 - 529 J	340	12/12	305 - 825	472	---	---	---
BENZO(G,H,I)PERYLENE	12/12	156.5 - 496	337	12/12	212 - 567	359	---	---	---
CHRYSENE	12/12	247.6 J - 986.8 J	543	12/12	290 - 1100	599	---	---	---
DIBENZO(A,H)ANTHRACENE	12/12	36 J - 165	92.5	12/12	33.6 - 166	96.4	---	---	---
FLUORANTHENE	12/12	363.7 - 1810	931	12/12	603 - 5660	1665	---	---	---
FLUORENE	12/12	30.6 J - 176 J	73.1	12/12	18.3 - 262	57.8	---	---	---
INDENO(1,2,3-CD)PYRENE	12/12	175.6 J - 558	373	12/12	181 - 521	354	---	---	---
NAPHTHALENE	9/12	27.9 J - 82.7	45.4	12/12	25.3 - 94.3	42.1	---	---	---
PERYLENE	12/12	59.5 J - 188 J	110	12/12	76.8 - 232	163	---	---	---
PHENANTHRENE	12/12	168.5 - 902	451	12/12	335 J - 1140	564	---	---	---
PYRENE	12/12	351.8 - 1520	864	12/12	593 - 4220	1342	---	---	---
Pesticides/PCB's (UG/KG)									
2,4'-DDE	6/12	0.1 - 0.93	0.2	2/12	0.4 J - 2	0.5	---	---	---
2,4'-DDT	12/12	0.04 J - 2.7	0.8	8/12	0.8 J - 10.1	2.7	---	---	---
4,4'-DDD	12/12	1.5 - 31	11.0	12/12	4.4 - 1060	123.7	---	---	---
4,4'-DDE	12/12	0.93 - 6.9	3.4	12/12	2.8 J - 22	8.3	---	---	---
4,4'-DDT	12/12	0.66 - 6.7	2.9	8/12	2.5 - 63.75	13.4	---	---	---
ALDRIN	6/12	0.01 J - 0.11	0.0	1/11	0.2	0.3	---	---	---
ALPHA-CHLORDANE	12/12	0.22 - 1.45	0.7	7/12	0.55 - 1.9	0.8	---	---	---
GAMMA-BHC (LINDANE)	3/12	0.22 J - 0.48	0.3	3/12	0.2 J - 0.45 J	0.3	---	---	---
HEPTACHLOR	11/12	0.19 - 2.6	0.7	11/12	0.575 - 4.95 J	2.1	---	---	---
HEPTACHLOR EPOXIDE	3/12	0.03 J - 0.12	0.0	3/12	0.2 J - 0.4 J	0.3	---	---	---
HEXACHLOROBENZENE	6/12	0.03 J - 8.5	0.8	9/12	0.1 J - 0.5	0.3	---	---	---
MIREX	7/12	0.04 - 0.29	0.1	11/12	0.8 J - 8	3.7	---	---	---
PCB-101/90	12/12	2.4 - 38	10.2	11/12	4.35 - 26.2	12.6	---	---	---
PCB-105	12/12	1.2 - 9.5	3.5	1/12	1.25	0.5	---	---	---
PCB-118	12/12	1.1 - 4.4	2.6	9/12	2.1 J - 13.6	5.2	---	---	---
PCB-126	6/12	0.28 - 9.8	2.2	4/12	1.8 - 33.7	4.1	---	---	---
PCB-128	12/12	0.66 - 5.05 J	2.1	12/12	2.35 - 13.9	5.9	---	---	---
PCB-138/160	12/12	4.1 - 89	25.2	12/12	9.2 J - 98.6	43.6	---	---	---
PCB-153/132	12/12	4 - 97	26.9	12/12	8.1 J - 93.4	43.0	---	---	---
PCB-170/190	12/12	1.1 J - 47 J	19.0	12/12	3.2 J - 45.6	21.2	---	---	---
PCB-18/17	4/12	0.2 J - 0.86	0.2	5/12	0.1 J - 0.6 J	0.4	---	---	---

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 03								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-180	12/12	3.1 - 53	20.4	12/12	12 J - 92.1	44.0	---	---	---
PCB-187	12/12	1.6 - 35	14.2	12/12	7.55 - 37	20.5	---	---	---
PCB-195/208	12/12	0.4 - 9	3.1	12/12	1.2 J - 8.3	4.3	---	---	---
PCB-206	12/12	0.69 - 14.05	4.1	12/12	4 - 8.8	6.7	---	---	---
PCB-209	12/12	0.32 J - 3.5 J	1.6	12/12	1.3 J - 22.9 J	4.7	---	---	---
PCB-28	9/12	0.29 - 2.2	0.8	6/12	0.2 J - 0.9	0.5	---	---	---
PCB-52	11/12	0.48 - 10	2.9	6/12	1.2 - 3.5	1.5	---	---	---
PCB-66	12/12	0.21 - 2.1	0.6	5/12	2.3 - 19	2.8	---	---	---
PCB-8/5	10/12	0.04 J - 0.615 J	0.3	6/12	0.4 - 1.4	0.5	---	---	---
TRANS-NONACHLOR	12/12	0.06 - 0.415	0.2	10/12	0.4 J - 2.9	0.8	---	---	---
Inorganics (MG/KG)									
ALUMINUM	12/12	39791 - 65615	55951	12/12	11891 J - 42083.75	25349	---	---	---
ARSENIC	12/12	10.41 - 19.9	15.9	12/12	7.5 J - 17.9	11.4	---	---	---
CADMIUM	11/12	0.38 - 0.85	0.6	11/11	0.27 J - 0.99 J	0.6	---	---	---
CHROMIUM	12/12	57.6 - 137	105	12/12	66.8 J - 192.2	135	---	---	---
COPPER	12/12	27.2 J - 3720	694	11/11	98 J - 528.7 J	280	---	---	---
IRON	12/12	9576 J - 44337	32104	12/12	23911.4 - 58088.6	32422	---	---	---
LEAD	12/12	50.93 - 292	144	11/11	49 J - 354 J	162	---	---	---
MANGANESE	12/12	307.95 - 524	406	12/12	332.1 J - 684.4 J	440	---	---	---
MERCURY	12/12	0.17 - 0.915 J	0.5	8/12	0.46 J - 1.3 J	0.5	---	---	---
NICKEL	12/12	14.5 J - 102 J	49.4	4/11	36.8 J - 85.3 J	41.2	---	---	---
SILVER	12/12	0.51 - 14.4	3.0	9/12	0.14 J - 0.48	0.3	---	---	---
ZINC	12/12	63.7 J - 2324	451	3/11	506.9 - 804.1	313	---	---	---

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	0.9 - 38.65 J	8.4	3/4	9.4 - 16.5	10.3	---	---	---
1-METHYLNAPHTHALENE	9/12	1.8 J - 99.1 J	24.0	4/4	18.1 - 56.4	31.9	---	---	---
1-METHYLPHENANTHRENE	12/12	4.8 - 378.55 J	71.8	4/4	49.7 - 75.8	58.4	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	0.9 - 49.55 J	12.7	4/4	5.8 - 11.3	7.7	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	1.5 - 94.1 J	21.5	4/4	22.7 - 41.3	32.5	---	---	---
2-METHYLNAPHTHALENE	9/12	2.7 J - 169.45 J	41.3	4/4	23.3 - 79.7	42.5	---	---	---
ACENAPHTHENE	12/12	2.53 - 422.5	54.6	4/4	19 - 42.3	27.0	---	---	---
ACENAPHTHYLENE	12/12	7.7 - 386.95 J	111	4/4	44.7 - 82.7	65.3	---	---	---
ANTHRACENE	12/12	22.2 - 4164.65 J	532	4/4	148 - 276	192	---	---	---
BENZO(A)ANTHRACENE	12/12	36.8 - 3648.15 J	676	4/4	393.5 - 795 J	564	---	---	---
BENZO(A)PYRENE	12/12	32.9 J - 4533.75 J	805	4/4	426 - 713	552	---	---	---
BENZO(B)FLUORANTHENE	12/12	49.1 J - 4091.55 J	849	4/4	847 - 1400	1097	---	---	---
BENZO(E)PYRENE	12/12	26.6 J - 1861.9 J	411	4/4	326 - 532	425	---	---	---
BENZO(G,H,I)PERYLENE	12/12	28 - 1873 J	429	4/4	289 - 413	371	---	---	---
CHRYSENE	12/12	44.6 - 2884.35 J	597	4/4	368.5 - 662 J	461	---	---	---
DIBENZO(A,H)ANTHRACENE	12/12	7.4 - 565.35 J	130	4/4	82.7 - 133	110	---	---	---
FLUORANTHENE	12/12	89.6 - 10974.3 J	1552	4/4	775 - 1140	972	---	---	---
FLUORENE	12/12	4.2 - 888.8 J	114	4/4	27.15 - 42.7	35.2	---	---	---
INDENO(1,2,3-CD)PYRENE	12/12	27.5 J - 2444.5 J	436	4/4	359 - 2364	889	---	---	---
NAPHTHALENE	9/12	3.3 - 233.25 J	57.4	4/4	29.5 - 95.5	52.0	---	---	---
PERYLENE	12/12	9.1 J - 330.7 J	97.2	4/4	111 - 210	156	---	---	---
PHENANTHRENE	12/12	24.6 - 6208.1 J	758	4/4	361.5 - 583	444	---	---	---
PYRENE	12/12	75 J - 8217.55 J	1229	4/4	745 - 1140	903	---	---	---
Pesticides/PCB's (UG/KG)									
2,4'-DDE	12/12	0.15 - 3.4	1.5	0/4	0	0.4	---	---	---
2,4'-DDT	10/12	0.05 - 34	10.8	4/4	1.3 - 11	4.6	---	---	---
4,4'-DDD	12/12	0.75 - 41	19.4	4/4	14.7 - 104	60.6	---	---	---
4,4'-DDE	12/12	0.51 - 138	36.3	4/4	3.7 - 14	9.1	---	---	---
4,4'-DDT	11/12	0.59 - 174	46.6	4/4	16 - 70.3	30.2	---	---	---
ALDRIN	5/12	0.01 J - 5.0055 J	0.6	0/4	0	0.3	---	---	---
ALPHA-CHLORDANE	12/12	0.12 - 1.4	0.5	2/4	0.9 - 1.5	0.8	---	---	---
GAMMA-BHC (LINDANE)	5/12	0.03 J - 0.35	0.1	1/4	0.2	0.3	---	---	---
HEPTACHLOR	9/12	0.02 J - 1	0.3	2/4	1.2 - 1.85	0.9	---	---	---
HEPTACHLOR EPOXIDE	2/12	0.04 J - 0.24	0.0	1/4	0.2	0.2	---	---	---
HEXACHLOROBENZENE	6/12	0.05 - 0.195	0.1	4/4	0.1 J - 1.3	0.4	---	---	---
MIREX	8/12	0.031 J - 0.265 J	0.1	4/4	0.9 J - 2.7	1.8	---	---	---
PCB-101/90	12/12	0.99 - 22	4.3	4/4	5.5 - 10.6	7.2	---	---	---
PCB-105	12/12	0.44 J - 5.1	1.7	2/4	1.3 - 4.5	1.7	---	---	---
PCB-118	12/12	0.45 - 7.1	2.0	3/4	2.6 - 7.9	4.1	---	---	---
PCB-126	7/12	0.08 J - 6.5	1.2	1/4	7.9	2.2	---	---	---
PCB-128	12/12	0.39 - 2.3	1.2	4/4	2.1 - 5.7	3.6	---	---	---
PCB-138/160	12/12	1.7 - 33	12.6	4/4	11.6 - 32.4	18.8	---	---	---
PCB-153/132	12/12	1.7 - 31	11.8	4/4	14 - 31.5	19.0	---	---	---
PCB-170/190	11/12	0.31 J - 21 J	7.3	4/4	4.5 - 12.5	7.3	---	---	---
PCB-18/17	4/12	0.13 - 1.1	0.2	1/4	0.2	0.3	---	---	---

TABLE C - 2

COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-180	12/12	1.2 J - 27	11.5	4/4	11.25 - 34.9	19.4	---	---	---
PCB-187	12/12	0.74 - 22	8.1	4/4	7.3 - 16	11.3	---	---	---
PCB-195/208	12/12	0.16 - 5.3	2.4	3/4	1.15 - 3.9	2.4	---	---	---
PCB-206	12/12	0.05 J - 11	3.5	4/4	3.9 - 24	11.0	---	---	---
PCB-209	11/12	0.37 - 13	3.7	4/4	5.8 - 14	8.9	---	---	---
PCB-28	8/12	0.04 J - 2.1	0.4	2/4	0.4 J - 0.5 J	0.7	---	---	---
PCB-52	12/12	0.08 - 5.4	1.9	3/4	1.3 - 10	3.7	---	---	---
PCB-66	10/12	0.05 - 1.3	0.4	1/4	5.8	1.6	---	---	---
PCB-8/5	11/12	0.14 J - 1.5	0.4	2/4	0.3 J - 0.6	0.3	---	---	---
TRANS-NONACHLOR	12/12	0.025 J - 0.46	0.1	3/4	0.3 J - 0.5 J	0.4	---	---	---
Inorganics (MG/KG)									
ALUMINUM	12/12	34143.115 - 60300	47831	4/4	20920 - 39200 J	27511	---	---	---
ARSENIC	12/12	8.7 - 27.6	15.4	4/4	11.3 - 13.9	12.6	---	---	---
CADMIUM	10/12	0.05 - 1.265	0.4	4/4	0.365 - 0.84	0.6	---	---	---
CHROMIUM	12/12	56.6 - 173.865	91.4	4/4	81.6 J - 208.8	142	---	---	---
COPPER	12/12	22.4 - 20507 J	2196	4/4	388 J - 566 J	466	---	---	---
IRON	12/12	19262 - 89742 J	34728	4/4	27816.5 J - 36900	31656	---	---	---
LEAD	12/12	46.5 - 788	198	4/4	73.35 J - 214 J	154	---	---	---
MANGANESE	12/12	313 - 810	499	4/4	379.3 J - 467	405	---	---	---
MERCURY	11/12	0.27 - 4.215 J	1.2	4/4	0.808 J - 2.975	1.8	---	---	---
NICKEL	12/12	16.6 J - 297.27	90.8	2/4	80.1 J - 86.3 J	61.8	---	---	---
SILVER	12/12	0.05 - 8.11 J	2.2	3/4	0.24 J - 2.12	0.8	---	---	---
ZINC	12/12	42.1 J - 2633 J	604	1/4	715.9	354	---	---	---

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	3.1 - 8.8 J	5.3	5/8	8.1 - 27.7	9.5	---	---	---
1-METHYLNAPHTHALENE	9/12	8.8 - 26.4 J	14.4	8/8	12.6 - 30	20.9	---	---	---
1-METHYLPHENANTHRENE	12/12	19.8 - 67.2	38.8	8/8	41.8 - 164	86.3	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	4.6 - 20 J	10.4	8/8	3.7 J - 22	10.3	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	6.5 - 21.7	12.9	8/8	18.4 - 50.8	31.4	---	---	---
2-METHYLNAPHTHALENE	9/12	12.6 - 38.2	21.3	8/8	17.4 - 32.5	24.6	---	---	---
ACENAPHTHENE	12/12	11.7 - 50.2	24.9	8/8	13.7 - 132.3	43.8	---	---	---
ACENAPHTHYLENE	12/12	53.3 - 103	72.4	8/8	34.3 - 98.2	63.7	---	---	---
ANTHRACENE	12/12	99.3 J - 344 J	182	8/8	120 - 456	235	---	---	---
BENZO(A)ANTHRACENE	12/12	221.2 - 727	333	8/8	326 - 1240	720	---	---	---
BENZO(A)PYRENE	12/12	149 J - 981 J	410	8/8	395 - 1040	680	---	---	---
BENZO(B)FLUORANTHENE	12/12	298.7 - 1013	441	8/8	750 - 1850	1249	---	---	---
BENZO(E)PYRENE	12/12	149.8 - 456	226	8/8	278 - 746	486	---	---	---
BENZO(G,H,I)PERYLENE	12/12	134.4 - 566 J	232	8/8	270 - 478	353	---	---	---
CHRYSENE	12/12	223 J - 679	332	8/8	263 - 826	571	---	---	---
DIBENZO(A,H)ANTHRACENE	12/12	35.1 J - 185 J	65.3	8/8	66.2 - 184	111	---	---	---
FLUORANTHENE	12/12	351 - 1251	591	8/8	623 - 2460	1310	---	---	---
FLUORENE	12/12	22.4 - 88 J	45.9	8/8	18.6 - 126	51.7	---	---	---
INDENO(1,2,3-CD)PYRENE	12/12	150.8 J - 661 J	257	8/8	269 - 487	356	---	---	---
NAPHTHALENE	9/12	22.4 - 55.7	32.9	8/8	24 - 53.7	36.2	---	---	---
PERYLENE	12/12	48 J - 252	93.2	8/8	118 - 261	182	---	---	---
PHENANTHRENE	12/12	155 - 520	252	8/8	247 - 1500	649	---	---	---
PYRENE	12/12	333 J - 1105 J	534	8/8	559 - 2080	1201	---	---	---
Pesticides/PCB's (UG/KG)									
2,4'-DDE	12/12	0.06 J - 0.94	0.4	3/8	0.1 J - 0.8 J	0.4	---	---	---
2,4'-DDT	10/12	0.03 J - 1	0.2	8/8	1 J - 8.8	3.2	---	---	---
4,4'-DDD	11/12	0.48 - 2.7	1.7	8/8	3.8 - 36.9	11.0	---	---	---
4,4'-DDE	11/12	0.68 - 4	1.5	8/8	2.8 - 18.4	8.5	---	---	---
4,4'-DDT	11/12	0.52 J - 3.5 J	1.3	8/8	3.5 - 67	14.5	---	---	---
ALDRIN	9/12	0.01 J - 6.9	1.1	0/8	0	0.4	---	---	---
ALPHA-CHLORDANE	12/12	0.13 - 0.71	0.3	6/8	0.5 J - 2.4	1.0	---	---	---
GAMMA-BHC (LINDANE)	4/12	0.14 J - 0.61	0.3	0/8	0	0.3	---	---	---
HEPTACHLOR	8/12	0.03 J - 0.65	0.2	7/8	0.1 J - 1.7	0.5	---	---	---
HEPTACHLOR EPOXIDE	4/12	0.04 J - 0.18	0.1	0/8	0	0.3	---	---	---
HEXACHLOROBENZENE	7/12	0.01 J - 2.9	0.5	6/8	0.1 J - 0.3 J	0.2	---	---	---
MIREX	6/12	0.01 J - 0.28	0.1	8/8	0.1 J - 0.3	0.2	---	---	---
PCB-101/90	12/12	0.49 - 2.75 J	1.4	2/8	0.8 - 4.6	1.4	---	---	---
PCB-105	12/12	0.14 J - 1.55	0.5	5/8	0.4 J - 2.7	0.8	---	---	---
PCB-118	12/12	0.36 - 2.8	1.1	4/8	1.2 - 5.4	1.8	---	---	---
PCB-126	6/12	0.027 J - 0.25 J	0.1	1/8	2.1	0.5	---	---	---
PCB-128	12/12	0.09 - 1.1	0.5	3/8	0.5 - 2.1	0.7	---	---	---
PCB-138/160	9/12	1.2 - 3.7 J	1.9	5/8	3.1 - 11	4.0	---	---	---
PCB-153/132	9/12	1.2 - 3.75	1.8	5/8	2.1 - 8.9	3.0	---	---	---
PCB-170/190	10/12	0.32 J - 14.915 J	3.2	5/8	0.5 - 2.5	0.9	---	---	---
PCB-18/17	5/12	0.3775 J - 0.88	0.3	2/8	0.2 J - 0.4 J	0.3	---	---	---

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-180	8/12	0.6 - 2.5 J	1.2	4/8	1 - 5.2	1.8	---	---	---
PCB-187	11/12	0.41 - 4.1	1.2	8/8	1 - 3.5	2.1	---	---	---
PCB-195/208	12/12	0.07 - 1.1	0.4	4/8	0.1 J - 0.5 J	0.3	---	---	---
PCB-206	11/12	0.13 J - 2.8	0.7	5/8	0.7 - 3.1	1.4	---	---	---
PCB-209	11/12	0.21 J - 3 J	0.8	4/8	0.7 - 2.3	0.9	---	---	---
PCB-28	11/12	0.05 J - 3.25 J	0.9	4/8	0.4 J - 1.7	0.6	---	---	---
PCB-52	12/12	0.17 - 3.1	0.9	3/8	0.6 J - 2.5	1.0	---	---	---
PCB-66	12/12	0.08 J - 0.95	0.4	1/8	1.5	0.4	---	---	---
PCB-8/5	12/12	0.07 J - 2.4	0.6	6/8	0.1 J - 0.7	0.4	---	---	---
TRANS-NONACHLOR	11/12	0.01 J - 0.35 J	0.2	6/8	0.3 J - 2.1	0.8	---	---	---
Inorganics (MG/KG)									
ALUMINUM	12/12	44042.89 - 66550	58132	8/8	12650.9 - 46739 J	31642	---	---	---
ARSENIC	12/12	5.3 - 18.6	11.8	8/8	6.9 - 13.8 J	10.8	---	---	---
CADMIUM	12/12	0.19 J - 0.99	0.5	8/8	0.3 - 0.8	0.6	---	---	---
CHROMIUM	12/12	66.4 J - 119.5	94.9	8/8	48.8 J - 233.3	120	---	---	---
COPPER	12/12	14.74 - 105	42.4	8/8	30 J - 244 J	107	---	---	---
IRON	12/12	7250.76 - 31933.5	26002	8/8	16154.1 - 35971.4	27680	---	---	---
LEAD	12/12	42.95 - 187 J	82.0	8/8	50.2 - 855 J	297	---	---	---
MANGANESE	12/12	345 - 602	415	8/8	244.8 - 508	420	---	---	---
MERCURY	11/12	0.18 J - 1.1 J	0.4	7/8	0.249 - 2.7 J	1.1	---	---	---
NICKEL	12/12	21.56 - 33.4	27.5	2/8	18.3 J - 30.5 J	21.5	---	---	---
SILVER	12/12	0.38 - 4.38 J	1.5	3/7	0.15 J - 0.71	0.2	---	---	---
ZINC	12/12	59.52 - 208	110	2/8	316.4 - 376.2	186	---	---	---

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	0.75 J - 8.12 J	3.9	1/4	19.8	7.4	---	---	---
1-METHYLNAPHTHALENE	9/12	0.85 J - 20.8 J	8.4	4/4	10.3 - 15.6	12.9	---	---	---
1-METHYLPHENANTHRENE	12/12	1.43 - 101.5	34.0	4/4	30.7 - 66.1	42.3	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	0.6 - 14.25	6.5	4/4	3.7 J - 6.1	4.6	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	0.68 J - 17.9	8.8	4/4	10.3 - 95.5	37.0	---	---	---
2-METHYLNAPHTHALENE	9/12	1.33 J - 33.1 J	14.2	4/4	15.5 - 19.55	17.8	---	---	---
ACENAPHTHENE	12/12	0.56 - 35.3	14.0	4/4	7.1 J - 12.2	10.6	1/1	8.7	8.7
ACENAPHTHYLENE	12/12	4.58 - 135.8	57.2	4/4	37.3 - 52.2	42.9	1/1	21.5	21.5
ANTHRACENE	12/12	5.55 J - 352	138	4/4	89.8 - 111	99.4	11/11	33.6-170	109
BENZO(A)ANTHRACENE	12/12	10.9 - 554.7	269	4/4	231 - 435	307	11/11	140.2-562	392
BENZO(A)PYRENE	12/12	16.3 J - 886.7 J	351	4/4	252 - 356	315	11/11	162.3-608	432
BENZO(B)FLUORANTHENE	12/12	15.8 - 860.9	385	4/4	450 - 721	629	1/1	227.8	228
BENZO(E)PYRENE	12/12	10.4 - 392	199	4/4	179 - 275	243	11/11	141.1-440	310
BENZO(G,H,I)PERYLENE	12/12	11 - 381.6	200	4/4	134 - 254 J	198	11/11	130.6-272	211
BENZO(K)FLUORANTHENE	12/12	6.69 - 265	119	---	---	---	1/1	84.4	84.4
C1-PHENANTHRENES/ANTHRACENES	12/12	6.84 - 338	136	---	---	---	11/11	46.4-568	345
C2-PHENANTHRENES/ANTHRACENES	12/12	4.52 - 280.4	111	---	---	---	11/11	124.1-472	331
C3-PHENANTHRENES/ANTHRACENES	12/12	6.52 - 251	74.8	---	---	---	11/11	88.6-339	176
C4-PHENANTHRENES/ANTHRACENES	12/12	4.04 - 95.6	36.9	---	---	---	5/11	132.2-599	161
CHRYSENE	12/12	11.6 - 569.2 J	277	4/4	245 - 323	291	11/11	180.8-520	388
DIBENZO(A,H)ANTHRACENE	12/12	2.12 - 91.7 J	51.9	4/4	36.6 - 67.4	55.8	11/11	28-71.6	54.2
FLUORANTHENE	12/12	20.4 - 1220.4	451	4/4	386 - 784.5	550	11/11	316.5-1160	686
FLUORENE	12/12	1.41 J - 81.1 J	32.8	4/4	11.5 - 30	19.4	11/11	10.9-43	24.6
INDENO(1,2,3-CD)PYRENE	12/12	10.9 - 454.2 J	219	4/4	143 - 242	191	11/11	136-290	203
NAPHTHALENE	9/12	2.14 J - 48.2	22.6	4/4	21.9 - 29.1	24.7	1/1	16.5	16.5
PERYLENE	12/12	3.38 - 140	63.8	4/4	69.4 - 102	86.3	11/11	44.6-180	116
PHENANTHRENE	12/12	7.73 - 605.7	199	4/4	170 - 300.5	232	11/11	139.7-352	261
PYRENE	12/12	17.6 - 1053.1	431	4/4	422 - 720	526	11/11	291.7-1510	762
Pesticides/PCB's (UG/KG)									
2,4'-DDD	10/12	0.09 - 10	2.8	---	---	---	0/6	0	0.3
2,4'-DDE	10/12	0.079 J - 0.58	0.2	0/4	0	0.4	0/6	0	0.3
2,4'-DDT	6/12	0.03 J - 0.61	0.1	3/4	0.2 J - 0.95	0.5	0/6	0	0.3
4,4'-DDD	10/12	0.13 - 21	4.1	4/4	3.4 - 5 J	4.3	8/10	1.95-3.16	2.0
4,4'-DDE	11/12	0.73 - 11	2.2	4/4	1.9 - 3.3	2.7	8/10	0.913-2.2	1.2
4,4'-DDT	10/12	0.03 J - 12	2.0	4/4	2 - 3.725	2.7	4/6	1.1-34.899	11.2
ALDRIN	5/12	0.02 J - 4.95	0.8	0/4	0	0.4	2/6	12.949-31.851	7.7
ALPHA-CHLORDANE	11/12	0.056 J - 0.43	0.2	3/4	0.2 J - 0.4 J	0.3	2/10	0.257-0.655	0.2
GAMMA-BHC (LINDANE)	4/12	0.06 J - 0.35 J	0.2	0/4	0	0.3	0/6	0	0.3
HEPTACHLOR	10/12	0.04 J - 0.55	0.1	3/4	0.2 J - 0.3 J	0.3	0/6	0	0.3
HEPTACHLOR EPOXIDE	4/12	0.03 J - 0.42	0.1	1/4	0.1	0.2	0/6	0	0.3
HEXACHLOROBENZENE	6/12	0.02 J - 0.36	0.1	4/4	0.1 J - 0.7	0.3	3/10	0.0528-0.055	0.2
MIREX	7/12	0.005 J - 0.25	0.1	3/4	0.1 J - 0.2 J	0.2	0/6	0	0.3
PCB-101/90	12/12	0.09 - 2.2	1.1	1/4	1.3	0.8	7/11	0.5-4.13	1.0
PCB-105	12/12	0.1 J - 0.85 J	0.4	2/4	0.4 J - 0.5 J	0.4	2/7	0.49-0.987	0.4
PCB-118	12/12	0.17 - 1.7	0.9	2/4	1.25 - 1.4	1.0	10/11	0.7-3.47	1.2

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-126	6/12	0.022 J - 0.25 J	0.1	2/4	0.225 - 1.1	0.5	---	---	---
PCB-128	12/12	0.14 - 0.97	0.5	1/4	0.6	0.3	8/11	0.284-1.2	0.5
PCB-138/160	7/12	1.45 J - 3.4	1.6	2/4	2.4 - 3.2	2.1	10/11	1.44-13.7	3.6
PCB-153/132	7/12	0.65 - 4.9	1.7	1/4	2.8	1.5	11/11	1.54-6.7	2.9
PCB-170/190	9/12	0.084 J - 18	3.9	3/4	0.6 J - 0.7	0.6	9/11	0.36-3	1.0
PCB-18/17	6/12	0.017 J - 0.56	0.2	2/4	0.1	0.2	4/11	0.164-0.437	0.5
PCB-180	7/12	0.25 - 3.9 J	1.1	2/4	0.9 - 1.5	0.9	9/11	0.6-5.01	1.4
PCB-187	9/12	0.21 - 3	1.0	4/4	1.05 - 1.4	1.2	9/11	0.641-3.99	1.3
PCB-195/208	12/12	0.04 J - 8.6	1.0	3/4	0.2 J - 0.5	0.3	5/11	0.176-1.19	0.3
PCB-206	9/12	0.07 J - 21	2.3	3/4	0.8 - 6.8	2.3	6/11	0.36-5.104	1.0
PCB-209	10/12	0.03 J - 6.22 J	1.0	3/4	0.7 - 2.6	1.3	6/11	0.283-4.094	0.7
PCB-28	10/12	0.097 J - 3.6	0.6	2/4	0.2 J - 0.3 J	0.3	8/11	0.137-1.041	0.5
PCB-44	11/12	0.16 - 0.66	0.3	---	---	---	5/11	0.203-0.651	0.3
PCB-52	11/12	0.08 J - 1.6	0.6	0/4	0	0.3	8/11	0.322-1.44	0.5
PCB-66	12/12	0.04 J - 0.67	0.3	1/4	0.5	0.3	5/7	1.662-2.5	1.4
PCB-8/5	12/12	0.05 J - 0.95	0.4	2/4	0.2 J - 0.5	0.3	3/11	0.096-0.5	0.2
SUM OF PCBS	---	---	---	4/4	7.6 - 36.4	22.2	11/11	9.7145-47.508	20.0
TRANS-NONACHLOR	10/12	0.03 J - 0.24	0.1	4/4	0.2 J - 0.3 J	0.3	3/10	0.148-0.292	0.2
Inorganics (MG/KG)									
ALUMINUM	12/12	38825 - 61000	48590	4/4	14341.2 - 39199.5	29046	7/7	11032-48800	35419
ARSENIC	12/12	6.9 - 19.95	11.8	4/4	10.1 - 11.3 J	10.7	6/6	9.5-17.8	12.3
CADMIUM	9/12	0.07 - 0.66	0.3	4/4	0.24 - 0.47	0.4	6/6	0.27-0.65	0.5
CHROMIUM	12/12	44.2 - 113.4	69.6	4/4	56.35 J - 138.1	107	7/7	71.3-113	89.6
COPPER	12/12	9.8 - 30.5 J	19.4	4/4	18.8125 - 75.5 J	41.9	7/7	23.6-36.3	30.9
IRON	12/12	5498 - 35120.79	21578	4/4	21177.25 - 32100	27152	7/7	18678-28800	24011
LEAD	12/12	19 - 93.54	47.6	4/4	48.125 - 184 J	84.6	7/7	46.3-192.8	79.4
MANGANESE	12/12	330.61 - 1298	581	4/4	411 - 508	470	7/7	306-450	372
MERCURY	11/12	0.02 - 0.415 J	0.2	2/4	0.41 J - 0.474	0.3	1/6	0.182	0.1
NICKEL	12/12	14.8 J - 57.35	26.0	1/4	28.8	20.1	7/7	20.2-30.6	25.9
SILVER	12/12	0.03 J - 4 J	1.0	1/4	0.13	0.1	6/6	0.336-0.61	0.5
ZINC	12/12	28.5 J - 100	65.0	1/4	298.3	139	7/7	84.9-170.4	109

TABLE C - 2

COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Monitoring Station 07 Sediment Samples								
	Cumulative Monitoring Station Data (1)			1996 to 1997 Samples (2)			EERA Samples (3)		
	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	2.1 - 8.19 J	4.5	1/4	2.75	3.1	---	---	---
1-METHYLNAPHTHALENE	9/12	4.2 - 18 J	10.5	4/4	2.7 J - 5.1 J	4.4	---	---	---
1-METHYLPHENANTHRENE	12/12	12.8 - 70.8	36.1	4/4	4.8 J - 15.1	11.8	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	2.3 - 16.9	8.1	4/4	0.9 J - 1.8 J	1.2	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	4.3 - 19.5	10.8	4/4	5.5 J - 10.2	7.2	---	---	---
2-METHYLNAPHTHALENE	9/12	6.9 - 27.3 J	16.1	4/4	4.6 - 8.35	6.1	---	---	---
ACENAPHTHENE	12/12	6.81 - 53.2	19.6	4/4	2.6 J - 12.1	7.2	---	---	---
ACENAPHTHYLENE	12/12	20.5 J - 116 J	59.3	4/4	9 - 17.7	12.8	---	---	---
ANTHRACENE	12/12	37.2 J - 280	137	4/4	19 - 45.3	34.2	7/7	42-327	142
BENZO(A)ANTHRACENE	12/12	93.6 J - 580	246	4/4	53.4 - 135	99.3	7/7	150-503	329
BENZO(A)PYRENE	12/12	85.6 J - 879	330	4/4	79.1 - 120	99.0	7/7	200-449	331
BENZO(B)FLUORANTHENE	12/12	115 - 740	358	4/4	162 - 239	188	---	---	---
BENZO(E)PYRENE	12/12	60.5 - 416	172	4/4	58.8 - 90.1	73.3	7/7	160-304	236
BENZO(G,H,I)PERYLENE	12/12	55.4 - 469	181	4/4	55.35 - 65.2 J	59.0	7/7	82-186	133
C1-PHENANTHRENES/ANTHRACENES	12/12	48.6 - 338	136	---	---	---	7/7	146-1530	486
C2-PHENANTHRENES/ANTHRACENES	12/12	33 - 274	107	---	---	---	7/7	120-1740	459
C3-PHENANTHRENES/ANTHRACENES	12/12	16.5 - 196	65.9	---	---	---	7/7	62-1930	400
C4-PHENANTHRENES/ANTHRACENES	12/12	7.7 - 145	38.2	---	---	---	6/7	23-2640	508
CHRYSENE	12/12	87.6 - 619	265	4/4	65.1 - 116	94.7	7/7	160-490	310
DIBENZO(A,H)ANTHRACENE	12/12	15.1 - 132	48.1	4/4	15.3 - 19.4 J	16.9	7/7	25.1-84	46.8
FLUORANTHENE	12/12	183 - 940	449	4/4	130 - 289	201	7/7	240-1220	712
FLUORENE	12/12	9.97 - 89.9 J	37.5	4/4	4.4 J - 18.7	9.5	7/7	11.8-102	35.3
INDENO(1,2,3-CD)PYRENE	12/12	64.4 J - 495 J	180	4/4	47.7 - 68.2	57.3	7/7	83.7-179	138
NAPHTHALENE	9/12	10 - 49.4	27.2	4/4	6.3 - 8.45	7.7	---	---	---
PERYLENE	12/12	21.9 J - 246	79.4	4/4	22.05 - 42.4	27.7	7/7	68-110	88.4
PHENANTHRENE	12/12	73.5 - 462	201	4/4	58.8 - 134.9	108	7/7	150-989	379
PYRENE	12/12	171 - 943 J	419	4/4	115 - 248	188	7/7	270-1190	695
Pesticides/PCB's (UG/KG)									
2,4'-DDD	10/12	1.1 - 4	2.0	---	---	---	4/4	0.763-3.61	1.8
2,4'-DDE	12/12	0.07 J - 0.61	0.3	0/4	0	0.4	1/3	0.315	0.2
2,4'-DDT	8/12	0.04 - 2.3	0.3	4/4	0.5 J - 0.825	0.7	2/4	0.41-0.68	0.4
4,4'-DDD	9/12	1.1 - 6.5	2.3	4/4	2.05 - 3.7	2.7	8/8	1.62-5.09	2.8
4,4'-DDE	10/12	0.74 - 3.5	1.8	4/4	2.2 - 3.2	2.8	6/8	0.915-2.126	1.3
4,4'-DDT	9/12	0.5 - 5.9 J	1.4	3/4	2.7 - 5	3.4	6/6	0.755-27.178	8.8
ALDRIN	5/12	0.03 - 6.2	0.7	0/4	0	0.4	2/4	0.55-0.811	0.5
ALPHA-CHLORDANE	12/12	0.06 J - 0.55	0.3	3/4	0.1	0.2	5/8	0.188-0.725	0.3
GAMMA-BHC (LINDANE)	3/12	0.06 J - 0.12 J	0.2	0/4	0	0.3	0/3	0	0.2
HEPTACHLOR	6/12	0.045 J - 0.34	0.1	1/4	0.1	0.2	1/4	0.22	0.2
HEPTACHLOR EPOXIDE	6/12	0.007 J - 0.25	0.0	0/4	0	0.3	0/3	0	0.1
HEXACHLOROBENZENE	5/12	0.02 J - 0.29	0.1	1/4	0.1	0.2	3/8	0.055-0.0669	0.1
MIREX	6/12	0.054 - 0.26	0.1	1/4	0.1	0.3	0/3	0	0.3
PCB-101/90	12/12	0.26 - 2.4	1.5	1/4	0.9	0.5	6/7	0.723-1.92	1.0
PCB-105	12/12	0.34 J - 2.1	0.8	2/4	0.3 J - 0.5 J	0.4	7/7	0.355-1.04	0.7
PCB-118	12/12	0.25 - 2.2	1.3	1/4	1.1	0.5	7/7	0.757-1.55	1.2
PCB-126	5/12	0.02 J - 0.29	0.2	1/4	0.3	0.3	---	---	---

TABLE C - 2

COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-128	12/12	0.11 - 1.4	0.5	1/4	0.4	0.2	7/7	0.215-0.831	0.5
PCB-138/160	8/12	1.5 - 3.6	1.9	1/4	1.8	0.8	6/6	1.16-2.35	1.7
PCB-153/132	8/12	1.4 - 9.5	2.4	1/4	1.3	0.6	7/7	1.18-2.521	1.9
PCB-170/190	10/12	0.27 J - 9.6	3.5	2/4	0.3 J - 0.5	0.3	7/7	0.248-1.177	0.6
PCB-18/17	10/12	0.29 J - 1.2	0.6	2/4	0.5 J - 0.85	0.5	4/6	0.215-1.137	0.4
PCB-180	6/12	0.73 - 2.3 J	1.0	1/4	0.6	0.4	7/7	0.612-1.3	0.9
PCB-187	10/12	0.13 J - 2.6	1.0	3/4	0.5 J - 0.6	0.4	7/7	0.533-1.659	0.9
PCB-195/208	12/12	0.11 - 5.9	1.0	2/4	0.1	0.2	6/7	0.2-0.76	0.3
PCB-206	10/12	0.59 - 15	2.2	2/4	0.6 - 0.8	0.5	7/7	0.467-10.887	2.3
PCB-209	9/12	0.35 - 5.47 J	1.0	2/4	0.3 J - 0.8	0.4	6/6	0.243-0.978	0.6
PCB-28	12/12	0.14 J - 3.1	0.8	2/4	1 - 2	0.9	6/7	0.182-1.279	0.5
PCB-44	12/12	0.047 J - 1.3	0.5	---	---	---	6/7	0.134-0.997	0.3
PCB-52	12/12	0.27 - 1.2	0.8	2/4	0.6 J - 1.05	0.6	6/7	0.299-1.68	0.7
PCB-66	11/12	0.3 - 0.92	0.6	2/4	0.4 - 0.7	0.4	2/3	0.566-0.953	0.6
PCB-8/5	12/12	0.01 J - 0.86	0.4	1/4	0.3	0.2	6/7	0.14-0.669	0.3
SUM OF PCBS	---	---	---	4/4	2.6 - 26.2	11.8	7/7	7.5643-22.761	14.9
TRANS-NONACHLOR	11/12	0.04 J - 0.29	0.2	3/4	0.1	0.2	4/8	0.155-0.39	0.2
Inorganics (MG/KG)									
ALUMINUM	12/12	43044.51 - 67478	55955	4/4	3894.6 - 23397.3	9061	7/7	22600-47500	33260
ARSENIC	12/12	6.7 - 15.05	11.6	4/4	3.8 - 6.2	5.5	6/6	5.439-16	7.9
CADMIUM	9/12	0.18 - 0.65	0.3	4/4	0.06 J - 0.2	0.1	6/6	0.21-0.464	0.4
CHROMIUM	12/12	53.5 - 125.08	89.0	4/4	32.3 J - 113.6	68.4	7/7	64.1-121.6	81.8
COPPER	12/12	18.3 - 47.5	29.7	3/4	15.6 J - 20.3 J	13.2	6/7	17.37-26	18.1
IRON	12/12	17367.24 - 31003	24067	4/4	9763 - 22695.9	16178	7/7	12900-34040	19077
LEAD	12/12	38.8 J - 70.2	54.3	4/4	14.8 J - 59.65 J	33.8	7/7	22.7-44.91	38.3
MANGANESE	12/12	258.43 - 433	360	4/4	228 - 463.9 J	307	7/7	158-413	296
MERCURY	11/12	0.1 J - 0.49	0.2	2/4	0.06 J - 0.101	0.1	3/6	0.701-0.714	0.4
NICKEL	12/12	15.9 J - 31.9	24.6	1/4	19.7	16.0	7/7	12.7-26.5	18.2
SILVER	12/12	0.15 - 3.95 J	1.1	0/3	0	0.1	6/6	0.263-0.35	0.3
ZINC	12/12	50.1 J - 122	86.8	1/4	273.8	103	7/7	55.4-126.3	77.5

TABLE C - 2

COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	1.8 - 9.6 J	5.5	3/4	4.6 J - 6.3	4.9	---	---	---
1-METHYLNAPHTHALENE	9/12	3.71 J - 27.1 J	15.1	4/4	9 - 27.75 J	16.4	---	---	---
1-METHYLPHENANTHRENE	12/12	5.9 - 85.2 J	41.2	4/4	24.6 - 69.7 J	39.8	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	1.89 - 18.6	10.1	4/4	2.6 J - 7.2 J	4.2	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	3.1 - 22.9	13.6	3/4	9.2 - 15.2	10.8	---	---	---
2-METHYLNAPHTHALENE	9/12	7.26 J - 41.9 J	24.6	4/4	14.2 - 29.1 J	19.6	---	---	---
ACENAPHTHENE	12/12	7 - 62.9 J	36.6	4/4	11.4 - 43.9 J	25.0	---	---	---
ACENAPHTHYLENE	12/12	20.5 J - 108 J	70.3	4/4	31.7 - 48.95 J	38.8	---	---	---
ANTHRACENE	12/12	43.5 - 410.2 J	224	4/4	90.7 - 228 J	145	10/10	63-190	96.2
BENZO(A)ANTHRACENE	12/12	73.8 - 689	375	4/4	173 - 682.5 J	358	10/10	190-399	316
BENZO(A)PYRENE	12/12	32.5 J - 937	456	4/4	209 - 388.5 J	278	10/10	270-530	377
BENZO(B)FLUORANTHENE	12/12	136 J - 905	523	4/4	556 - 999.5 J	703	---	---	---
BENZO(E)PYRENE	12/12	79.7 - 476	268	4/4	198 - 350.5 J	246	10/10	210-431	305
BENZO(G,H,I)PERYLENE	12/12	80.3 J - 529 J	266	4/4	129 - 232 J	173	10/10	140-387	218
C1-PHENANTHRENES/ANTHRACENES	12/12	28.8 - 301.3 J	168	---	---	---	9/10	190-351	241
C2-PHENANTHRENES/ANTHRACENES	12/12	15.6 - 231	115	---	---	---	10/10	130-282	208
C3-PHENANTHRENES/ANTHRACENES	12/12	10.3 - 149	69.4	---	---	---	9/10	27-175	94.8
C4-PHENANTHRENES/ANTHRACENES	12/12	5.5 - 77.7	32.4	---	---	---	4/10	244-300	118
CHRYSENE	12/12	110.6 J - 718	405	4/4	197 - 592 J	360	10/10	190-420	327
DIBENZO(A,H)ANTHRACENE	12/12	19.2 J - 165 J	77.6	4/4	36.4 - 64.95 J	49.9	10/10	25-87.4	53.8
FLUORANTHENE	12/12	52.1 J - 1194.4 J	676	4/4	558 - 1875 J	999	10/10	390-1290	769
FLUORENE	12/12	8.14 - 92.2 J	52.7	4/4	20.4 - 39.8 J	28.5	10/10	17.4-69	30.1
INDENO(1,2,3-CD)PYRENE	12/12	76 - 607 J	295	4/4	146 - 227.5 J	174	10/10	135-346	215
NAPHTHALENE	9/12	8.71 J - 60.3 J	34.4	4/4	15.1 - 34.75 J	24.8	---	---	---
PERYLENE	12/12	21.6 J - 151	85.0	4/4	60 - 94.3 J	75.5	10/10	100-160	123
PHENANTHRENE	12/12	76.3 - 651 J	339	4/4	248 - 649 J	433	10/10	190-530	310
PYRENE	12/12	147 J - 1090.1 J	668	4/4	543 - 1565 J	828	10/10	410-1300	795
Pesticides/PCB's (UG/KG)									
2,4'-DDD	12/12	3.7 - 48	21.6	---	---	---	6/6	1.5-3.1	2.3
2,4'-DDE	12/12	0.11 J - 1.6	0.9	2/4	0.6 - 0.9	0.6	6/6	0.9-2.6	1.7
2,4'-DDT	12/12	0.17 - 37	12.3	3/4	8.4 - 37.5	16.4	6/6	0.81-4.2	1.9
4,4'-DDD	11/12	5.6 - 135	55.5	4/4	71.3 - 267	161.8	10/10	0.9-14	7.3
4,4'-DDE	12/12	2.4 - 22	12.8	4/4	12.7 - 38.3	22.1	10/10	2.05-6.4	3.9
4,4'-DDT	11/12	2 - 285	67.7	4/4	37.1 - 166	82.6	9/10	2.17-11.5	4.4
ALDRIN	8/12	0.02 J - 6	1.5	0/4	0	0.4	1/6	1.8	0.6
ALPHA-CHLORDANE	12/12	0.46 - 3.3	1.6	4/4	1.2 - 2.6	1.9	7/10	0.312-1.6	0.6
GAMMA-BHC (LINDANE)	5/12	0.02 J - 0.25 J	0.2	1/4	0.2	0.3	0/6	0	0.4
HEPTACHLOR	9/12	0.05 J - 0.41	0.2	4/4	0.3 J - 0.4 J	0.3	0/6	0	0.4
HEPTACHLOR EPOXIDE	4/12	0.089 - 0.3	0.1	1/4	0.1	0.2	0/6	0	0.4
HEXACHLOROBENZENE	7/12	0.02 J - 0.14	0.1	3/4	0.1 - 0.2 J	0.2	2/10	0.0653-0.9	0.3
MIREX	9/12	0.02 J - 0.2	0.1	4/4	0.7 - 2.1	1.3	2/6	1.4-1.9	0.9
PCB-101/90	12/12	2.1 - 26.5 J	7.6	4/4	4.3 - 5.9	5.0	10/10	1.64-3.4	2.4
PCB-105	12/12	0.58 - 12.15 J	3.0	3/4	1.4 - 1.9	1.5	8/10	1.24-10	2.3
PCB-118	12/12	0.88 - 19.05 J	4.7	3/4	3.4 - 4.65	3.6	10/10	1.99-3.8	2.8
PCB-126	6/12	0.043 J - 0.12 J	0.1	1/4	3.7	1.1	---	---	---

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-128	12/12	0.59 - 5.6 J	1.9	3/4	1.8 - 2.3	1.6	10/10	0.475-6.1	1.7
PCB-138/160	12/12	4.3 - 26 J	13.3	4/4	10.2 - 15.6	13.4	10/10	3.03-8.3	4.5
PCB-153/132	12/12	3.6 - 29 J	15.8	4/4	9.55 - 14.7	12.1	10/10	2.89-13	5.5
PCB-170/190	11/12	1.1 J - 34.5 J	9.9	4/4	3.9 - 17	7.9	10/10	0.67-4.8	2.1
PCB-18/17	11/12	0.088 J - 2 J	0.7	2/4	0.4 J - 0.5 J	0.4	6/10	0.125-3.1	1.1
PCB-180	12/12	3.4 - 29.5 J	11.5	4/4	8.1 - 30.5	16.0	10/10	1.371-15	3.5
PCB-187	12/12	2.4 - 15.5	7.4	4/4	4.9 - 12.1	7.5	10/10	1.2-15	3.4
PCB-195/208	12/12	1 - 8.35 J	3.3	4/4	0.6 - 3.9	1.8	9/10	0.667-5.81	1.8
PCB-206	12/12	1.6 - 17 J	6.4	4/4	5.1 - 10.3	7.0	10/10	1.54-17.142	5.3
PCB-209	12/12	0.4 - 5.035 J	2.0	4/4	1.2 - 2	1.6	9/10	0.682-6.69	1.9
PCB-28	10/12	0.22 - 3.2	1.0	2/4	0.7 - 1.1	0.7	10/10	0.375-2.4	1.4
PCB-44	12/12	0.32 - 5.75 J	1.4	---	---	---	10/10	0.359-1.453	0.9
PCB-52	12/12	0.59 - 15.6 J	3.3	4/4	1.6 - 2.7	2.0	10/10	0.609-2	1.4
PCB-66	12/12	0.25 - 3.85 J	1.3	1/4	4	1.2	5/7	0.669-7.6	3.0
PCB-8/5	10/12	0.13 J - 0.84 J	0.4	2/4	0.4 - 0.5	0.3	7/10	0.35-1.424	0.6
SUM OF PCBS	---	---	---	4/4	117.8 - 241.4	176.5	10/10	20.08-95.9	45.7
TRANS-NONACHLOR	12/12	0.22 - 2.1	1.1	4/4	0.9 - 1.4	1.1	5/10	0.29-1.1	0.5
Inorganics (MG/KG)									
ALUMINUM	12/12	45100 - 64359	54164	4/4	8092 J - 23740.5	12977	8/8	25800-64433.7	45718
ARSENIC	12/12	9.64 - 13.95	12.0	4/4	7.2 - 9.7 J	8.7	8/8	12.2-19.6	16.3
CADMIUM	11/12	0.14 - 0.57	0.3	4/4	0.17 - 0.265	0.2	8/8	0.7-1.41	1.1
CHROMIUM	12/12	85.8 - 218.9	141	4/4	115.35 J - 259	187	8/8	87.3-205	172
COPPER	12/12	77.5 - 755.5 J	315	4/4	192 J - 312 J	248	8/8	35.7-92.4	70.2
IRON	12/12	24000 - 80067	49024	4/4	41221 - 78925.4	57923	8/8	15800-38208.2	32980
LEAD	12/12	66.2 - 428 J	190	4/4	133.3 - 542 J	261	8/8	42.9-122.4	87.1
MANGANESE	12/12	304.54 - 958	516	4/4	363 - 651 J	475	8/8	177-458.6	355
MERCURY	11/12	0.06 J - 0.46	0.2	2/4	0.12 J - 0.284	0.2	3/8	0-0.8	0.2
NICKEL	12/12	25.2 J - 174 J	83.0	3/4	45.45 - 141 J	80.7	8/8	17.7-41.4	33.8
SILVER	12/12	0.19 - 4.46	1.5	1/3	0.31	0.2	8/8	0.37-1.3	0.8
ZINC	12/12	90 J - 1034	534	3/4	316.3875 - 1089	654	8/8	95.8-206	172

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	1.08 - 11.65	4.7	1/4	2.6	3.1	---	---	---
1-METHYLNAPHTHALENE	9/12	1.11 J - 47.6 J	14.8	4/4	3.8 J - 19.3	9.1	---	---	---
1-METHYLPHENANTHRENE	12/12	1.63 - 72.95	30.6	4/4	7.1 - 53.6 J	20.3	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	0.64 J - 15.7	8.4	3/4	0.8 J - 3.1	2.1	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	1.19 J - 27.3 J	12.8	3/4	8.7 - 24	11.7	---	---	---
2-METHYLNAPHTHALENE	9/12	1.85 J - 50.7	21.1	4/4	6.4 - 17.4	10.0	---	---	---
ACENAPHTHENE	12/12	0.8 - 84.15 J	33.3	4/4	4 J - 32.9	11.7	---	---	---
ACENAPHTHYLENE	12/12	5.38 - 113 J	40.6	4/4	5.5 - 28.8	12.3	---	---	---
ANTHRACENE	12/12	11.8 - 414.75 J	150	4/4	18.5 - 147.3	55.0	6/6	79-120	97.4
BENZO(A)ANTHRACENE	12/12	10.1 - 571.7	254	4/4	50 J - 485	168	6/6	180-450	316
BENZO(A)PYRENE	12/12	9.88 - 816.95 J	268	4/4	45.3 - 393	153	6/6	230-570	383
BENZO(B)FLUORANTHENE	12/12	17.7 J - 913 J	352	4/4	102 - 755	315	---	---	---
BENZO(E)PYRENE	12/12	9.44 - 471.5 J	179	4/4	65.1 - 307	133	6/6	160-456	308
BENZO(G,H,I)PERYLENE	12/12	6.87 - 478 J	177	4/4	45 - 235	100	6/6	120-380	206
C1-PHENANTHRENES/ANTHRACENES	12/12	5.39 - 264.75	129	---	---	---	6/6	100-300	225
C2-PHENANTHRENES/ANTHRACENES	12/12	3.69 - 203.5	87.5	---	---	---	6/6	51-289	143
C3-PHENANTHRENES/ANTHRACENES	12/12	1.96 - 104.1 J	45.4	---	---	---	3/6	58-154	71.3
C4-PHENANTHRENES/ANTHRACENES	12/12	0.47 J - 82.8	21.0	---	---	---	0/5	0	30.8
CHRYSENE	12/12	12.2 - 603.5 J	267	4/4	48.9 J - 386	143	6/6	180-606	374
DIBENZO(A,H)ANTHRACENE	12/12	2.04 - 117 J	47.2	4/4	15 - 68.2	30.6	4/6	25-61.5	39.8
FLUORANTHENE	11/12	14.8 - 1120 J	473	4/4	109 - 979	347	6/6	390-1000	676
FLUORENE	12/12	1.65 - 105.75 J	42.4	4/4	4 J - 30.9	11.5	5/6	21-57	30.1
INDENO(1,2,3-CD)PYRENE	12/12	7.4 J - 507 J	198	3/4	39 - 231	88.4	6/6	110-340	197
NAPHTHALENE	10/12	3.14 - 97.1	33.9	4/4	6.9 - 16.2	11.3	---	---	---
PERYLENE	12/12	2.72 - 209.5 J	65.6	4/4	21.8 - 102	44.3	6/6	76-188	134
PHENANTHRENE	12/12	7.41 - 571.3	256	4/4	59.8 - 428	159	6/6	210-450	344
PYRENE	12/12	13.4 - 1038 J	450	4/4	108 - 887	314	6/6	350-940	632
Pesticides/PCB's (UG/KG)									
2,4'-DDD	12/12	0.11 - 7.1	2.2	---	---	---	6/6	0.8-2.93	2.1
2,4'-DDE	12/12	0.05 J - 0.6	0.2	0/4	0	0.4	4/5	0.8-2.2	1.4
2,4'-DDT	12/12	0.22 - 1	0.6	4/4	0.8 J - 2.3	1.4	4/6	0.63-2	0.9
4,4'-DDD	12/12	0.28 - 4.55 J	2.4	4/4	2.8 - 5.9	4.0	6/6	5.5-16	9.0
4,4'-DDE	12/12	0.2 - 3.7	1.8	4/4	1.1 - 3	2.1	6/6	2.4-5.3	3.6
4,4'-DDT	12/12	0.6 - 4.75 J	2.5	4/4	3.4 - 15	8.1	6/6	2.2-6.8	4.2
ALDRIN	7/12	0.94 - 6	2.0	1/4	0.1	0.3	1/5	1.8	0.7
ALPHA-CHLORDANE	12/12	0.07 - 1	0.6	3/4	0.3 - 0.6 J	0.5	2/6	0.53-1	0.5
GAMMA-BHC (LINDANE)	5/12	0.01 J - 0.21 J	0.2	0/4	0	0.3	0/5	0	0.3
HEPTACHLOR	10/12	0.03 J - 0.43	0.2	3/4	0.1 J - 0.2 J	0.2	0/5	0	0.3
HEPTACHLOR EPOXIDE	6/12	0.007 J - 0.39	0.1	0/4	0	0.3	2/6	0.9-0.97	0.6
HEXACHLOROBENZENE	9/12	0.08 - 5.6	0.7	3/4	0.1 J - 0.3 J	0.2	4/6	0.52-7.2	1.7
MIREX	4/12	0.01 J - 0.195 J	0.1	2/4	0.1 J - 0.3	0.3	2/6	0.04-1.7	0.5
PCB-101/90	12/12	0.93 - 5.8 J	2.9	3/4	1.5 - 5.1	2.7	6/6	1.4-3.73	2.4
PCB-105	12/12	0.36 J - 2.15 J	1.2	3/4	0.7 - 2.3	1.1	4/6	1.47-3.5	1.8
PCB-118	12/12	0.72 - 4.5 J	2.0	2/4	2.9 - 5.1	2.4	6/6	1.6-3.57	2.4
PCB-126	7/12	0.041 J - 0.2125 J	0.1	1/4	1.8	0.6	---	---	---

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-128	12/12	0.27 - 1.65 J	0.8	1/4	1.6	0.8	5/6	0.87-1.7	1.1
PCB-138/160	12/12	1.2 - 8.6 J	4.1	4/4	2.7 - 6.9	4.9	6/6	2.8-4.8	3.8
PCB-153/132	12/12	1 - 9.1 J	4.1	3/4	2.9 - 7.6	3.9	6/6	3.3-6.112	4.7
PCB-170/190	10/12	0.17 J - 24.5 J	6.5	3/4	0.7 - 1.3	1.0	5/6	1.11-3.19	1.8
PCB-18/17	10/12	0.1 J - 9.1 J	1.1	2/4	0.3 J - 0.4 J	0.4	3/6	0.84-1.6	0.9
PCB-180	12/12	0.78 J - 5.15	3.0	3/4	1.5 - 3.3	2.2	5/6	1.1-3.3	1.8
PCB-187	12/12	0.91 - 6 J	2.6	4/4	1.5 - 2.9	2.3	6/6	1.1-2.8	2.0
PCB-195/208	12/12	0.8 - 4.2 J	2.2	0/4	0	0.3	4/6	1.1-1.9	1.1
PCB-206	12/12	1.7 - 9.1 J	5.3	4/4	3.5 - 7.8	5.3	6/6	1.1-17.046	5.1
PCB-209	12/12	0.45 - 3.3	1.5	4/4	0.8 - 1.7	1.3	4/6	0.7-2.007	1.1
PCB-28	11/12	0.32 - 2.5	1.1	2/4	0.5 J - 0.7 J	0.6	6/6	0.6-2.8	1.5
PCB-44	12/12	0.27 - 3.25 J	1.1	---	---	---	4/6	0.8-1.468	0.9
PCB-52	12/12	0.47 - 2.95	1.5	3/4	0.8 - 2.5	1.3	6/6	0.8-2.21	1.3
PCB-66	12/12	0.2 - 1.6	0.8	1/4	1.6	0.6	5/6	1.8-5.2	2.6
PCB-8/5	9/12	0.2 J - 2.2	0.5	2/4	0.4 - 0.6	0.3	4/6	0.67-1.4	0.8
SUM OF PCBS	---	---	---	4/4	32.6 - 113.6	63.7	6/6	22.7-51.571	38.0
TRANS-NONACHLOR	12/12	0.02 J - 0.69	0.4	3/4	0.2 J - 0.3 J	0.3	2/6	0.48-0.744	0.5
Inorganics (MG/KG)									
ALUMINUM	12/12	45148 - 66568	53489	4/4	1289 J - 22953.1	13341	8/8	11000-58867.5	39230
ARSENIC	12/12	6.7 - 18.5	12.7	4/4	4 J - 11	6.0	8/8	13.8-17.6	15.4
CADMIUM	10/12	0.14 - 0.82	0.4	4/4	0.12 - 0.57 J	0.3	8/8	0.76-1.08	0.9
CHROMIUM	12/12	69.2 - 136	108	4/4	55.8 J - 106.5	78.2	8/8	145-182.6	160
COPPER	12/12	73.3 - 511	179	4/4	77.2 J - 126.7 J	103	8/8	43.3-71.4	53.8
IRON	12/12	25268 - 43900	35065	4/4	22225 J - 41746.4	28039	8/8	28600-35700	32306
LEAD	12/12	65.5 J - 190 J	120	4/4	76.9 - 516 J	207	8/8	49.7-84.6	70.6
MANGANESE	12/12	349.45 - 1160	586	4/4	187 - 674.3 J	361	8/8	163-542	383
MERCURY	12/12	0.04 J - 0.39 J	0.2	1/4	0.07	0.1	3/8	0-0.2	0.1
NICKEL	12/12	32.4 J - 160	64.2	2/4	30.2 J - 58.8 J	33.5	8/8	28.6-39.3	33.2
SILVER	12/12	0.21 - 5.68 J	1.5	1/3	0.19	0.1	8/8	0.35-0.9	0.6
ZINC	12/12	106 J - 484	230	1/4	514	267	8/8	125-168	146

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameters	Monitoring Station 10 Sediment Samples: Cumulative Monitoring Station Data [1] Frequency of Detection	Range of Detections	Mean Concentration	1996 to 1997 Samples [2] Frequency of Detection	Range of Detections	Mean Concentration	EERA Samples [3] Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
1,1-BIPHENYL	9/12	2.7 - 20.9 J	7.0	6/12	1.1 J - 14.3	4.7	---	---	---
1-METHYLNAPHTHALENE	9/12	5.35 - 38.2	15.8	11/12	1.7 J - 24.5	8.9	---	---	---
1-METHYLPHENANTHRENE	12/12	4.35 - 143 J	67.5	12/12	5.4 J - 77.5	20.0	---	---	---
2,3,5-TRIMETHYLNAPHTHALENE	12/12	1.93 - 56.6	20.4	11/12	0.9 J - 15.1	3.3	---	---	---
2,6-DIMETHYLNAPHTHALENE	12/12	2.35 - 51	19.9	11/12	3.1 J - 42.9	12.8	---	---	---
2-METHYLNAPHTHALENE	9/12	11.25 - 44.7	22.6	11/12	4.2 - 40.2	14.5	---	---	---
ACENAPHTHENE	12/12	1.06 - 112	32.2	12/12	1.4 J - 53	9.5	---	---	---
ACENAPHTHYLENE	12/12	3.22 J - 237	108	12/12	2.3 J - 60.5	16.8	---	---	---
ANTHRACENE	12/12	13.7 - 1650	612	12/12	7.7 J - 366	71.3	4/4	48.9-250	121
BENZO(A)ANTHRACENE	12/12	30.4 - 1718	707	12/12	13.1 J - 559	153	4/4	199-423	297
BENZO(A)PYRENE	12/12	46.5 - 1750	727	12/12	20.1 - 505	135	4/4	194-380	280
BENZO(B)FLUORANTHENE	12/12	45.4 - 2282	784	12/12	43.9 - 1010	290	---	---	---
BENZO(E)PYRENE	12/12	36.3 - 1039	382	12/12	23.8 - 318	105	4/4	173-245	212
BENZO(G,H,I)PERYLENE	12/12	38.4 - 779	334	12/12	16.1 - 228 J	74.2	4/4	60.7-157	101
C1-PHENANTHRENES/ANTHRACENES	12/12	25.9 - 887	330	---	---	---	4/4	145-490	258
C2-PHENANTHRENES/ANTHRACENES	12/12	16.7 - 475	208	---	---	---	4/4	110-580	246
C3-PHENANTHRENES/ANTHRACENES	12/12	8.12 - 230	101	---	---	---	4/4	55.3-290	125
C4-PHENANTHRENES/ANTHRACENES	12/12	5.4 - 97.4	38.0	---	---	---	4/4	104-840	328
CHRYSENE	12/12	33.3 - 1946	644	12/12	14.8 J - 438	157	4/4	320-381	346
DIBENZO(A,H)ANTHRACENE	12/12	11.6 - 254 J	105	11/12	10.6 - 83.6	23.7	4/4	18.6-44	30.4
FLUORANTHENE	12/12	74.1 - 3508	1239	12/12	39.5 - 1260	351	4/4	558-1390	814
FLUORENE	12/12	3.78 - 386	109	11/12	2.45 J - 81.4	17.2	4/4	9.35-75	27.0
INDENO(1,2,3-CD)PYRENE	12/12	30.9 - 971 J	408	12/12	15.5 - 262 J	75.2	4/4	62.8-170	112
NAPHTHALENE	9/12	20.5 - 103.4	47.0	12/12	2.8 J - 59.6	16.0	---	---	---
PERYLENE	12/12	11.7 - 285 J	127	12/12	8.4 - 126	37.6	4/4	40.7-110	70.6
PHENANTHRENE	12/12	49.1 - 1620	546	12/12	20.2 - 843	184	4/4	157-490	295
PYRENE	12/12	56.2 J - 2735 J	1030	12/12	30.8 - 973	281	4/4	500-1210	702
Pesticides/PCB's (UG/KG)									
2,4'-DDD	10/12	1.5 - 27.5	9.0	---	---	---	1/1	1.359	1.4
2,4'-DDE	11/12	0.11 - 0.8	0.3	5/12	0.2 - 0.6 J	0.4	0/1	0	0.3
2,4'-DDT	10/12	0.05 - 23	3.5	12/12	1.2 - 20	6.7	1/1	3.728	3.7
4,4'-DDD	10/12	2.8 - 94	24.3	12/12	1.4 - 289	57.1	4/4	4.562-62.1	35.8
4,4'-DDE	10/12	0.9 - 13	4.4	12/12	2.9 - 14.3	7.9	4/4	1.969-17.3	11.7
4,4'-DDT	9/12	0.58 - 66	14.8	12/12	9.2 - 265	51.9	4/4	47.9-82.2	62.6
ALDRIN	5/12	0.01 J - 11	1.4	2/12	0.1 J - 0.2 J	0.3	1/1	6.044	6.0
ALPHA-CHLORDANE	12/12	0.22 - 45	6.8	11/12	0.35 J - 24	5.3	4/4	1.085-1.4	1.2
GAMMA-BHC (LINDANE)	6/12	0.09 J - 0.38	0.2	1/12	0.1	0.3	1/1	1.025	1.0
HEPTACHLOR	8/12	0.12 J - 0.96	0.3	7/12	0.1 J - 0.2 J	0.2	0/1	0	0.3
HEPTACHLOR EPOXIDE	3/12	0.01 J - 0.55 J	0.1	2/12	0.5	0.3	0/1	0	0.2
HEXACHLOROBENZENE	7/12	0.02 J - 0.24	0.1	6/12	0.1 J - 0.2 J	0.2	4/4	0.0505-0.862	0.3
MIREX	6/12	0.03 J - 0.81	0.1	5/12	0.1 J - 0.3 J	0.3	0/1	0	0.3
PCB-101/90	12/12	0.92 - 4.3 J	2.1	5/12	0.4 J - 1.9	0.9	4/4	1.072-1.66	1.4
PCB-105	12/12	0.21 J - 1.7 J	0.8	7/12	0.1 J - 1.7	0.5	4/4	0.605-1.437	1.0
PCB-118	12/12	0.93 - 4.05 J	2.1	6/12	0.3 J - 3.7	1.0	4/4	1.28-1.68	1.5
PCB-126	6/12	0.023 J - 0.13 J	0.1	7/12	0.1 J - 0.3 J	0.2	---	---	---

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BASELINE INTERIM OFFSHORE MONITORING REPORT
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	Monitoring Station 10								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-128	12/12	0.17 - 1.3	0.7	3/12	0.2 J - 0.8	0.4	4/4	0.389-1.884	0.8
PCB-138/160	10/12	1.95 - 12	3.5	7/12	0.7 - 5.9	2.1	4/4	2.02-2.95	2.6
PCB-153/132	11/12	1.575 - 16	3.9	6/12	0.5 - 3.4	1.2	4/4	1.82-2.93	2.3
PCB-170/190	12/12	0.22 J - 47	12.8	7/12	0.2 - 0.9	0.4	4/4	0.425-1	0.7
PCB-18/17	4/12	0.2 - 0.6 J	0.1	1/12	0.1	0.3	3/4	0.0868-0.763	0.2
PCB-180	9/12	0.755 - 16	2.4	5/12	0.3 J - 1.8	0.7	3/4	1-2.47	1.2
PCB-187	12/12	0.31 J - 8.9	2.2	7/12	0.3 J - 1.8	0.6	4/4	0.729-1.936	1.3
PCB-195/208	11/12	0.115 - 1.4	0.4	5/12	0.1 - 0.2 J	0.2	3/4	0.221-0.415	0.3
PCB-206	10/12	0.12075 J - 1.6	0.4	5/12	0.4 J - 1.3	0.5	4/4	0.486-1.702	0.9
PCB-209	10/12	0.13 J - 1.3	0.6	3/12	0.1 J - 0.25 J	0.2	4/4	0.18-1.441	0.5
PCB-28	12/12	0.16 J - 3	1.1	4/12	0.1 J - 0.15 J	0.3	3/4	0.127-0.179	0.2
PCB-44	12/12	0.2 J - 1.15 J	0.5	---	---	---	4/4	0.195-1.258	0.5
PCB-52	12/12	0.63 - 1.7 J	1.1	1/12	0.525	0.4	3/4	0.427-0.569	0.4
PCB-66	11/12	0.10975 J - 1.3	0.6	3/12	0.9 - 1.9	0.6	1/1	2.749	2.7
PCB-8/5	11/12	0.165 J - 2.8	0.6	5/12	0.1 J - 0.6	0.2	4/4	0.0594-1.902	0.5
SUM OF PCBS	---	---	---	12/12	2 - 45.2	16.2	4/4	11.2726-25.151	17.3
TRANS-NONACHLOR	12/12	0.02 J - 21	3.2	10/12	0.2 J - 7	1.7	3/4	0.584-0.729	0.5
Inorganics (MG/KG)									
ALUMINUM	12/12	36556.72 - 61000	49153	12/12	1500 J - 45400 J	16381	1/1	23900	23900
ARSENIC	12/12	6.5 - 17.6	10.3	12/12	4.4 - 10.25	6.4	1/1	12.3	12.3
CADMIUM	9/12	0.11 - 0.58 J	0.2	10/12	0.05 - 0.39 J	0.1	1/1	0.15	0.2
CHROMIUM	12/12	41.05 - 98	68.7	12/12	27.7 - 99.35	59.6	1/1	64.5	64.5
COPPER	12/12	17 J - 105 J	32.4	12/12	9.3 J - 68.8 J	29.8	1/1	18	18.0
IRON	12/12	15856 - 31849 J	22333	12/12	11916.8 - 33800	20205	1/1	15800	15800
LEAD	12/12	30.5 J - 116 J	70.9	12/12	29.5 J - 184 J	68.6	1/1	55.6	55.6
MANGANESE	12/12	185.02 - 469	358	12/12	126 - 513.8 J	309	1/1	354	354
MERCURY	12/12	0.03 J - 0.23	0.1	4/12	0.065 - 0.225	0.1	0/1	0	0.1
NICKEL	12/12	16.29 - 42.4	25.5	3/12	26.7 J - 34.2 J	20.1	1/1	18.8	18.8
SILVER	12/12	0.1 - 4.11	1.0	0/9	0	0.1	1/1	0.25	0.3
ZINC	12/12	38.125 J - 250	98.1	3/12	215.3 - 369.3	136	1/1	69.6	69.6

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12								
	Sediment Samples								
	Cumulative Monitoring Station Data (1)			1996 to 1997 Samples (2)			EERA Samples (3)		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
ANTHRACENE	12/12	196 - 2880	1270	---	---	---	3/3	438-642	539
BENZO(A)ANTHRACENE	12/12	438 J - 5833	2308	---	---	---	3/3	1230-1470	1367
BENZO(A)PYRENE	12/12	692 - 8467	2892	---	---	---	3/3	1150-1240	1183
BENZO(E)PYRENE	12/12	361 J - 3370 J	1351	---	---	---	3/3	823-893	849
BENZO(G,H,I)PERYLENE	12/12	343 J - 3248	1226	---	---	---	3/3	423-553	485
C1-PHENANTHRENES/ANTHRACENES	12/12	197 - 2452	935	---	---	---	3/3	904-1080	986
C2-PHENANTHRENES/ANTHRACENES	12/12	104 - 991	397	---	---	---	3/3	489-536	517
C3-PHENANTHRENES/ANTHRACENES	12/12	62.1 - 460	178	---	---	---	3/3	244-304	281
C4-PHENANTHRENES/ANTHRACENES	12/12	31.7 - 126	56.6	---	---	---	3/3	747-890	817
CHRYSENE	12/12	511 - 6585	2386	---	---	---	3/3	1390-1460	1417
DIBENZO(A,H)ANTHRACENE	12/12	96.9 J - 790	346	---	---	---	3/3	115-146	132
FLUORANTHENE	12/12	843 J - 13836.81 J	5345	---	---	---	3/3	4380-4750	4600
FLUORENE	12/12	95.5 J - 2434	821	---	---	---	3/3	115-177	150
INDENO(1,2,3-CD)PYRENE	12/12	399 J - 3740	1443	---	---	---	3/3	427-532	494
PERYLENE	12/12	112 - 1016	417	---	---	---	3/3	272-288	282
PHENANTHRENE	12/12	438.5 J - 10224	3977	---	---	---	3/3	2180-3270	2827
PYRENE	11/12	790 J - 11419.54 J	4145	---	---	---	3/3	4260-5000	4680
Pesticides/PCB's (UG/KG)									
4,4'-DDD	12/12	0.9 - 6.7 J	2.9	---	---	---	3/3	2.47-3.18	2.7
4,4'-DDE	12/12	0.69 - 3.1	1.4	---	---	---	3/3	2.07-2.83	2.4
4,4'-DDT	12/12	0.255 - 7.3	2.6	---	---	---	2/2	1.13-1.6	1.4
ALPHA-CHLORDANE	11/12	0.16 J - 1.6	0.8	---	---	---	3/3	0.32-0.413	0.4
GAMMA-BHC (LINDANE)	1/12	0.25	0.2	---	---	---	1/2	0.104	0.1
HEXACHLOROBENZENE	4/12	0.01 J - 2.46275	0.2	---	---	---	3/3	0.0478-0.138	0.1
PCB-101/90	12/12	2.45 - 9.1	5.0	---	---	---	3/3	4.86-7.36	6.1
PCB-105	12/12	0.91 J - 3.2 J	1.9	---	---	---	3/3	2.32-4.66	3.3
PCB-118	12/12	1.95 - 12	4.9	---	---	---	3/3	3.85-6.37	5.1
PCB-128	12/12	0.53 J - 5.7	1.7	---	---	---	3/3	0.918-1.75	1.3
PCB-138/160	12/12	2.6 - 25	9.1	---	---	---	3/3	6.87-11	8.6
PCB-153/132	12/12	3.3 J - 27	11.6	---	---	---	3/3	7.12-10.4	8.5
PCB-170/190	11/12	1.4 J - 117	45.8	---	---	---	3/3	1.98-2.99	2.4
PCB-18/17	9/12	0.011 J - 3.9 J	1.3	---	---	---	3/3	0.305-0.686	0.5
PCB-180	12/12	2.7 J - 57	12.4	---	---	---	3/3	4.77-6.99	5.6
PCB-187	12/12	1.65 J - 78	15.5	---	---	---	3/3	3.4-4.67	3.9
PCB-195/208	12/12	0.64 J - 35	5.9	---	---	---	3/3	1.1-1.5	1.2
PCB-206	12/12	0.57 - 107	13.1	---	---	---	3/3	2.51-3.32	2.8
PCB-209	12/12	0.31 - 34	5.8	---	---	---	3/3	0.75-1.14	0.9
PCB-28	12/12	1 - 11	4.0	---	---	---	3/3	0.821-1.03	0.9
PCB-44	12/12	0.485 - 6.2	2.2	---	---	---	3/3	1.16-1.42	1.3
PCB-52	12/12	1.4 - 11	3.8	---	---	---	3/3	2.17-2.8	2.5
PCB-66	12/12	0.315 - 8.5	2.7	---	---	---	2/2	1.7-1.76	1.7
PCB-8/5	10/12	0.245 J - 7.8	2.1	---	---	---	3/3	0.223-0.298	0.3
TRANS-NONACHLOR	12/12	0.0365 J - 0.52	0.2	---	---	---	3/3	0.296-0.426	0.3

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
ANTHRACENE	12/12	340 - 2269 J	756	---	---	---	2/2	280-650	465
BENZO(A)ANTHRACENE	12/12	515.4 J - 2398	985	---	---	---	2/2	620-800	710
BENZO(A)PYRENE	12/12	150 J - 1752	832	---	---	---	2/2	670-820	745
BENZO(E)PYRENE	12/12	343.3 J - 860	509	---	---	---	2/2	500-580	540
BENZO(G,H,I)PERYLENE	12/12	9.2 J - 554	369	---	---	---	2/2	240	240
C1-PHENANTHRENES/ANTHRACENES	12/12	47.2 - 2221	589	---	---	---	2/2	480-760	620
C2-PHENANTHRENES/ANTHRACENES	12/12	159 - 836	336	---	---	---	2/2	350-360	355
C3-PHENANTHRENES/ANTHRACENES	12/12	108.1 - 290 J	178	---	---	---	2/2	140-150	145
C4-PHENANTHRENES/ANTHRACENES	12/12	31.3 - 166.1	87.1	---	---	---	0/2	0	11.0
CHRYSENE	12/12	622.4 J - 2095	1016	---	---	---	2/2	650-1300	975
DIBENZO(A,H)ANTHRACENE	12/12	69 J - 243	111	---	---	---	2/2	84-87	85.5
FLUORANTHENE	12/12	1075 - 8447 J	2634	---	---	---	2/2	1300-1800	1550
FLUORENE	12/12	65 - 3752 J	496	---	---	---	2/2	89-150	120
INDENO(1,2,3-CD)PYRENE	12/12	337 J - 710	442	---	---	---	2/2	270-320	295
PERYLENE	12/12	98.4 J - 270 J	161	---	---	---	2/2	200-230	215
PHENANTHRENE	12/12	289 - 5800	1297	---	---	---	2/2	690-1500	1095
PYRENE	12/12	924.3 - 5957 J	2033	---	---	---	2/2	1300-1500	1400
Pesticides/PCB's (UG/KG)									
2,4'-DDD	12/12	0.46 - 8	4.1	---	---	---	2/2	1.439-3.029	2.2
2,4'-DDE	9/12	0.057 J - 0.28 J	0.1	---	---	---	2/2	0.765-1.282	1.0
2,4'-DDT	8/12	0.05 - 0.87	0.2	---	---	---	1/2	2.467	1.4
4,4'-DDD	12/12	0.93 - 2.9	1.6	---	---	---	2/2	2.79-4.468	3.6
4,4'-DDE	12/12	0.23 - 1.7	1.2	---	---	---	1/2	4.26	2.4
4,4'-DDT	12/12	0.31 - 5.1	1.6	---	---	---	2/2	20.683-90.476	55.6
ALDRIN	4/12	1 J - 10	1.8	---	---	---	1/2	19.75	10.0
ALPHA-CHLORDANE	12/12	0.33 - 1.3	0.6	---	---	---	2/2	1.52-2.921	2.2
GAMMA-BHC (LINDANE)	2/12	0.25 J - 0.47	0.3	---	---	---	2/2	0.768-1.064	0.9
HEPTACHLOR	5/12	0.06 J - 0.21 J	0.1	---	---	---	0/2	0	0.3
HEPTACHLOR EPOXIDE	0/12	0	0.1	---	---	---	0/2	0	0.2
HEXACHLOROBENZENE	6/12	0.01 J - 0.63	0.2	---	---	---	0/2	0	0.2
MIREX	1/12	0.24	0.1	---	---	---	0/2	0	0.3
PCB-101/90	12/12	0.79 - 3.8	2.3	---	---	---	2/2	2.887-3.524	3.2
PCB-105	12/12	0.49 J - 2 J	1.1	---	---	---	2/2	1.765-1.8	1.8
PCB-118	12/12	1.4 - 3.6	2.4	---	---	---	2/2	2.816-2.873	2.8
PCB-128	12/12	0.24 - 1.2 J	0.7	---	---	---	2/2	2.237-8.877	5.6
PCB-138/160	12/12	1.1 - 5.5	3.5	---	---	---	2/2	3.798-5.02	4.4
PCB-153/132	12/12	1.1 - 5.8	3.5	---	---	---	2/2	5.888-6.709	6.3
PCB-170/190	12/12	0.9 J - 65 J	19.4	---	---	---	2/2	2.264-10.05	6.2
PCB-18/17	7/12	0.13 J - 5.8	1.1	---	---	---	2/2	0.84-1.602	1.2
PCB-180	12/12	1.2 - 4.2	2.4	---	---	---	2/2	3.129-6.192	4.7
PCB-187	12/12	0.36 - 6.4	2.3	---	---	---	2/2	2.171-2.199	2.2
PCB-195/208	12/12	0.45 - 1.6	0.8	---	---	---	1/2	8.823	4.5
PCB-206	12/12	0.23 - 2.2	1.0	---	---	---	2/2	1.975-91.564	46.8
PCB-209	12/12	0.42 - 2	1.1	---	---	---	2/2	1.296-15.03	8.2
PCB-28	12/12	0.78 - 11	3.7	---	---	---	2/2	0.751-1.353	1.1

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-44	12/12	0.18 J - 3.9	1.0	---	---	---	2/2	1.078-2.883	2.0
PCB-52	12/12	0.59 - 4.5	2.0	---	---	---	2/2	1.119-1.826	1.5
PCB-66	12/12	0.09 J - 4.5	1.2	---	---	---	2/2	4.172-4.688	4.4
PCB-8/5	9/12	0.68 - 8.3	1.8	---	---	---	2/2	0.609-2.607	1.6
TRANS-NONACHLOR	11/12	0.05 J - 0.28	0.1	---	---	---	1/2	1.476	0.8
Inorganics (MG/KG)									
ALUMINUM	12/12	52038.81 - 64272	58357.5	---	---	---	2/2	28300-30000	29150.0
ARSENIC	12/12	11.9 - 20.6	14.9	---	---	---	2/2	9.9-17.8	13.9
CADMIUM	9/12	0.43 - 1.4	0.5	---	---	---	1/2	0.14	0.2
CHROMIUM	12/12	81.7 - 116	102.9	---	---	---	2/2	75.3-87.3	81.3
COPPER	12/12	35.7 J - 119	58.1	---	---	---	2/2	91.1-105	98.1
IRON	12/12	28487 - 35859 J	31896.3	---	---	---	2/2	17900-19400	18650.0
LEAD	12/12	49.2 - 88.62	68.4	---	---	---	2/2	122-124	123.0
MANGANESE	12/12	346 - 470	408.9	---	---	---	2/2	254-304	279.0
MERCURY	12/12	0.18 J - 0.35	0.3	---	---	---	1/2	0.19	0.2
NICKEL	12/12	22.9 J - 37.7	29.5	---	---	---	2/2	24.5-27.6	26.1
SILVER	12/12	0.41 - 3.92	1.3	---	---	---	2/2	0.34-0.37	0.4
ZINC	12/12	94.1 J - 232	141.8	---	---	---	2/2	378-530	454.0

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COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)									
ANTHRACENE	12/12	90.1 - 548.6 J	319	---	---	---	11/11	95-707	266
BENZO(A)ANTHRACENE	12/12	215 - 910	555	---	---	---	11/11	270-1550	664
BENZO(A)PYRENE	12/12	182 J - 1200	707	---	---	---	11/11	330-1120	649
BENZO(E)PYRENE	12/12	188 J - 608 J	393	---	---	---	11/11	230-735	445
BENZO(G,H,I)PERYLENE	12/12	202.8 J - 625	391	---	---	---	11/11	170-546	287
C1-PHENANTHRENES/ANTHRACENES	12/12	131 - 1463	370	---	---	---	11/11	170-2190	645
C2-PHENANTHRENES/ANTHRACENES	12/12	107 - 869	268	---	---	---	11/11	140-1880	528
C3-PHENANTHRENES/ANTHRACENES	12/12	71.3 J - 678	183	---	---	---	11/11	31-1020	303
C4-PHENANTHRENES/ANTHRACENES	12/12	12.7 J - 222	83.1	---	---	---	6/10	25-1450	406
CHRYSENE	12/12	227 - 772	515	---	---	---	11/11	260-1220	594
DIBENZO(A,H)ANTHRACENE	12/12	44.8 - 198 J	101	---	---	---	11/11	26-148	83.2
FLUORANTHENE	12/12	376 - 1100	768	---	---	---	11/11	420-3850	1382
FLUORENE	12/12	23.1 - 142	77	---	---	---	11/11	23.9-87.2	47.5
INDENO(1,2,3-CD)PYRENE	12/12	234.6 J - 645 J	410	---	---	---	11/11	150-507	269
PERYLENE	12/12	39.7 J - 173 J	102	---	---	---	11/11	86-241	154
PHENANTHRENE	12/12	152 - 1253	434	---	---	---	11/11	200-1130	486
PYRENE	12/12	359 - 1220	790	---	---	---	11/11	460-4080	1470
Pesticides/PCB's (UG/KG)									
2,4'-DDD	12/12	0.34 - 7	2.6	---	---	---	1/6	3.71	0.9
2,4'-DDE	7/12	0.04 J - 0.42 J	0.1	---	---	---	1/6	0.4	0.3
2,4'-DDT	10/12	0.037 - 0.49 J	0.1	---	---	---	3/6	0.2-9.5	1.9
4,4'-DDD	12/12	0.38 - 2.3	1.2	---	---	---	11/11	1.12-4.35	2.7
4,4'-DDE	12/12	0.28 - 9	1.7	---	---	---	10/11	0.974-1.84	1.2
4,4'-DDT	12/12	0.11 - 5.3 J	1.4	---	---	---	8/10	0.512-14	2.5
ALDRIN	7/12	0.04 J - 13	2.9	---	---	---	0/5	0	0.3
ALPHA-CHLORDANE	12/12	0.1 J - 0.65 J	0.3	---	---	---	2/11	0.15-0.216	0.2
GAMMA-BHC (LINDANE)	4/12	0.02 J - 0.16 J	0.2	---	---	---	0/5	0	0.3
HEPTACHLOR	5/12	0.08 J - 0.16 J	0.1	---	---	---	1/6	0.03	0.3
HEPTACHLOR EPOXIDE	0/12	0	0.1	---	---	---	1/6	0.07	0.3
HEXACHLOROBENZENE	6/12	0.02 J - 0.08	0.1	---	---	---	2/10	0.0589-0.32	0.2
MIREX	3/12	0.045 - 0.58	0.1	---	---	---	1/5	1	0.4
PCB-101/90	12/12	0.34 - 6.1	1.7	---	---	---	8/11	0.5-1.97	1.0
PCB-105	12/12	0.088 J - 3.8	0.8	---	---	---	6/9	0.727-2.1	0.8
PCB-118	12/12	0.36 - 5.6	1.8	---	---	---	11/11	0.5-2.05	1.2
PCB-128	12/12	0.07 J - 1.3	0.6	---	---	---	9/11	0.255-1.2	0.5
PCB-138/160	12/12	0.79 - 4.8	2.4	---	---	---	11/11	1.2-3.14	1.9
PCB-153/132	12/12	0.57 - 4.5	2.2	---	---	---	11/11	1.046-9.2	2.7
PCB-170/190	11/12	3.9 - 20 J	9.1	---	---	---	9/11	0.381-1.1	0.5
PCB-18/17	4/12	0.04 J - 0.97	0.2	---	---	---	4/10	0.111-0.576	0.5
PCB-180	12/12	0.31 - 2	1.1	---	---	---	9/11	0.8-1.62	1.0
PCB-187	12/12	0.3 - 5	1.7	---	---	---	9/11	0.447-4.1	1.0
PCB-195/208	11/12	0.11 - 0.86	0.4	---	---	---	6/11	0.234-0.411	0.3
PCB-206	12/12	0.1 J - 1.7	0.8	---	---	---	7/11	0.44-2.1	0.6
PCB-209	11/12	0.11 - 1.3	0.5	---	---	---	10/11	0.393-1.496	0.7
PCB-28	10/12	0.2 J - 1.8	0.8	---	---	---	8/11	0.211-0.61	0.3

TABLE C - 2

COMPARISON OF SEDIMENT ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14								
	Sediment Samples								
	Cumulative Monitoring Station Data [1]			1996 to 1997 Samples [2]			EERA Samples [3]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-44	10/12	0.01 J - 1.6	0.4	---	---	---	6/11	0.224-0.38	0.3
PCB-52	12/12	0.08 J - 3.8	0.9	---	---	---	7/11	0.468-0.78	0.5
PCB-66	12/12	0.28 - 1.8	0.7	---	---	---	9/9	0.363-2.5	1.1
PCB-8/5	9/12	0.26 J - 2.2	0.8	---	---	---	5/10	0.0871-0.255	0.2
TRANS-NONACHLOR	7/12	0.03 J - 0.28	0.1	---	---	---	2/11	0.13-0.266	0.2
Inorganics (MG/KG)									
ALUMINUM	12/12	48057 - 61663	54476	---	---	---	6/6	18600-36700	28933
ARSENIC	12/12	8.39 - 12.3	10.4	---	---	---	5/5	7-12.4	10.6
CADMIUM	9/12	0.24 - 0.48	0.3	---	---	---	5/5	0.39-0.56	0.5
CHROMIUM	12/12	53.3 - 110.17	82.5	---	---	---	6/6	66.4-94.2	76.6
COPPER	12/12	16.3 J - 59.7	32.6	---	---	---	6/6	24.9-42.3	30.7
IRON	12/12	8299 J - 27139.75	22315	---	---	---	6/6	16600-22400	19755
LEAD	12/12	44.1 - 185	73.7	---	---	---	6/6	28.1-119	67.8
MANGANESE	12/12	297 - 430	366	---	---	---	6/6	232-376	300
MERCURY	12/12	0.2 J - 0.55	0.3	---	---	---	1/5	0.16	0.2
NICKEL	12/12	16.6 J - 29.7	22.9	---	---	---	6/6	18.1-24.4	20.3
SILVER	12/12	0.19 - 3.43	1.0	---	---	---	5/5	0.32-0.45	0.4
ZINC	12/12	58.7 J - 123	90.0	---	---	---	6/6	83.7-152	110.5

Footnotes:
1 Source data is located in Rounds 1 through 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001).
2 Source data located in TtNUS, August 2000.
3 Source data located in NCCOSC, 2000.
Duplicate samples are averaged in this table.
One half of detection limits are used in this table.
Parameters analyzed in only a single study were not presented in this table.
Stations collected from only a single study were not presented in this table.
Dashes indicate non-analyzed parameters.

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	8/8	22.8 - 65.1	38.4	1/1	25	25.0
BENZO(A)ANTHRACENE	8/8	11 J - 38.3 J	24.0	1/1	27.6	27.6
BENZO(A)PYRENE	8/8	6.72 J - 23.7	17.1	1/1	18.5	18.5
BENZO(E)PYRENE	8/8	14.1 - 41.3	31.4	1/1	44.9	44.9
BENZO(G,H,I)PERYLENE	8/8	5.67 - 23.2	14.8	1/1	21.6	21.6
C1-PHENANTHRENES/ANTHRACENES	8/8	19.5 - 89.6	39.4	1/1	97.2	97.2
C2-PHENANTHRENES/ANTHRACENES	8/8	21.8 - 80.9	44.5	1/1	138.8	139
C3-PHENANTHRENES/ANTHRACENES	8/8	16.8 - 144	47.6	1/1	95.2	95.2
C4-PHENANTHRENES/ANTHRACENES	8/8	6.97 J - 52.1	20.7	1/1	84.5	84.5
CHRYSENE	8/8	18.2 - 52.9	39.6	1/1	52.9	52.9
DIBENZO(A,H)ANTHRACENE	8/8	1 J - 4 J	2.2	0/1	0	10.6
FLUORANTHENE	8/8	34.3 - 101.9	70.6	1/1	123.1	123.1
FLUORENE	8/8	2.56 J - 23.9 J	11.5	1/1	16	16.0
INDENO(1,2,3-CD)PYRENE	8/8	3.8 J - 17.6	10.4	1/1	21.9	21.9
PERYLENE	8/8	5.11 J - 18.2	11.7	0/1	0	3.6
PHENANTHRENE	6/8	13.7 - 49 J	27.6	1/1	41.2	41.2
PYRENE	8/8	34.1 - 149.9 J	75.0	1/1	90.7	90.7
Pesticides/PCB's (UG/KG)						
2,4'-DDD	8/8	1.4 J - 4.4	3.1	0/1	0	0.7
2,4'-DDE	7/8	0.31 - 3.9	1.5	0/1	0	0.3
2,4'-DDT	8/8	1.1 - 6.2	2.9	0/1	0	0.8
4,4'-DDD	8/8	2.8 - 11	6.5	0/1	0	0.9
4,4'-DDE	8/8	6.8 - 30	16.1	1/1	17.32	17.3
4,4'-DDT	6/8	0.78 - 8.8	4.1	1/1	21.33	21.3
ALDRIN	4/8	0.03 J - 1.5	0.4	0/1	0	0.3
ALPHA-CHLORDANE	8/8	1.1 - 7.9	3.2	0/1	0	0.2
GAMMA-BHC (LINDANE)	3/8	0.13 J - 1.3	0.6	0/1	0	0.4
HEPTACHLOR	5/8	0.21 J - 1.4	0.4	0/1	0	0.3
HEPTACHLOR EPOXIDE	2/8	1.5	0.6	0/1	0	0.9
HEXACHLOROBENZENE	7/8	0.2 J - 0.91	0.4	0/1	0	2.6
MIREX	3/8	0.39 - 1.9 J	0.6	0/1	0	0.2
PCB-101/90	6/8	5.8 - 9.8	6.9	1/1	9.21	9.2
PCB-105	8/8	1.4 J - 5.9	3.2	0/1	0	0.4
PCB-118	7/8	4 J - 7.7	5.8	1/1	9.4	9.4
PCB-128	7/8	0.74 - 2.2	1.5	0/1	0	0.6
PCB-138/160	2/8	12	7.7	1/1	13.3	13.3
PCB-153/132	3/8	11 - 20	10.3	1/1	18.7	18.7
PCB-170/190	4/8	0.23 J - 3.4 J	0.7	0/1	0	0.6

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 01					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	5/8	1.1 - 6.5	3.0	0/1	0	1.6
PCB-180	2/8	4.7 - 9 J	4.7	1/1	1.37	1.4
PCB-187	4/8	3.5 - 5.7	4.0	1/1	4.69	4.7
PCB-195/208	1/8	0.47	0.3	0/1	0	0.4
PCB-206	0/8	0	0.3	0/1	0	0.4
PCB-209	2/8	0.54 J - 1.5 J	0.6	0/1	0	0.3
PCB-28	8/8	0.49 J - 4 J	2.1	0/1	0	0.7
PCB-44	5/8	0.71 J - 12 J	3.1	0/1	0	0.6
PCB-52	8/8	1.9 - 13 J	5.7	0/1	0	0.3
PCB-66	8/8	0.56 - 2.7 J	1.5	0/1	0	0.3
PCB-8/5	6/8	0.63 J - 5.2	3.1	0/1	0	1.5
TRANS-NONACHLOR	8/8	0.92 - 3.3	2.0	0/1	0	0.2
Inorganics (MG/KG)						
ALUMINUM	8/8	121 J - 380	258	2/2	299 - 358.64	329
ARSENIC	8/8	5.46 - 10.4	7.6	2/2	10.2 - 10.3	10.3
CADMIUM	8/8	0.97 - 2.6	1.6	2/2	1.59 - 2.03	1.8
CHROMIUM	7/8	1.65 - 4.46	2.6	1/1	4.78	4.8
COPPER	8/8	5.79 - 29.5 J	9.9	2/2	7.26 - 13.8	10.5
IRON	8/8	290.5 - 896	502	1/1	641	641
LEAD	8/8	3.08 - 6.46	4.4	2/2	6.26 - 6.91	6.6
MANGANESE	8/8	6.6 - 13.4	11.1	2/2	19.3 - 63	41.2
MERCURY	8/8	0.2 - 0.3	0.3	1/1	0.43	0.4
NICKEL	4/8	1.15 - 1.6	1.4	1/1	2.71	2.7
SILVER	5/8	0.04 J - 0.06 J	0.1	1/2	0.317	0.2
ZINC	8/8	77.94 - 107	92.4	2/2	71.9 - 100	86.0

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	11/11	15.6 J - 70.1 J	33.4	9/14	17.3 - 29.9	17.9
BENZO(A)ANTHRACENE	11/11	10.2 J - 42.2	18.4	11/16	26.6 - 57.2	30.0
BENZO(A)PYRENE	11/11	4.89 J - 50	15.8	11/16	16.3 - 40	17.8
BENZO(E)PYRENE	11/11	13.4 - 43.4 J	25.3	13/16	37.6 - 68.92	44.5
BENZO(G,H,I)PERYLENE	11/11	5.92 J - 24.8 J	12.4	9/14	16.4 - 45.29	24.0
C1-PHENANTHRENES/ANTHRACENES	11/11	8.73 J - 52	25.2	15/16	24.24 - 88.9	57.7
C2-PHENANTHRENES/ANTHRACENES	11/11	10.6 J - 57.5	29.5	15/16	38.48 - 220.8	106
C3-PHENANTHRENES/ANTHRACENES	11/11	6.25 J - 85.3	27.0	15/16	26.46 - 91	58.4
C4-PHENANTHRENES/ANTHRACENES	11/11	5.72 J - 31.3	13.4	11/16	36.96 - 152	69.7
CHRYSENE	11/11	14.9 - 63.7	34.5	14/16	46 - 89.3	56.3
DIBENZO(A,H)ANTHRACENE	11/11	0.31 J - 3.9 J	1.9	4/14	19.6 - 22.6	16.1
FLUORANTHENE	10/11	25.1 - 149	68.4	16/16	69 - 157	107
FLUORENE	11/11	2.19 J - 25.5 J	10.0	9/14	13.2 - 27.1	15.0
INDENO(1,2,3-CD)PYRENE	11/11	4.04 J - 24.2	9.6	6/14	21.4 - 41.96	20.0
PERYLENE	11/11	5.65 J - 19.2	11.4	6/14	14.24 - 35	12.7
PHENANTHRENE	8/11	5.45 J - 73.9 J	28.3	15/16	19 - 58.3	40.5
PYRENE	10/11	27.2 - 99.3 J	52.7	16/16	39 - 140	82.1
Pesticides/PCB's (UG/KG)						
2,4'-DDD	10/11	0.88 - 3	1.7	2/14	1.47 - 2.23	0.9
2,4'-DDE	10/11	0.15 J - 4.2	0.8	1/13	1.24	0.4
2,4'-DDT	11/11	1.3 J - 4	2.3	4/13	1.382 - 4.407	1.4
4,4'-DDD	11/11	1.3 - 7	3.6	10/14	6.251 - 17.2	8.0
4,4'-DDE	11/11	4.1 - 12	8.9	12/14	9.165 - 18.15	10.8
4,4'-DDT	8/11	0.21 J - 2.4 J	1.5	13/14	0.78 - 20.15	12.9
ALDRIN	4/11	0.13 J - 2.5	0.5	3/12	1.433 - 4.499	0.9
ALPHA-CHLORDANE	11/11	0.55 - 10	3.2	9/14	1.67 - 5.425	2.0
GAMMA-BHC (LINDANE)	4/11	0.1 J - 0.71	0.3	2/14	0.47 - 0.48	0.4
HEPTACHLOR	8/11	0.09 J - 2.9	0.8	0/12	0	0.4
HEPTACHLOR EPOXIDE	2/11	0.34 - 3.3	0.6	0/12	0	0.7
HEXACHLOROBENZENE	9/11	0.16 J - 0.82	0.4	2/14	0.43 - 0.47	1.8
MIREX	0/11	0	0.3	2/14	0.21 - 0.43	0.4
PCB-101/90	10/11	5.2 - 12	7.7	10/12	3.971 - 14.1	6.3
PCB-105	11/11	2 - 6.5	3.7	9/12	2.56 - 12.095	4.2
PCB-118	11/11	4.3 - 10	6.9	11/12	6.092 - 13.9	7.7
PCB-128	11/11	0.92 - 4	2.2	11/12	1.86 - 3.531	2.5
PCB-138/160	6/11	8.2 - 16	10.3	12/12	9.038 - 21.1	13.3
PCB-153/132	5/11	12 - 19	11.9	12/12	13.489 - 29.3	18.3
PCB-170/190	4/11	0.18 J - 0.68	0.5	2/11	0.46 - 2.67	0.8

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 02					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	8/11	0.51 J - 5.1	1.9	6/12	1.706 - 4.12	2.3
PCB-180	4/11	3.7 - 7.7 J	4.7	7/12	1.5 - 6.197	2.2
PCB-187	6/11	3.8 - 6.5	4.5	12/12	4.132 - 9.58	5.8
PCB-195/208	0/11	0	0.3	0/10	0	0.5
PCB-206	0/11	0	0.3	0/10	0	0.5
PCB-209	2/11	0.48 J - 0.62 J	0.4	1/11	0.1	0.4
PCB-28	11/11	0.82 J - 3.4	1.8	3/11	1.097 - 2.78	1.1
PCB-44	6/11	0.43 J - 3.5	0.9	5/12	1.222 - 2.38	1.0
PCB-52	9/11	2.3 - 5.4	3.2	6/12	1.976 - 5.7	2.3
PCB-66	11/11	0.67 J - 6.5	1.6	4/11	5.19 - 7.2	2.5
PCB-8/5	10/11	0.93 J - 12	4.9	0/10	0	1.2
TRANS-NONACHLOR	11/11	0.58 - 1.9	1.3	6/14	2.298 - 3.32	1.3
Inorganics (MG/KG)						
ALUMINUM	11/11	164 J - 718	292	12/12	203 - 568	373
ARSENIC	11/11	5.79 - 10	7.8	12/12	6.1 - 12.6	10.2
CADMIUM	11/11	1.03 - 2	1.6	12/12	1.5 - 3.22	2.1
CHROMIUM	9/11	1.7 - 8.82	3.0	7/7	2.97 - 4.83	3.9
COPPER	11/11	6.2 - 26.34	12.4	11/11	4.8 - 11.1	7.8
IRON	11/11	313 - 1210	578	7/7	566 - 937.9	756
LEAD	11/11	3.91 - 6.3	4.7	12/12	8.89 - 40.23	14.1
MANGANESE	11/11	7 - 16.6	10.7	12/12	9.7 - 20.4	14.8
MERCURY	11/11	0.19 - 0.35	0.3	10/10	0.19 - 0.655	0.4
NICKEL	7/11	1.3 - 9.09	2.2	7/7	0.85 - 2	1.6
SILVER	6/11	0.04 J - 0.06 J	0.1	9/12	0.05 - 0.876	0.2
ZINC	11/11	75.22 - 109	90.3	12/12	89.9 - 133.08	108

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	4/4	20.1 - 38.4 J	29.3	1/1	27.7	27.7
BENZO(A)ANTHRACENE	4/4	10.6 - 17.5	13.9	1/1	40.5	40.5
BENZO(A)PYRENE	4/4	8.09 J - 18.2	13.1	1/1	27.4	27.4
BENZO(E)PYRENE	4/4	13.9 - 32 J	23.1	1/1	49.2	49.2
BENZO(G,H,I)PERYLENE	4/4	6.15 J - 19	12.2	1/1	36.3	36.3
C1-PHENANTHRENES/ANTHRACENES	4/4	11.4 - 28.9	21.8	1/1	46.9	46.9
C2-PHENANTHRENES/ANTHRACENES	4/4	12.3 - 32.8	23.9	1/1	81.3	81.3
C3-PHENANTHRENES/ANTHRACENES	4/4	8.49 J - 30.5	20.5	1/1	78.2	78.2
C4-PHENANTHRENES/ANTHRACENES	4/4	4.76 J - 13.8	10.1	1/1	84.9	84.9
CHRYSENE	4/4	16.4 - 44.4	29.1	1/1	48.3	48.3
DIBENZO(A,H)ANTHRACENE	4/4	1.45 J - 3.3 J	2.0	0/1	0	10.4
FLUORANTHENE	4/4	31.3 - 92	54.5	1/1	80.9	80.9
FLUORENE	4/4	3.7 J - 13.8 J	8.1	1/1	21.6	21.6
INDENO(1,2,3-CD)PYRENE	4/4	4.29 J - 15.8	9.6	1/1	35.3	35.3
PERYLENE	4/4	5.11 J - 18.1	10.7	1/1	29.6	29.6
PHENANTHRENE	3/4	8.41 - 34.1 J	18.2	1/1	42.2	42.2
PYRENE	3/4	28.8 - 55.8	36.4	1/1	55.3	55.3
Pesticides/PCB's (UG/KG)						
2,4'-DDD	4/4	1.5 - 3.3	2.4	1/1	1.44	1.4
2,4'-DDE	2/4	0.11 J - 0.68	0.3	0/1	0	0.2
2,4'-DDT	4/4	1.1 - 6.8	3.2	1/1	1.56	1.6
4,4'-DDD	4/4	3 - 8.4	4.7	1/1	8.54	8.5
4,4'-DDE	4/4	5.5 - 11	8.7	1/1	11.98	12.0
4,4'-DDT	3/4	1.1 - 2.9	1.9	1/1	34.74	34.7
ALDRIN	1/4	0.65	0.3	0/1	0	0.3
ALPHA-CHLORDANE	4/4	0.68 - 4.8	2.2	1/1	2.29	2.3
GAMMA-BHC (LINDANE)	3/4	0.14 J - 0.52	0.4	0/1	0	0.4
HEPTACHLOR	2/4	0.37 - 1.8	0.6	0/1	0	0.3
HEPTACHLOR EPOXIDE	1/4	0.28	0.2	0/1	0	0.9
HEXACHLOROBENZENE	4/4	0.05 J - 1.5	0.6	0/1	0	2.6
MIREX	1/4	0.57	0.4	0/1	0	0.2
PCB-101/90	3/4	9.9 - 16	9.9	1/1	13.1	13.1
PCB-105	4/4	3.4 - 9.6	5.2	0/1	0	0.4
PCB-118	4/4	5.4 - 12	7.4	1/1	7.99	8.0
PCB-128	4/4	1.7 - 3.9	2.3	1/1	4.03	4.0
PCB-138/160	3/4	19 - 34	20.4	1/1	20.4	20.4
PCB-153/132	3/4	28 - 44	29.0	1/1	28.4	28.4
PCB-170/190	3/4	0.55 J - 1.3	1.0	0/1	0	0.6

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 04					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	2/4	0.29 J - 3.2	1.8	0/1	0	1.5
PCB-180	2/4	7.9 - 12 J	8.2	1/1	4.25	4.3
PCB-187	3/4	14 - 25	14.5	1/1	12.5	12.5
PCB-195/208	1/4	0.26	0.4	0/1	0	0.4
PCB-206	0/4	0	0.4	0/1	0	0.4
PCB-209	2/4	0.45 J - 0.64	0.6	0/1	0	0.3
PCB-28	4/4	1.3 - 3.1	2.3	0/1	0	0.7
PCB-44	3/4	0.85 - 3	1.4	0/1	0	0.6
PCB-52	4/4	5.3 - 7.6	6.3	0/1	0	1.3
PCB-66	4/4	0.83 - 1.2	1.0	1/1	3.3	3.3
PCB-8/5	4/4	0.83 J - 8.2	4.5	0/1	0	1.5
TRANS-NONACHLOR	4/4	0.77 - 1.7	1.2	0/1	0	0.2
Inorganics (MG/KG)						
ALUMINUM	4/4	195 J - 507	331	2/2	369.64 - 469	419
ARSENIC	4/4	7.5 - 9.81	8.6	2/2	10.4	10.4
CADMIUM	4/4	1.11 - 2.4	1.8	2/2	1.98 - 2.4	2.2
CHROMIUM	4/4	2.2 - 5.82	3.8	1/1	4.61	4.6
COPPER	4/4	18.33 - 27.9	22.9	2/2	34.2 - 34.8	34.5
IRON	4/4	465 - 1057	684	1/1	692	692
LEAD	4/4	6.54 - 11.4 J	8.3	2/2	8.92 - 10.5	9.7
MANGANESE	4/4	8.6 - 13.3	11.8	2/2	16.1 - 27.3	21.7
MERCURY	4/4	0.31 - 0.48	0.4	1/1	0.631	0.6
NICKEL	3/4	2.2 J - 3.2	2.6	1/1	3.36	3.4
SILVER	4/4	0.08 J - 0.5 J	0.2	0/2	0	0.1
ZINC	4/4	93.67 - 154	137	2/2	131 - 183	157

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	7/8	16.1 J - 45.5	26.7	1/1	21.1	21.1
BENZO(A)ANTHRACENE	8/8	4.76 - 74.1	18.3	1/1	37.7	37.7
BENZO(A)PYRENE	8/8	3.2 J - 82.2 J	17.8	1/1	27.1	27.1
BENZO(E)PYRENE	8/8	7.2 - 59.2	23.2	1/1	44	44.0
BENZO(G,H,I)PERYLENE	8/8	3.59 J - 52.9 J	14.2	1/1	35.5	35.5
C1-PHENANTHRENES/ANTHRACENES	8/8	10.5 - 32.4	21.7	1/1	75.3	75.3
C2-PHENANTHRENES/ANTHRACENES	8/8	10.1 - 41.65 J	24.4	1/1	78.6	78.6
C3-PHENANTHRENES/ANTHRACENES	8/8	6.23 J - 62.85 J	22.4	1/1	33.6	33.6
C4-PHENANTHRENES/ANTHRACENES	8/8	4.01 J - 20.7 J	10.3	1/1	49.9	49.9
CHRYSENE	8/8	10.1 - 78.7	32.6	1/1	38.5	38.5
DIBENZO(A,H)ANTHRACENE	8/8	0.59 J - 10.6	2.4	0/1	0	10.8
FLUORANTHENE	6/8	21.4 - 147	54.8	1/1	69.5	69.5
FLUORENE	8/8	2.11 J - 14.6 J	7.1	1/1	38	38.0
INDENO(1,2,3-CD)PYRENE	8/8	2.37 J - 56.6	12.6	1/1	32	32.0
PERYLENE	8/8	1.94 J - 25.9	10.5	1/1	18.9	18.9
PHENANTHRENE	6/8	7.51 - 40.3	21.0	1/1	50.9	50.9
PYRENE	6/8	17.1 - 117	41.8	1/1	53.8	53.8
Pesticides/PCB's (UG/KG)						
2,4'-DDD	8/8	1.1 - 3.5	2.0	0/1	0	0.7
2,4'-DDE	6/8	0.35 - 1.8	0.7	0/1	0	0.3
2,4'-DDT	8/8	0.86 - 3.5	2.3	0/1	0	0.8
4,4'-DDD	8/8	2.1 - 5.5	3.6	1/1	7.06	7.1
4,4'-DDE	8/8	4.6 - 12	7.5	1/1	12.5	12.5
4,4'-DDT	6/8	1 - 2.9	1.6	1/1	20.27	20.3
ALDRIN	2/8	0.15 J - 0.7125	0.2	0/1	0	0.3
ALPHA-CHLORDANE	8/8	0.72 - 6 J	2.5	0/1	0	0.2
GAMMA-BHC (LINDANE)	4/8	0.09 J - 1	0.4	0/1	0	0.4
HEPTACHLOR	4/8	0.23 J - 0.86	0.3	0/1	0	0.3
HEPTACHLOR EPOXIDE	3/8	0.23 - 0.44	0.3	0/1	0	0.9
HEXACHLOROBENZENE	8/8	0.13 J - 0.86	0.4	0/1	0	2.6
MIREX	1/8	0.3	0.3	0/1	0	0.2
PCB-101/90	7/8	6.2 - 8.35	7.0	0/1	0	0.5
PCB-105	8/8	1.4 - 5.05 J	3.3	1/1	3.64	3.6
PCB-118	8/8	4.4 - 8.5	6.5	1/1	9.46	9.5
PCB-128	8/8	1.2 - 2.5	1.8	1/1	2.77	2.8
PCB-138/160	5/8	9 - 15	9.6	1/1	12.1	12.1
PCB-153/132	4/8	13 - 15	10.8	1/1	16	16.0
PCB-170/190	6/8	0.19 J - 1.2	0.5	0/1	0	0.6

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 05					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	5/8	0.54 J - 7.3	2.5	0/1	0	1.6
PCB-180	4/8	5.1 - 6.8	5.4	1/1	1.58	1.6
PCB-187	4/8	4.3 - 9.6	4.7	1/1	5.76	5.8
PCB-195/208	2/8	0.05 J - 0.21 J	0.2	0/1	0	0.4
PCB-206	0/8	0	0.3	0/1	0	0.4
PCB-209	2/8	0.545 J - 0.56 J	0.4	0/1	0	0.3
PCB-28	8/8	0.36 J - 3.65	1.9	0/1	0	0.8
PCB-44	8/8	0.7 - 4.05	1.7	0/1	0	0.6
PCB-52	8/8	2.9 - 8.8	5.0	0/1	0	1.3
PCB-66	8/8	0.61 J - 3.4 J	1.4	0/1	0	0.3
PCB-8/5	8/8	0.74 J - 4.5	2.4	0/1	0	1.5
TRANS-NONACHLOR	8/8	0.7 - 2.4	1.6	0/1	0	0.2
Inorganics (MG/KG)						
ALUMINUM	8/8	199 J - 641	300	2/2	218.64 - 418	318
ARSENIC	8/8	5.95 - 9.6	8.0	1/2	11.9	6.3
CADMIUM	8/8	1.12 - 2.85	2.0	2/2	3.3 - 3.96	3.6
CHROMIUM	8/8	2 - 6.9	3.6	1/1	7.12	7.1
COPPER	8/8	5.89 - 20.4	10.5	2/2	40.6 - 43.2	41.9
IRON	8/8	480 J - 1027	617	1/1	438	438
LEAD	8/8	3.15 - 117.92	38.2	2/2	147 - 178	163
MANGANESE	8/8	7.6 - 16.3	11.7	2/2	18.8 - 34.2	26.5
MERCURY	8/8	0.14 - 2.31	0.7	1/1	5.54	5.5
NICKEL	5/8	1.1 - 2.56 J	1.7	1/1	4.74	4.7
SILVER	5/8	0.03 J - 0.1 J	0.1	2/2	0.469 - 0.612	0.5
ZINC	8/8	72.02 - 198	115	2/2	185 - 254	220

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	11/12	12.3 J - 34.2	21.1	5/9	25.44 - 43	19.1
BENZO(A)ANTHRACENE	12/12	5.4 - 18.9	11.2	5/10	24.3 - 39.9	22.9
BENZO(A)PYRENE	12/12	6.48 J - 19.5	10.2	4/9	19.63 - 36	16.4
BENZO(E)PYRENE	12/12	7.09 - 30.2	19.3	7/10	42.4 - 72	40.9
BENZO(G,H,I)PERYLENE	12/12	3.23 J - 16.9	9.4	4/9	30.48 - 37	28.5
C1-PHENANTHRENES/ANTHRACENES	12/12	7.75 J - 42.2	19.7	9/10	18.77 - 96	51.1
C2-PHENANTHRENES/ANTHRACENES	12/12	8.3 J - 30.3	20.4	10/10	60 - 100	80.7
C3-PHENANTHRENES/ANTHRACENES	12/12	3.99 J - 33.5	18.0	6/10	49.66 - 135.6	62.1
C4-PHENANTHRENES/ANTHRACENES	12/12	2.34 J - 16.6	9.8	5/10	33.77 - 108.9	48.6
CHRYSENE	12/12	10.4 J - 51	27.9	6/10	32.22 - 67.2	35.8
DIBENZO(A,H)ANTHRACENE	12/12	0.49 J - 3 J	1.4	0/9	0	18.9
FLUORANTHENE	9/12	18 - 107	46.3	10/10	55.22 - 112	76.5
FLUORENE	12/12	2.19 J - 11.5 J	6.5	3/9	21 - 23.5	13.1
INDENO(1,2,3-CD)PYRENE	12/12	1.64 J - 14.6	7.5	2/9	38.2 - 38.8	22.1
PERYLENE	12/12	3.53 J - 16.7	8.2	4/9	16.28 - 19.3	18.2
PHENANTHRENE	9/12	9.22 - 40	18.3	9/10	29.22 - 42.1	34.3
PYRENE	9/12	14.8 - 73.5	34.1	10/10	39.44 - 100	65.5
Pesticides/PCB's (UG/KG)						
2,4'-DDD	12/12	0.65 - 5.9	2.1	2/10	0.93 - 10.82	1.9
2,4'-DDE	11/12	0.15 J - 1.6	0.5	2/9	1.094 - 2.7	0.9
2,4'-DDT	11/12	0.24 J - 2.5	1.3	2/10	1.02 - 3.226	1.2
4,4'-DDD	12/12	1.8 - 15	4.3	10/10	5.46 - 10.55	8.2
4,4'-DDE	12/12	2.8 - 8.2	5.8	10/10	7.4 - 12.6	10.1
4,4'-DDT	9/12	0.4 J - 7	1.7	10/10	3.521 - 25.438	12.0
ALDRIN	5/12	0.039 J - 1.3	0.3	2/9	1.593 - 2.7	0.9
ALPHA-CHLORDANE	12/12	0.44 - 4	1.8	6/10	2.04 - 4.296	2.1
GAMMA-BHC (LINDANE)	5/12	0.13 J - 1.4	0.4	1/10	0.49	0.6
HEPTACHLOR	9/12	0.26 - 1.5	0.5	0/9	0	0.5
HEPTACHLOR EPOXIDE	5/12	0.074 J - 0.61	0.3	0/9	0	0.8
HEXACHLOROBENZENE	10/12	0.07 J - 1.4	0.6	1/10	0.44	2.4
MIREX	2/12	0.23 J - 1.4	0.4	1/10	0.45	0.6
PCB-101/90	9/12	4 - 9.1	5.8	10/10	3.493 - 9.79	6.2
PCB-105	12/12	1.3 - 4.6	2.4	7/10	2.48 - 49	11.6
PCB-118	11/12	2.9 - 7.7	4.6	10/10	5.538 - 8.41	6.6
PCB-128	12/12	0.81 J - 2.9	1.5	9/10	1.71 - 3.4	2.5
PCB-138/160	7/12	6.3 - 14	8.2	10/10	9.631 - 18	12.0
PCB-153/132	7/12	8.4 - 18	10.1	10/10	12.94 - 30	18.3
PCB-170/190	8/12	0.18 J - 2.4	0.7	1/9	1.412	0.9

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 06					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	7/12	0.26 J - 3.9	1.8	6/10	1.838 - 4.5	2.4
PCB-180	7/12	2.9 - 8.6	4.9	6/10	1.32 - 6	2.7
PCB-187	7/12	1.6 - 12	4.1	10/10	2.71 - 8.93	5.2
PCB-195/208	5/12	0.13 - 0.5	0.3	0/9	0	0.6
PCB-206	1/12	0.09	0.3	0/9	0	0.6
PCB-209	3/12	0.19 J - 0.48 J	0.4	0/9	0	0.6
PCB-28	11/12	0.21 J - 2.2	1.2	0/9	0	0.7
PCB-44	9/12	0.55 J - 1.6	0.9	2/10	1.08 - 1.101	0.7
PCB-52	12/12	1.8 - 6.7	3.9	6/10	1.651 - 2.426	2.0
PCB-66	12/12	0.55 - 2	1.0	5/9	3.608 - 12	3.9
PCB-8/5	12/12	0.54 J - 26	6.9	3/9	4.39 - 5.8	2.6
TRANS-NONACHLOR	12/12	0.34 - 2.2	1.3	5/10	2.19 - 3.3	1.5
Inorganics (MG/KG)						
ALUMINUM	12/12	94 J - 494	290	11/11	179 - 607	388
ARSENIC	12/12	5.38 - 10.59	7.9	11/11	5.9 - 15.6	10.5
CADMIUM	12/12	0.89 - 2.2	1.5	11/11	1.18 - 3	1.9
CHROMIUM	10/12	1.4 - 5.28	2.6	6/7	3.4 - 4.82	3.9
COPPER	12/12	5.65 - 30.16	8.9	11/11	4.7 - 15.5	9.4
IRON	12/12	327 - 1074	586	7/7	470 - 2760	1078
LEAD	12/12	2.58 - 6.32 J	4.0	11/11	4.56 - 8.15	6.5
MANGANESE	12/12	6.1 - 16.45	11.6	11/11	8.2 - 1210	235
MERCURY	12/12	0.19 - 0.3	0.3	9/9	0.365 - 0.96	0.5
NICKEL	7/12	0.89 - 2.11 J	1.3	7/7	1 - 5.14	2.6
SILVER	7/12	0.04 J - 0.1 J	0.1	5/11	0.06 - 0.557	0.1
ZINC	12/12	63.54 - 105	85.8	11/11	73.3 - 127	105

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	7/8	11.3 J - 38	22.1	5/9	21.9 - 28.1	14.7
BENZO(A)ANTHRACENE	8/8	7.48 - 20.8	12.6	5/9	24.2 - 38.4	22.2
BENZO(A)PYRENE	8/8	4.98 J - 18.4	12.0	5/9	15.7 - 30.6	14.8
BENZO(E)PYRENE	8/8	12.4 - 30.4 J	19.1	7/9	40.3 - 54	38.4
BENZO(G,H,I)PERYLENE	8/8	5.89 - 15.5	9.9	5/9	24.8 - 38.6	24.7
C1-PHENANTHRENES/ANTHRACENES	8/8	6.24 J - 37.7	20.6	6/9	37.75 - 97.6	44.0
C2-PHENANTHRENES/ANTHRACENES	8/8	8.88 J - 50.6	28.5	8/9	61 - 221.8	98.9
C3-PHENANTHRENES/ANTHRACENES	8/8	6.43 J - 87.9	31.6	7/9	8.244 - 203.1	62.2
C4-PHENANTHRENES/ANTHRACENES	8/8	3.44 J - 23.3	13.6	6/9	51.73 - 144.7	70.2
CHRYSENE	8/8	12.2 - 36.3	26.9	6/9	36.63 - 44.06	31.7
DIBENZO(A,H)ANTHRACENE	8/8	0.66 J - 2.1 J	1.4	0/9	0	14.8
FLUORANTHENE	6/8	19.6 - 59.9	39.5	9/9	46 - 81.14	63.0
FLUORENE	8/8	2.24 J - 11.8 J	6.7	5/9	12.5 - 24.3	13.3
INDENO(1,2,3-CD)PYRENE	8/8	3.17 J - 12.1 J	7.3	3/9	30.8 - 39.5	20.3
PERYLENE	8/8	4.23 J - 14.2 J	9.1	3/9	14.79 - 20.4	13.2
PHENANTHRENE	6/8	5.28 J - 30.9 J	17.5	7/9	21 - 44.8	24.7
PYRENE	6/8	19.7 - 51.2	31.7	9/9	39.18 - 77.4	60.4
Pesticides/PCB's (UG/KG)						
2,4'-DDD	8/8	0.57 - 3.2 J	1.9	2/9	3.009 - 13.04	2.4
2,4'-DDE	6/8	0.15 J - 1.6	0.6	0/9	0	0.4
2,4'-DDT	8/8	0.51 - 2.7	1.7	3/9	1.8 - 3.035	1.4
4,4'-DDD	8/8	1.2 - 7.2	3.7	7/9	7.756 - 20.91	9.6
4,4'-DDE	8/8	2.8 - 9.6	7.3	9/9	6.854 - 11.27	9.8
4,4'-DDT	8/8	0.48 J - 9.9	3.5	8/9	5.329 - 18.6	11.8
ALDRIN	4/8	0.08 J - 1.6	0.4	2/9	1.518 - 2.684	0.8
ALPHA-CHLORDANE	8/8	0.51 - 2.3	1.6	7/9	1.46 - 4.1	2.0
GAMMA-BHC (LINDANE)	5/8	0.02 J - 1.1	0.5	1/9	1.185	0.6
HEPTACHLOR	3/8	0.15 J - 0.84	0.3	0/9	0	0.4
HEPTACHLOR EPOXIDE	3/8	0.2 - 0.99	0.5	0/9	0	0.7
HEXACHLOROBENZENE	7/8	0.11 J - 1.1	0.5	0/9	0	2.2
MIREX	3/8	0.51 - 2.9	0.9	0/9	0	0.4
PCB-101/90	5/8	4 - 9.2	5.5	7/8	3.863 - 9.27	4.9
PCB-105	8/8	1.6 - 5.4	3.1	7/8	2.45 - 44	8.4
PCB-118	7/8	3.7 - 7.8	4.8	8/8	4.655 - 8.302	6.2
PCB-128	8/8	0.84 J - 4.4	2.2	7/8	1.87 - 3.02	2.4
PCB-138/160	4/8	6.4 - 12	7.8	8/8	8.008 - 11.69	10.3
PCB-153/132	3/8	8.8 - 15	9.0	8/8	3.867 - 21	14.3
PCB-170/190	5/8	0.18 J - 1.3	0.5	0/8	0	0.7

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 07					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	5/8	0.57 J - 4.8	2.2	2/8	3.3 - 5.784	2.1
PCB-180	3/8	2.4 - 6.4 J	3.9	4/8	1.63 - 3.774	1.9
PCB-187	4/8	3.2 - 5.9	3.7	8/8	3.841 - 6.06	4.9
PCB-195/208	3/8	0.087 J - 0.73	0.3	0/8	0	0.5
PCB-206	1/8	0.92	0.4	0/8	0	0.5
PCB-209	3/8	0.32 J - 0.48 J	0.4	0/8	0	0.4
PCB-28	8/8	0.36 J - 3.4	2.0	1/8	3.751	1.1
PCB-44	7/8	0.46 J - 4.9	1.9	2/8	1.098 - 2.004	0.9
PCB-52	7/8	1.2 - 9.5	4.5	4/8	1.939 - 3.97	2.1
PCB-66	8/8	0.51 J - 2.7	1.4	3/8	4.527 - 9.6	2.9
PCB-8/5	8/8	0.65 J - 9.2	3.8	1/8	1.283	1.2
TRANS-NONACHLOR	8/8	0.44 - 3	1.3	4/9	2.476 - 2.904	1.4
Inorganics (MG/KG)						
ALUMINUM	8/8	124 J - 424.6 J	274	10/10	118 - 718	374
ARSENIC	8/8	5.7 - 10.6	8.3	9/9	4.5 - 27.8	11.2
CADMIUM	8/8	1.16 - 1.9	1.5	10/10	1.2 - 3.53	2.4
CHROMIUM	7/8	1.6 - 4.59	2.5	5/5	2.6 - 6.83	4.0
COPPER	8/8	5.64 - 64.59	14.0	9/9	5 - 12.2	8.1
IRON	8/8	256 - 661.6	494	5/5	320 - 1090	574
LEAD	8/8	2.49 - 5.99	3.8	10/10	3.5 - 10.8	7.2
MANGANESE	8/8	7.7 - 14.5	10.5	9/9	8.6 - 20	14.7
MERCURY	8/8	0.2 - 0.27	0.2	9/9	0.32 - 0.627	0.5
NICKEL	5/8	1.3 - 4.87	1.9	5/5	1.1 - 2.77	1.9
SILVER	5/8	0.03 J - 0.07 J	0.1	6/10	0.06 - 0.712	0.2
ZINC	8/8	71.79 - 112	92.5	9/9	59.5 - 135	102

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COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	12/12	18.5 - 45	29.2	0/1	0	4.0
BENZO(A)ANTHRACENE	12/12	8.31 - 75	18.7	0/1	0	15.0
BENZO(A)PYRENE	10/12	8.24 - 76.7	17.7	0/1	0	9.5
BENZO(E)PYRENE	12/12	11.5 - 70.2 J	26.3	1/1	65	65.0
BENZO(G,H,I)PERYLENE	12/12	4.35 J - 53.6	15.3	0/1	0	16.5
C1-PHENANTHRENES/ANTHRACENES	12/12	15.3 - 71.05	27.6	1/1	34	34.0
C2-PHENANTHRENES/ANTHRACENES	12/12	21 - 111.5	36.0	1/1	57	57.0
C3-PHENANTHRENES/ANTHRACENES	12/12	16 - 91.1 J	34.6	1/1	140	140
C4-PHENANTHRENES/ANTHRACENES	12/12	8.7 J - 48.25	17.3	0/1	0	16.5
CHRYSENE	12/12	18.2 J - 106 J	39.4	1/1	60	60.0
DIBENZO(A,H)ANTHRACENE	12/12	0.48 J - 6.7 J	2.0	0/1	0	12.0
FLUORANTHENE	12/12	32.1 - 263	77.1	1/1	110	110
FLUORENE	12/12	3.34 J - 28.6 J	10.4	0/1	0	8.0
INDENO(1,2,3-CD)PYRENE	12/12	1.99 J - 51.6 J	12.2	0/1	0	12.0
PERYLENE	12/12	4.14 J - 27.5 J	11.8	0/1	0	8.0
PHENANTHRENE	9/12	15 - 165	33.7	1/1	24	24.0
PYRENE	12/12	30.6 - 200	61.7	1/1	110	110
Pesticides/PCB's (UG/KG)						
2,4'-DDD	12/12	1.2 - 26	10.9	1/1	9.101	9.1
2,4'-DDE	12/12	0.15 J - 2.35 J	0.8	0/1	0	0.5
2,4'-DDT	12/12	1.8 - 5 J	3.1	0/1	0	0.5
4,4'-DDD	12/12	3.3 - 65 J	25.2	1/1	46.974	47.0
4,4'-DDE	12/12	6.7 - 22	13.3	1/1	19.332	19.3
4,4'-DDT	10/12	1.5 - 11	4.5	1/1	11.62	11.6
ALDRIN	4/12	0.15 J - 1.9	0.4	1/1	2.407	2.4
ALPHA-CHLORDANE	10/12	0.58 - 5.1	1.8	1/1	3.002	3.0
GAMMA-BHC (LINDANE)	9/12	0.08 J - 1.2	0.4	0/1	0	0.3
HEPTACHLOR	6/12	0.08 J - 4.45	1.0	0/1	0	0.5
HEPTACHLOR EPOXIDE	6/12	0.27 - 2.2	0.7	0/1	0	0.1
HEXACHLOROBENZENE	12/12	0.125 J - 1.6	0.6	0/1	0	0.4
MIREX	4/12	0.51 - 2	0.7	0/1	0	0.2
PCB-101/90	9/12	7.6 - 17	9.8	1/1	8.436	8.4
PCB-105	12/12	2.1 - 6.8	4.7	0/1	0	0.4
PCB-118	10/12	4.2 - 15	7.4	1/1	12.728	12.7
PCB-128	12/12	1.5 - 4.1	2.9	1/1	4.559	4.6
PCB-138/160	7/12	11 - 27	14.4	1/1	18.837	18.8
PCB-153/132	8/12	14 - 37	20.3	1/1	29.613	29.6
PCB-170/190	4/12	0.21 J - 1.3	0.6	1/1	3.275	3.3

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COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 08					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	9/12	0.1 J - 5.1 J	1.9	1/1	5.308	5.3
PCB-180	7/12	4.6 J - 9.8	5.9	1/1	7.02	7.0
PCB-187	8/12	4.9 - 13	8.0	1/1	11.336	11.3
PCB-195/208	3/12	0.17 J - 0.27 J	0.3	0/1	0	0.4
PCB-206	1/12	0.0415	0.3	0/1	0	0.4
PCB-209	3/12	0.3 J - 0.45 J	0.4	0/1	0	0.4
PCB-28	12/12	0.51 J - 3.5	1.5	1/1	2.957	3.0
PCB-44	9/12	0.21 J - 5.2	2.0	1/1	2.923	2.9
PCB-52	11/12	1.9 - 9.8	4.5	1/1	5.304	5.3
PCB-66	9/12	1 J - 2.75	1.5	1/1	12.047	12.0
PCB-8/5	9/12	0.18 J - 5	1.8	0/1	0	0.4
TRANS-NONACHLOR	12/12	0.87 - 3.3	1.8	1/1	3.734	3.7
Inorganics (MG/KG)						
ALUMINUM	12/12	59.5 J - 532	314	1/1	294	294
ARSENIC	12/12	4.53 - 9.98	7.8	1/1	6.3	6.3
CADMIUM	12/12	0.88 - 2	1.4	1/1	1.6	1.6
CHROMIUM	11/12	1.4 - 6.28	3.4	1/1	3.4	3.4
COPPER	12/12	6.46 J - 11	8.4	1/1	7.5	7.5
IRON	12/12	274 - 1078	638	1/1	627	627
LEAD	12/12	3.06 - 9.52	4.8	1/1	10.7	10.7
MANGANESE	12/12	5.3 - 17	11.9	1/1	8.8	8.8
MERCURY	12/12	0.18 - 0.27	0.2	1/1	0.24	0.2
NICKEL	8/12	1.5 - 3.5	2.1	1/1	2.4	2.4
SILVER	6/12	0.02 J - 0.09 J	0.1	1/1	0.85	0.9
ZINC	12/12	72.39 - 110	91.0	1/1	107	107

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COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	7/8	10.5 J - 57.1	28.0	1/2	18.2	11.6
BENZO(A)ANTHRACENE	8/8	8.68 - 31.9	17.2	1/2	27.8	23.7
BENZO(A)PYRENE	6/8	5.35 J - 30.5 J	13.0	1/2	20.3	17.7
BENZO(E)PYRENE	8/8	10.5 - 40	23.8	2/2	42.3 - 88	65.2
BENZO(G,H,I)PERYLENE	8/8	3.51 J - 26.9	12.7	1/2	21.7	26.9
C1-PHENANTHRENES/ANTHRACENES	8/8	9.86 J - 51.4	30.9	1/2	51.6	39.3
C2-PHENANTHRENES/ANTHRACENES	8/8	11.9 - 40.6	30.4	1/2	127	79.5
C3-PHENANTHRENES/ANTHRACENES	8/8	5.48 J - 85.6	37.1	2/2	76.3 - 160	118
C4-PHENANTHRENES/ANTHRACENES	8/8	5.28 J - 21.1	14.4	2/2	92 - 131.8	112
CHRYSENE	8/8	17.8 J - 52	33.5	1/2	53	41.8
DIBENZO(A,H)ANTHRACENE	8/8	0.5 J - 5.3 J	1.9	0/2	0	16.4
FLUORANTHENE	8/8	30.8 - 130	71.6	2/2	93 - 180	137
FLUORENE	8/8	2.39 J - 13 J	8.1	1/2	10.8	13.4
INDENO(1,2,3-CD)PYRENE	8/8	1.65 J - 23.9	9.9	1/2	27.1	25.6
PERYLENE	8/8	2.7 J - 22.2 J	11.4	1/2	9.89	16.9
PHENANTHRENE	6/8	9.24 - 56.4	26.5	2/2	20.8 - 35	27.9
PYRENE	8/8	29.1 - 98.5	57.8	2/2	77.4 - 160	119
Pesticides/PCB's (UG/KG)						
2,4'-DDD	8/8	0.95 - 4.9	2.6	2/3	7.324 - 7.608	5.2
2,4'-DDE	7/8	0.11 J - 5 J	1.1	0/3	0	0.4
2,4'-DDT	8/8	0.35 J - 4.8 J	2.7	2/3	3.713 - 4.464	2.9
4,4'-DDD	8/8	2.3 - 7.9	5.5	2/3	7.365 - 37.761	25.3
4,4'-DDE	8/8	5 - 13	7.3	3/3	1.64 - 30.503	24.2
4,4'-DDT	6/8	0.56 - 4.8	2.3	2/3	3.67 - 16.892	10.4
ALDRIN	2/8	0.46 - 3.3	0.6	0/3	0	0.4
ALPHA-CHLORDANE	6/8	0.74 - 2.1	1.3	2/3	7.385 - 7.594	5.1
GAMMA-BHC (LINDANE)	6/8	0.04 J - 1.3	0.4	0/3	0	0.2
HEPTACHLOR	4/8	0.09 J - 4.1	1.2	0/3	0	0.1
HEPTACHLOR EPOXIDE	4/8	0.33 - 1.1	0.5	0/3	0	0.4
HEXACHLOROBENZENE	8/8	0.07 J - 2.3	0.8	0/3	0	1.5
MIREX	1/8	0.74	0.4	0/3	0	0.4
PCB-101/90	6/8	7.5 - 17	8.7	3/3	11 - 19.455	16.6
PCB-105	8/8	3 - 6.5	4.5	0/3	0	0.4
PCB-118	7/8	5.3 - 11	6.3	3/3	9.02 - 22.19	17.3
PCB-128	7/8	1.5 - 4.1	2.4	3/3	4.09 - 8.448	6.8
PCB-138/160	4/8	12 - 22	12.8	3/3	15.6 - 26.942	22.9
PCB-153/132	4/8	15 - 29	15.0	3/3	19.2 - 40.949	33.7
PCB-170/190	2/8	3.9 - 18	3.1	2/3	3.151 - 4.069	2.6

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COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 09					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	5/8	0.95 J - 4.1	1.9	2/3	5.844 - 6.807	4.6
PCB-180	3/8	3.7 J - 9.5	5.2	3/3	2.53 - 11.029	7.9
PCB-187	5/8	5.6 - 15	7.5	3/3	6.43 - 13.559	11.1
PCB-195/208	2/8	0.19 J - 0.55 J	0.3	0/3	0	0.4
PCB-206	1/8	0.05	0.4	0/3	0	0.4
PCB-209	2/8	0.58 J - 0.93	0.7	0/3	0	0.4
PCB-28	8/8	0.56 J - 3.5	1.9	2/3	3.117 - 3.501	2.4
PCB-44	6/8	0.52 J - 5.4	2.4	2/3	4.666 - 4.748	3.3
PCB-52	8/8	1.8 - 11	5.0	2/3	9.56 - 9.818	6.8
PCB-66	6/8	0.91 J - 4.5	1.7	2/3	7.863 - 28.017	18.7
PCB-8/5	6/8	0.25 J - 5.3 J	2.1	0/3	0	0.7
TRANS-NONACHLOR	8/8	0.54 J - 1.9	1.4	2/3	7.673 - 8.396	5.4
Inorganics (MG/KG)						
ALUMINUM	8/8	76.1 J - 1175	427	6/6	203 - 695	445
ARSENIC	8/8	5.19 - 10.28	7.9	6/6	6.9 - 13	10.5
CADMIUM	8/8	0.85 - 2.1	1.6	6/6	1.55 - 2.83	2.3
CHROMIUM	8/8	1.9 - 7.43	3.8	3/3	3.94 - 5.72	4.6
COPPER	8/8	6.8 - 52.5 J	14.1	6/6	8.4 - 22.7	12.5
IRON	8/8	186 - 1877	733	3/3	526 - 714.6	594
LEAD	8/8	2.6 - 7.33	4.5	6/6	6.1 - 13.6	9.2
MANGANESE	8/8	8.3 - 73.9	21.2	6/6	15.6 - 228	58.6
MERCURY	8/8	0.19 - 0.3	0.3	4/4	0.18 - 2.4	0.9
NICKEL	7/8	1.7 - 12.9	3.6	3/3	2.64 - 3.52	3.1
SILVER	7/8	0.04 J - 0.74 J	0.2	3/6	0.374 - 2.7	0.6
ZINC	8/8	84.99 - 126 J	102	6/6	74.3 - 176	110

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	12/12	9.36 J - 32	23.0	6/7	14.3 - 42.05	25.3
BENZO(A)ANTHRACENE	12/12	7.1 J - 36.3	13.4	5/7	15.8 - 120.5	36.9
BENZO(A)PYRENE	9/12	5.25 J - 29.8 J	9.8	5/7	8.35 - 71.4	20.8
BENZO(E)PYRENE	12/12	11.7 - 43.6	19.5	5/7	28.4 - 129.9	46.7
BENZO(G,H,I)PERYLENE	12/12	4.2 J - 22.9	8.9	3/7	16.5 - 54.85	22.5
C1-PHENANTHRENES/ANTHRACENES	12/12	10.475 J - 68	28.2	7/7	39.6 - 91.68	62.9
C2-PHENANTHRENES/ANTHRACENES	12/12	10.57 J - 31.6	22.4	7/7	55 - 139.2	99.8
C3-PHENANTHRENES/ANTHRACENES	12/12	7.55 J - 52.55	23.6	5/7	60.76 - 136.2	66.3
C4-PHENANTHRENES/ANTHRACENES	12/12	4.005 J - 20.3	11.4	5/7	65.67 - 132.9	76.2
CHRYSENE	12/12	14.6 - 61.4	28.1	5/7	36.1 - 127.1	53.4
DIBENZO(A,H)ANTHRACENE	12/12	0.5 J - 3.95	1.5	0/7	0	12.0
FLUORANTHENE	12/12	32 - 87.3	49.9	7/7	61 - 251.4	130
FLUORENE	12/12	2.59 J - 12.4 J	7.4	5/7	10.1 - 29.53	16.1
INDENO(1,2,3-CD)PYRENE	12/12	2.89 J - 20.7	7.3	2/7	19.2 - 50.65	18.5
PERYLENE	12/12	5.73 J - 15.4	8.5	2/7	14.01 - 14.03	9.9
PHENANTHRENE	9/12	8.12 - 34.9	18.7	7/7	23.6 - 106.5	53.8
PYRENE	12/12	28.95 - 78.6	39.3	7/7	44 - 167.2	92.0
Pesticides/PCB's (UG/KG)						
2,4'-DDD	12/12	1.1 - 80	11.4	2/8	1.852 - 6.27	1.5
2,4'-DDE	11/12	0.14 J - 9.15	1.6	2/8	1.327 - 1.56	0.6
2,4'-DDT	12/12	0.16 J - 391	36.9	8/8	2.21 - 26.709	7.7
4,4'-DDD	12/12	2.9 - 104	17.7	8/8	7.887 - 17.502	11.5
4,4'-DDE	12/12	6.5 - 99	18.5	8/8	9.57 - 20.65	14.9
4,4'-DDT	12/12	0.5 - 596	56.3	8/8	3.42 - 54.556	23.8
ALDRIN	4/12	0.09 J - 3.3	0.6	1/8	1.18	0.5
ALPHA-CHLORDANE	10/12	0.9 - 32.5	4.8	8/8	1.209 - 4.33	3.1
GAMMA-BHC (LINDANE)	9/12	0.08 J - 0.96	0.3	1/8	31.848	4.3
HEPTACHLOR	10/12	0.13 J - 3.85	1.2	0/8	0	0.3
HEPTACHLOR EPOXIDE	4/12	0.54 - 1.5	0.6	0/8	0	0.6
HEXACHLOROBENZENE	12/12	0.12 J - 3.5	1.0	0/8	0	1.7
MIREX	3/12	0.12 J - 0.525 J	0.3	0/8	0	0.4
PCB-101/90	9/12	4.3 - 54	14.5	8/8	3.463 - 22	8.7
PCB-105	12/12	1.3 - 17	6.3	7/8	2.41 - 12.183	4.1
PCB-118	12/12	3.9 - 34	11.9	7/8	4.948 - 13.9	7.1
PCB-128	12/12	1.055 - 6.9	3.1	7/8	2.115 - 4.21	2.4
PCB-138/160	5/12	8.2 - 37	12.1	7/8	7.808 - 17.4	10.3
PCB-153/132	4/12	9.25 - 37	11.9	8/8	11.347 - 19.6	14.3
PCB-170/190	3/12	0.85 - 1.4	0.5	0/8	0	0.6

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COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 10					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	7/12	1.7 - 5.9 J	2.9	3/8	1.224 - 4.727	2.2
PCB-180	5/12	4.6 J - 7.6 J	4.9	4/8	1.07 - 4.132	1.6
PCB-187	6/12	2.75 - 6.9	3.5	7/8	2.91 - 6.44	3.6
PCB-195/208	0/12	0	0.3	0/8	0	0.5
PCB-206	1/12	0.2195	0.3	0/8	0	0.4
PCB-209	3/12	0.28 J - 0.53 J	0.4	0/8	0	0.4
PCB-28	12/12	0.37 J - 2.5	1.4	1/8	1.254	0.7
PCB-44	10/12	0.3 J - 6.5	2.7	1/8	1.307	0.6
PCB-52	11/12	1.6 - 34	8.4	3/8	1.567 - 4.88	1.8
PCB-66	9/12	0.3 J - 3.6	1.2	3/8	2.944 - 6.673	1.9
PCB-8/5	9/12	1.015 - 5.45 J	2.3	1/8	1.44	1.1
TRANS-NONACHLOR	12/12	0.88 - 22	3.8	6/8	1.548 - 4.23	1.9
Inorganics (MG/KG)						
ALUMINUM	12/12	139.5 J - 525	268	11/11	127 - 492	261
ARSENIC	12/12	4.17 - 10.5 J	8.2	11/11	4.8 - 11.2	8.9
CADMIUM	12/12	1.22 - 3	2.0	11/11	1.13 - 2.79	1.9
CHROMIUM	10/12	1.6 - 5.64	2.5	7/7	2.8 - 3.7	3.2
COPPER	12/12	6.09 J - 23.955	10.0	11/11	5.3 - 9.86	7.8
IRON	12/12	238 J - 1029.5	467	7/7	303 - 431.6	391
LEAD	12/12	2.52 - 9.4	5.9	11/11	3.04 - 15	7.0
MANGANESE	12/12	8.15 - 312	38.1	11/11	8 - 18.9	13.0
MERCURY	12/12	0.18 - 0.37	0.3	7/7	0.27 - 0.41	0.3
NICKEL	8/12	1.2 - 3.4	1.7	7/7	0.89 - 2.23	1.7
SILVER	8/12	0.06 J - 0.55 J	0.2	5/11	0.06 - 0.424	0.1
ZINC	12/12	77.2 J - 404	121	11/11	63.9 - 132	94.6

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	12/12	13.3 J - 29.7	23.1	3/4	18.3 - 25	17.5
BENZO(A)ANTHRACENE	12/12	6.1 J - 16.85	11.6	3/4	17.1 - 40	26.1
BENZO(A)PYRENE	9/12	5 - 13.6 J	8.0	3/4	8.58 - 27.4	16.4
BENZO(E)PYRENE	12/12	10.8 - 24.15 J	16.9	3/4	28.9 - 47	32.7
BENZO(G,H,I)PERYLENE	12/12	4.2 J - 11	7.7	2/4	28 - 32.8	22.2
C1-PHENANTHRENES/ANTHRACENES	12/12	8.8 - 39.1	24.6	3/4	60.9 - 88.1	56.0
C2-PHENANTHRENES/ANTHRACENES	12/12	15.5 - 43.6	26.2	3/4	106.4 - 124.2	91.0
C3-PHENANTHRENES/ANTHRACENES	12/12	10.9 J - 41	23.7	3/4	75.5 - 136.4	85.8
C4-PHENANTHRENES/ANTHRACENES	12/12	7.4 J - 22.5	12.2	3/4	59.9 - 101.9	67.7
CHRYSENE	12/12	12.65 - 35.6	23.5	3/4	31.4 - 40.8	31.5
DIBENZO(A,H)ANTHRACENE	12/12	0.2 J - 2.23 J	1.2	0/4	0	11.1
FLUORANTHENE	12/12	22.2 - 60.9	44.2	4/4	65.7 - 81.6	72.7
FLUORENE	12/12	3.96 - 12.1 J	7.9	3/4	10.3 - 25.1	14.7
INDENO(1,2,3-CD)PYRENE	12/12	1.7 J - 8 J	5.4	2/4	28.1 - 35.22	21.8
PERYLENE	12/12	4.8 J - 31.1 J	10.9	2/4	16 - 19.1	12.4
PHENANTHRENE	9/12	6.2 - 32.6 J	17.9	3/4	21.3 - 40.9	26.8
PYRENE	12/12	22.1 - 48.6	35.2	4/4	44.4 - 71	55.2
Pesticides/PCB's (UG/KG)						
2,4'-DDD	12/12	0.46 J - 2.7	1.9	0/4	0	0.6
2,4'-DDE	8/12	0.1 J - 7.5 J	1.4	0/4	0	0.3
2,4'-DDT	11/12	0.084 J - 5.2 J	1.7	1/4	5.49	1.9
4,4'-DDD	12/12	1.57 J - 9.2	4.3	4/4	5.05 - 7.27	6.5
4,4'-DDE	12/12	4 - 10	6.8	4/4	8.07 - 17.99	13.0
4,4'-DDT	9/12	0.13 J - 6.5 J	1.4	4/4	4.048 - 26.16	16.3
ALDRIN	5/12	0.17 J - 0.82	0.3	1/4	2.654	0.9
ALPHA-CHLORDANE	9/12	0.66 J - 4.8	1.5	3/4	2.89 - 5.375	2.9
GAMMA-BHC (LINDANE)	8/12	0.145 J - 2.1	0.6	0/4	0	0.3
HEPTACHLOR	10/12	0.08 J - 4.6	1.3	0/4	0	0.3
HEPTACHLOR EPOXIDE	3/12	0.14 - 9.4	1.1	0/4	0	0.6
HEXACHLOROBENZENE	12/12	0.08 J - 9.5	1.5	0/4	0	1.9
MIREX	3/12	0.033 J - 0.66	0.3	0/4	0	0.3
PCB-101/90	12/12	6.65 J - 32	15.7	4/4	11 - 57.7	23.8
PCB-105	12/12	2.15 - 20	6.8	3/4	3.33 - 8.84	4.6
PCB-118	12/12	4.05 J - 29.5	13.8	4/4	7.69 - 24.8	14.3
PCB-128	12/12	1.9 - 13	4.8	4/4	3.04 - 11.2	6.1
PCB-138/160	11/12	11 J - 46	21.5	4/4	12.7 - 46.9	24.2
PCB-153/132	11/12	9.2 - 40.5	21.0	4/4	14.3 - 40.5	24.5
PCB-170/190	1/12	2.07	0.6	1/4	1.255	0.7

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 11					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	8/12	0.48 J - 5.8	2.4	1/4	5.33	2.4
PCB-180	9/12	2.8 J - 12.8 J	6.7	3/4	1.76 - 4.61	2.4
PCB-187	10/12	2.1 - 11.6 J	5.3	4/4	3.28 - 5.71	5.0
PCB-195/208	4/12	0.27 J - 2.3	0.5	0/4	0	0.4
PCB-206	2/12	0.05 J - 0.15 J	0.3	0/4	0	0.4
PCB-209	4/12	0.235 J - 0.63 J	0.4	0/4	0	0.4
PCB-28	12/12	0.55 J - 3	1.4	1/4	2.466	1.1
PCB-44	9/12	1.3 - 4.2	2.4	1/4	2.978	1.2
PCB-52	9/12	2.1 - 10.8	4.2	1/4	6.048	2.4
PCB-66	9/12	0.34 J - 1.9	1.0	1/4	14.302	3.8
PCB-8/5	9/12	0.06 J - 7.6	1.8	0/4	0	1.1
TRANS-NONACHLOR	12/12	0.77 J - 4.15	2.0	2/4	2.04 - 3.493	1.5
Inorganics (MG/KG)						
ALUMINUM	12/12	151 J - 631	267	8/8	76.9 - 390	279
ARSENIC	12/12	5.9 - 10.86	7.6	7/9	5.1 - 9.99	6.5
CADMIUM	12/12	1.3 - 2.22	1.7	8/8	0.893 - 3.02	1.9
CHROMIUM	12/12	1.3 - 5.91	2.7	4/5	2.3 - 4.83	3.5
COPPER	12/12	6.98 - 24.4 J	9.8	9/9	6.2 - 34.1	17.3
IRON	12/12	219 J - 1686	490	5/5	209 - 713.6	463
LEAD	12/12	2.4 - 199 J	29.4	9/9	11.8 - 273	97.2
MANGANESE	12/12	10.6 - 21.11	15.7	9/9	12.7 - 77.6	29.2
MERCURY	11/12	0.14 - 0.53	0.3	4/5	0.261 - 0.457	0.3
NICKEL	7/12	0.82 - 2.29	1.5	5/5	1.44 - 5.65	3.0
SILVER	7/12	0.02 J - 0.07 J	0.1	3/8	0.04 - 0.529	0.2
ZINC	12/12	73.8 - 121 J	95.8	9/9	68.1 - 162	116

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Monitoring Station 12					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	8/8	47.3 J - 485 J	200	4/7	17.9 - 38.4	24.0
BENZO(A)ANTHRACENE	8/8	24.4 - 381 J	128	5/7	45.9 - 63.5	44.5
BENZO(A)PYRENE	7/8	17.7 - 338 J	86.5	5/7	30.5 - 44.1	30.2
BENZO(E)PYRENE	8/8	30.1 J - 251.5 J	81.8	6/7	56.61 - 69.8	56.1
BENZO(G,H,I)PERYLENE	8/8	9.6 J - 179.85	41.7	5/7	23.8 - 43	33.7
C1-PHENANTHRENES/ANTHRACENES	8/8	41.6 - 258	113	7/7	43.05 - 100	83.1
C2-PHENANTHRENES/ANTHRACENES	8/8	30.3 - 138	68.2	6/7	55.76 - 215.2	121
C3-PHENANTHRENES/ANTHRACENES	8/8	18.2 - 89.6 J	47.2	6/7	27.6 - 225	65.4
C4-PHENANTHRENES/ANTHRACENES	8/8	14.8 - 32.8	19.7	5/7	31.69 - 345	121
CHRYSENE	8/8	48.35 - 474.5 J	170	6/7	51.52 - 121.7	87.2
DIBENZO(A,H)ANTHRACENE	8/8	0.9 J - 34.7 J	7.4	0/6	0	16.3
FLUORANTHENE	8/8	120.5 - 1326 J	522	7/7	84.23 - 242	163
FLUORENE	8/8	17.9 J - 217 J	78.4	6/7	19 - 41.4	26.0
INDENO(1,2,3-CD)PYRENE	8/8	6.6 J - 211.45 J	43.9	4/7	20.3 - 56.7	31.7
PERYLENE	8/8	11.9 - 75.45 J	28.3	5/7	10.7 - 40.16	20.4
PHENANTHRENE	8/8	57.9 - 893 J	309	7/7	44.23 - 163	83.4
PYRENE	8/8	87.9 - 995.5 J	370	7/7	64.23 - 179	127
Pesticides/PCB's (UG/KG)						
2,4'-DDD	8/8	1.3 J - 12.55 J	4.1	1/8	1.1	0.9
2,4'-DDE	5/8	0.17 J - 5.2 J	1.3	0/7	0	0.4
2,4'-DDT	6/8	1.5 - 3.5 J	1.8	3/8	1.09 - 3.492	1.4
4,4'-DDD	8/8	2.3 - 12	5.2	7/8	3.534 - 7.701	4.9
4,4'-DDE	8/8	5.9 - 13	8.0	5/8	7.43 - 10.88	6.1
4,4'-DDT	6/8	0.35 J - 2.6 J	1.0	8/8	2.211 - 30.19	18.7
ALDRIN	5/8	0.11 J - 1.4	0.4	1/7	2.31	0.8
ALPHA-CHLORDANE	7/8	1 - 6.7 J.	3.0	4/8	1.48 - 3.41	1.3
GAMMA-BHC (LINDANE)	5/8	0.11 J - 2.5	0.8	1/8	0.23	0.4
HEPTACHLOR	6/8	0.24 J - 3.7	1.3	0/7	0	0.4
HEPTACHLOR EPOXIDE	2/8	8.8 - 8.9	2.5	0/7	0	0.8
HEXACHLOROBENZENE	8/8	0.22 J - 17	3.8	1/8	0.41	2.0
MIREX	3/8	0.4 J - 0.6925 J	0.4	1/8	0.32	0.4
PCB-101/90	8/8	6.4 - 27	15.1	6/7	3.906 - 8.51	5.1
PCB-105	8/8	2.4 - 16	6.9	5/7	3.05 - 9.669	4.6
PCB-118	8/8	5.9 - 24	11.7	6/7	4.586 - 7.9	5.5
PCB-128	8/8	1.5 - 6.8	3.7	5/7	1.764 - 2.576	1.9
PCB-138/160	6/8	17 - 48	23.2	7/7	8.054 - 17.1	13.2
PCB-153/132	8/8	14.75 - 60	33.6	7/7	2.803 - 23.49	18.6
PCB-170/190	2/8	0.33 J - 4.1 J	1.3	3/7	0.45 - 1.561	1.0

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 12					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	4/8	1.7 - 3.275 J	1.8	3/7	2.43 - 4.081	2.5
PCB-180	7/8	6.6 J - 21	11.3	6/7	2.05 - 5.694	3.0
PCB-187	8/8	6.6 - 32	16.7	7/7	4.881 - 13.7	9.6
PCB-195/208	3/8	0.2 J - 2	0.5	0/6	0	0.6
PCB-206	3/8	0.1 J - 0.32 J	0.3	0/6	0	0.6
PCB-209	4/8	0.29 J - 0.89 J	0.5	1/7	0.18	0.5
PCB-28	8/8	1.4 - 6.7	3.4	1/6	1.081	0.9
PCB-44	5/8	4.7 - 8.6	4.1	3/7	1.689 - 2.187	1.3
PCB-52	7/8	3.3 - 15	7.5	4/7	2.191 - 2.907	2.3
PCB-66	8/8	0.43 - 8.1	3.7	3/7	4.34 - 9.705	3.1
PCB-8/5	6/8	2.5 - 6.1	3.4	2/6	1.138 - 4.034	2.1
TRANS-NONACHLOR	8/8	0.76 - 8.5	3.5	3/8	1.4 - 2.367	1.0
Inorganics (MG/KG)						
ALUMINUM	8/8	202 J - 358 J	295	7/7	268 - 1140	588
ARSENIC	8/8	5.62 - 10.73	8.1	7/7	4.6 - 12.3	9.0
CADMIUM	8/8	0.95 - 1.8 J	1.3	7/7	1.2 - 6.03	3.1
CHROMIUM	8/8	1.7 - 4.1	2.9	4/4	3.5 - 4.73	4.0
COPPER	8/8	6.56 - 10.48	8.3	7/7	6.6 - 14	10.2
IRON	8/8	394 J - 834	549	4/4	643 - 2164	1160
LEAD	8/8	2.95 - 11.2 J	5.6	7/7	7.1 - 23.23	13.8
MANGANESE	8/8	9.97 - 24.9	15.1	7/7	10.9 - 29.07	18.0
MERCURY	8/8	0.17 - 0.27	0.2	7/7	0.26 - 0.675	0.4
NICKEL	5/8	1.4 - 2.1	1.6	4/4	1.6 - 3.4	2.5
SILVER	4/8	0.03 J - 0.07 J	0.1	7/7	0.05 - 0.632	0.3
ZINC	8/8	79.85 - 109.2	93.5	7/7	71.5 - 206.3	125

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COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	8/8	23 J - 2009 J	353	2/2	352.3 - 364.9	359
BENZO(A)ANTHRACENE	8/8	11.7 J - 3936.5	599	2/2	1720 - 1730	1725
BENZO(A)PYRENE	8/8	9.8 - 3148 J	451	2/2	504 - 512.7	508
BENZO(E)PYRENE	8/8	14.9 J - 1878	307	2/2	592.1 - 594	593
BENZO(G,H,I)PERYLENE	8/8	4.4 J - 850	126	2/2	156.8 - 157.4	157
C1-PHENANTHRENES/ANTHRACENES	8/8	17.5 - 1644.5	274	2/2	1630 - 1730	1680
C2-PHENANTHRENES/ANTHRACENES	8/8	16.7 - 631.5	136	2/2	996.4 - 1030	1013
C3-PHENANTHRENES/ANTHRACENES	8/8	17.2 - 263	83.3	2/2	439.3 - 450.1	445
C4-PHENANTHRENES/ANTHRACENES	8/8	8.9 J - 77.6	36.0	2/2	814.1 - 933.6	874
CHRYSENE	8/8	24.2 - 4733.5	717	2/2	1320 - 1330	1325
DIBENZO(A,H)ANTHRACENE	8/8	0.4 J - 313	43.1	2/2	57.9 - 60.4	59.2
FLUORANTHENE	8/8	58.3 - 8456.5	1338	2/2	5080 - 5300	5190
FLUORENE	8/8	11.3 J - 1769 J	246	2/2	429.9 - 430.1	430
INDENO(1,2,3-CD)PYRENE	8/8	2.8 J - 1096	155	2/2	209.7 - 213.2	211
PERYLENE	8/8	6 - 542.5	91.6	2/2	175.3 - 176.2	176
PHENANTHRENE	8/8	21.6 J - 5891.5	849	2/2	3330 - 3420	3375
PYRENE	8/8	38.9 J - 5496.5	892	2/2	3400 - 3560	3480
Pesticides/PCB's (UG/KG)						
2,4'-DDD	8/8	0.61 - 182.7 J	25.4	0/4	0	0.7
2,4'-DDE	7/8	0.21 - 0.79	0.4	0/4	0	0.4
2,4'-DDT	8/8	0.82 J - 3	1.4	0/4	0	0.7
4,4'-DDD	8/8	1.6 - 5.5	3.6	4/4	3.519 - 6.31	5.3
4,4'-DDE	8/8	4.2 - 12	7.3	4/4	7.761 - 9.89	9.3
4,4'-DDT	8/8	0.67 - 8.9 J	3.4	2/4	15.06 - 15.57	8.0
ALDRIN	5/8	0.14 J - 1.3	0.4	1/4	3.154	1.1
ALPHA-CHLORDANE	8/8	1.25 - 2.6	1.8	1/4	1.301	0.6
GAMMA-BHC (LINDANE)	6/8	0.05 J - 2.7	0.6	0/4	0	0.5
HEPTACHLOR	2/8	0.23 J - 0.31 J	0.2	0/4	0	0.3
HEPTACHLOR EPOXIDE	3/8	0.41 - 1.1	0.5	0/4	0	0.6
HEXACHLOROBENZENE	8/8	0.11 J - 1.4	0.5	0/4	0	1.5
MIREX	3/8	0.06 J - 2.3	0.7	0/4	0	0.4
PCB-101/90	8/8	5 - 13	8.9	4/4	7.19 - 16.697	11.0
PCB-105	8/8	1.85 - 6.5	3.9	4/4	2.55 - 20.285	8.7
PCB-118	8/8	3.9 - 18 J	8.2	3/4	5.83 - 10.49	5.7
PCB-128	8/8	0.76 - 4	2.4	4/4	2.06 - 5.873	3.9
PCB-138/160	4/8	12 - 23	12.0	4/4	9.08 - 55.616	29.6
PCB-153/132	6/8	10 - 24.5	16.3	4/4	10.6 - 96.603	48.8
PCB-170/190	5/8	0.43 J - 32.5 J	5.7	2/4	0.96 - 11.693	6.0

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COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	4/8	0.37 J - 19.7 J	3.7	2/4	2.872 - 3.776	2.4
PCB-180	4/8	7.5 J - 18	6.9	2/4	9.93 - 21.277	10.6
PCB-187	6/8	1.6 - 9.65	5.3	4/4	1.61 - 27.101	13.7
PCB-195/208	4/8	0.08 J - 0.875 J	0.3	0/4	0	0.4
PCB-206	0/8	0	0.3	0/4	0	0.5
PCB-209	2/8	0.22 J - 1	0.4	0/4	0	0.4
PCB-28	7/8	0.26 J - 9.8 J	2.9	0/4	0	0.6
PCB-44	4/8	2.8 - 5.7	2.4	2/4	1.506 - 2.068	1.2
PCB-52	8/8	2.8 - 13	6.4	2/4	2.501 - 2.732	2.0
PCB-66	8/8	0.2 J - 4.45 J	2.2	2/4	4.68 - 21.677	9.3
PCB-8/5	6/8	.086 J - 18.425	5.2	0/4	0	1.0
TRANS-NONACHLOR	8/8	0.95 - 2	1.4	0/4	0	0.5
Inorganics (MG/KG)						
ALUMINUM	8/8	79.5 J - 436	253	3/3	238.64 - 543	354
ARSENIC	8/8	4.01 - 7.97	6.3	3/3	6.5 - 8.51	7.6
CADMIUM	8/8	1.21 - 1.8	1.6	3/3	1.52 - 3.1	2.5
CHROMIUM	8/8	1.2 - 3.895	2.5	2/2	3.5	3.5
COPPER	8/8	6.7 - 33.65 J	12.1	3/3	13.9 - 32.3	24.0
IRON	8/8	249 - 710	446	2/2	424.6 - 536	480
LEAD	8/8	2.1 - 4.57	2.9	3/3	3.56 - 11	6.5
MANGANESE	8/8	12.9 - 50.15	20.0	3/3	27.1 - 97.7	51.7
MERCURY	8/8	0.2 - 0.28	0.2	2/2	0.45 - 0.79	0.6
NICKEL	5/8	0.94 - 1.8	1.2	2/2	1.87 - 2.3	2.1
SILVER	5/8	0.03 J - 0.06	0.1	2/3	0.07 - 0.665	0.3
ZINC	8/8	81.6 - 125 J	102	3/3	75.2 - 105	92.6

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
Semi-Volatiles (UG/KG)						
ANTHRACENE	8/8	5.49 J - 42.5 J	27.2	3/5	26.38 - 59	25.9
BENZO(A)ANTHRACENE	8/8	10.8 J - 25.1	17.4	2/5	41.8 - 45.2	27.5
BENZO(A)PYRENE	8/8	9.5 J - 24.3	14.2	2/5	21.9 - 24.79	16.4
BENZO(E)PYRENE	8/8	11.9 - 27.8	20.6	4/5	51.91 - 58	48.0
BENZO(G,H,I)PERYLENE	8/8	5.1 J - 14.4	9.1	2/5	31.71 - 37.12	22.9
C1-PHENANTHRENES/ANTHRACENES	8/8	8.67 J - 37.3	23.8	5/5	44 - 95	67.7
C2-PHENANTHRENES/ANTHRACENES	8/8	5.31 J - 51.7	25.9	5/5	74.93 - 140	102
C3-PHENANTHRENES/ANTHRACENES	8/8	2.59 J - 69.2	31.1	5/5	9.136 - 150	76.6
C4-PHENANTHRENES/ANTHRACENES	8/8	0.07 J - 33.6	14.9	2/5	51.8 - 60.27	31.4
CHRYSENE	8/8	23.6 - 36.4	29.0	5/5	41.91 - 66	50.5
DIBENZO(A,H)ANTHRACENE	8/8	0.6 J - 3.2 J	1.5	0/5	0	16.3
FLUORANTHENE	7/8	43.4 - 87.8	54.3	5/5	90 - 122.8	104
FLUORENE	8/8	2.98 J - 22 J	8.9	2/5	25.33 - 52.46	20.1
INDENO(1,2,3-CD)PYRENE	8/8	3.8 J - 12	7.3	0/5	0	13.8
PERYLENE	8/8	6.4 - 13.9 J	9.5	3/5	13.42 - 36.84	23.5
PHENANTHRENE	7/8	8.92 - 43.9	21.5	5/5	29 - 116.5	60.4
PYRENE	7/8	32.4 - 66.1	46.4	5/5	69 - 100	86.0
Pesticides/PCB's (UG/KG)						
2,4'-DDD	7/8	0.34 - 1.9	0.9	3/6	1.482 - 10.7	2.8
2,4'-DDE	7/8	0.5 - 1.6	0.8	0/6	0	0.5
2,4'-DDT	7/8	0.71 - 5.5	1.8	1/6	3.009	1.1
4,4'-DDD	8/8	0.31 J - 6.6	3.0	5/6	5.866 - 10.963	7.4
4,4'-DDE	8/8	4.4 - 8.4	5.8	6/6	5.906 - 13.482	10.4
4,4'-DDT	5/8	0.12 J - 0.84	0.7	5/6	2.286 - 15.86	7.1
ALDRIN	5/8	0.21 J - 1.3	0.5	3/6	1.378 - 2.418	1.3
ALPHA-CHLORDANE	7/8	1.4 - 2.2	1.6	4/6	1.909 - 3.72	2.1
GAMMA-BHC (LINDANE)	4/8	0.07 J - 0.83	0.6	0/6	0	0.4
HEPTACHLOR	5/8	0.2 J - 2.7	0.7	0/6	0	0.5
HEPTACHLOR EPOXIDE	4/8	0.09 J - 21	3.3	2/6	1.902 - 2.314	1.2
HEXACHLOROBENZENE	7/8	0.08 J - 7.2	1.6	0/6	0	1.7
MIREX	0/8	0	0.3	0/6	0	0.4
PCB-101/90	8/8	0.71 J - 10	6.5	6/6	3.957 - 7.368	5.6
PCB-105	8/8	1 J - 5	2.5	4/6	3.04 - 7.274	3.7
PCB-118	8/8	3.4 - 11	6.0	6/6	5.168 - 12.007	8.2
PCB-128	8/8	0.63 J - 3.2	1.9	5/6	1.99 - 3.474	2.4
PCB-138/160	4/8	7.9 - 13	8.4	6/6	9.139 - 16.102	12.1
PCB-153/132	5/8	10 - 15	11.0	6/6	13.983 - 22.52	16.7
PCB-170/190	3/8	0.11 J - 1.6 J	0.5	3/6	1.606 - 2.297	1.4

TABLE C - 3

COMPARISON OF MUSSEL ANALYTICAL DATA BETWEEN MONITORING STATIONS AND HISTORIC SAMPLING LOCATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 14					
	Mussel Samples					
	Cumulative Monitoring Station Data [1]			EERA Samples [2]		
Parameters	Frequency of Detection	Range of Detections	Mean Concentration	Frequency of Detection	Range of Detections	Mean Concentration
PCB-18/17	5/8	0.25 J - 7.9	2.3	4/6	2.538 - 6.714	3.8
PCB-180	4/8	5.5 - 8.3	4.8	3/6	4.24 - 5.193	2.7
PCB-187	7/8	1.2 - 6	3.8	6/6	4.54 - 6.648	5.3
PCB-195/208	5/8	0.22 J - 0.6	0.3	0/6	0	0.5
PCB-206	3/8	0.015 J - 0.33 J	0.2	0/6	0	0.6
PCB-209	4/8	0.15 J - 1	0.4	0/6	0	0.3
PCB-28	7/8	0.78 - 7.8	3.0	3/6	1.119 - 2.709	1.5
PCB-44	6/8	0.87 - 9.9	2.6	4/6	1.045 - 2.778	1.5
PCB-52	7/8	2.1 - 11	5.5	4/6	1.495 - 5.033	2.6
PCB-66	8/8	0.24 J - 3.8	1.3	4/6	3.758 - 10.072	4.6
PCB-8/5	7/8	0.09 J - 11	2.8	1/6	2.908	1.5
TRANS-NONACHLOR	7/8	0.97 - 2.5	1.6	4/6	1.934 - 3.154	1.8
Inorganics (MG/KG)						
ALUMINUM	8/8	183 J - 434 J	286	5/5	198 - 550	394
ARSENIC	8/8	4.79 - 9.58	7.4	5/5	4.4 - 10.4	7.1
CADMIUM	8/8	0.69 - 1.8	1.3	5/5	1.1 - 2.65	1.7
CHROMIUM	7/8	1.9 - 4.28	2.6	3/3	2.7 - 3.9	3.3
COPPER	8/8	5.92 - 8.7	7.0	5/5	5.7 - 8.71	7.0
IRON	8/8	388 - 786	558	3/3	362 - 898	626
LEAD	8/8	1.74 - 4.45 J	3.1	5/5	2.1 - 7.5	5.1
MANGANESE	8/8	8.9 - 15.3	11.8	5/5	8.7 - 16.3	11.6
MERCURY	8/8	0.18 - 0.31	0.3	5/5	0.15 - 0.432	0.3
NICKEL	4/8	0.92 - 2.2	1.2	3/3	1.5 - 2.7	2.0
SILVER	5/8	0.05 J - 0.08 J	0.1	4/5	0.1 - 2.4	0.7
ZINC	8/8	61.83 - 110	88.5	5/5	83.3 - 107	97.7

Footnotes:
1 Source data is located in Rounds 1 through 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001).
2 Source data located in NCCOSC, 2000
Duplicate samples are averaged in this table
One half of detection limits are used in this table
Parameters analyzed in only a single study were not reported in this table
Stations collected from only a single study were not reported in this table
Dashes indicatenon-analyzed parameters

APPENDIX D

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES

TABLE D - 1

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES COLLECTED DURING ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Back Channel	Jamaica Cove	Clarks Cove	Sullivan Point	M12	M13	M14
Dioxins (NG/KG)							
1,2,3,4,6,7,8,9-OCDD			1.51	1.37	0.84		
1,2,3,4,6,7,8,9-OCDF			1.43	1.14	0.72		
1,2,3,4,6,7,8-HPCDD			1.37	1.79	0.74		
1,2,3,4,6,7,8-HPCDF			1.33	1.19	0.74		
1,2,3,4,7,8,9-HPCDF			1.07	0.66	1.92		
1,2,3,4,7,8-HXCDD			0.84	0.83	0.37		
1,2,3,4,7,8-HXCDF			1.27	1.05	0.76		
1,2,3,6,7,8-HXCDD			1.05	1.31	0.76		
1,2,3,6,7,8-HXCDF			1.34	0.61	0.76		
1,2,3,7,8,9-HXCDD			1.16	0.93	0.84		
1,2,3,7,8,9-HXCDF			0.75	0.51	0.70		
1,2,3,7,8-PECDD			0.70	0.61	0.24		
1,2,3,7,8-PECDF			0.80	0.52	0.46		
2,3,4,6,7,8-HXCDF			1.32	0.78	0.47		
2,3,4,7,8-PECDF			1.18	0.53	0.23		
2,3,7,8-TCDD			0.81	0.86	0.30		
2,3,7,8-TCDF			1.05	0.88	0.91		
TOTAL DIOXINS			1.45	1.49	0.90		
TOTAL FURANS			1.36	1.14	1.08		
TOTAL HPCDD			1.30	1.79	0.72		
TOTAL HPCDF			1.27	1.13	0.90		
TOTAL HXCDD			1.49	1.28	0.73		
TOTAL HXCDF			1.50	1.17	1.27		
TOTAL PECDD			1.78	1.49	0.51		
TOTAL PECDF			1.38	1.02	1.35		
TOTAL TCDD			1.66	1.59	0.72		
TOTAL TCDF			1.71	1.43	1.00		
Minimum			***0.70***	***0.51***	***0.23***		
Average			***1.25***	***1.08***	***0.78***		
Maximum			***1.78***	***1.79***	***1.92***		

TABLE D - 1

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES COLLECTED DURING ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Back Channel	Jamaica Cove	Clarks Cove	Sullivan Point	M12	M13	M14
Semi-Volatile Organics (UG/KG)							
1,1-BIPHENYL	1.39	0.56	0.60	0.79	0.79	2.07	0.45
1-METHYLNAPHTHALENE	1.34	0.64	0.73	0.64	0.79	1.19	1.98
1-METHYLPHENANTHRENE	1.31	0.64	0.62	0.77	0.74	1.16	1.93
2,3,5-TRIMETHYLNAPHTHALENE	1.05	0.62	0.54	0.90	0.57	1.10	0.66
2,6-DIMETHYLNAPHTHALENE	0.96	0.56	0.54	0.76	0.72	1.81	0.73
2-METHYLNAPHTHALENE	1.24	0.61	0.65	0.49	0.74	1.22	1.63
ACENAPHTHENE	2.04	0.68	0.74	0.99	0.94	1.96	0.76
ACENAPHTHYLENE	1.28	0.55	0.59	0.72	0.57	0.29	0.34
ANTHRACENE	1.62	0.63	0.62	0.94	0.77	0.76	0.44
BENZO(A)ANTHRACENE	1.26	0.59	0.61	0.85	0.77	0.58	0.44
BENZO(A)PYRENE	1.37	0.72	0.74	0.84	0.84	0.54	0.53
BENZO(B)FLUORANTHENE	1.10	0.57	0.61	0.85	0.78	0.32	0.36
BENZO(E)PYRENE	1.18	0.53	0.62	0.80	0.77	0.32	0.40
BENZO(G,H,I)PERYLENE	1.08	0.57	0.66	0.76	0.76	0.36	0.39
BENZO(K)FLUORANTHENE	1.12	0.54	0.70	0.87	0.81	0.35	0.37
C1-CHRYSENES	1.31	0.66	0.67	0.76	0.66	0.45	0.67
C1-DIBENZOTHIOPHENES	1.02	0.65	0.60	0.85	0.75	0.85	0.24
C1-FLUORANTHENES/PYRENES	1.59	0.59	0.66	0.86	0.80	0.68	0.46
C1-FLUORENES	1.93	0.66	0.63	1.09	0.71	1.47	0.67
C1-NAPHTHALENES	1.29	0.60	0.67	0.60	0.77	1.21	1.78
C1-PHENANTHRENES/ANTHRACEN	1.37	0.63	0.60	0.93	0.75	1.12	0.96
C2-CHRYSENES	1.27	0.65	0.65	0.82	0.49	0.24	0.63
C2-DIBENZOTHIOPHENES	1.05	0.70	0.61	0.75	0.51	0.37	0.24
C2-FLUORENES	1.88	0.61	0.61	0.80	0.63	0.79	0.60
C2-NAPHTHALENES	1.13	0.63	0.70	0.94	0.73	1.56	1.43
C2-PHENANTHRENES/ANTHRACEN	1.67	0.68	0.63	0.84	0.65	0.68	0.77
C3-CHRYSENES	0.80	0.71	0.70	0.31	0.75	0.39	0.45
C3-DIBENZOTHIOPHENES	1.17	0.74	0.68	0.71	0.62	0.59	0.41
C3-FLUORENES	2.12	1.00	0.58	0.66	0.84	0.50	0.64
C3-NAPHTHALENES	0.92	0.64	0.60	0.96	0.57	0.88	0.86
C3-PHENANTHRENES/ANTHRACEN	1.70	0.80	0.71	0.82	0.60	0.33	0.92
C4-CHRYSENES	1.89	1.15	1.06	1.10	1.42	1.11	1.30
C4-NAPHTHALENES	1.32	0.67	0.64	0.82	0.47	0.37	1.28

TABLE D - 1

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES COLLECTED DURING ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Back Channel	Jamaica Cove	Clarks Cove	Sullivan Point	M12	M13	M14
C4-PHENANTHRENES/ANTHRACEN	1.74	0.77	1.01	0.80	0.48	0.48	0.86
CHRYSENE	1.12	0.57	0.59	0.90	0.84	0.48	0.39
DIBENZO(A,H)ANTHRACENE	1.04	0.64	0.70	0.87	0.71	0.42	0.50
DIBENZOTHIOPHENE	1.47	0.62	0.66	1.03	0.87	1.29	0.26
FLUORANTHENE	1.56	0.62	0.63	0.93	0.83	0.86	0.30
FLUORENE	1.86	0.63	0.68	1.09	0.91	2.11	0.50
INDENO(1,2,3-CD)PYRENE	1.12	0.59	0.69	0.81	0.74	0.23	0.36
NAPHTHALENE	1.50	0.57	0.68	0.59	0.79	0.37	1.16
PERYLENE	0.81	0.68	0.71	0.75	0.81	0.30	0.36
PHENANTHRENE	1.70	0.64	0.66	1.01	0.90	1.39	0.67
PYRENE	1.57	0.59	0.60	0.86	0.89	0.77	0.35
Minimum	***0.80***	***0.53***	***0.54***	***0.31***	***0.47***	***0.23***	***0.24***
Average	***1.37***	***0.65***	***0.66***	***0.82***	***0.75***	***0.83***	***0.71***
Maximum	***2.12***	***1.15***	***1.06***	***1.10***	***1.42***	***2.11***	***1.98***

TABLE D - 1

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES COLLECTED DURING ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Back Channel	Jamaica Cove	Clarks Cove	Sullivan Point	M12	M13	M14
Pesticides/PCB's (UG/KG)	BC	JC	CC	SP	DD1	DD2	M14
1,2,3,4-TETRACHLOROBENZENE	1.18	0.97	0.91	0.82	0.69	1.59	0.84
1,2,4,5-TETRACHLOROBENZENE	0.75	0.89	0.93	0.78	0.69	0.49	0.98
2,4'-DDD	1.07	1.06	1.48	1.03	0.82	0.61	0.77
2,4'-DDE	1.21	0.80	0.96	0.68	0.78	0.55	1.02
2,4'-DDT	1.58	1.39	2.14	1.90	1.01	1.48	1.05
4,4'-DDD	1.25	1.75	1.80	1.30	0.70	0.39	0.57
4,4'-DDE	1.81	1.14	1.23	1.01	0.55	0.36	1.38
4,4'-DDT	3.07	1.46	2.35	1.47	0.86	0.93	1.09
ALDRIN	4.17	2.02	1.55	2.42	2.07	1.98	1.46
ALPHA-BHC	0.97	0.89	0.89	0.81	0.70	0.87	0.93
ALPHA-CHLORDANE	1.69	0.68	1.01	1.93	0.62	0.53	0.76
BETA-BHC	1.46	1.95	1.77	1.23	1.26	1.27	0.51
CHLORPYRIFOS	1.36	1.12	1.81	1.34	0.92	0.57	0.95
CIS-NONACHLOR	0.97	0.58	0.88	1.43	0.36	0.37	1.06
DELTA-BHC	1.14	0.79	1.16	0.75	1.65	0.50	0.56
DIELDRIN	2.44	0.95	1.09	0.79	1.51	0.82	0.84
ENDOSULFAN II	0.88	0.88	0.96	1.35	0.82	1.07	0.77
ENDRIN	1.44	0.35	0.49	0.60	0.70	0.55	0.29
GAMMA-BHC (LINDANE)	0.58	0.54	0.90	0.54	0.54	0.39	0.39
GAMMA-CHLORDANE	2.33	0.93	1.38	2.05	0.68	0.88	0.70
HEPTACHLOR	1.17	0.88	0.68	0.94	0.49	0.29	0.19
HEPTACHLOR EPOXIDE	2.32	1.35	1.41	1.80	0.31	1.28	1.34
HEXACHLOROBENZENE	5.32	2.29	3.36	0.91	2.85	1.21	1.22
MIREX	1.68	1.21	0.92	1.59	1.65	1.04	1.87
OXYCHLORDANE	1.43	1.02	1.09	1.32	0.79	1.50	1.03
PCB-101/90	1.51	0.52	1.19	0.47	0.41	0.43	0.97
PCB-105	1.05	0.66	1.22	0.54	0.40	0.45	1.18
PCB-114	0.44	0.37	0.58	0.57	0.45	0.49	0.50
PCB-118	0.84	0.63	1.23	0.40	0.63	0.29	0.83
PCB-126	2.26	0.66	0.69	0.49	0.78	0.86	0.81
PCB-128	0.75	0.59	0.92	0.51	0.80	0.37	0.55
PCB-138/160	1.47	0.62	1.02	0.90	0.72	0.37	0.52
PCB-149/123	1.71	0.56	1.11	0.95	0.59	0.56	0.55

TABLE D - 1

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES COLLECTED DURING ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Back Channel	Jamaica Cove	Clarks Cove	Sullivan Point	M12	M13	M14
PCB-153/132	1.79	0.68	1.05	1.08	0.67	0.45	0.60
PCB-156	0.79	0.62	0.91	1.16	0.80	0.56	0.84
PCB-167	2.64	0.84	0.74	1.06	0.40	0.43	0.75
PCB-169	1.81	0.75	0.93	0.94	1.16	1.20	1.17
PCB-170/190	0.86	1.40	1.24	0.97	0.80	0.80	0.58
PCB-18/17	1.32	1.09	1.83	1.12	1.01	1.49	1.59
PCB-180	3.30	0.73	1.20	1.80	1.20	0.41	0.52
PCB-187	3.39	0.86	0.99	1.34	1.48	0.73	1.03
PCB-189	2.41	0.89	0.64	0.49	0.66	0.51	0.54
PCB-195/208	4.10	2.30	0.88	1.02	1.59	0.45	0.71
PCB-201/157/173	3.76	0.81	0.67	1.08	1.47	0.85	1.47
PCB-206	4.61	2.90	0.95	0.94	2.28	0.51	0.63
PCB-209	1.78	1.39	0.93	0.73	1.69	0.43	0.68
PCB-28	2.14	1.44	0.87	0.81	0.80	0.77	0.73
PCB-44	1.07	1.27	1.15	0.62	0.85	1.08	1.26
PCB-52	1.16	1.01	1.43	0.29	0.82	0.66	1.18
PCB-66	0.85	0.65	0.88	0.78	1.03	0.97	0.64
PCB-77	2.74	1.62	1.34	0.79	1.23	0.59	1.22
PCB-8/5	0.95	1.02	0.89	1.27	1.26	1.23	0.89
PCB-81	1.78	0.91	0.73	0.87	1.57	0.75	1.04
PENTACHLOROANISOLE	0.96	1.11	0.83	0.83	0.57	0.41	1.29
PENTACHLOROBENZENE	0.78	0.72	1.24	1.03	0.58	0.57	0.59
TRANS-NONACHLOR	1.72	0.81	1.05	1.89	0.78	0.56	0.76
Minimum	***0.44***	***0.35***	***0.49***	***0.29***	***0.31***	***0.29***	***0.19***
Average	***1.79***	***1.04***	***1.15***	***1.05***	***0.95***	***0.75***	***0.88***
Maximum	***5.32***	***2.90***	***3.36***	***2.42***	***2.85***	***1.98***	***1.87***

TABLE D - 1

COEFFICIENT OF VARIATION FOR SEDIMENT SAMPLES COLLECTED DURING ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Back Channel	Jamaica Cove	Clarks Cove	Sullivan Point	M12	M13	M14
Inorganics (MG/KG)							
ALUMINUM	0.15	0.15	0.13	0.16	0.09	0.07	0.09
ARSENIC	0.30	0.35	0.22	0.32	0.33	0.19	0.13
CADMIUM	0.79	0.63	0.59	0.73	0.39	0.68	0.39
CHROMIUM	0.62	0.27	0.31	0.27	0.27	0.11	0.20
COPPER	3.46	0.69	1.04	0.73	0.82	0.40	0.34
IRON	0.47	0.24	0.44	0.27	0.20	0.07	0.12
LEAD	0.89	0.59	0.67	0.37	0.64	0.20	0.51
MANGANESE	0.46	0.45	0.44	0.24	0.11	0.10	0.12
MERCURY	1.77	0.72	0.58	0.45	0.78	0.21	0.31
NICKEL	1.46	0.31	0.74	0.28	0.43	0.16	0.18
SILVER	1.27	1.28	1.18	1.40	1.17	1.10	1.26
ZINC	1.66	0.45	0.95	0.55	1.00	0.25	0.24
Minimum	***0.15***	***0.15***	***0.13***	***0.16***	***0.09***	***0.07***	***0.09***
Average	***1.11***	***0.51***	***0.61***	***0.48***	***0.52***	***0.30***	***0.32***
Maximum	***3.46***	***1.28***	***1.18***	***1.40***	***1.17***	***1.10***	***1.26***

CV were calculated separately for monitoring stations M12, M13, and M14 for informational purposes
CVs were not calculated for monitoring station M11 because only one sediment sample was collected during most rounds.

APPENDIX E

CORRELATION PLOTS OF MUSSEL VERSUS SEDIMENT CONCENTRATIONS AND DATA USED TO GENERATE MUSSEL AND JUVENILE LOBSTER CORRELATION PLOTS

APPENDIX E

Approach for Developing Tissue Versus Sediment Correlation Plots

In order to determine BAF and BASF values for mussel tissue concentrations relative to sediment concentrations, scatterplots were made showing co-located mussel and sediment samples from the same station during the same round. The correlation plots for lobsters were based on the one lobster sample at a station compared to the average of the three sediment samples from that station during that round, because the lobster can move throughout the station.

The scatterplots were made showing tissue concentrations on the y-axis and sediment concentrations on the x-axis. The scatterplots for the inorganic chemicals used non-normalized data, while the organic concentrations were normalized to TOC for the sediments and percent lipids for the tissues.

Least-squares best-fit linear regression was performed on each plot. If the data is linearly correlated, the slope of such a line should represent the BAF or BASF. A good indicator of how well data fits a least-squares best-fit straight line is the coefficient of determination (r^2). This is the square of the Pearson r product-moment correlation between two variables.

$$r^2 = [(1/1\text{-}n)\ \Sigma\ (x\text{-}x'/S_x)(y\text{-}y'/S_x)]^2$$

where n = the number of samples
x = sediment concentration
x' = average sediment concentration
y = tissue concentration
y' = average tissue concentration
S_x = standard deviation of the sediment concentration
S_y = standard deviation of the tissue concentration

It expresses the amount of common correlation between the two variables (i.e., the 'strength' or 'magnitude' of their relationships). Perfect correlation corresponds to a r^2 value of 1 while total absence of correlation corresponds to a r^2 value of 0. The following is a common ranking that was used to determine the strength of association suggested by the value of the coefficient of determination:

0.65-1.00 - Strong Association between Variables
0.35-0.64 - Strong to Moderate Association

0.20-0.34 - Moderate Association

0.10-0.19 - Moderate to Weak Association

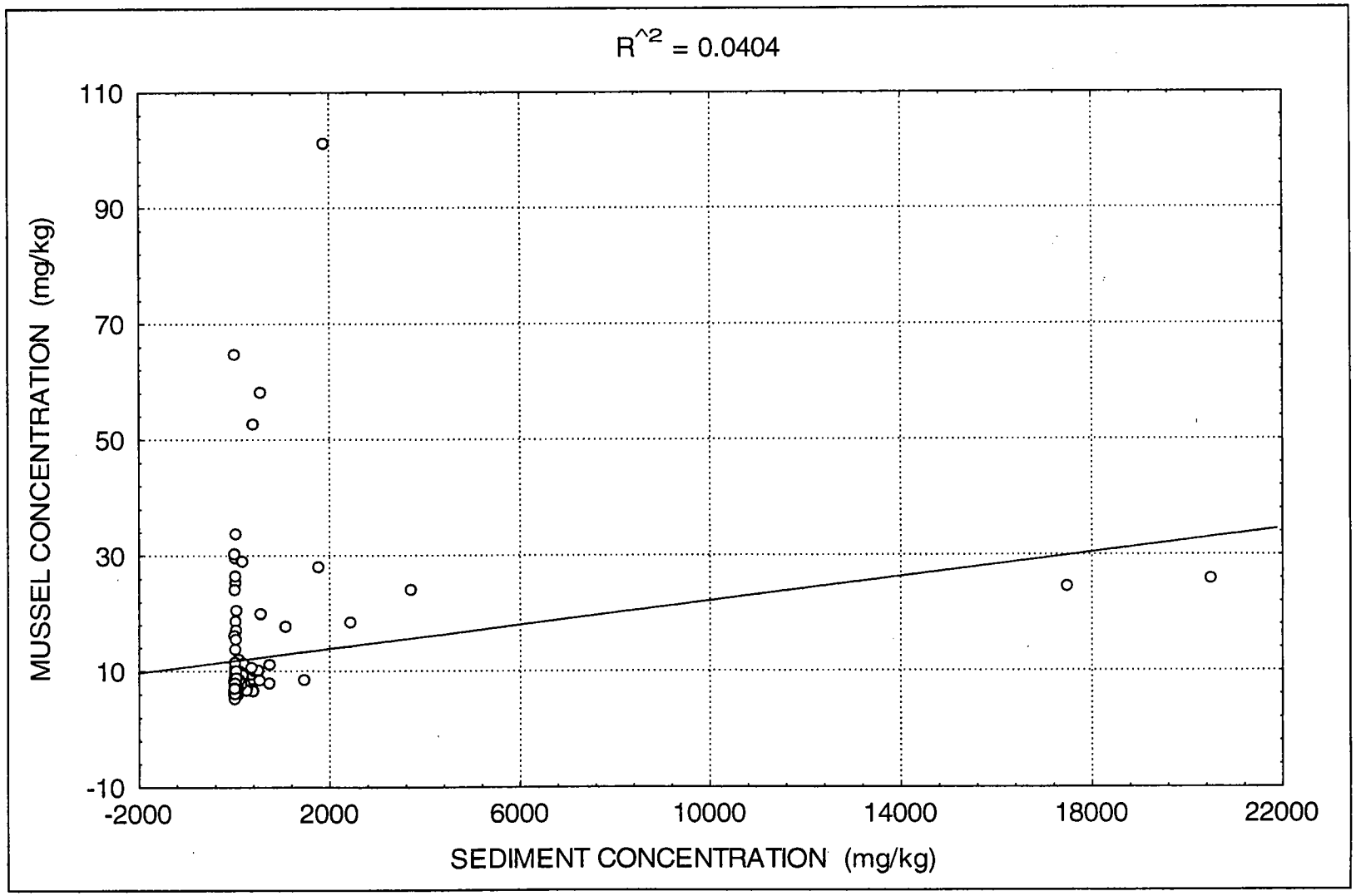
0.05-0.09 - Weak Association

0.00-0.04 - Little, if any association

The plots for the mussels are included in this appendix. The plots for the juvenile lobsters are provided in Section 7 of the report.

FIGURE E - 1

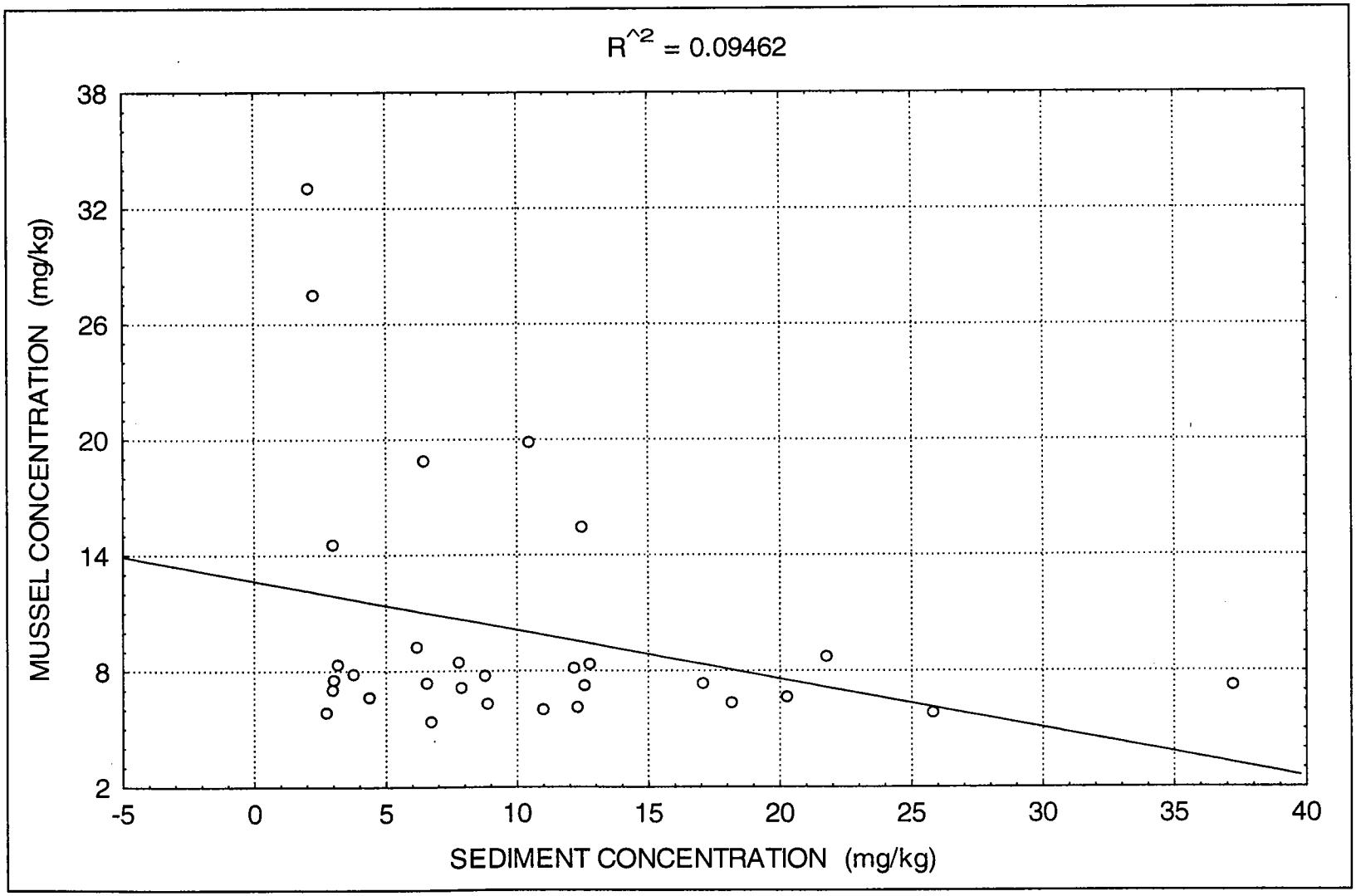
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE MONITORING STATIONS - COPPER - NON-NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- Neither the sediment or tissue data were normalized

FIGURE E - 2

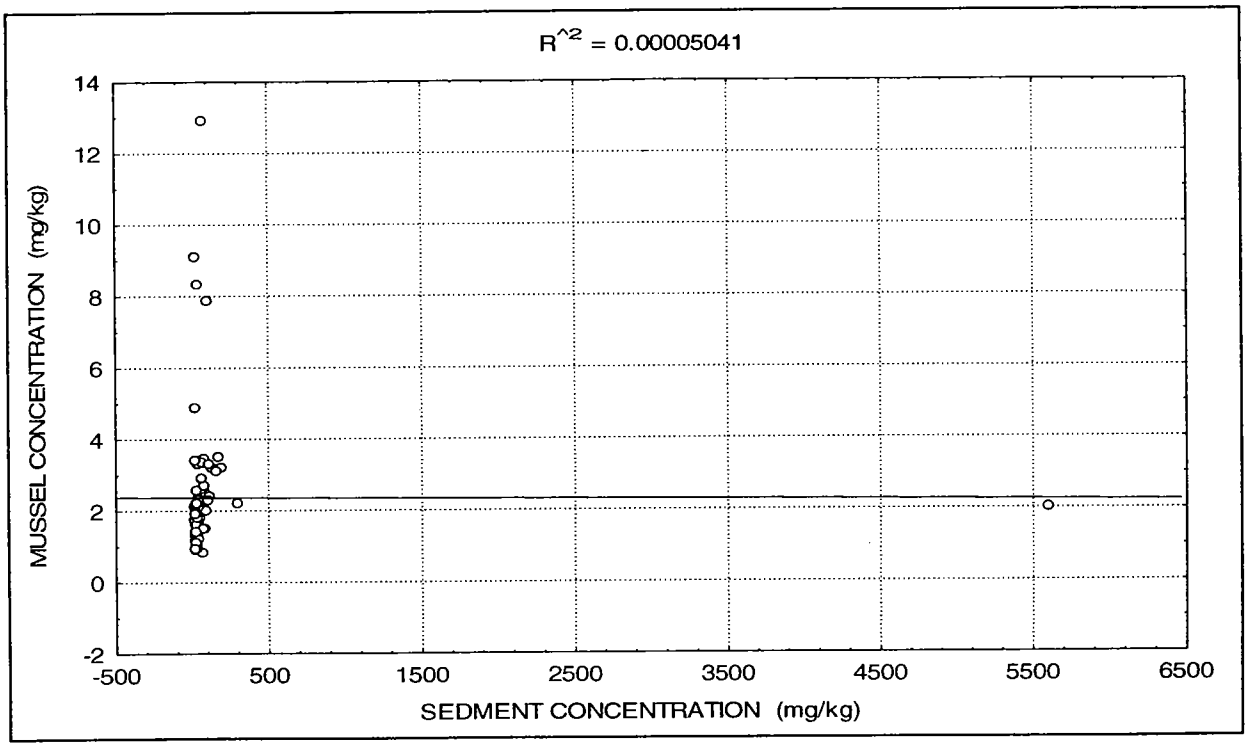
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE REFERENCE STATIONS - COPPER - NON-NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

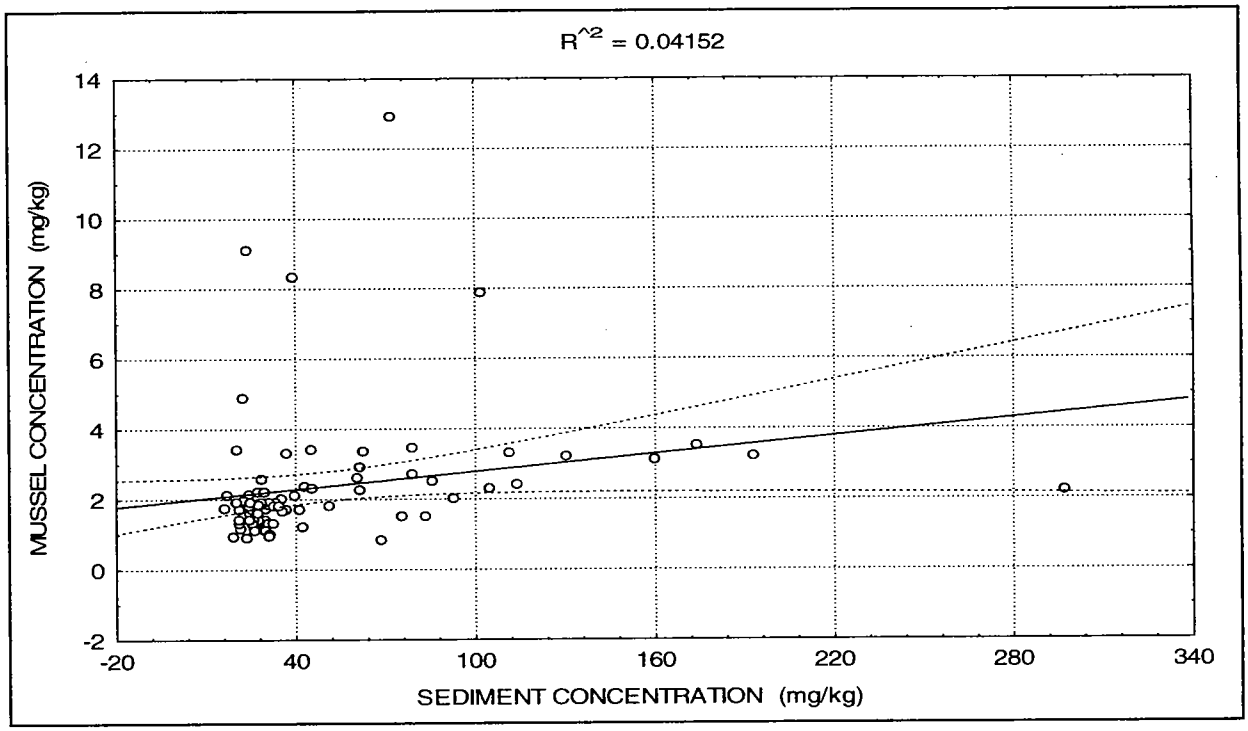


- Neither the sediment or tissue data were normalized

FIGURE E - 3

CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS AT THE MONITORING STATIONS - NICKEL - NON-NORMALIZED DATA BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

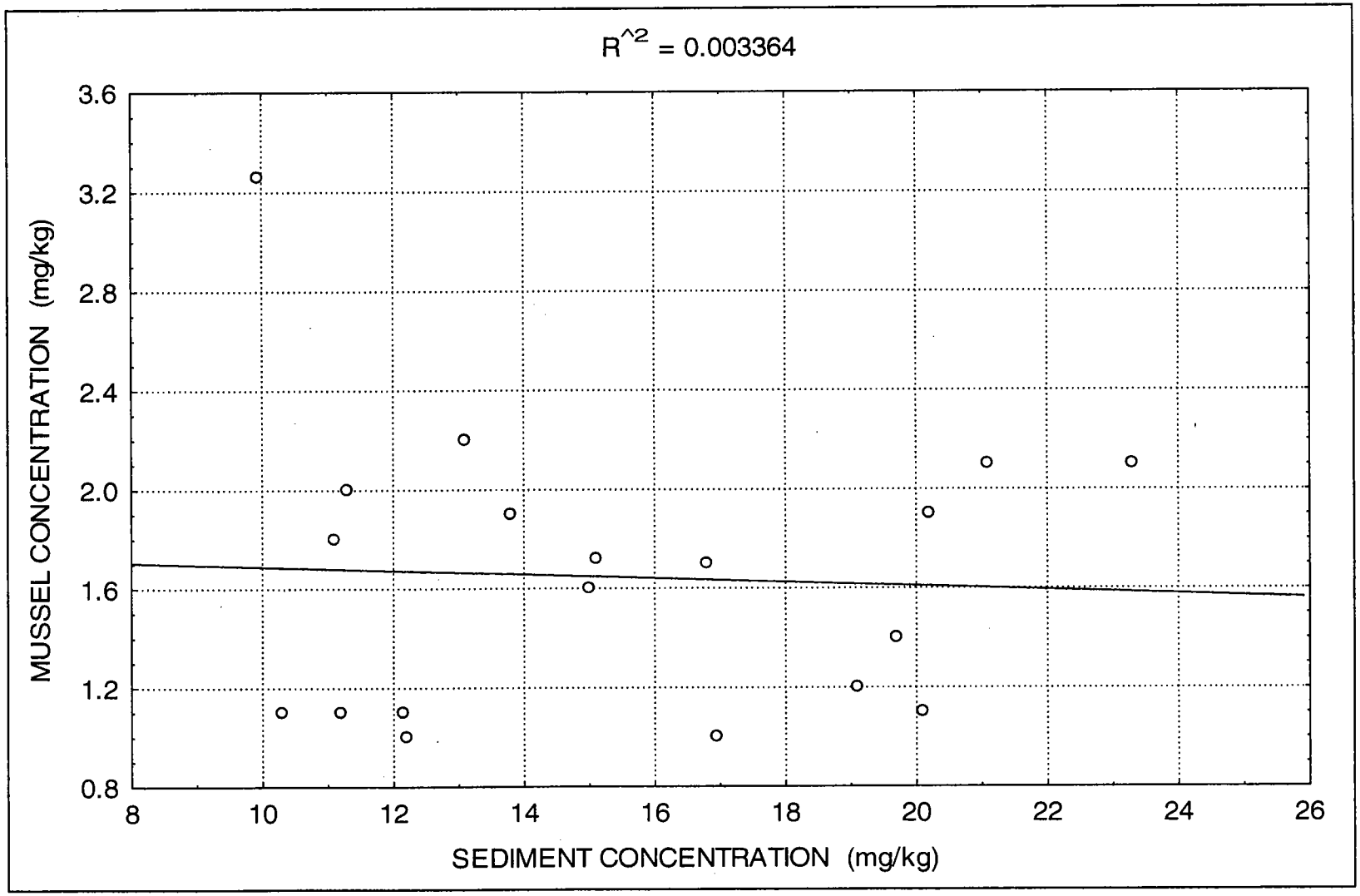




- An additional correlation was ran without the outlier in order to better visualize if a correlation did exist between sediment and mussel concentrations.
- Neither the sediment or tissue data were normalized

FIGURE E - 4

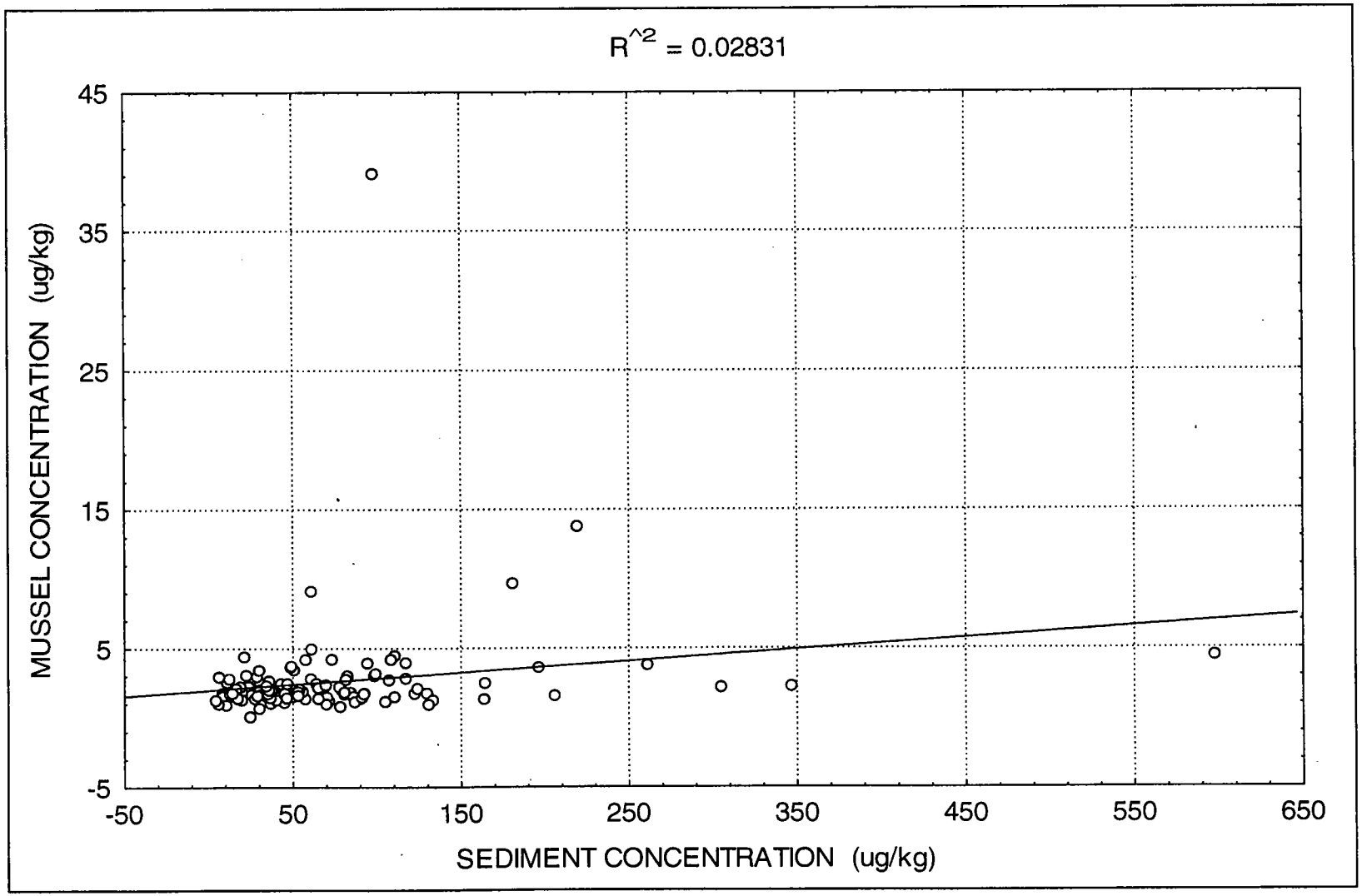
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE REFERENCE STATIONS - NICKEL - NON-NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- Neither the sediment or tissue data were normalized

FIGURE E - 5

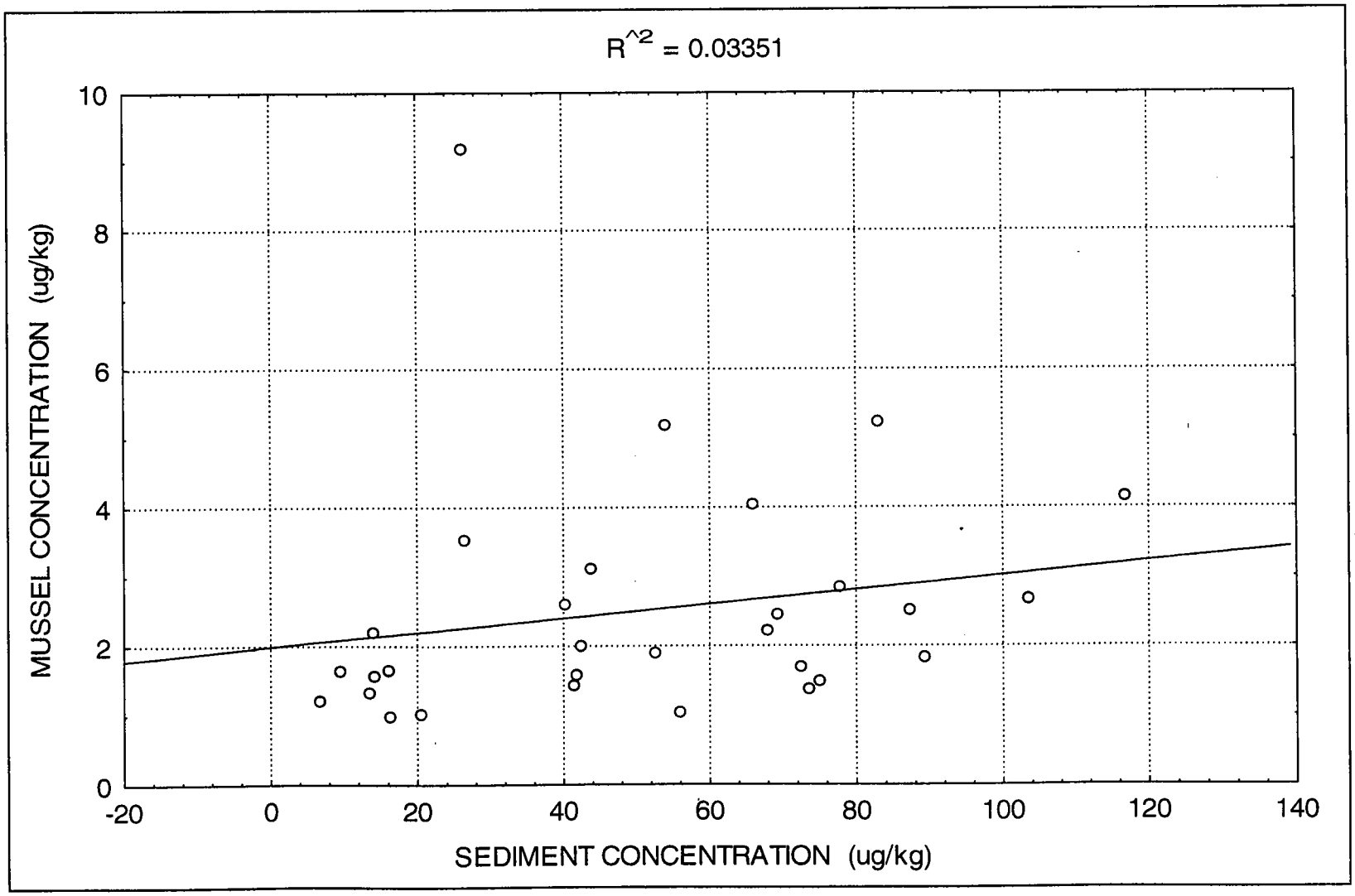
CORRELATION PLOST OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE MONITORING STATIONS - ACENAPHTHYLENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE E - 6

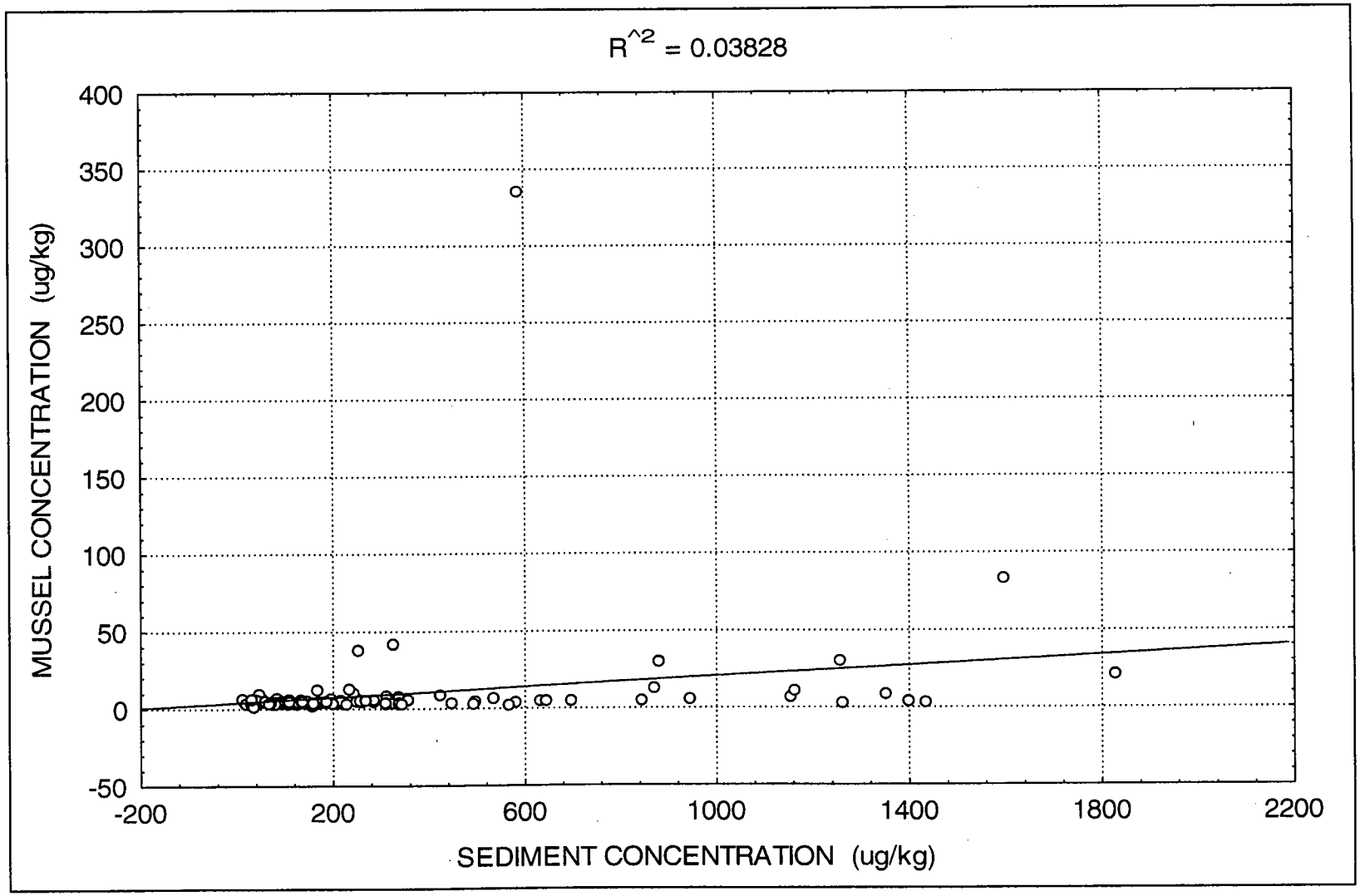
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE REFERENCE STATIONS - ACENAPHTHYLENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE E - 7

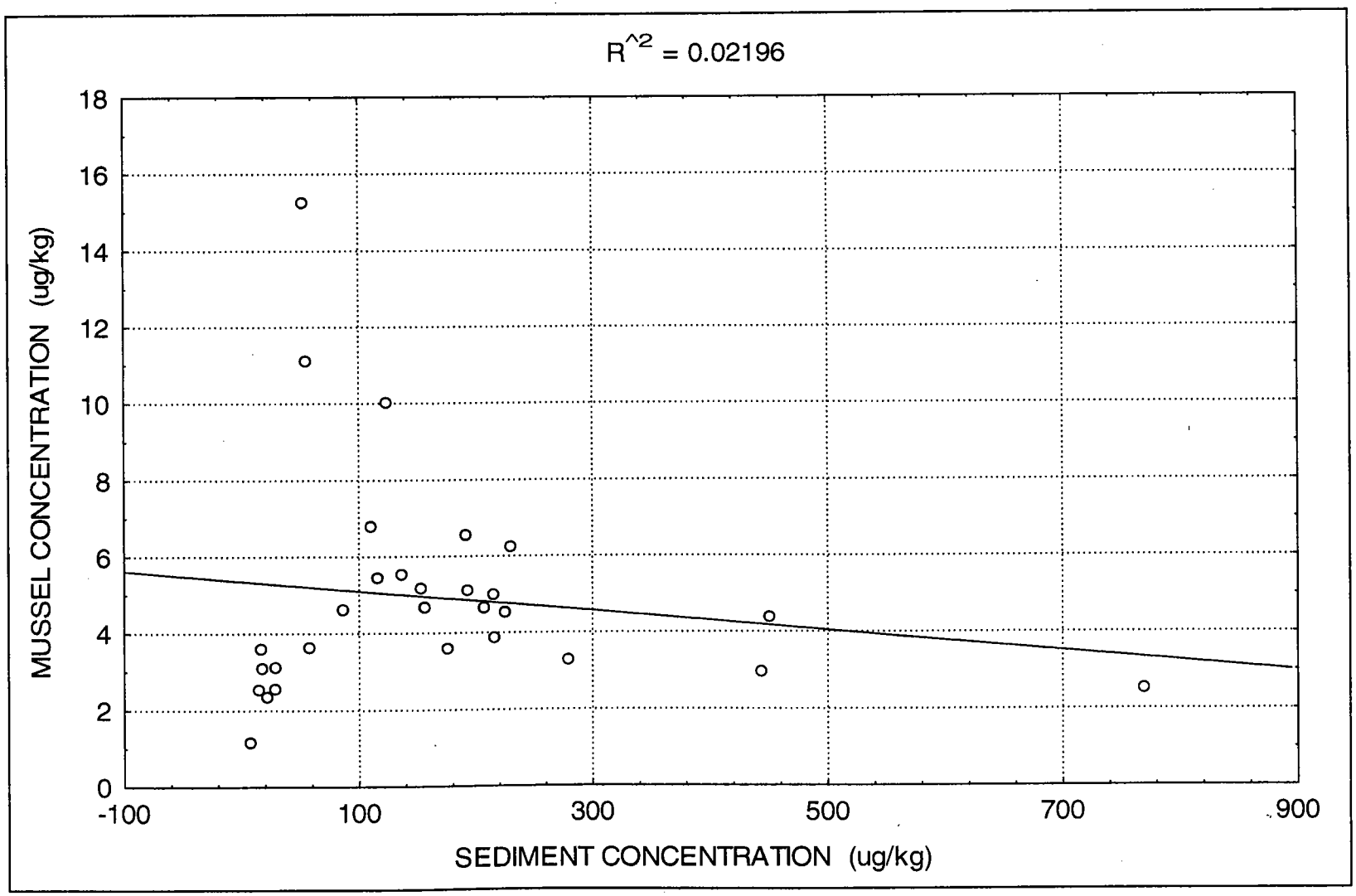
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE MONITORING STATIONS - ANTHRACENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE E - 8

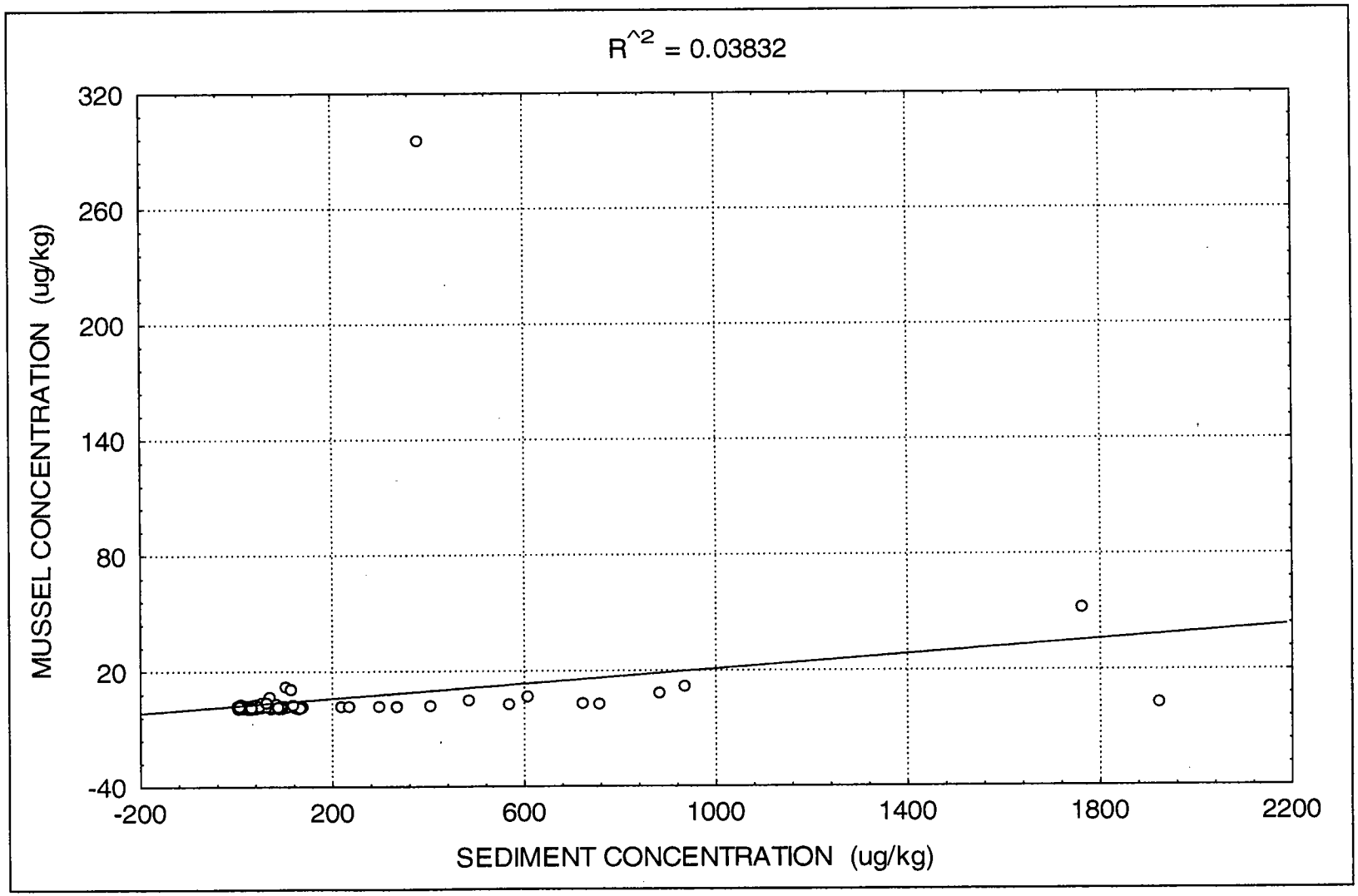
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE REFERENCE STATIONS - ANTHRACENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE E - 9

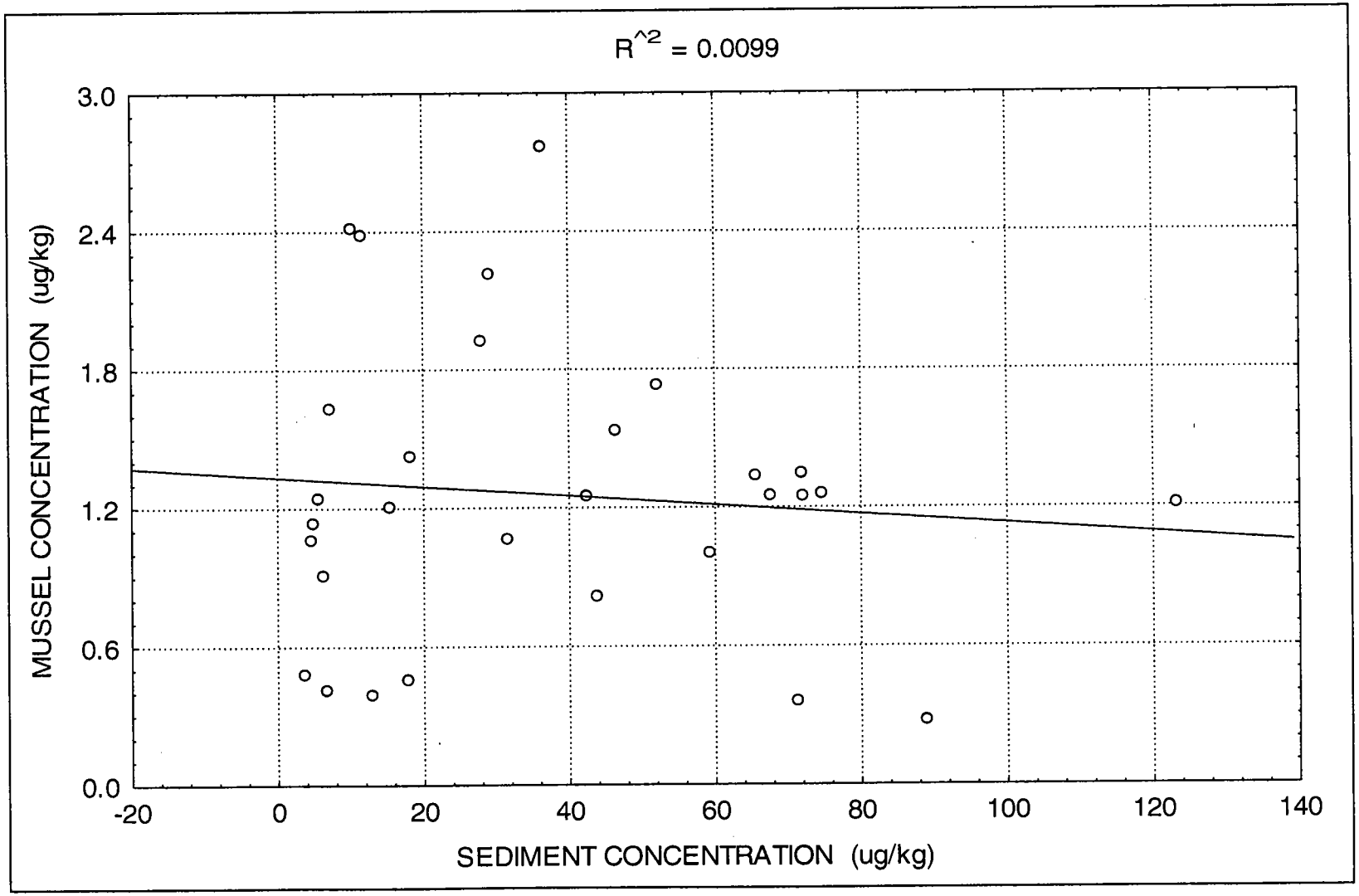
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE MONITORING STATIONS - FLUORENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE E - 10

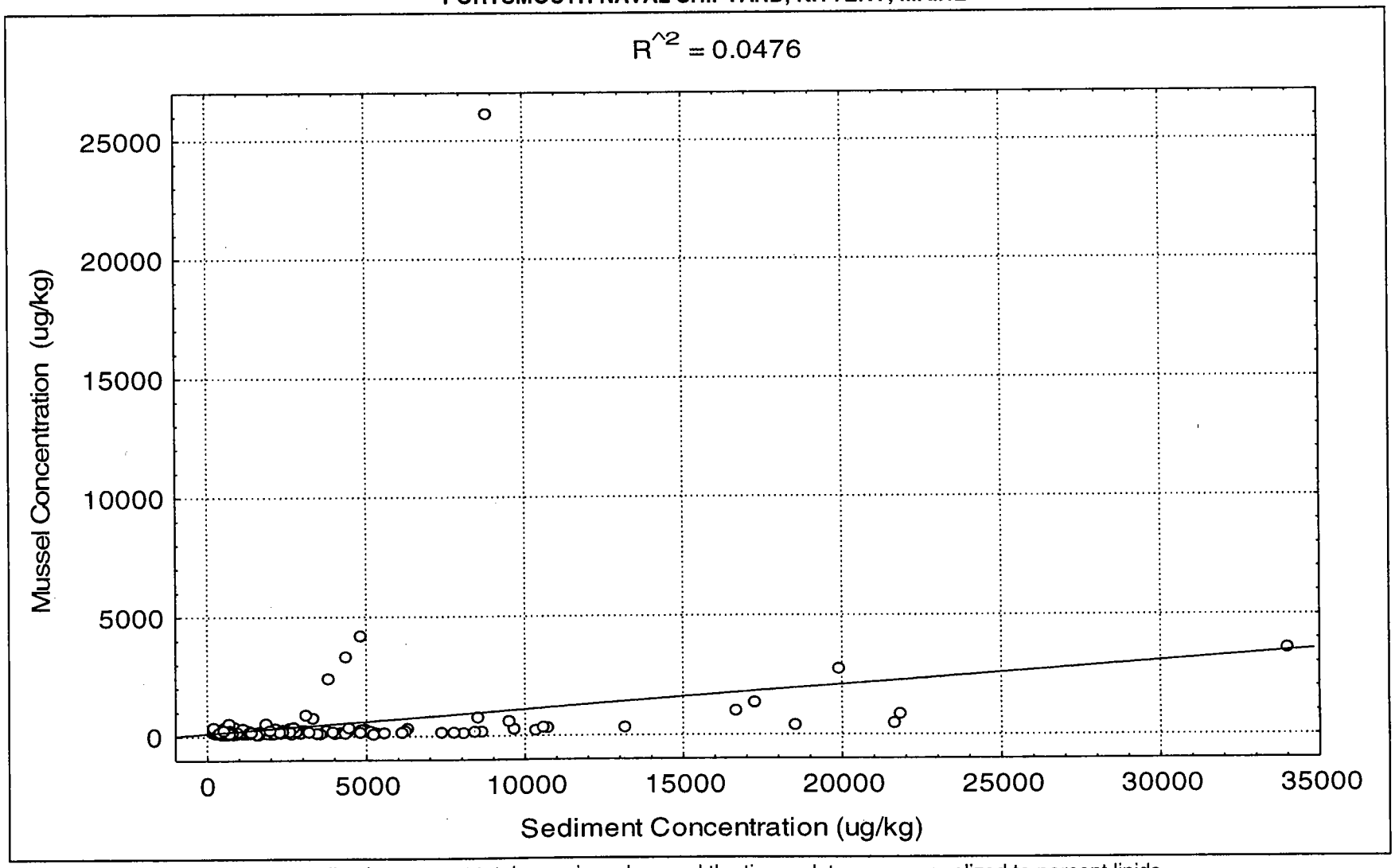
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
AT THE REFERENCE STATIONS - FLUORENE - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE E - 11

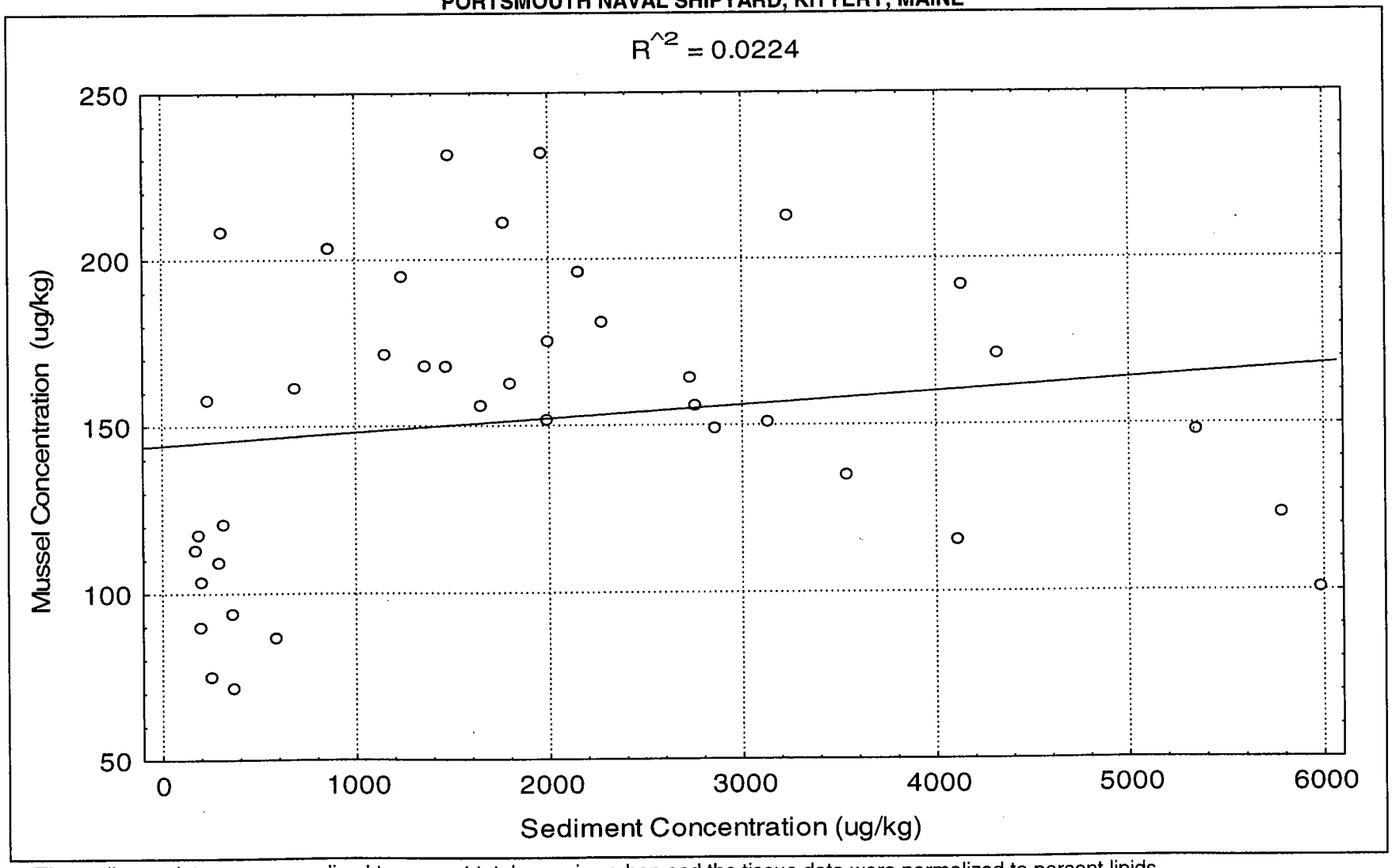
CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN MONITORING STATIONS - HMW PAHS - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

FIGURE E - 12

CORRELATION PLOT OF MUSSEL CONCENTRATIONS VERSUS SEDIMENT CONCENTRATIONS
IN REFERENCE STATIONS - HMW PAHS - NORMALIZED DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE



- The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids.

TABLE E - 1
DATA USED TO GENERATE MUSSEL VS SEDIMENT CONCENTRATION CORRELATION PLOTS
AT THE MONITORING AND REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Acenaphthylene				Anthracene				Fluorene			
Monitoring Station		Reference Station		Monitoring Station		Reference Station		Monitoring Station		Reference Station	
Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)
197	3.53	26	9.18	252	5.84	54	15.24	37	1.14	10	2.41
85	1.75	27	3.52	325	3.26	111	6.77	96	1.37	29	2.21
347	2.17	53	1.88	845	4.34	87	4.60	220	1.33	18	1.42
123	1.68	54	5.17	497	4.15	56	11.09	131	0.47	18	0.46
261	3.72	78	2.83	357	5.09	137	5.51	101	1.57	12	2.38
165	2.41	89	1.82	698	4.20	216	3.85	406	1.54	66	1.33
598	4.36	42	1.42	1352	8.03	58	3.62	724	2.64	15	1.20
111	1.45	117	4.13	339	2.70	231	6.22	130	0.38	13	0.39
31	2.46	87	2.50	53	4.88	193	5.09	12	1.00	72	1.24
38	2.13	42	1.57	81	5.28	176	3.57	17	1.67	52	1.73
40	1.64	83	5.22	99	4.48	192	6.53	22	0.46	46	1.53
29	2.91	69	2.44	40	5.00	207	4.63	12	1.17	44	0.81
17	1.60	68	2.21	42	3.38	157	4.65	8	1.34	42	1.25
31	1.62	66	4.03	117	3.45	124	10.00	46	1.99	28	1.92
21	1.59	44	3.11	41	4.24	154	5.15	12	0.37	32	1.06
11	2.49	42	1.99	21	4.40	451	4.36	6	1.05	75	1.26
24	2.22	74	1.36	55	4.44	444	2.94	14	1.54	123	1.21
23	3.00	56	1.03	52	6.74	770	2.50	11	2.45	68	1.25
9	1.47	104	2.66	25	4.76	215	4.97	6	0.89	89	0.28
61	2.75	40	2.59	110	5.42	117	5.42	25	1.07	59	1.00
46	1.76	75	1.47	199	3.52	280	3.27	56	1.25	36	2.77
69	2.09	73	1.68	261	3.97	226	4.51	38	1.44	72	1.34
42	1.43	14	2.18	107	3.83	17	3.58	21	0.37	71	0.36
99	2.97	10	1.63	197	6.00	18	3.07	52	1.09	5	1.13
37	2.32	7	1.20	134	5.30	15	2.52	38	1.52	5	1.06
80	1.94	14	1.56	286	4.12	22	2.33	55	1.37	6	1.24
45	1.04	16	0.97	208	3.09	29	3.10	74	0.26	4	0.48
117	3.89	16	1.64	338	7.29	29	2.54	74	1.32	6	0.91
305	2.09	14	1.31	633	4.28	8	1.14	139	1.18	7	1.63
130	1.71	21	1.01	1400	3.43			299	1.23	7	0.41
55	1.64			135	3.57			28	0.76		
30	3.37			47	9.03			12	1.83		
50	1.62			172	3.00			42	0.96		
20	1.82			49	3.59			12	0.99		
37	1.00			126	2.68			27	0.29		
124	2.03			174	3.93			54	0.81		
81	1.64			203	3.07			53	0.99		
93	1.70			339	3.27			107	1.09		
58	1.31			158	1.40			24	0.44		
78	0.74			187	3.56			42	0.41		
56	1.83			494	2.52			74	1.20		
134	1.21			154	3.59			137	0.82		
91	1.32			85	6.38			32	0.40		
51	3.38			89	3.34			20	1.42		
47	1.78			224	2.63			23	1.19		
86	1.46			143	3.42			36	1.34		
50	1.44			15	5.04			32	0.38		
13	2.75			36	4.06			4	1.44		
9	1.72			28	2.77			14	1.52		
9	1.49			73	3.27			8	0.99		
11	0.87			94	3.06			6	0.34		
31	1.94			84	2.93			20	1.10		
31	1.61			39	5.23			23	0.86		
26	1.61			57	4.52			19	1.18		
22	4.35			44	3.69			10	0.58		
36	2.60			107	2.60			20	1.16		
38	1.91			243	9.78			15	1.15		
35	1.45			216	5.23			22	1.00		
58	4.13			286	5.35			37	1.97		
99	3.11			311	2.70			71	6.22		
64	2.39			90	3.89			54	2.04		
78	2.16			169	3.96			54	2.10		
72	1.15			162	2.27			97	0.43		
43	2.39			121	3.18			25	0.77		
54	1.99			218	5.00			47	1.14		
40	1.23			424	8.17			36	1.22		
46	1.69			229	2.65			32	0.53		
108	2.65			582	3.30			41	1.43		
111	4.40			13	5.92			44	2.44		
71	1.43			42	5.24			30	1.74		
164	1.26			110	4.00			126	0.53		
7	2.89			29	2.25			7	1.08		
19	2.18			86	3.28			6	1.19		
13	1.63			146	4.56			22	1.44		
6	0.94			77	3.01			13	0.92		
37	1.38			79	3.55			24	0.95		
17	2.04			66	3.17			29	1.35		
19	1.32			81	2.61			16	1.22		
31	0.61			20	2.82			33	0.31		
35	1.94			568	1.53			23	1.46		
15	1.53			1435	2.73			16	1.04		

TABLE E - 1
DATA USED TO GENERATE MUSSEL VS SEDIMENT CONCENTRATION CORRELATION PLOTS
AT THE MONITORING AND REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 4

Acenaphthylene				Anthracene				Fluorene			
Monitoring Station		Reference Station		Monitoring Station		Reference Station		Monitoring Station		Reference Station	
Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)
20	1.25			1263	2.27			20	1.45		
5	1.20			448	2.98			5	0.33		
131	0.90			131	3.14			134	0.60		
206	1.50			646	4.27			336	1.07		
105	1.10			200	3.00			236	1.31		
87	1.09			250	4.47			91	0.37		
70	0.93			72	3.49			21	1.10		
53	1.81			257	4.81			47	1.35		
47	1.37			160	3.23			32	1.14		
92	1.40			344	2.48			28	0.43		
28	1.32			30	3.23			15	0.56		
81	1.79			1598	82.50			64	1.77		
36	1.67			871	12.20			39	1.07		
66	1.33			1829	20.64			94	1.22		
18	1.34			1258	29.72			12	0.71		
220	13.71			881	29.27			1764	51.67		
83	2.94			946	5.03			486	4.45		
95	3.87			1155	6.22			937	11.35		
181	9.61			254	37.30			608	6.20		
82	2.69			589	334.83			884	7.93		
66	2.09			1164	10.23			570	2.26		
49	3.58			535	5.99			758	2.36		
99	39.08			326	41.27			104	11.69		
109	4.14			169	11.69			383	294.83		
70	2.29			312	7.89			1924	2.42		
61	9.05			136	4.11			85	2.54		
62	4.91			235	12.29			115	10.17		
50	3.65			36	0.95			54	3.28		
36	1.95			60	4.42			120	2.11		
74	4.15			68	3.03			39	2.02		
25	0.02			32	5.64			63	1.24		
35	2.24			269	4.98			8	0.51		
30	1.52			188	4.27			13	1.38		
15	1.71			310	3.35			11	0.92		
117	2.77			137	4.29			8	1.25		
47	2.39							88	1.03		
93	1.66							49	1.35		
54	1.54							64	3.24		
								33	0.64		

TABLE E - 1
DATA USED TO GENERATE MUSSEL VS SEDIMENT CONCENTRATION CORRELATION PLOTS
AT THE MONITORING AND REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

HMW PAHS				Copper				Nickel			
Monitoring Station		Reference Station		Monitoring Station		Reference Station		Monitoring Station		Reference Station	
Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)
2648	215	690	161	26	30	7	5	25	1.60	11	1.80
3763	224	1243	195	44	7	6	9	22	1.15	10	1.10
2360	129	239	158	43	6	4	7	30	1.40	13	2.20
9672	251	313	208	29	7	7	7	27	1.30	12	1.00
5327	106	1802	162	48	9	8	8	28	1.40	15	1.60
6322	288	866	203	175	8	9	6	35	2.00	17	1.00
13186	300	2734	164	81	6	8	7	37	3.30	21	2.10
18547	362	1650	156	44	7	13	8	31	1.30	20	1.40
4907	170	1770	211	39	25	9	8	24	9.09	20	1.90
490	83	1156	171	33	26	6	19	27	1.60	15	1.72
929	78	3240	213	32	7	37	7	33	1.30	19	1.20
854	383	3134	151	68	7	22	9	39	8.32	23	2.10
1082	125	1471	168	51	8	26	6	45	3.40	17	1.70
510	159	1363	168	53	10	20	7	43	2.35	20	1.10
467	190	2760	156	31	6	11	20	46	2.30	14	1.90
637	102	2157	196	37	14	17	7	102	7.86	10	3.26
992	128	1999	175	46	8	12	6	79	3.45	12	1.10
580	106	1487	231	39	19	18	6	63	3.35	11	2.00
217	142	1969	232	43	8	13	15	86	2.50	11	1.10
687	235	1993	152	186	29	12	8	193	3.20		
279	96	3540	135	185	10	11	6	297	2.20		
556	347	5985	101	182	10	13	7	61	2.60		
295	214	2861	149	205	11	3	15	33	1.90		
1329	112	5787	123	1902	101	4	8	29	2.56		
2056	203	4136	192	1090	18	2	27	32	1.80		
1730	140	2278	181	564	58	3	8	28	2.20		
2669	147	5351	148	3720	24	2	33	30	1.10		
1475	143	4321	171	20507	26	3	8	21	1.70		
2877	132	4112	115	1780	28	3	6	17	2.11		
1701	178	199	90	2452	18	3	7	21	1.30		
1996	133	190	117	565	20			27	1.60		
3073	217	204	103	61	20			24	0.89		
2613	306	174	113	63	9			37	1.70		
5179	97	255	75	51	17			26	1.20		
6242	192	294	109	105	12			26	1.70		
8077	104	319	121	31	6			23	4.87		
10361	204	589	86	23	8			26	1.40		
2013	102	364	94	15	6			25	1.80		
703	510	370	71	24	6			26	1.30		
1872	171			14	6			93	2.00		
1342	137			15	8			83	1.50		
673	124			14	30			31	1.90		
2106	88			25	7			30	1.72		
2674	79			31	7			36	1.65		
2384	231			28	9			131	3.20		
2043	110			17	6			112	3.30		
3575	82			26	7			174	3.50		
1649	57			13	7			72	12.9		
2955	114			16	8			160	3.10		
4984	269			25	6			79	2.70		
8651	157			10	6			114	2.40		
7389	120			18	6			62	2.90		
1937	148			48	8			62	2.25		
956	116			22	65			41	1.70		
1262	119			20	8			29	1.85		
2321	118			20	6			42	1.20		
2070	87			23	7			21	3.40		
1677	96			29	6			16	1.73		
509	229			43	6			21	1.40		
653	59			311	10			29	1.90		
283	137			455	9			25	2.12		
475	56			382	8			28	1.60		
1332	186			370	9			5601[1]	2.00		
1330	149			118	7			76	1.50		
1712	163			78	8			105	2.29		
1058	122			100	7			69	0.82		
751	105			95	8			40	2.10		
852	65			407	6			51	1.80		
462	164			756	11			23	1.95		
1275	96			434	10			28	1.83		
1139	87			282	7			25	1.40		
2047	115			413	53			33	1.80		
3341	727			511	10			25	1.90		
2340	179			227	8			32	1.00		
4446	179			98	7			35	1.80		
2868	231			101	8			31	0.94		
4241	132			207	11			30	2.20		
1081	223			132	9			27	1.10		
1422	142			119	7			20	1.90		
2037	91			20	24			19	0.92		
1642	161			28	9						

TABLE E - 1
DATA USED TO GENERATE MUSSEL VS SEDIMENT CONCENTRATION CORRELATION PLOTS
AT THE MONITORING AND REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

HMW PAHS				Copper				Nickel			
Monitoring Station		Reference Station		Monitoring Station		Reference Station		Monitoring Station		Reference Station	
Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)	Sediment Concentration (ug/kg)	Mussel Concentration (ug/kg)
1906	98			32	11						
2813	182			21	7						
4868	249			20	5						
5169	180			34	9						
2504	148			18	16						
7778	126			17	8						
203	272			37	6						
223	348			31	11						
1671	169			27	6						
732	222			105	7						
471	115			17495	24						
1202	133			1479	8						
1314	215			541	8						
1656	130			747	8						
812	162			139	10						
3481	93			375	10						
1375	107			88	8						
628	134			266	7						
4043	90			162	8						
1096	150			191	9						
365	101			37	8						
5587	111			85	7						
8430	159			27	10						
5245	51			45	34						
6143	122			54	10						
4365	97			45	15						
1133	297			47	7						
1409	151			87	7						
625	106			119	8						
1345	145			63	7						
4836	130			62	9						
955	140			44	8						
3962	156			60	9						
1478	139			37	6						
1580	50			27	7						
2142	102			16	6						
529	142			29	8						
34008	3550			29	6						
9521	579			25	7						
19924	2713										
16688	980										
17283	1318										
21845	824										
10747	302										
21657	446										
10601	324										
3823	2386										
8872	26084										
8530	746										
4838	4181										
4472	322										
4384	3307										
1861	509										
2732	348										
2154	296										
1402	143										
3114	865										
415	144										
672	141										
809	123										
722	98										
532	219										
2612	165										
2389	169										
3218	151										
2294	150										
1993	217										

Notes:
- Data used to generate figures 7-1 through 7-10.
- For organic chemicals, the sediment data were normalized to percent total organic carbon, and the tissue data were normalized to percent lipids.
- For metals, neither the sediment or tissue data were normalized.

Footnote:
1 An additional correlation was ran without the outlier in order to better visualize if a correlation did exist between sediment and mussel concentrations.

TABLE E - 2
DATA USED TO GENERATE JUVENILE LOBSTER VS SEDIMENT CONCENTRATION CORRELATION PLOTS
AT THE MONITORING AND REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Acenaphthylene				Anthracene				Fluorene			
Monitoring Station		Reference Station		Monitoring Station		Reference Station		Monitoring Station		Reference Station	
Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)
101	0.22	40	0.24	312	0.28	65	0.34	95	0.59	14	0.69
23	0.29	83	0.27	55	6.21	229	0.82	13	3.38	48	1.00
45	0.25	66	0.63	142	1.72	482	9.33	40	0.88	68	2.59
47	0.28	14	0.39	112	1.28	25	5.15	19	1.28	4	1.39
40	0.19	37	0.14	99	0.73	79	0.64	20	0.96	29	1.73
51	0.25	68	0.14	108	1.96	224	0.48	24	1.17	48	1.38
35	0.28	32	0.45	77	0.50	260	1.09	19	1.67	60	2.00
94	0.20	11	0.56	338	1.08	20	0.44	85	1.08	6	2.22
21	0.29	41	0.42	103	0.62	52	0.41	26	0.95	12	0.89
61	0.27	129	0.46	239	4.18	254	0.76	41	1.36	64	1.10
23	0.21	66	0.26	51	1.48	184	0.53	13	0.88	62	0.73
62	0.24	12	0.28	578	3.38	16	0.37	263	3.90	5	0.93
66	0.23	44	0.08	267	13.00	118	0.62	74	2.05	24	1.31
39	0.22	58	0.09	87	1.43	220	1.17	20	0.83	47	2.63
140	5.67	51	0.09	394	4.96	272	0.62	203	6.11	54	0.82
26	0.94			62	1.78			13	2.44		
44	0.56			157	1.06			45	2.94		
117	0.47			251	0.93			55	1.67		
55	0.57			163	0.86			44	2.21		
37	0.64			104	0.93			37	2.07		
36	0.25			74	0.45			20	0.63		
77	0.38			270	0.46			48	1.27		
22	0.50			95	0.94			22	2.06		
92	0.11			716	0.58			133	1.68		
36	0.27			160	1.30			39	2.21		
70	0.67			686	3.44			370	2.39		
81	0.81			585	8.50			705	3.94		
51	0.25			137	0.50			35	1.25		
197	0.28			637	0.80			270	0.80		
24	0.22			38	0.43			10	0.56		
69	0.31			148	0.60			44	0.70		
63	0.25			150	2.05			33	1.30		
65	0.20			96	0.62			27	0.64		
47	0.28			86	0.54			22	0.64		
37	0.28			70	0.50			28	0.67		
83	2.30			183	4.57			45	2.70		
28	0.11			64	0.90			22	1.00		
79	0.21			259	0.61			59	0.65		
81	0.25			257	0.31			64	0.76		
153	0.44			872	0.93			910	1.62		
82	0.53			318	5.14			158	5.14		
68	1.37			158	3.45			45	4.33		
341	0.37			806	2.00			340	2.09		
31	0.07			83	0.75			25	1.11		
64	0.06			220	0.50			39	0.91		
60	0.06			513	0.52			109	0.91		
46	0.07			149	0.50			44	1.25		
76	0.05			248	0.55			60	1.00		
35	0.06			111	0.73			23	0.97		
63	0.08			226	0.53			40	1.00		
22	0.09			114	1.50			26	2.41		
57	0.06			515	2.97			96	1.81		
66	0.06			344	1.61			94	1.42		
65	0.06			1100	0.38			618	1.03		
53	0.07			299	1.31			54	1.21		
60	0.06			191	0.63			44	0.91		

TABLE E - 2
DATA USED TO GENERATE JUVENILE LOBSTER VS SEDIMENT CONCENTRATION CORRELATION PLOTS
AT THE MONITORING AND REFERENCE STATIONS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

HMW PAHS				Copper				Nickel			
Monitoring Station		Reference Station		Monitoring Station		Reference Station		Monitoring Station		Reference Station	
Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)	Sediment Concentration (ug/kg)	J. Lobster Concentration (ug/kg)
7982	54	710	31	40	41	9	56	30	0.52	13	0.57
4360	121	1216	44	35	47	20	35	2835	0.31	20	0.69
7100	18	660	25	1350	48	15	34	50	0.65	26	0.56
10202	149	1109	49	242	50	4	51	30	0.51		
3722	21	1193	22	54	34	11	47	28	0.70		
406	66	3466	68	20	41	14	46	85	0.36		
694	83	2691	100	32	35	18	46	76	0.85		
464	23	2929	26	249	34	5	75	33	0.93		
800	32	2198	630	108	35	9	55	33	0.56		
653	533	3206	65	48	35	21	32				
1888	40	2666	55	8817	48	15	42				
1803	59	2474	74	79	38	4	41				
1847	32	4037	77	51	29	8	50				
2344	54	2463	67	30	31	14	53				
1952	130	4639	315	88	63	13	21				
2590	80	207	25	54	57						
2520	39	231	25	460	35						
3206	31	440	17	744	22						
4047	42	328	342	41	64						
2247	84			20	47						
1369	50			35	45						
1807	40			429	64						
1505	24			264	46						
1606	22			31	35						
1486	27			541	77						
1377	25			74	61						
2252	37			75	56						
3875	24			40	43						
3247	27			36	48						
1363	100			48	44						
1107	71			705	61						
937	39			6886	39						
1386	40			42	53						
1189	39			19	41						
1164	27			25	58						
2412	161			279	46						
2620	42			197	38						
2338	88			25	39						
4642	84			1479	38						
903	106			214	48						
939	51			56	61						
1972	17			30	49						
1027	58			50	46						
1727	31			42	32						
2698	67			259	37						
3489	58			1810	25						
3304	152			33	39						
2861	121			19	43						
3189	256			27	30						
3962	19			305	21						
1478	87			146	25						
1580	22			26	25						
2142	144			747	30						
742	98			145	20						
19409	42			50	31						
7762	188			31	37						
15343	38										
10286	51										
8181	109										
4306	308										
4635	283										
2800	94										
2614	211										
3410	343										
1585	122										
1669	30										
1984	125										
1489	44										
1302	251										

Notes:
- Data used to generate figures 7-1 through 7-10.
- For organic chemicals, the sediment data were normalized to percent total organic carbon, and the tissue data were normalized to percent lipids.
- For metals, neither the sediment or tissue data were normalized.

APPENDIX F

OUTLIER ANALYSIS STATISTICAL APPROACH AND EVALUATION OF TOC AND GRAIN SIZE BETWEEN THE AOCS

APPENDIX F

Reference Station Statistical Outlier Approach

Statistical outlier analysis was performed on the Reference Station data to identify any values that did not represent the underlying distribution. The Shapiro-Wilk W test was used to identify an underlying normal distribution or log transformed data with a lognormal underlying distribution. The data tested for the lognormal underlying distribution was first transformed by computing the natural logarithm of each value. Data that fell outside the ninety-five percent confidence ellipse was then tested to determine if the data was a statistical outlier.

Two tests were used to conduct the Outlier analysis on the Reference Station data. After conducting the Shapiro-Wilk W test the data was analyzed to determine which Outlier test could be conducted. The Discordance Test was chosen for the Lobster data due to the small number of samples in the data set. The mussel and sediment data sets, which were larger, were assigned the Rosner's Test.

The Discordance Test, for samples between three and fifty, used the mean and the standard deviation of the samples to test the largest measurement of the data set.

$$D_{test} = [X_{(N)} - \overline{X}] / s$$

Where: $X_{(N)}$ = the largest measurement

$\overline{X}$ = Mean of sample

s = Standard deviation of sample

A ninety five percent confidence limit was used to determine the critical value D_{calc} and was then compared to D_{test}. If D_{test} exceeded D_{calc} then the measurement was assumed a statistical outlier and a formal investigation was conducted to explore the result and identify if a true outlier existed.

The Rosner Outlier Test, a similar test to the Discordance Test, was used to determine the presence of statistical outliers in Mussel and Sediment Reference Stations. However there is a significant difference between the Discordance Test and the Rosner Test. The Rosner Test can be used to test for the presence or more than one outlier in a sample, which allows a more thorough examination of the data set. Also, the Rosner Test conducted an outlier test on the

datum furthest away from the mean of the sample, where as the Discordance Test only conducted its analysis on the largest value, $X_{(N)}$.

This test, for sample size above twenty-five, used the mean and standard deviation to test for the presence of an outlier. To test if there are r outliers in the data set compute:

$$R_r = [\, | y^{(r-1)} - \overline{X}^{(r-1)} | \,] / s^{(r-1)}$$

Where: $y^{(r-1)}$ = The farthest data point from mean not including the first outlier tested

$\overline{X}^{(r)}$ = Mean of sample not including the first outlier tested

$s^{(r-1)}$ = Standard deviation not including the first outlier tested

A ninety five percent confidence limit was used to determine the critical value R_{calc} and was then compared to R. If R exceeded R_{calc} then the measurement was assumed a statistical outlier and a formal investigation was conducted to explore the result and identify if a true outlier existed.

The results of this outlier test are presented on Table 5-3.

Grain Size – TOC Comparison Statistical Outlier Approach

Nonparametric ANOVA Kruskal-Wallis Test

The parametric ANOVA technique was the preferred approach for comparing environmental measurements from one data set to another. However, parametric ANOVA methods make a key assumption that the data sets being compared have the same underlying distribution. If this assumption was violated, non-parametric tests (i.e. Kruskal-Wallis or Wilcoxon Rank-Sum tests) were used to determine if constituent differences are found between the data sets.

Non-parametric tests were conducted using the ranks of the analytical results rather than the analytical results themselves. Therefore, the AOCs were inspected for extremely high values that may have been underestimated as a result of the ranking process.

The Kruskal-Wallis (EPA, 1989) test was employed when comparing three or more data sets. The Kruskal-Wallis test is described below:

- Step 1. Rank all N observations of the k AOCs from least to greatest.

- Step 2. Add the ranks of the observations for each AOC. Call the sum of the ranks for the *i*th AOC R_i. Also, calculate the average rank for each AOC by:

$$\overline{R_i} = \frac{R_i}{n_i} .$$

- Step 3. Compute the Kruskal-Wallis statistic given by:

$$H = \left[\frac{12}{N(N+1)} \sum_{i=1}^{k} \frac{R_i^2}{N_i} \right] 3(N+1)$$

where N = total number of samples,
N_i = number of samples for each AOC, and
k = number of AOCs.

An adjustment to the Kruskal-Wallis statistic was made to account for the presence of tied values. Tied values were those in which have the same concentration for a given analyte. This adjustment is given by the following formula:

$$H' = \frac{H}{1 - \left[\frac{\sum_{i=1}^{g} t_i^3 - t_i}{N_3 - N} \right]}$$

where g is the number of groups of distinct tied observations and t_i is the number of tied observations in the ith group.

- Step 4. Compare the calculated value H (or H') to the tabulated X^2 value with (k-1) degrees of freedom, where k is the number of AOCs.

- Step 5. If the computed H value exceeds the tabulated X^2 value, compute the critical difference for the data sets.

$$C_i = Z_{0.05} \sqrt{N(N+1)\frac{1}{12}\left(\frac{1}{n_1} + \frac{1}{n_i}\right)}$$

for i =2,...,k and $Z_{0.05}$ is the upper 95th percentile of the standard normal distribution.

- Step 6. Compute the differences between the average ranks of each AOC and compare the differences to the critical value from Step 5 in order to determine which AOC gives evidence of contamination. That is, compare

$$D_i = \overline{R_i} - \overline{R_1}$$

to C_i for i = 2,...,k. If D_i exceeded C_i, it was determined that the ith AOC exhibits statistically significant levels of contamination. If D_i did not exceed C_i, there was no statistically significant evidence of contamination in the ith AOC.

Box and Whisker Plots:

To aid the analysis of the Kruskal-Wallis Test, box and whisker plots were generated on the data for individual grain size and TOC percentages for the purpose of analyzing the data graphically. The use of box and whisker plots is supported by the USEPA Region 4 "Statistical Tests for Background Comparisons at Hazardous Waste Sites" (USEPA, November 1998) and "Procedural

Guidance for Statistically Analyzing Environmental Background Data" (Navy, September 1998) SWDIV & EFA WEST Naval Facilities Engineering Command.

Box and whisker plots showed the central tendency, degree of symmetry, range of variation, and potential outliers of a data set. The upper value of the box (UBV) in the box and whisker plot was the mean plus one standard deviation. The lower value of the box (LBV) was the mean minus one standard deviation. If the data was normally distributed ~ 68% of the data are within this range. The mean was represented by a square in the middle of the box to indicate the middle point of the data.

The top of the whisker in the box and whisker plot was the mean plus 1.96 standard deviations. The bottom of the whisker in the box and whisker plot was the mean minus 1.96 standard deviations. If the data was normally distributed, 95% of the data are within this range. The range between the upper whisker value and the lower whisker value was the non-outlier range. Any value outside of this range was considered a statistical outlier. Statistical outliers that were more than one standard deviation from the non-outlier range were considered extreme.

The results of this evaluation are presented in the rest of this appendix.

FIGURE F-1

PERCENT TOC BY AOC - ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res		
OU4-SD-M11-399A	0.43	DRMO	1
OU4-SD-M09-299A	0.46	CC	2
OU4-SD-M04-399A	0.48	BC	3
OU4-SD-M08-399A	0.49	CC	4
OU4-SD-M10-199A	0.69	SP	5
OU4-SD-M11-299A	0.72	DRMO	6
OU4-SD-M08-199A	0.75	CC	7
OU4-SD-M06-199A	0.78	JC	8
OU4-SD-M06-399A	0.9	JC	9
OU4-SD-M09-199A	0.91	CC	10
OU4-SD-M07-199A	0.95	CC	11
OU4-SD-M05-399A	0.96	JC	12
OU4-SD-M01-199A	1.01	BC	13
OU4-SD-M03-399A	1.36	BC	14
OU4-SD-M13-199A	1.39	DD	15
OU4-SD-M12-299A	1.4	DD	16
OU4-SD-M04-199A	1.46	BC	17
OU4-SD-M13-399A	1.48	DD	18
OU4-SD-M01-399A	1.5	BC	19
OU4-SD-M01-299A	1.54	BC	20
OU4-SD-M14-399A	1.55	DD	21
OU4-SD-M04-299A	1.62	BC	22
OU4-SD-M02-199A	1.63	BC	23
OU4-SD-M03-299A	1.7	BC	24
OU4-SD-M12-399A-AVG	1.785	DD	25
OU4-SD-M06-299A-AVG	1.79	JC	26
OU4-SD-M10-299A	1.8	SP	27
OU4-SD-M13-299A	1.93	DD	28
OU4-SD-M07-399A	2	CC	29
OU4-SD-M14-299A	2.24	DD	30
OU4-SD-M12-199A	2.29	DD	31
OU4-SD-M07-299A	2.3	CC	32
OU4-SD-M05-199A	2.34	JC	33
OU4-SD-M08-299A	2.37	CC	34
OU4-SD-M10-399A	2.37	SP	35
OU4-SD-M09-399A	2.49	CC	36
OU4-SD-M05-299A	2.51	JC	37
OU4-SD-M03-199A-AVG	2.63	BC	38
OU4-SD-M14-199A	2.85	DD	39
OU4-SD-M02-299A	2.89	BC	40
OU4-SD-M02-399A	7.25	BC	41

TOC - Round 1

Kruskal-Wallis ANOVA by Ranks (alum.sta)
Independent (grouping) variable: VAR3
Kruskal-Wallis test: H (5, N= 41) = 5.902177 p =.3159

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	274	22.83
JC	6	125	20.83
CC	9	165.5	18.39
SP	3	66.5	22.17
DRMO	2	7	3.50
DD	9	223	24.78

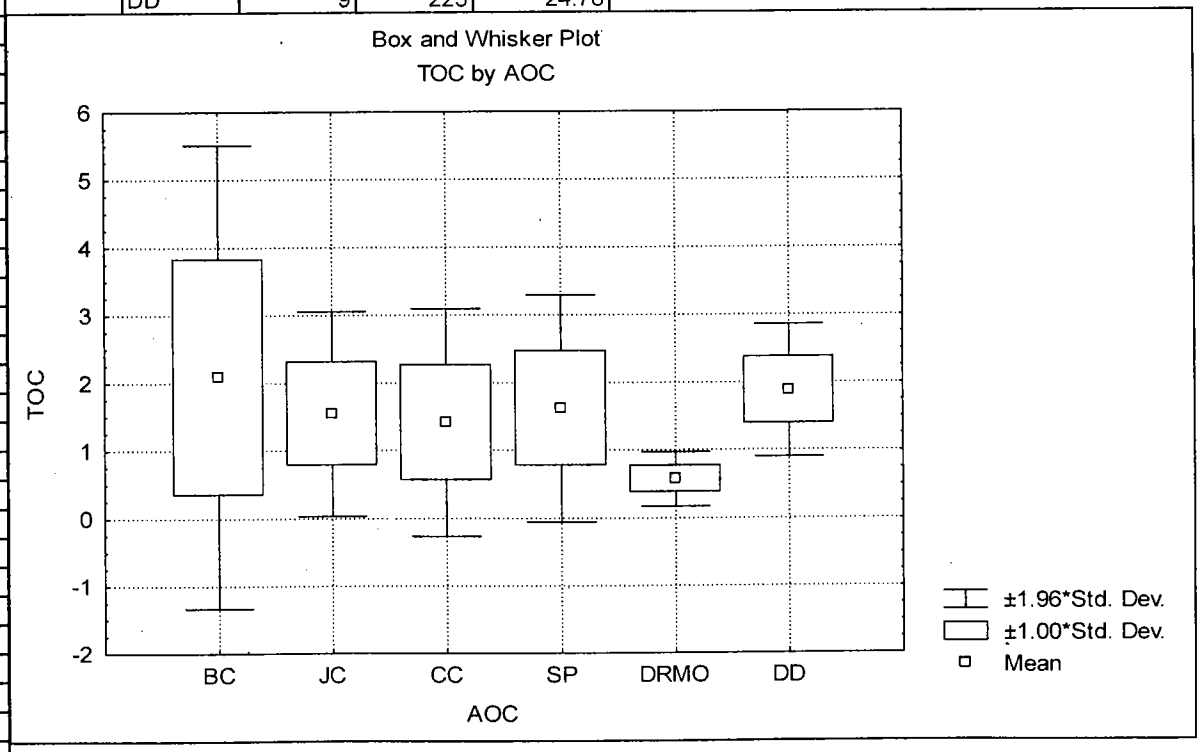


FIGURE F-2

PERCENT CLAY BY AOC - ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTTERY, MAINE

nsample	val_res	AOC	
OU4-SD-M01-199A	11.77	BC	1
OU4-SD-M01-299A	2.93	BC	2
OU4-SD-M01-399A	18.07	BC	3
OU4-SD-M02-199A	20.12	BC	4
OU4-SD-M02-299A	4.88	BC	5
OU4-SD-M02-399A	29.27	BC	6
OU4-SD-M03-199A	30.6	BC	7
OU4-SD-M03-299A	15.98	BC	8
OU4-SD-M03-399A	11.51	BC	9
OU4-SD-M04-199A	22.19	BC	10
OU4-SD-M04-299A	14.58	BC	11
OU4-SD-M04-399A	1.43	BC	12
OU4-SD-M05-199A	22.94	JC	13
OU4-SD-M05-299A	30.07	JC	14
OU4-SD-M05-399A	10.25	JC	15
OU4-SD-M06-199A	10.66	JC	16
OU4-SD-M06-299A-AVG	21.895	JC	17
OU4-SD-M06-399A	7.2	JC	18
OU4-SD-M07-199A	10.73	CC	19
OU4-SD-M07-299A	35.35	CC	20
OU4-SD-M07-399A	22.43	CC	21
OU4-SD-M08-199A	8.37	CC	22
OU4-SD-M08-299A	26.25	CC	23
OU4-SD-M08-399A	1.78	CC	24
OU4-SD-M09-199A	2.05	CC	25
OU4-SD-M09-299A	5.14	CC	26
OU4-SD-M09-399A	33.95	CC	27
OU4-SD-M10-199A	1.19	SP	28
OU4-SD-M10-299A	13.02	SP	29
OU4-SD-M10-399A	24.78	SP	30
OU4-SD-M11-299A	4.83	DRMO	31
OU4-SD-M11-399A	3.48	DRMO	32
OU4-SD-M12-199A	19.13	DD	33
OU4-SD-M12-299A	14.55	DD	34
OU4-SD-M12-399A-AVG	14.87	DD	35
OU4-SD-M13-199A	21.8	DD	36
OU4-SD-M13-299A	23.01	DD	37
OU4-SD-M13-399A	24.4	DD	38
OU4-SD-M14-199A	1.97	DD	39
OU4-SD-M14-299A	11.91	DD	40
OU4-SD-M14-399A	16.81	DD	41

% CLAY - ROUND 1

Kruskal-Wallis ANOVA by Ranks (grainmo1.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 41) = 3.151377 p =.6767

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	252	21.00
JC	6	137	22.83
CC	9	193	21.44
SP	3	55	18.33
DRMO	2	15	7.50
DD	9	209	23.22

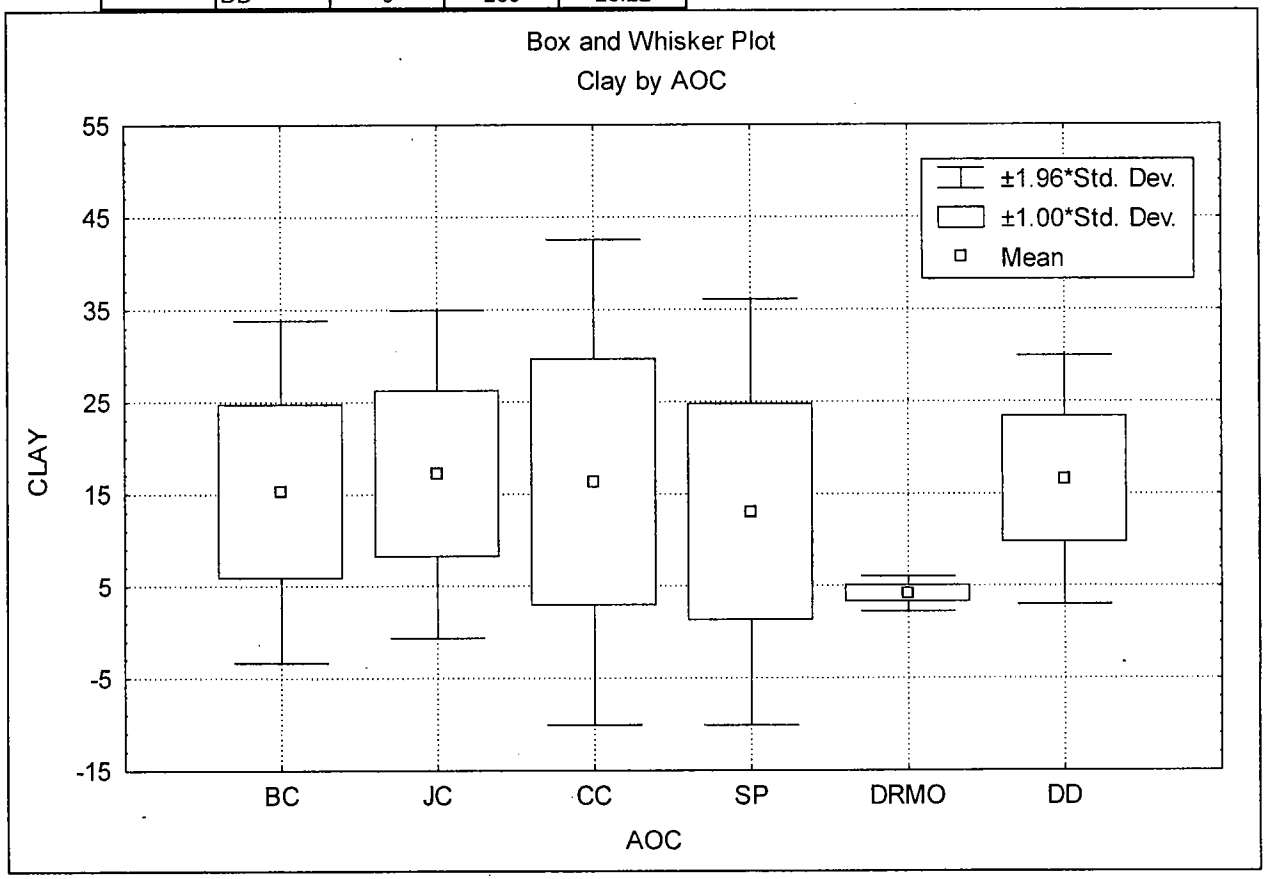


FIGURE F-3

PERCENT SAND BY AOC - ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	value	AOC	
OU4-SD-M01-199A	74.41	BC	1
OU4-SD-M01-299A	96.84	BC	2
OU4-SD-M01-399A	49.88	BC	3
OU4-SD-M02-199A	48.59	BC	4
OU4-SD-M02-299A	88.72	BC	5
OU4-SD-M02-399A	24.39	BC	6
OU4-SD-M03-199A	17.46	BC	7
OU4-SD-M03-299A	56.18	BC	8
OU4-SD-M03-399A	61.07	BC	9
OU4-SD-M04-199A	39.1	BC	10
OU4-SD-M04-299A	53.14	BC	11
OU4-SD-M04-399A	93.56	BC	12
OU4-SD-M05-199A	41.37	JC	13
OU4-SD-M05-299A	27.1	JC	14
OU4-SD-M05-399A	74.19	JC	15
OU4-SD-M06-199A	76.91	JC	16
OU4-SD-M06-299A-A'	44.71	JC	17
OU4-SD-M06-399A	78	JC	18
OU4-SD-M07-199A	75.59	CC	19
OU4-SD-M07-299A	14.9	CC	20
OU4-SD-M07-399A	40.66	CC	21
OU4-SD-M08-199A	83.98	CC	22
OU4-SD-M08-299A	29.45	CC	23
OU4-SD-M08-399A	97.78	CC	24
OU4-SD-M09-199A	97.79	CC	25
OU4-SD-M09-299A	92.99	CC	26
OU4-SD-M09-399A	15.13	CC	27
OU4-SD-M10-199A	97.43	SP	28
OU4-SD-M10-299A	72.92	SP	29
OU4-SD-M10-399A	27.91	SP	30
OU4-SD-M11-299A	93.36	DRMO	31
OU4-SD-M11-399A	95.36	DRMO	32
OU4-SD-M12-199A	57.81	DD	33
OU4-SD-M12-299A	64.87	DD	34
OU4-SD-M12-399A-A'	45.405	DD	35
OU4-SD-M13-199A	18.46	DD	36
OU4-SD-M13-299A	26.38	DD	37
OU4-SD-M13-399A	21.73	DD	38
OU4-SD-M14-199A	78.28	DD	39
OU4-SD-M14-299A	63.72	DD	40
OU4-SD-M14-399A	45.72	DD	41

% SAND - ROUND 1

Kruskal-Wallis ANOVA by Ranks (grainmo1.sta) ,
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 41) = 4.937677 p =.4236

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	250	20.83
JC	6	120	20.00
CC	9	200	22.22
SP	3	73	24.33
DRMO	2	72	36.00
DD	9	146	16.22

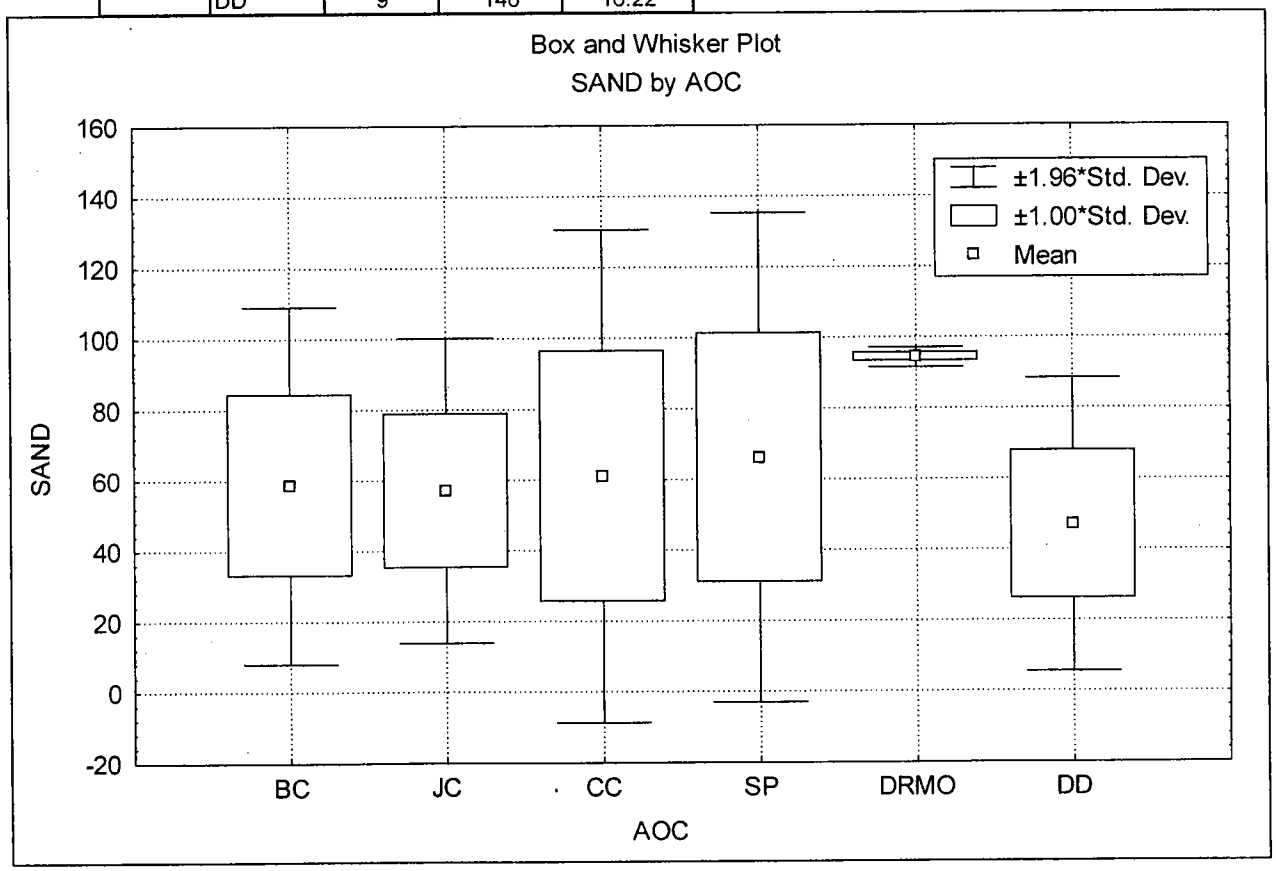


FIGURE F-4

PERCENT SILT BY AOC - ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	value	AOC	
OU4-SD-M01-199A	13.82	BC	1
OU4-SD-M01-299A	0.23	BC	2
OU4-SD-M01-399A	32.05	BC	3
OU4-SD-M02-199A	31.29	BC	4
OU4-SD-M02-299A	6.4	BC	5
OU4-SD-M02-399A	46.34	BC	6
OU4-SD-M03-199A	51.94	BC	7
OU4-SD-M03-299A	27.84	BC	8
OU4-SD-M03-399A	27.42	BC	9
OU4-SD-M04-199A	38.71	BC	10
OU4-SD-M04-299A	32.28	BC	11
OU4-SD-M04-399A	5.01	BC	12
OU4-SD-M05-199A	35.69	JC	13
OU4-SD-M05-299A	42.83	JC	14
OU4-SD-M05-399A	15.56	JC	15
OU4-SD-M06-199A	12.43	JC	16
OU4-SD-M06-299A-AVG	33.395	JC	17
OU4-SD-M06-399A	14.8	JC	18
OU4-SD-M07-199A	13.68	CC	19
OU4-SD-M07-299A	49.75	CC	20
OU4-SD-M07-399A	36.91	CC	21
OU4-SD-M08-199A	7.65	CC	22
OU4-SD-M08-299A	44.3	CC	23
OU4-SD-M08-399A	0.44	CC	24
OU4-SD-M09-199A	0.16	CC	25
OU4-SD-M09-299A	1.87	CC	26
OU4-SD-M09-399A	50.92	CC	27
OU4-SD-M10-199A	1.38	SP	28
OU4-SD-M10-299A	14.06	SP	29
OU4-SD-M10-399A	47.31	SP	30
OU4-SD-M11-299A	1.81	DRMO	31
OU4-SD-M11-399A	1.16	DRMO	32
OU4-SD-M12-199A	23.06	DD	33
OU4-SD-M12-299A	20.58	DD	34
OU4-SD-M12-399A-AVG	39.725	DD	35
OU4-SD-M13-199A	59.74	DD	36
OU4-SD-M13-299A	50.61	DD	37
OU4-SD-M13-399A	53.87	DD	38
OU4-SD-M14-199A	19.75	DD	39
OU4-SD-M14-299A	24.37	DD	40
OU4-SD-M14-399A	37.47	DD	41

% SILT - ROUND 1

Kruskal-Wallis ANOVA by Ranks (grainmo1.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 41) = 7.174216 p =.2080

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	250	20.83
JC	6	127	21.17
CC	9	168	18.67
SP	3	54	18.00
DRMO	2	10	5.00
DD	9	252	28.00

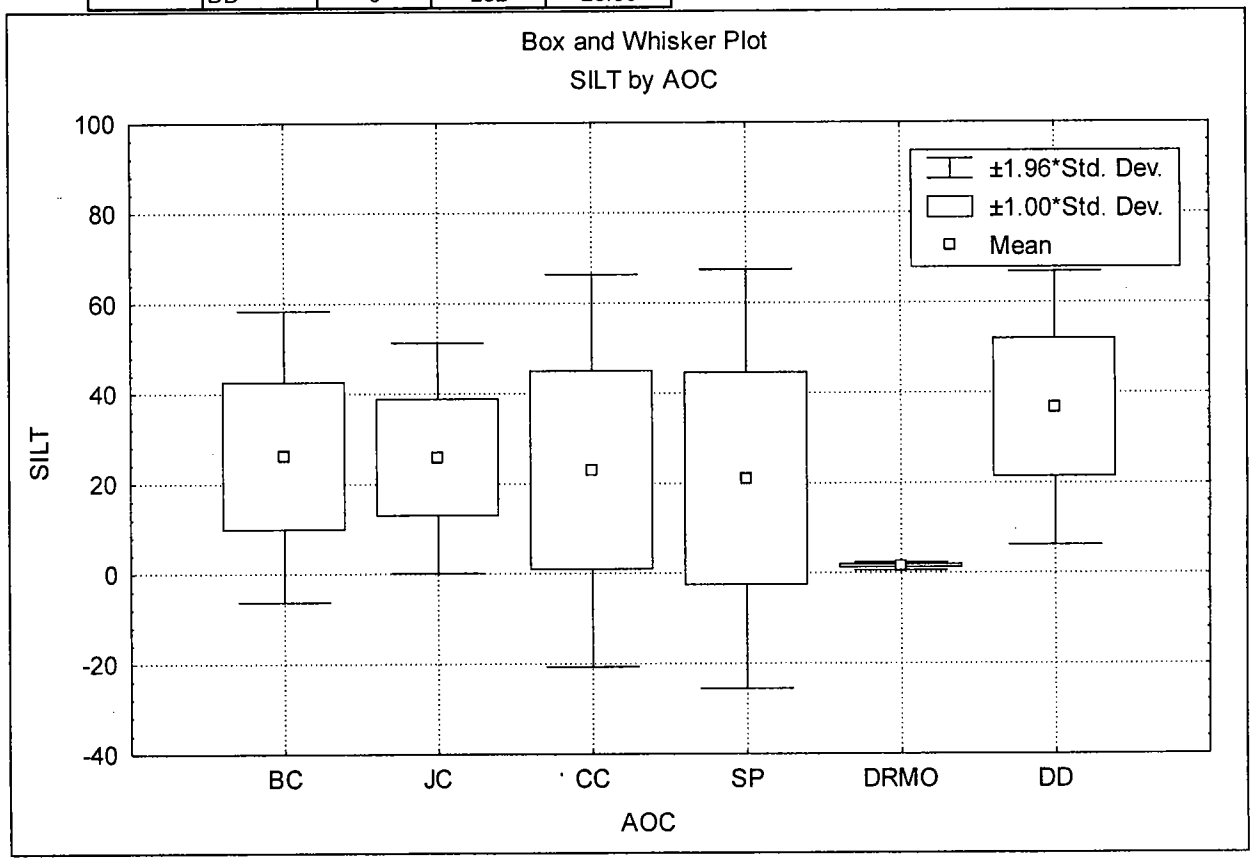


FIGURE F-5

PERCENT TOC BY AOC - ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res		
OU4-SD-M09-100B	0.28	CC	1
OU4-SD-M06-100B	0.47	JC	2
OU4-SD-M06-300B	0.52	JC	3
OU4-SD-M09-200B	0.54	CC	4
OU4-SD-M08-300B-AVG	0.545	CC	5
OU4-SD-M04-300B	0.69	BC	6
OU4-SD-M05-300B	0.7	JC	7
OU4-SD-M07-100B	0.98	CC	8
OU4-SD-M08-100B	1.04	CC	9
OU4-SD-M04-100B	1.13	BC	10
OU4-SD-M12-200B-AVG	1.14	DD	11
OU4-SD-M10-200B	1.15	SP	12
OU4-SD-M11-300B	1.34	DRMO	13
OU4-SD-M12-100B	1.4	DD	14
OU4-SD-M07-300B	1.48	CC	15
OU4-SD-M08-200B	1.63	CC	16
OU4-SD-M01-100B	1.73	BC	17
OU4-SD-M10-100B-AVG	1.73	SP	18
OU4-SD-M12-300B-AVG	1.74	DD	19
OU4-SD-M10-300B	1.75	SP	20
OU4-SD-M03-300B	1.81	BC	21
OU4-SD-M08-400B	1.88	CC	22
OU4-SD-M01-200B	1.89	BC	23
OU4-SD-M04-200B	1.92	BC	24
OU4-SD-M13-100B	1.95	DD	25
OU4-SD-M07-200B	1.97	CC	26
OU4-SD-M05-100B-AVG	2.005	JC	27
OU4-SD-M03-200B	2.09	BC	28
OU4-SD-M06-200B	2.09	JC	29
OU4-SD-M09-300B	2.14	CC	30
OU4-SD-M02-100B	2.15	BC	31
OU4-SD-M14-200B	2.18	DD	32
OU4-SD-M13-200B	2.23	DD	33
OU4-SD-M01-300B-AVG	2.255	BC	34
OU4-SD-M05-200B	2.36	JC	35
OU4-SD-M13-300B	2.4	DD	36
OU4-SD-M14-300B	2.4	DD	37
OU4-SD-M09-400B	2.56	CC	38
OU4-SD-M02-300B	2.91	BC	39
OU4-SD-M03-100B	3.12	BC	40
OU4-SD-M14-100B	3.31	DD	41

TOC - Round 2

Kruskal-Wallis ANOVA by Ranks (alum.sta)
Independent (grouping) variable: VAR6
Kruskal-Wallis test: H (5, N= 42) = 8.173187 p =.1470

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	316	26.33
JC	6	102.5	17.08
CC	11	174	15.82
SP	3	49.5	16.50
DRMO	1	13	13.00
DD	9	248	27.56

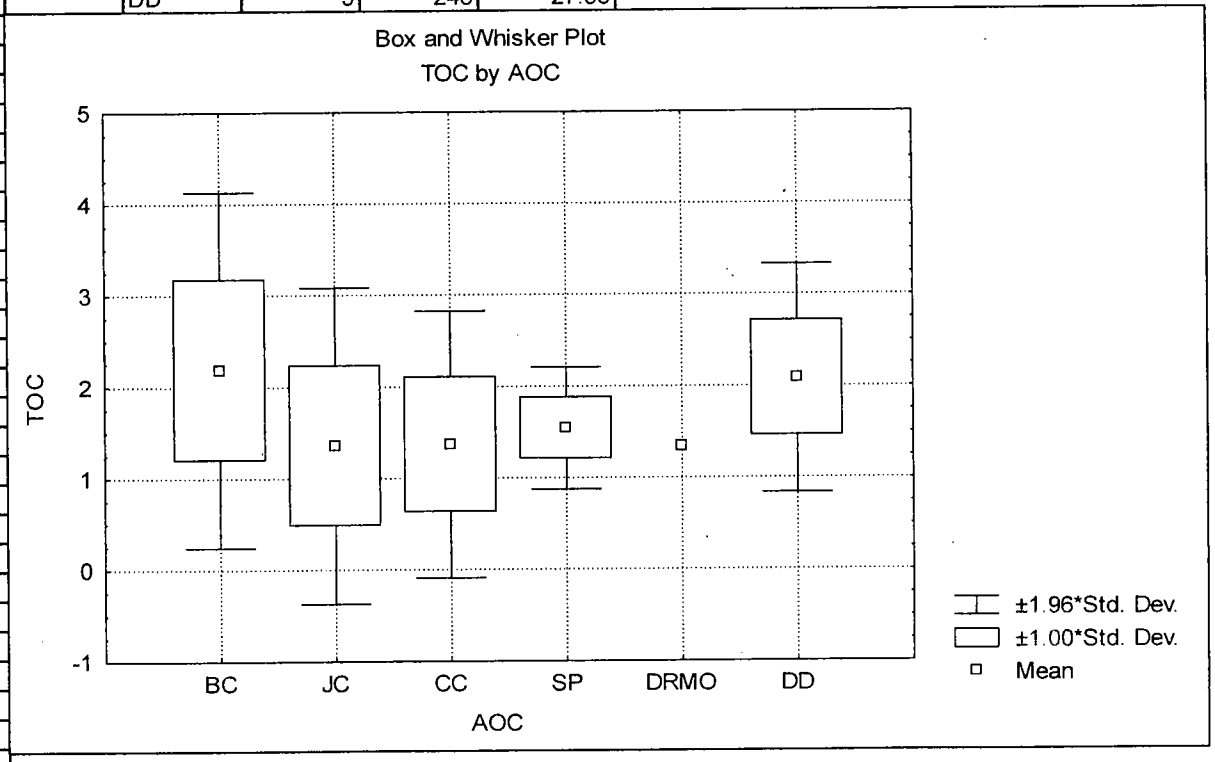


FIGURE F-6

PERCENT CLAY BY AOC - ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	Value	AOC	
OU4-SD-M06-300B	2.35	JC	1
OU4-SD-M07-200B	28.85	CC	2
OU4-SD-M07-300B	23.13	CC	3
OU4-SD-M08-200B	14.73	CC	4
OU4-SD-M09-300B	31.01	CC	5
OU4-SD-M10-100B	0	SP	6
OU4-SD-M10-200B	7.68	SP	7
OU4-SD-M10-300B	26.37	SP	8
OU4-SD-M02-300B	24.38	BC	9
OU4-SD-M04-100B	1.41	BC	10
OU4-SD-M04-300B	0.37	BC	11
OU4-SD-M05-100B	22.14	JC	12
OU4-SD-M05-300B	6.96	JC	13
OU4-SD-M06-100B	4.79	JC	14
OU4-SD-M07-100B	7.44	CC	15
OU4-SD-M08-100B	7.07	CC	16
OU4-SD-M08-300B	0.17	CC	17
OU4-SD-M09-100B	0.51	CC	18
OU4-SD-M09-200B	0.41	CC	19
OU4-SD-M01-100B	10.47	BC	20
OU4-SD-M01-200B	0.85	BC	21
OU4-SD-M01-300B	12.06	BC	22
OU4-SD-M02-100B	13.42	BC	23
OU4-SD-M02-200B	4.79	BC	24
OU4-SD-M03-100B	26.66	BC	25
OU4-SD-M03-200B	15.41	BC	26
OU4-SD-M03-300B	14.8	BC	27
OU4-SD-M04-200B	16.01	BC	28
OU4-SD-M05-200B	22.64	JC	29
OU4-SD-M06-200B	19.4	JC	30
OU4-SD-M12-100B	9.08	DD	31
OU4-SD-M12-200B	6.75	DD	32
OU4-SD-M14-100B	17.57	DD	33
OU4-SD-M08-400B	13.43	CC	34
OU4-SD-M09-400B	10.87	CC	35
OU4-SD-M11-300B	4.15	DRMO	36
OU4-SD-M12-300B	19	DD	37
OU4-SD-M13-100B	0	DD	38
OU4-SD-M13-200B	27.76	DD	39
OU4-SD-M13-300B	22.64	DD	40
OU4-SD-M14-200B	13.15	DD	41
OU4-SD-M14-300B	20.58	DD	42
OU4-SD-M01-300B-AVG	11.83	BC	43
OU4-SD-M05-100B-AVG	22.65	JC	44
OU4-SD-M08-300B-AVG	0.085	CC	45
OU4-SD-M10-100B-AVG	0.215	SP	46
OU4-SD-M12-200B-AVG	8.395	DD	47
OU4-SD-M12-300B-AVG	17.17	DD	48

% CLAY - ROUND 2

Kruskal-Wallis ANOVA by Ranks (grainmo2.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 48) = 3.094204 p =.6855

AOC	Valid N	Sum of Ranks	Avg of Ranks
JC	7	195	27.86
CC	12	274	22.83
SP	4	69.5	17.38
BC	13	317.5	24.42
DD	11	308	28.00
DRMO	1	12	12.00

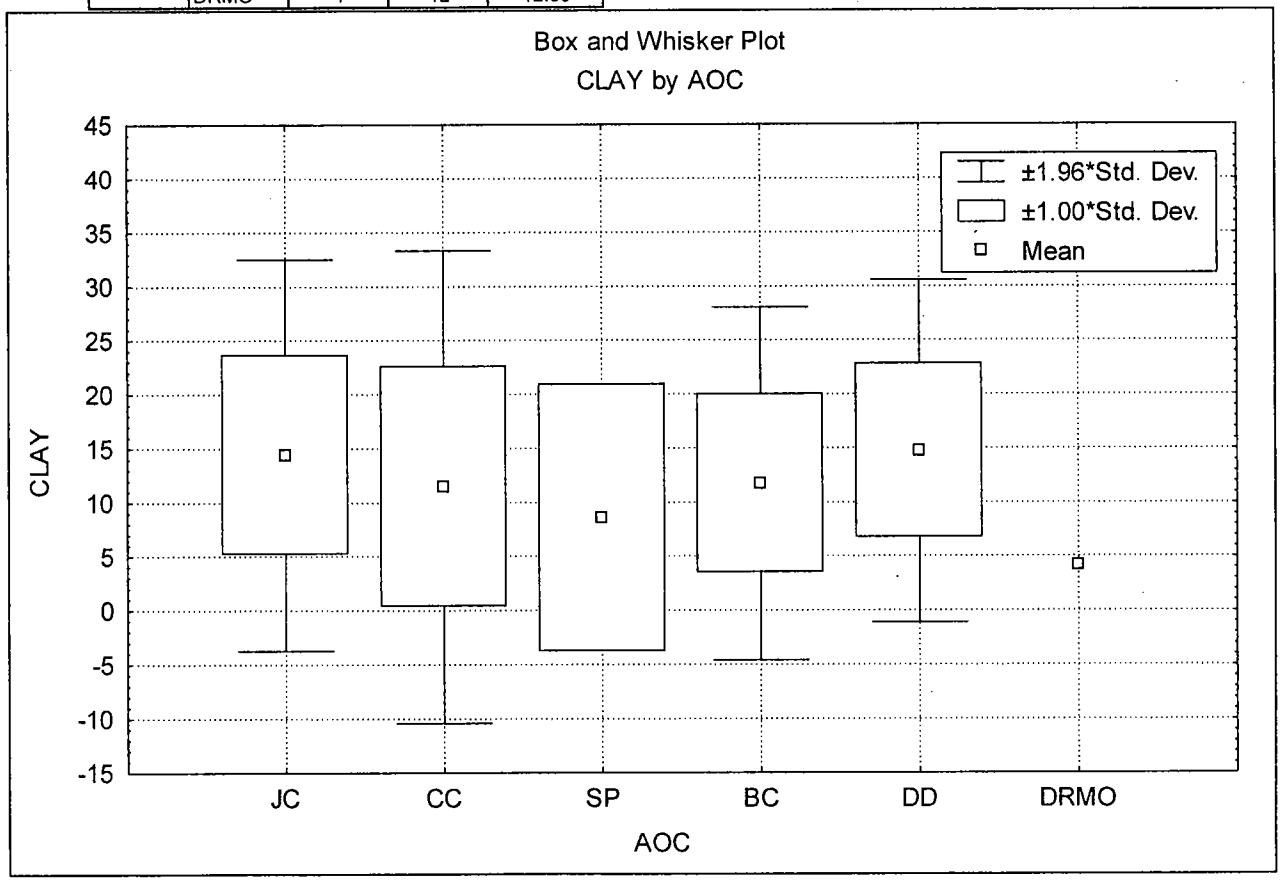


FIGURE F- 7

PERCENT SAND BY AOC - ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	Value	AOC	
OU4-SD-M06-300B	84.51	JC	1
OU4-SD-M07-200B	20.89	CC	2
OU4-SD-M07-300B	41.21	CC	3
OU4-SD-M08-200B	43.71	CC	4
OU4-SD-M09-300B	12.98	CC	5
OU4-SD-M10-100B	98.64	SP	6
OU4-SD-M10-200B	78.18	SP	7
OU4-SD-M10-300B	31.58	SP	8
OU4-SD-M02-300B	26.86	BC	9
OU4-SD-M04-100B	89.41	BC	10
OU4-SD-M04-300B	97.07	BC	11
OU4-SD-M05-100B	23.64	JC	12
OU4-SD-M05-300B	78.13	JC	13
OU4-SD-M06-100B	85.63	JC	14
OU4-SD-M07-100B	73.79	CC	15
OU4-SD-M08-100B	78.55	CC	16
OU4-SD-M08-300B	98.99	CC	17
OU4-SD-M09-100B	98.65	CC	18
OU4-SD-M09-200B	98.77	CC	19
OU4-SD-M01-100B	78.14	BC	20
OU4-SD-M01-200B	97.11	BC	21
OU4-SD-M01-300B	74.4	BC	22
OU4-SD-M02-100B	66.25	BC	23
OU4-SD-M02-200B	89.15	BC	24
OU4-SD-M03-100B	30.43	BC	25
OU4-SD-M03-200B	57.46	BC	26
OU4-SD-M03-300B	57.05	BC	27
OU4-SD-M04-200B	56.9	BC	28
OU4-SD-M05-200B	33.92	JC	29
OU4-SD-M06-200B	46.66	JC	30
OU4-SD-M12-100B	73.69	DD	31
OU4-SD-M12-200B	78.4	DD	32
OU4-SD-M14-100B	35.57	DD	33
OU4-SD-M08-400B	56.94	CC	34
OU4-SD-M09-400B	69.49	CC	35
OU4-SD-M11-300B	92.7	DRMO	36
OU4-SD-M12-300B	53.56	DD	37
OU4-SD-M13-100B	20.18	DD	38
OU4-SD-M13-200B	32.82	DD	39
OU4-SD-M13-300B	32.08	DD	40
OU4-SD-M14-200B	64.45	DD	41
OU4-SD-M14-300B	48.77	DD	42
OU4-SD-M01-300B-AVG	74.9	BC	43
OU4-SD-M05-100B-AVG	25.055	JC	44
OU4-SD-M08-300B-AVG	99.345	CC	45
OU4-SD-M10-100B-AVG	98.605	SP	46
OU4-SD-M12-200B-AVG	75.93	DD	47
OU4-SD-M12-300B-AVG	54.135	DD	48

% SAND - ROUND 2

Kruskal-Wallis ANOVA by Ranks (grainmo2.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 48) = 6.305744 p =.2776

AOC	Valid N	Sum of Ranks	Avg of Ranks
JC	7	139	19.86
CC	12	324	27.00
SP	4	128	32.00
BC	13	348	26.77
DD	11	197	17.91
DRMO	1	40	40.00

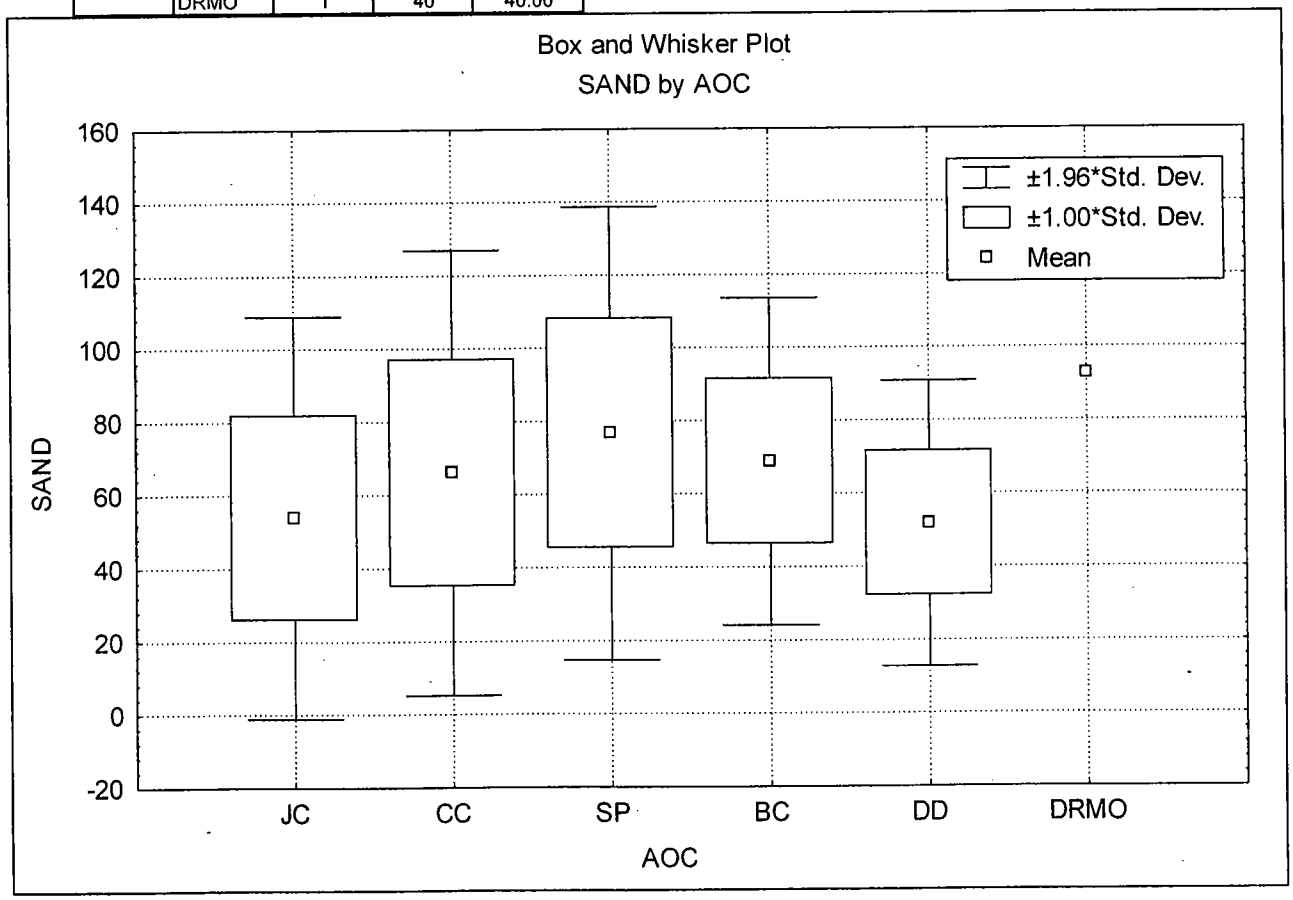


FIGURE F-8

PERCENT SILT BY AOC - ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	Value	AOC	
OU4-SD-M06-300B	13.14	JC	1
OU4-SD-M07-200B	50.26	CC	2
OU4-SD-M07-300B	35.66	CC	3
OU4-SD-M08-200B	41.56	CC	4
OU4-SD-M09-300B	56.01	CC	5
OU4-SD-M10-100B	1.36	SP	6
OU4-SD-M10-200B	14.14	SP	7
OU4-SD-M10-300B	42.05	SP	8
OU4-SD-M02-300B	48.76	BC	9
OU4-SD-M04-100B	9.18	BC	10
OU4-SD-M04-300B	2.56	BC	11
OU4-SD-M05-100B	54.22	JC	12
OU4-SD-M05-300B	14.91	JC	13
OU4-SD-M06-100B	9.58	JC	14
OU4-SD-M07-100B	18.77	CC	15
OU4-SD-M08-100B	14.38	CC	16
OU4-SD-M08-300B	0.84	CC	17
OU4-SD-M09-100B	0.84	CC	18
OU4-SD-M09-200B	0.82	CC	19
OU4-SD-M01-100B	11.39	BC	20
OU4-SD-M01-200B	2.04	BC	21
OU4-SD-M01-300B	13.54	BC	22
OU4-SD-M02-100B	20.33	BC	23
OU4-SD-M02-200B	6.06	BC	24
OU4-SD-M03-100B	42.91	BC	25
OU4-SD-M03-200B	27.13	BC	26
OU4-SD-M03-300B	28.15	BC	27
OU4-SD-M04-200B	27.09	BC	28
OU4-SD-M05-200B	43.44	JC	29
OU4-SD-M06-200B	33.94	JC	30
OU4-SD-M12-100B	17.23	DD	31
OU4-SD-M12-200B	14.85	DD	32
OU4-SD-M14-100B	46.86	DD	33
OU4-SD-M08-400B	29.63	CC	34
OU4-SD-M09-400B	19.64	CC	35
OU4-SD-M11-300B	3.15	DRMO	36
OU4-SD-M12-300B	27.44	DD	37
OU4-SD-M13-100B	79.82	DD	38
OU4-SD-M13-200B	39.42	DD	39
OU4-SD-M13-300B	45.28	DD	40
OU4-SD-M14-200B	22.4	DD	41
OU4-SD-M14-300B	30.65	DD	42
OU4-SD-M01-300B-AVG	13.27	BC	43
OU4-SD-M05-100B-AVG	52.295	JC	44
OU4-SD-M08-300B-AVG	0.57	CC	45
OU4-SD-M10-100B-AVG	1.18	SP	46
OU4-SD-M12-200B-AVG	15.675	DD	47
OU4-SD-M12-300B-AVG	28.695	DD	48

% SILT - ROUND 2

Kruskal-Wallis ANOVA by Ranks (grainmo2.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 48) = 7.621199 p =.1784

	Valid N	Sum of Ranks	Avg of Ranks
JC	7	211	30.14
CC	12	270	22.50
SP	4	66	16.50
BC	13	272	20.92
DD	11	348	31.64
DRMO	1	9	9.00

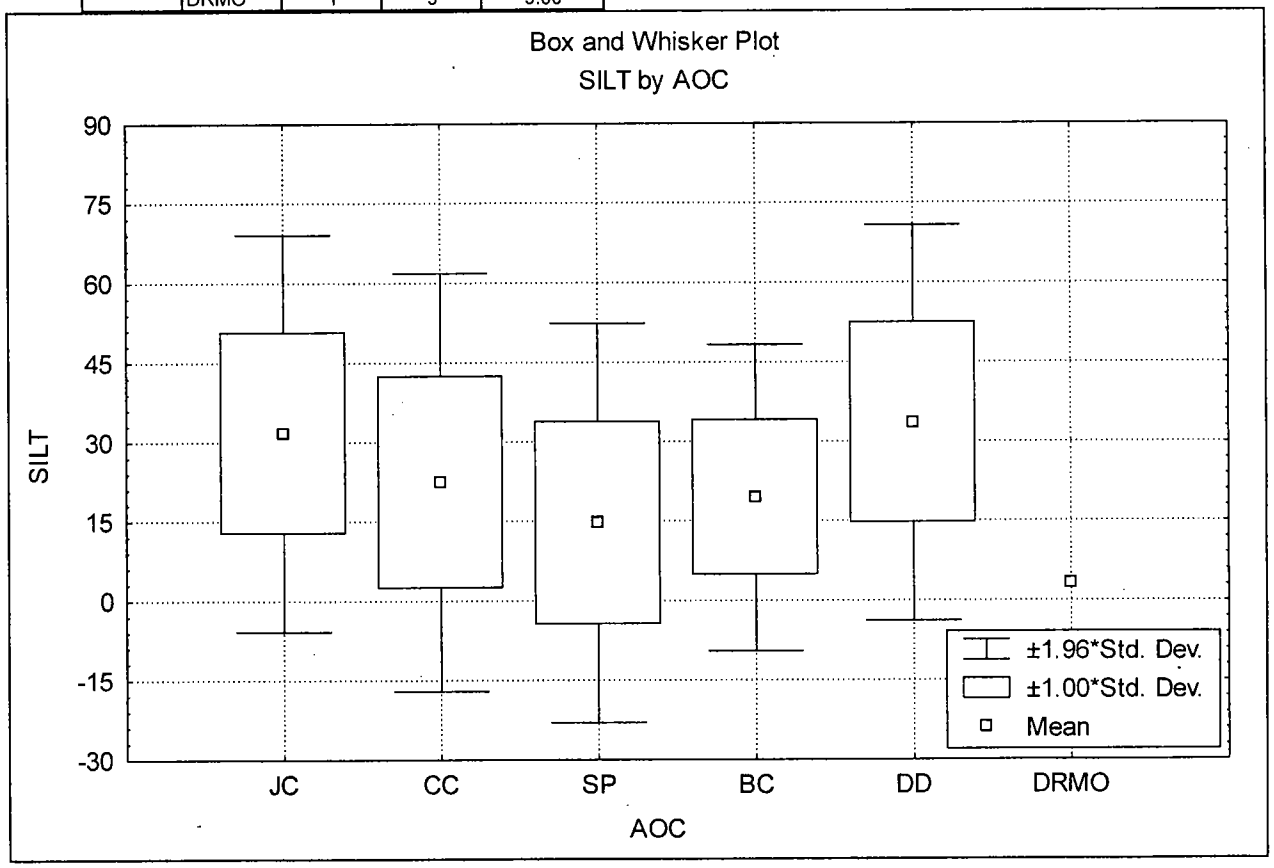


FIGURE F-9

PERCENT TOC BY AOC - ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res		
OU4-SD-M08-300A	0.2	CC	1
OU4-SD-M11-300A	0.26	DRMO	2
OU4-SD-M06-300A	0.36	JC	3
OU4-SD-M02-100A	0.41	BC	4
OU4-SD-M06-100A	0.53	JC	5
OU4-SD-M05-300A	0.57	JC	6
OU4-SD-M01-200A	0.58	BC	7
OU4-SD-M04-300A	0.62	BC	8
OU4-SD-M03-200A	0.64	BC	9
OU4-SD-M10-100A-AVG	0.76	SP	10
OU4-SD-M07-100A	0.77	CC	11
OU4-SD-M10-200A	0.87	SP	12
OU4-SD-M08-100A-AVG	0.875	CC	13
OU4-SD-M09-100A	1.03	CC	14
OU4-SD-M01-100A	1.13	BC	15
OU4-SD-M12-200A-AVG	1.195	DD	16
OU4-SD-M03-300A	1.31	BC	17
OU4-SD-M12-100A	1.38	DD	18
OU4-SD-M12-300A	1.42	DD	19
OU4-SD-M09-200A	1.48	CC	20
OU4-SD-M14-200A	1.61	DD	21
OU4-SD-M07-300A	1.67	CC	22
OU4-SD-M01-300A-AVG	1.725	BC	23
OU4-SD-M13-200A	1.73	DD	24
OU4-SD-M04-200A	1.83	BC	25
OU4-SD-M04-100A	1.84	BC	26
OU4-SD-M10-300A	1.92	SP	27
OU4-SD-M08-200A	2.01	CC	28
OU4-SD-M07-200A	2.09	CC	29
OU4-SD-M14-300A	2.1	DD	30
OU4-SD-M13-300A	2.13	DD	31
OU4-SD-M13-100A	2.18	DD	32
OU4-SD-M06-200A	2.27	JC	33
OU4-SD-M03-100A	2.5	BC	34
OU4-SD-M05-100A-AVG	2.52	JC	35
OU4-SD-M05-200A	2.59	JC	36
OU4-SD-M02-200A	2.72	BC	37
OU4-SD-M09-300A-AVG	2.785	CC	38
OU4-SD-M02-300A	3.99	BC	39
OU4-SD-M14-100A	4.64	DD	40

TOC - Round 3

Kruskal-Wallis ANOVA by Ranks (alum.sta)
Independent (grouping) variable: VAR9
Kruskal-Wallis test: H (5, N= 37) = 3.364865 p =.6439

Code	Valid N	Sum of Ranks	Avg of Ranks
BC	12	235	19.58
JC	6	112	18.67
CC	9	171	19.00
SP	3	48	16.00
DRMO	1	2	2.00
DD	6	135	22.50

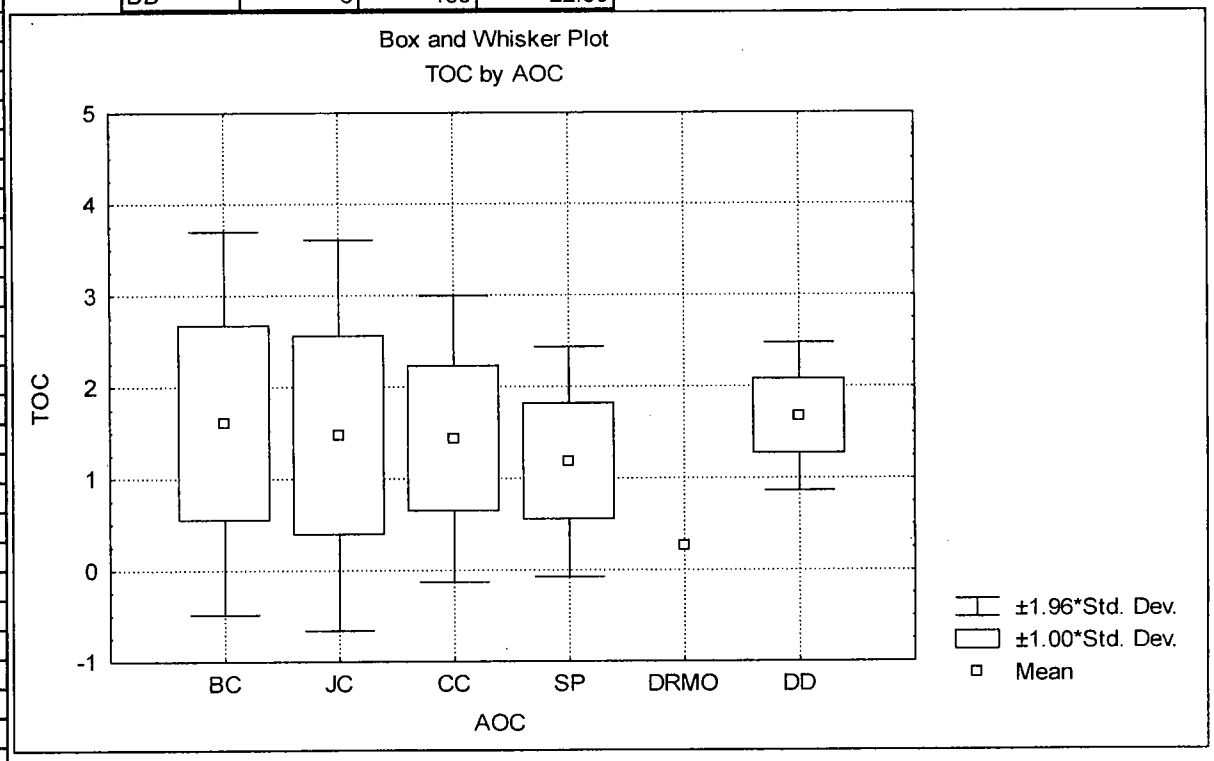


FIGURE F-10

PERCENT CLAY BY AOC - ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res	AOC	
OU4-SD-M01-100A	11.10	BC	1
OU4-SD-M01-200A	0.30	BC	2
OU4-SD-M01-300A	17.60	BC	3
OU4-SD-M02-100A	21.70	BC	4
OU4-SD-M02-200A	5.40	BC	5
OU4-SD-M02-300A	17.90	BC	6
OU4-SD-M03-100A	47.90	BC	7
OU4-SD-M03-200A	9.30	BC	8
OU4-SD-M03-300A	13.30	BC	9
OU4-SD-M04-100A	1.80	BC	10
OU4-SD-M04-200A	15.40	BC	11
OU4-SD-M04-300A	2.70	BC	12
OU4-SD-M05-100A	30.90	JC	13
OU4-SD-M05-200A	31.00	JC	14
OU4-SD-M05-300A	15.70	JC	15
OU4-SD-M06-100A	4.10	JC	16
OU4-SD-M06-200A	28.70	JC	17
OU4-SD-M06-300A	3.40	JC	18
OU4-SD-M07-100A	5.40	CC	19
OU4-SD-M07-200A	18.60	CC	20
OU4-SD-M07-300A	17.00	CC	21
OU4-SD-M08-100A	5.40	CC	22
OU4-SD-M08-200A	11.50	CC	23
OU4-SD-M08-300A	0.00	CC	24
OU4-SD-M09-100A	0.60	CC	25
OU4-SD-M09-200A	8.20	CC	26
OU4-SD-M09-300A	25.90	CC	27
OU4-SD-M10-100A	1.20	SP	28
OU4-SD-M10-200A	8.80	SP	29
OU4-SD-M10-300A	24.50	SP	30
OU4-SD-M11-300A	2.30	DRMO	31
OU4-SD-M12-100A	13.30	DD	32
OU4-SD-M12-200A	10.50	DD	33
OU4-SD-M12-300A	20.70	DD	34
OU4-SD-M13-100A	34.60	DD	35
OU4-SD-M13-200A	31.90	DD	36
OU4-SD-M13-300A	34.70	DD	37
OU4-SD-M14-100A	15.00	DD	38
OU4-SD-M14-200A	12.30	DD	39
OU4-SD-M14-300A	22.40	DD	40

% CLAY - ROUND 3

Kruskal-Wallis ANOVA by Ranks (grainmo3.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 40) = 7.868272 p =.1637

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	223.5	18.63
JC	6	146	24.33
CC	9	143	15.89
SP	3	50	16.67
DRMO	1	6	6.00
DD	9	251.5	27.94

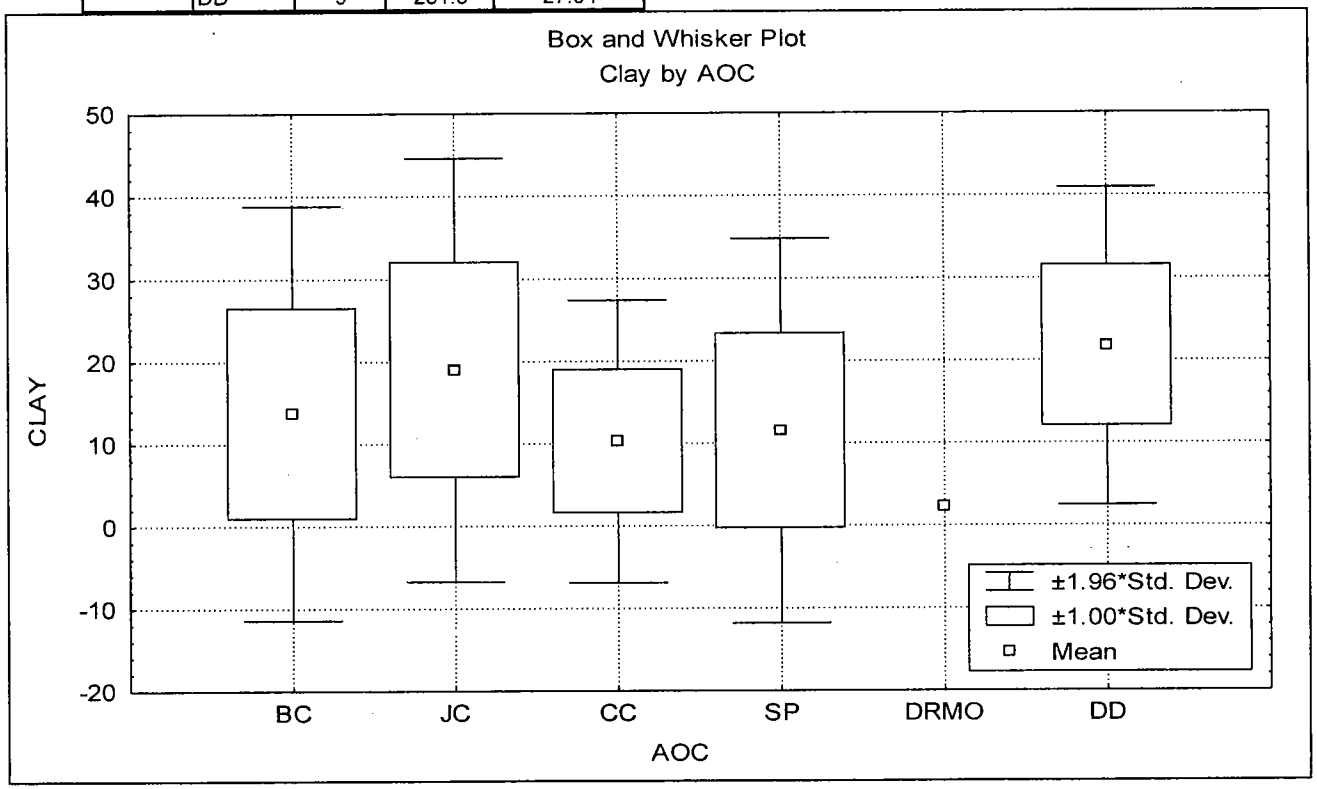


FIGURE F-11

PERCENT SAND BY AOC - ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL HSIPYARD, KITTERY, MAINE

nsample	val_res	AOC	
OU4-SD-M01-100A	80.80	BC	1
OU4-SD-M01-200A	97.40	BC	2
OU4-SD-M01-300A	60.40	BC	3
OU4-SD-M02-100A	53.10	BC	4
OU4-SD-M02-200A	86.90	BC	5
OU4-SD-M02-300A	30.00	BC	6
OU4-SD-M03-100A	29.40	BC	7
OU4-SD-M03-200A	77.60	BC	8
OU4-SD-M03-300A	63.90	BC	9
OU4-SD-M04-100A	96.00	BC	10
OU4-SD-M04-200A	51.60	BC	11
OU4-SD-M04-300A	92.40	BC	12
OU4-SD-M05-100A	19.10	JC	13
OU4-SD-M05-200A	29.30	JC	14
OU4-SD-M05-300A	76.20	JC	15
OU4-SD-M06-100A	86.30	JC	16
OU4-SD-M06-200A	29.50	JC	17
OU4-SD-M06-300A	81.60	JC	18
OU4-SD-M07-100A	80.40	CC	19
OU4-SD-M07-200A	34.30	CC	20
OU4-SD-M07-300A	45.00	CC	21
OU4-SD-M08-100A	81.00	CC	22
OU4-SD-M08-200A	49.70	CC	23
OU4-SD-M08-300A	99.70	CC	24
OU4-SD-M09-100A	98.10	CC	25
OU4-SD-M09-200A	76.90	CC	26
OU4-SD-M09-300A	16.40	CC	27
OU4-SD-M10-100A	97.70	SP	28
OU4-SD-M10-200A	79.80	SP	29
OU4-SD-M10-300A	28.70	SP	30
OU4-SD-M11-300A	96.40	DRMO	31
OU4-SD-M12-100A	55.80	DD	32
OU4-SD-M12-200A	72.60	DD	33
OU4-SD-M12-300A	46.30	DD	34
OU4-SD-M13-100A	19.80	DD	35
OU4-SD-M13-200A	31.90	DD	36
OU4-SD-M13-300A	29.00	DD	37
OU4-SD-M14-100A	32.70	DD	38
OU4-SD-M14-200A	64.30	DD	39
OU4-SD-M14-300A	39.10	DD	40

% SAND - ROUND 3

Kruskal-Wallis ANOVA by Ranks (grainmo3.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 40) = 6.978458 p =.2223

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	286	23.83
JC	6	103	17.17
CC	9	205	22.78
SP	3	69	23.00
DRMO	1	36	36.00
DD	9	121	13.44

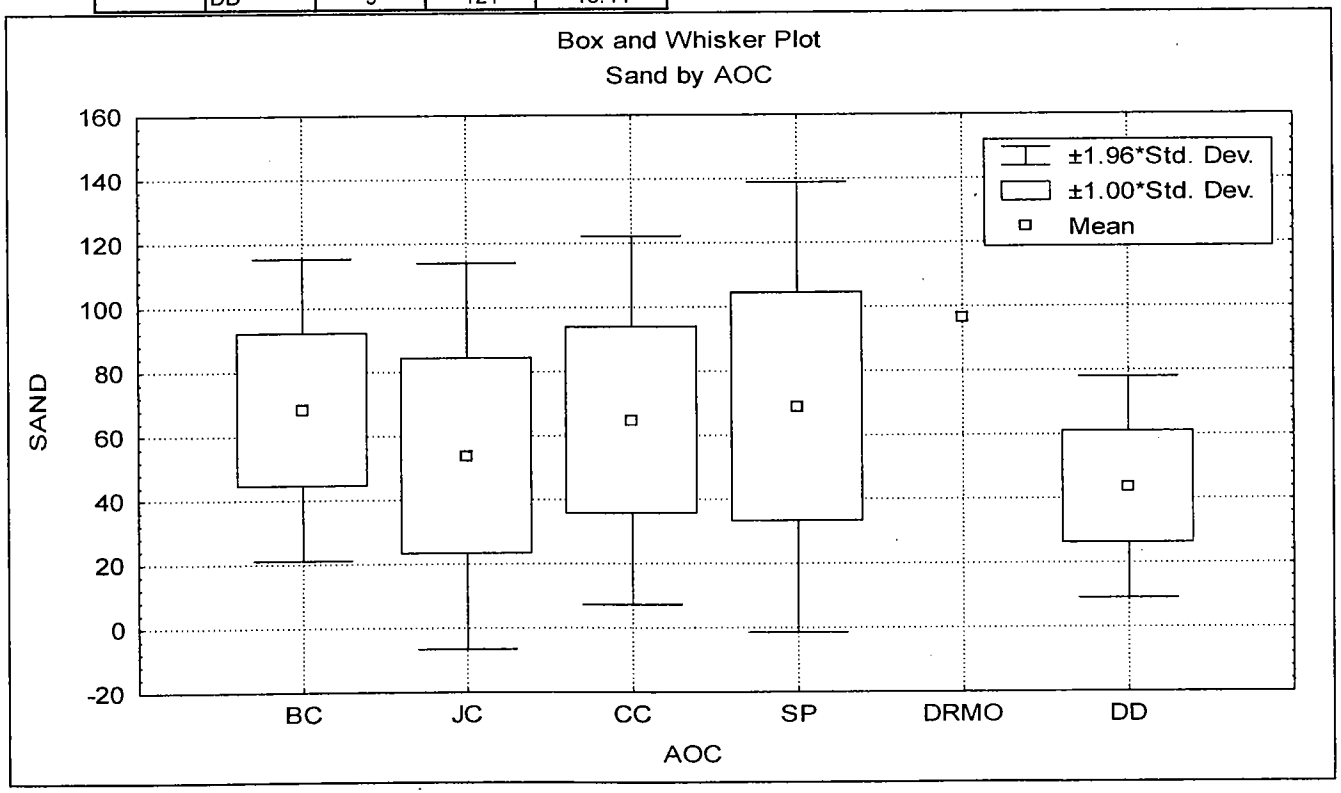


FIGURE F-12

PERCENT SILT BY AOC - ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res	AOC	
OU4-SD-M01-100A	8.20	BC	1
OU4-SD-M01-200A	2.40	BC	2
OU4-SD-M01-300A	22.00	BC	3
OU4-SD-M02-100A	25.20	BC	4
OU4-SD-M02-200A	7.70	BC	5
OU4-SD-M02-300A	52.10	BC	6
OU4-SD-M03-100A	22.80	BC	7
OU4-SD-M03-200A	13.10	BC	8
OU4-SD-M03-300A	22.70	BC	9
OU4-SD-M04-100A	2.20	BC	10
OU4-SD-M04-200A	33.00	BC	11
OU4-SD-M04-300A	4.90	BC	12
OU4-SD-M05-100A	50.00	JC	13
OU4-SD-M05-200A	39.70	JC	14
OU4-SD-M05-300A	8.10	JC	15
OU4-SD-M06-100A	9.70	JC	16
OU4-SD-M06-200A	41.80	JC	17
OU4-SD-M06-300A	15.00	JC	18
OU4-SD-M07-100A	14.20	CC	19
OU4-SD-M07-200A	47.10	CC	20
OU4-SD-M07-300A	38.00	CC	21
OU4-SD-M08-100A	13.60	CC	22
OU4-SD-M08-200A	38.80	CC	23
OU4-SD-M08-300A	0.30	CC	24
OU4-SD-M09-100A	1.20	CC	25
OU4-SD-M09-200A	14.80	CC	26
OU4-SD-M09-300A	57.80	CC	27
OU4-SD-M10-100A	1.20	SP	28
OU4-SD-M10-200A	11.50	SP	29
OU4-SD-M10-300A	46.80	SP	30
OU4-SD-M11-300A	1.30	DRMO	31
OU4-SD-M12-100A	30.90	DD	32
OU4-SD-M12-200A	16.90	DD	33
OU4-SD-M12-300A	33.10	DD	34
OU4-SD-M13-100A	45.60	DD	35
OU4-SD-M13-200A	36.20	DD	36
OU4-SD-M13-300A	36.30	DD	37
OU4-SD-M14-100A	52.40	DD	38
OU4-SD-M14-200A	23.40	DD	39
OU4-SD-M14-300A	38.50	DD	40

% SILT - ROUND 3

Kruskal-Wallis ANOVA by Ranks (grainmo3.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 40) = 7.520413 p =.1848

AOC	Valid N	Sum of Ranks	Avg of Ranks
BC	12	195	16.25
JC	6	139	23.17
CC	9	184.5	20.50
SP	3	49.5	16.50
DRMO	1	4	4.00
DD	9	248	27.56

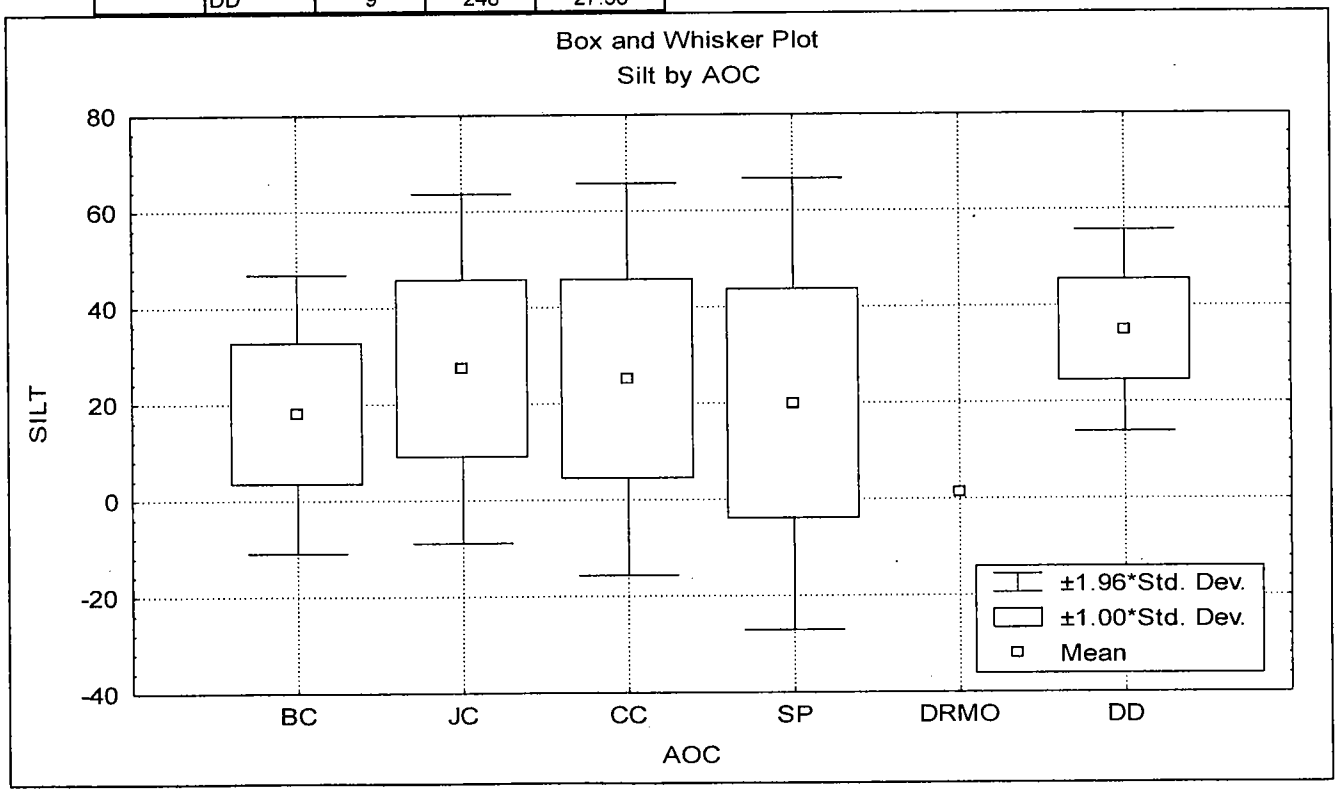


FIGURE F-13

PERCENT TOC BY AOC - ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res	aoc	
OU4-SD-M01-101B	0.97	BC	1
OU4-SD-M01-201B	0.63	BC	2
OU4-SD-M01-301B-AVG	1.865	BC	3
OU4-SD-M02-101B	1.88	BC	4
OU4-SD-M02-201B	2.2	BC	5
OU4-SD-M02-301B	3.56	BC	6
OU4-SD-M03-101B	2.21	BC	7
OU4-SD-M03-201B	0.93	BC	8
OU4-SD-M03-301B	1.25	BC	9
OU4-SD-M04-101B-AVG	2.975	BC	10
OU4-SD-M04-201B	1.89	BC	11
OU4-SD-M04-301B	0.37	BC	12
OU4-SD-M07-101B	0.88	CC	13
OU4-SD-M07-201B	1.93	CC	14
OU4-SD-M07-301B	2	CC	15
OU4-SD-M08-101B-AVG	0.85	CC	16
OU4-SD-M08-201B	2.53	CC	17
OU4-SD-M08-301B	0.29	CC	18
OU4-SD-M09-101B	1.21	CC	19
OU4-SD-M09-201B	2.52	CC	20
OU4-SD-M09-301B-AVG	2.68	CC	21
OU4-SD-M12-101B	1.33	DD	22
OU4-SD-M12-201B-AVG	2.165	DD	23
OU4-SD-M12-301B	1.57	DD	24
OU4-SD-M13-101B	2.31	DD	25
OU4-SD-M13-201B	2.49	DD	26
OU4-SD-M13-301B	2.83	DD	27
OU4-SD-M14-101B	6.08	DD	28
OU4-SD-M14-201B	1.77	DD	29
OU4-SD-M14-301B	1.92	DD	30
OU4-SD-M11-301B	0.69	DRMO	31
OU4-SD-M05-101B	2.63	JC	32
OU4-SD-M05-201B	2.85	JC	33
OU4-SD-M05-301B	0.6	JC	34
OU4-SD-M06-101B	0.59	JC	35
OU4-SD-M06-201B	1.57	JC	36
OU4-SD-M06-301B	1.26	JC	37
OU4-SD-M10-101B-AVG	0.775	SP	38
OU4-SD-M10-201B	1.22	SP	39
OU4-SD-M10-301B	3.11	SP	40

% TOC - Round 4

Kruskal-Wallis ANOVA by Ranks (rnd4_tocgs.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 40) = 4.059413 p =.5409

AOC	Valid N	Sum of Ranks	AVG of Ranks
BC	12	236	19.67
JC	6	108.5	18.08
CC	9	176	19.56
SP	3	58	19.33
DRMO	1	6	6.00
DD	9	235.5	26.17

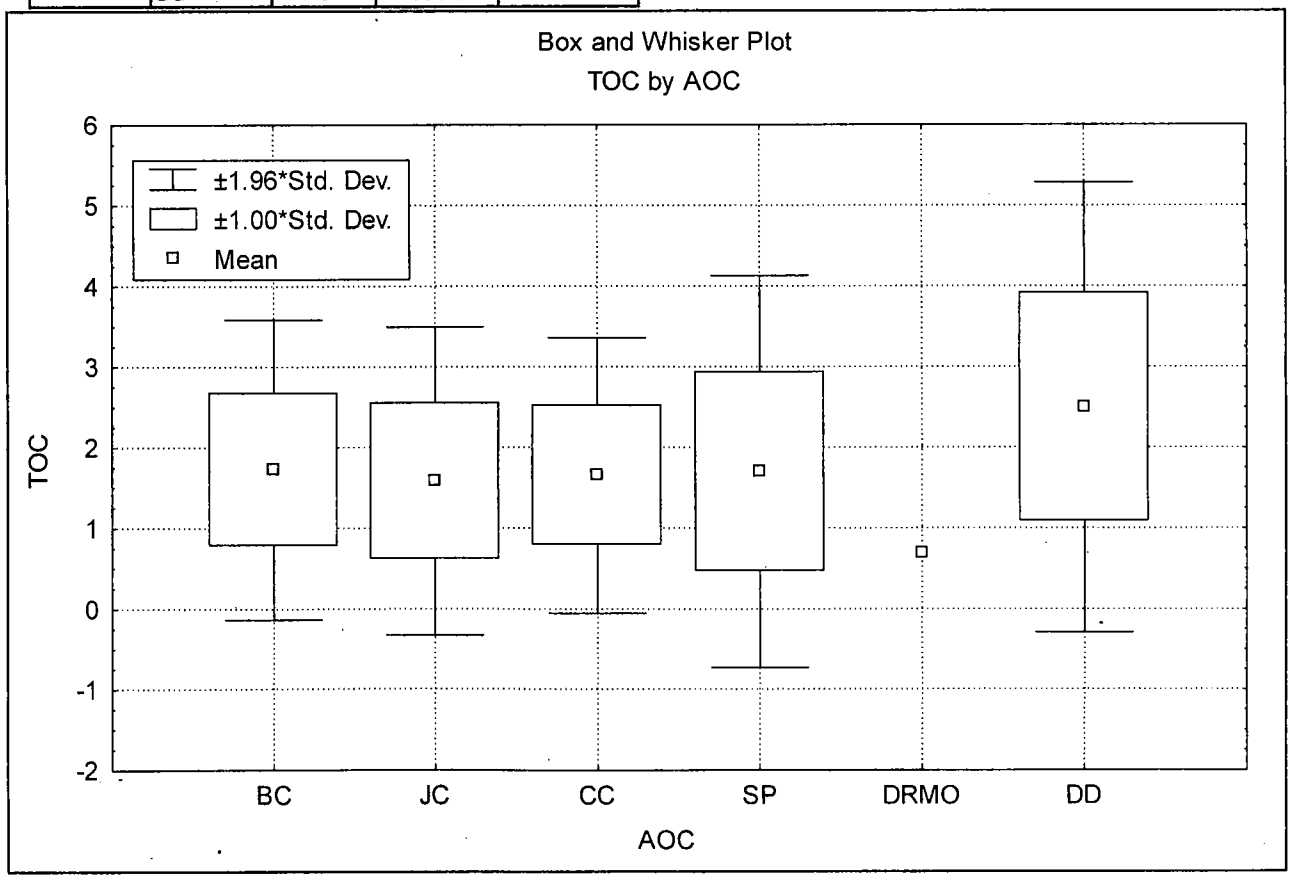


FIGURE F-14

PERCENT CLAY BY AOC - ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res	aoc	
OU4-SD-M01-101B	9.2	BC	1
OU4-SD-M01-201B	1.4	BC	2
OU4-SD-M01-301B-AVG	10	BC	3
OU4-SD-M02-101B	12.8	BC	4
OU4-SD-M02-201B	3.2	BC	5
OU4-SD-M02-301B	15.1	BC	6
OU4-SD-M03-101B	19.9	BC	7
OU4-SD-M03-201B	8.7	BC	8
OU4-SD-M03-301B	10.7	BC	9
OU4-SD-M04-101B-AVG	3.1	BC	10
OU4-SD-M04-201B	14	BC	11
OU4-SD-M04-301B	0.8	BC	12
OU4-SD-M07-101B	6.3	CC	13
OU4-SD-M07-201B	24.6	CC	14
OU4-SD-M07-301B	21.2	CC	15
OU4-SD-M08-101B-AVG	7.4	CC	16
OU4-SD-M08-201B	19.3	CC	17
OU4-SD-M08-301B	0.9	CC	18
OU4-SD-M09-101B	6.2	CC	19
OU4-SD-M09-201B	1.9	CC	20
OU4-SD-M09-301B-AVG	23.55	CC	21
OU4-SD-M12-101B	7.2	DD	22
OU4-SD-M12-201B-AVG	10.2	DD	23
OU4-SD-M12-301B	11.3	DD	24
OU4-SD-M13-101B	27	DD	25
OU4-SD-M13-201B	21.1	DD	26
OU4-SD-M13-301B	15.5	DD	27
OU4-SD-M14-101B	13.8	DD	28
OU4-SD-M14-201B	14.3	DD	29
OU4-SD-M14-301B	20	DD	30
OU4-SD-M11-301B	1.3	DRMO	31
OU4-SD-M05-101B	21.1	JC	32
OU4-SD-M05-201B	20.5	JC	33
OU4-SD-M05-301B	4.7	JC	34
OU4-SD-M06-101B	5.5	JC	35
OU4-SD-M06-201B	13.7	JC	36
OU4-SD-M06-301B	1.6	JC	37
OU4-SD-M10-101B-AVG	1.55	SP	38
OU4-SD-M10-201B	6.5	SP	39
OU4-SD-M10-301B	20.9	SP	40

% CLAY - ROUND 4

Kruskal-Wallis ANOVA by Ranks (rnd4_tocgs.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 40) = 6.556198 p =.2558

AOC	Valid N	Sum of Ranks	AVG of Ranks
BC	12	205	17.08
JC	6	119.5	19.92
CC	9	194	21.56
SP	3	53	17.67
DRMO	1	3	3.00
DD	9	245.5	27.28

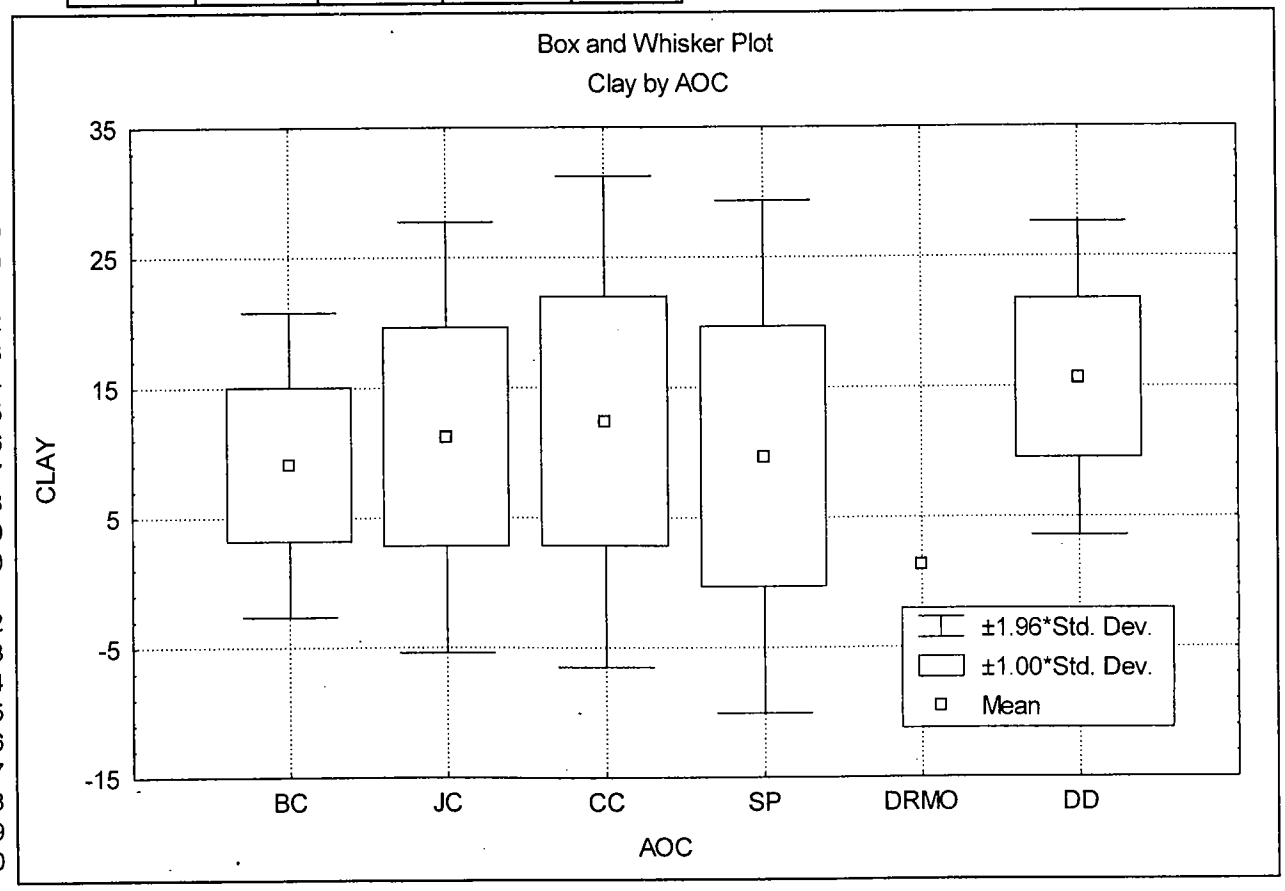


FIGURE F-15

PERCENT SAND BY AOC - ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res	aoc	
OU4-SD-M01-101B	76.6	BC	1
OU4-SD-M01-201B	96.2	BC	2
OU4-SD-M01-301B-AVG	78.55	BC	3
OU4-SD-M02-101B	46	BC	4
OU4-SD-M02-201B	90.2	BC	5
OU4-SD-M02-301B	37.1	BC	6
OU4-SD-M03-101B	37	BC	7
OU4-SD-M03-201B	75.5	BC	8
OU4-SD-M03-301B	65.1	BC	9
OU4-SD-M04-101B-AVG	90.4	BC	10
OU4-SD-M04-201B	58.5	BC	11
OU4-SD-M04-301B	94.9	BC	12
OU4-SD-M07-101B	79.9	CC	13
OU4-SD-M07-201B	29.4	CC	14
OU4-SD-M07-301B	42.8	CC	15
OU4-SD-M08-101B-AVG	77.1	CC	16
OU4-SD-M08-201B	46.3	CC	17
OU4-SD-M08-301B	98.8	CC	18
OU4-SD-M09-101B	76.1	CC	19
OU4-SD-M09-201B	97.1	CC	20
OU4-SD-M09-301B-AVG	23.4	CC	21
OU4-SD-M12-101B	75.3	DD	22
OU4-SD-M12-201B-AVG	70.25	DD	23
OU4-SD-M12-301B	50.8	DD	24
OU4-SD-M13-101B	27.2	DD	25
OU4-SD-M13-201B	42	DD	26
OU4-SD-M13-301B	55.6	DD	27
OU4-SD-M14-101B	50.6	DD	28
OU4-SD-M14-201B	61.3	DD	29
OU4-SD-M14-301B	42.9	DD	30
OU4-SD-M11-301B	96.7	DRMO	31
OU4-SD-M05-101B	31.9	JC	32
OU4-SD-M05-201B	43.3	JC	33
OU4-SD-M05-301B	88.3	JC	34
OU4-SD-M06-101B	87.4	JC	35
OU4-SD-M06-201B	66	JC	36
OU4-SD-M06-301B	94.1	JC	37
OU4-SD-M10-101B-AVG	97.35	SP	38
OU4-SD-M10-201B	88.7	SP	39
OU4-SD-M10-301B	46.1	SP	40

% Sand - Round 4

Kruskal-Wallis ANOVA by Ranks (rnd4_tocgs.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 40) = 6.344917 p =.2741

AOC	Valid N	Sum of Ranks	AVG of Ranks
BC	12	269	22.42
JC	6	127	21.17
CC	9	181	20.11
SP	3	82	27.33
DRMO	1	37	37.00
DD	9	124	13.78

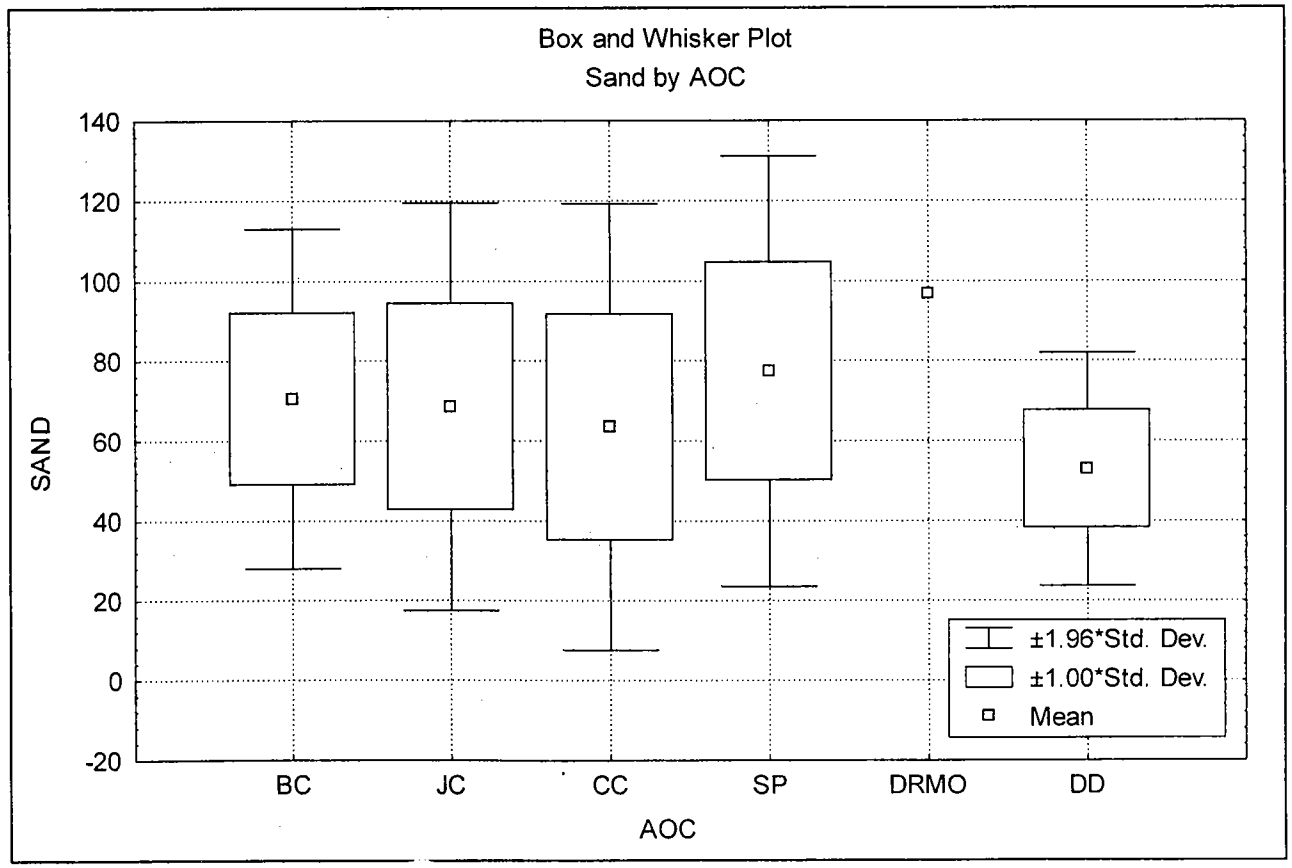


FIGURE F-16

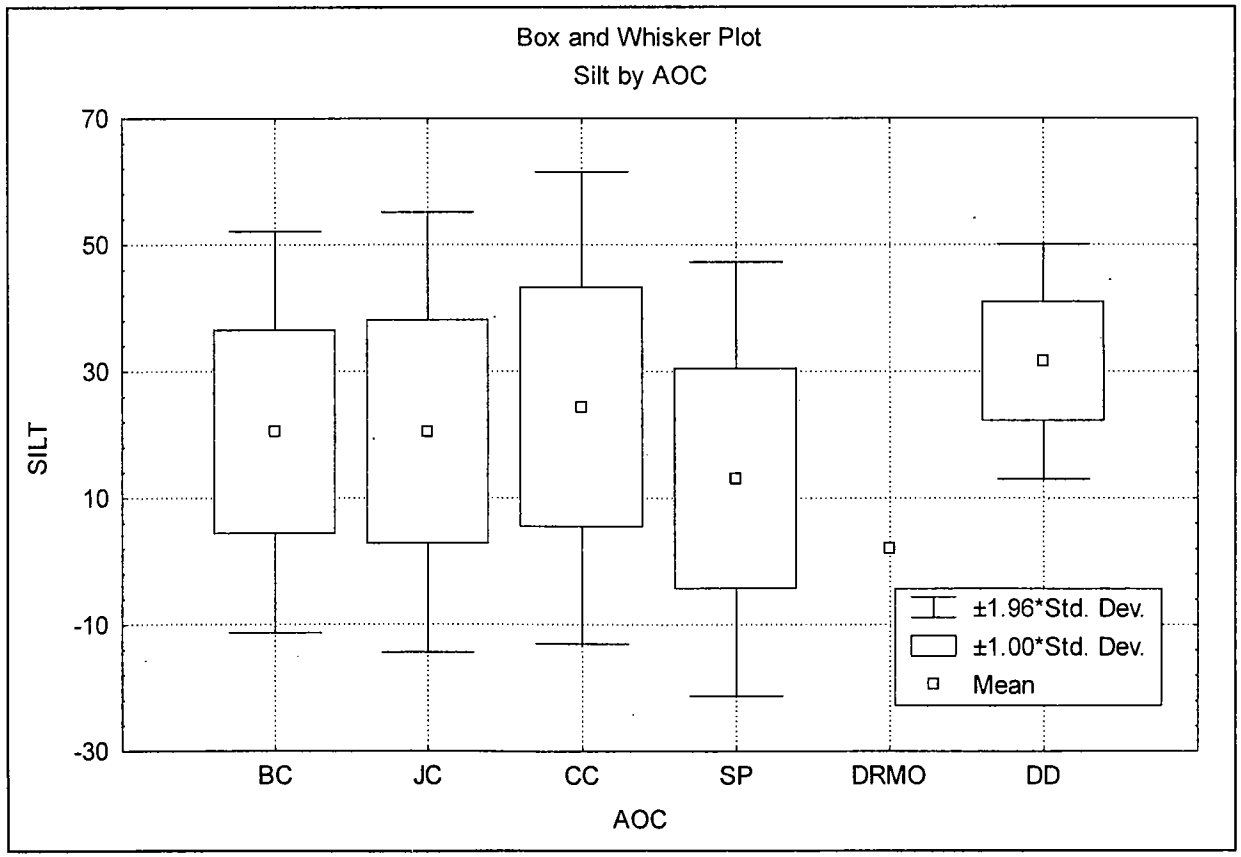
PERCENT SILT BY AOC - ROUND 4
BASELINE INTERIM OFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

nsample	val_res	aoc	
OU4-SD-M01-101B	14.2	BC	1
OU4-SD-M01-201B	2.4	BC	2
OU4-SD-M01-301B-AVG	11.5	BC	3
OU4-SD-M02-101B	41.2	BC	4
OU4-SD-M02-201B	6.6	BC	5
OU4-SD-M02-301B	47.9	BC	6
OU4-SD-M03-101B	43.1	BC	7
OU4-SD-M03-201B	15.7	BC	8
OU4-SD-M03-301B	24.2	BC	9
OU4-SD-M04-101B-AVG	6.5	BC	10
OU4-SD-M04-201B	27.5	BC	11
OU4-SD-M04-301B	4.2	BC	12
OU4-SD-M07-101B	13.8	CC	13
OU4-SD-M07-201B	46	CC	14
OU4-SD-M07-301B	36.1	CC	15
OU4-SD-M08-101B-AVG	15.55	CC	16
OU4-SD-M08-201B	34.4	CC	17
OU4-SD-M08-301B	0.3	CC	18
OU4-SD-M09-101B	17.7	CC	19
OU4-SD-M09-201B	1	CC	20
OU4-SD-M09-301B-AVG	53.1	CC	21
OU4-SD-M12-101B	17.5	DD	22
OU4-SD-M12-201B-AVG	19.55	DD	23
OU4-SD-M12-301B	37.9	DD	24
OU4-SD-M13-101B	45.8	DD	25
OU4-SD-M13-201B	36.8	DD	26
OU4-SD-M13-301B	28.9	DD	27
OU4-SD-M14-101B	35.6	DD	28
OU4-SD-M14-201B	24.4	DD	29
OU4-SD-M14-301B	37.1	DD	30
OU4-SD-M11-301B	2	DRMO	31
OU4-SD-M05-101B	47	JC	32
OU4-SD-M05-201B	36.3	JC	33
OU4-SD-M05-301B	7.1	JC	34
OU4-SD-M06-101B	7.1	JC	35
OU4-SD-M06-201B	20.3	JC	36
OU4-SD-M06-301B	4.3	JC	37
OU4-SD-M10-101B-AVG	1.15	SP	38
OU4-SD-M10-201B	4.8	SP	39
OU4-SD-M10-301B	33.1	SP	40

% Silt - Round 4

Kruskal-Wallis ANOVA by Ranks (rnd4_tocgs.sta)
Independent (grouping) variable: AOC
Kruskal-Wallis test: H (5, N= 40) = 6.727651 p =.2417

AOC	Valid N	Sum of Ranks	AVG of Ranks
BC	12	229	19.08
JC	6	119	19.83
CC	9	185	20.56
SP	3	37	12.33
DRMO	1	4	4.00
DD	9	246	27.33



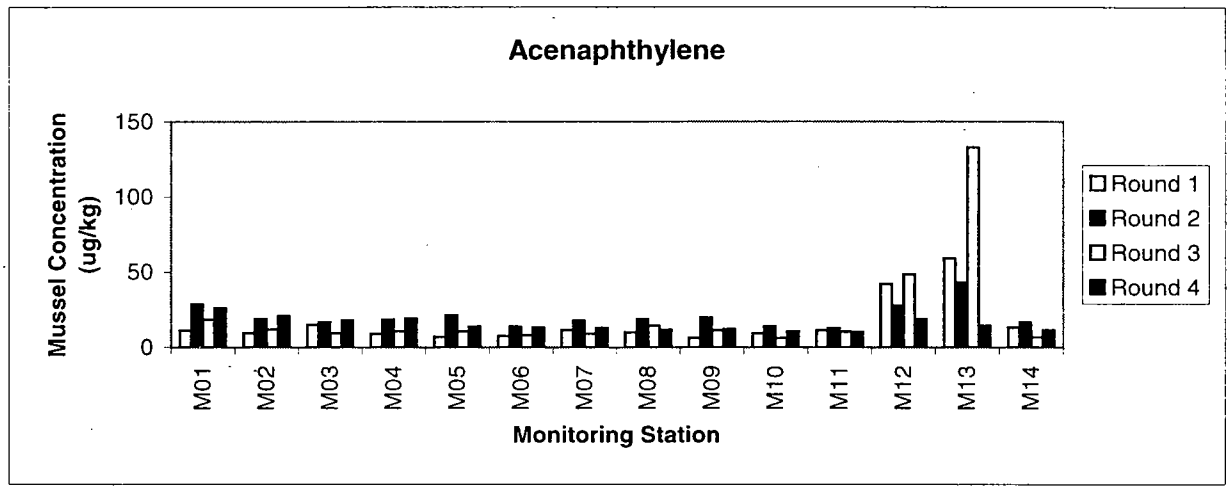
APPENDIX G

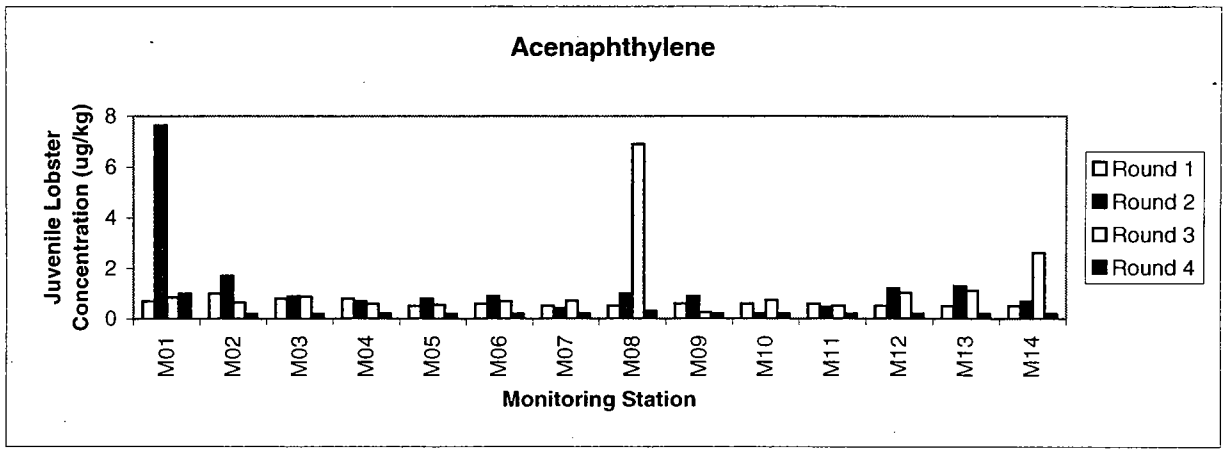
NON-NORMALIZED TISSUE CONCENTRATIONS OF PAHS IN MUSSELS AND JUVENILE LOBSTERS AT EACH MONITORING STATION

NORMALIZED ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND JUVENILE LOBSTER FROM ROUNDS 1 THOUGH 4

FIGURE G-1

ACENAPHTHYLENE TISSUE CONCENTRATIONS IN MUSSELS AND JUVENILE LOBSTER
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

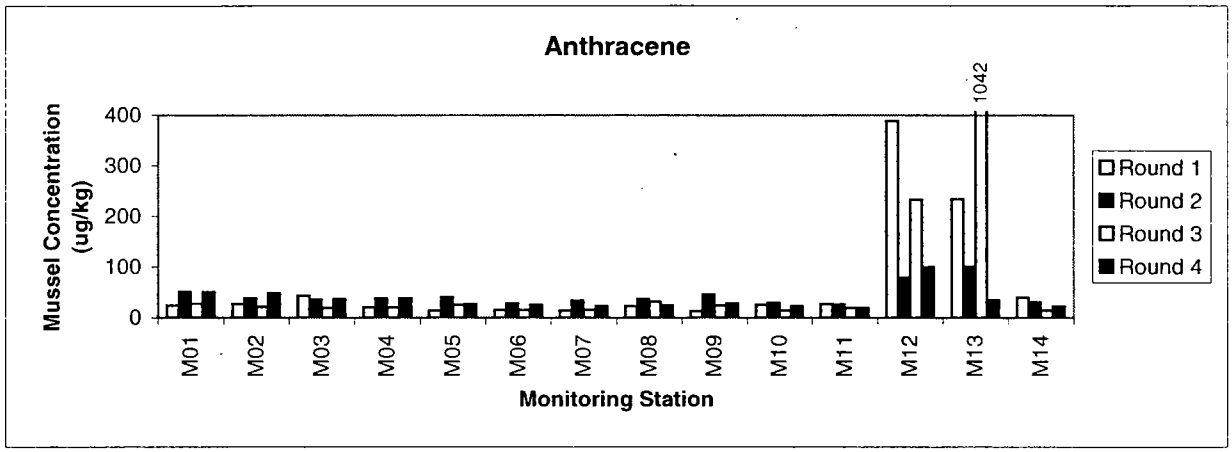


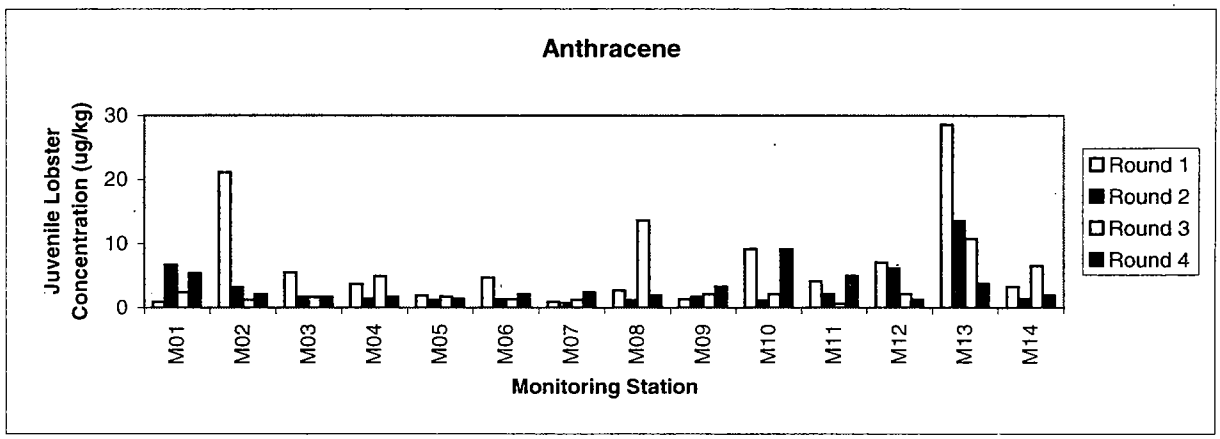


The bars for each station are in order from Rounds 1 through 4.
M - Monitoring Station; R - Reference Station
Monitoring Station values were averaged for all locations within each monitoring station
The data in these figures are not normalized

FIGURE G-2

ANTHRACENE TISSUE CONCENTRATIONS IN MUSSELS AND JUVENILE LOBSTER
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

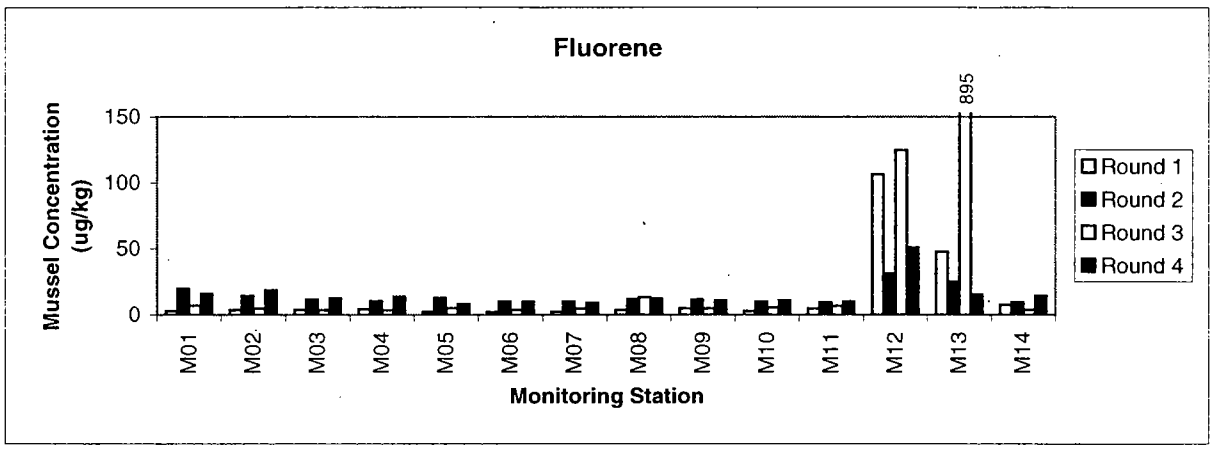


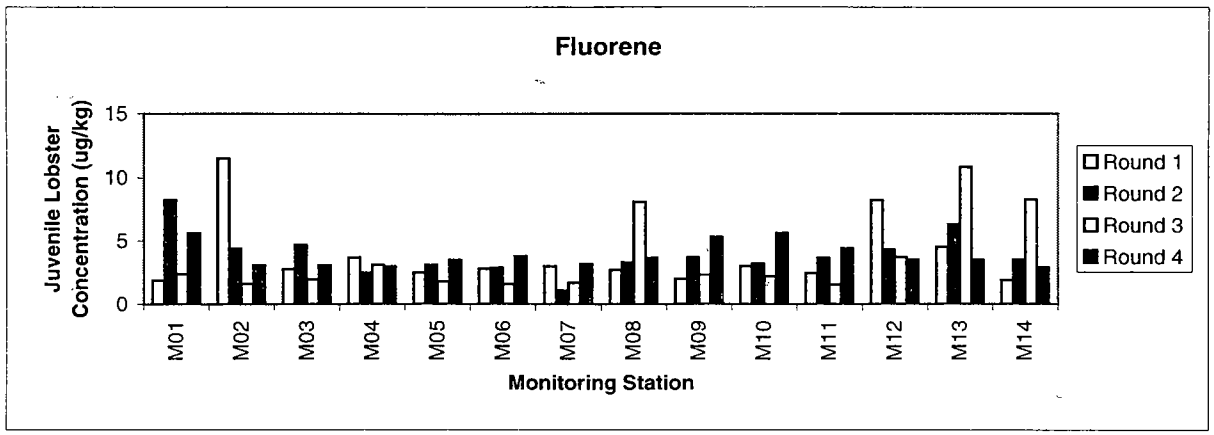


The bars for each station are in order from Rounds 1 through 4.
M - Monitoring Station; R - Reference Station
Monitoring Station values were averaged for all locations within each monitoring station
The data in these figures are not normalized

FIGURE G-3

FLUORENE TISSUE CONCENTRATIONS IN MUSSELS AND JUVENILE LOBSTER
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

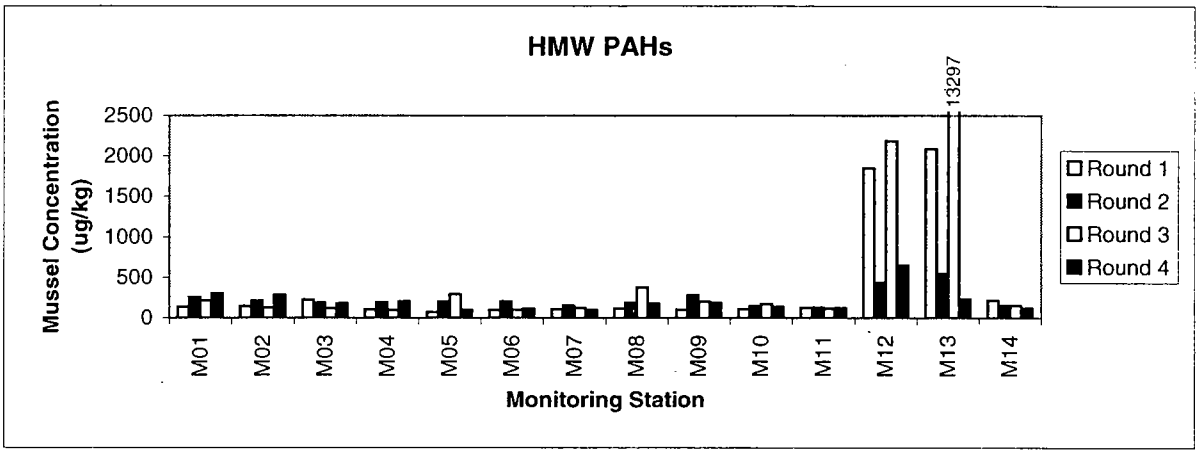


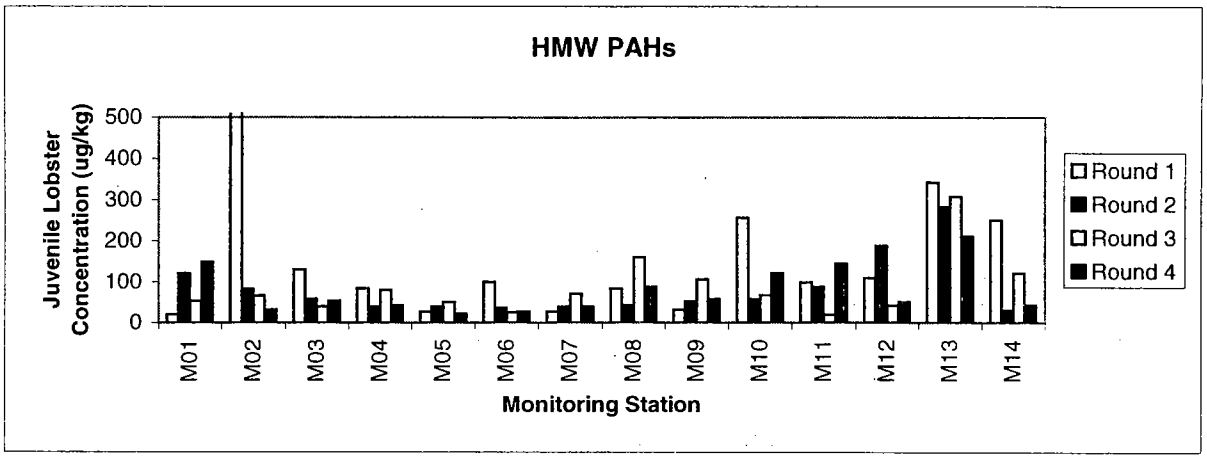


The bars for each station are in order from Rounds 1 through 4.
M - Monitoring Station; R - Reference Station
Monitoring Station values were averaged for all locations within each monitoring station
The data in these figures are not normalized

FIGURE G-4

HMW PAH TISSUE CONCENTRATIONS IN MUSSELS AND JUVENILE LOBSTER
INTERIM BASELINE OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE





The bars for each station are in order from Rounds 1 through 4.
M - Monitoring Station; R - Reference Station
Monitoring Station values were averaged for all locations within each monitoring station
The data in these figures are not normalized

TABLE G - 1

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2,3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	9.7	16.5	24.8	26.2
1-METHYLNAPHTHALENE	7.2	27.1	40.7	71.1	67.1
1-METHYLPHENANTHRENE	43.8	109.1	141.6	179.0	224.4
2,3,5-TRIMETHYLNAPHTHALENE	9.2	13.6	18.1	26.8	30.5
2,6-DIMETHYLNAPHTHALENE	8.9	19.1	25.5	39.3	36.8
2-METHYLNAPHTHALENE	11.1 U	41.6	54.2	96.9	90.9
ACENAPHTHENE	15.2	69.4	96.7	245.9	219.5
ACENAPHTHYLENE	47.6	101.4	139.9	197.2	341.0
ANTHRACENE	157.7	311.6	394.2	636.8	806.5
BENZO(A)ANTHRACENE	263.0	625.7	619.3	1054.6	1280.3
BENZO(A)PYRENE	329.5	745.7	784.8	1275.3	1900.3
BENZO(B)FLUORANTHENE	331.3	690.5	653.4	1318.7	1441.7
BENZO(E)PYRENE	160.2	438.2	446.9	918.3	931.4
BENZO(G,H,I)PERYLENE	152.4	459.0	449.7	843.7	820.4
BENZO(K)FLUORANTHENE	105.8	221.5	207.4	443.0	425.2
C1-CHRYSENES	159.5	448.4	589.5	913.8	940.2
C1-DIBENZOTHIOPHENES	18.0	28.0	26.1	50.3	45.0
C1-FLUORANTHENES/PYRENES	262.1	741.5	825.3	1526.1	1932.0
C1-FLUORENES	35.6	54.4	121.2	119.1	269.6
C1-NAPHTHALENES	18.3	64.0	94.9	167.6	158.1
C1-PHENANTHRENES/ANTHRACENES	166.4	397.2	538.4	691.6	848.5
C2-CHRYSENES	71.5	184.0	277.5	362.9	427.6
C2-DIBENZOTHIOPHENES	23.5	36.7	32.0	56.2	70.8
C2-FLUORENES	39.6	57.4	97.4	126.6	267.4
C2-NAPHTHALENES	24.9	70.5	105.3	163.0	125.1
C2-PHENANTHRENES/ANTHRACENES	142.1 U	293.3	358.4	524.3	784.5
C3-CHRYSENES	4.5	8.1	11.4	9.0	19.0
C3-DIBENZOTHIOPHENES	16.2	31.7	25.3	52.7	57.9

TABLE G - 1

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	45.7	71.8	100.9	236.4
C3-NAPHTHALENES	38.6	85.3	86.7	140.6	115.8
C3-PHENANTHRENES/ANTHRACENES	88.8 U	183.2	196.8	313.3	466.4
C4-CHRYSENES	8.3	25.5	14.4	9.6	80.5
C4-NAPHTHALENES	25.9	47.1	30.0	69.3	98.3
C4-PHENANTHRENES/ANTHRACENES	44.1	54.8	74.3	149.1	175.2
CHRYSENE	249.4	511.7	617.5	1043.0	1181.4
DIBENZO(A,H)ANTHRACENE	42.8	129.7	134.4	178.0	168.3
DIBENZOTHIOPHENE	14.3	39.3	42.0	73.5	68.9
FLUORANTHENE	503.8	928.9	1063.5	2208.5	2712.2
FLUORENE	34.3	95.2	203.3	270.5	339.6
INDENO(1,2,3-CD)PYRENE	181.1	242.4	423.2	745.2	759.4
NAPHTHALENE	19.4	66.8	94.4	141.1	169.1
PERYLENE	57.6	122.6	81.4	226.7	120.8
PHENANTHRENE	225.0	706.1	985.4	1697.5	1666.2
PYRENE	428.9	779.8	1140.4	2222.1	2960.0
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.0	0.1	0.1 U	0.1
1,2,4,5-TETRACHLOROBENZENE	0.60	0.4	0.2	0.8	0.3
2,4'-DDD	1.29	8.6	15.2	11.3	22.5
2,4'-DDE	0.24 U	0.3	0.5	0.5	1.1
2,4'-DDT	0.13 U	6.5	5.9	11.3	11.8
4,4'-DDD	0.79	38.6	36.9	29.3	36.9
4,4'-DDE	0.57	9.9	11.8	13.4	15.7
4,4'-DDT	0.68	286.1	39.3	57.6	113.0
ALDRIN	0.41	2.6	0.3	0.0 U	5.8
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1	0.1
ALPHA-CHLORDANE	0.22	4.6	3.8	3.2	4.8
BETA-BHC	0.19	0.1	0.3	0.8	0.2
CHLORPYRIFOS	0.37	0.1	0.1 U	0.2 U	0.0 U
CIS-NONACHLOR	0.17	0.4	0.6	0.5	1.1
DELTA-BHC	0.07	0.1	0.0	0.0	0.0
DIELDRIN	0.09 U	5.7	4.0	22.3	6.8
ENDOSULFAN II	0.58	2.2	1.7	2.1	2.2
ENDRIN	0.10	0.3	0.2	0.5	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.3	0.2	0.2	0.2
GAMMA-CHLORDANE	0.10 U	5.0	2.9	3.1	3.8
HEPTACHLOR	0.16	0.4	0.2	0.3	0.3
HEPTACHLOR EPOXIDE	0.06	0.0	0.0 U	0.0 U	0.2
HEXACHLOROBENZENE	1.01	0.0 U	0.0	0.1	0.0 U
MIREX	0.07	0.0 U	0.4	0.0 U	0.5
OXYCHLORDANE	0.09	0.3	0.4	0.2	0.1
PCB-101/90	1.59	1.1	0.9	0.9	0.9
PCB-105	0.71	0.5	0.4	0.6	0.9
PCB-114	0.20 U	0.1 U	0.0 U	0.1 U	0.1 U
PCB-118	1.44	1.1	1.1	1.0	1.0
PCB-126	0.17	0.2	0.1	0.1 U	0.1 U
PCB-128	0.51	1.1	0.8	0.5	1.3
PCB-138/160	1.76 U	1.9	1.2	1.9	1.7
PCB-149/123	0.69	0.9	0.6	1.7	1.6
PCB-153/132	1.29	1.4	1.0	1.9	3.5
PCB-156	0.44	2.1	0.8	1.2	2.9
PCB-167	0.89	2.0	0.4	2.0	10.2
PCB-169	0.13	0.2 U	0.1	0.1 U	0.1
PCB-170/190	5.99	7.0	14.3	23.1	24.0
PCB-18/17	0.26	0.3	0.1	0.0	0.1
PCB-180	0.52	1.2	0.6	1.1	1.1

TABLE G - 1

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	1.1	0.3	0.7	7.4
PCB-189	0.22	0.3	0.4	0.7	2.6
PCB-195/208	0.18 U	0.6	0.5	1.1	0.3
PCB-201/157/173	0.24 U	0.3	0.4	0.7	1.9
PCB-206	0.32	1.4	0.2	1.6	0.9
PCB-209	0.37	0.8	0.6	1.5	0.2
PCB-28	0.63	0.2	0.5	0.3	0.2
PCB-44	0.41 U	0.1	0.4	0.2	0.2
PCB-52	1.07	0.5	0.6	0.8	0.3
PCB-66	0.32	0.5	0.3	1.1	0.8
PCB-77	0.09	0.1	0.2	0.1 U	0.0
PCB-8/5	0.52	0.3	1.0	0.4	0.4
PCB-81	0.12	0.0	0.2	0.1	0.2
PENTACHLOROANISOLE	0.08 U	0.1	0.2	0.1 U	0.1
PENTACHLOROBENZENE	0.21	0.1	0.1	0.1 U	0.1
TRANS-NONACHLOR	0.15	1.8	1.3	1.1	1.8
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000186	0.000229	0.000285	0.000338
CADMIUM	0.000004	0.000005	0.000006	0.000007	0.000006
CHROMIUM	0.001099	0.001467	0.001533	0.001297	0.001697
COPPER	0.000238	0.000743	0.001668	0.000757	0.001234
IRON	0.328134	0.440172	0.491672	0.549732	0.556983
LEAD	0.000903	0.002353	0.002883	0.001963	0.006011
MANGANESE	0.008512	0.008693	0.016611	0.018527	0.008622
MERCURY	0.000003	0.000003	0.000004	0.000005	0.000003
NICKEL	0.000335	0.000446	0.000541	0.000369	0.000569
SILVER	0.000016	0.000005	0.000007	0.000066	0.000006
ZINC	0.001037	0.002495	0.003077	0.001453	0.002326

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2,3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	1.2 U	2.1	2.3	3.3
1-METHYLNAPHTHALENE	7.2	3.6 U	4.8	6.7	10.2
1-METHYLPHENANTHRENE	43.8	18.1	15.3	11.1	23.5
2,3,5-TRIMETHYLNAPHTHALENE	9.2	4.8	3.9	3.3	6.3
2,6-DIMETHYLNAPHTHALENE	8.9	7.3	4.5	4.9	9.2
2-METHYLNAPHTHALENE	11.1 U	6.1 U	7.8	11.0	13.3
ACENAPHTHENE	15.2	5.8	6.6	5.1	11.3
ACENAPHTHYLENE	47.6	23.3	25.9	23.9	30.5
ANTHRACENE	157.7	54.7	62.0	38.2	83.2
BENZO(A)ANTHRACENE	263.0	88.5	99.2	72.3	110.9
BENZO(A)PYRENE	329.5	112.2	121.1	53.9	169.6
BENZO(B)FLUORANTHENE	331.3	122.4	119.8	119.8	148.0
BENZO(E)PYRENE	160.2	72.3	66.0	64.6	72.7
BENZO(G,H,I)PERYLENE	152.4	73.8	64.1	67.8	68.8
BENZO(K)FLUORANTHENE	105.8	38.2	38.6	36.9	40.1
C1-CHRYSENES	159.5	64.7	74.1	64.7	72.7
C1-DIBENZOTHIOPHENES	18.0	9.8	6.2	5.1	8.9
C1-FLUORANTHENES/PYRENES	262.1	112.8	102.8	73.2	116.2
C1-FLUORENES	35.6	10.6	12.7	8.1	24.3
C1-NAPHTHALENES	18.3	9.7 U	12.6	17.7	23.4
C1-PHENANTHRENES/ANTHRACENES	166.4	73.6	62.4	41.4	80.2
C2-CHRYSENES	71.5	33.6	33.9	28.5	38.8
C2-DIBENZOTHIOPHENES	23.5	15.6	9.5	7.2	10.8
C2-FLUORENES	39.6	20.1	23.6	15.4	28.0
C2-NAPHTHALENES	24.9	9.5 U	14.0	19.3	25.7
C2-PHENANTHRENES/ANTHRACENES	142.1 U	53.8	47.8	28.9	58.8
C3-CHRYSENES	4.5	2.8	2.8	3.5	3.8
C3-DIBENZOTHIOPHENES	16.2	13.7	7.5	5.3	7.2

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	14.3	14.2	10.7	21.8
C3-NAPHTHALENES	38.6	27.8	16.5	16.3	22.3
C3-PHENANTHRENES/ANTHRACENES	88.8 U	43.9	31.6	17.7	30.5
C4-CHRYSENES	8.3	4.2	1.5	4.6	12.5
C4-NAPHTHALENES	25.9	22.0	5.5	10.9	10.1
C4-PHENANTHRENES/ANTHRACENES	44.1	11.3	5.4	10.0	9.5
CHRYSENE	249.4	111.3	106.0	80.0	106.1
DIBENZO(A,H)ANTHRACENE	42.8	18.3	19.0	15.1	16.6
DIBENZOTHIOPHENE	14.3	9.2	4.8	3.9	7.4
FLUORANTHENE	503.8	167.3	181.2	106.4	209.5
FLUORENE	34.3	13.3	13.4	9.9	24.8
INDENO(1,2,3-CD)PYRENE	181.1	72.0	50.8	67.6	75.9
NAPHTHALENE	19.4	7.0 U	12.4	15.1	18.6
PERYLENE	57.6	23.8	29.6	28.3	25.3
PHENANTHRENE	225.0	101.7	78.5	54.1	112.0
PYRENE	428.9	154.9	167.7	78.0	187.6
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1	0.1	0.1	0.0
1,2,4,5-TETRACHLOROBENZENE	0.60	0.3	0.3	0.2	0.2
2,4'-DDD	1.29	2.0	0.7	0.6	1.7
2,4'-DDE	0.24 U	0.1	0.2	0.0	0.2
2,4'-DDT	0.13 U	0.8	0.3	0.7	0.6
4,4'-DDD	0.79	4.2	1.2	1.2	3.9
4,4'-DDE	0.57	3.3	1.7	1.2	4.2
4,4'-DDT	0.68	3.4	1.1	4.3	3.4
ALDRIN	0.41	0.0 U	0.1	0.0 U	0.0
ALPHA-BHC	0.10 U	0.0 U	0.0	0.0	0.0
ALPHA-CHLORDANE	0.22	0.3	0.2	0.1	0.3
BETA-BHC	0.19	0.0	0.2	1.0	0.1
CHLORPYRIFOS	0.37	0.1	0.1	0.1 U	0.0
CIS-NONACHLOR	0.17	0.1	0.3	0.1	0.2
DELTA-BHC	0.07	0.0	0.0	0.0 U	0.0
DIELDRIN	0.09 U	0.0	0.2	0.4	0.5
ENDOSULFAN II	0.58	0.5	0.5	0.2	0.4
ENDRIN	0.10	0.0	0.0 U	0.1 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.1 U	0.1	0.1	0.1 U
GAMMA-CHLORDANE	0.10 U	0.2	0.1	0.1	0.2
HEPTACHLOR	0.16	0.0	0.1	0.1 U	0.1
HEPTACHLOR EPOXIDE	0.06	0.0	0.0 U	0.0 U	0.0
HEXACHLOROBENZENE	1.01	0.0 U	0.0	0.0	0.0 U
MIREX	0.07	0.0	0.1	0.0 U	0.0
OXYCHLORDANE	0.09	0.1	0.0	0.0	0.0
PCB-101/90	1.59	0.8	0.5	0.5	3.1
PCB-105	0.71	0.5	0.5	0.3	1.4
PCB-114	0.20 U	0.0 U	0.0 U	0.1 U	0.0 U
PCB-118	1.44	0.8	0.9	0.4	1.8
PCB-126	0.17	0.1	0.0	0.1 U	0.1 U
PCB-128	0.51	0.4	0.4	0.2	0.7
PCB-138/160	1.76 U	1.5	0.7	0.7	6.5
PCB-149/123	0.69	0.6	0.7	0.6	11.2
PCB-153/132	1.29	1.2	1.0	0.7	20.2
PCB-156	0.44	0.2	0.5	0.2	0.9
PCB-167	0.89	0.5	0.2	0.5	0.6
PCB-169	0.13	0.2 U	0.0	0.0 U	0.0
PCB-170/190	5.99	2.9	4.3	4.0	7.8
PCB-18/17	0.26	0.1	0.0 U	0.1	0.2
PCB-180	0.52	0.8	0.7	0.4	58.1

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	0.5	0.4	0.2	46.7
PCB-189	0.22	0.1	0.1	0.1	0.1
PCB-195/208	0.18 U	0.9	0.2	0.1	19.3
PCB-201/157/173	0.24 U	0.2	0.2	0.0	8.4
PCB-206	0.32	2.2	0.1	0.1	39.6
PCB-209	0.37	1.0	0.2	0.2	3.7
PCB-28	0.63	0.0 U	1.5	0.1	0.0 U
PCB-44	0.41 U	0.1	0.2	0.1	0.4
PCB-52	1.07	0.3	0.5	0.4	0.8
PCB-66	0.32	0.3	0.1	0.1	0.4
PCB-77	0.09	0.0	0.1	0.0 U	0.0 U
PCB-8/5	0.52	0.3	0.4	0.3	0.2
PCB-81	0.12	0.0	0.1	0.1	0.0 U
PENTACHLOROANISOLE	0.08 U	0.0	0.0	0.0 U	0.0 U
PENTACHLOROBENZENE	0.21	0.0	0.1	0.1 U	0.0
TRANS-NONACHLOR	0.15	0.1	0.1	0.1	0.2
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000221	0.000223	0.000277	0.000270
CADMIUM	0.000004	0.000008	0.000008	0.000007	0.000015
CHROMIUM	0.001099	0.002091	0.001737	0.001640	0.002264
COPPER	0.000238	0.000624	0.000973	0.000890	0.000828
IRON	0.328134	0.457848	0.415133	0.493953	0.584904
LEAD	0.000903	0.002037	0.002813	0.001693	0.002000
MANGANESE	0.008512	0.007178	0.008197	0.009257	0.006443
MERCURY	0.000003	0.000008	0.000013	0.000010	0.000009
NICKEL	0.000335	0.000542	0.000530	0.000460	0.000622
SILVER	0.000016	0.000011	0.000020	0.000067	0.000012
ZINC	0.001037	0.002231	0.003717	0.001463	0.001928

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2.3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	2.8 U	3.7	6.5	4.7
1-METHYLNAPHTHALENE	7.2	6.9 U	8.5	19.3	11.3
1-METHYLPHENANTHRENE	43.8	40.2	35.2	38.1	41.4
2,3,5-TRIMETHYLNAPHTHALENE	9.2	8.6	6.4	7.5	6.1
2,6-DIMETHYLNAPHTHALENE	8.9	12.1 U	7.5	12.5	9.8
2-METHYLNAPHTHALENE	11.1 U	11.8	13.5	32.3	18.7
ACENAPHTHENE	15.2	26.0	27.9	34.3	22.0
ACENAPHTHYLENE	47.6	44.5	44.0	69.1	63.8
ANTHRACENE	157.7	141.6	156.7	148.5	219.9
BENZO(A)ANTHRACENE	263.0	266.8	268.5	272.4	307.4
BENZO(A)PYRENE	329.5	304.0	306.1	167.8	446.6
BENZO(B)FLUORANTHENE	331.3	370.4	319.5	500.9	446.5
BENZO(E)PYRENE	160.2	191.0	166.7	265.1	210.5
BENZO(G,H,I)PERYLENE	152.4	195.6	172.9	280.9	199.3
BENZO(K)FLUORANTHENE	105.8	118.6	109.2	145.2	139.0
C1-CHRYSENES	159.5	171.8	164.6	198.4	151.6
C1-DIBENZOTHIOPHENES	18.0	17.3	10.6	15.8	17.6
C1-FLUORANTHENES/PYRENES	262.1	299.6	224.7	324.2	264.9
C1-FLUORENES	35.6	24.6	25.3	26.3	29.5
C1-NAPHTHALENES	18.3	18.7 U	21.9	51.6	30.0
C1-PHENANTHRENES/ANTHRACENES	166.4	160.0	118.0	130.4	152.5
C2-CHRYSENES	71.5	68.0	64.2	78.2	74.5
C2-DIBENZOTHIOPHENES	23.5	23.6	14.1	20.0	17.8
C2-FLUORENES	39.6	25.7	25.0	35.2	23.8
C2-NAPHTHALENES	24.9	16.4 U	25.2	44.7	26.8
C2-PHENANTHRENES/ANTHRACENES	142.1 U	101.2	73.6	87.8	89.6
C3-CHRYSENES	4.5	5.4	5.4	7.9	12.6
C3-DIBENZOTHIOPHENES	16.2	31.2	12.2	19.7	12.4

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	32.7	19.6	19.7	18.5
C3-NAPHTHALENES	38.6	44.1	25.3	43.1	28.3
C3-PHENANTHRENES/ANTHRACENES	88.8 U	74.1	46.5	57.6	45.9
C4-CHRYSENES	8.3	11.7	1.7	9.8	37.5
C4-NAPHTHALENES	25.9	30.2	9.1	21.9	17.1
C4-PHENANTHRENES/ANTHRACENES	44.1	28.4	17.0	45.8	17.6
CHRYSENE	249.4	314.5	275.3	309.0	349.9
DIBENZO(A,H)ANTHRACENE	42.8	54.8	55.9	67.1	45.1
DIBENZOTHIOPHENE	14.3	21.3	12.3	13.6	15.2
FLUORANTHENE	503.8	525.9	473.6	539.3	606.4
FLUORENE	34.3	39.9	45.0	44.3	39.0
INDENO(1,2,3-CD)PYRENE	181.1	210.4	189.4	311.3	223.5
NAPHTHALENE	19.4	15.1 U	22.3	48.8	28.1
PERYLENE	57.6	56.3	61.0	89.6	62.3
PHENANTHRENE	225.0	306.4	219.3	233.3	287.9
PYRENE	428.9	486.4	423.8	532.1	588.4
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.2	0.5	0.1 U	0.2
1,2,4,5-TETRACHLOROBENZENE	0.60	0.6	0.6	0.7 U	0.6
2,4'-DDD	1.29	2.9	1.9	3.0	3.6
2,4'-DDE	0.24 U	0.2	0.0 U	0.1	0.3
2,4'-DDT	0.13 U	0.4	0.4	0.6	0.3
4,4'-DDD	0.79	5.8	3.8	5.5	6.2
4,4'-DDE	0.57	2.0	1.4	2.1	1.9
4,4'-DDT	0.68	2.4	1.1	1.6	1.4
ALDRIN	0.41	0.0 U	0.0 U	0.0	0.1
ALPHA-BHC	0.10 U	0.0 U	0.2	0.1	0.1
ALPHA-CHLORDANE	0.22	0.6	0.3	0.7	0.5
BETA-BHC	0.19	0.1 U	0.7	0.3	0.1
CHLORPYRIFOS	0.37	0.0	0.1 U	1.0 U	0.0 U
CIS-NONACHLOR	0.17	0.4	0.3	0.4	0.3
DELTA-BHC	0.07	0.1	0.1	0.0	0.1
DIELDRIN	0.09 U	0.1	0.4	0.9	0.0 U
ENDOSULFAN II	0.58	1.0	0.7	0.8	0.6
ENDRIN	0.10	0.1	0.0 U	0.1 U	0.0
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.2	0.1 U	0.2 U
GAMMA-CHLORDANE	0.10 U	0.1	0.1	0.0 U	0.2
HEPTACHLOR	0.16	0.5	0.2	0.3	0.6
HEPTACHLOR EPOXIDE	0.06	0.0 U	0.0 U	0.0 U	0.1
HEXACHLOROBENZENE	1.01	0.0 U	0.0	1.2	0.0
MIREX	0.07	0.1	0.1	0.0 U	0.0
OXYCHLORDANE	0.09	0.1	0.1	0.0	0.0
PCB-101/90	1.59	4.8	5.8	4.8	4.8
PCB-105	0.71	1.7	1.8	2.4	1.5
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.0 U
PCB-118	1.44	1.6	1.5	1.8	1.3
PCB-126	0.17	0.3 U	2.6	0.6	0.3
PCB-128	0.51	1.3	1.0	1.3	1.1
PCB-138/160	1.76 U	11.8	14.4	10.0	12.3
PCB-149/123	0.69	7.0	7.3	7.5	8.3
PCB-153/132	1.29	11.2	14.8	11.3	14.4
PCB-156	0.44	1.2	1.4	1.6	1.0
PCB-167	0.89	2.8	0.6	0.6	0.3
PCB-169	0.13	0.2	0.4	0.0 U	0.0
PCB-170/190	5.99	12.1	14.2	2.4	10.3
PCB-18/17	0.26	0.1	0.0 U	0.3	0.2
PCB-180	0.52	10.4	9.3	9.5	12.2

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	8.0	6.0	8.7	8.3
PCB-189	0.22	0.3	0.2	0.4	0.2
PCB-195/208	0.18 U	2.0	1.2	2.1	1.6
PCB-201/157/173	0.24 U	0.8	0.7	1.0	0.7
PCB-206	0.32	3.5	1.5	2.6	1.9
PCB-209	0.37	1.1	0.7	1.2	0.7
PCB-28	0.63	0.3	0.8	0.5	0.1
PCB-44	0.41 U	0.5	0.2	0.3	0.1
PCB-52	1.07	1.3	2.0	1.5	1.7
PCB-66	0.32	0.3	0.2	0.6	0.3
PCB-77	0.09	0.0	0.8	0.1	0.1 U
PCB-8/5	0.52	0.2	0.0	0.1	0.3
PCB-81	0.12	0.6	1.4	1.0	0.2
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.1 U	0.1
PENTACHLOROBENZENE	0.21	0.1	0.1	0.1 U	0.1
TRANS-NONACHLOR	0.15	0.1	0.1	0.1	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000282	0.000253	0.000350	0.000279
CADMIUM	0.000004	0.000009	0.000010	0.000013	0.000012
CHROMIUM	0.001099	0.001792	0.001947	0.002027	0.001806
COPPER	0.000238	0.023632	0.007553	0.017133	0.005250
IRON	0.328134	0.550593	0.509463	0.693740	0.607477
LEAD	0.000903	0.002310	0.002407	0.003683	0.002378
MANGANESE	0.008512	0.007702	0.007237	0.007823	0.006669
MERCURY	0.000003	0.000009	0.000010	0.000008	0.000007
NICKEL	0.000335	0.000905	0.000817	0.001163	0.000821
SILVER	0.000016	0.000025	0.000023	0.000077	0.000113
ZINC	0.001037	0.015754	0.005570	0.006910	0.005156

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2,3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	2.4 U	6.9	4.2	6.2
1-METHYLNAPHTHALENE	7.2	5.7 U	24.7	13.2	14.7
1-METHYLPHENANTHRENE	43.8	31.0	42.7	37.0	53.5
2,3,5-TRIMETHYLNAPHTHALENE	9.2	6.9	10.2	6.6	7.5
2,6-DIMETHYLNAPHTHALENE	8.9	9.5	17.0	10.5	13.6
2-METHYLNAPHTHALENE	11.1 U	9.5 U	42.0	23.4	24.7
ACENAPHTHENE	15.2	13.3	21.9	18.7	51.8
ACENAPHTHYLENE	47.6	46.9	117.0	62.9	59.7
ANTHRACENE	157.7	112.1	250.7	150.2	513.4
BENZO(A)ANTHRACENE	263.0	330.3	412.6	399.4	495.0
BENZO(A)PYRENE	329.5	444.6	408.7	381.0	646.5
BENZO(B)FLUORANTHENE	331.3	480.5	443.3	618.3	584.5
BENZO(E)PYRENE	160.2	258.7	225.6	306.0	269.3
BENZO(G,H,I)PERYLENE	152.4	287.9	268.2	307.9	273.2
BENZO(K)FLUORANTHENE	105.8	162.8	107.8	193.8	182.3
C1-CHRYSENES	159.5	159.0	249.9	220.4	183.1
C1-DIBENZOTHIOPHENES	18.0	14.0	21.6	12.7	19.6
C1-FLUORANTHENES/PYRENES	262.1	258.6	313.7	306.8	388.0
C1-FLUORENES	35.6	11.5	73.2	20.2	37.5
C1-NAPHTHALENES	18.3	15.1 U	66.7	36.5	39.4
C1-PHENANTHRENES/ANTHRACENES	166.4	119.3	194.0	135.6	232.7
C2-CHRYSENES	71.5	62.2	114.2	74.2	76.1
C2-DIBENZOTHIOPHENES	23.5	18.3	28.3	16.1	17.7
C2-FLUORENES	39.6	27.2	40.3	24.9	33.7
C2-NAPHTHALENES	24.9	14.3 U	60.0	43.3	38.1
C2-PHENANTHRENES/ANTHRACENES	142.1 U	83.3	129.8	83.8	118.4
C3-CHRYSENES	4.5	4.0	7.2	7.4	8.9
C3-DIBENZOTHIOPHENES	16.2	14.8	17.3	12.3	9.5

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	19.9	31.3	14.2	25.7
C3-NAPHTHALENES	38.6	40.9	54.2	39.9	34.5
C3-PHENANTHRENES/ANTHRACENES	88.8 U	52.6	71.0	43.4	53.9
C4-CHRYSENES	8.3	12.1	4.5	8.8	48.9
C4-NAPHTHALENES	25.9	45.8	15.9	18.7	21.7
C4-PHENANTHRENES/ANTHRACENES	44.1	22.4	26.8	36.8	19.0
CHRYSENE	249.4	345.5	398.2	376.3	406.0
DIBENZO(A,H)ANTHRACENE	42.8	76.9	92.2	92.2	78.0
DIBENZOTHIOPHENE	14.3	13.1	15.8	12.3	31.3
FLUORANTHENE	503.8	557.2	650.3	734.7	1373.9
FLUORENE	34.3	19.5	54.8	33.4	108.7
INDENO(1,2,3-CD)PYRENE	181.1	323.4	302.2	183.1	343.6
NAPHTHALENE	19.4	12.0 U	55.6	33.8	34.7
PERYLENE	57.6	83.5	63.3	74.0	59.8
PHENANTHRENE	225.0	197.4	238.8	248.8	755.3
PYRENE	428.9	492.1	557.9	606.7	1048.1
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.2	0.3	0.1 U	0.1
1,2,4,5-TETRACHLOROBENZENE	0.60	1.0	0.6	0.5 U	0.4
2,4'-DDD	1.29	7.3	11.3	8.4	14.9
2,4'-DDE	0.24 U	2.5	2.0	1.2	2.7
2,4'-DDT	0.13 U	15.4	17.0	13.9	19.9
4,4'-DDD	0.79	13.8	24.9	27.7	30.9
4,4'-DDE	0.57	27.5	70.0	65.1	87.1
4,4'-DDT	0.68	63.1	84.8	60.4	67.9
ALDRIN	0.41	0.5	0.0 U	0.0	0.6
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1	0.1
ALPHA-CHLORDANE	0.22	0.4	0.5	0.4	0.3
BETA-BHC	0.19	0.1	0.8	0.1 U	0.1
CHLORPYRIFOS	0.37	0.1	0.1 U	0.3 U	0.1
CIS-NONACHLOR	0.17	0.4	0.7	0.7	0.1
DELTA-BHC	0.07	0.0	0.1	0.0	0.0
DIELDRIN	0.09 U	0.1	0.1	0.9	0.8
ENDOSULFAN II	0.58	0.6	0.7	0.7	0.3
ENDRIN	0.10	0.1	0.1 U	0.1 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.1 U	0.1	0.1	0.1
GAMMA-CHLORDANE	0.10 U	0.1	0.2	0.0 U	0.1
HEPTACHLOR	0.16	0.3	0.2	0.2	0.2
HEPTACHLOR EPOXIDE	0.06	0.1	0.0 U	0.0 U	0.0
HEXACHLOROBENZENE	1.01	0.0 U	0.1	0.1	0.0
MIREX	0.07	0.0	0.1	0.1	0.1
OXYCHLORDANE	0.09	0.1	0.2	0.0	0.0
PCB-101/90	1.59	2.6	7.3	1.8	2.3
PCB-105	0.71	2.1	2.4	0.5	2.1
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.1 U
PCB-118	1.44	1.5	3.0	0.9	1.0
PCB-126	0.17	0.3	1.3	1.4	0.3
PCB-128	0.51	1.3	1.2	1.0	1.3
PCB-138/160	1.76 U	11.9	14.0	8.1	14.8
PCB-149/123	0.69	6.8	9.0	4.0	8.4
PCB-153/132	1.29	12.1	14.1	7.7	13.7
PCB-156	0.44	1.0	2.9	0.9	1.2
PCB-167	0.89	1.6	0.4	0.4	1.4
PCB-169	0.13	0.3 U	0.1	0.0 U	0.0
PCB-170/190	5.99	12.3	5.2	2.7	9.8
PCB-18/17	0.26	0.2	0.1	0.2	0.1 U
PCB-180	0.52	13.9	13.0	7.3	15.4

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	7.9	9.4	5.1	9.2
PCB-189	0.22	0.5	0.3	0.4	0.4
PCB-195/208	0.18 U	2.9	2.1	1.8	2.2
PCB-201/157/173	0.24 U	0.9	0.8	0.7	0.7
PCB-206	0.32	3.6	3.8	2.6	2.2
PCB-209	0.37	2.7	4.0	2.5	1.6
PCB-28	0.63	0.2	0.7	0.1 U	0.1
PCB-44	0.41 U	0.2	0.6	0.2	0.1
PCB-52	1.07	1.5	1.8	1.5	0.4
PCB-66	0.32	0.4	0.4	0.1	0.2
PCB-77	0.09	0.0	0.3	0.1	0.1
PCB-8/5	0.52	0.3	0.8	0.3	0.3
PCB-81	0.12	0.3	0.9	0.7	0.3
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.0 U	0.0
PENTACHLOROBENZENE	0.21	0.2	0.1	0.1 U	0.1
TRANS-NONACHLOR	0.15	0.1	0.3	0.1	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000225	0.000307	0.000470	0.000395
CADMIUM	0.000004	0.000005	0.000008	0.000014	0.000014
CHROMIUM	0.001099	0.001521	0.001973	0.001813	0.002930
COPPER	0.000238	0.004723	0.017647	0.190533	0.026031
IRON	0.328134	0.459194	0.680470	1.152367	0.984444
LEAD	0.000903	0.001443	0.003870	0.008543	0.006104
MANGANESE	0.008512	0.009279	0.012120	0.012160	0.010375
MERCURY	0.000003	0.000015	0.000035	0.000027	0.000046
NICKEL	0.000335	0.000769	0.002833	0.002107	0.003340
SILVER	0.000016	0.000022	0.000031	0.000117	0.000043
ZINC	0.001037	0.003789	0.013737	0.025017	0.020799

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2,3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	1.7 U	4.5	4.4	3.8
1-METHYLNAPHTHALENE	7.2	3.8 U	10.7	15.2	9.6
1-METHYLPHENANTHRENE	43.8	22.9	27.2	27.2	28.8
2,3,5-TRIMETHYLNAPHTHALENE	9.2	6.0	8.7	7.8	4.2
2,6-DIMETHYLNAPHTHALENE	8.9	6.5	10.6	9.2	7.4
2-METHYLNAPHTHALENE	11.1 U	5.9 U	16.5	21.1	14.7
ACENAPHTHENE	15.2	13.2	22.4	14.3	28.9
ACENAPHTHYLENE	47.6	40.1	55.0	64.9	45.5
ANTHRACENE	157.7	99.3	163.1	96.1	149.1
BENZO(A)ANTHRACENE	263.0	218.2	258.0	218.2	234.2
BENZO(A)PYRENE	329.5	327.4	324.7	158.1	360.9
BENZO(B)FLUORANTHENE	331.3	315.0	297.0	322.0	296.6
BENZO(E)PYRENE	160.2	150.7	169.5	171.6	142.4
BENZO(G,H,I)PERYLENE	152.4	177.0	155.8	177.0	134.3
BENZO(K)FLUORANTHENE	105.8	81.1	105.2	117.6	80.2
C1-CHRYSENES	159.5	152.1	168.0	162.2	118.4
C1-DIBENZOTHIOPHENES	18.0	15.4	13.9	11.7	9.5
C1-FLUORANTHENES/PYRENES	262.1	252.2	259.6	258.9	209.5
C1-FLUORENES	35.6	11.1	31.0	22.8	22.1
C1-NAPHTHALENES	18.3	9.7 U	27.2	36.2	24.3
C1-PHENANTHRENES/ANTHRACENES	166.4	121.7	128.2	105.2	105.7
C2-CHRYSENES	71.5	66.8	74.7	63.1	55.0
C2-DIBENZOTHIOPHENES	23.5	21.5	20.0	15.8	12.4
C2-FLUORENES	39.6	27.1	33.3	30.2	17.8
C2-NAPHTHALENES	24.9	30.5	29.1	45.5	20.5
C2-PHENANTHRENES/ANTHRACENES	142.1 U	99.7	97.8	82.0	72.0
C3-CHRYSENES	4.5	4.6	4.2	5.3	5.5
C3-DIBENZOTHIOPHENES	16.2	17.1	16.0	12.3	8.1

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	16.1	26.4	15.4	24.5
C3-NAPHTHALENES	38.6	34.9	27.9	44.9	17.0
C3-PHENANTHRENES/ANTHRACENES	88.8 U	55.7	57.8	48.1	36.3
C4-CHRYSENES	8.3	15.4	1.3	5.3	21.2
C4-NAPHTHALENES	25.9	15.5	11.7	19.8	11.1
C4-PHENANTHRENES/ANTHRACENES	44.1	19.8	15.2	23.5	14.7
CHRYSENE	249.4	214.1	278.3	206.9	208.9
DIBENZO(A,H)ANTHRACENE	42.8	52.4	46.6	45.3	33.6
DIBENZOTHIOPHENE	14.3	11.1	11.5	10.0	11.1
FLUORANTHENE	503.8	352.3	472.5	377.2	409.6
FLUORENE	34.3	20.0	44.3	27.5	43.6
INDENO(1,2,3-CD)PYRENE	181.1	196.9	169.7	192.6	153.0
NAPHTHALENE	19.4	10.8 U	25.0	32.8	23.1
PERYLENE	57.6	63.4	61.8	71.6	44.7
PHENANTHRENE	225.0	150.9	192.3	159.8	242.0
PYRENE	428.9	321.5	426.9	363.3	359.3
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1	0.2	0.0 U	0.1
1,2,4,5-TETRACHLOROBENZENE	0.60	0.3	0.6	0.3 U	0.3
2,4'-DDD	1.29	1.1	1.2	1.2	1.8
2,4'-DDE	0.24 U	0.2	0.2	0.1	0.4
2,4'-DDT	0.13 U	0.3	0.2	0.1	0.1
4,4'-DDD	0.79	1.2	1.3	1.2	1.4
4,4'-DDE	0.57	1.2	0.9	1.0	0.9
4,4'-DDT	0.68	1.0	0.9	0.6	0.9
ALDRIN	0.41	2.2	0.0	0.0	0.0
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1	0.0
ALPHA-CHLORDANE	0.22	0.2	0.3	0.2	0.2
BETA-BHC	0.19	0.0	1.4	0.1 U	0.0 U
CHLORPYRIFOS	0.37	0.2	0.2	0.3 U	0.0
CIS-NONACHLOR	0.17	0.1	0.3	0.1	0.1
DELTA-BHC	0.07	0.0	0.0	0.0	0.0
DIELDRIN	0.09 U	0.1	0.2	0.0	0.0
ENDOSULFAN II	0.58	0.1	0.8	0.5	0.3
ENDRIN	0.10	0.1 U	0.1 U	0.1 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.3	0.1	0.2 U
GAMMA-CHLORDANE	0.10 U	0.1	0.1	0.0	0.1
HEPTACHLOR	0.16	0.2	0.1	0.1	0.1
HEPTACHLOR EPOXIDE	0.06	0.1	0.0 U	0.0 U	0.1
HEXACHLOROBENZENE	1.01	0.7	0.3	0.0	0.0
MIREX	0.07	0.1	0.1	0.0 U	0.0
OXYCHLORDANE	0.09	0.0 U	0.1	0.0	0.0
PCB-101/90	1.59	0.8	1.1	0.7	0.7
PCB-105	0.71	0.2	0.7	0.3	0.2
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.0 U
PCB-118	1.44	0.5	1.2	0.7	0.4
PCB-126	0.17	0.0	0.1	0.1 U	0.1 U
PCB-128	0.51	0.4	0.3	0.2	0.2
PCB-138/160	1.76 U	1.2	1.4	1.3	0.8
PCB-149/123	0.69	0.9	1.1	0.8	0.4 U
PCB-153/132	1.29	1.3	2.0	1.3	0.3 U
PCB-156	0.44	0.7	0.7	0.3	0.6
PCB-167	0.89	0.6	0.6	0.2	0.7
PCB-169	0.13	0.1 U	0.1	0.1	0.1
PCB-170/190	5.99	0.2	3.6	0.5	3.7
PCB-18/17	0.26	0.2	0.1	0.2	0.2
PCB-180	0.52	1.0	0.9	0.7	0.4 U

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	1.2	0.9	0.6	0.3
PCB-189	0.22	0.1 U	0.2	0.1	0.1
PCB-195/208	0.18 U	0.5	0.3	0.2	0.2
PCB-201/157/173	0.24 U	0.1	0.3	0.2	0.1
PCB-206	0.32	1.2	0.3	0.2	0.2
PCB-209	0.37	1.2	0.5	0.6	0.2
PCB-28	0.63	0.4	1.3	0.4	0.0
PCB-44	0.41 U	0.1	1.0	0.2	0.0
PCB-52	1.07	0.4	0.9	0.4	0.2
PCB-66	0.32	0.3	0.2	0.1	0.2
PCB-77	0.09	0.1	0.3	0.0	0.1 U
PCB-8/5	0.52	0.2	0.8	0.2	0.2
PCB-81	0.12	0.0	0.2	0.1 U	0.1 U
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.0 U	0.1
PENTACHLOROBENZENE	0.21	0.1	0.2	0.0 U	0.1
TRANS-NONACHLOR	0.15	0.1	0.1	0.1	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000160	0.000182	0.000262	0.000195
CADMIUM	0.000004	0.000012	0.000009	0.000010	0.000004
CHROMIUM	0.001099	0.001443	0.001589	0.001521	0.001983
COPPER	0.000238	0.000877	0.000661	0.000702	0.000605
IRON	0.328134	0.397288	0.398677	0.506728	0.478517
LEAD	0.000903	0.001596	0.001217	0.001388	0.001342
MANGANESE	0.008512	0.007483	0.008054	0.005916	0.007505
MERCURY	0.000003	0.000009	0.000010	0.000004	0.000005
NICKEL	0.000335	0.000507	0.000494	0.000414	0.000488
SILVER	0.000016	0.000008	0.000010	0.000070	0.000011
ZINC	0.001037	0.002223	0.001827	0.001537	0.001895

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2,3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	2.4 U	3.8	4.8	5.7
1-METHYLNAPHTHALENE	7.2	6.0 U	6.4	9.6	11.1
1-METHYLPHENANTHRENE	43.8	22.8	27.2	29.0	57.0
2,3,5-TRIMETHYLNAPHTHALENE	9.2	6.4	4.8	5.9	6.7
2,6-DIMETHYLNAPHTHALENE	8.9	8.0	7.0	10.1	10.1
2-METHYLNAPHTHALENE	11.1 U	9.9 U	10.9	17.5	19.0
ACENAPHTHENE	15.2	9.7	17.6	10.3	25.4
ACENAPHTHYLENE	47.6	50.5	37.2	47.4	76.3
ANTHRACENE	157.7	107.7	104.1	85.8	248.5
BENZO(A)ANTHRACENE	263.0	188.5	287.7	211.7	433.9
BENZO(A)PYRENE	329.5	309.8	438.7	98.9	688.5
BENZO(B)FLUORANTHENE	331.3	301.4	448.1	367.2	630.7
BENZO(E)PYRENE	160.2	149.0	247.5	187.2	294.9
BENZO(G,H,I)PERYLENE	152.4	169.8	233.6	199.7	282.9
BENZO(K)FLUORANTHENE	105.8	100.3	145.2	120.8	190.3
C1-CHRYSENES	159.5	136.9	213.1	152.7	217.9
C1-DIBENZOTHIOPHENES	18.0	15.7	9.6	10.3	18.3
C1-FLUORANTHENES/PYRENES	262.1	251.5	263.0	253.9	423.1
C1-FLUORENES	35.6	19.5	23.2	13.4	40.4
C1-NAPHTHALENES	18.3	27.6	17.2	27.2	30.1
C1-PHENANTHRENES/ANTHRACENES	166.4	125.2	101.3	92.8	202.6
C2-CHRYSENES	71.5	67.0	80.0	69.0	121.1
C2-DIBENZOTHIOPHENES	23.5	22.5	14.7	15.3	24.0
C2-FLUORENES	39.6	25.5	26.5	29.7	40.9
C2-NAPHTHALENES	24.9	22.5 U	18.7	33.0	26.5
C2-PHENANTHRENES/ANTHRACENES	142.1 U	92.6	89.7	62.4	145.9
C3-CHRYSENES	4.5	3.9	5.0	5.1	13.5
C3-DIBENZOTHIOPHENES	16.2	18.3	14.9	12.4	18.2

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	18.2	31.6	16.4	44.3
C3-NAPHTHALENES	38.6	47.8	16.3	31.2	27.9
C3-PHENANTHRENES/ANTHRACENES	88.8 U	52.5	66.3	43.8	82.0
C4-CHRYSENES	8.3	16.0	2.0	7.9	51.3
C4-NAPHTHALENES	25.9	17.2	5.7	17.2	24.7
C4-PHENANTHRENES/ANTHRACENES	44.1	23.3	25.9	42.2	42.7
CHRYSENE	249.4	200.4	369.5	225.8	427.1
DIBENZO(A,H)ANTHRACENE	42.8	46.9	67.2	43.3	68.2
DIBENZOTHIOPHENE	14.3	11.9	12.8	10.2	21.0
FLUORANTHENE	503.8	308.4	592.8	414.4	855.3
FLUORENE	34.3	23.5	36.8	21.9	60.3
INDENO(1,2,3-CD)PYRENE	181.1	191.5	252.0	209.8	330.0
NAPHTHALENE	19.4	17.0 U	18.6	22.6	28.7
PERYLENE	57.6	50.8	58.1	69.3	79.9
PHENANTHRENE	225.0	147.3	235.2	162.0	415.8
PYRENE	428.9	309.1	495.7	382.7	774.4
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1	0.2	0.1 U	0.3
1,2,4,5-TETRACHLOROBENZENE	0.60	0.4	0.5	0.2 U	0.2 U
2,4'-DDD	1.29	1.0	0.9	6.6	6.8
2,4'-DDE	0.24 U	0.1	0.4	0.2	0.4
2,4'-DDT	0.13 U	0.0	0.1	0.3	0.4
4,4'-DDD	0.79	1.1	0.7	11.1	12.6
4,4'-DDE	0.57	1.6	1.6	2.3	4.7
4,4'-DDT	0.68	0.4	0.7	7.7	3.5
ALDRIN	0.41	2.6	0.0 U	0.0	0.0
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1	0.1 U
ALPHA-CHLORDANE	0.22	0.1	0.3	0.2	0.4
BETA-BHC	0.19	0.0	0.3	0.2	0.1 U
CHLORPYRIFOS	0.37	0.1	0.2 U	1.0 U	0.1 U
CIS-NONACHLOR	0.17	0.1	0.2	0.1	0.1
DELTA-BHC	0.07	0.0	0.0	0.1	0.1
DIELDRIN	0.09 U	0.1	0.2	0.1	0.2
ENDOSULFAN II	0.58	0.1	0.8	0.4	0.8
ENDRIN	0.10	0.1 U	0.1 U	0.1 U	0.1
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.2	0.2	0.4 U
GAMMA-CHLORDANE	0.10 U	0.1	0.1	0.1	0.0
HEPTACHLOR	0.16	0.1	0.1	0.1	0.3
HEPTACHLOR EPOXIDE	0.06	0.2	0.0 U	0.0 U	0.1
HEXACHLOROBENZENE	1.01	0.1 U	0.0	0.1	0.1
MIREX	0.07	0.0	0.2	0.0	0.0
OXYCHLORDANE	0.09	0.0	0.2	0.1	0.1
PCB-101/90	1.59	1.3	1.0	0.9	1.9
PCB-105	0.71	0.3	0.6	0.5	0.6
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.1 U
PCB-118	1.44	0.8	0.9	0.8	1.4
PCB-126	0.17	0.1	0.2	0.1 U	0.2 U
PCB-128	0.51	0.6	0.3	0.5	0.7
PCB-138/160	1.76 U	1.9	0.8	1.5	2.9
PCB-149/123	0.69	1.4	0.9	1.3	1.7
PCB-153/132	1.29	2.7	0.8	1.7	2.6
PCB-156	0.44	0.6	0.5	0.5	1.2
PCB-167	0.89	0.7	0.6	0.7	1.5
PCB-169	0.13	0.0	0.1	0.0 U	0.1
PCB-170/190	5.99	0.6	1.4	8.7	12.0
PCB-18/17	0.26	0.0	0.1	0.5	0.3
PCB-180	0.52	2.0	0.6	1.1	1.1 U

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	1.7	0.6	0.8	1.2
PCB-189	0.22	0.1	0.1	0.1	0.1
PCB-195/208	0.18 U	0.6	0.2	0.3	2.2
PCB-201/157/173	0.24 U	0.1	0.1	0.3	0.5
PCB-206	0.32	1.4	0.2	0.4	4.9
PCB-209	0.37	0.7	0.5	0.6	1.9
PCB-28	0.63	0.3	1.2	0.3	0.2
PCB-44	0.41 U	0.2	0.5	0.8	0.2
PCB-52	1.07	0.4	0.6	0.9	0.5
PCB-66	0.32	0.4	0.1	0.3	0.4
PCB-77	0.09	0.1	0.5	0.1	0.0 U
PCB-8/5	0.52	0.2	0.7	0.3	0.5
PCB-81	0.12	0.1	0.2	0.1 U	0.2 U
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.0 U	0.0 U
PENTACHLOROBENZENE	0.21	0.0	0.2	0.1 U	0.1
TRANS-NONACHLOR	0.15	0.1	0.1	0.1	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000195	0.000230	0.000280	0.000278
CADMIUM	0.000004	0.000005	0.000007	0.000008	0.000002 U
CHROMIUM	0.001099	0.001297	0.001327	0.001243	0.001854
COPPER	0.000238	0.000388	0.000373	0.000403	0.000411
IRON	0.328134	0.408441	0.400307	0.463000	0.513174
LEAD	0.000903	0.000916	0.000647	0.001013	0.001342
MANGANESE	0.008512	0.015230	0.011523	0.011680	0.010995
MERCURY	0.000003	0.000005	0.000005	0.000007	0.000006
NICKEL	0.000335	0.000474	0.000563	0.000443	0.000680
SILVER	0.000016	0.000004	0.000004	0.000070	0.000005
ZINC	0.001037	0.001376	0.001243	0.001003	0.001651

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	159.5 U	415.7	343.2	371.4
1,2,3,4,6,7,8,9-OCDF	15.0	9.3 U	24.4	14.1	10.1 U
1,2,3,4,6,7,8-HPCDD	49.9	37.1	48.9	40.8	21.8 U
1,2,3,4,6,7,8-HPCDF	11.9	4.9 U	13.5	10.8	11.0
1,2,3,4,7,8,9-HPCDF	1.2	0.6 U	0.3 U	0.6	0.9
1,2,3,4,7,8-HXCDD	1.2 U	0.8	0.6	0.7	0.7 U
1,2,3,4,7,8-HXCDF	1.0	0.6 U	0.8	0.6	0.7 U
1,2,3,6,7,8-HXCDD	2.5	2.1	2.3	2.0	2.0
1,2,3,6,7,8-HXCDF	1.1 U	0.6 U	0.5	0.5	0.6 U
1,2,3,7,8,9-HXCDD	1.5	0.9 U	0.7 U	1.1	0.8 U
1,2,3,7,8,9-HXCDF	1.1	0.7	0.5 U	0.5 U	0.8 U
1,2,3,7,8-PECDD	1.1	0.5 U	0.7 U	0.4	0.8 U
1,2,3,7,8-PECDF	1.0	0.5 U	0.2 U	0.2 U	0.6 U
2,3,4,6,7,8-HXCDF	1.3	0.6 U	0.5	0.5	0.8 U
2,3,4,7,8-PECDF	1.0	0.5 U	0.4	0.4	0.6 U
2,3,7,8-TCDD	0.2 U	0.1 U	0.1	0.4	0.2 U
2,3,7,8-TCDF	0.5	0.5 U	0.4	0.6	0.2 U
TOTAL DIOXINS	600.5	NR	550.7	465.8	491.8
TOTAL FURANS	53.1	NR	65.4	54.1	29.7 U
TOTAL HPCDD	117.8	86.6	110.3	95.9	96.1
TOTAL HPCDF	22.4	11.4 U	33.7	25.3	25.9
TOTAL HXCDD	26.3	8.6 U	23.7	22.3	11.6 U
TOTAL HXCDF	9.0	1.1 U	6.2	11.2	5.2 U
TOTAL PECDD	2.7	1.0 U	0.7 U	0.4	1.7 U
TOTAL PECDF	2.9	0.6 U	0.4 U	2.8	1.2 U
TOTAL TCDD	1.6	0.1	0.6	2.0 U	0.2 U
TOTAL TCDF	1.5	1.3 U	0.4	1.2	0.2 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	1.7 U	2.6	3.5	3.3
1-METHYLNAPHTHALENE	7.2	4.2 U	5.9	8.5	7.3
1-METHYLPHENANTHRENE	43.8	20.5	19.3	25.4	22.2
2,3,5-TRIMETHYLNAPHTHALENE	9.2	5.3	4.8	6.3	3.6
2,6-DIMETHYLNAPHTHALENE	8.9	5.9	6.1	7.8	6.4
2-METHYLNAPHTHALENE	11.1 U	6.5 U	9.0	13.2	11.4
ACENAPHTHENE	15.2	13.2	10.3	13.2	11.1
ACENAPHTHYLENE	47.6	35.0	35.6	37.4	34.9
ANTHRACENE	157.7	77.3	74.4	70.4	111.0
BENZO(A)ANTHRACENE	263.0	161.2	127.7	167.9	158.3
BENZO(A)PYRENE	329.5	242.6	175.7	114.7	259.6
BENZO(B)FLUORANTHENE	331.3	214.2	166.9	274.5	237.5
BENZO(E)PYRENE	160.2	118.0	88.3	118.7	108.8
BENZO(G,H,I)PERYLENE	152.4	129.2	85.8	130.0	108.5
BENZO(K)FLUORANTHENE	105.8	77.1	51.3	59.5	61.4
C1-CHRYSENES	159.5	110.1	89.6	100.7	85.9
C1-DIBENZOTHIOPHENES	18.0	10.9	7.0	10.8	7.8
C1-FLUORANTHENES/PYRENES	262.1	202.9	130.1	176.2	142.3
C1-FLUORENES	35.6	11.7	17.1	16.8	15.2
C1-NAPHTHALENES	18.3	13.8	14.9	21.7	18.7
C1-PHENANTHRENES/ANTHRACENES	166.4	94.0	70.0	88.2	77.5
C2-CHRYSENES	71.5	47.7	45.1	44.7	44.2
C2-DIBENZOTHIOPHENES	23.5	14.8	9.3	15.4	9.5
C2-FLUORENES	39.6	19.5	16.7	29.5	14.3
C2-NAPHTHALENES	24.9	21.1	17.6	22.9	17.1
C2-PHENANTHRENES/ANTHRACENES	142.1 U	75.6	51.4	74.3	54.9
C3-CHRYSENES	4.5	3.2	1.9	3.1	5.1
C3-DIBENZOTHIOPHENES	16.2	14.5	7.1	13.1	6.9

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	12.6	10.6	20.5	13.0
C3-NAPHTHALENES	38.6	29.6	17.2	26.8	16.1
C3-PHENANTHRENES/ANTHRACENES	88.8 U	49.9	31.3	47.0	29.3
C4-CHRYSENES	8.3	10.1	1.1	3.6	17.0
C4-NAPHTHALENES	25.9	14.8	4.9	11.6	10.3
C4-PHENANTHRENES/ANTHRACENES	44.1	23.7	12.5	40.8	11.0
CHRYSENE	249.4	175.7	132.6	178.0	177.8
DIBENZO(A,H)ANTHRACENE	42.8	34.9	23.7	35.4	24.7
DIBENZOTHIOPHENE	14.3	9.8	5.7	8.3	7.6
FLUORANTHENE	503.8	280.9	249.1	319.9	299.5
FLUORENE	34.3	19.4	19.8	27.8	23.0
INDENO(1,2,3-CD)PYRENE	181.1	138.6	92.9	105.4	124.3
NAPHTHALENE	19.4	10.7 U	16.5	21.7	17.7
PERYLENE	57.6	39.0	42.6	73.9	41.1
PHENANTHRENE	225.0	133.1	96.8	133.3	147.2
PYRENE	428.9	268.2	228.2	290.8	269.4
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1	0.1	0.1 U	0.1
1,2,4,5-TETRACHLOROBENZENE	0.60	0.6	0.9	0.6	0.5
2,4'-DDD	1.29	1.5	0.8	1.2	1.8
2,4'-DDE	0.24 U	0.1	0.2	0.1	0.3
2,4'-DDT	0.13 U	0.5	0.1 U	0.2	0.1
4,4'-DDD	0.79	2.4	1.0 U	1.5	1.7
4,4'-DDE	0.57	1.6	1.3	1.4	1.5
4,4'-DDT	0.68	1.6	0.5 U	1.0	1.0
ALDRIN	0.41	1.3	0.0	0.0 U	0.0
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1	0.0
ALPHA-CHLORDANE	0.22	0.2	0.1	0.2	0.2
BETA-BHC	0.19	0.0	0.8	0.2	0.0 U
CHLORPYRIFOS	0.37	0.1	0.1 U	0.2 U	0.0
CIS-NONACHLOR	0.17	0.1	0.1	0.1	0.1
DELTA-BHC	0.07	0.0	0.0	0.1	0.1
DIELDRIN	0.09 U	0.1	0.2	0.2	0.1
ENDOSULFAN II	0.58	0.2	0.4	0.5	0.5
ENDRIN	0.10	0.0	0.1 U	0.1 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.1	0.1 U	0.1
GAMMA-CHLORDANE	0.10 U	0.1	0.1	0.1	0.1
HEPTACHLOR	0.16	0.1	0.1	0.1 U	0.1
HEPTACHLOR EPOXIDE	0.06	0.0	0.0	0.0 U	0.0
HEXACHLOROBENZENE	1.01	0.0 U	0.0	0.0	0.1
MIREX	0.07	0.1	0.1	0.0 U	0.0
OXYCHLORDANE	0.09	0.0	0.0	0.0	0.0
PCB-101/90	1.59	0.9	0.9	1.0	1.3
PCB-105	0.71	0.4	0.7	0.5	0.5
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.0 U
PCB-118	1.44	0.7	0.8	1.1	1.1
PCB-126	0.17	0.1	0.1	0.1 U	0.1 U
PCB-128	0.51	0.4	0.2	0.3	0.4
PCB-138/160	1.76 U	1.4	1.0	1.6	1.1
PCB-149/123	0.69	0.8	0.4	0.8	0.4 U
PCB-153/132	1.29	1.4	2.6	1.3	0.8 U
PCB-156	0.44	0.4	0.6	0.4	0.6
PCB-167	0.89	0.5	0.1	0.5	0.7
PCB-169	0.13	0.2 U	0.1	0.0 U	0.1 U
PCB-170/190	5.99	3.0	0.3	3.2	4.0
PCB-18/17	0.26	0.4	0.3	0.4	0.5
PCB-180	0.52	0.9	0.3 U	0.8	0.5 U

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	0.8	0.5	0.7	0.8
PCB-189	0.22	0.1	0.2	0.1	0.0
PCB-195/208	0.18 U	0.4	0.3	0.3	2.4
PCB-201/157/173	0.24 U	0.1	0.1	0.3	0.3
PCB-206	0.32	0.9	0.8	0.6	6.0
PCB-209	0.37	0.4	0.2 U	0.5	2.3
PCB-28	0.63	0.5	1.3	0.8	0.2
PCB-44	0.41 U	0.2	0.6	0.4	0.3
PCB-52	1.07	0.4	0.6	0.7	0.6
PCB-66	0.32	0.5	0.4	0.5	0.4
PCB-77	0.09	0.1	0.4 U	0.0	0.0 U
PCB-8/5	0.52	0.3	0.3	0.4	0.3
PCB-81	0.12	0.0	0.1	0.1 U	0.1 U
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.0 U	0.0 U
PENTACHLOROBENZENE	0.21	0.1	0.1	0.1 U	0.0
TRANS-NONACHLOR	0.15	0.1	0.1	0.1	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000156	0.000197	0.000250	0.000239
CADMIUM	0.000004	0.000006	0.000010	0.000010	0.000002 U
CHROMIUM	0.001099	0.001492	0.001583	0.001447	0.001782
COPPER	0.000238	0.000522	0.000620	0.000473	0.000508
IRON	0.328134	0.402351	0.388320	0.443840	0.475075
LEAD	0.000903	0.000923	0.000790	0.001127	0.001113
MANGANESE	0.008512	0.006589	0.006660	0.006260	0.006227
MERCURY	0.000003	0.000004	0.000008	0.000003	0.000003
NICKEL	0.000335	0.000464	0.000467	0.000357	0.000479
SILVER	0.000016	0.000005	0.000008	0.000063	0.000007
ZINC	0.001037	0.001699	0.001650	0.001163	0.001601

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	331.2 U	459.8	493.0	93.5
1,2,3,4,6,7,8,9-OCDF	15.0	20.8 U	24.9	24.9	3.8 U
1,2,3,4,6,7,8-HPCDD	49.9	91.2	56.6	48.8	13.2
1,2,3,4,6,7,8-HPCDF	11.9	13.1 U	17.3	17.5	7.7
1,2,3,4,7,8,9-HPCDF	1.2	1.1 U	0.7 U	1.3	0.4
1,2,3,4,7,8-HXCDD	1.2 U	1.1	0.6	1.1	0.9 U
1,2,3,4,7,8-HXCDF	1.0	1.6 U	2.2	2.1	0.9 U
1,2,3,6,7,8-HXCDD	2.5	4.5	3.1	2.7	0.8
1,2,3,6,7,8-HXCDF	1.1 U	1.2 U	0.9 U	2.0	0.8 U
1,2,3,7,8,9-HXCDD	1.5	1.7 U	1.8	1.7	1.0 U
1,2,3,7,8,9-HXCDF	1.1	1.6	0.5	1.2 U	1.0 U
1,2,3,7,8-PECDD	1.1	0.4 U	0.8	1.1	1.0 U
1,2,3,7,8-PECDF	1.0	0.9 U	0.7 U	1.0	0.7 U
2,3,4,6,7,8-HXCDF	1.3	1.6 U	2.1	2.2	1.0 U
2,3,4,7,8-PECDF	1.0	1.2 U	0.9	1.5	0.9 U
2,3,7,8-TCDD	0.2 U	0.2 U	0.2	0.3	0.1 U
2,3,7,8-TCDF	0.5	1.3 U	0.9	1.8	0.5 U
TOTAL DIOXINS	600.5	NR	640.2	690.6	138.3
TOTAL FURANS	53.1	NR	85.8	123.5	23.0 U
TOTAL HPCDD	117.8	242.0	148.5	133.3	37.3
TOTAL HPCDF	22.4	30.9 U	37.9	38.4	11.8
TOTAL HXCDD	26.3	22.0 U	29.2	28.4	6.1
TOTAL HXCDF	9.0	4.2 U	22.5	26.6	7.8
TOTAL PECDD	2.7	1.6 U	0.8	1.1	1.3 U
TOTAL PECDF	2.9	7.7 U	9.6	24.1	6.3 U
TOTAL TCDD	1.6	3.2	2.7	4.4	0.7 U
TOTAL TCDF	1.5	6.1 U	5.8	10.5	0.5 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	4.5 U	5.6	7.3	5.6
1-METHYLNAPHTHALENE	7.2	13.2 U	14.4	19.5	16.4
1-METHYLPHENANTHRENE	43.8	41.4	48.2	35.7	37.7
2,3,5-TRIMETHYLNAPHTHALENE	9.2	13.3	11.5	9.5	9.6
2,6-DIMETHYLNAPHTHALENE	8.9	17.3	12.5	14.6	15.0
2-METHYLNAPHTHALENE	11.1 U	20.1 U	24.3	33.4	30.3
ACENAPHTHENE	15.2	58.0	31.4	36.0	28.3
ACENAPHTHYLENE	47.6	93.8	76.6	83.5	63.1
ANTHRACENE	157.7	337.7	269.8	183.5	225.6
BENZO(A)ANTHRACENE	263.0	665.8	385.0	330.8	326.9
BENZO(A)PYRENE	329.5	805.7	406.4	260.2	494.3
BENZO(B)FLUORANTHENE	331.3	829.7	487.3	577.8	493.3
BENZO(E)PYRENE	160.2	420.9	243.6	311.8	253.1
BENZO(G,H,I)PERYLENE	152.4	467.9	224.8	305.9	220.6
BENZO(K)FLUORANTHENE	105.8	292.2	147.3	178.4	156.1
C1-CHRYSENES	159.5	291.3	242.7	207.4	197.1
C1-DIBENZOTHIOPHENES	18.0	26.2	16.6	15.0	14.2
C1-FLUORANTHENES/PYRENES	262.1	534.6	362.9	308.1	242.2
C1-FLUORENES	35.6	33.6	34.1	21.3	25.8
C1-NAPHTHALENES	18.3	33.3 U	38.8	53.0	46.6
C1-PHENANTHRENES/ANTHRACENES	166.4	245.2	178.7	137.3	138.8
C2-CHRYSENES	71.5	107.2	104.6	92.2	161.3
C2-DIBENZOTHIOPHENES	23.5	30.4	24.6	19.9	19.3
C2-FLUORENES	39.6	37.5	46.0	36.4	24.3
C2-NAPHTHALENES	24.9	62.4	39.5	54.0	37.3
C2-PHENANTHRENES/ANTHRACENES	142.1 U	145.6	130.5	91.0	97.2
C3-CHRYSENES	4.5	10.7	7.2	10.9	18.0
C3-DIBENZOTHIOPHENES	16.2	25.7	14.7	23.7	13.3

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	35.2	32.3	25.8	26.7
C3-NAPHTHALENES	38.6	83.3	42.8	56.2	39.0
C3-PHENANTHRENES/ANTHRACENES	88.8 U	81.6	67.6	73.3	52.6
C4-CHRYSENES	8.3	51.3	5.2	7.1	60.3
C4-NAPHTHALENES	25.9	33.2	15.9	27.6	27.5
C4-PHENANTHRENES/ANTHRACENES	44.1	37.6	15.6	49.9	28.5
CHRYSENE	249.4	685.6	451.9	430.5	326.1
DIBENZO(A,H)ANTHRACENE	42.8	151.3	71.3	75.8	57.4
DIBENZOTHIOPHENE	14.3	40.4	15.3	16.7	13.5
FLUORANTHENE	503.8	1255.4	742.7	701.4	579.4
FLUORENE	34.3	84.7	48.2	45.4	40.2
INDENO(1,2,3-CD)PYRENE	181.1	534.3	244.6	309.1	244.5
NAPHTHALENE	19.4	38.7 U	31.2	38.3	33.0
PERYLENE	57.6	146.2	69.2	92.2	70.8
PHENANTHRENE	225.0	669.4	281.9	320.4	272.9
PYRENE	428.9	1077.9	819.3	613.0	553.9
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1	0.3	0.2	0.3
1,2,4,5-TETRACHLOROBENZENE	0.60	0.4	0.8	0.4	0.6
2,4'-DDD	1.29	45.8	21.4	38.0	37.4
2,4'-DDE	0.24 U	1.6	0.9	1.5	1.6
2,4'-DDT	0.13 U	30.9	18.2	26.9	43.5
4,4'-DDD	0.79	130.5	62.8	99.5	71.0
4,4'-DDE	0.57	21.3	20.5	25.2	24.4
4,4'-DDT	0.68	110.9	148.3	125.6	151.6
ALDRIN	0.41	6.4	0.1	0.1	1.2
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1	0.2
ALPHA-CHLORDANE	0.22	2.2	2.4	2.0	4.9
BETA-BHC	0.19	0.2	0.7	0.2	0.1 U
CHLORPYRIFOS	0.37	0.1	0.1 U	0.4 U	0.1
CIS-NONACHLOR	0.17	1.0	0.7	0.6	2.0
DELTA-BHC	0.07	0.1	0.1	0.0	0.1
DIELDRIN	0.09 U	0.4	0.5	0.1	0.6
ENDOSULFAN II	0.58	0.0 U	1.7	0.6	0.7
ENDRIN	0.10	0.1 U	0.1	0.1 U	0.1
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.2	0.2 U	0.1
GAMMA-CHLORDANE	0.10 U	2.6	2.8	2.5	5.9
HEPTACHLOR	0.16	0.4	0.1	0.1	0.5
HEPTACHLOR EPOXIDE	0.06	0.2	0.0 U	0.0 U	0.1
HEXACHLOROBENZENE	1.01	0.1 U	0.1	0.1	0.1
MIREX	0.07	0.1	0.2	0.0	0.1
OXYCHLORDANE	0.09	0.0	0.2	0.1	0.1
PCB-101/90	1.59	5.1	9.5	14.4	9.9
PCB-105	0.71	2.4	4.2	7.8	1.7
PCB-114	0.20 U	0.1 U	0.1 U	0.2 U	0.3 U
PCB-118	1.44	2.2	5.1	9.1	4.5
PCB-126	0.17	0.1	0.1	0.2 U	0.1 U
PCB-128	0.51	1.8	2.3	3.3	2.7
PCB-138/160	1.76 U	11.4	22.6	20.8	25.9
PCB-149/123	0.69	8.4	12.9	15.1	26.9
PCB-153/132	1.29	12.8	27.9	21.0	33.4
PCB-156	0.44	2.2	3.5	2.9	2.1
PCB-167	0.89	0.9	1.3	1.7	1.2
PCB-169	0.13	0.1	0.1	0.0 U	0.5
PCB-170/190	5.99	2.9	22.2	20.1	18.4
PCB-18/17	0.26	0.6	0.5	1.2	0.6
PCB-180	0.52	11.4	23.5	15.9	24.4

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
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Parameter[1]	Mean Reference Concentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	9.4	11.4	9.2	16.4
PCB-189	0.22	0.4	0.5	0.6	0.4
PCB-195/208	0.18 U	2.8	3.2	4.0	6.2
PCB-201/157/173	0.24 U	1.1	1.1	1.0	1.6
PCB-206	0.32	4.7	4.6	7.9	11.0
PCB-209	0.37	1.3	1.3	2.5	2.9
PCB-28	0.63	0.8	1.6	1.0	0.8
PCB-44	0.41 U	0.9	1.9	2.8	1.2
PCB-52	1.07	2.1	3.4	7.2	2.3
PCB-66	0.32	1.2	1.6	2.0	0.9
PCB-77	0.09	0.3	0.4 U	0.1	0.3
PCB-8/5	0.52	0.3	0.4	0.5	0.3
PCB-81	0.12	0.0	0.2	0.2	0.1
PENTACHLOROANISOLE	0.08 U	0.2	0.2	0.5	0.1
PENTACHLOROBENZENE	0.21	0.1	0.2	0.1 U	0.1
TRANS-NONACHLOR	0.15	1.6	1.6	1.3	2.8
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000208	0.000215	0.000253	0.000215
CADMIUM	0.000004	0.000005	0.000008	0.000006	0.000006
CHROMIUM	0.001099	0.002584	0.002469	0.002401	0.003151
COPPER	0.000238	0.004609	0.008817	0.005291	0.005899
IRON	0.328134	0.956159	0.772089	0.978766	1.010963
LEAD	0.000903	0.004380	0.003400	0.002844	0.003703
MANGANESE	0.008512	0.009929	0.012297	0.010489	0.006416
MERCURY	0.000003	0.000003	0.000005	0.000007	0.000005
NICKEL	0.000335	0.001891	0.001705	0.001456	0.001381
SILVER	0.000016	0.000007	0.000009	0.000083	0.000014
ZINC	0.001037	0.010670	0.011875	0.008305	0.010239

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	125.3 U	673.4	423.9	58.5 U
1,2,3,4,6,7,8,9-OCDF	15.0	11.4 U	72.1	20.8	5.6 U
1,2,3,4,6,7,8-HPCDD	49.9	40.5	88.5	53.3	7.1 U
1,2,3,4,6,7,8-HPCDF	11.9	27.4 U	149.0	18.8	6.0
1,2,3,4,7,8,9-HPCDF	1.2	1.4 U	9.7	1.2	0.5
1,2,3,4,7,8-HXCDD	1.2 U	1.6	2.0	1.0	0.3 U
1,2,3,4,7,8-HXCDF	1.0	5.6 U	20.9	3.7	0.8 U
1,2,3,6,7,8-HXCDD	2.5	3.4	5.4	3.4	1.2
1,2,3,6,7,8-HXCDF	1.1 U	5.0 U	17.6	3.0	0.6 U
1,2,3,7,8,9-HXCDD	1.5	1.2 U	3.3	2.1	0.5 U
1,2,3,7,8,9-HXCDF	1.1	2.7	1.2	0.3	0.5 U
1,2,3,7,8-PECDD	1.1	1.0 U	1.7	0.9	0.5
1,2,3,7,8-PECDF	1.0	2.3 U	3.5 U	1.7	0.6 U
2,3,4,6,7,8-HXCDF	1.3	5.8 U	22.8	4.3	0.8 U
2,3,4,7,8-PECDF	1.0	5.1 U	11.7	3.3	0.4 U
2,3,7,8-TCDD	0.2 U	0.2 U	0.3	0.2	0.1 U
2,3,7,8-TCDF	0.5	2.4 U	3.1	2.0	0.1 U
TOTAL DIOXINS	600.5	NR	923.5	593.5	82.4 U
TOTAL FURANS	53.1	NR	580.2	124.7	20.4 U
TOTAL HPCDD	117.8	100.8	200.6	125.1	17.5 U
TOTAL HPCDF	22.4	40.6 U	202.3	38.1	10.3
TOTAL HXCDD	26.3	20.0 U	44.0	43.0	5.2 U
TOTAL HXCDF	9.0	17.4 U	162.1	35.1	4.6 U
TOTAL PECDD	2.7	6.6 U	1.7	8.4	0.8 U
TOTAL PECDF	2.9	31.6 U	91.6	18.0	3.2 U
TOTAL TCDD	1.6	4.4	5.2	2.5	0.4 U
TOTAL TCDF	1.5	40.1 U	50.4	29.8	2.2 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	2.0 U	3.3	4.0	2.6
1-METHYLNAPHTHALENE	7.2	5.2 U	5.2	23.1	5.6
1-METHYLPHENANTHRENE	43.8	25.0	27.9	14.2	17.6
2,3,5-TRIMETHYLNAPHTHALENE	9.2	4.2	9.7	6.5	4.0
2,6-DIMETHYLNAPHTHALENE	8.9	10.1	6.7	12.6	6.0
2-METHYLNAPHTHALENE	11.1 U	7.7 U	8.5	28.7	9.2
ACENAPHTHENE	15.2	34.0	11.2	18.2	17.3
ACENAPHTHYLENE	47.6	21.2	21.6	28.1	21.5
ANTHRACENE	157.7	103.4	95.2	64.0	113.8
BENZO(A)ANTHRACENE	263.0	208.7	139.1	144.5	140.0
BENZO(A)PYRENE	329.5	245.0	143.9	64.5	196.3
BENZO(B)FLUORANTHENE	331.3	266.2	147.9	224.4	200.0
BENZO(E)PYRENE	160.2	120.6	80.5	119.0	96.5
BENZO(G,H,I)PERYLENE	152.4	124.0	70.8	124.5	83.4
BENZO(K)FLUORANTHENE	105.8	81.4	52.1	79.3	67.5
C1-CHRYSENES	159.5	101.7	103.8	103.7	83.7
C1-DIBENZOTHIOPHENES	18.0	15.0	12.3	7.2	6.3
C1-FLUORANTHENES/PYRENES	262.1	215.2	162.9	141.1	114.9
C1-FLUORENES	35.6	10.9	34.0	14.9	12.3
C1-NAPHTHALENES	18.3	12.9 U	13.7	51.8	14.8
C1-PHENANTHRENES/ANTHRACENES	166.4	124.9	118.1	63.8	62.1
C2-CHRYSENES	71.5	40.7	58.9	42.9	44.3
C2-DIBENZOTHIOPHENES	23.5	16.2	13.0	8.6	7.8
C2-FLUORENES	39.6	14.0	31.0	20.4	12.2
C2-NAPHTHALENES	24.9	20.1	19.6	51.1	12.1
C2-PHENANTHRENES/ANTHRACENES	142.1 U	74.0	78.3	42.6	44.2
C3-CHRYSENES	4.5	4.2	5.1	3.3	3.2
C3-DIBENZOTHIOPHENES	16.2	11.5	9.5	7.3	5.7

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	14.6	19.4	13.2	9.1
C3-NAPHTHALENES	38.6	31.1	32.4	42.9	11.4
C3-PHENANTHRENES/ANTHRACENES	88.8 U	37.4	41.5	23.0	21.9
C4-CHRYSENES	8.3	12.8	1.1	2.9	15.8
C4-NAPHTHALENES	25.9	11.2	9.1	17.8	7.5
C4-PHENANTHRENES/ANTHRACENES	44.1	15.1	10.8	16.4	8.4
CHRYSENE	249.4	224.6	123.9	157.6	161.5
DIBENZO(A,H)ANTHRACENE	42.8	35.1	22.5	30.5	22.4
DIBENZOTHIOPHENE	14.3	18.1	6.6	7.3	7.2
FLUORANTHENE	503.8	542.6	255.9	262.6	270.7
FLUORENE	34.3	26.1	22.2	22.3	25.8
INDENO(1,2,3-CD)PYRENE	181.1	139.7	75.9	130.3	103.4
NAPHTHALENE	19.4	20.4	13.3	32.2	13.4
PERYLENE	57.6	40.6	29.8	48.6	33.7
PHENANTHRENE	225.0	304.5	106.5	125.6	139.2
PYRENE	428.9	471.6	226.3	243.6	236.0
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.2	0.8	0.1	0.1
1,2,4,5-TETRACHLOROBENZENE	0.60	1.2	1.4	0.4	0.4
2,4'-DDD	1.29	1.4	1.2	1.0	1.6
2,4'-DDE	0.24 U	0.2	0.2	0.1	0.1
2,4'-DDT	0.13 U	0.9	0.9	0.3	0.4
4,4'-DDD	0.79	2.6	1.7	1.5	1.2
4,4'-DDE	0.57	1.7	1.3	0.9	0.9
4,4'-DDT	0.68	2.3	2.4	1.5	1.9
ALDRIN	0.41	3.8	0.7	0.0 U	1.4
ALPHA-BHC	0.10 U	0.0 U	0.1	0.0	0.0
ALPHA-CHLORDANE	0.22	0.6	0.4	0.5	0.2
BETA-BHC	0.19	0.5	0.5	0.2	0.1
CHLORPYRIFOS	0.37	0.2	0.2 U	0.5	0.0 U
CIS-NONACHLOR	0.17	0.2	0.3	0.1	0.1
DELTA-BHC	0.07	0.1	0.1	0.0	0.1
DIELDRIN	0.09 U	0.2	0.0	0.0	0.1
ENDOSULFAN II	0.58	0.1 U	0.7	0.3	0.2
ENDRIN	0.10	0.1 U	0.1 U	0.0 U	0.0
GAMMA-BHC (LINDANE)	0.21	0.3 U	0.1	0.1 U	0.1
GAMMA-CHLORDANE	0.10 U	0.4	0.2	0.6	0.1
HEPTACHLOR	0.16	0.2	0.1	0.1	0.1
HEPTACHLOR EPOXIDE	0.06	0.3	0.2	0.0	0.0
HEXACHLOROBENZENE	1.01	0.9	1.5	0.1	0.1
MIREX	0.07	0.0	0.1	0.0 U	0.0
OXYCHLORDANE	0.09	0.0 U	0.0 U	0.0	0.0
PCB-101/90	1.59	3.1	3.4	1.5	1.4
PCB-105	0.71	1.0	2.0	0.8	0.5
PCB-114	0.20 U	0.1 U	0.2 U	0.1 U	0.1 U
PCB-118	1.44	1.5	2.7	1.1	1.1
PCB-126	0.17	0.1	0.2	0.1 U	0.1
PCB-128	0.51	0.8	1.0	0.4	0.4
PCB-138/160	1.76 U	3.7	4.6	2.4	2.2
PCB-149/123	0.69	2.4	2.2	1.6	1.6
PCB-153/132	1.29	4.0	3.7	2.3	2.5
PCB-156	0.44	0.7	0.2	0.7	0.6
PCB-167	0.89	0.2	0.6	0.5	0.4
PCB-169	0.13	0.1	0.2	0.0 U	0.0
PCB-170/190	5.99	0.7	3.8	3.7	5.3
PCB-18/17	0.26	1.9	0.3	0.2	0.1
PCB-180	0.52	2.9	2.4	2.0	1.6

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	3.0	2.3	1.4	1.4
PCB-189	0.22	0.1	0.4	0.2	0.1
PCB-195/208	0.18 U	2.4	2.9	1.3	1.2
PCB-201/157/173	0.24 U	0.7	0.6	0.4	0.3
PCB-206	0.32	5.9	7.2	3.6	2.6
PCB-209	0.37	1.1	2.2	0.9	0.7
PCB-28	0.63	0.7	1.0	0.8	0.5
PCB-44	0.41 U	0.8	0.7	0.9	0.4
PCB-52	1.07	1.0	1.9	0.9	0.7
PCB-66	0.32	0.7	0.6	0.5	0.4
PCB-77	0.09	0.1	0.8	0.0	0.1
PCB-8/5	0.52	0.3	0.8	0.3	0.2
PCB-81	0.12	0.0	0.3	0.0	0.0
PENTACHLOROANISOLE	0.08 U	0.2	0.2	0.0 U	0.0
PENTACHLOROBENZENE	0.21	0.2	1.6	0.1 U	0.1
TRANS-NONACHLOR	0.15	0.6	0.2	0.3	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000172	0.000210	0.000315	0.000252
CADMIUM	0.000004	0.000005	0.000010	0.000011	0.000002
CHROMIUM	0.001099	0.001890	0.002047	0.001965	0.002220
COPPER	0.000238	0.002015	0.005177	0.004117	0.002946
IRON	0.328134	0.617649	0.660473	0.706473	0.698502
LEAD	0.000903	0.002280	0.002740	0.001813	0.002427
MANGANESE	0.008512	0.012015	0.016520	0.008770	0.008435
MERCURY	0.000003	0.000003	0.000005	0.000004	0.000005
NICKEL	0.000335	0.001253	0.001677	0.000918	0.001168
SILVER	0.000016	0.000007	0.000010	0.000081	0.000013
ZINC	0.001037	0.005254	0.005597	0.002794	0.004076

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	344.0 U	360.4	75.1	258.7
1,2,3,4,6,7,8,9-OCDF	15.0	16.6 U	21.3	6.5	11.3 U
1,2,3,4,6,7,8-HPCDD	49.9	89.6	39.2	6.1	19.1
1,2,3,4,6,7,8-HPCDF	11.9	9.7 U	15.7	2.9	9.0
1,2,3,4,7,8,9-HPCDF	1.2	0.7 U	0.4	0.7 U	0.6
1,2,3,4,7,8-HXCDD	1.2 U	0.7	0.6	0.5	0.7 U
1,2,3,4,7,8-HXCDF	1.0	0.9 U	1.7	0.6	0.7 U
1,2,3,6,7,8-HXCDD	2.5	3.4	1.8	1.1	1.6
1,2,3,6,7,8-HXCDF	1.1 U	0.7 U	0.7	0.7 U	0.6 U
1,2,3,7,8,9-HXCDD	1.5	1.2 U	0.8 U	0.5	0.8 U
1,2,3,7,8,9-HXCDF	1.1	1.1	0.3	0.7 U	0.7 U
1,2,3,7,8-PECDD	1.1	0.4 U	0.6 U	0.5	0.5
1,2,3,7,8-PECDF	1.0	0.5 U	0.5 U	0.9	0.4 U
2,3,4,6,7,8-HXCDF	1.3	0.8 U	0.5 U	0.5	0.7 U
2,3,4,7,8-PECDF	1.0	0.7 U	0.4	0.6 U	0.6 U
2,3,7,8-TCDD	0.2 U	0.1 U	0.1	0.1 U	0.2
2,3,7,8-TCDF	0.5	0.8 U	0.7	0.6	0.4 U
TOTAL DIOXINS	600.5	NR	473.0	102.8	357.7
TOTAL FURANS	53.1	NR	74.5	24.0	24.3 U
TOTAL HPCDD	117.8	236.7	91.4	19.2	65.1
TOTAL HPCDF	22.4	26.4 U	32.1	6.3	8.6
TOTAL HXCDD	26.3	24.2 U	20.0	10.5	10.1
TOTAL HXCDF	9.0	2.0 U	15.5	6.2	5.9
TOTAL PECDD	2.7	1.0 U	0.6 U	0.5	1.0
TOTAL PECDF	2.9	2.7 U	4.0	7.1	2.2 U
TOTAL TCDD	1.6	3.6	2.2	1.2	0.2
TOTAL TCDF	1.5	3.2 U	1.5	2.5	0.6 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	1.9 U	8.0	5.4	6.0
1-METHYLNAPHTHALENE	7.2	5.7 U	10.8	16.8	14.6
1-METHYLPHENANTHRENE	43.8	38.4	52.7	55.4	51.5
2,3,5-TRIMETHYLNAPHTHALENE	9.2	10.5	19.6	15.2	15.9
2,6-DIMETHYLNAPHTHALENE	8.9	9.3	18.6	15.2	16.4
2-METHYLNAPHTHALENE	11.1 U	7.5 U	16.2	24.5	20.0
ACENAPHTHENE	15.2	12.5	39.3	24.1	23.3
ACENAPHTHYLENE	47.6	61.2	91.5	78.7	57.5
ANTHRACENE	157.7	239.1	715.7	259.2	514.8
BENZO(A)ANTHRACENE	263.0	494.3	579.1	455.3	403.4
BENZO(A)PYRENE	329.5	508.0	619.5	402.0	488.3
BENZO(B)FLUORANTHENE	331.3	589.6	522.2	536.5	433.4
BENZO(E)PYRENE	160.2	280.0	281.7	279.1	198.1
BENZO(G,H,I)PERYLENE	152.4	230.1	272.9	285.7	175.9
BENZO(K)FLUORANTHENE	105.8	205.2	202.4	199.7	127.9
C1-CHRYSENES	159.5	228.6	298.3	264.8	181.0
C1-DIBENZOTHIOPHENES	18.0	22.5	24.8	18.0	19.6
C1-FLUORANTHENES/PYRENES	262.1	491.2	465.9	385.6	363.3
C1-FLUORENES	35.6	34.1	84.9	48.5	76.3
C1-NAPHTHALENES	18.3	21.0	26.9	41.4	34.6
C1-PHENANTHRENES/ANTHRACENES	166.4	211.9	307.3	199.7	251.0
C2-CHRYSENES	71.5	88.9	172.0	103.9	88.7
C2-DIBENZOTHIOPHENES	23.5	24.0	22.7	19.0	15.6
C2-FLUORENES	39.6	31.9	58.7	43.2	47.1
C2-NAPHTHALENES	24.9	47.3	63.0	72.9	45.3
C2-PHENANTHRENES/ANTHRACENES	142.1 U	149.7	174.6	112.8	140.8
C3-CHRYSENES	4.5	9.8	5.6	8.4	8.0
C3-DIBENZOTHIOPHENES	16.2	15.2	14.4	12.4	9.8

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	23.4	34.7	31.1	34.9
C3-NAPHTHALENES	38.6	69.7	73.0	90.6	53.6
C3-PHENANTHRENES/ANTHRACENES	88.8 U	73.1	87.4	51.2	62.1
C4-CHRYSENES	8.3	35.7	2.8	4.1	31.8
C4-NAPHTHALENES	25.9	18.3	13.6	46.3	25.0
C4-PHENANTHRENES/ANTHRACENES	44.1	32.2	13.3	34.0	21.0
CHRYSENE	249.4	495.9	496.3	386.9	302.9
DIBENZO(A,H)ANTHRACENE	42.8	83.7	87.4	73.2	50.9
DIBENZOTHIOPHENE	14.3	19.9	34.0	20.8	24.2
FLUORANTHENE	503.8	898.1	944.5	724.1	888.3
FLUORENE	34.3	41.4	132.7	59.3	96.0
INDENO(1,2,3-CD)PYRENE	181.1	278.5	333.5	323.0	234.9
NAPHTHALENE	19.4	18.0 U	42.1	40.6	41.8
PERYLENE	57.6	71.4	101.3	89.9	104.7
PHENANTHRENE	225.0	265.3	536.5	368.1	510.6
PYRENE	428.9	708.9	761.8	656.9	727.5
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1	0.1	0.1 U	0.1
1,2,4,5-TETRACHLOROBENZENE	0.60	0.5	0.3	0.3	0.2
2,4'-DDD	1.29	11.4	5.8	5.4	12.3
2,4'-DDE	0.24 U	0.5	0.2	0.3	0.3
2,4'-DDT	0.13 U	11.2	0.7	1.9	4.1
4,4'-DDD	0.79	46.6	16.5	14.8	20.8
4,4'-DDE	0.57	6.7	1.5	4.6	6.1
4,4'-DDT	0.68	23.7	1.8 U	20.5	12.3
ALDRIN	0.41	2.6	0.0	0.0	0.0 U
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1	0.1
ALPHA-CHLORDANE	0.22	21.8	3.0	2.7	5.4
BETA-BHC	0.19	0.1	0.9	0.4	0.1
CHLORPYRIFOS	0.37	0.1	0.4	0.2 U	0.1 U
CIS-NONACHLOR	0.17	1.9	0.4	0.3	0.7
DELTA-BHC	0.07	0.1	0.0	0.1	0.0
DIELDRIN	0.09 U	0.4	0.2	0.1	0.3
ENDOSULFAN II	0.58	0.1	0.5	0.4	1.4
ENDRIN	0.10	0.1 U	0.1 U	0.1 U	0.0
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.1	0.1	0.1
GAMMA-CHLORDANE	0.10 U	29.5	4.2	2.9	6.3
HEPTACHLOR	0.16	0.5	0.1	0.2	0.2
HEPTACHLOR EPOXIDE	0.06	0.1 U	0.0 U	0.0	0.2
HEXACHLOROBENZENE	1.01	0.1	0.0	0.1	0.0
MIREX	0.07	0.1	0.3	0.0 U	0.1
OXYCHLORDANE	0.09	0.4	0.1	0.1	0.1
PCB-101/90	1.59	1.4	0.9	2.0	2.6
PCB-105	0.71	0.2	0.5	1.0	0.9
PCB-114	0.20 U	0.1	0.1 U	0.1 U	0.2 U
PCB-118	1.44	1.2	1.3	1.8	2.7
PCB-126	0.17	0.0	0.1	0.1 U	0.1 U
PCB-128	0.51	0.6	0.2	0.5	0.9
PCB-138/160	1.76 U	2.5	0.7	2.5	4.6
PCB-149/123	0.69	1.4	0.5	1.6	3.1
PCB-153/132	1.29	1.7	1.5	2.4	5.1
PCB-156	0.44	0.9	0.7	0.4	0.6
PCB-167	0.89	1.1	0.2	2.3	1.5
PCB-169	0.13	0.0	0.1	0.0 U	0.0
PCB-170/190	5.99	7.7	5.4	7.7	11.6
PCB-18/17	0.26	0.4	0.0 U	0.1	0.0 U
PCB-180	0.52	1.1	0.6	1.1	2.6

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	1.8	0.4	0.8	1.9
PCB-189	0.22	0.2	0.2	0.1	0.3
PCB-195/208	0.18 U	0.3	0.2	0.3	0.2
PCB-201/157/173	0.24 U	0.0	0.1	0.1	0.5
PCB-206	0.32	0.2	0.2	0.2	0.4
PCB-209	0.37	0.2	0.3	0.6	0.5
PCB-28	0.63	0.7	1.1	0.5	0.8
PCB-44	0.41 U	0.4	0.4	0.3	0.7
PCB-52	1.07	0.9	0.7	0.8	1.2
PCB-66	0.32	0.3	0.5	0.5	0.4
PCB-77	0.09	0.2	0.2 U	0.0 U	0.1
PCB-8/5	0.52	0.3	0.9	0.4	0.2
PCB-81	0.12	0.0	0.0	0.1	0.1
PENTACHLOROANISOLE	0.08 U	0.2	0.1	0.1	0.1
PENTACHLOROBENZENE	0.21	0.1	0.0	0.1 U	0.0
TRANS-NONACHLOR	0.15	10.2	1.6	1.2	2.6
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000163	0.000188	0.000262	0.000223
CADMIUM	0.000004	0.000005	0.000006	0.000008	0.000002 U
CHROMIUM	0.001099	0.001321	0.001326	0.001258	0.001642
COPPER	0.000238	0.000823	0.000594	0.000534	0.000609
IRON	0.328134	0.441368	0.392351	0.485916	0.492523
LEAD	0.000903	0.001321	0.001088	0.001900	0.001552
MANGANESE	0.008512	0.007616	0.008293	0.007493	0.005749
MERCURY	0.000003	0.000002	0.000003	0.000003	0.000003
NICKEL	0.000335	0.000564	0.000503	0.000460	0.000588
SILVER	0.000016	0.000004	0.000006	0.000069	0.000006
ZINC	0.001037	0.002483	0.001902	0.001424	0.001927

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	248.7 U	273.9	503.8 U	63.1 U
1,2,3,4,6,7,8,9-OCDF	15.0	19.1 U	26.5	77.5 U	8.9 U
1,2,3,4,6,7,8-HPCDD	49.9	77.9	72.6	109.0 U	16.4 U
1,2,3,4,6,7,8-HPCDF	11.9	26.1 U	44.5	250.0 U	16.7
1,2,3,4,7,8,9-HPCDF	1.2	1.7 U	0.6 U	26.5	0.7
1,2,3,4,7,8-HXCDD	1.2 U	2.3	0.6 U	16.5	1.1 U
1,2,3,4,7,8-HXCDF	1.0	7.6 U	9.3	2.2 U	2.4 U
1,2,3,6,7,8-HXCDD	2.5	6.6	6.2	30.0	5.4
1,2,3,6,7,8-HXCDF	1.1 U	6.3 U	7.5	127.7	1.5 U
1,2,3,7,8,9-HXCDD	1.5	2.4 U	4.6	28.5	1.9 U
1,2,3,7,8,9-HXCDF	1.1	2.7	0.6 U	2.2 U	1.1 U
1,2,3,7,8-PECDD	1.1	1.4 U	0.6 U	2.2 U	2.2
1,2,3,7,8-PECDF	1.0	5.3 U	5.4	68.5	1.5 U
2,3,4,6,7,8-HXCDF	1.3	7.2 U	11.8	151.5	2.0 U
2,3,4,7,8-PECDF	1.0	10.0 U	8.7	158.8	3.7 U
2,3,7,8-TCDD	0.2 U	0.4 U	0.1 U	0.4 U	0.4
2,3,7,8-TCDF	0.5	7.9 U	0.1 U	67.3	0.4
TOTAL DIOXINS	600.5	NR	494.8	853.8 U	130.5 U
TOTAL FURANS	53.1	NR	256.0	3642.3	80.8 U
TOTAL HPCDD	117.8	178.6	159.0	232.7 U	35.2 U
TOTAL HPCDF	22.4	45.4 U	65.5	611.5	27.4
TOTAL HXCDD	26.3	36.6 U	54.4	191.9	23.5 U
TOTAL HXCDF	9.0	22.4 U	63.2	638.5	19.1 U
TOTAL PECDD	2.7	7.4 U	0.6 U	2.2 U	5.2 U
TOTAL PECDF	2.9	86.2 U	40.4	1138.5	18.8 U
TOTAL TCDD	1.6	8.6	7.7	40.8	3.5 U
TOTAL TCDF	1.5	79.3 U	60.5	1100.0	20.4 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	3.9 U	10.3	33.8	27.4
1-METHYLNAPHTHALENE	7.2	16.7	17.5	66.5	45.7
1-METHYLPHENANTHRENE	43.8	25.9	41.0	122.7	64.1
2,3,5-TRIMETHYLNAPHTHALENE	9.2	6.5	12.8	38.3	21.0
2,6-DIMETHYLNAPHTHALENE	8.9	11.5	20.0	70.8	38.4
2-METHYLNAPHTHALENE	11.1 U	33.5	37.0	148.8	99.7
ACENAPHTHENE	15.2	7.5	12.6	18.3	47.5
ACENAPHTHYLENE	47.6	22.8	35.6	81.2	65.7
ANTHRACENE	157.7	51.3	159.7	257.3	343.9
BENZO(A)ANTHRACENE	263.0	97.9	211.2	546.2	347.4
BENZO(A)PYRENE	329.5	109.1	249.3	896.2	450.0
BENZO(B)FLUORANTHENE	331.3	127.3	230.6	850.0	448.0
BENZO(E)PYRENE	160.2	81.1	124.6	392.3	224.5
BENZO(G,H,I)PERYLENE	152.4	82.0	129.9	349.6	191.4
BENZO(K)FLUORANTHENE	105.8	40.0	76.9	216.2	112.0
C1-CHRYSENES	159.5	79.8	117.2	291.5	191.4
C1-DIBENZOTHIOPHENES	18.0	15.5	16.2	50.8	22.6
C1-FLUORANTHENES/PYRENES	262.1	90.6	205.2	403.8	261.9
C1-FLUORENES	35.6	6.4 U	31.7	71.9	57.0
C1-NAPHTHALENES	18.3	29.4 U	54.5	215.0	145.5
C1-PHENANTHRENES/ANTHRACENES	166.4	90.0	133.6	323.1	200.3
C2-CHRYSENES	71.5	43.1	55.8	128.1	105.9
C2-DIBENZOTHIOPHENES	23.5	19.6	23.2	62.3	27.5
C2-FLUORENES	39.6	32.1	26.4	125.8	59.3
C2-NAPHTHALENES	24.9	35.3 U	55.4	236.5	93.8
C2-PHENANTHRENES/ANTHRACENES	142.1 U	60.5	89.6	210.8	141.7
C3-CHRYSENES	4.5	2.5	5.4	7.7	6.1
C3-DIBENZOTHIOPHENES	16.2	13.3	14.9	43.1	15.7

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	21.5	21.6	105.0	44.6
C3-NAPHTHALENES	38.6	92.9	53.9	263.1	86.5
C3-PHENANTHRENES/ANTHRACENES	88.8 U	46.5	55.7	134.2	71.0
C4-CHRYSENES	8.3	3.4	1.1	2.7	36.2
C4-NAPHTHALENES	25.9	58.9	17.2	186.2	46.8
C4-PHENANTHRENES/ANTHRACENES	44.1	15.0	27.1	76.5	19.6
CHRYSENE	249.4	137.5	212.7	738.5	310.7
DIBENZO(A,H)ANTHRACENE	42.8	26.8	40.2	103.8	52.2
DIBENZOTHIOPHENE	14.3	15.0	14.2	31.4	26.1
FLUORANTHENE	503.8	200.9	403.7	919.2	533.0
FLUORENE	34.3	13.3	39.3	63.8	94.1
INDENO(1,2,3-CD)PYRENE	181.1	77.3	138.1	434.6	223.5
NAPHTHALENE	19.4	16.3 U	48.4	190.0	266.5
PERYLENE	57.6	26.0	48.9	115.0	84.9
PHENANTHRENE	225.0	156.8	187.3	473.1	404.6
PYRENE	428.9	169.9	360.4	757.7	448.3
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.3	0.5	2.5	0.4
1,2,4,5-TETRACHLOROBENZENE	0.60	0.9	1.2	3.5 U	0.6 U
2,4'-DDD	1.29	1.5	1.2	3.8	1.4
2,4'-DDE	0.24 U	0.7	0.5	1.6	3.8
2,4'-DDT	0.13 U	3.5	0.6	3.3	1.7
4,4'-DDD	0.79	3.9	2.0	4.6	1.9
4,4'-DDE	0.57	3.5	0.7	3.3	1.4
4,4'-DDT	0.68	6.6	8.2	2.8	14.2
ALDRIN	0.41	0.1 U	1.4	0.1 U	4.1
ALPHA-BHC	0.10 U	0.0 U	0.1	0.1 U	0.1
ALPHA-CHLORDANE	0.22	1.5	1.1	4.6	1.7
BETA-BHC	0.19	0.2 U	0.4	0.3 U	0.3
CHLORPYRIFOS	0.37	0.2	0.1 U	1.0 U	0.1 U
CIS-NONACHLOR	0.17	0.7	0.5	2.2	0.9
DELTA-BHC	0.07	0.1	0.0 U	0.1 U	0.0
DIELDRIN	0.09 U	0.3	2.1	10.4	3.9
ENDOSULFAN II	0.58	0.7	0.6	0.7	0.1 U
ENDRIN	0.10	0.1	0.0 U	0.2 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.3 U	0.1	0.3 U	0.1 U
GAMMA-CHLORDANE	0.10 U	0.2	0.0 U	1.0	0.2
HEPTACHLOR	0.16	0.6	2.4	2.2	3.5
HEPTACHLOR EPOXIDE	0.06	0.0	0.0 U	0.0 U	0.0 U
HEXACHLOROBENZENE	1.01	0.3	0.2	1.3	0.3
MIREX	0.07	0.3	0.0 U	0.0 U	0.1 U
OXYCHLORDANE	0.09	0.1	0.0 U	0.0 U	0.0 U
PCB-101/90	1.59	22.1	17.9	50.0	11.7
PCB-105	0.71	11.6	5.9	11.2	3.3
PCB-114	0.20 U	0.1 U	0.1 U	0.3 U	0.3 U
PCB-118	1.44	18.1	11.2	26.5	9.0
PCB-126	0.17	0.4	0.1	0.3 U	2.5
PCB-128	0.51	7.7	2.5	9.2	2.6
PCB-138/160	1.76 U	38.0	22.4	80.8	20.3
PCB-149/123	0.69	11.5	5.4	25.4	10.7
PCB-153/132	1.29	25.2	12.7	65.4	18.8
PCB-156	0.44	5.8	0.6	5.8	4.1
PCB-167	0.89	2.2	0.9	2.7	4.6
PCB-169	0.13	0.2	0.0	0.3 U	0.0
PCB-170/190	5.99	8.9	5.7	21.5	9.1
PCB-18/17	0.26	0.9	0.2	0.6	0.2
PCB-180	0.52	14.5	9.7	38.5	12.9

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	13.3	9.7	37.3	10.0
PCB-189	0.22	0.5	0.3	1.2	0.2
PCB-195/208	0.18 U	3.4	2.4	7.7	2.8
PCB-201/157/173	0.24 U	1.4	1.1	4.8	1.7
PCB-206	0.32	6.0	5.1	11.9	4.6
PCB-209	0.37	2.1	1.0	3.8	1.4
PCB-28	0.63	0.7	1.2	2.0	1.1
PCB-44	0.41 U	1.9	2.3	3.2	1.2
PCB-52	1.07	5.3	6.8	13.1	4.9
PCB-66	0.32	2.3	2.0	3.4	0.9
PCB-77	0.09	0.3	0.8	0.3 U	0.2 U
PCB-8/5	0.52	0.5	0.8	0.3 U	0.2 U
PCB-81	0.12	3.1	0.1 U	11.2	3.5
PENTACHLOROANISOLE	0.08 U	0.2	0.1	1.3	0.2
PENTACHLOROBENZENE	0.21	0.3	0.5	1.3 U	0.5
TRANS-NONACHLOR	0.15	0.3	0.3	1.1	0.2
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000409	0.000250	0.000520	0.000329
CADMIUM	0.000004	0.000015	0.000020	0.000030	0.000025 U
CHROMIUM	0.001099	0.003567	0.002990	0.003010	0.005290
COPPER	0.000238	0.189454	0.012270	0.042800	0.018401
IRON	0.328134	1.251057	0.793650	1.320520	1.592977
LEAD	0.000903	0.176576	0.012560	0.036600	0.030166
MANGANESE	0.008512	0.015370	0.013110	0.024390	0.015543
MERCURY	0.000003	0.000038	0.000020	0.000030	0.000017
NICKEL	0.000335	0.060843	0.001710	0.001630	0.002583
SILVER	0.000016	0.000021	0.000060	0.000200	0.000054
ZINC	0.001037	0.093142	0.011090	0.015160	0.014735

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	494.3 U	650.0	1022.1	681.8
1,2,3,4,6,7,8,9-OCDF	15.0	21.1 U	33.8	35.0	23.7 U
1,2,3,4,6,7,8-HPCDD	49.9	112.5	74.0	121.9	76.1
1,2,3,4,6,7,8-HPCDF	11.9	10.0 U	19.0	18.6	19.2
1,2,3,4,7,8,9-HPCDF	1.2	4.4 U	0.9 U	2.0	0.8
1,2,3,4,7,8-HXCDD	1.2 U	1.1	1.1	1.0	0.7
1,2,3,4,7,8-HXCDF	1.0	1.0 U	1.2	2.4	0.7 U
1,2,3,6,7,8-HXCDD	2.5	4.9	2.6	5.1	1.2
1,2,3,6,7,8-HXCDF	1.1 U	0.7 U	0.8	1.6	0.8
1,2,3,7,8,9-HXCDD	1.5	1.1 U	1.2	3.3	1.0
1,2,3,7,8,9-HXCDF	1.1	1.2	0.7 U	0.7	0.5
1,2,3,7,8-PECDD	1.1	0.4 U	0.8	0.6 U	0.7
1,2,3,7,8-PECDF	1.0	0.6 U	0.7	0.6 U	0.5 U
2,3,4,6,7,8-HXCDF	1.3	0.8 U	1.2	1.2	0.8
2,3,4,7,8-PECDF	1.0	0.5 U	0.8	0.6 U	0.7 U
2,3,7,8-TCDD	0.2 U	0.1 U	0.1 U	0.1 U	0.2
2,3,7,8-TCDF	0.5	0.6 U	1.0	0.1 U	0.2 U
TOTAL DIOXINS	600.5	NR	927.9	1426.1	937.5
TOTAL FURANS	53.1	NR	105.7	184.7	54.3 U
TOTAL HPCDD	117.8	323.3	245.4	353.9	220.7
TOTAL HPCDF	22.4	35.7 U	48.7	72.5	40.6
TOTAL HXCDD	26.3	22.3 U	29.4	48.2	34.5
TOTAL HXCDF	9.0	2.7 U	15.8	36.4	10.5
TOTAL PECDD	2.7	0.9 U	0.8	0.6 U	0.2
TOTAL PECDF	2.9	3.8 U	3.0 U	13.7	1.1 U
TOTAL TCDD	1.6	3.5	2.7	1.8	0.3 U
TOTAL TCDF	1.5	3.6 U	1.8	4.8	0.6 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	11.5	14.4	30.4	20.1
1-METHYLNAPHTHALENE	7.2	41.7	60.0	99.0	55.6
1-METHYLPHENANTHRENE	43.8	139.5	139.3	234.7	151.7
2,3,5-TRIMETHYLNAPHTHALENE	9.2	12.6	16.3	25.4	24.8
2,6-DIMETHYLNAPHTHALENE	8.9	22.8	24.1	48.5	48.7
2-METHYLNAPHTHALENE	11.1 U	47.5	81.8	127.7	92.6
ACENAPHTHENE	15.2	340.9	337.6	966.6	631.3
ACENAPHTHYLENE	47.6	61.6	70.2	153.4	64.7
ANTHRACENE	157.7	578.2	686.1	872.3	1100.2
BENZO(A)ANTHRACENE	263.0	999.7	1240.2	2467.1	1382.5
BENZO(A)PYRENE	329.5	1144.3	1289.7	3317.5	1943.7
BENZO(B)FLUORANTHENE	331.3	1291.1	1357.4	3120.5	1830.1
BENZO(E)PYRENE	160.2	619.6	677.9	1471.1	809.4
BENZO(G,H,I)PERYLENE	152.4	487.5	687.6	1422.7	703.8
BENZO(K)FLUORANTHENE	105.8	416.3	378.2	1059.5	586.5
C1-CHRYSENES	159.5	394.9	643.7	971.3	545.3
C1-DIBENZOTHIOPHENES	18.0	41.0	33.1	81.6	42.4
C1-FLUORANTHENES/PYRENES	262.1	1022.8	836.4	1487.2	1019.6
C1-FLUORENES	35.6	67.6	101.8	196.4	134.6
C1-NAPHTHALENES	18.3	80.8	141.7	227.0	164.6
C1-PHENANTHRENES/ANTHRACENES	166.4	524.2	478.5	831.5	569.5
C2-CHRYSENES	71.5	132.9	187.8	249.8	216.7
C2-DIBENZOTHIOPHENES	23.5	31.1	31.0	45.8	30.4
C2-FLUORENES	39.6	48.5	61.7	129.9	72.2
C2-NAPHTHALENES	24.9	54.8	117.6	187.1	126.9
C2-PHENANTHRENES/ANTHRACENES	142.1 U	239.2	209.7	344.5	231.6
C3-CHRYSENES	4.5	4.7	9.9	14.7	10.0
C3-DIBENZOTHIOPHENES	16.2	22.9	16.1	33.8	17.6

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	20.1	45.3	115.0	49.9
C3-NAPHTHALENES	38.6	61.9	78.5	116.3	88.6
C3-PHENANTHRENES/ANTHRACENES	88.8 U	112.4	105.9	139.8	97.9
C4-CHRYSENES	8.3	16.9	2.5	27.0	119.3
C4-NAPHTHALENES	25.9	28.1	18.7	42.5	39.6
C4-PHENANTHRENES/ANTHRACENES	44.1	34.4	31.6	45.8	33.7
CHRYSENE	249.4	1179.3	1132.5	2634.8	1296.0
DIBENZO(A,H)ANTHRACENE	42.8	144.0	243.8	355.3	190.0
DIBENZOTHIOPHENE	14.3	101.0	85.1	201.5	113.4
FLUORANTHENE	503.8	2513.1	2123.7	5838.6	3513.1
FLUORENE	34.3	263.4	370.3	909.9	618.3
INDENO(1,2,3-CD)PYRENE	181.1	574.9	830.0	1635.3	843.5
NAPHTHALENE	19.4	80.9	168.3	252.1	139.1
PERYLENE	57.6	188.2	162.1	481.0	276.8
PHENANTHRENE	225.0	2002.9	1404.2	4122.6	2726.3
PYRENE	428.9	2200.9	1732.4	4796.0	1960.8
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1	0.1	0.1	0.0
1,2,4,5-TETRACHLOROBENZENE	0.60	0.3	0.3	0.7	0.3
2,4'-DDD	1.29	2.3	2.4	4.0	6.4
2,4'-DDE	0.24 U	0.1	0.2	0.0 U	0.0
2,4'-DDT	0.13 U	0.1	0.4	0.2	0.5
4,4'-DDD	0.79	1.4	1.3	2.1	2.7
4,4'-DDE	0.57	0.5	0.8	1.3	1.3
4,4'-DDT	0.68	0.6	1.4	1.1	3.6
ALDRIN	0.41	11.2	3.7	0.0	6.7
ALPHA-BHC	0.10 U	0.0 U	0.2	0.2	0.1
ALPHA-CHLORDANE	0.22	0.3	0.4	0.7	0.7
BETA-BHC	0.19	0.1 U	0.8	0.1 U	0.1
CHLORPYRIFOS	0.37	0.0	0.1 U	0.3 U	0.1
CIS-NONACHLOR	0.17	0.2	0.3	0.4	0.4
DELTA-BHC	0.07	0.1	0.0 U	0.0 U	0.2
DIELDRIN	0.09 U	0.0	0.1	0.1	0.5
ENDOSULFAN II	0.58	0.8	1.6	0.2	1.1
ENDRIN	0.10	0.1	0.1 U	0.1 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.1	0.1 U	0.0 U
GAMMA-CHLORDANE	0.10 U	0.1	0.1	0.1	0.0
HEPTACHLOR	0.16	0.1	0.1	0.1 U	0.1
HEPTACHLOR EPOXIDE	0.06	0.0 U	0.0 U	0.0 U	0.0 U
HEXACHLOROBENZENE	1.01	0.0 U	0.7	0.0	0.0
MIREX	0.07	0.3	0.2	0.0 U	0.6
OXYCHLORDANE	0.09	0.1	0.3	0.2	0.1
PCB-101/90	1.59	2.2	3.1	4.1	4.2
PCB-105	0.71	1.1	1.5	1.4	1.2
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.1 U
PCB-118	1.44	2.2	2.5	4.3	4.4
PCB-126	0.17	0.0	0.1	0.1	0.1
PCB-128	0.51	0.8	1.0	1.0	2.0
PCB-138/160	1.76 U	2.8	6.8	6.9	9.6
PCB-149/123	0.69	1.7	4.4	4.1	4.5
PCB-153/132	1.29	3.7	8.3	9.9	10.9
PCB-156	0.44	1.2	2.3	3.3	3.7
PCB-167	0.89	1.4	1.2	1.5	1.3
PCB-169	0.13	0.2	0.1	0.0 U	0.0
PCB-170/190	5.99	10.5	30.5	41.4	45.6
PCB-18/17	0.26	0.6	1.0	0.8	1.1
PCB-180	0.52	4.2	6.8	7.5	16.8

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	7.7	4.0	4.9	23.7
PCB-189	0.22	0.3	0.4	0.5	0.5
PCB-195/208	0.18 U	2.3	1.4	2.8	9.8
PCB-201/157/173	0.24 U	0.3	0.9	1.8	3.4
PCB-206	0.32	2.7	1.5	4.4	29.2
PCB-209	0.37	1.6	0.6	9.3	4.7
PCB-28	0.63	2.4	2.6	1.8	3.3
PCB-44	0.41 U	1.3	1.2	1.5	1.8
PCB-52	1.07	2.2	2.0	2.7	2.8
PCB-66	0.32	0.6	1.4	2.8	2.8
PCB-77	0.09	0.0	0.3	0.0	0.1
PCB-8/5	0.52	0.3	1.2	2.7	2.1
PCB-81	0.12	0.1	0.1	0.1	0.5
PENTACHLOROANISOLE	0.08 U	0.0	0.1	0.1 U	0.1
PENTACHLOROBENZENE	0.21	0.0	0.1	0.1 U	0.0
TRANS-NONACHLOR	0.15	0.1	0.2	0.2	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000150	0.000161	0.000299	0.000209
CADMIUM	0.000004	0.000007	0.000007	0.000009	0.000007
CHROMIUM	0.001099	0.001402	0.001568	0.002094	0.002372
COPPER	0.000238	0.001383	0.001304	0.004443	0.002983
IRON	0.328134	0.374750	0.392001	0.532656	0.554569
LEAD	0.000903	0.001918	0.001708	0.004811	0.004149
MANGANESE	0.008512	0.007804	0.007996	0.008132	0.007616
MERCURY	0.000003	0.000015	0.000008	0.000009	0.000008
NICKEL	0.000335	0.000600	0.000588	0.000963	0.000890
SILVER	0.000016	0.000007	0.000007	0.000073	0.000011
ZINC	0.001037	0.004481	0.003764	0.017109	0.010166

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2,3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	3.3 U	35.8	5.8	4.2
1-METHYLNAPHTHALENE	7.2	7.2 U	32.1	12.4	9.5
1-METHYLPHENANTHRENE	43.8	57.7	144.2	98.0	40.1
2,3,5-TRIMETHYLNAPHTHALENE	9.2	17.1	43.9	17.0	13.1
2,6-DIMETHYLNAPHTHALENE	8.9	16.0	73.9	15.0	9.9
2-METHYLNAPHTHALENE	11.1 U	11.2 U	50.7	18.2	14.2
ACENAPHTHENE	15.2	65.1	480.8	174.7	64.8
ACENAPHTHYLENE	47.6	66.2	80.9	82.3	53.3
ANTHRACENE	157.7	267.0	585.3	317.9	298.6
BENZO(A)ANTHRACENE	263.0	435.1	678.1	485.0	341.0
BENZO(A)PYRENE	329.5	435.0	560.2	255.9	368.8
BENZO(B)FLUORANTHENE	331.3	513.1	591.0	566.1	394.0
BENZO(E)PYRENE	160.2	254.2	285.3	296.3	174.1
BENZO(G,H,I)PERYLENE	152.4	231.5	212.9	213.2	96.2
BENZO(K)FLUORANTHENE	105.8	158.0	184.9	180.8	137.5
C1-CHRYSENES	159.5	249.9	388.8	303.1	174.4
C1-DIBENZOTHIOPHENES	18.0	32.7	42.8	32.6	13.5
C1-FLUORANTHENES/PYRENES	262.1	533.5	736.5	623.7	306.6
C1-FLUORENES	35.6	50.6	204.0	86.0	39.9
C1-NAPHTHALENES	18.3	18.3 U	82.8	30.7	23.6
C1-PHENANTHRENES/ANTHRACENES	166.4	247.9	490.2	302.4	134.6
C2-CHRYSENES	71.5	109.3	123.8	97.3	76.4
C2-DIBENZOTHIOPHENES	23.5	44.3	40.0	34.2	18.6
C2-FLUORENES	39.6	46.8	104.5	49.6	37.1
C2-NAPHTHALENES	24.9	23.1 U	153.9	48.6	28.2
C2-PHENANTHRENES/ANTHRACENES	142.1 U	168.2	227.3	175.9	96.7
C3-CHRYSENES	4.5	5.6	8.0	4.6	4.8
C3-DIBENZOTHIOPHENES	16.2	43.2	25.7	46.2	17.3

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	51.9	63.1	55.8	50.1
C3-NAPHTHALENES	38.6	72.7	114.0	66.1	35.3
C3-PHENANTHRENES/ANTHRACENES	88.8 U	115.1	100.5	86.8	54.2
C4-CHRYSENES	8.3	10.0	1.6	4.2	25.7
C4-NAPHTHALENES	25.9	59.5	31.3	44.3	28.1
C4-PHENANTHRENES/ANTHRACENES	44.1	45.1	29.4	59.5	34.6
CHRYSENE	249.4	447.7	630.5	539.1	379.3
DIBENZO(A,H)ANTHRACENE	42.8	57.4	79.7	54.9	29.2
DIBENZOTHIOPHENE	14.3	43.6	83.8	49.7	15.1
FLUORANTHENE	503.8	1135.9	1494.3	1695.3	858.5
FLUORENE	34.3	74.5	704.5	158.2	54.4
INDENO(1,2,3-CD)PYRENE	181.1	266.5	254.2	225.2	141.2
NAPHTHALENE	19.4	19.6 U	31.1	31.9	25.0
PERYLENE	57.6	74.0	82.4	94.3	62.5
PHENANTHRENE	225.0	361.3	1186.7	783.0	217.6
PYRENE	428.9	898.6	1192.2	1275.6	636.8
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.0	0.1	0.2	0.0
1,2,4,5-TETRACHLOROBENZENE	0.60	0.3	0.4	0.2	0.4 U
2,4'-DDD	1.29	2.7	1.0	1.7	2.6
2,4'-DDE	0.24 U	0.1	0.1	0.0	0.1
2,4'-DDT	0.13 U	0.0	0.0	0.0	0.2
4,4'-DDD	0.79	1.2	0.7	0.7	0.6
4,4'-DDE	0.57	1.0	0.3	0.6	0.5
4,4'-DDT	0.68	0.3	0.4	0.6	1.5
ALDRIN	0.41	0.3	1.5	0.0 U	1.3
ALPHA-BHC	0.10 U	0.1	0.1	0.0	0.1
ALPHA-CHLORDANE	0.22	0.5	0.2	0.3	0.2
BETA-BHC	0.19	0.1	0.3	0.6	0.1
CHLORPYRIFOS	0.37	0.1	0.0	0.1 U	0.0 U
CIS-NONACHLOR	0.17	0.2	0.1	0.1	0.2
DELTA-BHC	0.07	0.1	0.0 U	0.0	0.0
DIELDRIN	0.09 U	0.1	0.2	0.0	0.1
ENDOSULFAN II	0.58	1.0	0.2	0.9	0.1 U
ENDRIN	0.10	0.1	0.1 U	0.1 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.1 U	0.1	0.1
GAMMA-CHLORDANE	0.10 U	0.1	0.0	0.0	0.0
HEPTACHLOR	0.16	0.1	0.1 U	0.1 U	0.1
HEPTACHLOR EPOXIDE	0.06	0.1 U	0.0 U	0.0 U	0.0 U
HEXACHLOROBENZENE	1.01	0.1 U	0.0	0.1	0.0 U
MIREX	0.07	0.0 U	0.0	0.0 U	0.0 U
OXYCHLORDANE	0.09	0.1	0.3	0.1	0.1
PCB-101/90	1.59	1.7	0.9	1.2	0.9
PCB-105	0.71	0.8	0.5	0.7	0.3
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.2 U
PCB-118	1.44	1.5	1.3	1.0	0.9
PCB-126	0.17	0.3	0.1	0.1 U	0.1 U
PCB-128	0.51	0.6	0.2	0.4	0.3
PCB-138/160	1.76 U	2.4	1.3	2.0	1.3
PCB-149/123	0.69	1.2	0.5	1.5	0.9
PCB-153/132	1.29	2.1	1.2	2.0	1.5
PCB-156	0.44	1.3	0.5	0.9	0.7
PCB-167	0.89	1.3	0.4	1.1	0.9
PCB-169	0.13	0.3	0.1 U	0.0 U	0.0
PCB-170/190	5.99	7.4	6.4	17.5	6.2
PCB-18/17	0.26	0.2	0.6	0.5	0.7
PCB-180	0.52	1.5	1.0	1.4	0.8

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	0.9	0.6	1.0	1.8
PCB-189	0.22	0.1	0.2	0.2	0.1
PCB-195/208	0.18 U	0.4	0.3	0.5	0.3
PCB-201/157/173	0.24 U	0.3	0.4	0.3	1.0
PCB-206	0.32	0.5	0.4	0.6	0.5
PCB-209	0.37	0.7	0.6	0.6	0.3
PCB-28	0.63	2.0	1.4	0.9	2.5
PCB-44	0.41 U	0.3	0.3	0.5	0.6
PCB-52	1.07	0.6	0.9	1.3	0.8
PCB-66	0.32	0.5	0.3	0.6	0.8
PCB-77	0.09	0.1	0.1	0.0 U	0.1
PCB-8/5	0.52	0.7	1.8	0.6	0.4 U
PCB-81	0.12	0.0	0.0	0.1	0.1
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.0 U	0.0
PENTACHLOROBENZENE	0.21	0.1	0.1	0.1 U	0.0 U
TRANS-NONACHLOR	0.15	0.1	0.1	0.0	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000189	0.000247	0.000337	0.000260
CADMIUM	0.000004	0.000007	0.000013	0.000010	0.000002 U
CHROMIUM	0.001099	0.001635	0.001853	0.001603	0.001986
COPPER	0.000238	0.000806	0.001237	0.000990	0.000948
IRON	0.328134	0.482013	0.539767	0.588880	0.586544
LEAD	0.000903	0.000973	0.001020	0.001320	0.001426
MANGANESE	0.008512	0.006853	0.007417	0.006363	0.007408
MERCURY	0.000003	0.000004	0.000006	0.000006	0.000004
NICKEL	0.000335	0.000526	0.000540	0.000457	0.000492
SILVER	0.000016	0.000008	0.000010	0.000067	0.000009
ZINC	0.001037	0.002206	0.002987	0.002063	0.002453

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0				
1,2,3,4,6,7,8,9-OCDF	15.0				
1,2,3,4,6,7,8-HPCDD	49.9				
1,2,3,4,6,7,8-HPCDF	11.9				
1,2,3,4,7,8,9-HPCDF	1.2				
1,2,3,4,7,8-HXCDD	1.2 U				
1,2,3,4,7,8-HXCDF	1.0				
1,2,3,6,7,8-HXCDD	2.5				
1,2,3,6,7,8-HXCDF	1.1 U				
1,2,3,7,8,9-HXCDD	1.5				
1,2,3,7,8,9-HXCDF	1.1				
1,2,3,7,8-PECDD	1.1				
1,2,3,7,8-PECDF	1.0				
2,3,4,6,7,8-HXCDF	1.3				
2,3,4,7,8-PECDF	1.0				
2,3,7,8-TCDD	0.2 U				
2,3,7,8-TCDF	0.5				
TOTAL DIOXINS	600.5				
TOTAL FURANS	53.1				
TOTAL HPCDD	117.8				
TOTAL HPCDF	22.4				
TOTAL HXCDD	26.3				
TOTAL HXCDF	9.0				
TOTAL PECDD	2.7				
TOTAL PECDF	2.9				
TOTAL TCDD	1.6				
TOTAL TCDF	1.5				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	2.9	4.1	6.3	4.9
1-METHYLNAPHTHALENE	7.2	3.1 U	7.6	67.9	10.5
1-METHYLPHENANTHRENE	43.8	24.0	39.0	281.6	37.1
2,3,5-TRIMETHYLNAPHTHALENE	9.2	6.8	7.7	16.7	8.5
2,6-DIMETHYLNAPHTHALENE	8.9	6.2	7.7	20.0	9.6
2-METHYLNAPHTHALENE	11.1 U	5.5 U	13.0	81.1	17.3
ACENAPHTHENE	15.2	7.9	10.4	27.0	20.0
ACENAPHTHYLENE	47.6	39.4	51.4	68.2	60.3
ANTHRACENE	157.7	87.4	137.4	157.6	190.8
BENZO(A)ANTHRACENE	263.0	187.7	284.6	277.7	226.9
BENZO(A)PYRENE	329.5	267.9	384.2	205.2	351.1
BENZO(B)FLUORANTHENE	331.3	252.6	315.0	319.0	303.4
BENZO(E)PYRENE	160.2	145.3	194.2	191.9	147.1
BENZO(G,H,I)PERYLENE	152.4	163.1	203.8	178.4	127.9
BENZO(K)FLUORANTHENE	105.8	74.8	99.2	109.5	77.8
C1-CHRYSENES	159.5	151.5	308.4	275.4	140.3
C1-DIBENZOTHIOPHENES	18.0	13.5	11.4	15.2	11.6
C1-FLUORANTHENES/PYRENES	262.1	245.8	318.8	359.7	220.9
C1-FLUORENES	35.6	17.8	33.4	57.1	29.7
C1-NAPHTHALENES	18.3	8.6 U	20.6	149.0	27.7
C1-PHENANTHRENES/ANTHRACENES	166.4	107.4	126.3	368.4	119.6
C2-CHRYSENES	71.5	79.8	146.7	112.1	73.7
C2-DIBENZOTHIOPHENES	23.5	19.5	15.9	19.7	14.2
C2-FLUORENES	39.6	17.9	40.8	57.9	26.9
C2-NAPHTHALENES	24.9	8.6 U	25.5	120.9	26.2
C2-PHENANTHRENES/ANTHRACENES	142.1 U	89.5	109.6	224.7	88.0
C3-CHRYSENES	4.5	2.9	3.4	4.0	4.6
C3-DIBENZOTHIOPHENES	16.2	19.2	16.4	17.2	8.6

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	18.7	40.4	30.0	19.0
C3-NAPHTHALENES	38.6	22.3	24.0	79.4	28.6
C3-PHENANTHRENES/ANTHRACENES	88.8 U	64.4	80.1	166.4	43.8
C4-CHRYSENES	8.3	5.7	2.7	3.4	25.2
C4-NAPHTHALENES	25.9	15.4	9.7	65.6	17.7
C4-PHENANTHRENES/ANTHRACENES	44.1	23.7	52.0	62.9	17.1
CHRYSENE	249.4	184.4	254.1	261.2	202.5
DIBENZO(A,H)ANTHRACENE	42.8	33.8	62.7	44.2	32.8
DIBENZOTHIOPHENE	14.3	12.5	8.8	10.5	10.9
FLUORANTHENE	503.8	310.6	327.6	383.3	340.1
FLUORENE	34.3	20.1	34.5	45.3	43.5
INDENO(1,2,3-CD)PYRENE	181.1	162.7	202.2	182.9	149.4
NAPHTHALENE	19.4	10.8 U	24.6	90.1	27.9
PERYLENE	57.6	33.3	44.8	56.7	43.5
PHENANTHRENE	225.0	141.1	144.9	347.2	194.1
PYRENE	428.9	317.4	355.9	414.0	335.7
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.0 U	0.1	0.1	0.1
1,2,4,5-TETRACHLOROBENZENE	0.60	0.1 U	0.6	0.5	0.6 U
2,4'-DDD	1.29	0.8	0.6	0.7	2.2
2,4'-DDE	0.24 U	0.0	0.1	0.0	0.1
2,4'-DDT	0.13 U	0.0	0.0	0.0	0.1
4,4'-DDD	0.79	0.5	0.4	0.4	0.6
4,4'-DDE	0.57	0.4	1.0	0.5	0.5
4,4'-DDT	0.68	0.3	0.3	0.3	1.7
ALDRIN	0.41	1.2	0.5	0.0	2.3
ALPHA-BHC	0.10 U	0.1	0.1	0.1	0.1
ALPHA-CHLORDANE	0.22	0.1	0.1	0.1	0.2
BETA-BHC	0.19	0.1 U	0.1	0.1	0.1
CHLORPYRIFOS	0.37	0.0	0.1	0.1 U	0.0
CIS-NONACHLOR	0.17	0.2	0.2	0.1	0.1
DELTA-BHC	0.07	0.0	0.0 U	0.0	0.0
DIELDRIN	0.09 U	0.1	0.0	0.0	0.0
ENDOSULFAN II	0.58	0.3	0.3	0.3	0.0 U
ENDRIN	0.10	0.0 U	0.0	0.0 U	0.0
GAMMA-BHC (LINDANE)	0.21	0.1 U	0.1	0.1 U	0.1
GAMMA-CHLORDANE	0.10 U	0.1	0.0	0.0	0.0
HEPTACHLOR	0.16	0.1	0.0 U	0.0	0.1
HEPTACHLOR EPOXIDE	0.06	0.1 U	0.0 U	0.0 U	0.0 U
HEXACHLOROBENZENE	1.01	0.2 U	0.0	0.0	0.0
MIREX	0.07	0.0	0.0 U	0.0 U	0.1
OXYCHLORDANE	0.09	0.0	0.1	0.1	0.1
PCB-101/90	1.59	0.4	1.2	0.5	0.8
PCB-105	0.71	0.2	0.8	0.2	0.2
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.1 U
PCB-118	1.44	0.3	1.4	0.6	0.7
PCB-126	0.17	0.2 U	0.0	0.1 U	0.1 U
PCB-128	0.51	0.2	0.4	0.2	0.3
PCB-138/160	1.76 U	1.1	1.3	0.8	1.1
PCB-149/123	0.69	0.4	0.5	0.5	0.7
PCB-153/132	1.29	0.6	1.1	0.7	1.3
PCB-156	0.44	0.4	0.1	0.3	0.8
PCB-167	0.89	0.7	0.4	0.7	1.7
PCB-169	0.13	0.2 U	0.0	0.0 U	0.0
PCB-170/190	5.99	2.4	2.5	3.9	5.4
PCB-18/17	0.26	0.0 U	0.1	0.1	0.0 U
PCB-180	0.52	0.5	0.5	0.4	0.6

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
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BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameter[1]	Mean Reference Concentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	0.5	0.3	0.3	1.8
PCB-189	0.22	0.1	0.0	0.1	0.1
PCB-195/208	0.18 U	0.1	0.2	0.2	0.2
PCB-201/157/173	0.24 U	0.1	0.1	0.2	0.6
PCB-206	0.32	0.3	0.2	0.2	0.6
PCB-209	0.37	0.1	0.3	0.3	0.2
PCB-28	0.63	0.4	0.4	0.2	0.3
PCB-44	0.41 U	0.1	0.3	0.1	0.1
PCB-52	1.07	0.3	0.7	0.3	0.2
PCB-66	0.32	0.2	0.4	0.3	0.2
PCB-77	0.09	0.0 U	0.1	0.1 U	0.1
PCB-8/5	0.52	0.2	0.5	0.5	0.1 U
PCB-81	0.12	0.0	0.0	0.0	0.0
PENTACHLOROANISOLE	0.08 U	0.1 U	0.0	0.0 U	0.0 U
PENTACHLOROBENZENE	0.21	0.1	0.1	0.0 U	0.0 U
TRANS-NONACHLOR	0.15	0.1	0.0	0.0	0.0 U
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000172	0.000170	0.000237	0.000197
CADMIUM	0.000004	0.000006	0.000010	0.000010	0.000004 U
CHROMIUM	0.001099	0.001395	0.001397	0.001423	0.001872
COPPER	0.000238	0.000526	0.000670	0.000607	0.000585
IRON	0.328134	0.374246	0.384660	0.429187	0.457554
LEAD	0.000903	0.001051	0.001580	0.001460	0.001321
MANGANESE	0.008512	0.007024	0.006687	0.006407	0.006758
MERCURY	0.000003	0.000005	0.000006	0.000008	0.000006
NICKEL	0.000335	0.000429	0.000433	0.000433	0.000386
SILVER	0.000016	0.000006	0.000006	0.000067	0.000007
ZINC	0.001037	0.001784	0.001787	0.001330	0.001662

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	281.5 U	463.4	313.9	696.0
1,2,3,4,6,7,8,9-OCDF	15.0	13.3 U	21.8	16.0	13.7 U
1,2,3,4,6,7,8-HPCDD	49.9	71.8	63.7	36.9	81.1
1,2,3,4,6,7,8-HPCDF	11.9	8.9 U	16.2	10.5	20.4
1,2,3,4,7,8,9-HPCDF	1.2	0.9 U	1.3 U	1.5	2.0
1,2,3,4,7,8-HXCDD	1.2 U	0.9	1.3 U	1.6	2.9
1,2,3,4,7,8-HXCDF	1.0	0.9 U	1.3 U	1.7	1.5 U
1,2,3,6,7,8-HXCDD	2.5	3.1	1.6	2.4	4.3
1,2,3,6,7,8-HXCDF	1.1 U	0.7 U	1.3 U	1.5	1.7
1,2,3,7,8,9-HXCDD	1.5	1.1 U	1.6	2.1	2.2
1,2,3,7,8,9-HXCDF	1.1	0.8 U	1.3 U	1.4	1.8 U
1,2,3,7,8-PECDD	1.1	0.7 U	1.3 U	1.5	1.8 U
1,2,3,7,8-PECDF	1.0	0.7 U	1.0	1.4 U	1.5 U
2,3,4,6,7,8-HXCDF	1.3	0.8 U	1.3 U	1.7	2.1
2,3,4,7,8-PECDF	1.0	0.6 U	1.3	1.4 U	1.8 U
2,3,7,8-TCDD	0.2 U	0.2 U	0.3 U	0.4	0.4 U
2,3,7,8-TCDF	0.5	0.6 U	0.4	0.7	0.6 U
TOTAL DIOXINS	600.5	NR	668.2	413.5	1032.3
TOTAL FURANS	53.1	NR	71.3	46.6	45.7 U
TOTAL HPCDD	117.8	189.3	170.6	89.2	219.9
TOTAL HPCDF	22.4	21.8 U	36.7	19.2	21.6 U
TOTAL HXCDD	26.3	32.8 U	29.7	8.3	102.1
TOTAL HXCDF	9.0	1.4 U	9.1	8.5	17.3
TOTAL PECDD	2.7	4.4 U	1.6 U	2.1	15.4
TOTAL PECDF	2.9	1.8 U	1.6	3.5	2.8 U
TOTAL TCDD	1.6	2.8	1.9	1.4 U	0.4 U
TOTAL TCDF	1.5	2.1 U	0.4	1.8	0.9 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	1.5 U	2.8	3.3	2.4 U
1-METHYLNAPHTHALENE	7.2	2.6 U	4.4	6.4	3.3
1-METHYLPHENANTHRENE	43.8	24.5	35.1	17.3	17.2
2,3,5-TRIMETHYLNAPHTHALENE	9.2	6.2	8.7	3.7	3.8
2,6-DIMETHYLNAPHTHALENE	8.9	5.3	6.3	5.5	7.0
2-METHYLNAPHTHALENE	11.1 U	5.2	6.8	10.2	8.9
ACENAPHTHENE	15.2	7.2	9.4	6.0	14.5
ACENAPHTHYLENE	47.6	39.6	36.7	40.9	44.4
ANTHRACENE	157.7	64.8	78.6	52.4	118.4
BENZO(A)ANTHRACENE	263.0	179.3	140.3	112.0	120.1
BENZO(A)PYRENE	329.5	251.0	166.5	122.0	223.6
BENZO(B)FLUORANTHENE	331.3	239.5	173.2	158.0	201.3
BENZO(E)PYRENE	160.2	126.9	91.6	87.0	96.4
BENZO(G,H,I)PERYLENE	152.4	153.6	75.7	87.5	94.1
BENZO(K)FLUORANTHENE	105.8	73.0	58.1	53.2	62.6
C1-CHRYSENES	159.5	101.1	148.1	80.8	102.2
C1-DIBENZOTHIOPHENES	18.0	14.2	15.2	5.9	6.9
C1-FLUORANTHENES/PYRENES	262.1	221.4	194.6	118.5	170.3
C1-FLUORENES	35.6	11.9	36.0	12.1	15.9
C1-NAPHTHALENES	18.3	7.2 U	11.3	16.6	14.2
C1-PHENANTHRENES/ANTHRACENES	166.4	97.0	139.1	49.9	50.5
C2-CHRYSENES	71.5	49.7	70.3	28.2	46.7
C2-DIBENZOTHIOPHENES	23.5	20.7	20.9	10.9	10.9
C2-FLUORENES	39.6	20.1	48.2	26.2	16.9
C2-NAPHTHALENES	24.9	7.1 U	18.1	18.7	13.3
C2-PHENANTHRENES/ANTHRACENES	142.1 U	77.5	99.8	39.6	32.4
C3-CHRYSENES	4.5	2.3	2.5	1.5	3.1
C3-DIBENZOTHIOPHENES	16.2	15.3	14.4	7.1	8.8

TABLE G - 1

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BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameter[1]	Mean Reference Concentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	17.7	33.4	14.3	16.8
C3-NAPHTHALENES	38.6	22.3	27.0	19.8	9.4
C3-PHENANTHRENES/ANTHRACENES	88.8 U	52.5	56.3	23.1	18.8
C4-CHRYSENES	8.3	5.7	1.0	1.7	16.5
C4-NAPHTHALENES	25.9	17.1	11.3	14.0	8.7
C4-PHENANTHRENES/ANTHRACENES	44.1	17.1	18.0	12.5	10.6
CHRYSENE	249.4	177.7	168.4	116.8	163.6
DIBENZO(A,H)ANTHRACENE	42.8	31.3	24.1	20.7	24.2
DIBENZOTHIOPHENE	14.3	11.8	12.3	4.4	6.7
FLUORANTHENE	503.8	279.1	402.6	169.4	357.7
FLUORENE	34.3	13.8	28.6	11.9	23.6
INDENO(1,2,3-CD)PYRENE	181.1	163.0	81.3	97.4	111.1
NAPHTHALENE	19.4	9.6 U	12.0	19.8	11.0
PERYLENE	57.6	31.5	27.8	38.0	43.4
PHENANTHRENE	225.0	100.9	227.3	59.9	131.4
PYRENE	428.9	275.0	314.1	169.4	219.6
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1 U	0.1	0.2	0.1 U
1,2,4,5-TETRACHLOROBENZENE	0.60	0.1 U	0.6	0.8 U	0.9
2,4'-DDD	1.29	0.6	0.2	0.7	1.9
2,4'-DDE	0.24 U	0.1	0.3	0.2	0.1 U
2,4'-DDT	0.13 U	0.0 U	0.0	0.7	0.1 U
4,4'-DDD	0.79	0.2	0.2	0.7	0.6
4,4'-DDE	0.57	0.4	0.3	0.6	0.7
4,4'-DDT	0.68	0.2	0.2	2.1	0.6
ALDRIN	0.41	0.7	0.0 U	0.0	0.0 U
ALPHA-BHC	0.10 U	0.1	0.0	0.0	0.1
ALPHA-CHLORDANE	0.22	0.1	0.1	0.2	0.2
BETA-BHC	0.19	0.1	0.2 U	0.3 U	0.1 U
CHLORPYRIFOS	0.37	0.1	0.1	0.7 U	1.5
CIS-NONACHLOR	0.17	0.1	0.1	0.1	0.1
DELTA-BHC	0.07	0.1	0.0 U	0.1	0.1
DIELDRIN	0.09 U	0.1	0.1	0.1	0.1
ENDOSULFAN II	0.58	0.3	0.1	0.2	0.6
ENDRIN	0.10	0.1 U	0.1 U	0.2 U	0.1 U
GAMMA-BHC (LINDANE)	0.21	0.3 U	0.2 U	0.3	0.2
GAMMA-CHLORDANE	0.10 U	0.1	0.1	0.1	0.1
HEPTACHLOR	0.16	0.1	0.1	0.2	0.4
HEPTACHLOR EPOXIDE	0.06	0.1 U	0.0 U	0.0 U	0.2
HEXACHLOROBENZENE	1.01	0.3 U	0.0	0.3	0.1
MIREX	0.07	0.1	0.0 U	0.0 U	0.1
OXYCHLORDANE	0.09	0.0 U	0.0 U	0.0	0.0
PCB-101/90	1.59	0.3	0.4	0.5	0.8
PCB-105	0.71	0.2	0.2	0.2	0.5
PCB-114	0.20 U	0.1 U	0.1 U	0.2 U	0.3 U
PCB-118	1.44	0.1	0.5	0.5	0.6
PCB-126	0.17	0.4	0.0	0.2 U	
PCB-128	0.51	0.1	0.1	0.1	0.6
PCB-138/160	1.76 U	0.9	0.5	0.9	1.4 U
PCB-149/123	0.69	0.2	0.2	0.2	0.4 U
PCB-153/132	1.29	0.4	0.5	0.5	0.5 U
PCB-156	0.44	0.4	0.2	0.2	0.9
PCB-167	0.89	0.6	0.1	0.6	1.7
PCB-169	0.13	0.2	0.1	0.0 U	0.2
PCB-170/190	5.99	2.2	1.3	1.8	7.4
PCB-18/17	0.26	0.1	0.1 U	0.3	1.0
PCB-180	0.52	0.3	0.2	0.3	0.6 U

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	0.1	0.2	0.3	1.4
PCB-189	0.22	0.1	0.1	0.3	0.3
PCB-195/208	0.18 U	0.1	0.1	0.2	0.4
PCB-201/157/173	0.24 U	0.1	0.1	0.1	0.3
PCB-206	0.32	0.2	0.1	0.1	1.6
PCB-209	0.37	0.1	0.4	0.4	0.3
PCB-28	0.63	0.3	1.2	0.1 U	0.6 U
PCB-44	0.41 U	0.1	0.3	0.2	1.6
PCB-52	1.07	0.2	0.4	0.3	0.1
PCB-66	0.32	0.1	0.1	0.2	0.2
PCB-77	0.09	0.2	0.1	0.0	0.1 U
PCB-8/5	0.52	0.4	0.6	0.1	0.4
PCB-81	0.12	0.0	0.1	0.2 U	0.1
PENTACHLOROANISOLE	0.08 U	0.0	0.1	0.0 U	0.1 U
PENTACHLOROBENZENE	0.21	0.0	0.2 U	0.2 U	0.1
TRANS-NONACHLOR	0.15	0.1	0.1	0.1	0.4
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000096	0.000115	0.000205	0.000190
CADMIUM	0.000004	0.000005	0.000005	0.000006	0.000004
CHROMIUM	0.001099	0.000795	0.000940	0.000860	0.001266
COPPER	0.000238	0.000174	0.000210	0.000215	0.000187
IRON	0.328134	0.263827	0.322023	0.327785	0.322178
LEAD	0.000903	0.000680	0.000635	0.001115	0.000861
MANGANESE	0.008512	0.009060	0.012508	0.008873	0.006132
MERCURY	0.000003	0.000002	0.000004	0.000004	0.000003
NICKEL	0.000335	0.000261	0.000300	0.000188	0.000280
SILVER	0.000016	0.000002	0.000003	0.000060	0.000004
ZINC	0.001037	0.000960	0.001010	0.000845	0.001341

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	306.0 U	791.8	152.5	460.6
1,2,3,4,6,7,8,9-OCDF	15.0	14.7 U	35.0	3.5	9.1 U
1,2,3,4,6,7,8-HPCDD	49.9	60.5	88.9	11.9	45.2
1,2,3,4,6,7,8-HPCDF	11.9	9.1 U	26.0	3.2	11.6
1,2,3,4,7,8,9-HPCDF	1.2	0.5 U	0.9	0.6 U	0.8
1,2,3,4,7,8-HXCDD	1.2 U	0.5	0.8 U	0.6	0.9
1,2,3,4,7,8-HXCDF	1.0	0.7 U	0.7	0.6 U	0.4 U
1,2,3,6,7,8-HXCDD	2.5	2.7	4.2	0.6	2.4
1,2,3,6,7,8-HXCDF	1.1 U	0.5 U	1.0	0.6 U	0.6
1,2,3,7,8,9-HXCDD	1.5	1.1 U	1.8	0.7	1.7
1,2,3,7,8,9-HXCDF	1.1	0.5 U	0.8	0.6 U	0.7 U
1,2,3,7,8-PECDD	1.1	0.5 U	0.9	0.6 U	0.5
1,2,3,7,8-PECDF	1.0	0.5 U	1.1	0.9	0.3 U
2,3,4,6,7,8-HXCDF	1.3	0.8 U	0.9 U	0.6 U	1.2
2,3,4,7,8-PECDF	1.0	0.5 U	0.8 U	0.7	0.5 U
2,3,7,8-TCDD	0.2 U	0.1 U	0.2	0.1 U	0.1 U
2,3,7,8-TCDF	0.5	0.5 U	0.6	0.2	0.5 U
TOTAL DIOXINS	600.5	NR	726.6	187.3	594.4
TOTAL FURANS	53.1	NR	133.2	17.3	33.4 U
TOTAL HPCDD	117.8	150.8	197.1	28.3	106.8
TOTAL HPCDF	22.4	22.5 U	60.2	5.7	13.1
TOTAL HXCDD	26.3	17.8 U	45.1	7.5	24.7
TOTAL HXCDF	9.0	1.4 U	24.6	4.4	13.6
TOTAL PECDD	2.7	1.2 U	1.3	0.6 U	1.9
TOTAL PECDF	2.9	1.8 U	9.7	3.4	3.1 U
TOTAL TCDD	1.6	0.9	2.3	0.7	0.1 U
TOTAL TCDF	1.5	1.9 U	3.7	1.8	1.5 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	2.9	4.7	7.4	3.9
1-METHYLNAPHTHALENE	7.2	6.5 U	10.8	20.7	9.6
1-METHYLPHENANTHRENE	43.8	48.7	45.7	78.3	83.3
2,3,5-TRIMETHYLNAPHTHALENE	9.2	12.1	11.7	13.3	12.6
2,6-DIMETHYLNAPHTHALENE	8.9	13.3	10.7	14.8	11.0
2-METHYLNAPHTHALENE	11.1 U	10.2	15.7	33.8	14.6
ACENAPHTHENE	15.2	14.3	20.1	25.3	19.1
ACENAPHTHYLENE	47.6	83.2	68.2	129.3	58.1
ANTHRACENE	157.7	228.6	224.2	254.1	219.5
BENZO(A)ANTHRACENE	263.0	444.6	398.2	528.7	304.7
BENZO(A)PYRENE	329.5	477.1	506.5	666.0	349.2
BENZO(B)FLUORANTHENE	331.3	513.3	482.5	808.8	399.3
BENZO(E)PYRENE	160.2	247.7	253.7	393.7	151.5
BENZO(G,H,I)PERYLENE	152.4	247.4	237.7	332.1	135.6
BENZO(K)FLUORANTHENE	105.8	161.1	172.2	218.8	151.4
C1-CHRYSENES	159.5	242.7	295.7	308.8	221.4
C1-DIBENZOTHIOPHENES	18.0	35.8	21.4	29.4	23.7
C1-FLUORANTHENES/PYRENES	262.1	528.0	355.3	413.7	363.8
C1-FLUORENES	35.6	52.7	43.0	66.9	50.8
C1-NAPHTHALENES	18.3	14.9 U	26.5	54.5	24.9
C1-PHENANTHRENES/ANTHRACENES	166.4	252.3	197.5	239.9	244.8
C2-CHRYSENES	71.5	102.3	121.1	133.4	116.4
C2-DIBENZOTHIOPHENES	23.5	41.3	27.4	43.5	27.7
C2-FLUORENES	39.6	45.5	47.0	64.7	49.7
C2-NAPHTHALENES	24.9	20.4 U	31.9	63.1	26.2
C2-PHENANTHRENES/ANTHRACENES	142.1 U	192.4	133.3	180.9	187.8
C3-CHRYSENES	4.5	5.6	5.1	1.3	7.9
C3-DIBENZOTHIOPHENES	16.2	31.6	20.4	33.6	15.0

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	36.6	36.6	65.8	39.2
C3-NAPHTHALENES	38.6	45.3	37.4	62.4	34.5
C3-PHENANTHRENES/ANTHRACENES	88.8 U	95.1	69.2	109.4	98.4
C4-CHRYSENES	8.3	11.9	1.7	5.5	26.1
C4-NAPHTHALENES	25.9	25.1	11.8	40.0	23.0
C4-PHENANTHRENES/ANTHRACENES	44.1	33.3	25.8	37.0	27.6
CHRYSENE	249.4	434.4	396.9	524.0	258.5
DIBENZO(A,H)ANTHRACENE	42.8	56.8	76.1	97.2	42.2
DIBENZOTHIOPHENE	14.3	26.7	16.4	24.7	18.4
FLUORANTHENE	503.8	985.2	696.0	877.9	706.9
FLUORENE	34.3	47.5	47.8	63.6	47.2
INDENO(1,2,3-CD)PYRENE	181.1	270.6	271.6	395.4	175.6
NAPHTHALENE	19.4	14.0 U	26.1	60.6	20.2
PERYLENE	57.6	63.8	78.6	127.5	76.2
PHENANTHRENE	225.0	335.9	252.1	363.9	360.8
PYRENE	428.9	808.1	616.8	771.9	536.3
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.0 U	0.2	0.2	0.3
1,2,4,5-TETRACHLOROBENZENE	0.60	0.1 U	0.3	0.8	0.5
2,4'-DDD	1.29	2.1	1.2	1.6	2.4
2,4'-DDE	0.24 U	0.1	0.1	0.1	0.1
2,4'-DDT	0.13 U	0.0	0.5	0.1	0.1
4,4'-DDD	0.79	1.2	2.8	0.7	1.0
4,4'-DDE	0.57	0.4	0.7	0.6	0.6
4,4'-DDT	0.68	0.3	3.2	1.0	0.8
ALDRIN	0.41	2.3	0.0 U	0.0	0.0 U
ALPHA-BHC	0.10 U	0.1	0.1	0.1	0.1
ALPHA-CHLORDANE	0.22	0.2	0.3	0.5	0.3
BETA-BHC	0.19	0.1	0.2	0.2	0.2
CHLORPYRIFOS	0.37	0.1	0.2 U	0.3 U	0.5
CIS-NONACHLOR	0.17	0.1	0.5	0.1	0.6
DELTA-BHC	0.07	0.0	0.0 U	0.0 U	0.1
DIELDRIN	0.09 U	0.0	0.4	0.1	0.0
ENDOSULFAN II	0.58	0.9	0.4	0.1	2.0
ENDRIN	0.10	0.1	0.1 U	0.1 U	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.2 U	0.1	0.1 U	0.1
GAMMA-CHLORDANE	0.10 U	0.2	0.1	0.2	0.0
HEPTACHLOR	0.16	0.1	0.1	0.1	0.2
HEPTACHLOR EPOXIDE	0.06	0.1	0.0 U	0.0 U	0.0
HEXACHLOROBENZENE	1.01	12.1	2.8	0.0	0.2
MIREX	0.07	0.1	0.0 U	0.0 U	0.1
OXYCHLORDANE	0.09	0.0	0.2	0.1	0.0
PCB-101/90	1.59	0.6	9.9	1.2	4.7
PCB-105	0.71	0.3	5.7	0.5	1.8
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.2 U
PCB-118	1.44	0.6	10.5	1.3	4.0
PCB-126	0.17	0.2	0.0	0.1 U	0.2 U
PCB-128	0.51	0.5	2.3	0.3	1.4
PCB-138/160	1.76 U	1.1	8.8	1.5	6.2
PCB-149/123	0.69	0.5	2.3	0.7	2.5
PCB-153/132	1.29	0.6	6.1	1.4	4.3
PCB-156	0.44	0.9	0.8	0.6	1.3
PCB-167	0.89	1.3	0.8	0.6	1.3
PCB-169	0.13	0.3 U	0.1	0.0 U	0.1
PCB-170/190	5.99	6.8	0.7	8.1	17.8
PCB-18/17	0.26	0.1	0.1 U	0.0 U	0.2
PCB-180	0.52	0.5	1.6	0.7	1.1

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	1.1	0.6	0.4	2.2
PCB-189	0.22	0.1	0.2	0.2	0.3
PCB-195/208	0.18 U	0.1	0.3	0.2	0.2
PCB-201/157/173	0.24 U	0.3	0.4	0.4	0.2
PCB-206	0.32	0.5	0.2	0.1	0.5
PCB-209	0.37	0.2	1.0	0.4	0.4
PCB-28	0.63	0.5	1.4	0.4	0.8
PCB-44	0.41 U	0.1	1.6	0.2	0.8
PCB-52	1.07	0.9	5.1	4.4	2.0
PCB-66	0.32	0.3	1.5	0.5	0.4
PCB-77	0.09	0.1	0.1	0.1	0.1
PCB-8/5	0.52	0.3	0.8	0.3	0.5
PCB-81	0.12	0.1	0.1	0.1	0.2
PENTACHLOROANISOLE	0.08 U	0.0	0.1	0.1	0.2
PENTACHLOROBENZENE	0.21	0.1	0.2 U	0.2 U	0.1
TRANS-NONACHLOR	0.15	0.0	0.2	0.2	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000136	0.000130	0.000223	0.000190
CADMIUM	0.000004	0.000003	0.000005	0.000008	0.000004 U
CHROMIUM	0.001099	0.000945	0.001020	0.001200	0.001337
COPPER	0.000238	0.000392	0.000283	0.000423	0.000307
IRON	0.328134	0.309946	0.329253	0.410125	0.387081
LEAD	0.000903	0.001240	0.001005	0.001650	0.001292
MANGANESE	0.008512	0.010238	0.011605	0.006935	0.007934
MERCURY	0.000003	0.000003	0.000003	0.000006	0.000004
NICKEL	0.000335	0.000359	0.000410	0.000370	0.000336
SILVER	0.000016	0.000004	0.000003	0.000060	0.000004
ZINC	0.001037	0.001340	0.001333	0.001238	0.001250

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	181.0 U	460.4	777.3	582.2
1,2,3,4,6,7,8,9-OCDF	15.0	9.6 U	12.1	29.1	13.2 U
1,2,3,4,6,7,8-HPCDD	49.9	30.9	28.8	69.0	59.8
1,2,3,4,6,7,8-HPCDF	11.9	5.6 U	7.7	17.5	18.1
1,2,3,4,7,8,9-HPCDF	1.2	0.5 U	0.3 U	0.6	0.9
1,2,3,4,7,8-HXCDD	1.2 U	0.6	0.3	0.7 U	0.8
1,2,3,4,7,8-HXCDF	1.0	0.5 U	0.4	0.7 U	0.5 U
1,2,3,6,7,8-HXCDD	2.5	2.5	1.1	2.9	2.7
1,2,3,6,7,8-HXCDF	1.1 U	0.5 U	0.3	1.0	0.8
1,2,3,7,8,9-HXCDD	1.5	0.9 U	0.6	0.7	1.8
1,2,3,7,8,9-HXCDF	1.1	0.5 U	0.3	0.7 U	0.5
1,2,3,7,8-PECDD	1.1	0.5 U	0.1	0.7	0.5
1,2,3,7,8-PECDF	1.0	0.5 U	0.2 U	0.7	0.3 U
2,3,4,6,7,8-HXCDF	1.3	0.6 U	0.4	0.8	1.3
2,3,4,7,8-PECDF	1.0	0.5 U	0.2	0.7	0.3 U
2,3,7,8-TCDD	0.2 U	0.1 U	0.1	0.1 U	0.2
2,3,7,8-TCDF	0.5	0.3 U	0.5	1.0	0.5 U
TOTAL DIOXINS	600.5	NR	540.9	1011.5	758.6
TOTAL FURANS	53.1	NR	42.0	90.8	49.0 U
TOTAL HPCDD	117.8	30.9	69.2	185.5	142.0
TOTAL HPCDF	22.4	14.1 U	17.6	39.1	19.9 U
TOTAL HXCDD	26.3	12.4 U	9.6	45.3	29.2
TOTAL HXCDF	9.0	1.0 U	8.1	13.5	20.2
TOTAL PECDD	2.7	0.8 U	0.1	1.5	5.1
TOTAL PECDF	2.9	0.5 U	1.0 U	7.4	3.6 U
TOTAL TCDD	1.6	1.0	1.6	2.5	0.2
TOTAL TCDF	1.5	0.8 U	1.1	3.7	2.1 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	6.5	3.1	4.5	4.9
1-METHYLNAPHTHALENE	7.2	7.7 U	8.7	14.3	10.1
1-METHYLPHENANTHRENE	43.8	71.6	85.1	81.2	88.6
2,3,5-TRIMETHYLNAPHTHALENE	9.2	22.1	14.6	14.4	15.6
2,6-DIMETHYLNAPHTHALENE	8.9	16.1	9.4	11.0	11.4
2-METHYLNAPHTHALENE	11.1 U	10.3 U	11.5	18.3	16.2
ACENAPHTHENE	15.2	31.7	33.2	32.4	21.5
ACENAPHTHYLENE	47.6	65.9	32.2	66.2	50.8
ANTHRACENE	157.7	481.9	260.0	184.1	272.1
BENZO(A)ANTHRACENE	263.0	694.8	385.9	409.6	357.3
BENZO(A)PYRENE	329.5	861.2	444.1	520.6	485.2
BENZO(B)FLUORANTHENE	331.3	758.4	376.7	526.6	444.6
BENZO(E)PYRENE	160.2	352.9	202.7	246.1	203.1
BENZO(G,H,I)PERYLENE	152.4	366.8	199.8	220.3	185.8
BENZO(K)FLUORANTHENE	105.8	246.6	138.4	141.4	147.1
C1-CHRYSENES	159.5	361.1	241.5	117.2	239.1
C1-DIBENZOTHIOPHENES	18.0	54.8	21.1	24.9	21.5
C1-FLUORANTHENES/PYRENES	262.1	718.7	362.8	203.8	397.2
C1-FLUORENES	35.6	70.5	63.3	66.6	57.6
C1-NAPHTHALENES	18.3	17.9 U	20.1	32.6	26.2
C1-PHENANTHRENES/ANTHRACENES	166.4	452.1	271.0	236.7	332.0
C2-CHRYSENES	71.5	137.4	104.5	58.4	130.4
C2-DIBENZOTHIOPHENES	23.5	75.8	21.3	28.7	28.5
C2-FLUORENES	39.6	88.1	56.9	62.5	66.1
C2-NAPHTHALENES	24.9	48.3	39.3	45.8	28.8
C2-PHENANTHRENES/ANTHRACENES	142.1 U	352.6	204.3	166.9	525.9
C3-CHRYSENES	4.5	7.4	14.0	1.5	15.0
C3-DIBENZOTHIOPHENES	16.2	53.2	12.6	15.7	17.5

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	71.9	41.7	45.3	82.8
C3-NAPHTHALENES	38.6	143.4	57.9	67.8	53.1
C3-PHENANTHRENES/ANTHRACENES	88.8 U	241.2	72.9	96.2	433.0
C4-CHRYSENES	8.3	24.3	1.8	4.2	19.8
C4-NAPHTHALENES	25.9	137.5	21.2	39.0	45.9
C4-PHENANTHRENES/ANTHRACENES	44.1	117.7	21.8	35.2	319.8
CHRYSENE	249.4	605.3	327.1	359.6	301.5
DIBENZO(A,H)ANTHRACENE	42.8	106.1	65.7	58.0	56.0
DIBENZOTHIOPHENE	14.3	41.1	19.4	22.9	15.0
FLUORANTHENE	503.8	1289.5	659.7	704.2	651.1
FLUORENE	34.3	67.8	60.2	62.2	54.1
INDENO(1,2,3-CD)PYRENE	181.1	433.9	232.2	278.1	257.9
NAPHTHALENE	19.4	25.0 U	20.9	30.2	32.1
PERYLENE	57.6	134.0	75.1	102.5	68.0
PHENANTHRENE	225.0	619.0	344.8	387.3	306.2
PYRENE	428.9	1082.0	591.1	613.8	611.8
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1 U	0.1	0.2	0.2
1,2,4,5-TETRACHLOROBENZENE	0.60	0.2 U	0.3	1.3	0.2
2,4'-DDD	1.29	2.6	1.7	1.8	3.1
2,4'-DDE	0.24 U	0.2	0.1	0.1	0.0
2,4'-DDT	0.13 U	0.0	0.1	0.0	0.0 U
4,4'-DDD	0.79	0.4	0.6	0.8	1.1
4,4'-DDE	0.57	0.8	0.3	0.9	0.6
4,4'-DDT	0.68	0.2 U	0.4	0.4	0.6
ALDRIN	0.41	0.0 U	2.3	0.1	0.0 U
ALPHA-BHC	0.10 U	0.1	0.1	0.1	0.1
ALPHA-CHLORDANE	0.22	0.2	0.1	0.3	0.2
BETA-BHC	0.19	0.1	0.2	0.1 U	0.1
CHLORPYRIFOS	0.37	0.2	0.1	0.3 U	0.1
CIS-NONACHLOR	0.17	0.1	0.1	0.2	0.1
DELTA-BHC	0.07	0.2	0.0	0.0	0.2
DIELDRIN	0.09 U	0.1 U	0.1	0.0	0.0 U
ENDOSULFAN II	0.58	0.9	0.2	0.4	2.2
ENDRIN	0.10	0.1 U	0.0 U	0.1	0.0 U
GAMMA-BHC (LINDANE)	0.21	0.4 U	0.1	0.1	0.1
GAMMA-CHLORDANE	0.10 U	0.1	0.0 U	0.1	0.0 U
HEPTACHLOR	0.16	0.2	0.1	0.1	0.1 U
HEPTACHLOR EPOXIDE	0.06	0.0	0.0 U	0.0 U	0.0
HEXACHLOROBENZENE	1.01	0.0	0.0 U	0.0	0.0
MIREX	0.07	0.0	0.1	0.0	0.1
OXYCHLORDANE	0.09	0.0	0.2	0.2	0.2
PCB-101/90	1.59	0.4 U	0.4	1.1	1.4
PCB-105	0.71	0.2	0.2	0.6	0.5
PCB-114	0.20 U	0.1 U	0.1 U	0.1 U	0.2 U
PCB-118	1.44	0.2 U	0.7	1.3	1.2
PCB-126	0.17	0.0	0.1	0.1 U	0.1 U
PCB-128	0.51	0.8	0.3	0.4	0.6
PCB-138/160	1.76 U	0.7 U	0.7	1.2	2.0
PCB-149/123	0.69	0.3 U	0.3	0.7	1.4
PCB-153/132	1.29	0.3 U	0.4	1.2	1.8
PCB-156	0.44	0.1 U	0.2	0.5	0.2 U
PCB-167	0.89	1.6	0.4	0.8	3.3
PCB-169	0.13	0.0	0.1 U	0.0 U	0.0
PCB-170/190	5.99	6.4	5.2	7.4	23.4
PCB-18/17	0.26	0.0 U	0.4	0.4	0.0 U
PCB-180	0.52	0.2 U	0.4	0.7	0.6

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	0.1 U	0.2	0.4	0.4
PCB-189	0.22	0.1	0.1	0.2	0.2
PCB-195/208	0.18 U	0.1	0.2	0.2	0.4
PCB-201/157/173	0.24 U	0.1	0.3	0.4	0.3
PCB-206	0.32	0.5	0.1	0.2	0.4
PCB-209	0.37	0.2	0.2	0.6	0.4
PCB-28	0.63	0.7	0.6	0.2	0.6
PCB-44	0.41 U	0.1 U	0.1	0.3	0.3
PCB-52	1.07	0.2	0.4	0.7	0.7
PCB-66	0.32	0.4	0.1	0.3	0.0
PCB-77	0.09	0.1	0.1	0.0	0.1
PCB-8/5	0.52	0.5	1.1	0.7	0.3
PCB-81	0.12	0.0	0.1	0.1	0.0
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.1 U	0.1
PENTACHLOROBENZENE	0.21	0.1	0.1	0.2 U	0.0
TRANS-NONACHLOR	0.15	0.0 U	0.1	0.2	0.2
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000135	0.000173	0.000256	0.000169
CADMIUM	0.000004	0.000004	0.000008	0.000010	0.000003 U
CHROMIUM	0.001099	0.001144	0.001265	0.001487	0.001474
COPPER	0.000238	0.000285	0.000338	0.000342	0.000268
IRON	0.328134	0.329820	0.371135	0.416032	0.410434
LEAD	0.000903	0.000910	0.000800	0.001197	0.001019
MANGANESE	0.008512	0.007849	0.008923	0.008275	0.007397
MERCURY	0.000003	0.000009	0.000003	0.000004	0.000003
NICKEL	0.000335	0.000378	0.000470	0.000391	0.000412
SILVER	0.000016	0.000003	0.000006	0.000062	0.000004
ZINC	0.001037	0.001139	0.001443	0.001196	0.001193

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	416.0	206.1 U	602.3	189.9	190.5
1,2,3,4,6,7,8,9-OCDF	15.0	10.5 U	25.0	8.9	4.8 U
1,2,3,4,6,7,8-HPCDD	49.9	48.8	54.5	22.8	23.2
1,2,3,4,6,7,8-HPCDF	11.9	6.2 U	17.2	6.1	6.5
1,2,3,4,7,8,9-HPCDF	1.2	1.7 U	1.8 U	2.3	2.0
1,2,3,4,7,8-HXCDD	1.2 U	1.7 U	0.6	2.3	2.1
1,2,3,4,7,8-HXCDF	1.0	1.7 U	0.6	2.3	2.0 U
1,2,3,6,7,8-HXCDD	2.5	1.7 U	2.1	2.6	2.3
1,2,3,6,7,8-HXCDF	1.1 U	1.7 U	1.5	2.3	2.0
1,2,3,7,8,9-HXCDD	1.5	1.7 U	1.1 U	2.6	2.2
1,2,3,7,8,9-HXCDF	1.1	1.7 U	1.9 U	2.2	2.0 U
1,2,3,7,8-PECDD	1.1	1.7 U	1.1	2.2	2.0
1,2,3,7,8-PECDF	1.0	1.7 U	1.4 U	2.3 U	1.9 U
2,3,4,6,7,8-HXCDF	1.3	1.7 U	1.4 U	2.2	2.1
2,3,4,7,8-PECDF	1.0	1.7 U	1.2	2.3 U	2.0 U
2,3,7,8-TCDD	0.2 U	0.3 U	0.4 U	0.5	0.4 U
2,3,7,8-TCDF	0.5	0.3 U	0.5	0.7	0.3 U
TOTAL DIOXINS	600.5	NR	771.4	249.8	251.9
TOTAL FURANS	53.1	NR	69.4	24.1	14.4 U
TOTAL HPCDD	117.8	70.2	131.0	50.7	53.7
TOTAL HPCDF	22.4	12.8 U	36.1	11.8	6.2 U
TOTAL HXCDD	26.3	5.4 U	32.0	9.8	8.8
TOTAL HXCDF	9.0	1.7 U	7.1	7.0	4.8
TOTAL PECDD	2.7	1.7 U	1.1	2.2	2.0
TOTAL PECDF	2.9	1.7 U	1.3	2.5	1.5 U
TOTAL TCDD	1.6	0.8 U	6.0	2.7	0.3
TOTAL TCDF	1.5	0.3 U	0.5	1.4	0.4 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	3.7	4.0 U	2.2	2.2	2.4
1-METHYLNAPHTHALENE	7.2	1.4 U	2.2	3.5	2.8
1-METHYLPHENANTHRENE	43.8	5.8	6.9	5.8	5.6
2,3,5-TRIMETHYLNAPHTHALENE	9.2	1.7	1.6	1.9	2.4
2,6-DIMETHYLNAPHTHALENE	8.9	4.2	4.0	5.6	7.3
2-METHYLNAPHTHALENE	11.1 U	2.2 U	3.4	5.5	4.8
ACENAPHTHENE	15.2	1.5	2.6	1.9	2.9
ACENAPHTHYLENE	47.6	13.9	10.9	12.0	10.0
ANTHRACENE	157.7	24.6	20.4	15.7	23.5
BENZO(A)ANTHRACENE	263.0	45.3	25.3	27.4	35.3
BENZO(A)PYRENE	329.5	67.2	42.2	37.4	52.8
BENZO(B)FLUORANTHENE	331.3	66.7	48.2	44.7	59.3
BENZO(E)PYRENE	160.2	34.4	25.1	23.0	27.7
BENZO(G,H,I)PERYLENE	152.4	35.7	25.6	15.2	24.6
BENZO(K)FLUORANTHENE	105.8	25.9	14.1	12.9	15.7
C1-CHRYSENES	159.5	30.8	20.5	18.9	22.3
C1-DIBENZOTHIOPHENES	18.0	5.0	2.8	2.3	2.6
C1-FLUORANTHENES/PYRENES	262.1	53.8	30.7	27.0	34.4
C1-FLUORENES	35.6	2.5 U	4.9	8.7	5.8
C1-NAPHTHALENES	18.3	3.5 U	5.5	9.0	7.6
C1-PHENANTHRENES/ANTHRACENES	166.4	31.1	30.5	16.8	20.7
C2-CHRYSENES	71.5	17.1	10.6	8.2	9.7
C2-DIBENZOTHIOPHENES	23.5	7.8	3.4	3.9	3.2
C2-FLUORENES	39.6	6.6	8.1	16.5	10.0
C2-NAPHTHALENES	24.9	5.6 U	7.8	15.8	8.7
C2-PHENANTHRENES/ANTHRACENES	142.1 U	31.6	15.2	15.7	17.9
C3-CHRYSENES	4.5	1.6	1.5	0.9	0.6
C3-DIBENZOTHIOPHENES	16.2	6.3	2.4	3.2	2.1

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	34.2	8.9	12.0	11.4	13.1
C3-NAPHTHALENES	38.6	12.4	6.0	11.4	6.7
C3-PHENANTHRENES/ANTHRACENES	88.8 U	25.1	10.8	8.0	9.9
C4-CHRYSENES	8.3	3.5	1.2	0.2	7.1
C4-NAPHTHALENES	25.9	8.2	1.4	5.5	4.5
C4-PHENANTHRENES/ANTHRACENES	44.1	16.8	4.2	4.0	3.6
CHRYSENE	249.4	45.8	33.5	32.8	44.6
DIBENZO(A,H)ANTHRACENE	42.8	8.9	6.2	4.6	6.7
DIBENZOTHIOPHENE	14.3	2.9	1.9	1.7	1.9
FLUORANTHENE	503.8	86.1	64.1	54.4	76.7
FLUORENE	34.3	4.4	5.6	4.6	6.1
INDENO(1,2,3-CD)PYRENE	181.1	41.6	27.9	25.3	34.7
NAPHTHALENE	19.4	5.2 U	6.7	8.6	7.7
PERYLENE	57.6	14.4	11.6	15.2	13.9
PHENANTHRENE	225.0	31.9	26.8	21.7	30.4
PYRENE	428.9	75.0	59.7	50.3	67.8
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.18 U	0.1 U	0.1	0.3	0.8
1,2,4,5-TETRACHLOROBENZENE	0.60	0.5 U	0.1	1.3 U	1.6
2,4'-DDD	1.29	0.2	0.2	0.2	0.3
2,4'-DDE	0.24 U	0.4	0.7	0.5	0.8
2,4'-DDT	0.13 U	0.0	0.2	0.2	0.1 U
4,4'-DDD	0.79	0.6	0.5	0.8	0.4
4,4'-DDE	0.57	0.6	0.5	0.7	0.4
4,4'-DDT	0.68	0.1 U	0.2	0.1	0.5
ALDRIN	0.41	0.1	0.7	0.1	0.1 U
ALPHA-BHC	0.10 U	0.1	0.2	0.1	0.1
ALPHA-CHLORDANE	0.22	0.2	0.2	0.3	0.3
BETA-BHC	0.19	0.3	0.3	0.4 U	0.3 U
CHLORPYRIFOS	0.37	0.2	0.3	1.0 U	0.3
CIS-NONACHLOR	0.17	0.0	0.1	0.1	0.2
DELTA-BHC	0.07	0.1	0.1	0.1	0.1 U
DIELDRIN	0.09 U	0.1 U	0.1 U	0.1 U	0.0 U
ENDOSULFAN II	0.58	0.2	0.2	0.2	0.3
ENDRIN	0.10	0.2	0.2 U	0.2 U	0.1 U
GAMMA-BHC (LINDANE)	0.21	0.5 U	0.1	0.4	0.3
GAMMA-CHLORDANE	0.10 U	0.3	0.1	0.1	0.0
HEPTACHLOR	0.16	0.2	0.2 U	0.2	0.2 U
HEPTACHLOR EPOXIDE	0.06	0.1	0.0 U	0.1 U	0.1
HEXACHLOROBENZENE	1.01	0.1	0.1 U	0.1 U	0.1
MIREX	0.07	0.0 U	0.0 U	0.1	0.1 U
OXYCHLORDANE	0.09	0.0 U	0.3	0.0 U	0.1 U
PCB-101/90	1.59	0.4 U	1.2	0.6	1.5
PCB-105	0.71	0.3	0.2	0.1	0.1
PCB-114	0.20 U	0.3 U	0.2 U	0.3 U	0.6 U
PCB-118	1.44	0.3 U	0.5	0.3	0.4
PCB-126	0.17	0.2	0.2	0.3 U	0.3 U
PCB-128	0.51	0.3	0.1	0.1	0.2
PCB-138/160	1.76 U	0.6 U	0.5	0.3 U	1.0 U
PCB-149/123	0.69	0.2 U	0.2	0.3	0.7
PCB-153/132	1.29	0.4 U	0.6	0.4	1.1
PCB-156	0.44	0.2	0.2	0.1	0.6 U
PCB-167	0.89	0.2	0.2	0.3	0.4
PCB-169	0.13	0.2	0.2 U	0.3 U	0.2
PCB-170/190	5.99	0.6 U	2.5	2.2	2.0
PCB-18/17	0.26	0.2 U	0.5	0.3	0.2
PCB-180	0.52	0.2 U	0.2	0.2	0.6 U

TABLE G - 1

AVERAGE CHEMICAL CONCENTRATION IN SEDIMENT
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.51	0.1 U	0.3	0.1	0.4 U
PCB-189	0.22	0.3	0.2	0.3 U	0.6 U
PCB-195/208	0.18 U	0.1	0.1	0.1	0.2 U
PCB-201/157/173	0.24 U	0.1	0.1	0.1	0.6 U
PCB-206	0.32	0.2	0.1	0.2	0.3
PCB-209	0.37	0.2	0.2	0.8	0.1
PCB-28	0.63	1.0	0.9	0.3 U	0.4
PCB-44	0.41 U	0.1 U	0.2	0.2	0.4
PCB-52	1.07	0.5	0.3	0.8	0.2
PCB-66	0.32	0.3	0.3	0.3	0.1
PCB-77	0.09	0.1	0.1	0.0	0.2
PCB-8/5	0.52	0.7	0.5	0.4	0.7
PCB-81	0.12	0.1	0.2	0.3	0.3 U
PENTACHLOROANISOLE	0.08 U	0.1	0.1	0.1 U	0.1 U
PENTACHLOROBENZENE	0.21	0.2	0.2	0.3 U	1.1
TRANS-NONACHLOR	0.15	0.1	0.3	0.3	0.1
Inorganics (MG/KG)					
ALUMINUM	1.0	1.0	1.0	1.0	1.0
ARSENIC	0.000150	0.000051	0.000070	0.000139	0.000125
CADMIUM	0.000004	0.000001	0.000002	0.000003	0.000002 U
CHROMIUM	0.001099	0.000793	0.001030	0.000861	0.001165
COPPER	0.000238	0.000089	0.000118	0.000094	0.000095
IRON	0.328134	0.220461	0.257755	0.288482	0.283800
LEAD	0.000903	0.000477	0.000403	0.000615	0.000547
MANGANESE	0.008512	0.008116	0.010393	0.006835	0.005127
MERCURY	0.000003	0.000001	0.000002	0.000002	0.000001
NICKEL	0.000335	0.000289	0.000343	0.000274	0.000311
SILVER	0.000016	0.000001	0.000002	0.000040	0.000001 U
ZINC	0.001037	0.000541	0.000633	0.000418	0.000709

Footnotes:

1 Normalized concentrations were determined for organics by dividing sediment concentration by percent TOC. Normalized concentrations were determined for inorganics by dividing each inorganic parameter by the aluminum concentration.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.19 U	0.35	0.33	0.75
1-METHYLNAPHTHALENE	1.0	0.40 U	0.62	1.06	1.69
1-METHYLPHENANTHRENE	0.9	0.69	0.75	0.92	2.57
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.30	0.51	0.67	1.47
2,6-DIMETHYLNAPHTHALENE	0.7	0.57	0.61	0.79	0.97
2-METHYLNAPHTHALENE	1.5	0.72 U	1.00	1.67	1.32
ACENAPHTHENE	0.8	1.90	1.07	1.65	1.61
ACENAPHTHYLENE	2.5	1.57	2.08	3.62	3.26
ANTHRACENE	4.8	3.43	3.73	5.47	6.19
BENZO(A)ANTHRACENE	2.6	2.06	1.82	5.68	3.60
BENZO(A)PYRENE	2.3	1.25	1.40	4.47	2.25
BENZO(B)FLUORANTHENE	4.2	2.61	3.03	7.09	2.81
BENZO(E)PYRENE	4.1	2.90	2.56	7.51	3.68
BENZO(G,H,I)PERYLENE	1.6	1.06	1.46	4.02	1.30
BENZO(K)FLUORANTHENE	1.4	0.62	0.70	2.71	1.15
C1-CHRYSENES	2.8	2.25	1.94	5.34	2.98
C1-DIBENZOTHIOPHENES	0.6	0.40	0.63	0.60	0.75
C1-FLUORANTHENES/PYRENES	5.8	6.15	3.15	8.49	9.90
C1-FLUORENES	3.5	4.36	2.28	4.78	8.25
C1-NAPHTHALENES	2.5	1.12 U	1.62	2.74	3.01
C1-PHENANTHRENES/ANTHRACENES	4.0	3.45	3.09	4.26	8.87
C2-CHRYSENES	3.0	1.82	1.11	3.45	1.41
C2-DIBENZOTHIOPHENES	1.7	1.27	1.62	1.02	1.45
C2-FLUORENES	3.8	3.26	1.81	4.36	7.05
C2-NAPHTHALENES	2.4	1.23 U	1.30	2.70	4.02
C2-PHENANTHRENES/ANTHRACENES	5.6	4.82	4.10	4.79	8.12
C3-CHRYSENES	0.2	0.24	0.12	0.03	0.02
C3-DIBENZOTHIOPHENES	1.8	1.51	1.17	1.43	1.23
C3-FLUORENES	4.6	4.46	1.02	5.83	3.75

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.38	1.80	3.25	4.44
C3-PHENANTHRENES/ANTHRACENES	6.0	3.43	7.84	3.41	4.92
C4-CHRYSENES	0.1	0.13	0.08	0.02	0.46
C4-NAPHTHALENES	3.2	1.42	0.91	3.39	3.34
C4-PHENANTHRENES/ANTHRACENES	3.1	1.91	3.11	2.04	1.97
CHRYSENE	5.3	3.35	3.54	7.57	5.83
DIBENZO(A,H)ANTHRACENE	0.2	0.24	0.26	0.49	0.13
DIBENZOTHIOPHENE	0.2	0.08 U	0.24	0.25	0.38
FLUORANTHENE	8.9	5.40	6.34	11.23	12.25
FLUORENE	1.3	0.42	1.46	1.36	1.99
HIGH MOLECULAR WEIGHT PAHS	27.4	18.87	18.94	42.03	38.63
INDENO(1,2,3-CD)PYRENE	1.1	0.72	1.18	2.65	0.82
LOW MOLECULAR WEIGHT PAHS	15.5	10.22	13.46	18.45	21.91
NAPHTHALENE	2.0	1.28 U	0.99	1.78	1.77
PERYLENE	2.1	0.88	1.13	2.68	1.30
PHENANTHRENE	2.6	0.91 U	3.12	2.90	5.77
PYRENE	8.1	6.57	5.57	12.59	14.57
TOTAL PAHS	42.8	29.09	32.40	60.47	60.54
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.15	0.12	0.05	0.71
1,2,4,5-TETRACHLOROBENZENE	0.2	0.20 U	0.02 U	0.12 U	0.07 U
2,4'-DDD	0.3	0.52	0.28	0.62	0.26
2,4'-DDE	0.1	0.09	0.29	0.07	0.12
2,4'-DDT	0.2	0.60	0.21	0.44	0.22
4,4'-DDD	0.6	1.43	0.44	1.20	0.50
4,4'-DDE	1.2	2.06	2.07	2.66	1.16
4,4'-DDT	0.4	0.42 U	0.08	1.46	0.54
ALDRIN	0.04	0.02 U	0.08	0.02	0.01 U
ALPHA-BHC	0.1	0.10	0.15	0.06	0.11
ALPHA-CHLORDANE	0.3	0.85	0.22	0.33	0.22
BETA-BHC	0.2	0.01 U	0.10	0.25 U	0.04 U
CHLORPYRIFOS	0.3	0.13 U	0.06 U	0.28 U	0.10
CIS-NONACHLOR	0.2	0.30	0.19	0.15	0.12
DELTA-BHC	0.01	0.10	0.00 U	0.02 U	0.01 U
DIELDRIN	0.2	0.35	0.10	0.29	0.25
ENDOSULFAN II	0.1	0.04	0.13	0.03	0.01 U
ENDRIN	0.1	0.04 U	0.02 U	0.09 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.09 U	0.07	0.03	0.11
GAMMA-CHLORDANE	0.2	0.21	0.15	0.21	0.13
HEPTACHLOR	0.04	0.10	0.02	0.06	0.01 U
HEPTACHLOR EPOXIDE	0.1	0.02 U	0.11	0.03 U	0.08 U
HEXACHLOROBENZENE	0.1	0.06	0.06	0.05	0.03
MIREX	0.1	0.05	0.09	0.08 U	0.03 U
OXYCHLORDANE	0.03	0.09	0.05	0.04 U	0.06
PCB-101/90	1.3	1.28	0.34 U	1.37	0.83
PCB-105	0.5	0.69	0.23	0.54	0.22
PCB-114	0.1 U	0.05 U	0.02 U	0.12 U	0.05 U
PCB-118	1.1	1.09	0.32	1.19	0.63
PCB-126	0.1	0.02	0.07	0.12 U	0.00
PCB-128	0.3	0.32	0.08	0.31	0.13
PCB-138/160	1.6	0.99 U	0.58 U	1.70	0.81
PCB-149/123	0.8	0.34 U	0.19 U	1.38	0.75
PCB-153/132	2.1	1.06 U	0.54 U	2.14	1.75
PCB-156	0.2	0.21	0.12	0.10	0.11
PCB-167	0.2	0.18	0.03	0.20	0.04
PCB-169	0.1	0.01	0.05	0.01 U	0.01
PCB-170/190	0.1	0.05 U	0.15	0.04 U	0.03
PCB-18/17	0.2	0.50	0.37	0.31 U	0.18

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.49 U	0.46 U	0.73	0.60
PCB-187	0.7	0.46 U	0.23 U	1.04	0.53
PCB-189	0.1	0.05 U	0.02 U	0.12 U	0.05 U
PCB-195/208	0.1	0.04 U	0.03	0.10 U	0.00 U
PCB-201/157/173	0.1	0.12 U	0.21	0.04	0.05 U
PCB-206	0.1	0.05 U	0.02 U	0.10 U	0.02 U
PCB-209	0.1	0.06 U	0.07	0.14 U	0.01 U
PCB-28	0.3	0.27	0.25	0.17	0.32
PCB-44	0.2	0.17	0.68	0.11	0.10
PCB-52	0.7	0.74	0.85	0.41	0.46
PCB-66	0.2	0.19	0.19	0.20	0.12
PCB-77	0.1	0.04	0.07	0.03	0.08
PCB-8/5	0.6	0.10	0.31	0.86	0.40
PCB-81	0.1	0.01	0.16	0.12 U	0.08
PENTACHLOROANISOLE	0.2	0.09	0.18	0.13 U	0.32
PENTACHLOROBENZENE	0.1	0.56	0.09 U	0.11 U	0.13
TOTAL DDT	2.9	5.12	3.37	6.46	2.80
TOTAL PCB CONGENERS	21.8	17.12	11.42	22.92	14.25
TRANS-NONACHLOR	0.3	0.42	0.15	0.26	0.20
Inorganics (MG/KG)					
ALUMINUM	299.5	171.00	286.50	349.50	223.66
ARSENIC	7.6	6.25	9.40	5.97	8.76
CADMIUM	1.3	2.23	1.45	1.61	1.01
CHROMIUM	3.2	1.88	1.80	3.49	3.13
COPPER	9.9	7.05	7.45	19.13	5.97
IRON	552.0	361.25	509.50	704.50	432.27
LEAD	3.2	4.15	3.65	6.39	3.26
MANGANESE	12.0	9.80	12.50	11.65	10.38
MERCURY	0.3	0.29	0.26	0.28	0.21
NICKEL	1.5	1.23	1.50	1.98 U	0.89 U
SILVER	0.1	0.04	0.05	0.16 U	0.05
ZINC	91.5	96.28	96.90	96.15	80.08

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.19 U	0.36	0.44	0.56
1-METHYLNAPHTHALENE	1.0	0.48 U	0.80	0.94	0.73
1-METHYLPHENANTHRENE	0.9	0.71	0.74	0.77	1.32
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.34	0.42	0.55	0.63
2,6-DIMETHYLNAPHTHALENE	0.7	0.61	0.58	0.65	0.66
2-METHYLNAPHTHALENE	1.5	0.85 U	1.32	1.36	1.13
ACENAPHTHENE	0.8	3.74	1.18	1.38	0.69
ACENAPHTHYLENE	2.5	1.56	1.91	2.62	2.25
ANTHRACENE	4.8	4.49	3.91	4.76	5.16
BENZO(A)ANTHRACENE	2.6	2.48	1.83	3.28	2.85
BENZO(A)PYRENE	2.3	1.72	1.63	2.15	2.99
BENZO(B)FLUORANTHENE	4.2	3.61	3.02	5.16	4.26
BENZO(E)PYRENE	4.1	2.83	2.57	5.20	3.87
BENZO(G,H,I)PERYLENE	1.6	1.39	1.52	2.38	1.81
BENZO(K)FLUORANTHENE	1.4	0.91	1.14	2.19	1.41
C1-CHRYSENES	2.8	1.90	1.80	3.98	2.17
C1-DIBENZOTHIOPHENES	0.6	0.51	0.54	0.46	0.47
C1-FLUORANTHENES/PYRENES	5.8	4.35	3.26	4.92	5.27
C1-FLUORENES	3.5	4.83	2.30	4.82	4.90
C1-NAPHTHALENES	2.5	1.33 U	2.12	2.30	1.86
C1-PHENANTHRENES/ANTHRACENES	4.0	3.70	2.67	2.99	4.19
C2-CHRYSENES	3.0	1.97	1.14	1.48	1.48
C2-DIBENZOTHIOPHENES	1.7	1.14	1.75	0.78	1.05
C2-FLUORENES	3.8	5.35	1.53	2.56	4.02
C2-NAPHTHALENES	2.4	1.43 U	1.82	2.46	1.67
C2-PHENANTHRENES/ANTHRACENES	5.6	4.63	3.17	4.14	4.26
C3-CHRYSENES	0.2	0.44	0.09	0.04	0.50
C3-DIBENZOTHIOPHENES	1.8	1.57	1.04	1.04	1.19
C3-FLUORENES	4.6	5.68	1.50	4.42	1.76

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	3.12	2.11	3.45	2.18
C3-PHENANTHRENES/ANTHRACENES	6.0	3.40	4.96	3.08	3.09
C4-CHRYSENES	0.1	0.18	0.16	0.04	0.01
C4-NAPHTHALENES	3.2	3.40	1.07	2.48	1.87
C4-PHENANTHRENES/ANTHRACENES	3.1	1.86	2.09	2.22	1.44
CHRYSENE	5.3	4.27	4.00	5.39	5.38
DIBENZO(A,H)ANTHRACENE	0.2	0.33	0.33	0.17	0.23
DIBENZOTHIOPHENE	0.2	0.16 U	0.26	0.20	0.35
FLUORANTHENE	8.9	8.52	7.69	8.74	11.73
FLUORENE	1.3	0.57	1.44	1.07	2.04
HIGH MOLECULAR WEIGHT PAHS	27.4	24.17	21.58	28.18	31.18
INDENO(1,2,3-CD)PYRENE	1.1	1.17	1.22	1.41	1.55
LOW MOLECULAR WEIGHT PAHS	15.5	14.69	14.95	15.18	18.76
NAPHTHALENE	2.0	1.55 U	1.42	1.63	1.35
PERYLENE	2.1	1.18	1.46	2.26	1.66
PHENANTHRENE	2.6	1.92 U	3.77	2.36	6.14
PYRENE	8.1	6.86	6.10	8.45	7.99
TOTAL PAHS	42.8	38.85	36.53	43.36	49.94
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.06 U	0.09	0.06	0.25
1,2,4,5-TETRACHLOROBENZENE	0.2	0.31 U	0.09	0.17 U	0.09 U
2,4'-DDD	0.3	0.38	0.08	0.42	0.16
2,4'-DDE	0.1	0.09	0.20	0.05	0.09
2,4'-DDT	0.2	0.59	0.21	0.42	0.19
4,4'-DDD	0.6	1.06	0.24	0.61	0.29
4,4'-DDE	1.2	1.70	0.88	1.77	0.89
4,4'-DDT	0.4	0.22 U	0.05	0.39	0.23
ALDRIN	0.04	0.02 U	0.19	0.04	0.01 U
ALPHA-BHC	0.1	0.09	0.09	0.04	0.08
ALPHA-CHLORDANE	0.3	0.86	0.54	0.22	0.17
BETA-BHC	0.2	0.02 U	0.28	0.22	0.04 U
CHLORPYRIFOS	0.3	0.16 U	0.08 U	0.34 U	0.17
CIS-NONACHLOR	0.2	0.36	0.29	0.21	0.12
DELTA-BHC	0.01	0.16	0.00 U	0.02 U	0.02
DIELDRIN	0.2	0.17	0.06	0.15	0.12
ENDOSULFAN II	0.1	0.16	0.03	0.05	0.01 U
ENDRIN	0.1	0.05 U	0.20	0.11 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.07 U	0.08	0.03	0.02 U
GAMMA-CHLORDANE	0.2	0.13	0.14	0.07	0.10
HEPTACHLOR	0.04	0.39	0.02	0.06	0.03
HEPTACHLOR EPOXIDE	0.1	0.02 U	0.17	0.04 U	0.09 U
HEXACHLOROBENZENE	0.1	0.11	0.06	0.06	0.03
MIREX	0.1	0.04 U	0.02 U	0.10 U	0.03 U
OXYCHLORDANE	0.03	0.09	0.01	0.04 U	0.10
PCB-101/90	1.3	1.81	0.52	1.63	0.72
PCB-105	0.5	0.99	0.42	0.62	0.23
PCB-114	0.1 U	0.07 U	0.03 U	0.14 U	0.05 U
PCB-118	1.1	1.56	0.62	1.42	0.57
PCB-126	0.1	0.02	0.08	0.14 U	0.00
PCB-128	0.3	0.58	0.22	0.38	0.15
PCB-138/160	1.6	1.51 U	1.19	2.21	1.09
PCB-149/123	0.8	0.62 U	0.48	1.57	0.72
PCB-153/132	2.1	1.62 U	0.71 U	3.07	1.75
PCB-156	0.2	0.27	0.25	0.12	0.09
PCB-167	0.2	0.28	0.18	0.19	0.07
PCB-169	0.1	0.01	0.06	0.04 U	0.01
PCB-170/190	0.1	0.08 U	0.12	0.04 U	0.03
PCB-18/17	0.2	0.67	0.15	0.26	0.12

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.64 U	0.53 U	0.75	0.74
PCB-187	0.7	0.67 U	0.28 U	1.25	0.52
PCB-189	0.1	0.07 U	0.03 U	0.14 U	0.05 U
PCB-195/208	0.1	0.06 U	0.03 U	0.12 U	0.00 U
PCB-201/157/173	0.1	0.12 U	0.18	0.11	0.05 U
PCB-206	0.1	0.06 U	0.03 U	0.12 U	0.02 U
PCB-209	0.1	0.08 U	0.05	0.16 U	0.01 U
PCB-28	0.3	0.45	0.14	0.21	0.21
PCB-44	0.2	0.08 U	0.25	0.12	0.07
PCB-52	0.7	0.79	0.43	0.48	0.25
PCB-66	0.2	0.21	0.37	0.23	0.09
PCB-77	0.1	0.03	0.07	0.10	0.00
PCB-8/5	0.6	0.17	0.27	1.36	1.06
PCB-81	0.1	0.01	0.12	0.14 U	0.04
PENTACHLOROANISOLE	0.2	0.14	0.16	0.18 U	0.35
PENTACHLOROBENZENE	0.1	0.58	0.10 U	0.13 U	0.10
TOTAL DDT	2.9	4.04	1.66	3.67	1.85
TOTAL PCB CONGENERS	21.8	24.06	12.64	28.88	15.28
TRANS-NONACHLOR	0.3	0.25	0.16	0.19	0.15
Inorganics (MG/KG)					
ALUMINUM	299.5	209.67	331.00	397.00	243.63
ARSENIC	7.6	7.07	9.70	6.06	9.18
CADMIUM	1.3	1.90	1.45	1.67	1.31
CHROMIUM	3.2	1.93	2.20	4.94	2.71
COPPER	9.9	6.93	7.55	15.16	18.37
IRON	552.0	514.00	629.00	708.33	475.99
LEAD	3.2	5.23	4.20	5.35	4.01
MANGANESE	12.0	7.93	12.55	12.00	10.97
MERCURY	0.3	0.29	0.29	0.28	0.23
NICKEL	1.5	1.33	1.80	3.93	1.70
SILVER	0.1	0.06	0.05	0.16 U	0.04
ZINC	91.5	96.50	85.05	96.03	81.86

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.12 U	0.43	0.42	0.49
1-METHYLNAPHTHALENE	1.0	0.33 U	0.92	0.84	0.66
1-METHYLPHENANTHRENE	0.9	0.52	0.61	0.61	1.09
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.28	0.51	0.58	0.47
2,6-DIMETHYLNAPHTHALENE	0.7	0.44	0.55	0.82	0.57
2-METHYLNAPHTHALENE	1.5	0.46 U	1.37	1.60	1.09
ACENAPHTHENE	0.8	2.19	1.30	1.21	0.40
ACENAPHTHYLENE	2.5	1.24	2.04	2.86	2.01
ANTHRACENE	4.8	3.46	4.41	5.71	4.04
BENZO(A)ANTHRACENE	2.6	1.43	1.76	4.29	1.71
BENZO(A)PYRENE	2.3	0.60	1.66	3.00	1.76
BENZO(B)FLUORANTHENE	4.2	2.00	3.84	7.32	3.11
BENZO(E)PYRENE	4.1	2.01	2.99	5.98	3.24
BENZO(G,H,I)PERYLENE	1.6	0.73	1.84	3.30	1.42
BENZO(K)FLUORANTHENE	1.4	0.40	0.94	2.81	0.87
C1-CHRYSENES	2.8	1.31	2.03	3.12	1.70
C1-DIBENZOTHIOPHENES	0.6	0.52	0.60	0.35	0.47
C1-FLUORANTHENES/PYRENES	5.8	3.59	3.35	4.96	4.15
C1-FLUORENES	3.5	3.25	3.37	3.78	3.38
C1-NAPHTHALENES	2.5	0.79 U	2.28	2.44	1.75
C1-PHENANTHRENES/ANTHRACENES	4.0	2.31	3.09	2.99	4.23
C2-CHRYSENES	3.0	1.11	1.40	1.54	1.50
C2-DIBENZOTHIOPHENES	1.7	1.00	1.46	0.64	1.03
C2-FLUORENES	3.8	3.71	1.86	3.23	2.69
C2-NAPHTHALENES	2.4	0.88 U	2.15	1.69	1.45
C2-PHENANTHRENES/ANTHRACENES	5.6	3.43	3.58	3.10	3.61
C3-CHRYSENES	0.2	0.26	0.14	0.06	0.36
C3-DIBENZOTHIOPHENES	1.8	1.22	0.86	0.91	1.09
C3-FLUORENES	4.6	6.78	2.67	3.20	2.31

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.17	3.12	1.50	1.79
C3-PHENANTHRENES/ANTHRACENES	6.0	2.67	9.74	2.56	3.23
C4-CHRYSENES	0.1	0.12	0.12	0.02	0.75 U
C4-NAPHTHALENES	3.2	1.72	1.68	1.43	1.48
C4-PHENANTHRENES/ANTHRACENES	3.1	1.41	2.15	1.26	1.39
CHRYSENE	5.3	2.96	4.46	6.90	4.74
DIBENZO(A,H)ANTHRACENE	0.2	0.12	0.37	0.54	0.18
DIBENZOTHIOPHENE	0.2	0.08 U	0.24	0.20	0.24
FLUORANTHENE	8.9	7.28	8.48	12.07	7.57
FLUORENE	1.3	0.32	1.39	1.08	1.41
HIGH MOLECULAR WEIGHT PAHS	27.4	17.99	23.41	37.01	20.23
INDENO(1,2,3-CD)PYRENE	1.1	0.47	1.44	2.68	1.07
LOW MOLECULAR WEIGHT PAHS	15.5	9.09	15.73	17.13	14.28
NAPHTHALENE	2.0	0.76 U	1.86	1.52	1.37
PERYLENE	2.1	0.58	1.35	2.27	1.11
PHENANTHRENE	2.6	0.67 U	3.37	3.15	3.95
PYRENE	8.1	5.60	6.69	10.20	4.27
TOTAL PAHS	42.8	27.09	39.15	54.13	34.51
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.17	0.28	0.09	0.43
1,2,4,5-TETRACHLOROBENZENE	0.2	0.14 U	0.13	0.23 U	0.11 U
2,4'-DDD	0.3	0.44	0.08	0.35	0.22
2,4'-DDE	0.1	0.09	0.04	0.05 U	0.10
2,4'-DDT	0.2	0.60	0.18	0.74	0.23
4,4'-DDD	0.6	1.28	0.44	0.89	0.43
4,4'-DDE	1.2	1.15	0.93	1.31	0.96
4,4'-DDT	0.4	0.20 U	0.10	0.66	0.29
ALDRIN	0.04	0.02 U	0.16	0.06 U	0.01 U
ALPHA-BHC	0.1	0.05	0.10	0.06 U	0.08
ALPHA-CHLORDANE	0.3	0.53	0.80	0.23	0.18
BETA-BHC	0.2	0.01 U	2.32	2.30	0.11
CHLORPYRIFOS	0.3	0.11 U	0.50	0.39 U	0.23
CIS-NONACHLOR	0.2	0.30	0.89	0.27	0.23
DELTA-BHC	0.01	0.17	0.02	0.02 U	0.03
DIELDRIN	0.2	0.09	0.05	0.11	0.13
ENDOSULFAN II	0.1	0.21	0.10	0.08	0.01 U
ENDRIN	0.1	0.10	0.20	0.12 U	0.02
GAMMA-BHC (LINDANE)	0.1	0.08 U	0.10	0.02	0.04
GAMMA-CHLORDANE	0.2	0.10	0.12	0.08	0.12
HEPTACHLOR	0.04	0.19	0.04	0.07 U	0.01 U
HEPTACHLOR EPOXIDE	0.1	0.03	0.10	0.05 U	0.01
HEXACHLOROBENZENE	0.1	0.07	0.12	0.08	0.04
MIREX	0.1	0.04	0.03 U	0.11 U	0.03 U
OXYCHLORDANE	0.03	0.01 U	0.04	0.05 U	0.05
PCB-101/90	1.3	2.24	0.86	3.46	1.94
PCB-105	0.5	1.28	0.56	1.74	0.37
PCB-114	0.1 U	0.05 U	0.04 U	0.17 U	0.04 U
PCB-118	1.1	1.43	0.75	1.79	0.87
PCB-126	0.1	0.01	0.02	0.17 U	0.00
PCB-128	0.3	0.59	0.33	0.65	0.31
PCB-138/160	1.6	4.74	3.37	3.97 U	3.92
PCB-149/123	0.8	2.94	1.46	6.09	3.11
PCB-153/132	2.1	5.74	2.60	11.53	6.39
PCB-156	0.2	0.46	0.21	0.22	0.22
PCB-167	0.2	0.39	0.41	0.41	0.14
PCB-169	0.1	0.01	0.03	0.08 U	0.01
PCB-170/190	0.1	0.18	0.13 U	0.22 U	0.18
PCB-18/17	0.2	0.51	0.12	0.44 U	0.11

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	2.17	1.22	3.06	1.67
PCB-187	0.7	3.40	0.92	5.55	2.39
PCB-189	0.1	0.06	0.07	0.07	0.04
PCB-195/208	0.1	0.01	0.17	0.10	0.02
PCB-201/157/173	0.1	0.16	0.21	0.32	0.15
PCB-206	0.1	0.02	0.02	0.11	0.02 U
PCB-209	0.1	0.05 U	0.04	0.18 U	0.01 U
PCB-28	0.3	0.39	0.26	0.33	0.11
PCB-44	0.2	0.15	0.39	0.19	0.14
PCB-52	0.7	0.58	0.92	1.09	0.73
PCB-66	0.2	0.15	0.24	0.15	0.07
PCB-77	0.1	0.02	0.04 U	0.11 U	0.01
PCB-8/5	0.6	0.14	0.42	0.99 U	0.64
PCB-81	0.1	0.03	0.06	0.17 U	0.00
PENTACHLOROANISOLE	0.2	0.07	0.19	0.19 U	0.34
PENTACHLOROBENZENE	0.1	0.26	0.12 U	0.18 U	0.07
TOTAL DDT	2.9	3.75	1.78	4.00	2.23
TOTAL PCB CONGENERS	21.8	47.54	26.63	71.11	39.76
TRANS-NONACHLOR	0.3	0.22	0.20	0.17	0.22
Inorganics (MG/KG)					
ALUMINUM	299.5	141.00	462.75	281.00	326.14
ARSENIC	7.6	6.15	9.53	5.75	9.91
CADMIUM	1.3	2.20	1.58	2.04	1.03
CHROMIUM	3.2	2.40	3.40	4.51	3.34
COPPER	9.9	17.55	13.60	64.95	33.88
IRON	552.0	366.50	833.50	986.00	629.09
LEAD	3.2	9.25	4.80	21.05	5.63
MANGANESE	12.0	7.05	14.78	11.50	12.49
MERCURY	0.3	0.34	0.30	0.44	0.22
NICKEL	1.5	2.40	3.43	8.09	2.85
SILVER	0.1	0.21	0.06	0.39	0.06
ZINC	91.5	156.50	103.65	227.00	85.65

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.48 U	0.30	0.44	0.46
1-METHYLNAPHTHALENE	1.0	0.98 U	0.62	0.90	0.46
1-METHYLPHENANTHRENE	0.9	0.89	0.63	0.73	0.52
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.65	0.43	0.62	0.42
2,6-DIMETHYLNAPHTHALENE	0.7	1.04	0.48	0.98	0.47
2-METHYLNAPHTHALENE	1.5	1.23 U	1.03	1.74	0.80
ACENAPHTHENE	0.8	4.00	0.85	1.47	0.28
ACENAPHTHYLENE	2.5	1.64	2.09	3.89	1.71
ANTHRACENE	4.8	3.57	4.28	7.29	3.43
BENZO(A)ANTHRACENE	2.6	1.88	1.81	4.00	1.56
BENZO(A)PYRENE	2.3	1.58	2.04	2.89	1.54
BENZO(B)FLUORANTHENE	4.2	2.75	3.85	6.54	2.92
BENZO(E)PYRENE	4.1	2.47	3.28	6.11	2.86
BENZO(G,H,I)PERYLENE	1.6	1.09	2.13	3.64	1.19
BENZO(K)FLUORANTHENE	1.4	0.74	1.36	2.38	0.78
C1-CHRYSENES	2.8	1.88	2.24	3.05	1.21
C1-DIBENZOTHIOPHENES	0.6	0.75	0.43	0.51	0.40
C1-FLUORANTHENES/PYRENES	5.8	3.73	3.49	5.64	3.48
C1-FLUORENES	3.5	8.02	1.89	4.89	1.95
C1-NAPHTHALENES	2.5	2.20 U	1.65	2.63	1.27
C1-PHENANTHRENES/ANTHRACENES	4.0	4.09	2.70	4.07	2.58
C2-CHRYSENES	3.0	3.64	0.81	1.81	1.36
C2-DIBENZOTHIOPHENES	1.7	1.41	1.30	0.65	0.99
C2-FLUORENES	3.8	9.88	1.67	4.46	2.20
C2-NAPHTHALENES	2.4	2.27 U	1.40	2.05	1.19
C2-PHENANTHRENES/ANTHRACENES	5.6	4.51	2.80	4.39	2.93
C3-CHRYSENES	0.2	0.34	0.07	0.01	0.60 U
C3-DIBENZOTHIOPHENES	1.8	1.75	1.26	0.89	0.98
C3-FLUORENES	4.6	18.31	2.09	5.32	1.54

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	5.07	1.98	1.94	1.39
C3-PHENANTHRENES/ANTHRACENES	6.0	3.41	2.69	3.03	2.72
C4-CHRYSENES	0.1	0.15	0.11	0.41	0.01
C4-NAPHTHALENES	3.2	4.12	1.16	1.64	1.42
C4-PHENANTHRENES/ANTHRACENES	3.1	2.01	1.55	1.70	0.96
CHRYSENE	5.3	3.48	4.06	5.86	3.96
DIBENZO(A,H)ANTHRACENE	0.2	0.29	0.37	0.52	0.15
DIBENZOTHIOPHENE	0.2	0.20 U	0.19	0.20	0.17
FLUORANTHENE	8.9	5.63	7.07	11.18	8.21
FLUORENE	1.3	0.76	1.18	1.32	1.23
HIGH MOLECULAR WEIGHT PAHS	27.4	18.17	21.62	34.73	18.23
INDENO(1,2,3-CD)PYRENE	1.1	0.76	1.78	2.69	0.95
LOW MOLECULAR WEIGHT PAHS	15.5	14.03	13.52	20.54	11.39
NAPHTHALENE	2.0	1.90 U	1.26	1.84	0.90
PERYLENE	2.1	0.91	2.03	2.73	1.05
PHENANTHRENE	2.6	0.93 U	2.82	3.00	3.04
PYRENE	8.1	5.30	6.27	10.29	2.79 U
TOTAL PAHS	42.8	32.21	35.13	55.27	29.62
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.23	0.11	0.14	0.54
1,2,4,5-TETRACHLOROBENZENE	0.2	0.17 U	0.05 U	0.71	0.03 U
2,4'-DDD	0.3	0.59	0.19	0.54	0.28
2,4'-DDE	0.1	0.03 U	0.01	0.07 U	0.06
2,4'-DDT	0.2	1.21	0.33	0.39	0.19
4,4'-DDD	0.6	1.49	0.36	1.07	0.36
4,4'-DDE	1.2	1.65	1.01	1.96	0.98
4,4'-DDT	0.4	0.31 U	0.12	0.71	0.26
ALDRIN	0.04	0.03 U	0.07	0.08 U	0.01 U
ALPHA-BHC	0.1	0.08	0.09	0.09	0.11
ALPHA-CHLORDANE	0.3	0.85	0.10	0.24	0.20
BETA-BHC	0.2	0.02 U	1.01	0.46	0.09
CHLORPYRIFOS	0.3	0.20 U	0.10 U	0.54 U	0.38
CIS-NONACHLOR	0.2	0.59	0.10	0.26	0.12
DELTA-BHC	0.01	0.52	0.01 U	0.03 U	0.08
DIELDRIN	0.2	0.21	0.08	0.13	0.10
ENDOSULFAN II	0.1	0.20	0.07	0.19	0.01 U
ENDRIN	0.1	0.06 U	0.03 U	0.17 U	0.34
GAMMA-BHC (LINDANE)	0.1	0.09 U	0.06	0.05	0.03
GAMMA-CHLORDANE	0.2	0.14	0.15	0.10	0.12
HEPTACHLOR	0.04	0.32	0.04	0.09 U	0.01 U
HEPTACHLOR EPOXIDE	0.1	0.02 U	0.01 U	0.07 U	0.03
HEXACHLOROBENZENE	0.1	0.06	0.04	0.02	0.13
MIREX	0.1	0.10	0.03 U	0.15 U	0.02 U
OXYCHLORDANE	0.03	0.15	0.11	0.07 U	0.04
PCB-101/90	1.3	2.84	0.42 U	3.54	0.89
PCB-105	0.5	1.71	0.38	1.36	0.36
PCB-114	0.1 U	0.08 U	0.04 U	0.23 U	0.04 U
PCB-118	1.1	2.13	0.61	2.36	0.50
PCB-126	0.1	0.02	0.13	0.23 U	0.00
PCB-128	0.3	0.69	0.19	0.61	0.17
PCB-138/160	1.6	6.04	1.07 U	6.79	1.70
PCB-149/123	0.8	3.20	0.44 U	5.00	1.25
PCB-153/132	2.1	7.82	1.24 U	10.00	2.95
PCB-156	0.2	0.71	0.20	0.34	0.13
PCB-167	0.2	0.50	0.17	0.18	0.09
PCB-169	0.1	0.08 U	0.13	0.23 U	0.02
PCB-170/190	0.1	0.20 U	0.11	0.46	0.05
PCB-18/17	0.2	0.35 U	0.36	0.59 U	0.03

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	1.33 U	0.62 U	2.82	1.07
PCB-187	0.7	4.44	0.56 U	5.00	1.25
PCB-189	0.1	0.08 U	0.04 U	0.04	0.04 U
PCB-195/208	0.1	0.07 U	0.03 U	0.20 U	0.02
PCB-201/157/173	0.1	0.22 U	0.12	0.50	0.09
PCB-206	0.1	0.07 U	0.04 U	0.20 U	0.01 U
PCB-209	0.1	0.10 U	0.05	0.25 U	0.06
PCB-28	0.3	0.55	0.31	0.46	0.17
PCB-44	0.2	0.10 U	0.34	0.30	0.11
PCB-52	0.7	0.94	0.85	2.00	0.58
PCB-66	0.2	0.21	0.11	0.36	0.07
PCB-77	0.1	0.13	0.04	0.23 U	0.00
PCB-8/5	0.6	0.15	0.15	2.68	0.73
PCB-81	0.1	0.01	0.21	0.23 U	0.00
PENTACHLOROANISOLE	0.2	0.12	0.16	0.61	0.26
PENTACHLOROBENZENE	0.1	0.36	0.04 U	0.71	0.18
TOTAL DDT	2.9	5.28	2.02	4.75	2.12
TOTAL PCB CONGENERS	21.8	59.51	14.87	79.93	21.43
TRANS-NONACHLOR	0.3	0.25	0.11	0.28	0.15
Inorganics (MG/KG)					
ALUMINUM	299.5	195.00	348.00	507.00	275.45
ARSENIC	7.6	7.50	9.50	7.60	9.81
CADMIUM	1.3	2.40	1.90	1.81	1.11
CHROMIUM	3.2	2.20	2.50	4.62	5.82
COPPER	9.9	19.80	27.90	25.70	18.33
IRON	552.0	465.00	651.00	1057.00	561.96
LEAD	3.2	7.60	7.60	11.40	6.54
MANGANESE	12.0	8.60	13.00	13.30	12.13
MERCURY	0.3	0.44	0.48	0.44	0.31
NICKEL	1.5	2.60	3.20	2.48 U	2.20
SILVER	0.1	0.15	0.18	0.50	0.08
ZINC	91.5	154.00	151.00	150.00	93.67

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.16 U	0.27	0.37	0.56
1-METHYLNAPHTHALENE	1.0	0.37 U	0.62	0.80	0.52
1-METHYLPHENANTHRENE	0.9	0.54	0.54	0.85	0.94
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.32	0.41	0.45	0.43
2,6-DIMETHYLNAPHTHALENE	0.7	0.44	0.42	0.66	0.42
2-METHYLNAPHTHALENE	1.5	0.48 U	0.91	1.45	0.84
ACENAPHTHENE	0.8	2.08	0.98	1.65	0.33
ACENAPHTHYLENE	2.5	1.15	1.63	2.70	1.76
ANTHRACENE	4.8	2.15	3.04	6.48	3.43
BENZO(A)ANTHRACENE	2.6	0.95	1.13	10.77	1.40
BENZO(A)PYRENE	2.3	0.68	0.95	11.60	1.28
BENZO(B)FLUORANTHENE	4.2	1.40	2.12	15.27	2.51
BENZO(E)PYRENE	4.1	1.47	2.04	9.48	2.53
BENZO(G,H,I)PERYLENE	1.6	0.67	1.04	7.96	1.04
BENZO(K)FLUORANTHENE	1.4	0.38	0.76	6.78	0.77
C1-CHRYSENES	2.8	1.14	1.14	4.82	1.20
C1-DIBENZOTHIOPHENES	0.6	0.27	0.47	0.43	0.35
C1-FLUORANTHENES/PYRENES	5.8	2.46	2.30	6.44	3.42
C1-FLUORENES	3.5	3.86	1.89	2.71	2.03
C1-NAPHTHALENES	2.5	0.85 U	1.53	2.25	1.35
C1-PHENANTHRENES/ANTHRACENES	4.0	2.30	2.22	4.10	3.56
C2-CHRYSENES	3.0	1.43	0.67	2.15	1.01
C2-DIBENZOTHIOPHENES	1.7	0.80	1.48	0.59	1.02
C2-FLUORENES	3.8	6.00	1.37	3.82	1.92
C2-NAPHTHALENES	2.4	1.04 U	1.41	1.60	1.12
C2-PHENANTHRENES/ANTHRACENES	5.6	3.64	2.89	3.13	3.23
C3-CHRYSENES	0.2	0.27	0.06	0.04	0.74 U
C3-DIBENZOTHIOPHENES	1.8	0.96	0.93	0.65	1.06
C3-FLUORENES	4.6	8.48	1.23	3.70	3.06

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.59	1.88	1.45	1.53
C3-PHENANTHRENES/ANTHRACENES	6.0	2.62	3.60	1.86	2.68
C4-CHRYSENES	0.1	0.09	0.04	0.50	0.01
C4-NAPHTHALENES	3.2	1.64	1.14	1.42	1.90
C4-PHENANTHRENES/ANTHRACENES	3.1	1.41	1.34	1.12	1.45
CHRYSENE	5.3	2.06	3.03	12.16	3.83
DIBENZO(A,H)ANTHRACENE	0.2	0.11	0.16	1.53	0.12
DIBENZOTHIOPHENE	0.2	0.09 U	0.19	0.29	0.18
FLUORANTHENE	8.9	4.36	5.57	22.49	3.93 U
FLUORENE	1.3	0.36	0.97	1.32	1.04
HIGH MOLECULAR WEIGHT PAHS	27.4	11.61	15.09	76.65	13.06
INDENO(1,2,3-CD)PYRENE	1.1	0.44	0.78	8.15	0.78
LOW MOLECULAR WEIGHT PAHS	15.5	7.78	11.09	21.24	11.36
NAPHTHALENE	2.0	0.77 U	1.17	1.43	1.01
PERYLENE	2.1	0.54	1.11	4.15	0.99
PHENANTHRENE	2.6	0.77 U	2.40	6.22	2.96
PYRENE	8.1	3.45	4.24	18.10	2.50 U
TOTAL PAHS	42.8	19.39	26.19	97.90	24.42
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.49	0.13	0.20	0.11
1,2,4,5-TETRACHLOROBENZENE	0.2	0.15 U	0.09	0.60	0.10 U
2,4'-DDD	0.3	0.36	0.17	0.40	0.22
2,4'-DDE	0.1	0.07	0.09	0.04 U	0.16
2,4'-DDT	0.2	0.44	0.21	0.43	0.23
4,4'-DDD	0.6	0.81	0.31	0.61	0.38
4,4'-DDE	1.2	1.22	0.74	1.18	1.02
4,4'-DDT	0.4	0.14 U	0.08	0.49	0.30
ALDRIN	0.04	0.02 U	0.04	0.05 U	0.01 U
ALPHA-BHC	0.1	0.06	0.08	0.08	0.08
ALPHA-CHLORDANE	0.3	0.61	0.33	0.21	0.21
BETA-BHC	0.2	0.01 U	0.37	0.99	0.09
CHLORPYRIFOS	0.3	0.15 U	0.24	0.32 U	0.12
CIS-NONACHLOR	0.2	0.32	0.25	0.18	0.18
DELTA-BHC	0.01	0.30	0.01	0.02 U	0.01
DIELDRIN	0.2	0.08 U	0.09	0.10	0.12
ENDOSULFAN II	0.1	0.08	0.08	0.06	0.01 U
ENDRIN	0.1	0.05 U	0.02 U	0.10 U	0.01 U
GAMMA-BHC (LINDANE)	0.1	0.12 U	0.05	0.03	0.02 U
GAMMA-CHLORDANE	0.2	0.13	0.12	0.06	0.11
HEPTACHLOR	0.04	0.12	0.02	0.06 U	0.01 U
HEPTACHLOR EPOXIDE	0.1	0.03	0.03	0.04 U	0.08 U
HEXACHLOROBENZENE	0.1	0.08	0.06	0.05	0.02
MIREX	0.1	0.05	0.02 U	0.09 U	0.03 U
OXYCHLORDANE	0.03	0.09	0.02	0.04 U	0.02 U
PCB-101/90	1.3	1.31	0.51	1.73	0.88
PCB-105	0.5	0.74	0.36	0.69	0.21
PCB-114	0.1 U	0.06 U	0.03 U	0.13 U	0.04 U
PCB-118	1.1	1.22	0.65	1.26	0.67
PCB-126	0.1	0.04	0.09	0.13 U	0.00
PCB-128	0.3	0.34	0.19	0.34	0.17
PCB-138/160	1.6	1.04 U	0.96	2.79	1.14
PCB-149/123	0.8	0.42 U	0.34	1.60	0.75
PCB-153/132	2.1	1.16 U	0.66 U	3.42	1.77
PCB-156	0.2	0.23	0.13	0.14	0.14
PCB-167	0.2	0.18	0.10	0.22	0.07
PCB-169	0.1	0.02	0.06	0.05	0.13 U
PCB-170/190	0.1	0.05 U	0.09	0.12	0.03
PCB-18/17	0.2	0.63	0.28	0.36 U	0.07

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 05							
		Round 1		Round 2		Round 3		Round 4	
PCB-180	1.0	0.49	U	0.51	U	1.50		0.78	
PCB-187	0.7	0.49	U	0.25	U	2.08		0.56	
PCB-189	0.1	0.06	U	0.03	U	0.13	U	0.04	U
PCB-195/208	0.1	0.05	U	0.02	U	0.03		0.00	U
PCB-201/157/173	0.1	0.09	U	0.10		0.05		0.04	U
PCB-206	0.1	0.05	U	0.02	U	0.12	U	0.02	U
PCB-209	0.1	0.07	U	0.04		0.15	U	0.01	U
PCB-28	0.3	0.48		0.25		0.29		0.06	
PCB-44	0.2	0.35		0.23		0.18		0.15	
PCB-52	0.7	1.05		0.52		0.74		0.42	
PCB-66	0.2	0.23		0.21		0.19		0.10	
PCB-77	0.1	0.25		0.09		0.19		0.00	
PCB-8/5	0.6	0.17		0.19		1.04		0.21	
PCB-81	0.1	0.06		0.13		0.08		0.00	
PENTACHLOROANISOLE	0.2	0.13		0.18		0.21		0.18	
PENTACHLOROBENZENE	0.1	0.77		0.12		0.35		0.06	
TOTAL DDT	2.9	3.04		1.60		3.15		2.31	
TOTAL PCB CONGENERS	21.8	19.85		11.92		34.03		14.51	
TRANS-NONACHLOR	0.3	0.26		0.18		0.18		0.24	
Inorganics (MG/KG)									
ALUMINUM	299.5	204.00		276.25		455.00		265.59	
ARSENIC	7.6	7.25		9.18		6.26		9.50	
CADMIUM	1.3	2.15		2.13		2.30		1.52	
CHROMIUM	3.2	2.05		2.15		4.82		5.19	
COPPER	9.9	9.00		8.45		13.25		11.43	
IRON	552.0	541.50		527.50		819.50		578.25	
LEAD	3.2	28.70		9.28		54.38		60.54	
MANGANESE	12.0	9.15		12.58		12.84		12.36	
MERCURY	0.3	0.42		0.37		1.29		0.66	
NICKEL	1.5	1.45		2.05		1.42	U	1.70	
SILVER	0.1	0.05		0.08		0.15	U	0.07	
ZINC	91.5	113.05		95.50		147.55		102.80	

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.27 U	0.43	0.40	0.33
1-METHYLNAPHTHALENE	1.0	0.36 U	0.75	0.95	0.48
1-METHYLPHENANTHRENE	0.9	0.56	0.67	0.47	0.68
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.32	0.45	0.57	0.37
2,6-DIMETHYLNAPHTHALENE	0.7	0.48	0.54	0.74	0.39
2-METHYLNAPHTHALENE	1.5	0.52 U	1.10	1.71	0.77
ACENAPHTHENE	0.8	1.06	1.50	0.87	0.24
ACENAPHTHYLENE	2.5	1.21	1.78	2.29	1.39
ANTHRACENE	4.8	2.61	3.65	4.27	2.64
BENZO(A)ANTHRACENE	2.6	1.44	1.93	2.86	1.06
BENZO(A)PYRENE	2.3	1.08	1.93	2.70	0.97
BENZO(B)FLUORANTHENE	4.2	2.34	3.83	5.32	2.29
BENZO(E)PYRENE	4.1	2.02	3.06	4.66	2.44
BENZO(G,H,I)PERYLENE	1.6	0.92	1.69	2.62	0.89
BENZO(K)FLUORANTHENE	1.4	0.69	1.18	2.15	0.80
C1-CHRYSENES	2.8	1.34	1.95	2.55	1.20
C1-DIBENZOTHIOPHENES	0.6	0.27	0.62	0.28	0.37
C1-FLUORANTHENES/PYRENES	5.8	3.10	3.33	4.12	3.07
C1-FLUORENES	3.5	3.82	3.21	6.73	4.06
C1-NAPHTHALENES	2.5	0.87 U	1.85	2.66	1.25
C1-PHENANTHRENES/ANTHRACENES	4.0	2.35	2.91	2.67	3.49
C2-CHRYSENES	3.0	1.51	1.25	1.67	0.78
C2-DIBENZOTHIOPHENES	1.7	0.76	1.52	0.65	0.86
C2-FLUORENES	3.8	4.63	1.75	3.13	2.49
C2-NAPHTHALENES	2.4	1.13 U	1.72	1.78	1.13
C2-PHENANTHRENES/ANTHRACENES	5.6	3.40	3.07	2.96	2.74
C3-CHRYSENES	0.2	0.36	0.22	0.04	0.68 U
C3-DIBENZOTHIOPHENES	1.8	1.05	1.08	0.68	0.92
C3-FLUORENES	4.6	6.56	1.90	2.02	2.11

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.51	2.42	1.70	1.48
C3-PHENANTHRENES/ANTHRACENES	6.0	2.24	3.07	1.94	2.98
C4-CHRYSENES	0.1	0.13	0.10	0.02	0.21
C4-NAPHTHALENES	3.2	2.24	1.25	2.06	1.26
C4-PHENANTHRENES/ANTHRACENES	3.1	1.25	1.89	1.02	1.36
CHRYSENE	5.3	3.13	4.92	4.84	3.66
DIBENZO(A,H)ANTHRACENE	0.2	0.19	0.31	0.36	0.09
DIBENZOTHIOPHENE	0.2	0.10 U	0.29	0.19	0.17
FLUORANTHENE	8.9	6.09	9.89	8.86	3.77 U
FLUORENE	1.3	0.37	1.30	1.09	1.05
HIGH MOLECULAR WEIGHT PAHS	27.4	16.91	26.00	27.49	11.82
INDENO(1,2,3-CD)PYRENE	1.1	0.65	1.47	2.07	0.66
LOW MOLECULAR WEIGHT PAHS	15.5	7.58	14.89	14.58	9.68
NAPHTHALENE	2.0	0.88 U	1.62	1.72	0.82
PERYLENE	2.1	0.77	1.70	1.96	0.80
PHENANTHRENE	2.6	0.93 U	3.93	2.62	2.78
PYRENE	8.1	4.99	7.02	7.88	2.27 U
TOTAL PAHS	42.8	24.49	40.89	42.07	21.50
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.15	0.26	0.32	0.44
1,2,4,5-TETRACHLOROBENZENE	0.2	0.18 U	0.09 U	0.53	0.31
2,4'-DDD	0.3	0.26	0.21	0.52	0.25
2,4'-DDE	0.1	0.06	0.06	0.09	0.09
2,4'-DDT	0.2	0.34	0.11	0.31	0.08
4,4'-DDD	0.6	0.61	0.40	1.27	0.33
4,4'-DDE	1.2	0.99	0.78	1.00	0.73
4,4'-DDT	0.4	0.15 U	0.09	0.64	0.16
ALDRIN	0.04	0.02	0.10	0.06	0.01 U
ALPHA-BHC	0.1	0.07	0.08	0.08	0.09
ALPHA-CHLORDANE	0.3	0.52	0.23	0.18	0.16
BETA-BHC	0.2	0.06	0.22	0.54	0.07
CHLORPYRIFOS	0.3	0.13 U	0.19 U	0.41 U	0.23
CIS-NONACHLOR	0.2	0.23	0.23	0.12	0.09
DELTA-BHC	0.01	0.11	0.01 U	0.03 U	0.08
DIELDRIN	0.2	0.17	0.09	0.10	0.09
ENDOSULFAN II	0.1	0.05	0.08	0.04	0.01 U
ENDRIN	0.1	0.06	0.03 U	0.13 U	0.12
GAMMA-BHC (LINDANE)	0.1	0.06 U	0.12	0.04	0.02
GAMMA-CHLORDANE	0.2	0.08	0.23	0.05	0.15
HEPTACHLOR	0.04	0.10	0.07	0.14	0.07
HEPTACHLOR EPOXIDE	0.1	0.05	0.04	0.05 U	0.07
HEXACHLOROBENZENE	0.1	0.08	0.12	0.05	0.07
MIREX	0.1	0.10	0.03 U	0.11 U	0.03 U
OXYCHLORDANE	0.03	0.06	0.03	0.04	0.11
PCB-101/90	1.3	1.05	0.56	1.49	0.77
PCB-105	0.5	0.60	0.32	0.52	0.18
PCB-114	0.1 U	0.05 U	0.04 U	0.17 U	0.04 U
PCB-118	1.1	0.92	0.62	1.13	0.42
PCB-126	0.1	0.05	0.13	0.09	0.00
PCB-128	0.3	0.31	0.24	0.30	0.11
PCB-138/160	1.6	0.97 U	1.20	2.57	0.93
PCB-149/123	0.8	0.43 U	0.36	1.19	0.64
PCB-153/132	2.1	1.13 U	1.18	3.37	1.31
PCB-156	0.2	0.12	0.19	0.12	0.08
PCB-167	0.2	0.19	0.12	0.23	0.07
PCB-169	0.1	0.03	0.11	0.15	0.12 U
PCB-170/190	0.1	0.07 U	0.15	0.31	0.02
PCB-18/17	0.2	0.26 U	0.34	0.41	0.19

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 06							
		Round 1		Round 2		Round 3		Round 4	
PCB-180	1.0	0.47	U	0.76		1.41		0.65	
PCB-187	0.7	0.46	U	0.29		1.87		0.46	
PCB-189	0.1	0.05	U	0.04	U	0.17	U	0.04	U
PCB-195/208	0.1	0.04		0.04		0.14		0.02	
PCB-201/157/173	0.1	0.07		0.12		0.14		0.05	
PCB-206	0.1	0.05	U	0.04	U	0.12		0.02	U
PCB-209	0.1	0.06	U	0.05		0.20	U	0.01	U
PCB-28	0.3	0.34		0.19		0.15		0.04	
PCB-44	0.2	0.11	U	0.17		0.17		0.11	
PCB-52	0.7	0.63		0.53		0.50		0.61	
PCB-66	0.2	0.21		0.17		0.20		0.07	
PCB-77	0.1	0.11		0.07		0.11		0.05	
PCB-8/5	0.6	0.17		0.16		4.66		1.10	
PCB-81	0.1	0.01		0.21		0.12		0.00	
PENTACHLOROANISOLE	0.2	0.11		0.19		0.49		0.36	
PENTACHLOROBENZENE	0.1	0.51		0.07	U	0.48		0.13	
TOTAL DDT	2.9	2.41		1.65		3.83		1.66	
TOTAL PCB CONGENERS	21.8	15.70		13.99		39.00		14.04	
TRANS-NONACHLOR	0.3	0.20		0.17		0.15		0.22	
Inorganics (MG/KG)									
ALUMINUM	299.5	125.67		413.17		384.33		236.79	
ARSENIC	7.6	6.60		9.02		6.48		9.54	
CADMIUM	1.3	2.00		1.48		1.35		1.02	
CHROMIUM	3.2	1.50		2.42		3.43		3.02	
COPPER	9.9	6.73		8.33		6.41		14.02	
IRON	552.0	362.33		696.33		781.67		502.68	
LEAD	3.2	3.17		3.62		5.98		3.05	
MANGANESE	12.0	6.97		16.05		11.25		12.22	
MERCURY	0.3	0.26		0.28		0.28		0.20	
NICKEL	1.5	1.13		1.67		1.06	U	1.30	
SILVER	0.1	0.07		0.07		0.16	U	0.04	
ZINC	91.5	86.87		92.95		89.10		74.28	

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	26.19	8.87	7.35 U	7.59
1,2,3,4,6,7,8,9-OCDF	3.9	2.34	3.33 U	7.35 U	3.15 U
1,2,3,4,6,7,8-HPCDD	2.9	2.84 U	1.66 U	3.27	1.58 U
1,2,3,4,6,7,8-HPCDF	1.9	2.84 U	1.30	3.67 U	1.58 U
1,2,3,4,7,8,9-HPCDF	2.1	2.84 U	1.66 U	3.67 U	1.58 U
1,2,3,4,7,8-HXCDD	2.1	2.84 U	1.66 U	3.67 U	1.58 U
1,2,3,4,7,8-HXCDF	2.0	2.32	1.66 U	3.67 U	1.58 U
1,2,3,6,7,8-HXCDD	1.9	2.84 U	1.66 U	3.67 U	1.58 U
1,2,3,6,7,8-HXCDF	2.0	2.62	1.66 U	3.67 U	1.58 U
1,2,3,7,8,9-HXCDD	2.0	2.84 U	1.66 U	3.67 U	1.58 U
1,2,3,7,8,9-HXCDF	2.1	2.57	1.66 U	3.67 U	1.58 U
1,2,3,7,8-PECDD	2.1	8.16 U	1.66 U	3.67 U	1.58 U
1,2,3,7,8-PECDF	2.0	8.16 U	1.66 U	3.02	1.58 U
2,3,4,6,7,8-HXCDF	2.0	2.83	0.93	3.67 U	1.58 U
2,3,4,7,8-PECDF	2.0	8.16 U	1.00	3.67 U	1.58 U
2,3,7,8-TCDD	0.3 U	1.63 U	0.33 U	U	0.32 U
2,3,7,8-TCDF	0.6	2.39 U	0.27	1.04	0.32 U
TOTAL DIOXINS	22.3	U	24.64	12.97	7.59
TOTAL FURANS	6.0	U	4.30	12.16	3.15 U
TOTAL HPCDD	5.3	2.84 U	4.25	4.33	1.58 U
TOTAL HPCDF	2.1	2.84 U	1.43	3.67 U	1.58 U
TOTAL HXCDD	2.2	2.84 U	1.25	2.22	1.58 U
TOTAL HXCDF	2.3	6.09	0.33	3.67 U	1.58 U
TOTAL PECDD	2.1	8.16 U	1.01	3.67 U	1.58 U
TOTAL PECDF	2.6	8.16 U	0.42	3.02	1.58 U
TOTAL TCDD	2.7	2.54 U	1.64	7.42	0.32 U
TOTAL TCDF	2.0	6.08 U	0.92	10.12	0.32 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.72 U	0.25	0.44	0.36
1-METHYLNAPHTHALENE	1.0	1.95 U	0.54	0.92	0.48
1-METHYLPHENANTHRENE	0.9	1.22	0.47	0.58	0.94
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.59	0.37	0.42	0.42
2,6-DIMETHYLNAPHTHALENE	0.7	1.59	0.45	0.62	0.42
2-METHYLNAPHTHALENE	1.5	3.23 U	0.86	1.55	0.83
ACENAPHTHENE	0.8	0.38	1.09	1.33	0.22
ACENAPHTHYLENE	2.5	4.24	1.76	2.27	1.53
ANTHRACENE	4.8	5.99	3.37	3.90	2.76
BENZO(A)ANTHRACENE	2.6	8.15	1.19	3.17	1.27
BENZO(A)PYRENE	2.3	9.44	1.03	2.42	1.33
BENZO(B)FLUORANTHENE	4.2	12.52	2.24	5.37	2.50
BENZO(E)PYRENE	4.1	7.51	2.06	4.99	2.45
BENZO(G,H,I)PERYLENE	1.6	4.22	1.21	2.50	1.14
BENZO(K)FLUORANTHENE	1.4	3.72	0.87	2.47	0.86
C1-CHRYSENES	2.8	6.90	1.42	3.76	1.35
C1-DIBENZOTHIOPHENES	0.6	1.39	0.52	0.34	0.50
C1-FLUORANTHENES/PYRENES	5.8	21.16	1.99	4.31	3.30
C1-FLUORENES	3.5	5.30	1.89	3.65	3.67
C1-NAPHTHALENES	2.5	5.19 U	1.39	2.47	1.31
C1-PHENANTHRENES/ANTHRACENES	4.0	11.92	2.15	2.48	3.48
C2-CHRYSENES	3.0	10.53	1.10	2.01	0.99
C2-DIBENZOTHIOPHENES	1.7	4.89	1.12	0.65	1.42
C2-FLUORENES	3.8	6.75	1.57	2.34	3.76
C2-NAPHTHALENES	2.4	4.45 U	1.37	1.84	1.09
C2-PHENANTHRENES/ANTHRACENES	5.6	17.17	3.06	3.72	4.18
C3-CHRYSENES	0.2	0.33	0.06	0.06	0.92 U
C3-DIBENZOTHIOPHENES	1.8	3.96	0.86	0.83	1.39
C3-FLUORENES	4.6	21.77	1.46	3.24	2.36

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	9.87	1.68	1.74	1.55
C3-PHENANTHRENES/ANTHRACENES	6.0	11.65	6.13	2.60	3.36
C4-CHRYSENES	0.1	0.48	0.09	0.02	0.02
C4-NAPHTHALENES	3.2	10.28	1.01	1.92	2.15
C4-PHENANTHRENES/ANTHRACENES	3.1	9.42	1.62	1.50	1.40
CHRYSENE	5.3	12.80	3.07	5.27	3.66
DIBENZO(A,H)ANTHRACENE	0.2	0.78	0.19	0.30	0.12
DIBENZOTHIOPHENE	0.2	0.21 U	0.20	0.20	0.20
FLUORANTHENE	8.9	16.99	5.69	8.70	3.49 U
FLUORENE	1.3	1.28	1.00	1.13	1.09
HIGH MOLECULAR WEIGHT PAHS	27.4	63.31	15.48	27.93	12.21
INDENO(1,2,3-CD)PYRENE	1.1	3.20	0.88	1.92	0.85
LOW MOLECULAR WEIGHT PAHS	15.5	21.65	11.63	14.77	10.74
NAPHTHALENE	2.0	4.11 U	0.98	1.92	1.14
PERYLENE	2.1	2.56	1.24	2.41	0.99
PHENANTHRENE	2.6	2.43 U	2.57	2.68	3.16
PYRENE	8.1	15.15	4.32	8.07	2.35 U
TOTAL PAHS	42.8	84.96	27.11	42.70	22.95
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.22 U	0.15	0.12	0.11
1,2,4,5-TETRACHLOROBENZENE	0.2	0.81 U	0.03 U	0.43	0.13 U
2,4'-DDD	0.3	1.02	0.14	0.32	0.27
2,4'-DDE	0.1	0.07	0.05	0.05	0.17
2,4'-DDT	0.2	1.43	0.25	0.15	0.16
4,4'-DDD	0.6	3.10	0.36	0.48	0.33
4,4'-DDE	1.2	3.93	0.70	1.30	0.96
4,4'-DDT	0.4	4.88	0.13	0.23	0.27
ALDRIN	0.04	0.08 U	0.10	0.03	0.02 U
ALPHA-BHC	0.1	0.32	0.12	0.05	0.09
ALPHA-CHLORDANE	0.3	0.81	0.17	0.19	0.26
BETA-BHC	0.2	3.33	0.59	0.20	0.07
CHLORPYRIFOS	0.3	0.48	0.08 U	0.40 U	0.18
CIS-NONACHLOR	0.2	0.66	0.32	0.16	0.11
DELTA-BHC	0.01	0.03 U	0.00 U	0.02 U	0.04
DIELDRIN	0.2	1.69	0.09	0.12	0.09
ENDOSULFAN II	0.1	0.11	0.20	0.03	0.01 U
ENDRIN	0.1	0.29	0.02 U	0.12 U	0.20
GAMMA-BHC (LINDANE)	0.1	0.33 U	0.10	0.01	0.08
GAMMA-CHLORDANE	0.2	0.60	0.18	0.06	0.11
HEPTACHLOR	0.04	0.09 U	0.05	0.07 U	0.03
HEPTACHLOR EPOXIDE	0.1	0.07	0.07	0.05 U	0.09 U
HEXACHLOROBENZENE	0.1	0.36	0.10	0.05	0.05
MIREX	0.1	1.54	0.04	0.11 U	0.03 U
OXYCHLORDANE	0.03	0.07 U	0.03	0.05 U	0.04
PCB-101/90	1.3	2.26	0.32 U	1.41	0.82
PCB-105	0.5	2.67	0.30	0.68	0.20
PCB-114	0.1 U	0.22 U	0.03 U	0.17 U	0.05 U
PCB-118	1.1	1.85	0.49	1.37	0.48
PCB-126	0.1	0.06	0.08	0.17 U	0.00
PCB-128	0.3	1.65	0.32	0.33	0.14
PCB-138/160	1.6	3.59 U	0.64 U	2.25	0.99
PCB-149/123	0.8	1.74 U	0.25 U	1.31	0.68
PCB-153/132	2.1	4.09 U	0.59 U	2.45	1.58
PCB-156	0.2	0.64	0.14	0.16	0.08
PCB-167	0.2	0.88	0.08	0.17	0.07
PCB-169	0.1	0.18	0.11	0.17 U	0.00
PCB-170/190	0.1	0.22 U	0.11	0.07	0.02
PCB-18/17	0.2	2.22	0.32	0.44 U	0.14

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 07							
		Round 1		Round 2		Round 3		Round 4	
PCB-180	1.0	1.44	U	0.46	U	0.69		0.70	
PCB-187	0.7	2.15	U	0.23	U	1.12		0.46	
PCB-189	0.1	0.22	U	0.03	U	0.17	U	0.05	U
PCB-195/208	0.1	0.19		0.03	U	0.14	U	0.04	
PCB-201/157/173	0.1	1.49		0.10		0.11		0.05	U
PCB-206	0.1	0.44		0.03	U	0.14	U	0.02	U
PCB-209	0.1	0.24		0.04		0.19	U	0.02	U
PCB-28	0.3	1.68		0.30		0.21		0.21	
PCB-44	0.2	2.02		0.31		0.13		0.09	
PCB-52	0.7	2.88		0.69		0.32		0.62	
PCB-66	0.2	0.91		0.24		0.21		0.09	
PCB-77	0.1	0.39		0.06		0.23		0.09	
PCB-8/5	0.6	0.43		0.26		1.53		0.77	
PCB-81	0.1	0.07		0.15		0.25		0.00	
PENTACHLOROANISOLE	0.2	0.29		0.19		0.24		0.25	
PENTACHLOROBENZENE	0.1	0.41		0.10	U	0.22		0.07	
TOTAL DDT	2.9	14.43		1.62		2.53		2.16	
TOTAL PCB CONGENERS	21.8	61.84		11.35		27.34		14.83	
TRANS-NONACHLOR	0.3	0.56		0.13		0.17		0.24	
Inorganics (MG/KG)									
ALUMINUM	299.5	139.50		302.50		320.00		333.24	
ARSENIC	7.6	7.00		9.65		6.89		9.63	
CADMIUM	1.3	1.85		1.60		1.34		1.20	
CHROMIUM	3.2	1.65		1.95		3.10		3.31	
COPPER	9.9	7.00		7.85		5.99		35.12	
IRON	552.0	341.50		541.50		553.50		539.69	
LEAD	3.2	2.90		3.80		4.42		4.24	
MANGANESE	12.0	8.00		12.55		8.64		12.75	
MERCURY	0.3	0.23		0.27		0.25		0.21	
NICKEL	1.5	1.35		1.75		1.46	U	2.89	
SILVER	0.1	0.05		0.07		0.16	U	0.05	
ZINC	91.5	96.80		95.55		85.80		91.90	

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	8.81	33.78	11.15	6.22
1,2,3,4,6,7,8,9-OCDF	3.9	3.79	3.68	5.02 U	4.50 U
1,2,3,4,6,7,8-HPCDD	2.9	1.61 U	6.46	3.33	2.38
1,2,3,4,6,7,8-HPCDF	1.9	1.61 U	1.59	2.51 U	1.43
1,2,3,4,7,8,9-HPCDF	2.1	0.90	1.64	2.51 U	2.25 U
1,2,3,4,7,8-HXCDD	2.1	0.80	2.16 U	2.51 U	2.25 U
1,2,3,4,7,8-HXCDF	2.0	0.26	2.16 U	2.51 U	2.25 U
1,2,3,6,7,8-HXCDD	1.9	0.20	1.14	2.51 U	2.25 U
1,2,3,6,7,8-HXCDF	2.0	0.27	2.16 U	2.51 U	2.25 U
1,2,3,7,8,9-HXCDD	2.0	1.34	0.56	2.51 U	2.25 U
1,2,3,7,8,9-HXCDF	2.1	0.76	2.16 U	2.51 U	2.25 U
1,2,3,7,8-PECDD	2.1	1.45 U	0.53	2.51 U	2.25 U
1,2,3,7,8-PECDF	2.0	1.61 U	1.82	2.51 U	2.25 U
2,3,4,6,7,8-HXCDF	2.0	0.23	2.16 U	2.51 U	2.25 U
2,3,4,7,8-PECDF	2.0	1.61 U	0.98	2.51 U	2.25 U
2,3,7,8-TCDD	0.3 U	0.61 U	0.33	U	0.45 U
2,3,7,8-TCDF	0.6	0.56 U	1.28	0.50 U	0.45 U
TOTAL DIOXINS	22.3	U	47.90	22.81	13.09
TOTAL FURANS	6.0	U	16.28	5.23	2.65
TOTAL HPCDD	5.3	2.14	11.24	4.46	3.49
TOTAL HPCDF	2.1	1.27	2.52	2.51 U	1.43
TOTAL HXCDD	2.2	0.51	1.14	3.45	2.25 U
TOTAL HXCDF	2.3	0.92	1.46	4.00	2.25 U
TOTAL PECDD	2.1	1.03	0.53	2.51 U	2.25 U
TOTAL PECDF	2.6	1.65 U	2.24	2.51 U	2.25 U
TOTAL TCDD	2.7	1.42 U	1.64	8.82	0.45 U
TOTAL TCDF	2.0	1.44 U	7.63	0.50 U	0.45 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.48 U	0.44	0.51	0.50 U
1-METHYLNAPHTHALENE	1.0	0.36 U	0.99	0.92	0.48 U
1-METHYLPHENANTHRENE	0.9	0.35	0.85	1.29	1.81
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.28	0.68	0.51	0.86
2,6-DIMETHYLNAPHTHALENE	0.7	0.45	0.78	0.52	0.66
2-METHYLNAPHTHALENE	1.5	0.64 U	1.57	1.16	0.89
ACENAPHTHENE	0.8	0.28	1.83	3.01	0.74
ACENAPHTHYLENE	2.5	1.37	2.93	2.72	1.61
ANTHRACENE	4.8	3.06	5.79	6.22	3.42
BENZO(A)ANTHRACENE	2.6	1.42	2.41	7.92	1.55
BENZO(A)PYRENE	2.3	1.27	2.54	7.75	1.24
BENZO(B)FLUORANTHENE	4.2	2.29	4.64	13.43	2.73
BENZO(E)PYRENE	4.1	1.83	3.88	9.12	2.84
BENZO(G,H,I)PERYLENE	1.6	0.74	2.59	6.07	1.35
BENZO(K)FLUORANTHENE	1.4	0.53	1.66	5.63	1.06
C1-CHRYSENES	2.8	1.41	2.68	5.53	1.71
C1-DIBENZOTHIOPHENES	0.6	0.35	0.65	0.72	1.00
C1-FLUORANTHENES/PYRENES	5.8	3.85	4.42	8.23	4.84
C1-FLUORENES	3.5	1.93	3.07	3.62	5.44
C1-NAPHTHALENES	2.5	1.02 U	2.55	2.09	1.21 U
C1-PHENANTHRENES/ANTHRACENES	4.0	2.39	3.64	4.90	6.22
C2-CHRYSENES	3.0	3.03	1.15	2.61	0.30
C2-DIBENZOTHIOPHENES	1.7	1.04	1.54	1.08	2.59
C2-FLUORENES	3.8	2.05	2.27	2.15	6.67
C2-NAPHTHALENES	2.4	1.24 U	2.24	2.30	1.78
C2-PHENANTHRENES/ANTHRACENES	5.6	3.69	4.25	6.02	8.34
C3-CHRYSENES	0.2	0.08	0.05	0.02	0.69
C3-DIBENZOTHIOPHENES	1.8	1.40	1.14	1.56	2.42
C3-FLUORENES	4.6	2.90	1.40	5.37	7.02

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.15	2.73	3.06	2.78
C3-PHENANTHRENES/ANTHRACENES	6.0	4.03	6.43	4.34	6.65
C4-CHRYSENES	0.1	0.07	0.05	0.04	0.02
C4-NAPHTHALENES	3.2	2.83	1.76	3.20	4.37
C4-PHENANTHRENES/ANTHRACENES	3.1	2.67	2.26	2.35	3.28
CHRYSENE	5.3	2.94	5.72	12.72	5.01
DIBENZO(A,H)ANTHRACENE	0.2	0.09	0.46	0.72	0.15
DIBENZOTHIOPHENE	0.2	0.09 U	0.34	0.94	0.33
FLUORANTHENE	8.9	5.43	10.47	26.98	9.76
FLUORENE	1.3	0.50	1.88	2.81	1.68
HIGH MOLECULAR WEIGHT PAHS	27.4	16.01	30.00	78.22	24.50
INDENO(1,2,3-CD)PYRENE	1.1	0.37	2.08	5.35	1.01
LOW MOLECULAR WEIGHT PAHS	15.5	8.07	20.17	32.68	13.38
NAPHTHALENE	2.0	1.16 U	1.77	2.16	0.84 U
PERYLENE	2.1	0.62	2.03	3.83	1.32
PHENANTHRENE	2.6	1.06 U	4.42	14.60	4.20
PYRENE	8.1	4.86	8.40	22.14	6.80
TOTAL PAHS	42.8	24.08	50.17	110.90	37.88
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.04 U	0.21	0.03 U	0.15
1,2,4,5-TETRACHLOROBENZENE	0.2	0.14	0.06 U	0.23 U	0.32
2,4'-DDD	0.3	1.77	1.00	2.80	1.34
2,4'-DDE	0.1	0.04	0.06	0.12	0.28
2,4'-DDT	0.2	0.43	0.35	0.58	0.56
4,4'-DDD	0.6	4.32	2.52	6.16	2.87
4,4'-DDE	1.2	1.92	1.70	3.24	1.54
4,4'-DDT	0.4	0.27 U	0.37	1.43	0.96
ALDRIN	0.04	0.02	0.17	0.05 U	0.02 U
ALPHA-BHC	0.1	0.07	0.16	0.06	0.10
ALPHA-CHLORDANE	0.3	0.34	0.23	0.29	0.24
BETA-BHC	0.2	0.02	0.55	0.13 U	0.28
CHLORPYRIFOS	0.3	0.06	0.11 U	0.31 U	0.02 U
CIS-NONACHLOR	0.2	0.12	0.50	0.20	0.12
DELTA-BHC	0.01	0.01 U	0.01 U	0.02 U	0.13
DIELDRIN	0.2	0.28	0.15	0.18	0.09
ENDOSULFAN II	0.1	0.06	0.13	0.06	0.02
ENDRIN	0.1	0.10	0.10	0.10 U	0.03
GAMMA-BHC (LINDANE)	0.1	0.01 U	0.11	0.02	0.10
GAMMA-CHLORDANE	0.2	0.18	0.28	0.18	0.51
HEPTACHLOR	0.04	0.02 U	0.02	0.05 U	0.48
HEPTACHLOR EPOXIDE	0.1	0.18	0.08	0.04 U	0.12 U
HEXACHLOROBENZENE	0.1	0.04	0.08	0.04	0.19
MIREX	0.1	0.21	0.04	0.09 U	0.04 U
OXYCHLORDANE	0.03	0.08	0.07	0.04 U	0.03 U
PCB-101/90	1.3	1.65	0.61 U	2.51	1.32
PCB-105	0.5	0.84	0.59	1.15	0.39
PCB-114	0.1 U	0.04 U	0.05 U	0.13 U	0.07 U
PCB-118	1.1	0.62	0.84	2.25	0.95
PCB-126	0.1	0.05	0.17	0.13 U	0.00
PCB-128	0.3	0.43	0.42	0.63	0.29
PCB-138/160	1.6	1.27 U	1.30 U	4.37	1.94
PCB-149/123	0.8	1.97	0.52 U	2.80	0.98
PCB-153/132	2.1	2.97	1.29 U	5.88	2.63
PCB-156	0.2	0.09	0.22	0.20	0.07
PCB-167	0.2	0.22	0.15	0.32	0.14
PCB-169	0.1	0.01	0.14	0.06 U	0.01
PCB-170/190	0.1	0.02	0.18	0.10 U	0.07 U
PCB-18/17	0.2	0.15	0.45	0.20	0.37

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.61	0.78 U	1.45	0.84
PCB-187	0.7	1.39	0.55 U	2.11	0.95
PCB-189	0.1	0.02	0.05 U	0.13 U	0.07
PCB-195/208	0.1	0.03	0.04 U	0.11 U	0.01 U
PCB-201/157/173	0.1	0.13	0.10	0.14	0.13
PCB-206	0.1	0.03	0.04 U	0.11 U	0.03 U
PCB-209	0.1	0.05 U	0.06	0.14 U	0.02 U
PCB-28	0.3	0.23	0.43	0.19	0.07
PCB-44	0.2	0.24	0.60	0.17	0.26
PCB-52	0.7	0.57	1.30	0.62	0.29
PCB-66	0.2	0.29	0.31	0.30	0.03 U
PCB-77	0.1	0.11	0.12	0.08	0.00
PCB-8/5	0.6	0.07	0.26	0.81	0.13 U
PCB-81	0.1	0.04	0.28	0.12	0.06
PENTACHLOROANISOLE	0.2	0.03	0.24	0.08 U	0.17
PENTACHLOROBENZENE	0.1	0.14	0.11 U	0.09 U	0.11
TOTAL DDT	2.9	8.76	6.00	14.33	7.55
TOTAL PCB CONGENERS	21.8	22.92	20.05	46.19	21.11
TRANS-NONACHLOR	0.3	0.29	0.21	0.28	0.32
Inorganics (MG/KG)					
ALUMINUM	299.5	84.90	473.00	437.00	259.97
ARSENIC	7.6	7.70	8.37	5.65	9.48
CADMIUM	1.3	1.77	1.33	1.45	1.10
CHROMIUM	3.2	1.63	2.67	5.74	3.62
COPPER	9.9	8.03	9.33	7.93	8.35
IRON	552.0	319.67	782.33	784.33	665.80
LEAD	3.2	4.35	4.63	6.86	3.34
MANGANESE	12.0	7.18	14.53	13.83	11.90
MERCURY	0.3	0.25	0.26	0.24	0.19
NICKEL	1.5	2.22	2.37	1.95 U	2.05
SILVER	0.1	0.03	0.06	0.17 U	0.03 U
ZINC	91.5	104.57	91.13	93.80	74.34

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter (1)	Mean Reference Conentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	5.33	21.85	39.35	10.07
1,2,3,4,6,7,8,9-OCDF	3.9	0.45	3.00 U	5.53 U	2.73 U
1,2,3,4,6,7,8-HPCDD	2.9	1.59 U	4.13	7.52	2.95
1,2,3,4,6,7,8-HPCDF	1.9	1.59 U	1.13	2.14	1.37 U
1,2,3,4,7,8,9-HPCDF	2.1	1.59 U	1.50 U	3.44 U	1.37 U
1,2,3,4,7,8-HXCDD	2.1	0.08	1.50 U	2.69	1.37 U
1,2,3,4,7,8-HXCDF	2.0	1.59 U	1.50 U	3.44 U	1.37 U
1,2,3,6,7,8-HXCDD	1.9	0.11	0.77	2.74	1.37 U
1,2,3,6,7,8-HXCDF	2.0	1.59 U	1.50 U	3.44 U	1.37 U
1,2,3,7,8,9-HXCDD	2.0	0.22	0.75	3.44 U	1.37 U
1,2,3,7,8,9-HXCDF	2.1	1.59 U	1.50 U	3.44 U	1.37 U
1,2,3,7,8-PECDD	2.1	5.02 U	1.50 U	3.44 U	1.37 U
1,2,3,7,8-PECDF	2.0	5.02 U	1.06	0.79	1.37 U
2,3,4,6,7,8-HXCDF	2.0	1.59 U	1.50 U	3.44 U	1.37 U
2,3,4,7,8-PECDF	2.0	5.02 U	0.86	1.23	1.37 U
2,3,7,8-TCDD	0.3 U	1.00 U	0.30 U	0.69 U	0.27 U
2,3,7,8-TCDF	0.6	1.01 U	2.78	1.45	0.48
TOTAL DIOXINS	22.3	U	39.01	67.42	14.02
TOTAL FURANS	6.0	U	10.69	2.41 U	2.98
TOTAL HPCDD	5.3	0.60	9.99	19.68	2.95
TOTAL HPCDF	2.1	1.59 U	1.23	3.10	1.37 U
TOTAL HXCDD	2.2	0.41	2.24	2.69	1.37 U
TOTAL HXCDF	2.3	1.59 U	1.50 U	3.00 U	1.37 U
TOTAL PECDD	2.1	4.30	1.50 U	3.44 U	1.37 U
TOTAL PECDF	2.6	5.02 U	2.70	1.11	1.37 U
TOTAL TCDD	2.7	1.43 U	3.42	6.24	1.50
TOTAL TCDF	2.0	2.29 U	5.86	1.45	1.07
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	2.01	0.27	0.41	0.28 U
1-METHYLNAPHTHALENE	1.0	0.59 U	0.65	0.59	0.52 U
1-METHYLPHENANTHRENE	0.9	0.43	0.90	1.07	1.00
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.26	0.38	0.43	0.61
2,6-DIMETHYLNAPHTHALENE	0.7	0.67	0.48	0.42	0.81
2-METHYLNAPHTHALENE	1.5	1.03 U	1.08	0.93	1.58
ACENAPHTHENE	0.8	0.33	1.27	1.41	0.56
ACENAPHTHYLENE	2.5	0.77	2.11	2.14	1.48
ANTHRACENE	4.8	1.64	4.90	4.60	3.51
BENZO(A)ANTHRACENE	2.6	1.14	2.49	4.99	1.51
BENZO(A)PYRENE	2.3	0.70	2.28	4.08	0.82 U
BENZO(B)FLUORANTHENE	4.2	1.54	4.12	8.42	2.51
BENZO(E)PYRENE	4.1	1.34	3.28	6.73	2.73
BENZO(G,H,I)PERYLENE	1.6	0.47	2.03	3.91	1.27
BENZO(K)FLUORANTHENE	1.4	0.44	1.28	3.38	1.10
C1-CHRYSENES	2.8	1.49	2.22	4.37	1.56
C1-DIBENZOTHIOPHENES	0.6	0.35	0.55	0.44	0.42
C1-FLUORANTHENES/PYRENES	5.8	2.91	4.01	5.94	4.40
C1-FLUORENES	3.5	4.20	2.25	3.33	3.13
C1-NAPHTHALENES	2.5	1.62 U	1.73	1.51	1.49 U
C1-PHENANTHRENES/ANTHRACENES	4.0	3.03	3.58	3.64	5.84
C2-CHRYSENES	3.0	1.27	2.67	2.53	0.78
C2-DIBENZOTHIOPHENES	1.7	0.67	1.37	0.75	1.03
C2-FLUORENES	3.8	3.32	1.51	2.80	2.79
C2-NAPHTHALENES	2.4	1.62 U	1.59	1.59	1.82
C2-PHENANTHRENES/ANTHRACENES	5.6	3.36	3.77	4.97	4.20
C3-CHRYSENES	0.2	0.13	0.07	1.09	0.01
C3-DIBENZOTHIOPHENES	1.8	0.92	0.98	1.07	0.93
C3-FLUORENES	4.6	2.12	0.88	3.45	3.62

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	3.38	1.75	1.62	2.12
C3-PHENANTHRENES/ANTHRACENES	6.0	2.73	8.91	3.40	3.21
C4-CHRYSENES	0.1	0.07	0.08	0.51	0.01
C4-NAPHTHALENES	3.2	2.81	1.09	1.92	1.96
C4-PHENANTHRENES/ANTHRACENES	3.1	1.81	2.27	2.05	1.48
CHRYSENE	5.3	2.68	4.48	7.66	4.30
DIBENZO(A,H)ANTHRACENE	0.2	0.07	0.38	0.55	0.10
DIBENZOTHIOPHENE	0.2	0.08 U	0.28	0.21	0.22
FLUORANTHENE	8.9	4.49	11.41	12.59	9.90
FLUORENE	1.3	0.61	1.27	1.02	1.33
HIGH MOLECULAR WEIGHT PAHS	27.4	13.02	29.74	42.39	23.54
INDENO(1,2,3-CD)PYRENE	1.1	0.22	1.75	3.10	0.91
LOW MOLECULAR WEIGHT PAHS	15.5	7.84	16.85	14.75	13.44
NAPHTHALENE	2.0	2.22 U	1.26	1.46	0.85 U
PERYLENE	2.1	0.49	1.66	3.37	1.18
PHENANTHRENE	2.6	1.24 U	4.95	3.19	4.14
PYRENE	8.1	3.94	8.70	12.51	6.91
TOTAL PAHS	42.8	20.86	46.59	57.13	36.98
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.03 U	0.13	0.09	0.04
1,2,4,5-TETRACHLOROBENZENE	0.2	0.23 U	0.04 U	0.08	0.25
2,4'-DDD	0.3	0.27	0.28	0.72	0.26
2,4'-DDE	0.1	0.04	0.05	0.06	0.39
2,4'-DDT	0.2	0.30	0.23	0.32	0.55
4,4'-DDD	0.6	0.77	0.45	0.99	0.80
4,4'-DDE	1.2	0.66	0.82	1.83	0.88
4,4'-DDT	0.4	0.22 U	0.11	0.55	0.42
ALDRIN	0.04	0.05 U	0.18	0.05 U	0.01 U
ALPHA-BHC	0.1	0.10	0.10	0.05	0.23
ALPHA-CHLORDANE	0.3	0.23	0.20	0.27	0.00 U
BETA-BHC	0.2	0.03 U	0.98	0.71	0.22
CHLORPYRIFOS	0.3	0.25	0.08 U	0.35 U	0.02 U
CIS-NONACHLOR	0.2	0.10	0.37	0.17	0.31
DELTA-BHC	0.01	0.02 U	0.01	0.02 U	0.24
DIELDRIN	0.2	0.21	0.13	0.23	0.11
ENDOSULFAN II	0.1	0.07	0.17	0.06	0.01 U
ENDRIN	0.1	0.12	0.08	0.11 U	0.07
GAMMA-BHC (LINDANE)	0.1	0.03 U	0.11	0.02	0.05
GAMMA-CHLORDANE	0.2	0.12	0.23	0.13	0.36
HEPTACHLOR	0.04	0.05 U	0.01	0.06 U	0.50
HEPTACHLOR EPOXIDE	0.1	0.07	0.07	0.04 U	0.08 U
HEXACHLOROBENZENE	0.1	0.03	0.06	0.04	0.28
MIREX	0.1	0.12	0.02 U	0.10 U	0.03 U
OXYCHLORDANE	0.03	0.04 U	0.08	0.04 U	0.02 U
PCB-101/90	1.3	1.01	0.51 U	2.12	1.52
PCB-105	0.5	0.62	0.49	1.09	0.39
PCB-114	0.1 U	0.13 U	0.03 U	0.15 U	0.05 U
PCB-118	1.1	0.50	0.69	1.84	0.75
PCB-126	0.1	0.05	0.10	0.08 U	0.00
PCB-128	0.3	0.22	0.28	0.57	0.27
PCB-138/160	1.6	1.09 U	1.16 U	3.78	1.66
PCB-149/123	0.8	1.29	0.56 U	2.54	0.96
PCB-153/132	2.1	1.19 U	1.03 U	4.65	2.27
PCB-156	0.2	0.13 U	0.16	0.23	0.05 U
PCB-167	0.2	0.11	0.09	0.28	0.13
PCB-169	0.1	0.04	0.12	0.15 U	0.00
PCB-170/190	0.1	0.09 U	1.33	0.07 U	0.05 U
PCB-18/17	0.2	0.16 U	0.34	0.36	0.21

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.49 U	0.70 U	1.04	0.58
PCB-187	0.7	1.14	0.50 U	1.84	0.90
PCB-189	0.1	0.13 U	0.03 U	0.12	0.05 U
PCB-195/208	0.1	0.05	0.03 U	0.13 U	0.00 U
PCB-201/157/173	0.1	0.02	0.14	0.11	0.25
PCB-206	0.1	0.10	0.03 U	0.13 U	0.02 U
PCB-209	0.1	0.14 U	0.09	0.17 U	0.01 U
PCB-28	0.3	0.34	0.36	0.18	0.12
PCB-44	0.2	0.51	0.43	0.13 U	0.09
PCB-52	0.7	0.45	1.06	0.57	0.45
PCB-66	0.2	0.23	0.37	0.27	0.02 U
PCB-77	0.1	0.41	0.05	0.14	0.00
PCB-8/5	0.6	0.31	0.16	0.96	0.10 U
PCB-81	0.1	0.20	0.18	0.15 U	0.14 U
PENTACHLOROANISOLE	0.2	0.05	0.19	0.13 U	0.15
PENTACHLOROBENZENE	0.1	0.15	0.06 U	0.05 U	0.08
TOTAL DDT	2.9	2.25	1.93	4.46	3.28
TOTAL PCB CONGENERS	21.8	17.21	19.09	39.78	18.80
TRANS-NONACHLOR	0.3	0.09	0.19	0.25	0.23
Inorganics (MG/KG)					
ALUMINUM	299.5	82.05	398.50	887.00	341.28
ARSENIC	7.6	6.50	9.15	6.27	9.60
CADMIUM	1.3	2.00	1.65	1.53	1.06
CHROMIUM	3.2	2.00	2.35	7.02	3.70
COPPER	9.9	6.90	10.60	30.45	8.38
IRON	552.0	216.00	676.50	1428.50	611.97
LEAD	3.2	3.10	3.65	7.31	4.11
MANGANESE	12.0	8.50	17.85	43.05	15.52
MERCURY	0.3	0.30	0.28	0.27	0.21
NICKEL	1.5	2.05	3.00	6.92	2.48
SILVER	0.1	0.09	0.11	0.45	0.12
ZINC	91.5	104.50	104.55	115.00	85.68

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	12.81	18.02	22.39	3.40 U
1,2,3,4,6,7,8,9-OCDF	3.9	1.97	2.97	6.50 U	3.40 U
1,2,3,4,6,7,8-HPCDD	2.9	2.06 U	3.62	2.90	1.70 U
1,2,3,4,6,7,8-HPCDF	1.9	1.63 U	0.97	1.69	1.70 U
1,2,3,4,7,8,9-HPCDF	2.1	1.89	1.66 U	3.25 U	1.70 U
1,2,3,4,7,8-HXCDD	2.1	1.47	1.09	3.25 U	1.70 U
1,2,3,4,7,8-HXCDF	2.0	1.45	1.14	3.25 U	1.70 U
1,2,3,6,7,8-HXCDD	1.9	1.29	1.66 U	1.51	1.70 U
1,2,3,6,7,8-HXCDF	2.0	1.38	1.66 U	3.25 U	1.70 U
1,2,3,7,8,9-HXCDD	2.0	1.35	1.26	3.25 U	1.70 U
1,2,3,7,8,9-HXCDF	2.1	1.71	1.66 U	3.25 U	1.70 U
1,2,3,7,8-PECDD	2.1	1.62 U	1.09	3.25 U	1.70 U
1,2,3,7,8-PECDF	2.0	1.76 U	0.57	3.25 U	1.70 U
2,3,4,6,7,8-HXCDF	2.0	1.53	1.66 U	1.72	1.70 U
2,3,4,7,8-PECDF	2.0	1.62 U	0.86	3.25 U	1.70 U
2,3,7,8-TCDD	0.3 U	0.33 U	0.33 U	0.65 U	0.34 U
2,3,7,8-TCDF	0.6	0.58 U	1.05	0.70	0.34 U
TOTAL DIOXINS	22.3	U	66.18	23.25	3.11
TOTAL FURANS	6.0	U	9.80	3.08 U	3.40 U
TOTAL HPCDD	5.3	2.06 U	17.33	2.90	1.70 U
TOTAL HPCDF	2.1	1.95	3.66	1.69	1.70 U
TOTAL HXCDD	2.2	1.47	5.02	1.51	1.70 U
TOTAL HXCDF	2.3	2.47	1.48	1.72	1.70 U
TOTAL PECDD	2.1	1.31	1.09	3.25 U	1.70 U
TOTAL PECDF	2.6	2.21 U	3.04	3.25 U	1.70 U
TOTAL TCDD	2.7	1.44 U	0.98	1.80	0.93
TOTAL TCDF	2.0	3.22 U	2.70	0.70	0.34 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.18 U	0.32	0.39	0.28 U
1-METHYLNAPHTHALENE	1.0	0.26 U	0.73	0.41	0.32 U
1-METHYLPHENANTHRENE	0.9	0.41	0.65	0.69	0.73
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.26	0.41	0.43	0.51
2,6-DIMETHYLNAPHTHALENE	0.7	0.39	0.55	0.42	0.51
2-METHYLNAPHTHALENE	1.5	0.33 U	1.22	0.69	0.51 U
ACENAPHTHENE	0.8	0.91	1.00	0.66	0.43
ACENAPHTHYLENE	2.5	1.23	1.61	1.26	1.24
ANTHRACENE	4.8	3.42	3.39	2.74	2.63
BENZO(A)ANTHRACENE	2.6	1.63	1.42	3.54	1.02
BENZO(A)PYRENE	2.3	0.80	1.24	3.34	0.51 U
BENZO(B)FLUORANTHENE	4.2	2.03	2.71	5.78	1.57
BENZO(E)PYRENE	4.1	1.78	2.27	4.91	2.03
BENZO(G,H,I)PERYLENE	1.6	0.73	1.23	2.59	0.67
BENZO(K)FLUORANTHENE	1.4	0.55	0.95	2.35	0.71
C1-CHRYSENES	2.8	1.42	1.69	2.77	0.94
C1-DIBENZOTHIOPHENES	0.6	0.57	0.49	0.40	0.41
C1-FLUORANTHENES/PYRENES	5.8	4.37	2.40	4.03	2.88
C1-FLUORENES	3.5	3.18	2.31	2.21	3.41
C1-NAPHTHALENES	2.5	0.59 U	1.94	1.10	0.83 U
C1-PHENANTHRENES/ANTHRACENES	4.0	7.24	2.35	2.68	3.03
C2-CHRYSENES	3.0	2.49	0.68	1.49	0.45
C2-DIBENZOTHIOPHENES	1.7	1.45	1.26	0.80	0.94
C2-FLUORENES	3.8	3.69	1.30	2.41	2.85
C2-NAPHTHALENES	2.4	1.04	1.73	0.98	1.34
C2-PHENANTHRENES/ANTHRACENES	5.6	3.88	2.86	2.91	2.40
C3-CHRYSENES	0.2	0.34	0.14	0.01	0.30
C3-DIBENZOTHIOPHENES	1.8	1.59	1.00	0.86	0.84
C3-FLUORENES	4.6	6.45	1.46	2.78	2.77

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.13	2.03	1.24	1.71
C3-PHENANTHRENES/ANTHRACENES	6.0	3.18	4.96	2.18	1.95
C4-CHRYSENES	0.1	0.16	0.18	0.02	0.02
C4-NAPHTHALENES	3.2	1.63	0.90	1.42	1.65
C4-PHENANTHRENES/ANTHRACENES	3.1	2.40	1.58	1.11	0.97
CHRYSENE	5.3	2.71	3.38	5.85	3.38
DIBENZO(A,H)ANTHRACENE	0.2	0.14	0.24	0.43	0.06
DIBENZOTHIOPHENE	0.2	0.06 U	0.20	0.23	0.19
FLUORANTHENE	8.9	5.17	5.96	9.33	6.83
FLUORENE	1.3	0.38	1.15	1.05	1.30
HIGH MOLECULAR WEIGHT PAHS	27.4	14.83	17.00	30.98	16.16
INDENO(1,2,3-CD)PYRENE	1.1	0.54	1.03	2.26	0.46
LOW MOLECULAR WEIGHT PAHS	15.5	7.71	12.38	10.66	9.77
NAPHTHALENE	2.0	0.64 U	1.25	0.82	0.66 U
PERYLENE	2.1	0.81	1.19	1.96	0.82
PHENANTHRENE	2.6	0.80 U	2.76	3.45	3.00
PYRENE	8.1	4.37	4.75	8.49	4.35
TOTAL PAHS	42.8	22.54	29.38	41.64	25.93
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.34	0.40	0.05	0.08
1,2,4,5-TETRACHLOROBENZENE	0.2	0.10 U	0.04 U	0.07	0.23
2,4'-DDD	0.3	3.54	0.68	1.06	0.50
2,4'-DDE	0.1	0.41	0.04	0.08	0.29
2,4'-DDT	0.2	14.98	0.34	1.34	1.04
4,4'-DDD	0.6	5.28	1.09	1.75	0.95
4,4'-DDE	1.2	5.18	1.03	2.38	1.15
4,4'-DDT	0.4	23.53	0.16	2.44	1.27
ALDRIN	0.04	0.01 U	0.22	0.03	0.02 U
ALPHA-BHC	0.1	0.06	0.11	0.05	0.24
ALPHA-CHLORDANE	0.3	1.55	0.28	0.46	0.19
BETA-BHC	0.2	0.01 U	0.58	1.77	0.19
CHLORPYRIFOS	0.3	0.09 U	0.09 U	0.30 U	0.02 U
CIS-NONACHLOR	0.2	0.38	0.41	0.04	0.19
DELTA-BHC	0.01	0.15	0.01 U	0.01	0.11
DIELDRIN	0.2	0.20	0.11	0.17	0.11
ENDOSULFAN II	0.1	0.07	0.27	0.05	0.07
ENDRIN	0.1	0.03 U	0.07	0.09 U	0.03
GAMMA-BHC (LINDANE)	0.1	0.05 U	0.06	0.02	0.04
GAMMA-CHLORDANE	0.2	1.38	0.28	0.30	0.36
HEPTACHLOR	0.04	0.23	0.04	0.05	0.30
HEPTACHLOR EPOXIDE	0.1	0.07	0.09	0.04 U	0.09 U
HEXACHLOROBENZENE	0.1	0.06	0.07	0.04	0.33
MIREX	0.1	0.04	0.02	0.08 U	0.03 U
OXYCHLORDANE	0.03	0.22	0.05	0.04 U	0.03 U
PCB-101/90	1.3	1.88	0.50 U	2.55	2.75
PCB-105	0.5	1.05	0.40	0.97	0.88
PCB-114	0.1 U	0.04 U	0.04 U	0.13 U	0.05 U
PCB-118	1.1	1.76	0.70	2.24	1.70
PCB-126	0.1	0.01	0.10	U	0.02
PCB-128	0.3	0.54	0.25	0.50	0.37
PCB-138/160	1.6	1.19 U	0.73 U	2.30	2.11
PCB-149/123	0.8	0.71	0.32 U	0.67	0.82
PCB-153/132	2.1	1.11 U	0.64 U	2.24	2.28
PCB-156	0.2	0.18	0.13	0.20	0.05 U
PCB-167	0.2	0.25	0.07	0.19	0.17
PCB-169	0.1	0.00	0.07	0.09	0.00
PCB-170/190	0.1	0.06 U	0.13	0.04 U	0.05 U
PCB-18/17	0.2	0.37	0.39	0.33 U	0.47

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.53 U	0.51 U	0.79	0.72
PCB-187	0.7	0.46 U	0.22 U	0.86	0.47
PCB-189	0.1	0.21	0.04 U	0.13 U	0.05 U
PCB-195/208	0.1	0.03 U	0.03 U	0.10 U	0.01 U
PCB-201/157/173	0.1	0.17	0.08	0.07	0.08
PCB-206	0.1	0.03	0.03 U	0.11 U	0.02 U
PCB-209	0.1	0.05 U	0.05	0.14 U	0.01 U
PCB-28	0.3	0.30	0.22	0.11	0.11
PCB-44	0.2	0.40	0.43	0.27	0.29
PCB-52	0.7	0.93	1.02	0.92	1.44
PCB-66	0.2	0.17	0.25	0.18	0.02 U
PCB-77	0.1	0.04	0.06	0.11 U	0.00
PCB-8/5	0.6	0.36	0.15	0.94	0.14 U
PCB-81	0.1	0.01	0.14	0.13 U	0.05
PENTACHLOROANISOLE	0.2	0.10	0.18	0.12 U	0.20
PENTACHLOROBENZENE	0.1	0.70	0.07 U	0.11 U	0.09
TOTAL DDT	2.9	52.92	3.34	9.06	5.20
TOTAL PCB CONGENERS	21.8	22.45	13.28	31.20	27.66
TRANS-NONACHLOR	0.3	1.28	0.17	0.29	0.23
Inorganics (MG/KG)					
ALUMINUM	299.5	159.83	382.33	321.83	207.00
ARSENIC	7.6	9.30	9.07	5.30	9.33
CADMIUM	1.3	2.45	2.27	1.85	1.48
CHROMIUM	3.2	1.83	2.32	2.91	2.75
COPPER	9.9	7.57	9.50	11.79	10.95
IRON	552.0	290.67	606.33	589.83	380.50
LEAD	3.2	5.58	7.02	6.49	4.57
MANGANESE	12.0	8.82	118.68	12.92	11.81
MERCURY	0.3	0.27	0.31	0.24	0.21
NICKEL	1.5	1.40	2.38	1.50 U	1.60
SILVER	0.1	0.09	0.30	0.20 U	0.12
ZINC	91.5	94.67	214.00	93.55	83.32

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	6.24	19.89	11.65	12.67
1,2,3,4,6,7,8,9-OCDF	3.9	3.21	1.94	7.48 U	3.49 U
1,2,3,4,6,7,8-HPCDD	2.9	1.49 U	3.29	U	2.20
1,2,3,4,6,7,8-HPCDF	1.9	1.90 U	0.99	3.74 U	1.75 U
1,2,3,4,7,8,9-HPCDF	2.1	1.90 U	1.39 U	3.74 U	1.75 U
1,2,3,4,7,8-HXCDD	2.1	1.47	1.06	3.74 U	1.75 U
1,2,3,4,7,8-HXCDF	2.0	1.90 U	1.39 U	3.74 U	1.75 U
1,2,3,6,7,8-HXCDD	1.9	1.48	1.02	3.74 U	1.75 U
1,2,3,6,7,8-HXCDF	2.0	1.90 U	1.39 U	3.74 U	1.75 U
1,2,3,7,8,9-HXCDD	2.0	1.48	1.39 U	3.74 U	1.75 U
1,2,3,7,8,9-HXCDF	2.1	1.90 U	1.39 U	3.74 U	1.75 U
1,2,3,7,8-PECDD	2.1	1.90 U	1.39 U	3.74 U	1.75 U
1,2,3,7,8-PECDF	2.0	1.90 U	1.14	3.74 U	1.75 U
2,3,4,6,7,8-HXCDF	2.0	1.90 U	1.39 U	3.74 U	1.75 U
2,3,4,7,8-PECDF	2.0	1.58 U	1.13	3.74 U	1.75 U
2,3,7,8-TCDD	0.3 U	0.38 U	0.22	U	0.35 U
2,3,7,8-TCDF	0.6	0.55 U	1.35	0.90	0.35 U
TOTAL DIOXINS	22.3	U	27.93	9.97	16.18
TOTAL FURANS	6.0	U	7.39	10.86	3.38
TOTAL HPCDD	5.3	1.49 U	7.30	3.74 U	2.39
TOTAL HPCDF	2.1	1.90 U	1.51	3.74 U	1.75 U
TOTAL HXCDD	2.2	1.54	0.98	3.50	1.75 U
TOTAL HXCDF	2.3	1.90 U	1.12	5.56	1.75 U
TOTAL PECDD	2.1	1.90 U	1.39 U	3.74 U	1.75 U
TOTAL PECDF	2.6	1.90 U	1.83	5.19	1.75 U
TOTAL TCDD	2.7	2.48 U	0.22	5.15	2.94
TOTAL TCDF	2.0	1.63 U	4.35	3.70	0.35 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.37 U	0.51	0.56	0.49 U
1-METHYLNAPHTHALENE	1.0	0.40 U	0.92	1.22	0.38 U
1-METHYLPHENANTHRENE	0.9	0.58	0.92	0.82	0.61
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.38	0.67	0.52	0.47
2,6-DIMETHYLNAPHTHALENE	0.7	0.59	0.64	0.59	0.54
2-METHYLNAPHTHALENE	1.5	0.56 U	1.37	1.65	0.60 U
ACENAPHTHENE	0.8	1.50	1.17	1.79	0.58
ACENAPHTHYLENE	2.5	1.30	1.75	2.12	1.32
ANTHRACENE	4.8	3.14	3.64	3.90	2.47
BENZO(A)ANTHRACENE	2.6	1.69	1.52	2.53	1.06
BENZO(A)PYRENE	2.3	0.90	1.33	1.91	0.63 U
BENZO(B)FLUORANTHENE	4.2	1.97	2.94	3.69	1.63
BENZO(E)PYRENE	4.1	1.78	2.40	3.75	2.06
BENZO(G,H,I)PERYLENE	1.6	0.81	1.26	1.72	0.74
BENZO(K)FLUORANTHENE	1.4	0.71	0.75	1.60	1.01
C1-CHRYSENES	2.8	1.30	1.80	2.82	1.20
C1-DIBENZOTHIOPHENES	0.6	0.59	0.74	0.47	0.41
C1-FLUORANTHENES/PYRENES	5.8	3.48	3.02	4.01	2.88
C1-FLUORENES	3.5	2.08	2.55	3.67	3.89
C1-NAPHTHALENES	2.5	0.97 U	2.29	2.88	0.98 U
C1-PHENANTHRENES/ANTHRACENES	4.0	3.76	3.46	2.67	3.65
C2-CHRYSENES	3.0	4.20	1.06	0.92	0.83
C2-DIBENZOTHIOPHENES	1.7	1.14	1.73	0.81	0.83
C2-FLUORENES	3.8	2.85	3.22	2.18	2.88
C2-NAPHTHALENES	2.4	2.16	1.87	2.95	1.50
C2-PHENANTHRENES/ANTHRACENES	5.6	3.52	4.76	4.29	2.35
C3-CHRYSENES	0.2	0.30	0.12	0.09	0.58
C3-DIBENZOTHIOPHENES	1.8	1.34	1.55	1.29	0.88
C3-FLUORENES	4.6	4.64	2.33	4.01	2.81

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.32	3.44	3.47	1.67
C3-PHENANTHRENES/ANTHRACENES	6.0	3.09	5.09	3.40	1.86
C4-CHRYSENES	0.1	0.12	0.15	0.02	0.02
C4-NAPHTHALENES	3.2	2.07	1.53	2.89	1.61
C4-PHENANTHRENES/ANTHRACENES	3.1	1.70	2.25	1.82	1.09
CHRYSENE	5.3	2.22	3.42	4.07	3.81
DIBENZO(A,H)ANTHRACENE	0.2	0.19	0.24	0.22	0.05
DIBENZOTHIOPHENE	0.2	0.14 U	0.27	0.27	0.17
FLUORANTHENE	8.9	5.16	6.44	7.84	6.13
FLUORENE	1.3	0.57	1.35	1.41	1.31
HIGH MOLECULAR WEIGHT PAHS	27.4	14.62	18.15	23.64	15.50
INDENO(1,2,3-CD)PYRENE	1.1	0.63	1.01	1.16	0.35
LOW MOLECULAR WEIGHT PAHS	15.5	8.93	14.71	16.85	9.89
NAPHTHALENE	2.0	0.88 U	1.96	2.68	0.73 U
PERYLENE	2.1	0.94	1.22	4.19	0.80
PHENANTHRENE	2.6	0.98 U	3.47	3.31	2.87
PYRENE	8.1	4.45	5.21	7.09	3.82
TOTAL PAHS	42.8	23.55	32.85	40.50	25.39
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.02 U	0.08	0.03	0.14
1,2,4,5-TETRACHLOROBENZENE	0.2	0.18 U	0.08	0.10 U	0.29
2,4'-DDD	0.3	0.25	0.17	0.31	0.31
2,4'-DDE	0.1	0.02 U	0.08	0.05	0.64
2,4'-DDT	0.2	0.05	0.13	0.27	0.52
4,4'-DDD	0.6	0.91	0.31	0.48	0.62
4,4'-DDE	1.2	1.06	0.72	1.21	0.85
4,4'-DDT	0.4	0.15 U	0.06	0.21	0.34
ALDRIN	0.04	0.02	0.07	0.04	0.02 U
ALPHA-BHC	0.1	0.06	0.10	0.07	0.20
ALPHA-CHLORDANE	0.3	0.39	0.23	0.20	0.01 U
BETA-BHC	0.2	0.23	0.20	0.33	0.37
CHLORPYRIFOS	0.3	0.09	0.29 U	0.28 U	0.02 U
CIS-NONACHLOR	0.2	0.31	0.30	0.33	0.24
DELTA-BHC	0.01	0.14	0.01 U	0.02	0.16
DIELDRIN	0.2	0.13	0.10	0.18	0.14
ENDOSULFAN II	0.1	0.17	0.09	0.09	0.01 U
ENDRIN	0.1	0.11	0.14	0.09 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.05 U	0.17	0.03	0.06
GAMMA-CHLORDANE	0.2	0.08	0.25	0.07	0.22
HEPTACHLOR	0.04	0.15	0.03	0.04	0.49
HEPTACHLOR EPOXIDE	0.1	0.36	0.03	0.03 U	0.09 U
HEXACHLOROBENZENE	0.1	0.38	0.08	0.04	0.24
MIREX	0.1	0.04	0.02 U	0.08 U	0.03 U
OXYCHLORDANE	0.03	0.13	0.01 U	0.04 U	0.03 U
PCB-101/90	1.3	2.23	1.20	3.11	2.46
PCB-105	0.5	1.56	0.36	1.25	0.61
PCB-114	0.1 U	0.04 U	0.04 U	0.12 U	0.06 U
PCB-118	1.1	2.59	0.89	3.12	1.23
PCB-126	0.1	0.03	0.02	0.23	0.01
PCB-128	0.3	0.98	0.42	0.84	0.44
PCB-138/160	1.6	3.43	2.37	4.22	2.23
PCB-149/123	0.8	1.68	0.85	2.09	1.08
PCB-153/132	2.1	3.00	2.24	4.56	2.31
PCB-156	0.2	0.15	0.27	0.40	0.09
PCB-167	0.2	0.32	0.25	0.31	0.19
PCB-169	0.1	0.01	0.01	0.03 U	0.17 U
PCB-170/190	0.1	0.13	0.11 U	0.05 U	0.05 U
PCB-18/17	0.2	0.42	0.32	0.23	0.31

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.87	1.22	1.05	0.65
PCB-187	0.7	0.83	0.41	1.17	0.64
PCB-189	0.1	0.04	0.06	0.12 U	0.03
PCB-195/208	0.1	0.04	0.13	0.10 U	0.01 U
PCB-201/157/173	0.1	0.14	0.29	0.10	0.14
PCB-206	0.1	0.03	0.03	0.11 U	0.02 U
PCB-209	0.1	0.04 U	0.06	0.13 U	0.02 U
PCB-28	0.3	0.19	0.37	0.15	0.09
PCB-44	0.2	0.27	0.51	0.12 U	0.41
PCB-52	0.7	0.81	0.73	0.58	0.11
PCB-66	0.2	0.19	0.09	0.28	0.02 U
PCB-77	0.1	0.10	0.04	0.16	0.06
PCB-8/5	0.6	0.06	0.15	0.94	0.13 U
PCB-81	0.1	0.06	0.05	0.13	0.07
PENTACHLOROANISOLE	0.2	0.08	0.16	0.13 U	0.18
PENTACHLOROBENZENE	0.1	0.50	0.08	0.12 U	0.10
TOTAL DDT	2.9	2.44	1.47	2.53	3.28
TOTAL PCB CONGENERS	21.8	35.33	23.19	44.00	23.47
TRANS-NONACHLOR	0.3	0.40	0.19	0.19	0.31
Inorganics (MG/KG)					
ALUMINUM	299.5	169.67	259.00	350.50	287.90
ARSENIC	7.6	7.50	7.12	6.25	9.67
CADMIUM	1.3	1.90	1.52	1.95	1.45
CHROMIUM	3.2	1.47	1.80	3.15	4.27
COPPER	9.9	14.13	8.43	7.76	8.74
IRON	552.0	274.33	430.33	794.50	458.91
LEAD	3.2	72.27	10.75	17.80	16.93
MANGANESE	12.0	12.10	17.82	15.83	17.24
MERCURY	0.3	0.27	0.22	0.23	0.29
NICKEL	1.5	1.31	1.68	1.59 U	1.30
SILVER	0.1	0.04	0.05	0.21 U	0.04
ZINC	91.5	100.40	107.23	88.77	86.76

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	19.95	17.90	30.22	15.60
1,2,3,4,6,7,8,9-OCDF	3.9	7.89 U	6.12	10.76	2.35
1,2,3,4,6,7,8-HPCDD	2.9	2.60 U	2.77	3.00	1.59 U
1,2,3,4,6,7,8-HPCDF	1.9	3.95 U	0.65	3.76 U	1.59 U
1,2,3,4,7,8,9-HPCDF	2.1	3.95 U	1.74 U	3.76 U	1.59 U
1,2,3,4,7,8-HXCDD	2.1	3.95 U	1.74	3.76 U	1.59 U
1,2,3,4,7,8-HXCDF	2.0	3.95 U	2.42	3.76 U	1.59 U
1,2,3,6,7,8-HXCDD	1.9	3.95 U	1.96	3.76 U	1.59 U
1,2,3,6,7,8-HXCDF	2.0	3.95 U	1.71 U	3.76 U	1.59 U
1,2,3,7,8,9-HXCDD	2.0	3.95 U	2.18	3.76 U	1.59 U
1,2,3,7,8,9-HXCDF	2.1	3.95 U	1.72 U	3.76 U	1.59 U
1,2,3,7,8-PECDD	2.1	3.25 U	0.95	3.76 U	1.59 U
1,2,3,7,8-PECDF	2.0	3.25 U	0.84	3.76 U	1.59 U
2,3,4,6,7,8-HXCDF	2.0	3.95 U	1.72	3.76 U	1.59 U
2,3,4,7,8-PECDF	2.0	3.25 U	0.99	3.76 U	1.59 U
2,3,7,8-TCDD	0.3 U	0.65 U	0.50	U	0.32 U
2,3,7,8-TCDF	0.6	0.76 U	0.37	1.06	0.32 U
TOTAL DIOXINS	22.3	U	28.81	45.56	15.60
TOTAL FURANS	6.0	U	16.12	9.78	2.04
TOTAL HPCDD	5.3	2.60	4.45	14.35	1.59 U
TOTAL HPCDF	2.1	3.95 U	1.43	3.76 U	1.59 U
TOTAL HXCDD	2.2	3.95 U	3.58	3.76 U	1.59 U
TOTAL HXCDF	2.3	3.95 U	2.63	3.76 U	1.59 U
TOTAL PECDD	2.1	3.25 U	0.95	3.76 U	1.59 U
TOTAL PECDF	2.6	3.25 U	0.72	3.72	1.59 U
TOTAL TCDD	2.7	2.04 U	1.38	5.19	0.32 U
TOTAL TCDF	2.0	1.36 U	0.87	2.17	0.32 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.78 U	0.61	2.21	0.84
1-METHYLNAPHTHALENE	1.0	0.97 U	1.16	5.11	1.19
1-METHYLPHENANTHRENE	0.9	2.53	1.60	7.95	2.20
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.81	0.59	1.41	0.96
2,6-DIMETHYLNAPHTHALENE	0.7	1.61	0.69	2.42	1.07
2-METHYLNAPHTHALENE	1.5	1.24 U	1.63	7.35	2.53
ACENAPHTHENE	0.8	13.22	2.69	39.69	6.83
ACENAPHTHYLENE	2.5	3.72	2.82	11.66	2.55
ANTHRACENE	4.8	33.51	8.61	55.88	13.43
BENZO(A)ANTHRACENE	2.6	15.52	4.23	58.53	6.35
BENZO(A)PYRENE	2.3	8.64	3.05	45.76	3.10
BENZO(B)FLUORANTHENE	4.2	11.71	5.32	71.04	5.44
BENZO(E)PYRENE	4.1	8.19	3.79	38.37	4.89
BENZO(G,H,I)PERYLENE	1.6	2.74	2.23	24.13	1.61
BENZO(K)FLUORANTHENE	1.4	5.70	1.46	27.88	3.10
C1-CHRYSENES	2.8	5.24	2.78	25.04	2.72
C1-DIBENZOTHIOPHENES	0.6	1.06	0.69	2.82	0.85
C1-FLUORANTHENES/PYRENES	5.8	20.21	6.08	49.56	12.33
C1-FLUORENES	3.5	5.38	3.75	10.69	7.67
C1-NAPHTHALENES	2.5	2.21 U	2.79	12.44	3.05
C1-PHENANTHRENES/ANTHRACENES	4.0	16.94	5.17	30.66	10.13
C2-CHRYSENES	3.0	7.77	1.50	13.27	0.89
C2-DIBENZOTHIOPHENES	1.7	1.61	1.33	2.56	1.51
C2-FLUORENES	3.8	3.82	1.88	5.13	5.65
C2-NAPHTHALENES	2.4	4.32	3.12	10.17	2.85
C2-PHENANTHRENES/ANTHRACENES	5.6	9.85	4.21	18.36	5.59
C3-CHRYSENES	0.2	0.11	0.08	0.03	0.03
C3-DIBENZOTHIOPHENES	1.8	2.29	1.26	2.89	1.44
C3-FLUORENES	4.6	5.93	1.81	9.89	4.72

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	4.77	4.50	7.23	3.28
C3-PHENANTHRENES/ANTHRACENES	6.0	5.50	5.41	9.69	3.72
C4-CHRYSENES	0.1	0.12	0.15	0.65	0.01
C4-NAPHTHALENES	3.2	2.93	2.37	5.35	2.38
C4-PHENANTHRENES/ANTHRACENES	3.1	2.38	1.95	3.81	2.17
CHRYSENE	5.3	21.12	6.46	70.15	11.15
DIBENZO(A,H)ANTHRACENE	0.2	0.39	0.46	4.61	0.16
DIBENZOTHIOPHENE	0.2	2.83	0.58	6.10	1.08
FLUORANTHENE	8.9	67.66	20.25	193.47	40.90
FLUORENE	1.3	8.94	3.35	29.80	6.85
HIGH MOLECULAR WEIGHT PAHS	27.4	158.79	48.36	523.10	87.55
INDENO(1,2,3-CD)PYRENE	1.1	2.66	2.06	27.51	1.22
LOW MOLECULAR WEIGHT PAHS	15.5	103.56	32.34	279.50	55.66
NAPHTHALENE	2.0	2.29 U	2.74	15.03	2.63
PERYLENE	2.1	3.19	1.72	10.79	1.91
PHENANTHRENE	2.6	40.64	10.50	120.09	20.84
PYRENE	8.1	45.45	13.91	150.59	25.88
TOTAL PAHS	42.8	262.35	80.70	802.60	143.20
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.03 U	0.11	0.04	1.16
1,2,4,5-TETRACHLOROBENZENE	0.2	0.29 U	0.09	0.12 U	0.17
2,4'-DDD	0.3	0.20	0.30	2.30	0.19
2,4'-DDE	0.1	0.07 U	0.14	0.05	0.35
2,4'-DDT	0.2	0.10 U	0.18	0.40	0.37
4,4'-DDD	0.6	1.00	0.32	0.75	0.45
4,4'-DDE	1.2	1.01	0.73	1.66	0.87
4,4'-DDT	0.4	0.06 U	0.06	0.27	0.23
ALDRIN	0.04	0.06	0.10	0.03	0.02 U
ALPHA-BHC	0.1	0.18	0.10	0.12	0.19
ALPHA-CHLORDANE	0.3	0.48	0.39	0.31	0.12
BETA-BHC	0.2	0.11 U	1.10	0.46	0.11
CHLORPYRIFOS	0.3	0.13	0.46	0.36 U	0.14
CIS-NONACHLOR	0.2	0.41	0.39	0.40	0.22
DELTA-BHC	0.01	0.07 U	0.01	0.02 U	0.07
DIELDRIN	0.2	0.00 U	0.07	0.23	0.13
ENDOSULFAN II	0.1	0.17 U	0.16	0.15	0.01 U
ENDRIN	0.1	0.24	0.23	0.11 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.04 U	0.19	0.03	0.12
GAMMA-CHLORDANE	0.2	0.24	0.18	0.11	0.11
HEPTACHLOR	0.04	0.24	0.03	0.06	0.25
HEPTACHLOR EPOXIDE	0.1	0.79	0.01 U	0.04 U	0.09 U
HEXACHLOROBENZENE	0.1	1.20	0.09	0.06	0.15
MIREX	0.1	0.04	0.04	0.10 U	0.03 U
OXYCHLORDANE	0.03	0.09 U	0.02	0.05 U	0.03 U
PCB-101/90	1.3	2.16	0.76	3.67	1.73
PCB-105	0.5	1.39	0.30	1.48	0.41
PCB-114	0.1 U	0.06 U	0.03 U	0.16 U	0.05 U
PCB-118	1.1	2.07	0.69	2.54	0.86
PCB-126	0.1	0.09	0.02	0.16 U	0.00
PCB-128	0.3	0.59	0.31	0.84	0.25
PCB-138/160	1.6	2.89	1.98	6.58	1.59
PCB-149/123	0.8	2.18	0.75	4.95	1.32
PCB-153/132	2.1	5.11	1.79	9.41	2.80
PCB-156	0.2	0.06 U	0.26	0.57	0.16
PCB-167	0.2	0.31	0.21	0.48	0.11
PCB-169	0.1	0.05	0.02	0.08 U	0.01
PCB-170/190	0.1	0.23	0.09 U	0.20 U	0.07
PCB-18/17	0.2	0.06 U	0.17	0.59	0.27

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	1.67	1.13	2.45	0.65
PCB-187	0.7	2.78	0.73	4.22	1.47
PCB-189	0.1	0.04	0.03	0.10	0.05
PCB-195/208	0.1	0.04 U	0.15	0.09	0.01 U
PCB-201/157/173	0.1	0.47	0.23	0.45	0.22
PCB-206	0.1	0.02	0.03	0.13 U	0.02 U
PCB-209	0.1	0.06	0.05	0.19	0.01 U
PCB-28	0.3	0.55	0.24	0.46	0.44
PCB-44	0.2	0.60	0.56	0.30 U	0.38
PCB-52	0.7	1.19	1.01	1.10	0.35
PCB-66	0.2	0.66	0.29	0.85	0.11
PCB-77	0.1	0.33	0.01	0.26	0.16 U
PCB-8/5	0.6	0.32	0.28	1.24	0.32 U
PCB-81	0.1	0.17	0.04	0.10	0.07
PENTACHLOROANISOLE	0.2	0.23	0.20	0.09 U	0.26
PENTACHLOROBENZENE	0.1	0.16	0.12	0.15 U	0.14
TOTAL DDT	2.9	2.44	1.73	5.44	2.46
TOTAL PCB CONGENERS	21.8	44.76	21.15	72.68	23.48
TRANS-NONACHLOR	0.3	0.65	0.16	0.22	0.53
Inorganics (MG/KG)					
ALUMINUM	299.5	273.50	328.00	313.00	264.91
ARSENIC	7.6	8.90	7.50	6.39	9.51
CADMIUM	1.3	1.70	1.15	1.27	0.98
CHROMIUM	3.2	2.30	2.05	3.45	3.65
COPPER	9.9	8.70	8.03	9.84	6.66
IRON	552.0	438.50	585.00	682.00	489.40
LEAD	3.2	4.30	3.43	10.40	4.22
MANGANESE	12.0	11.05	16.53	20.03	12.86
MERCURY	0.3	0.21	0.21	0.27	0.18
NICKEL	1.5	1.60	2.03	1.36 U	1.35
SILVER	0.1	0.05	0.04	0.19 U	0.03 U
ZINC	91.5	97.55	95.78	97.10	83.68

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.69 U	0.54	6.82	1.24
1-METHYLNAPHTHALENE	1.0	0.70 U	1.05	9.53	0.95
1-METHYLPHENANTHRENE	0.9	3.22	1.52	42.70	0.99
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.64	0.57	8.73	0.71
2,6-DIMETHYLNAPHTHALENE	0.7	1.27	0.70	12.66	0.59
2-METHYLNAPHTHALENE	1.5	1.01 U	1.51	14.59	1.62
ACENAPHTHENE	0.8	5.36	2.01	99.31	0.67
ACENAPHTHYLENE	2.5	6.60	3.89	21.99	2.12
ANTHRACENE	4.8	26.78	9.06	173.26	5.05
BENZO(A)ANTHRACENE	2.6	38.41	4.34	333.19	2.80
BENZO(A)PYRENE	2.3	20.51	2.92	264.33	2.14
BENZO(B)FLUORANTHENE	4.2	44.58	6.32	344.38	3.07
BENZO(E)PYRENE	4.1	20.71	4.68	161.79	3.27
BENZO(G,H,I)PERYLENE	1.6	4.27	2.39	72.50	1.00
BENZO(K)FLUORANTHENE	1.4	9.67	1.69	57.65	1.77
C1-CHRYSENES	2.8	18.88	3.17	158.68	1.62
C1-DIBENZOTHIOPHENES	0.6	1.60	0.72	8.65	0.50
C1-FLUORANTHENES/PYRENES	5.8	44.82	6.45	230.42	5.62
C1-FLUORENES	3.5	3.19	2.52	49.04	5.38
C1-NAPHTHALENES	2.5	1.71 U	2.57	24.08	2.57
C1-PHENANTHRENES/ANTHRACENES	4.0	20.03	5.13	140.49	3.77
C2-CHRYSENES	3.0	5.63	1.76	36.96	0.77
C2-DIBENZOTHIOPHENES	1.7	2.43	1.62	5.84	1.15
C2-FLUORENES	3.8	2.98	1.91	21.38	4.54
C2-NAPHTHALENES	2.4	4.52	2.32	24.15	1.88
C2-PHENANTHRENES/ANTHRACENES	5.6	15.07	4.81	55.59	3.79
C3-CHRYSENES	0.2	0.06	0.06	0.98	0.02
C3-DIBENZOTHIOPHENES	1.8	2.58	1.73	3.60	1.17
C3-FLUORENES	4.6	3.19	1.95	13.37	2.58

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	4.21	3.48	18.66	2.69
C3-PHENANTHRENES/ANTHRACENES	6.0	10.25	6.87	23.97	3.23
C4-CHRYSENES	0.1	0.28	0.16	6.36	0.02
C4-NAPHTHALENES	3.2	3.76	1.86	9.69	3.21
C4-PHENANTHRENES/ANTHRACENES	3.1	6.27	2.51	7.69	1.62
CHRYSENE	5.3	39.85	6.96	400.44	5.86
DIBENZO(A,H)ANTHRACENE	0.2	1.04	0.45	26.31	0.10
DIBENZOTHIOPHENE	0.2	1.67	0.45	18.52	0.26
FLUORANTHENE	8.9	83.44	19.79	719.24	13.59
FLUORENE	1.3	5.71	2.26	149.06	2.28
HIGH MOLECULAR WEIGHT PAHS	27.4	244.31	48.50	2213.43	33.43
INDENO(1,2,3-CD)PYRENE	1.1	3.88	2.15	92.76	0.74
LOW MOLECULAR WEIGHT PAHS	15.5	82.13	28.97	966.67	18.45
NAPHTHALENE	2.0	2.02 U	2.28	11.40	1.97
PERYLENE	2.1	5.95	2.19	47.04	1.17
PHENANTHRENE	2.6	34.66	7.94	497.07	4.75
PYRENE	8.1	61.06	14.04	469.92	8.93
TOTAL PAHS	42.8	326.45	77.46	3180.11	51.88
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.03 U	0.10	0.06	2.04
1,2,4,5-TETRACHLOROBENZENE	0.2	0.06 U	0.09 U	0.22	0.14 U
2,4'-DDD	0.3	0.65	0.19	15.42	0.15
2,4'-DDE	0.1	0.03	0.02	0.09	0.08
2,4'-DDT	0.2	0.21	0.17	0.15	0.14
4,4'-DDD	0.6	0.59	0.35	0.50	0.28
4,4'-DDE	1.2	0.81	0.70	1.35	0.80
4,4'-DDT	0.4	0.92	0.13	0.41	0.15
ALDRIN	0.04	0.02	0.10	0.06	0.02 U
ALPHA-BHC	0.1	0.06	0.06	0.19	0.12
ALPHA-CHLORDANE	0.3	0.18	0.22	0.31	0.20
BETA-BHC	0.2	0.01 U	0.18	0.68	0.07
CHLORPYRIFOS	0.3	0.08 U	0.19 U	0.21 U	0.22
CIS-NONACHLOR	0.2	0.10	0.25	0.27	0.15
DELTA-BHC	0.01	0.00 U	0.00 U	0.01	0.02
DIELDRIN	0.2	0.23	0.06	0.11	0.17
ENDOSULFAN II	0.1	0.05	0.10	0.33	0.02 U
ENDRIN	0.1	0.08	0.11	0.07 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.01 U	0.11	0.02	0.10
GAMMA-CHLORDANE	0.2	0.08	0.16	0.08	0.15
HEPTACHLOR	0.04	0.01 U	0.02	0.04	0.02 U
HEPTACHLOR EPOXIDE	0.1	0.08	0.03	0.03 U	0.10 U
HEXACHLOROBENZENE	0.1	0.01	0.04	0.05	0.15
MIREX	0.1	0.24	0.02 U	0.03	0.04 U
OXYCHLORDANE	0.03	0.01 U	0.01 U	0.86	0.14
PCB-101/90	1.3	1.01	0.65	2.10	0.91
PCB-105	0.5	0.63	0.30	0.75	0.31
PCB-114	0.1 U	0.03 U	0.03 U	0.09 U	0.06 U
PCB-118	1.1	0.71	0.59	2.36	0.74
PCB-126	0.1	0.02	0.01	0.09 U	0.00 U
PCB-128	0.3	0.32	0.26	0.45	0.16
PCB-138/160	1.6	0.87 U	1.57	2.91	0.64 U
PCB-149/123	0.8	0.96	0.70	1.59	0.89
PCB-153/132	2.1	0.98 U	1.78	3.76	1.98
PCB-156	0.2	0.09	0.19	0.21	0.10
PCB-167	0.2	0.32	0.15	0.48	0.07
PCB-169	0.1	0.01	0.00	0.06	0.05 U
PCB-170/190	0.1	0.58	0.05 U	2.74	0.16
PCB-18/17	0.2	0.10 U	0.08 U	1.67	0.48

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.41 U	1.15	1.24	0.45 U
PCB-187	0.7	0.46 U	0.35	1.41	0.58
PCB-189	0.1	0.03 U	0.02	0.10	0.06 U
PCB-195/208	0.1	0.02	0.03	0.11	0.01 U
PCB-201/157/173	0.1	0.05	0.18	0.18	0.06 U
PCB-206	0.1	0.03 U	0.03 U	0.08 U	0.03 U
PCB-209	0.1	0.04 U	0.05	0.10 U	0.02 U
PCB-28	0.3	0.18	0.14	0.53	0.90
PCB-44	0.2	0.34	0.22	0.31	0.24 U
PCB-52	0.7	0.31	0.79	1.01	1.13
PCB-66	0.2	0.18	0.06	0.67	0.34
PCB-77	0.1	0.13	0.03 U	0.06	0.04 U
PCB-8/5	0.6	0.05	0.07	2.12	1.01 U
PCB-81	0.1	0.07	0.04	0.06	0.00
PENTACHLOROANISOLE	0.2	0.05	0.17	0.17	0.58
PENTACHLOROBENZENE	0.1	0.06	0.03 U	0.22	0.15
TOTAL DDT	2.9	3.21	1.56	17.92	1.60
TOTAL PCB CONGENERS	21.8	14.43	16.32	48.64	20.14
TRANS-NONACHLOR	0.3	0.14	0.19	0.22	0.16
Inorganics (MG/KG)					
ALUMINUM	299.5	87.95	333.50	362.00	228.91
ARSENIC	7.6	5.95	7.15	4.30	7.96
CADMIUM	1.3	1.80	1.70	1.48	1.28
CHROMIUM	3.2	1.30	2.10	2.89	3.53
COPPER	9.9	8.00	9.15	20.32	11.03
IRON	552.0	258.00	551.50	554.50	420.57
LEAD	3.2	2.20	2.90	3.88	2.56
MANGANESE	12.0	12.95	18.95	32.03	16.09
MERCURY	0.3	0.26	0.25	0.24	0.22
NICKEL	1.5	0.97	1.80	1.10 U	1.39
SILVER	0.1	0.03	0.04	0.43 U	0.03 U
ZINC	91.5	105.90	102.25	103.30	94.99

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0				
1,2,3,4,6,7,8,9-OCDF	3.9				
1,2,3,4,6,7,8-HPCDD	2.9				
1,2,3,4,6,7,8-HPCDF	1.9				
1,2,3,4,7,8,9-HPCDF	2.1				
1,2,3,4,7,8-HXCDD	2.1				
1,2,3,4,7,8-HXCDF	2.0				
1,2,3,6,7,8-HXCDD	1.9				
1,2,3,6,7,8-HXCDF	2.0				
1,2,3,7,8,9-HXCDD	2.0				
1,2,3,7,8,9-HXCDF	2.1				
1,2,3,7,8-PECDD	2.1				
1,2,3,7,8-PECDF	2.0				
2,3,4,6,7,8-HXCDF	2.0				
2,3,4,7,8-PECDF	2.0				
2,3,7,8-TCDD	0.3 U				
2,3,7,8-TCDF	0.6				
TOTAL DIOXINS	22.3				
TOTAL FURANS	6.0				
TOTAL HPCDD	5.3				
TOTAL HPCDF	2.1				
TOTAL HXCDD	2.2				
TOTAL HXCDF	2.3				
TOTAL PECDD	2.1				
TOTAL PECDF	2.6				
TOTAL TCDD	2.7				
TOTAL TCDF	2.0				
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.38 U	0.53	0.33	0.86
1-METHYLNAPHTHALENE	1.0	0.36 U	1.07	0.69	0.79
1-METHYLPHENANTHRENE	0.9	0.54	0.87	0.53	0.82
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.34	0.52	0.30	0.50
2,6-DIMETHYLNAPHTHALENE	0.7	0.61	0.66	0.40	0.52
2-METHYLNAPHTHALENE	1.5	0.52 U	1.63	1.13	1.26
ACENAPHTHENE	0.8	0.99	1.38	0.52	0.38
ACENAPHTHYLENE	2.5	1.62	2.32	1.40	1.59
ANTHRACENE	4.8	4.96	4.34	2.96	3.19
BENZO(A)ANTHRACENE	2.6	2.79	2.21	3.82	1.52
BENZO(A)PYRENE	2.3	1.30	2.53	3.34	1.42
BENZO(B)FLUORANTHENE	4.2	3.05	3.54	4.94	2.17
BENZO(E)PYRENE	4.1	2.79	3.02	3.92	2.50
BENZO(G,H,I)PERYLENE	1.6	0.99	1.76	1.82	0.88
BENZO(K)FLUORANTHENE	1.4	1.35	0.96	1.85	0.99
C1-CHRYSENES	2.8	1.70	2.35	2.56	1.38
C1-DIBENZOTHIOPHENES	0.6	0.45	0.52	0.29	0.42
C1-FLUORANTHENES/PYRENES	5.8	5.22	3.90	4.76	4.11
C1-FLUORENES	3.5	2.02	2.69	2.35	5.20
C1-NAPHTHALENES	2.5	0.88 U	2.69	1.82	2.05
C1-PHENANTHRENES/ANTHRACENES	4.0	3.79	2.99	2.14	4.43
C2-CHRYSENES	3.0	13.50	1.51	1.48	1.08
C2-DIBENZOTHIOPHENES	1.7	1.75	1.86	0.30	1.01
C2-FLUORENES	3.8	1.81	1.60	2.15	5.03
C2-NAPHTHALENES	2.4	1.04 U	2.24	1.19	1.65
C2-PHENANTHRENES/ANTHRACENES	5.6	5.61	3.66	2.27	2.74
C3-CHRYSENES	0.2	0.18	0.05	0.05	0.47
C3-DIBENZOTHIOPHENES	1.8	2.40	1.14	0.52	1.10
C3-FLUORENES	4.6	12.26	2.79	1.56	2.36

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.96	3.48	1.08	1.87
C3-PHENANTHRENES/ANTHRACENES	6.0	5.07	7.03	1.90	3.21
C4-CHRYSENES	0.1	0.12	0.10	0.05	0.11
C4-NAPHTHALENES	3.2	2.86	1.87	1.14	1.60
C4-PHENANTHRENES/ANTHRACENES	3.1	3.18	2.46	0.79	1.62
CHRYSENE	5.3	4.31	4.08	4.76	3.68
DIBENZO(A,H)ANTHRACENE	0.2	0.16	0.34	0.30	0.10
DIBENZOTHIOPHENE	0.2	0.21 U	0.22	0.15	0.21
FLUORANTHENE	8.9	10.20	6.55	8.50	6.13
FLUORENE	1.3	0.94	1.36	0.77	2.08
HIGH MOLECULAR WEIGHT PAHS	27.4	26.87	21.66	29.57	17.42
INDENO(1,2,3-CD)PYRENE	1.1	0.75	1.41	1.65	0.60
LOW MOLECULAR WEIGHT PAHS	15.5	13.57	16.19	10.49	13.45
NAPHTHALENE	2.0	0.80 U	2.28	1.42	1.63
PERYLENE	2.1	1.14	1.60	2.00	1.00
PHENANTHRENE	2.6	3.73	2.88	2.28	3.32
PYRENE	8.1	8.11	5.93	8.85	4.58
TOTAL PAHS	42.8	40.44	37.85	40.06	30.87
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.15	0.17	1.16	1.03
1,2,4,5-TETRACHLOROBENZENE	0.2	0.18 U	0.16 U	0.30	0.08 U
2,4'-DDD	0.3	0.21	0.07	0.09	0.12
2,4'-DDE	0.1	0.14	0.08	0.12	0.10
2,4'-DDT	0.2	0.46	0.22	0.12	0.18
4,4'-DDD	0.6	0.81	0.36	0.17	0.29
4,4'-DDE	1.2	0.90	0.71	0.96	0.78
4,4'-DDT	0.4	0.19 U	0.04	0.10	0.10
ALDRIN	0.04	0.12	0.07	0.04	0.02 U
ALPHA-BHC	0.1	0.18	0.06	0.06	0.10
ALPHA-CHLORDANE	0.3	0.25	0.27	0.16	0.23
BETA-BHC	0.2	0.21	0.32	0.21	0.04 U
CHLORPYRIFOS	0.3	0.13	0.32 U	0.28 U	0.32
CIS-NONACHLOR	0.2	0.25	0.23	0.10	0.15
DELTA-BHC	0.01	0.05 U	0.01 U	0.02 U	0.04
DIELDRIN	0.2	0.10	0.05	0.27	0.12
ENDOSULFAN II	0.1	0.13 U	0.18	0.04	0.01 U
ENDRIN	0.1	0.25	0.16	0.09 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.17 U	0.10	0.02	0.04
GAMMA-CHLORDANE	0.2	0.21	0.22	0.06	0.11
HEPTACHLOR	0.04	0.23	0.03	0.05 U	0.07
HEPTACHLOR EPOXIDE	0.1	1.58	0.04	0.02	0.09 U
HEXACHLOROBENZENE	0.1	0.68	0.07	0.07	0.03
MIREX	0.1	0.04 U	0.03 U	0.08 U	0.03 U
OXYCHLORDANE	0.03	0.07 U	0.01 U	0.29	0.05
PCB-101/90	1.3	1.07	0.70	1.00	1.04
PCB-105	0.5	0.56	0.24	0.36	0.26
PCB-114	0.1 U	0.05 U	0.04 U	0.12 U	0.05 U
PCB-118	1.1	1.12	0.57	1.13	0.68
PCB-126	0.1	0.02	0.03	0.11 U	0.08
PCB-128	0.3	0.31	0.40	0.21	0.14
PCB-138/160	1.6	1.24 U	1.61	1.27	0.77
PCB-149/123	0.8	0.34 U	0.61	0.51	0.75
PCB-153/132	2.1	1.27 U	1.75	1.86	1.65
PCB-156	0.2	0.05 U	0.22	0.12	0.08
PCB-167	0.2	0.10	0.27	0.17	0.07
PCB-169	0.1	0.01	0.02	0.14	0.08
PCB-170/190	0.1	0.04 U	0.05 U	0.05	0.12
PCB-18/17	0.2	0.81	0.11	0.26	0.05

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.44 U	1.10	0.68	0.61
PCB-187	0.7	0.64	0.21	0.77	0.63
PCB-189	0.1	0.05 U	0.04 U	0.12 U	0.05 U
PCB-195/208	0.1	0.04	0.07	0.07	0.01 U
PCB-201/157/173	0.1	0.09	0.20	0.07	0.07
PCB-206	0.1	0.01	0.03 U	0.08	0.02 U
PCB-209	0.1	0.08	0.03	0.13 U	0.01 U
PCB-28	0.3	0.91	0.23	0.17	0.32
PCB-44	0.2	0.86	0.31	0.13	0.11
PCB-52	0.7	1.19	0.96	0.26	0.56
PCB-66	0.2	0.40	0.09	0.14	0.10
PCB-77	0.1	0.14	0.02	0.09	0.08
PCB-8/5	0.6	0.11	0.09	1.18	0.54
PCB-81	0.1	0.05	0.06	0.12 U	0.00
PENTACHLOROANISOLE	0.2	0.19	0.15	0.17	0.35
PENTACHLOROBENZENE	0.1	0.25	0.09 U	0.15	0.10
TOTAL DDT	2.9	2.71	1.48	1.56	1.57
TOTAL PCB CONGENERS	21.8	22.17	17.11	19.49	15.24
TRANS-NONACHLOR	0.3	0.28	0.29	0.11	0.19
Inorganics (MG/KG)					
ALUMINUM	299.5	217.00	379.00	278.00	270.03
ARSENIC	7.6	7.15	8.25	5.70	8.68
CADMIUM	1.3	1.60	1.30	1.48	0.84
CHROMIUM	3.2	1.90	2.35	2.01	4.22
COPPER	9.9	6.95	8.25	6.93	6.00
IRON	552.0	485.00	708.00	498.50	541.88
LEAD	3.2	3.25	2.90	4.13	2.11
MANGANESE	12.0	9.45	13.90	11.15	12.51
MERCURY	0.3	0.28	0.30	0.31	0.20
NICKEL	1.5	1.01	2.05	0.93 U	0.90 U
SILVER	0.1	0.07	0.07	0.16 U	0.05
ZINC	91.5	96.65	89.50	97.70	70.33

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	U	25.87	40.15	8.79 U
1,2,3,4,6,7,8,9-OCDF	3.9	U	2.28	11.21 U	1.62
1,2,3,4,6,7,8-HPCDD	2.9	U	5.70	5.74	1.16 U
1,2,3,4,6,7,8-HPCDF	1.9	U	1.06	5.60 U	1.16 U
1,2,3,4,7,8,9-HPCDF	2.1	U	1.74 U	5.60 U	1.16 U
1,2,3,4,7,8-HXCDD	2.1	U	1.74 U	5.60 U	1.16 U
1,2,3,4,7,8-HXCDF	2.0	U	1.74 U	5.60 U	1.16 U
1,2,3,6,7,8-HXCDD	1.9	U	0.68 U	5.60 U	1.16 U
1,2,3,6,7,8-HXCDF	2.0	U	1.74 U	5.60 U	1.16 U
1,2,3,7,8,9-HXCDD	2.0	U	1.17	5.60 U	1.16 U
1,2,3,7,8,9-HXCDF	2.1	U	1.74 U	5.60 U	1.16 U
1,2,3,7,8-PECDD	2.1	1.67 U	1.18	5.60 U	1.16 U
1,2,3,7,8-PECDF	2.0	1.67 U	0.80	5.60 U	1.16 U
2,3,4,6,7,8-HXCDF	2.0	U	0.67	5.60 U	1.16 U
2,3,4,7,8-PECDF	2.0	1.67 U	0.15	5.60 U	1.16 U
2,3,7,8-TCDD	0.3 U	0.34 U	0.14 U	U	0.23 U
2,3,7,8-TCDF	0.6	0.47 U	0.72	3.07	0.23 U
TOTAL DIOXINS	22.3	U	42.83	52.70	9.84 U
TOTAL FURANS	6.0	U	13.18	26.29	1.20 U
TOTAL HPCDD	5.3	2.99	12.38	13.22	2.50
TOTAL HPCDF	2.1	U	2.26	5.60 U	1.16 U
TOTAL HXCDD	2.2	U	0.97	5.60 U	1.16 U
TOTAL HXCDF	2.3	U	1.52 U	5.60 U	1.16 U
TOTAL PECDD	2.1	1.67 U	1.18	5.60 U	1.16 U
TOTAL PECDF	2.6	1.67 U	1.44	14.16	1.16 U
TOTAL TCDD	2.7	2.31 U	2.59	3.85	0.23 U
TOTAL TCDF	2.0	1.54 U	4.24	12.13	0.23 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.41 U	0.52	0.89	0.50
1-METHYLNAPHTHALENE	1.0	0.32 U	1.16	2.51	0.67
1-METHYLPHENANTHRENE	0.9	0.25	0.82	1.18	0.64
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.22	0.50	0.84	0.61
2,6-DIMETHYLNAPHTHALENE	0.7	0.46	0.71	1.01	0.47
2-METHYLNAPHTHALENE	1.5	0.57 U	1.79	3.28	1.08
ACENAPHTHENE	0.8	0.19	1.08	1.68	0.47
ACENAPHTHYLENE	2.5	1.65	3.18	7.17	1.90
ANTHRACENE	4.8	4.11	6.14	13.16	4.04
BENZO(A)ANTHRACENE	2.6	2.54	2.13	8.31	1.58
BENZO(A)PYRENE	2.3	2.30	2.08	5.64	1.51
BENZO(B)FLUORANTHENE	4.2	3.64	4.44	14.28	2.25
BENZO(E)PYRENE	4.1	3.56	3.84	14.72	2.89
BENZO(G,H,I)PERYLENE	1.6	1.04	1.93	4.93	0.95
BENZO(K)FLUORANTHENE	1.4	0.97	1.27	5.09	1.24
C1-CHRYSENES	2.8	2.89	3.00	10.10	1.48
C1-DIBENZOTHIOPHENES	0.6	0.33	0.59	0.85	0.48
C1-FLUORANTHENES/PYRENES	5.8	7.30	4.33	16.00	4.36
C1-FLUORENES	3.5	0.96	2.28	8.34	2.93
C1-NAPHTHALENES	2.5	0.89 U	2.94	5.79	1.75
C1-PHENANTHRENES/ANTHRACENES	4.0	2.49	3.57	5.69	3.82
C2-CHRYSENES	3.0	4.98	1.37	10.38	0.95
C2-DIBENZOTHIOPHENES	1.7	1.30	2.17	1.72	1.22
C2-FLUORENES	3.8	2.09	2.45	5.51	3.41
C2-NAPHTHALENES	2.4	0.92 U	2.35	4.39	1.77
C2-PHENANTHRENES/ANTHRACENES	5.6	4.81	4.70	10.70	3.09
C3-CHRYSENES	0.2	0.08	0.05	0.08	0.43
C3-DIBENZOTHIOPHENES	1.8	1.69	1.46	3.27	1.13

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	4.6	3.27	10.28	6.72	2.22
C3-NAPHTHALENES	3.4	2.05	3.24	3.96	2.12
C3-PHENANTHRENES/ANTHRACENES	6.0	5.42	10.79	9.60	3.00
C4-CHRYSENES	0.1	0:08	0.18	0.05	0.02
C4-NAPHTHALENES	3.2	2.16	1.48	5.08	2.40
C4-PHENANTHRENES/ANTHRACENES	3.1	4.12	3.11	5.08	1.68
CHRYSENE	5.3	4.41	4.32	17.88	3.97
DIBENZO(A,H)ANTHRACENE	0.2	0.13	0.33	0.68	0.08
DIBENZOTHIOPHENE	0.2	0.07 U	0.26	0.31	0.21
FLUORANTHENE	8.9	6.57	7.24	20.24	9.15
FLUORENE	1.3	0.42	1.77	2.40	1.31
HIGH MOLECULAR WEIGHT PAHS	27.4	23.51	23.49	76.48	23.18
INDENO(1,2,3-CD)PYRENE	1.1	0.54	1.54	3.28	0.62
LOW MOLECULAR WEIGHT PAHS	15.5	8.61	18.99	35.23	13.26
NAPHTHALENE	2.0	0.93 U	1.84	4.63	1.42
PERYLENE	2.1	1.98	2.25	9.10	1.12
PHENANTHRENE	2.6	0.74 U	3.19	2.91	3.04
PYRENE	8.1	7.57	7.40	23.74	6.88
TOTAL PAHS	42.8	32.12	42.48	111.71	36.44
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.02 U	0.14	0.11	1.82
1,2,4,5-TETRACHLOROBENZENE	0.2	0.15 U	0.21 U	0.50	0.10 U
2,4'-DDD	0.3	0.35	0.11	0.73	0.19
2,4'-DDE	0.1	0.07	0.05	0.11	0.09
2,4'-DDT	0.2	0.20	0.16	0.40	0.13
4,4'-DDD	0.6	0.74	0.44	1.15	0.33
4,4'-DDE	1.2	1.18	1.03	3.36	0.96
4,4'-DDT	0.4	1.24	0.05	0.35	0.13
ALDRIN	0.04	0.04	0.08	0.10	0.01 U
ALPHA-BHC	0.1	0.08	0.09	0.14	0.09
ALPHA-CHLORDANE	0.3	0.34	0.41	0.44	0.17
BETA-BHC	0.2	0.01 U	0.19	0.14	0.11
CHLORPYRIFOS	0.3	0.02	0.28 U	0.60 U	0.20
CIS-NONACHLOR	0.2	0.12	0.20	0.58	0.18
DELTA-BHC	0.01	0.01 U	0.01	0.04 U	0.01 U
DIELDRIN	0.2	0.33	0.16	0.36	0.15
ENDOSULFAN II	0.1	0.08	0.17	0.08	0.01 U
ENDRIN	0.1	0.09	0.08	0.19 U	0.02
GAMMA-BHC (LINDANE)	0.1	0.01 U	0.18	0.06 U	0.10
GAMMA-CHLORDANE	0.2	0.16	0.22	0.22	0.14
HEPTACHLOR	0.04	0.02 U	0.05	0.11	0.01 U
HEPTACHLOR EPOXIDE	0.1	0.07	0.07	0.07 U	0.05
HEXACHLOROBENZENE	0.1	0.05	0.07	0.10	0.04
MIREX	0.1	0.23	0.02 U	0.17 U	0.03 U
OXYCHLORDANE	0.03	0.01 U	0.01 U	0.08 U	0.05
PCB-101/90	1.3	1.50	1.09	3.43	0.86
PCB-105	0.5	0.61	0.30	1.53	0.21
PCB-114	0.1 U	0.04 U	0.04 U	0.26 U	0.04 U
PCB-118	1.1	1.20	0.74	4.04	0.66
PCB-126	0.1	0.03	0.02	0.26 U	0.08 U
PCB-128	0.3	0.33	0.41	0.86	0.16
PCB-138/160	1.6	1.06 U	1.76	5.54	0.83
PCB-149/123	0.8	0.50 U	0.70	2.64	0.67
PCB-153/132	2.1	1.27 U	1.83	6.99	1.76
PCB-156	0.2	0.13	0.27	0.44	0.12
PCB-167	0.2	0.20	0.24	0.48	0.08
PCB-169	0.1	0.01	0.02	0.26 U	0.00 U

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
PCB-170/190	0.1	0.04 U	0.08 U	0.09	0.03
PCB-18/17	0.2	0.09 U	0.09 U	0.30	0.18
PCB-180	1.0	0.50 U	1.51	2.84	0.45 U
PCB-187	0.7	0.46 U	0.41	2.34	0.52
PCB-189	0.1	0.03	0.04 U	0.26 U	0.04 U
PCB-195/208	0.1	0.03	0.05	0.21 U	0.00 U
PCB-201/157/173	0.1	0.04	0.03 U	0.14	0.04 U
PCB-206	0.1	0.02	0.03 U	0.22 U	0.02 U
PCB-209	0.1	0.05 U	0.06	0.28 U	0.01 U
PCB-28	0.3	0.21	0.35	0.33	0.28
PCB-44	0.2	0.38	0.28	0.22	0.09 U
PCB-52	0.7	0.54	1.16	0.75	0.49
PCB-66	0.2	0.25	0.13	0.61	0.03
PCB-77	0.1	0.19	0.04 U	0.21	0.00 U
PCB-8/5	0.6	0.02	0.19	4.24	0.23 U
PCB-81	0.1	0.10	0.04	0.26 U	0.13 U
PENTACHLOROANISOLE	0.2	0.03	0.23	0.44	0.22
PENTACHLOROBENZENE	0.1	0.08	0.09 U	0.38	0.09
TOTAL DDT	2.9	3.78	1.85	6.10	1.82
TOTAL PCB CONGENERS	21.8	17.11	20.94	69.66	13.63
TRANS-NONACHLOR	0.3	0.37	0.21	0.48	0.25
Inorganics (MG/KG)					
ALUMINUM	299.5	378.00	564.00	653.00	532.71
ARSENIC	7.6	12.80	16.30	11.04	17.65
CADMIUM	1.3	2.80	2.90	2.83	2.02
CHROMIUM	3.2	3.60	4.40	6.91	7.05
COPPER	9.9	13.70	17.60	12.67	12.27
IRON	552.0	762.00	1015.00	1174.00	1098.28
LEAD	3.2	3.90	4.60	5.96	3.92
MANGANESE	12.0	22.10	25.60	27.60	28.66
MERCURY	0.3	0.60	0.57	0.57	0.43
NICKEL	1.5	2.10	4.00	2.12 U	1.70 U
SILVER	0.1	0.14	0.15	0.65	0.14
ZINC	91.5	195.00	182.80	147.20	144.70

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	9.36	13.66	5.10 U	6.12 U
1,2,3,4,6,7,8,9-OCDF	3.9	5.68	2.97 U	5.10 U	3.16 U
1,2,3,4,6,7,8-HPCDD	2.9	3.36 U	2.84	U	1.58 U
1,2,3,4,6,7,8-HPCDF	1.9	3.28 U	1.48 U	2.54 U	1.13
1,2,3,4,7,8,9-HPCDF	2.1	2.58	1.48 U	2.54 U	1.58 U
1,2,3,4,7,8-HXCDD	2.1	3.28 U	1.48 U	2.54 U	1.58 U
1,2,3,4,7,8-HXCDF	2.0	1.95	1.48 U	2.54 U	1.58 U
1,2,3,6,7,8-HXCDD	1.9	1.95	1.48 U	2.54 U	1.58 U
1,2,3,6,7,8-HXCDF	2.0	1.86	1.48 U	2.54 U	1.58 U
1,2,3,7,8,9-HXCDD	2.0	3.28 U	1.48 U	2.54 U	1.58 U
1,2,3,7,8,9-HXCDF	2.1	3.10	1.48 U	2.54 U	1.58 U
1,2,3,7,8-PECDD	2.1	3.28 U	1.48 U	2.54 U	1.58 U
1,2,3,7,8-PECDF	2.0	3.28 U	1.48 U	2.54 U	1.58 U
2,3,4,6,7,8-HXCDF	2.0	2.09	1.48 U	2.54 U	1.58 U
2,3,4,7,8-PECDF	2.0	3.28 U	1.48 U	2.54 U	1.58 U
2,3,7,8-TCDD	0.3 U	0.36 U	0.30 U	U	0.32 U
2,3,7,8-TCDF	0.6	0.87 U	0.30 U	0.51 U	0.32 U
TOTAL DIOXINS	22.3	U	17.12	15.96	6.12 U
TOTAL FURANS	6.0	U	1.61	5.16	1.83 U
TOTAL HPCDD	5.3	3.36 U	3.48	7.38	1.58 U
TOTAL HPCDF	2.1	2.58	1.35	2.54 U	1.13
TOTAL HXCDD	2.2	4.40	1.48 U	2.54 U	1.58 U
TOTAL HXCDF	2.3	4.05	0.85 U	5.16	1.58 U
TOTAL PECDD	2.1	3.28 U	1.48 U	2.54 U	1.58 U
TOTAL PECDF	2.6	2.99 U	1.48 U	2.54 U	1.58 U
TOTAL TCDD	2.7	1.78 U	0.30 U	8.58	0.32 U
TOTAL TCDF	2.0	1.68 U	1.17	0.51 U	0.32 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.85 U	0.45	0.56	0.88
1-METHYLNAPHTHALENE	1.0	0.73 U	1.14	1.49	1.13
1-METHYLPHENANTHRENE	0.9	0.98	0.85	0.67	0.90
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.46	0.47	0.53	0.75
2,6-DIMETHYLNAPHTHALENE	0.7	0.93	0.71	0.64	0.66
2-METHYLNAPHTHALENE	1.5	1.22 U	1.98	1.96	1.70
ACENAPHTHENE	0.8	0.55	1.37	1.40	0.55
ACENAPHTHYLENE	2.5	4.62	2.47	4.13	1.89
ANTHRACENE	4.8	8.27	4.86	6.22	4.11
BENZO(A)ANTHRACENE	2.6	5.50	2.11	5.04	1.85
BENZO(A)PYRENE	2.3	5.41	1.86	4.04	1.82
BENZO(B)FLUORANTHENE	4.2	8.40	3.65	8.42	2.28
BENZO(E)PYRENE	4.1	6.33	3.04	8.87	2.59
BENZO(G,H,I)PERYLENE	1.6	2.60	1.96	3.00	1.04
BENZO(K)FLUORANTHENE	1.4	2.00	1.00	4.09	1.28
C1-CHRYSENES	2.8	5.20	2.25	6.60	1.29
C1-DIBENZOTHIOPHENES	0.6	0.91	0.53	0.64	0.45
C1-FLUORANTHENES/PYRENES	5.8	11.80	3.25	9.51	4.39
C1-FLUORENES	3.5	2.78	2.07	3.58	5.88
C1-NAPHTHALENES	2.5	1.94 U	3.12	3.44	2.83
C1-PHENANTHRENES/ANTHRACENES	4.0	5.75	2.87	3.89	3.49
C2-CHRYSENES	3.0	8.18	1.50	3.24	0.98
C2-DIBENZOTHIOPHENES	1.7	2.45	1.64	1.33	1.08
C2-FLUORENES	3.8	2.98	1.73	2.47	5.38
C2-NAPHTHALENES	2.4	2.41 U	2.38	3.16	2.19
C2-PHENANTHRENES/ANTHRACENES	5.6	8.81	3.64	7.31	3.24
C3-CHRYSENES	0.2	0.34	0.04	0.02	0.43
C3-DIBENZOTHIOPHENES	1.8	3.28	1.15	1.73	1.16
C3-FLUORENES	4.6	4.52	3.97	7.04	2.85

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter (1)	Mean Reference Conentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	5.01	3.13	3.84	2.64
C3-PHENANTHRENES/ANTHRACENES	6.0	8.31	6.18	6.89	2.68
C4-CHRYSENES	0.1	0.23	0.19	0.02	0.02
C4-NAPHTHALENES	3.2	4.48	1.26	4.44	2.46
C4-PHENANTHRENES/ANTHRACENES	3.1	6.19	2.74	3.78	1.60
CHRYSENE	5.3	9.17	4.27	8.60	4.07
DIBENZO(A,H)ANTHRACENE	0.2	0.40	0.34	0.36	0.10
DIBENZOTHIOPHENE	0.2	0.20 U	0.27	0.24	0.24
FLUORANTHENE	8.9	14.43	7.23	13.71	10.43
FLUORENE	1.3	0.94	1.49	1.24	1.73
HIGH MOLECULAR WEIGHT PAHS	27.4	49.04	21.78	47.24	25.45
INDENO(1,2,3-CD)PYRENE	1.1	1.54	1.39	2.18	0.64
LOW MOLECULAR WEIGHT PAHS	15.5	19.83	17.66	19.91	16.92
NAPHTHALENE	2.0	1.97 U	1.93	2.56	2.68
PERYLENE	2.1	2.15	1.62	4.31	0.99
PHENANTHRENE	2.6	2.27 U	3.56	2.40	4.26
PYRENE	8.1	14.13	5.96	15.49	7.18
TOTAL PAHS	42.8	68.87	39.44	67.16	42.36
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.06 U	0.25	0.01 U	2.62
1,2,4,5-TETRACHLOROBENZENE	0.2	0.33 U	0.37 U	0.08 U	0.11 U
2,4'-DDD	0.3	0.75	0.08	0.44	0.18
2,4'-DDE	0.1	0.15	0.06	0.02	0.11
2,4'-DDT	0.2	1.03	0.18	0.22	0.18
4,4'-DDD	0.6	1.48	0.34	0.69	0.33
4,4'-DDE	1.2	1.86	0.75	1.44	0.82
4,4'-DDT	0.4	0.60 U	0.05	0.21	0.13
ALDRIN	0.04	0.02	0.06	0.04 U	0.02 U
ALPHA-BHC	0.1	0.15	0.06	0.07	0.10
ALPHA-CHLORDANE	0.3	0.62	0.25	0.22	0.23
BETA-BHC	0.2	0.02 U	0.76	0.14 U	0.04 U
CHLORPYRIFOS	0.3	0.22	0.32 U	0.29 U	0.18
CIS-NONACHLOR	0.2	0.27	0.25	0.24	0.18
DELTA-BHC	0.01	0.04 U	0.01 U	0.02 U	0.01 U
DIELDRIN	0.2	0.56	0.10	0.18	0.14
ENDOSULFAN II	0.1	0.18	0.16	0.04	0.01 U
ENDRIN	0.1	0.19	0.13	0.09 U	0.02
GAMMA-BHC (LINDANE)	0.1	0.02 U	0.14	0.02	0.15
GAMMA-CHLORDANE	0.2	0.26	0.28	0.09	0.12
HEPTACHLOR	0.04	0.03 U	0.08	0.05 U	0.02 U
HEPTACHLOR EPOXIDE	0.1	0.17	0.06	0.04 U	0.06
HEXACHLOROBENZENE	0.1	0.09	0.08	0.05	0.04
MIREX	0.1	0.60	0.03 U	0.08 U	0.03 U
OXYCHLORDANE	0.03	0.03 U	0.01 U	0.04 U	0.03 U
PCB-101/90	1.3	2.73	0.67	1.71	0.87
PCB-105	0.5	1.18	0.21	0.64	0.23
PCB-114	0.1 U	0.08 U	0.04 U	0.12 U	0.05 U
PCB-118	1.1	1.67	0.56	2.04	0.65
PCB-126	0.1	0.07	0.02	0.12 U	0.08 U
PCB-128	0.3	0.47	0.32	0.44	0.17
PCB-138/160	1.6	1.80 U	1.59	2.89	0.55 U
PCB-149/123	0.8	1.00 U	0.58	1.24	0.73
PCB-153/132	2.1	2.15 U	1.60	3.78	1.78
PCB-156	0.2	0.17	0.31	0.12 U	0.14
PCB-167	0.2	0.40	0.20	0.24	0.08
PCB-169	0.1	0.02	0.02	0.12 U	0.01 U
PCB-170/190	0.1	0.08 U	0.05 U	0.04 U	0.03
PCB-18/17	0.2	0.25 U	0.10 U	0.11	0.15

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.79 U	1.35	1.76	0.50 U
PCB-187	0.7	0.98 U	0.22	1.33	0.51
PCB-189	0.1	0.08 U	0.03	0.12 U	0.05 U
PCB-195/208	0.1	0.05	0.16	0.10 U	0.01 U
PCB-201/157/173	0.1	0.12	0.21	0.07	0.05 U
PCB-206	0.1	0.07 U	0.03 U	0.11 U	0.02 U
PCB-209	0.1	0.09 U	0.04	0.13 U	0.01 U
PCB-28	0.3	0.45	0.21	0.15	0.36
PCB-44	0.2	0.83	0.39	0.09 U	0.09 U
PCB-52	0.7	1.23	0.98	0.26 U	0.64
PCB-66	0.2	0.51	0.14	0.31	0.09
PCB-77	0.1	0.36	0.04 U	0.05	0.09 U
PCB-8/5	0.6	0.15	0.21	1.33	0.49 U
PCB-81	0.1	0.21	0.07	0.12 U	0.09
PENTACHLOROANISOLE	0.2	0.12	0.17	0.10 U	0.31
PENTACHLOROBENZENE	0.1	0.18	0.07 U	0.11 U	0.12
TOTAL DDT	2.9	5.87	1.46	3.03	1.75
TOTAL PCB CONGENERS	21.8	30.97	17.71	34.45	14.31
TRANS-NONACHLOR	0.3	0.65	0.25	0.21	0.20
Inorganics (MG/KG)					
ALUMINUM	299.5	459.00	607.00	353.00	581.77
ARSENIC	7.6	14.60	20.80	4.22	19.84
CADMIUM	1.3	3.40	2.50	1.22	1.91
CHROMIUM	3.2	5.00	4.30	3.79	8.13
COPPER	9.9	13.80	16.40	8.30	24.62
IRON	552.0	1024.00	1433.00	563.00	1255.88
LEAD	3.2	10.90	7.20	3.54	6.72
MANGANESE	12.0	27.00	23.20	12.60	23.40
MERCURY	0.3	0.66	0.71	0.26	0.46
NICKEL	1.5	2.40	3.70	2.52 U	1.64 U
SILVER	0.1	0.10	0.11	0.15 U	0.13
ZINC	91.5	207.50	189.60	87.90	153.41

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	5.99	20.31	11.17	6.69 U
1,2,3,4,6,7,8,9-OCDF	3.9	2.37 U	3.18 U	4.26 U	3.07 U
1,2,3,4,6,7,8-HPCDD	2.9	1.50 U	3.04	2.91	2.57
1,2,3,4,6,7,8-HPCDF	1.9	1.49 U	0.75	2.13 U	1.54 U
1,2,3,4,7,8,9-HPCDF	2.1	1.49 U	1.59 U	2.13 U	1.54 U
1,2,3,4,7,8-HXCDD	2.1	1.02	1.59 U	2.13 U	1.54 U
1,2,3,4,7,8-HXCDF	2.0	1.49 U	1.59 U	2.13 U	1.54 U
1,2,3,6,7,8-HXCDD	1.9	1.05	0.92	2.13 U	1.54 U
1,2,3,6,7,8-HXCDF	2.0	1.49 U	0.83	2.13 U	1.54 U
1,2,3,7,8,9-HXCDD	2.0	0.90	1.59 U	2.13 U	1.54 U
1,2,3,7,8,9-HXCDF	2.1	1.49 U	1.59 U	2.13 U	1.54 U
1,2,3,7,8-PECDD	2.1	1.49 U	1.59 U	2.13 U	1.54 U
1,2,3,7,8-PECDF	2.0	1.49 U	0.94	2.13 U	1.54 U
2,3,4,6,7,8-HXCDF	2.0	1.49 U	1.59 U	2.13 U	1.54 U
2,3,4,7,8-PECDF	2.0	1.49 U	1.59 U	2.13 U	1.54 U
2,3,7,8-TCDD	0.3 U	0.30 U	0.32 U	U	0.31 U
2,3,7,8-TCDF	0.6	0.39 U	0.36	0.96	0.31 U
TOTAL DIOXINS	22.3	U	46.64	15.94	7.87 U
TOTAL FURANS	6.0	U	6.82	3.61	1.52
TOTAL HPCDD	5.3	1.49 U	12.12	2.26	2.57
TOTAL HPCDF	2.1	1.17	3.23	2.13 U	1.54 U
TOTAL HXCDD	2.2	1.52	2.99	2.13 U	1.51
TOTAL HXCDF	2.3	1.49 U	1.42	2.89	1.54 U
TOTAL PECDD	2.1	1.49 U	1.59 U	2.13 U	1.54 U
TOTAL PECDF	2.6	1.49 U	0.37	2.13 U	1.54 U
TOTAL TCDD	2.7	3.75 U	1.77	5.14	0.31 U
TOTAL TCDF	2.0	0.82 U	1.81	2.05	0.31 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.19 U	0.52	0.44	0.79
1-METHYLNAPHTHALENE	1.0	0.31 U	0.83	1.30	0.99
1-METHYLPHENANTHRENE	0.9	0.35	2.11	1.22	0.78
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.25	0.94	1.00	0.85
2,6-DIMETHYLNAPHTHALENE	0.7	0.40	0.65	0.85	0.77
2-METHYLNAPHTHALENE	1.5	0.49 U	1.29	1.81	1.67
ACENAPHTHENE	0.8	0.20	1.49	1.10	0.41
ACENAPHTHYLENE	2.5	1.35	2.29	2.88	1.42
ANTHRACENE	4.8	3.51	4.89	5.06	3.10
BENZO(A)ANTHRACENE	2.6	1.92	1.66	2.63	1.20
BENZO(A)PYRENE	2.3	1.86	1.48	2.02	1.24
BENZO(B)FLUORANTHENE	4.2	2.58	3.18	4.73	1.46
BENZO(E)PYRENE	4.1	2.25	2.75	5.16	1.90
BENZO(G,H,I)PERYLENE	1.6	0.87	1.64	1.89	0.66
BENZO(K)FLUORANTHENE	1.4	0.57	0.80	1.68	0.80
C1-CHRYSENES	2.8	1.78	1.85	3.90	0.96
C1-DIBENZOTHIOPHENES	0.6	0.43	1.57	0.82	0.41
C1-FLUORANTHENES/PYRENES	5.8	5.75	3.96	6.07	3.13
C1-FLUORENES	3.5	1.36	3.43	3.22	4.73
C1-NAPHTHALENES	2.5	0.81 U	2.12	3.12	2.65
C1-PHENANTHRENES/ANTHRACENES	4.0	2.63	6.92	4.97	3.75
C2-CHRYSENES	3.0	3.16	1.23	3.18	0.33
C2-DIBENZOTHIOPHENES	1.7	1.32	3.58	1.71	1.16
C2-FLUORENES	3.8	1.71	6.88	4.94	4.01
C2-NAPHTHALENES	2.4	1.19 U	2.45	3.73	2.49
C2-PHENANTHRENES/ANTHRACENES	5.6	4.45	9.17	7.83	3.21
C3-CHRYSENES	0.2	0.04	0.08	0.04	0.37
C3-DIBENZOTHIOPHENES	1.8	1.59	2.98	2.32	1.06
C3-FLUORENES	4.6	3.14	6.12	7.76	3.05

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	2.56	3.81	5.31	3.13
C3-PHENANTHRENES/ANTHRACENES	6.0	4.56	12.29	5.10	2.76
C4-CHRYSENES	0.1	0.07	0.10	0.01	0.01
C4-NAPHTHALENES	3.2	2.49	3.47	6.61	2.42
C4-PHENANTHRENES/ANTHRACENES	3.1	3.24	4.16	2.69	1.14
CHRYSENE	5.3	3.37	3.92	5.25	3.20
DIBENZO(A,H)ANTHRACENE	0.2	0.10	0.28	0.10	0.05
DIBENZOTHIOPHENE	0.2	0.06 U	0.45	0.27	0.21
FLUORANTHENE	8.9	5.48	7.89	10.11	7.73
FLUORENE	1.3	0.32	1.99	1.13	1.30
HIGH MOLECULAR WEIGHT PAHS	27.4	17.82	21.74	29.81	18.38
INDENO(1,2,3-CD)PYRENE	1.1	0.47	1.28	1.08	0.34
LOW MOLECULAR WEIGHT PAHS	15.5	7.18	19.00	16.43	12.84
NAPHTHALENE	2.0	0.65 U	1.64	2.30	1.97
PERYLENE	2.1	0.99	1.48	3.00	0.84
PHENANTHRENE	2.6	0.66 U	5.41	2.16	2.98
PYRENE	8.1	5.08	6.52	9.71	4.95
TOTAL PAHS	42.8	25.00	40.75	46.24	31.22
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.02 U	0.06	0.02 U	1.77
1,2,4,5-TETRACHLOROBENZENE	0.2	0.17 U	0.10 U	0.08 U	0.10 U
2,4'-DDD	0.3	0.35	0.22	0.35	0.13
2,4'-DDE	0.1	0.06	0.06	0.04	0.14
2,4'-DDT	0.2	0.25	0.16	0.06	0.15
4,4'-DDD	0.6	0.79	0.35	0.63	0.28
4,4'-DDE	1.2	0.96	0.72	1.44	0.73
4,4'-DDT	0.4	1.35	0.13	0.19	0.12
ALDRIN	0.04	0.01 U	0.08	0.01	0.01 U
ALPHA-BHC	0.1	0.08	0.12	0.07	0.13
ALPHA-CHLORDANE	0.3	0.29	0.19	0.22	0.19
BETA-BHC	0.2	0.01 U	0.66	0.16 U	0.04 U
CHLORPYRIFOS	0.3	0.14	0.23 U	0.24 U	0.37
CIS-NONACHLOR	0.2	0.13	0.21	0.20	0.12
DELTA-BHC	0.01	0.01 U	0.00 U	0.02 U	0.02
DIELDRIN	0.2	0.24	0.07	0.17	0.16
ENDOSULFAN II	0.1	0.07	0.10	0.02	0.01 U
ENDRIN	0.1	0.07	0.10	0.08 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.01 U	0.22	0.02	0.15
GAMMA-CHLORDANE	0.2	0.07	0.26	0.08	0.12
HEPTACHLOR	0.04	0.02 U	0.12	0.04 U	0.01 U
HEPTACHLOR EPOXIDE	0.1	0.13	0.12	0.03 U	0.09 U
HEXACHLOROBENZENE	0.1	0.05	0.09	0.04	0.04
MIREX	0.1	0.27	0.02 U	0.07 U	0.03 U
OXYCHLORDANE	0.03	0.04	0.05	0.03 U	0.03 U
PCB-101/90	1.3	1.27	0.63	1.43	0.81
PCB-105	0.5	0.51	0.23	0.56	0.24
PCB-114	0.1 U	0.04 U	0.03 U	0.11 U	0.05 U
PCB-118	1.1	0.98	0.46	1.48	0.52
PCB-126	0.1	0.03	0.01	0.18	0.00 U
PCB-128	0.3	0.29	0.34	0.37	0.13
PCB-138/160	1.6	0.98 U	1.47	2.38	0.46 U
PCB-149/123	0.8	0.40 U	0.45	0.76	0.60
PCB-153/132	2.1	1.13 U	1.45	2.99	1.56
PCB-156	0.2	0.13	0.34	0.06	0.10
PCB-167	0.2	0.18	0.19	0.20	0.06
PCB-169	0.1	0.03	0.03 U	0.07 U	0.15 U
PCB-170/190	0.1	0.04 U	0.11 U	0.05 U	0.19
PCB-18/17	0.2	0.13 U	0.12	0.15	0.12

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.50 U	1.22	1.55	0.37 U
PCB-187	0.7	0.51 U	0.29	1.19	0.44
PCB-189	0.1	0.04 U	0.03 U	0.11 U	0.05 U
PCB-195/208	0.1	0.02	0.10	0.09 U	0.00 U
PCB-201/157/173	0.1	0.06	0.30	0.08	0.05 U
PCB-206	0.1	0.03 U	0.03	0.09 U	0.02 U
PCB-209	0.1	0.03	0.08	0.12 U	0.01 U
PCB-28	0.3	0.25	0.30	0.13	0.21
PCB-44	0.2	0.11 U	0.54	0.07 U	0.10 U
PCB-52	0.7	0.55	0.64	0.20 U	0.73
PCB-66	0.2	0.25	0.13	0.20	0.10
PCB-77	0.1	0.10	0.02	0.11	0.00 U
PCB-8/5	0.6	0.17	0.19	0.66	0.49 U
PCB-81	0.1	0.07	0.05	0.06	0.07
PENTACHLOROANISOLE	0.2	0.10	0.23	0.07 U	0.29
PENTACHLOROBENZENE	0.1	0.09	0.14 U	0.06 U	0.13
TOTAL DDT	2.9	3.76	1.64	2.70	1.55
TOTAL PCB CONGENERS	21.8	15.48	16.66	27.41	12.96
TRANS-NONACHLOR	0.3	0.28	0.17	0.22	0.16
Inorganics (MG/KG)					
ALUMINUM	299.5	459.00	816.00	757.00	488.73
ARSENIC	7.6	14.10	15.60	9.90	19.13
CADMIUM	1.3	3.50	2.60	2.65	1.89
CHROMIUM	3.2	4.40	4.90	6.63	8.27
COPPER	9.9	13.50	15.40	35.20	12.02
IRON	552.0	853.00	1312.00	1187.00	927.02
LEAD	3.2	5.90	6.10	7.34	4.97
MANGANESE	12.0	19.10	27.80	23.50	24.07
MERCURY	0.3	0.61	0.45	0.51	0.38
NICKEL	1.5	2.30	4.00	4.47 U	3.42
SILVER	0.1	0.12	0.12	0.33 U	0.14
ZINC	91.5	215.00	197.00	182.20	152.02

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

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AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	14.0	3.88 U	20.35	12.69	9.68 U
1,2,3,4,6,7,8,9-OCDF	3.9	3.88 U	2.22	5.15 U	3.61 U
1,2,3,4,6,7,8-HPCDD	2.9	1.94 U	3.94	2.23 U	3.12
1,2,3,4,6,7,8-HPCDF	1.9	1.94 U	1.04	2.57 U	1.53
1,2,3,4,7,8,9-HPCDF	2.1	1.94 U	1.49 U	2.57 U	1.81 U
1,2,3,4,7,8-HXCDD	2.1	1.94 U	1.49 U	2.57 U	1.81 U
1,2,3,4,7,8-HXCDF	2.0	1.94 U	1.49 U	2.57 U	1.81 U
1,2,3,6,7,8-HXCDD	1.9	1.94 U	1.49 U	2.57 U	1.81 U
1,2,3,6,7,8-HXCDF	2.0	1.94 U	1.49 U	2.57 U	1.81 U
1,2,3,7,8,9-HXCDD	2.0	1.94 U	1.49 U	2.57 U	1.81 U
1,2,3,7,8,9-HXCDF	2.1	1.94 U	1.49 U	2.57 U	1.81 U
1,2,3,7,8-PECDD	2.1	2.45 U	1.49 U	2.57 U	1.81 U
1,2,3,7,8-PECDF	2.0	2.45 U	0.93	2.30	1.81 U
2,3,4,6,7,8-HXCDF	2.0	1.94 U	1.49 U	2.57 U	1.81 U
2,3,4,7,8-PECDF	2.0	2.45 U	0.84	2.57 U	1.81 U
2,3,7,8-TCDD	0.3 U	0.49 U	0.30 U	0.45 U	0.36 U
2,3,7,8-TCDF	0.6	0.49 U	0.30 U	0.51 U	0.36 U
TOTAL DIOXINS	22.3	U	17.29	20.99	10.79 U
TOTAL FURANS	6.0	U	1.33	6.28	2.25 U
TOTAL HPCDD	5.3	2.32	9.83	2.57 U	3.12
TOTAL HPCDF	2.1	1.94 U	1.49 U	2.57 U	1.53
TOTAL HXCDD	2.2	1.94 U	1.49 U	2.57 U	1.81 U
TOTAL HXCDF	2.3	1.94 U	1.49 U	2.92	1.81 U
TOTAL PECDD	2.1	1.94 U	1.49 U	2.57 U	1.81 U
TOTAL PECDF	2.6	2.45 U	2.07	2.84	1.81 U
TOTAL TCDD	2.7	3.95 U	0.30 U	10.52	0.36 U
TOTAL TCDF	2.0	0.83 U	0.34	2.28	0.36 U
Semivolatile Organics (UG/KG)					
1,1-BIPHENYL	0.6	0.50 U	0.37	0.49	0.83
1-METHYLNAPHTHALENE	1.0	0.49 U	0.73	0.92	1.19
1-METHYLPHENANTHRENE	0.9	0.43	0.98	1.24	0.84
2,3,5-TRIMETHYLNAPHTHALENE	0.6	0.32	0.56	0.82	1.02
2,6-DIMETHYLNAPHTHALENE	0.7	0.57	0.57	0.91	0.77
2-METHYLNAPHTHALENE	1.5	0.83 U	1.09	1.55	2.14
ACENAPHTHENE	0.8	0.16	1.17	0.93	0.41
ACENAPHTHYLENE	2.5	1.28	1.63	1.58	1.26
ANTHRACENE	4.8	1.46 U	3.09	2.95	2.53
BENZO(A)ANTHRACENE	2.6	1.67	1.21	2.60	1.21
BENZO(A)PYRENE	2.3	1.74	1.08	1.81	1.35
BENZO(B)FLUORANTHENE	4.2	2.69	2.14	4.06	1.49
BENZO(E)PYRENE	4.1	2.07	1.90	3.95	1.82
BENZO(G,H,I)PERYLENE	1.6	0.92	1.02	2.03	0.57
BENZO(K)FLUORANTHENE	1.4	0.69	0.55	1.46	0.72
C1-CHRYSENES	2.8	1.59	1.38	2.30	0.87
C1-DIBENZOTHIOPHENES	0.6	0.44	0.68	0.56	0.47
C1-FLUORANTHENES/PYRENES	5.8	4.87	2.68	3.85	2.93
C1-FLUORENES	3.5	2.21	2.17	3.00	6.96
C1-NAPHTHALENES	2.5	1.32 U	1.81	2.48	3.31
C1-PHENANTHRENES/ANTHRACENES	4.0	2.87	3.42	3.97	3.44
C2-CHRYSENES	3.0	3.88	1.10	2.21	0.70
C2-DIBENZOTHIOPHENES	1.7	1.26	2.44	1.05	1.07
C2-FLUORENES	3.8	2.16	3.09	3.99	7.32
C2-NAPHTHALENES	2.4	1.83 U	2.14	2.60	2.91
C2-PHENANTHRENES/ANTHRACENES	5.6	5.44	5.96	5.07	3.04
C3-CHRYSENES	0.2	0.05	0.03	0.02	0.58
C3-DIBENZOTHIOPHENES	1.8	1.76	1.61	1.29	0.82
C3-FLUORENES	4.6	3.36	3.30	4.43	3.32

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
C3-NAPHTHALENES	3.4	3.61	3.11	3.44	3.81
C3-PHENANTHRENES/ANTHRACENES	6.0	5.44	7.70	3.25	2.53
C4-CHRYSENES	0.1	0.07	0.09	0.03	0.58
C4-NAPHTHALENES	3.2	3.22	1.79	3.94	3.34
C4-PHENANTHRENES/ANTHRACENES	3.1	3.85	2.79	1.99	1.13
CHRYSENE	5.3	3.12	2.85	4.54	3.33
DIBENZO(A,H)ANTHRACENE	0.2	0.11	0.17	0.21	0.06
DIBENZOTHIOPHENE	0.2	0.07 U	0.22	0.21	0.20
FLUORANTHENE	8.9	4.94	5.20	7.31	6.67
FLUORENE	1.3	0.45	1.10	1.02	1.43
HIGH MOLECULAR WEIGHT PAHS	27.4	15.60	14.51	22.92	16.62
INDENO(1,2,3-CD)PYRENE	1.1	0.46	0.80	1.28	0.46
LOW MOLECULAR WEIGHT PAHS	15.5	6.29	12.14	11.79	13.45
NAPHTHALENE	2.0	1.38 U	1.59	1.57	2.84
PERYLENE	2.1	0.83	0.88	2.10	0.92
PHENANTHRENE	2.6	0.74 U	2.48	2.19	2.85
PYRENE	8.1	4.03	4.00	6.45	4.01
TOTAL PAHS	42.8	21.89	26.65	34.72	30.07
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	0.6	0.06 U	0.08	0.01	2.92
1,2,4,5-TETRACHLOROBENZENE	0.2	0.29 U	0.12 U	0.09	0.12 U
2,4'-DDD	0.3	0.46	0.25	0.32	0.17
2,4'-DDE	0.1	0.12	0.06	0.06	0.14
2,4'-DDT	0.2	0.32	0.20	0.11	0.23
4,4'-DDD	0.6	0.96	0.37	0.44	0.37
4,4'-DDE	1.2	1.15	0.62	1.33	0.94
4,4'-DDT	0.4	1.50	0.05	0.13	0.11
ALDRIN	0.04	0.02	0.11	0.02	0.02 U
ALPHA-BHC	0.1	0.10	0.10	0.05	0.14
ALPHA-CHLORDANE	0.3	0.42	0.22	0.20	0.35
BETA-BHC	0.2	0.01 U	0.59	0.22	0.05 U
CHLORPYRIFOS	0.3	0.18	0.21 U	0.30 U	0.33
CIS-NONACHLOR	0.2	0.20	0.39	0.17	0.22
DELTA-BHC	0.01	0.01 U	0.00 U	0.02 U	0.02
DIELDRIN	0.2	0.34	0.07	0.08	0.09
ENDOSULFAN II	0.1	0.09	0.15	0.03	0.02 U
ENDRIN	0.1	0.10	0.18	0.10 U	0.02 U
GAMMA-BHC (LINDANE)	0.1	0.02 U	0.19	0.02	0.21
GAMMA-CHLORDANE	0.2	0.08	0.21	0.06	0.16
HEPTACHLOR	0.04	0.03 U	0.01 U	0.05 U	0.02 U
HEPTACHLOR EPOXIDE	0.1	0.06	0.04	0.04 U	0.10 U
HEXACHLOROBENZENE	0.1	0.05	0.13	0.03	0.03
MIREX	0.1	0.42	0.02 U	0.08 U	0.04 U
OXYCHLORDANE	0.03	0.02 U	0.01 U	0.04 U	0.03 U
PCB-101/90	1.3	1.45	0.53	1.14	0.96
PCB-105	0.5	0.58	0.18	0.49	0.31
PCB-114	0.1 U	0.06 U	0.03 U	0.13 U	0.06 U
PCB-118	1.1	0.44 U	0.35	1.10	0.60
PCB-126	0.1	0.10	0.02	0.13 U	0.00 U
PCB-128	0.3	0.37	0.36	0.29	0.11
PCB-138/160	1.6	1.06 U	1.20	1.84	0.55 U
PCB-149/123	0.8	0.49 U	0.31	0.70	0.77
PCB-153/132	2.1	1.13 U	1.14	1.66	1.61
PCB-156	0.2	0.07	0.28	0.13	0.14
PCB-167	0.2	0.20	0.23	0.16	0.05
PCB-169	0.1	0.06	0.00	0.02	0.01
PCB-170/190	0.1	0.06 U	0.06 U	0.04	0.24
PCB-18/17	0.2	0.16 U	0.08 U	0.21	0.28

TABLE G - 2

AVERAGE CHEMICAL CONCENTRATION IN MUSSELS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter [1]	Mean Reference Conentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
PCB-180	1.0	0.39 U	0.92	0.62	0.33 U
PCB-187	0.7	0.65 U	0.19	0.82	0.52
PCB-189	0.1	0.06 U	0.10	0.13 U	0.06 U
PCB-195/208	0.1	0.02	0.15	0.11 U	0.01 U
PCB-201/157/173	0.1	0.06	0.18	0.10 U	0.06 U
PCB-206	0.1	0.06 U	0.03 U	0.11 U	0.03 U
PCB-209	0.1	0.07 U	0.04	0.15 U	0.02 U
PCB-28	0.3	0.33	0.34	0.11	0.07
PCB-44	0.2	0.14 U	0.23	0.08	0.06 U
PCB-52	0.7	0.34	0.89	0.24	0.92
PCB-66	0.2	0.33	0.10	0.15	0.08
PCB-77	0.1	0.25	0.03 U	0.09	0.19 U
PCB-8/5	0.6	0.14	0.15	0.75	0.53 U
PCB-81	0.1	0.19	0.07	0.09	0.01
PENTACHLOROANISOLE	0.2	0.09	0.20	0.19	0.50
PENTACHLOROBENZENE	0.1	0.13	0.20 U	0.07	0.17
TOTAL DDT	2.9	4.52	1.55	2.39	1.95
TOTAL PCB CONGENERS	21.8	15.45	13.87	19.83	14.47
TRANS-NONACHLOR	0.3	0.44	0.20	0.19	0.21
Inorganics (MG/KG)					
ALUMINUM	299.5	265.00	745.00	797.00	828.58
ARSENIC	7.6	14.20	16.00	10.39	19.99
CADMIUM	1.3	3.70	2.50	2.91	2.10
CHROMIUM	3.2	3.60	4.60	6.78	15.34
COPPER	9.9	14.50	16.10	47.50	33.27
IRON	552.0	592.00	1229.00	1195.00	1490.79
LEAD	3.2	6.80	6.40	9.39	6.00
MANGANESE	12.0	13.30	25.70	23.48	25.11
MERCURY	0.3	0.56	0.51	0.62	0.50
NICKEL	1.5	2.20	3.90	2.05 U	4.07
SILVER	0.1	0.11	0.10	0.30 U	0.06 U
ZINC	91.5	229.00	195.80	192.40	165.93

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum detected or non-detected concentration.
- NR - Not Reported
- R - Rejected
- Duplicate samples are averaged in this table.
- Parameters where all samples were non-detects are designated with a "U".
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000,
- January 2001, September 2001).

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.72	2.44	0.61	2.83
1-METHYLNAPHTHALENE	2.49	2.22	16.41	1.12	2.09
1-METHYLPHENANTHRENE	1.60	0.84	3.19	0.34	1.52
2,3,5-TRIMETHYLNAPHTHALENE	0.95	0.75	1.30	0.34	0.69
2,6-DIMETHYLNAPHTHALENE	0.95	0.78	4.44	0.37	0.69
2-METHYLNAPHTHALENE	3.12	3.03	8.89	1.55	2.54
ACENAPHTHENE	0.58	0.19	3.37	0.54	0.94
ACENAPHTHYLENE	0.30	0.22	5.67	0.28	0.37
ANTHRACENE	1.52	0.28	4.96	0.80	2.00
BENZO(A)ANTHRACENE	3.52	0.59	9.44	1.98	4.72
BENZO(A)PYRENE	3.99	0.47	22.56	2.13	15.22
BENZO(B)FLUORANTHENE	3.92	0.44	11.19	2.55	8.39
BENZO(E)PYRENE	2.62	0.88	12.63	1.69	6.26
BENZO(G,H,I)PERYLENE	1.71	0.56	11.67	1.27	6.15
BENZO(K)FLUORANTHENE	2.31	0.34	3.96	1.32	3.11
C1-CHRYSENES	1.98	0.72	13.56	1.13	4.02
C1-DIBENZOTHIOPHENES	0.76	0.38	1.26	0.36	0.74
C1-FLUORANTHENES/PYRENES	5.43	1.34	21.85	1.71	9.26
C1-FLUORENES	2.79	1.03	6.15	1.29	2.89
C1-NAPHTHALENES	5.61	5.25	25.26	2.68	4.63
C1-PHENANTHRENES/ANTHRACENES	6.05	2.19	13.30	1.35	4.35
C2-CHRYSENES	0.87	0.38	3.33	0.45	1.76
C2-DIBENZOTHIOPHENES	0.57	0.38	1.30	0.02	0.07
C2-FLUORENES	2.68	1.25	5.30	0.68	2.28
C2-NAPHTHALENES	3.57	2.88	14.48	1.20	2.57
C2-PHENANTHRENES/ANTHRACENES	4.54	1.72	10.44	1.17	3.17
C3-CHRYSENES	0.56	0.03	0.37	0.06	0.04
C3-DIBENZOTHIOPHENES	0.54	0.44	1.11	0.01	1.38 U

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.16	4.41	0.36	4.52
C3-NAPHTHALENES	3.27	2.97	8.30	0.93	1.43
C3-PHENANTHRENES/ANTHRACENES	2.54	0.63	7.59	0.34	1.65
C4-CHRYSENES	0.43	0.09	0.56	0.12	6.74
C4-NAPHTHALENES	1.57	2.66	0.09	0.71	2.33
C4-PHENANTHRENES/ANTHRACENES	0.92	0.56	1.30	0.09	0.87
CHRYSENE	6.51	1.50	13.59	3.45	7.89
DIBENZO(A,H)ANTHRACENE	0.14	0.03	0.81	0.11	0.44
DIBENZOTHIOPHENE	0.54	0.16	0.63	0.20	0.39
FLUORANTHENE	18.80	2.16	16.93	5.70	13.52
FLUORENE	1.43	0.59	6.11	0.80	2.09
INDENO(1,2,3-CD)PYRENE	1.69	0.03	7.70	1.10	7.63
NAPHTHALENE	5.03	4.16	16.07	2.22	4.17
PERYLENE	2.54	0.22	6.93	1.29	3.26
PHENANTHRENE	8.73	1.41	15.11	2.61	6.61
PYRENE	12.37	1.66	26.48	4.55	13.43
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	6.31	0.70	4.67	20.00
1,2,4,5-TETRACHLOROBENZENE	0.27	0.36	0.44 U	0.07	0.15 U
2,4'-DDD	0.19	0.04 U	0.09 U	0.13	0.34 U
2,4'-DDE	0.11	0.05 U	0.69	0.11 U	0.08 U
2,4'-DDT	0.10	0.05 U	0.11 U	0.08	0.08 U
4,4'-DDD	0.08	0.04 U	0.28	0.07	0.09 U
4,4'-DDE	1.22	1.26	1.37	0.95	1.39
4,4'-DDT	0.15	0.07 U	0.98	0.15 U	0.07 U
ALDRIN	0.11	0.06 U	0.14 U	0.13 U	0.06 U
ALPHA-BHC	0.16	0.13	0.23	0.09 U	0.06 U
ALPHA-CHLORDANE	1.36	0.63	0.11 U	0.10 U	0.02 U
BETA-BHC	0.11	0.04 U	0.10	0.06	0.15 U
CHLORPYRIFOS	1.55	0.38 U	3.78 U	0.83 U	0.50
CIS-NONACHLOR	0.06	0.05	0.10 U	0.08	0.06 U
DELTA-BHC	0.08	0.02 U	0.06 U	0.03	0.05 U
DIELDRIN	0.69	0.58	1.93	0.85	0.96
ENDOSULFAN II	0.07 U	0.04 U	0.11 U	0.10 U	0.05 U
ENDRIN	0.21	0.12 U	0.29 U	0.27 U	0.06 U
GAMMA-BHC (LINDANE)	0.28	0.17	0.72	0.08 U	0.52
GAMMA-CHLORDANE	0.08	0.05 U	0.12	0.08	0.03 U
HEPTACHLOR	0.11 U	0.07 U	0.16 U	0.14 U	0.06 U
HEPTACHLOR EPOXIDE	0.13 U	0.05 U	0.11 U	0.08	0.34 U
HEXACHLOROBENZENE	0.14	0.08	0.21	0.10	0.07 U
MIREX	0.17	0.11 U	0.26 U	0.11	0.13 U
OXYCHLORDANE	0.38	0.42	0.71	0.31	0.26
PCB-101/90	0.47	0.94	0.89	0.26	0.13 U
PCB-105	0.35	0.36	0.40	0.55	0.23
PCB-114	0.27 U	0.16 U	0.40 U	0.35 U	0.20 U
PCB-118	1.14	1.00	1.78	2.07	0.87
PCB-126	0.24 U	0.06	1.46	0.21	0.61 U
PCB-128	0.21	0.16	0.31	0.35	0.15
PCB-138/160	1.19	1.02	2.26	0.91 U	1.15
PCB-149/123	0.16	0.16 U	0.27	0.06	0.20 U
PCB-153/132	1.22	1.73	1.35 U	1.33 U	1.65
PCB-156	0.36	0.16 U	0.40 U	0.10	0.20 U
PCB-167	0.21	0.16 U	0.07	0.11	0.20 U
PCB-169	0.25	0.65 U	0.40 U	0.08	0.02
PCB-170/190	0.27	0.16 U	0.87 U	0.26 U	0.31 U
PCB-18/17	1.19	0.21	0.50	1.90	0.20 U
PCB-180	0.43	0.45	0.83	0.46 U	0.76

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 01			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.43	0.73	1.23	0.46
PCB-189	0.27 U	0.16 U	0.40 U	0.35 U	0.20 U
PCB-195/208	0.12	0.13 U	0.33 U	0.12	0.02 U
PCB-201/157/173	0.20	0.12 U	0.28 U	0.11	0.20 U
PCB-206	0.15	0.14 U	0.34 U	0.11	0.08 U
PCB-209	0.24	0.03	0.20	0.15	0.05 U
PCB-28	0.17	0.05	0.31 U	0.11	0.06
PCB-44	0.20	0.09 U	0.07	0.13 U	0.29 U
PCB-52	0.41	0.11 U	0.55	0.43	0.20 U
PCB-66	0.18	0.14	0.29	0.23	0.24
PCB-77	0.32	0.65 U	0.39	0.35 U	0.00
PCB-8/5	0.54	0.19	0.65 U	0.34	0.10 U
PCB-81	0.43	0.65 U	0.51	0.35 U	0.61 U
PENTACHLOROANISOLE	0.12	0.11	0.23	0.07 U	0.11
PENTACHLOROBENZENE	0.43	0.14	0.24	0.09 U	0.14
TRANS-NONACHLOR	0.08 U	0.03 U	0.07 U	0.08	0.05 U
Inorganics (MG/KG)					
ALUMINUM	4.77	5.02	5.70	1.66 U	1.40 U
ARSENIC	12.33	9.79	14.20	4.22	20.30
CADMIUM	0.03	0.04	0.05	0.04	0.08
CHROMIUM	0.41	0.10 U	0.17 U	0.49	0.42 U
COPPER	45.62	40.50	63.40	47.50	45.65
IRON	11.63	10.90	9.40	6.98	6.00
LEAD	0.28	0.13	10.45	0.34	0.48
MANGANESE	4.28	2.50	4.15	2.97	3.25
MERCURY	0.73	0.50	0.71	0.65	0.65
NICKEL	0.65	0.10 U	0.22 U	1.02 U	0.87 U
SILVER	0.93	0.81	0.28	0.82	0.76
ZINC	101.94	92.60	136.50	95.75	102.65

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.76	0.89	0.44	1.61
1-METHYLNAPHTHALENE	2.49	3.00	3.22	0.82	1.36
1-METHYLPHENANTHRENE	1.60	4.32	1.00	0.29	0.29
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.41	0.72	0.26	0.36
2,6-DIMETHYLNAPHTHALENE	0.95	1.29	0.50	0.31	0.50
2-METHYLNAPHTHALENE	3.12	4.12	3.83	1.33	1.79
ACENAPHTHENE	0.58	1.91	1.28	0.42	0.57
ACENAPHTHYLENE	0.30	0.29	0.94	0.22	0.07
ANTHRACENE	1.52	6.21	1.78	0.43	0.75
BENZO(A)ANTHRACENE	3.52	19.85	3.28	2.71	0.79
BENZO(A)PYRENE	3.99	20.85	6.83	3.90	2.39
BENZO(B)FLUORANTHENE	3.92	10.18	6.06	4.66	2.36
BENZO(E)PYRENE	2.62	9.62	5.39	3.23	2.04
BENZO(G,H,I)PERYLENE	1.71	6.12	4.56	1.82	2.21
BENZO(K)FLUORANTHENE	2.31	13.15	2.11	2.14	0.75
C1-CHRYSENES	1.98	6.85	3.44	2.69	0.86
C1-DIBENZOTHIOPHENES	0.76	1.65	0.89	0.23	0.29
C1-FLUORANTHENES/PYRENES	5.43	21.09	6.00	3.05	1.96
C1-FLUORENES	2.79	2.18	2.72	1.09	1.79
C1-NAPHTHALENES	5.61	7.12	7.06	2.15	3.14
C1-PHENANTHRENES/ANTHRACENES	6.05	14.71	4.56	1.36	1.32
C2-CHRYSENES	0.87	2.74	3.44	1.15	0.57
C2-DIBENZOTHIOPHENES	0.57	1.68	0.78	0.30	1.09 U
C2-FLUORENES	2.68	2.41	1.72	1.54	0.96
C2-NAPHTHALENES	3.57	3.74	4.67	1.04	1.54
C2-PHENANTHRENES/ANTHRACENES	4.54	8.15	3.17	1.30	0.96
C3-CHRYSENES	0.56	0.09	0.17	0.02	2.73 U
C3-DIBENZOTHIOPHENES	0.54	1.26	0.28	0.01	1.09 U

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	3.88	0.89	0.23	1.18
C3-NAPHTHALENES	3.27	4.32	4.33	0.71	0.89
C3-PHENANTHRENES/ANTHRACENES	2.54	3.88	4.56	0.62	0.39
C4-CHRYSENES	0.43	0.12	0.22	0.01	2.73 U
C4-NAPHTHALENES	1.57	2.09	0.28	0.04	0.04
C4-PHENANTHRENES/ANTHRACENES	0.92	3.18	0.72	0.01	0.04
CHRYSENE	6.51	25.68	8.06	5.66	2.43
DIBENZO(A,H)ANTHRACENE	0.14	2.32	0.39	0.16	0.18
DIBENZOTHIOPHENE	0.54	1.71	0.56	0.14	0.18
FLUORANTHENE	18.80	50.29	14.94	5.41	3.29
FLUORENE	1.43	3.38	2.44	0.56	1.11
INDENO(1,2,3-CD)PYRENE	1.69	7.91	3.89	2.94	1.82
NAPHTHALENE	5.03	4.15	7.56	1.81	2.82
PERYLENE	2.54	5.18	3.11	1.77	1.21
PHENANTHRENE	8.73	25.06	7.39	1.32	2.32
PYRENE	12.37	37.65	12.44	4.90	2.43
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	14.34	6.67	3.79	14.29
1,2,4,5-TETRACHLOROBENZENE	0.27	0.12	0.36 U	0.07	0.12 U
2,4'-DDD	0.19	0.03 U	1.28	0.07 U	0.27 U
2,4'-DDE	0.11	0.05 U	0.09 U	0.10 U	0.07 U
2,4'-DDT	0.10	0.04 U	0.08	0.10 U	0.07 U
4,4'-DDD	0.08	0.04	0.14	0.09 U	0.07 U
4,4'-DDE	1.22	1.40	2.00	1.07	0.82
4,4'-DDT	0.15	0.06 U	4.22	0.14 U	0.05 U
ALDRIN	0.11	0.05 U	0.11 U	0.12 U	0.05 U
ALPHA-BHC	0.16	0.05	0.08 U	0.08 U	0.05 U
ALPHA-CHLORDANE	1.36	4.36	0.08 U	0.09 U	0.04
BETA-BHC	0.11	0.04 U	0.07 U	0.08 U	0.12 U
CHLORPYRIFOS	1.55	0.36 U	2.06 U	0.78 U	0.39
CIS-NONACHLOR	0.06	0.01	0.03	0.08 U	0.05 U
DELTA-BHC	0.08	0.02 U	0.04 U	0.05 U	0.04 U
DIELDRIN	0.69	0.31	0.94	0.69	0.57
ENDOSULFAN II	0.07 U	0.04 U	0.08 U	0.09 U	0.04 U
ENDRIN	0.21	0.11 U	0.22 U	0.24 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.17	0.61	0.07 U	0.35
GAMMA-CHLORDANE	0.08	0.04 U	0.08 U	0.10 U	0.02 U
HEPTACHLOR	0.11 U	0.06 U	0.12 U	0.14 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.04 U	0.08 U	0.10 U	0.27 U
HEXACHLOROBENZENE	0.14	0.45	0.16	0.08	0.05 U
MIREX	0.17	0.10 U	0.67	0.22 U	0.10 U
OXYCHLORDANE	0.38	0.29	0.48	0.21	0.39
PCB-101/90	0.47	0.79	0.48	0.24	0.11 U
PCB-105	0.35	0.36	0.43	0.28	0.24
PCB-114	0.27 U	0.15 U	0.31 U	0.33 U	0.16 U
PCB-118	1.14	1.26	1.67	1.10	0.61
PCB-126	0.24 U	0.09	0.41	0.33 U	0.48 U
PCB-128	0.21	0.29	0.37	0.22	0.13
PCB-138/160	1.19	2.77	2.11	1.28	0.75
PCB-149/123	0.16	0.07	0.12	0.04	0.16 U
PCB-153/132	1.22	3.85	1.67 U	0.93 U	1.29
PCB-156	0.36	0.15 U	0.21	0.33 U	0.16 U
PCB-167	0.21	0.16	0.12	0.33 U	0.16 U
PCB-169	0.25	0.60 U	0.06	0.11	0.03
PCB-170/190	0.27	1.38	0.61 U	0.19 U	0.11
PCB-18/17	1.19	1.74	0.29	1.31	0.08
PCB-180	0.43	2.69	0.94	0.28 U	0.36

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 02			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	1.50	0.89	0.55	0.39
PCB-189	0.27 U	0.03	0.31 U	0.33 U	0.16 U
PCB-195/208	0.12	0.23	0.07	0.06	0.02 U
PCB-201/157/173	0.20	0.05	0.14	0.26 U	0.16 U
PCB-206	0.15	0.13 U	0.06	0.06	0.07 U
PCB-209	0.24	0.14	0.33 U	0.38 U	0.04 U
PCB-28	0.17	0.06	0.48	0.05	0.13 U
PCB-44	0.20	0.09 U	0.17 U	0.02 U	0.05
PCB-52	0.41	0.27	0.53	0.05	0.16 U
PCB-66	0.18	0.09	0.37	0.21	0.06 U
PCB-77	0.32	0.60 U	0.31 U	0.05 U	0.48 U
PCB-8/5	0.54	0.24 U	0.47 U	0.15	0.08 U
PCB-81	0.43	0.60 U	0.78	0.33 U	0.48 U
PENTACHLOROANISOLE	0.12	0.09	0.21	0.04 U	0.08
PENTACHLOROBENZENE	0.43	0.04	0.13	0.08 U	0.08 U
TRANS-NONACHLOR	0.08 U	0.27	0.14	0.03	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	11.90	5.90	1.64 U	1.10 U
ARSENIC	12.33	10.70	14.60	4.01	18.10
CADMIUM	0.03	0.04	0.03	0.03	0.02 U
CHROMIUM	0.41	0.10 U	0.25 U	0.59	0.46 U
COPPER	45.62	46.60	56.90	43.70	32.30
IRON	11.63	17.00	15.10	8.77	11.40
LEAD	0.28	0.23	0.18	0.06 U	0.41
MANGANESE	4.28	4.24	2.60	2.49	4.20
MERCURY	0.73	0.56	8.20	0.66	0.68
NICKEL	0.65	0.52	0.25 U	1.01 U	0.84 U
SILVER	0.93	1.18	0.27	0.86	0.87
ZINC	101.94	106.00	111.00	86.70	112.00

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.56	1.25	0.53	1.12
1-METHYLNAPHTHALENE	2.49	3.44	3.13	1.21	1.18
1-METHYLPHENANTHRENE	1.60	2.16	0.69	0.32	0.38
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.22	0.63	0.38	0.32
2,6-DIMETHYLNAPHTHALENE	0.95	1.13	0.81	0.35	0.32
2-METHYLNAPHTHALENE	3.12	4.63	3.63	1.94	1.29
ACENAPHTHENE	0.58	0.22	2.50	0.43	0.38
ACENAPHTHYLENE	0.30	0.25	0.56	0.31	0.06
ANTHRACENE	1.52	1.72	1.06	0.60	0.50
BENZO(A)ANTHRACENE	3.52	3.16	2.63	1.18	1.44
BENZO(A)PYRENE	3.99	3.63	5.00	1.26	2.03
BENZO(B)FLUORANTHENE	3.92	3.50	5.94	2.20	2.88
BENZO(E)PYRENE	2.62	3.63	4.06	1.89	1.56
BENZO(G,H,I)PERYLENE	1.71	2.09	3.56	1.28	1.32
BENZO(K)FLUORANTHENE	2.31	2.13	1.88	1.23	0.76
C1-CHRYSENES	1.98	2.63	1.44	1.15	0.85
C1-DIBENZOTHIOPHENES	0.76	0.59	0.75	0.24	0.32
C1-FLUORANTHENES/PYRENES	5.43	5.25	4.69	1.86	2.47
C1-FLUORENES	2.79	1.41	3.50	1.19	1.44
C1-NAPHTHALENES	5.61	8.06	6.75	3.15	2.44
C1-PHENANTHRENES/ANTHRACENES	6.05	5.09	2.56	1.28	1.26
C2-CHRYSENES	0.87	1.38	3.50	0.25	0.62
C2-DIBENZOTHIOPHENES	0.57	0.81	0.75	0.02	0.03
C2-FLUORENES	2.68	2.09	0.44	1.51	1.29
C2-NAPHTHALENES	3.57	3.31	3.56	1.51	1.26
C2-PHENANTHRENES/ANTHRACENES	4.54	4.13	3.13	0.99	1.18
C3-CHRYSENES	0.56	0.16	0.31	0.06	0.03
C3-DIBENZOTHIOPHENES	0.54	0.66	0.02	0.02	0.03

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.16	0.81	0.92	0.35
C3-NAPHTHALENES	3.27	3.59	2.81	0.99	0.65
C3-PHENANTHRENES/ANTHRACENES	2.54	2.09	2.44	0.60	0.53
C4-CHRYSENES	0.43	0.91	0.13	0.16	2.81 U
C4-NAPHTHALENES	1.57	6.13	0.06	0.63	0.03
C4-PHENANTHRENES/ANTHRACENES	0.92	1.66	0.63	0.23	2.34 U
CHRYSENE	6.51	7.53	5.69	3.35	2.41
DIBENZO(A,H)ANTHRACENE	0.14	0.09	0.31	0.06	0.09
DIBENZOTHIOPHENE	0.54	0.41	0.63	0.14	0.18
FLUORANTHENE	18.80	14.53	11.06	4.46	4.82
FLUORENE	1.43	0.88	2.94	0.70	0.91
INDENO(1,2,3-CD)PYRENE	1.69	0.88	3.25	0.86	1.56
NAPHTHALENE	5.03	5.69	7.69	2.58	2.26
PERYLENE	2.54	1.47	3.88	1.12	1.18
PHENANTHRENE	8.73	4.09	6.69	1.21	1.97
PYRENE	12.37	11.75	11.88	4.00	5.09
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	2.86	2.25	4.64	2.94
1,2,4,5-TETRACHLOROBENZENE	0.27	0.11	0.26 U	0.07	0.12 U
2,4'-DDD	0.19	0.03 U	0.00	0.07 U	0.28 U
2,4'-DDE	0.11	0.04 U	0.58	0.10 U	0.07 U
2,4'-DDT	0.10	0.04 U	0.36	0.09 U	0.07 U
4,4'-DDD	0.08	0.04 U	0.14	0.09 U	0.22
4,4'-DDE	1.22	0.36	1.50	0.86	0.74
4,4'-DDT	0.15	0.06 U	1.44	0.13 U	0.06 U
ALDRIN	0.11	0.05 U	0.13 U	0.11 U	0.05 U
ALPHA-BHC	0.16	0.10	0.09 U	0.08 U	0.05 U
ALPHA-CHLORDANE	1.36	0.04 U	0.10 U	0.09 U	0.02 U
BETA-BHC	0.11	0.03 U	0.08 U	0.22	0.12 U
CHLORPYRIFOS	1.55	0.33 U	1.50 U	0.75 U	0.47
CIS-NONACHLOR	0.06	0.03 U	0.10	0.08 U	0.05 U
DELTA-BHC	0.08	0.02 U	0.05 U	0.05 U	0.04 U
DIELDRIN	0.69	0.39	1.13	0.64	0.47
ENDOSULFAN II	0.07 U	0.04 U	0.10 U	0.09 U	0.04 U
ENDRIN	0.21	0.10 U	0.27 U	0.23 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.03 U	0.58	0.07 U	0.38
GAMMA-CHLORDANE	0.08	0.04 U	0.10 U	0.09 U	0.02 U
HEPTACHLOR	0.11 U	0.06 U	0.14 U	0.13 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.07 U	0.10 U	0.09 U	0.28 U
HEXACHLOROBENZENE	0.14	0.16	0.14	0.06	0.06 U
MIREX	0.17	0.09 U	0.23 U	0.21 U	0.10 U
OXYCHLORDANE	0.38	0.04 U	1.06	0.28	0.14
PCB-101/90	0.47	0.97	2.00	0.26	0.11 U
PCB-105	0.35	0.14	0.28	0.20	0.16
PCB-114	0.27 U	0.14 U	0.34 U	0.32 U	0.16 U
PCB-118	1.14	0.29	1.56	0.96	0.65
PCB-126	0.24 U	0.05	0.11		0.50 U
PCB-128	0.21	0.11 U	0.55	0.19	0.12
PCB-138/160	1.19	0.50	6.13	0.59 U	0.76
PCB-149/123	0.16	0.14 U	3.06	0.04	0.16 U
PCB-153/132	1.22	0.59	4.38 U	0.88 U	1.29
PCB-156	0.36	0.14 U	0.34 U	0.32 U	0.16 U
PCB-167	0.21	0.14 U	0.29	0.32 U	0.16 U
PCB-169	0.25	0.56 U	0.34 U	0.15	0.00
PCB-170/190	0.27	0.14 U	1.34 U	0.13 U	0.10
PCB-18/17	1.19	0.36 U	0.69	0.39	0.16 U
PCB-180	0.43	0.23	5.69	0.27 U	0.35

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 03			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.17	3.56	0.57	0.35
PCB-189	0.27 U	0.14 U	0.05	0.32 U	0.16 U
PCB-195/208	0.12	0.12 U	0.36	0.05	0.02 U
PCB-201/157/173	0.20	0.11 U	0.74	0.25 U	0.16 U
PCB-206	0.15	0.12 U	0.13	0.05	0.07 U
PCB-209	0.24	0.28	0.41 U	0.36 U	0.04 U
PCB-28	0.17	0.11 U	0.28 U	0.04	0.13 U
PCB-44	0.20	0.08 U	0.21 U	0.02 U	0.19
PCB-52	0.41	0.10 U	0.24 U	0.16	0.16 U
PCB-66	0.18	0.13 U	0.26	0.15	0.06 U
PCB-77	0.32	0.56 U	0.15	0.32 U	0.50 U
PCB-8/5	0.54	0.23 U	0.56 U	0.13	0.08 U
PCB-81	0.43	0.25	0.43	0.32 U	0.50 U
PENTACHLOROANISOLE	0.12	0.10	0.26	0.05 U	0.06
PENTACHLOROBENZENE	0.43	0.13	0.12 U	0.07 U	0.01
TRANS-NONACHLOR	0.08 U	0.09	0.06 U	0.06 U	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	8.95	4.60	1.62 U	1.65 U
ARSENIC	12.33	9.59	19.10	3.45	22.00
CADMIUM	0.03	0.04	0.03	0.02	0.02 U
CHROMIUM	0.41	0.10 U	0.26 U	0.77	0.48 U
COPPER	45.62	48.40	35.20	61.00	37.40
IRON	11.63	9.15	9.30	10.90	12.40
LEAD	0.28	0.15	0.15	0.16 U	0.25
MANGANESE	4.28	2.13	3.20	5.18	3.50
MERCURY	0.73	0.41	0.50	0.55	0.53
NICKEL	0.65	0.10 U	0.65	1.94 U	0.82 U
SILVER	0.93	1.03	0.19	1.34	1.00
ZINC	101.94	102.00	107.00	90.50	87.00

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.69	1.20	0.78	1.30
1-METHYLNAPHTHALENE	2.49	2.83	1.33	0.75	0.97
1-METHYLPHENANTHRENE	1.60	1.93	0.80	0.78	0.33
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.17	0.53	0.49	0.36
2,6-DIMETHYLNAPHTHALENE	0.95	2.59	0.53	0.54	0.36
2-METHYLNAPHTHALENE	3.12	3.66	2.27	1.08	1.21
ACENAPHTHENE	0.58	0.59	1.13	0.79	0.58
ACENAPHTHYLENE	0.30	0.28	0.47	0.25	0.06
ANTHRACENE	1.52	1.28	0.93	2.05	0.52
BENZO(A)ANTHRACENE	3.52	3.83	1.40	4.21	1.39
BENZO(A)PYRENE	3.99	4.52	3.47	4.71	2.55
BENZO(B)FLUORANTHENE	3.92	2.62	4.07	5.67	2.39
BENZO(E)PYRENE	2.62	2.41	4.53	5.04	2.58
BENZO(G,H,I)PERYLENE	1.71	1.17	4.87	2.60	2.55
BENZO(K)FLUORANTHENE	2.31	4.21	1.47	2.53	0.82
C1-CHRYSENES	1.98	2.45	1.93	3.28	1.09
C1-DIBENZOTHIOPHENES	0.76	0.48	0.60	0.61	0.21
C1-FLUORANTHENES/PYRENES	5.43	4.03	4.60	3.91	2.21
C1-FLUORENES	2.79	1.10	6.20	2.09	1.64
C1-NAPHTHALENES	5.61	6.48	3.60	1.84	2.18
C1-PHENANTHRENES/ANTHRACENES	6.05	4.00	4.13	3.25	1.67
C2-CHRYSENES	0.87	1.21	1.73	2.58	0.70
C2-DIBENZOTHIOPHENES	0.57	0.72	0.07	0.08	1.18 U
C2-FLUORENES	2.68	1.17	0.20	1.92	0.91
C2-NAPHTHALENES	3.57	3.17	3.07	1.37	1.15
C2-PHENANTHRENES/ANTHRACENES	4.54	3.41	2.20	1.98	1.12
C3-CHRYSENES	0.56	0.14	0.07	0.09	2.94 U
C3-DIBENZOTHIOPHENES	0.54	0.41	0.07	0.01	1.18 U

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.03	0.33	2.37	0.45
C3-NAPHTHALENES	3.27	3.76	1.53	1.34	0.79
C3-PHENANTHRENES/ANTHRACENES	2.54	2.34	0.27	1.20	0.55
C4-CHRYSENES	0.43	0.28	0.13	0.01	2.94 U
C4-NAPHTHALENES	1.57	3.17	0.33	0.99	0.55
C4-PHENANTHRENES/ANTHRACENES	0.92	1.31	0.20	0.03	0.03
CHRYSENE	6.51	6.07	5.00	7.08	2.55
DIBENZO(A,H)ANTHRACENE	0.14	0.07	0.67	0.41	0.15
DIBENZOTHIOPHENE	0.54	0.48	0.40	0.27	0.15
FLUORANTHENE	18.80	8.17	8.00	8.79	3.36
FLUORENE	1.43	1.28	1.67	1.30	0.91
INDENO(1,2,3-CD)PYRENE	1.69	1.14	3.47	2.65	1.79
NAPHTHALENE	5.03	5.17	5.33	1.60	2.00
PERYLENE	2.54	0.97	4.13	2.75	1.94
PHENANTHRENE	8.73	4.72	3.73	4.14	1.85
PYRENE	12.37	6.41	7.67	8.08	2.70
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	4.52	5.73	4.17	10.00
1,2,4,5-TETRACHLOROBENZENE	0.27	0.12	0.50 U	0.33	0.13 U
2,4'-DDD	0.19	0.03 U	0.09 U	0.09 U	0.29 U
2,4'-DDE	0.11	0.05 U	0.13 U	0.13 U	0.07 U
2,4'-DDT	0.10	0.04 U	0.21	0.12 U	0.07 U
4,4'-DDD	0.08	0.04 U	0.11 U	0.11 U	0.08 U
4,4'-DDE	1.22	0.51	1.87	1.54	0.55
4,4'-DDT	0.15	0.06 U	0.17 U	0.18 U	0.06 U
ALDRIN	0.11	0.06 U	0.14 U	0.15 U	0.05 U
ALPHA-BHC	0.16	0.07	0.19	0.11 U	0.05 U
ALPHA-CHLORDANE	1.36	0.69	0.11 U	0.11 U	0.02 U
BETA-BHC	0.11	0.04 U	0.08	0.04	0.13 U
CHLORPYRIFOS	1.55	0.36 U	1.80 U	1.00 U	0.48
CIS-NONACHLOR	0.06	0.04 U	0.10 U	0.10 U	0.05 U
DELTA-BHC	0.08	0.02 U	0.15	0.06 U	0.05 U
DIELDRIN	0.69	0.38	1.27	0.71	0.26
ENDOSULFAN II	0.07 U	0.04 U	1.20	0.05	0.05 U
ENDRIN	0.21	0.12 U	1.20	0.31 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.18	0.22	0.09 U	0.23
GAMMA-CHLORDANE	0.08	0.04 U	0.12 U	0.12 U	0.02 U
HEPTACHLOR	0.11 U	0.06 U	0.16 U	0.17 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.04 U	0.12 U	0.12 U	0.29 U
HEXACHLOROBENZENE	0.14	0.10	0.14 U	0.08	0.06 U
MIREX	0.17	0.10 U	0.26 U	0.27 U	0.11 U
OXYCHLORDANE	0.38	0.20	0.93	0.23	0.16
PCB-101/90	0.47	0.39	0.33 U	0.71	0.11 U
PCB-105	0.35	0.20	0.59	0.38	0.21
PCB-114	0.27 U	0.16 U	0.40 U	0.42 U	0.17 U
PCB-118	1.14	0.38	2.33	1.79	0.48
PCB-126	0.24 U	0.01	0.63		0.00
PCB-128	0.21	0.07	0.41	0.32	0.12
PCB-138/160	1.19	0.64	2.73	1.29 U	0.82
PCB-149/123	0.16	0.16 U	0.09	0.30	0.17 U
PCB-153/132	1.22	0.87	2.10 U	1.85 U	1.45
PCB-156	0.36	0.16 U	0.40 U	0.42 U	0.17 U
PCB-167	0.21	0.16 U	0.29	0.42 U	0.17 U
PCB-169	0.25	0.62 U	0.11	0.42 U	0.01
PCB-170/190	0.27	0.16 U	0.93 U	0.33 U	0.18
PCB-18/17	1.19	0.09	1.13	0.88	0.17 U
PCB-180	0.43	0.23	1.27	0.75 U	0.58

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 04			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.24	1.27	1.88	0.52
PCB-189	0.27 U	0.16 U	0.40 U	0.42 U	0.17 U
PCB-195/208	0.12	0.13 U	0.08	0.13	0.02 U
PCB-201/157/173	0.20	0.12 U	0.79	0.33 U	0.17 U
PCB-206	0.15	0.13 U	0.07	0.15	0.07 U
PCB-209	0.24	0.15	0.47 U	0.48 U	0.05 U
PCB-28	0.17	0.12 U	1.07	0.07	0.13 U
PCB-44	0.20	0.09 U	0.23 U	0.03 U	0.07
PCB-52	0.41	0.10	0.17	0.38	0.18 U
PCB-66	0.18	0.15 U	0.67	0.32	0.07 U
PCB-77	0.32	0.62 U	0.40 U	0.11 U	0.00
PCB-8/5	0.54	0.25 U	1.13	0.69 U	0.09 U
PCB-81	0.43	0.62 U	0.73	0.42 U	0.52 U
PENTACHLOROANISOLE	0.12	0.10	0.31	0.06 U	0.07
PENTACHLOROBENZENE	0.43	0.49	0.07	0.06 U	0.09 U
TRANS-NONACHLOR	0.08 U	0.03 U	0.07 U	0.08 U	0.05 U
Inorganics (MG/KG)					
ALUMINUM	4.77	5.11	13.80	2.98 U	10.80 U
ARSENIC	12.33	10.40	22.80	3.00	15.50
CADMIUM	0.03	0.31	0.03	0.02	0.02 U
CHROMIUM	0.41	0.10 U	0.26 U	0.82	5.20
COPPER	45.62	49.90	22.30	38.80	24.50
IRON	11.63	8.21	25.30	17.20	27.30
LEAD	0.28	0.05 U	0.12	0.07 U	0.11
MANGANESE	4.28	2.91	2.80	4.62	9.30
MERCURY	0.73	0.52	0.58	0.63	0.55
NICKEL	0.65	0.10 U	0.26 U	1.63 U	0.82 U
SILVER	0.93	1.39	0.13	1.14	0.51
ZINC	101.94	91.30	72.60	81.00	87.80

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.69	0.93	0.52	2.29
1-METHYLNAPHTHALENE	2.49	2.85	4.07	0.73	1.39
1-METHYLPHENANTHRENE	1.60	2.38	1.21	0.48	0.25
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.69	0.64	0.39	0.39
2,6-DIMETHYLNAPHTHALENE	0.95	1.31	0.64	0.38	0.50
2-METHYLNAPHTHALENE	3.12	3.58	4.79	1.19	1.86
ACENAPHTHENE	0.58	0.15	1.43	0.49	0.64
ACENAPHTHYLENE	0.30	0.19	0.57	0.20	0.07
ANTHRACENE	1.52	0.73	0.86	0.62	0.50
BENZO(A)ANTHRACENE	3.52	0.96	1.71	1.54	0.75
BENZO(A)PYRENE	3.99	0.77	4.64	2.54	1.32
BENZO(B)FLUORANTHENE	3.92	0.46	4.29	2.69	1.57
BENZO(E)PYRENE	2.62	0.69	3.79	3.02	1.21
BENZO(G,H,I)PERYLENE	1.71	0.23	3.50	2.15	1.39
BENZO(K)FLUORANTHENE	2.31	0.85	1.64	1.59	1.39
C1-CHRYSENES	1.98	0.77	1.79	1.65	0.61
C1-DIBENZOTHIOPHENES	0.76	0.58	0.79	0.30	0.36
C1-FLUORANTHENES/PYRENES	5.43	1.92	4.07	1.94	1.14
C1-FLUORENES	2.79	1.27	3.79	0.89	2.61
C1-NAPHTHALENES	5.61	6.42	8.86	1.92	3.25
C1-PHENANTHRENES/ANTHRACENES	6.05	3.69	2.50	1.49	1.25
C2-CHRYSENES	0.87	1.50	0.86	0.97	0.04
C2-DIBENZOTHIOPHENES	0.57	0.54	0.86	0.41	0.11
C2-FLUORENES	2.68	2.46	1.79	0.74	1.54
C2-NAPHTHALENES	3.57	4.00	6.00	1.10	1.57
C2-PHENANTHRENES/ANTHRACENES	4.54	3.38	2.43	1.26	0.96
C3-CHRYSENES	0.56	0.19	0.14	0.03	0.04
C3-DIBENZOTHIOPHENES	0.54	0.69	0.50	0.01	0.04

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	1.58	3.71	0.08	0.75
C3-NAPHTHALENES	3.27	5.31	2.21	0.93	1.04
C3-PHENANTHRENES/ANTHRACENES	2.54	2.54	5.07	0.33	0.21
C4-CHRYSENES	0.43	0.69	0.14	0.03	0.04
C4-NAPHTHALENES	1.57	3.88	0.07	1.04	0.04
C4-PHENANTHRENES/ANTHRACENES	0.92	1.69	0.50	0.01	0.04
CHRYSENE	6.51	2.08	4.57	4.57	1.36
DIBENZO(A,H)ANTHRACENE	0.14	0.04	0.36	0.01	0.04
DIBENZOTHIOPHENE	0.54	0.19	0.43	0.24	0.21
FLUORANTHENE	18.80	3.62	8.71	5.50	2.46
FLUORENE	1.43	0.96	2.21	0.64	1.25
INDENO(1,2,3-CD)PYRENE	1.69	0.04	3.00	1.94	1.11
NAPHTHALENE	5.03	5.46	10.64	1.52	2.68
PERYLENE	2.54	0.15	3.93	1.99	0.82
PHENANTHRENE	8.73	2.19	3.64	1.38	1.93
PYRENE	12.37	2.77	8.29	3.86	1.75
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	3.43	5.21	2.82	1.93
1,2,4,5-TETRACHLOROBENZENE	0.27	0.12	0.50 U	0.07	0.04
2,4'-DDD	0.19	0.05 U	0.93 U	0.09 U	0.34 U
2,4'-DDE	0.11	0.07 U	0.27 U	0.12 U	0.09 U
2,4'-DDT	0.10	0.07 U	0.09 U	0.11 U	0.09 U
4,4'-DDD	0.08	0.06 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	1.22	0.76	1.14	1.79	0.61
4,4'-DDT	0.15	0.09 U	4.29	0.16 U	0.07 U
ALDRIN	0.11	0.08 U	0.13 U	0.14 U	0.06 U
ALPHA-BHC	0.16	0.17	0.07	0.10 U	0.06 U
ALPHA-CHLORDANE	1.36	0.31	0.10 U	0.10 U	0.02 U
BETA-BHC	0.11	0.05 U	0.09 U	0.08	0.16 U
CHLORPYRIFOS	1.55	0.54 U	2.21 U	0.89 U	0.50
CIS-NONACHLOR	0.06	0.06 U	0.09 U	0.09 U	0.07 U
DELTA-BHC	0.08	0.03 U	0.05 U	0.06 U	0.06 U
DIELDRIN	0.69	0.63	1.07	0.79	0.34
ENDOSULFAN II	0.07 U	0.06 U	0.10 U	0.10 U	0.06 U
ENDRIN	0.21	0.17 U	0.27 U	0.29 U	0.07 U
GAMMA-BHC (LINDANE)	0.28	0.05 U	0.67	0.09 U	0.30
GAMMA-CHLORDANE	0.08	0.07 U	0.11 U	0.11 U	0.03 U
HEPTACHLOR	0.11 U	0.09 U	0.15 U	0.16 U	0.06 U
HEPTACHLOR EPOXIDE	0.13 U	0.24 U	0.11 U	0.11 U	0.36 U
HEXACHLOROBENZENE	0.14	0.40	0.15	0.11	0.07 U
MIREX	0.17	0.15 U	0.46 U	0.25 U	0.13 U
OXYCHLORDANE	0.38	0.12	0.49	0.25	0.19
PCB-101/90	0.47	0.80	0.93	0.50	0.14 U
PCB-105	0.35	0.38	0.33	0.64	0.20
PCB-114	0.27 U	0.23 U	0.36 U	0.38 U	0.21 U
PCB-118	1.14	0.89	1.29	2.61	0.46
PCB-126	0.24 U	0.05	0.68		0.01
PCB-128	0.21	0.18 U	0.29	0.50	0.11 U
PCB-138/160	1.19	1.11	2.93	2.86	0.71
PCB-149/123	0.16	0.23 U	0.49 U	0.10	0.21 U
PCB-153/132	1.22	1.55	1.64 U	1.96 U	1.18
PCB-156	0.36	0.02	0.21 U	0.38 U	0.21 U
PCB-167	0.21	0.23 U	0.11 U	0.17	0.21 U
PCB-169	0.25	0.01	0.19 U	0.04	0.02
PCB-170/190	0.27	0.23 U	0.71 U	0.29 U	0.14
PCB-18/17	1.19	0.60 U	0.33 U	2.21	0.21 U
PCB-180	0.43	0.48	1.50	0.63 U	0.39

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 05			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.38	1.29	1.36	0.35
PCB-189	0.27 U	0.23 U	0.36 U	0.38 U	0.21 U
PCB-195/208	0.12	0.19 U	0.12 U	0.11	0.02 U
PCB-201/157/173	0.20	0.18 U	0.28 U	0.29 U	0.21 U
PCB-206	0.15	0.20 U	0.08 U	0.11	0.09 U
PCB-209	0.24	0.03	0.06 U	0.43 U	0.06 U
PCB-28	0.17	0.18 U	0.69 U	0.10	0.16 U
PCB-44	0.20	0.13 U	0.14 U	0.21 U	0.08
PCB-52	0.41	0.16 U	0.61	0.29	0.21 U
PCB-66	0.18	0.22 U	0.41	0.43	0.08 U
PCB-77	0.32	0.91 U	0.36 U	0.06 U	0.00
PCB-8/5	0.54	0.37 U	0.61 U	0.20	0.11 U
PCB-81	0.43	0.91 U	0.36	0.38 U	0.63 U
PENTACHLOROANISOLE	0.12	0.14	0.17	0.03 U	0.10
PENTACHLOROBENZENE	0.43	0.08 U	0.16	0.06 U	0.11 U
TRANS-NONACHLOR	0.08 U	0.04 U	0.02 U	0.06	0.06 U
Inorganics (MG/KG)					
ALUMINUM	4.77	13.20	7.80	2.26 U	1.75 U
ARSENIC	12.33	16.70	13.60	4.89	18.80
CADMIUM	0.03	0.04	0.03	0.04	0.02 U
CHROMIUM	0.41	0.10 U	0.26 U	0.36 U	0.48 U
COPPER	45.62	34.40	64.30	52.50	39.00
IRON	11.63	18.60	13.80	9.55	12.90
LEAD	0.28	0.13	0.34	0.11 U	0.29
MANGANESE	4.28	1.94	3.10	2.00	2.00
MERCURY	0.73	0.42	0.56	0.60	0.53
NICKEL	0.65	0.10 U	0.51	1.50 U	0.84 U
SILVER	0.93	0.76	0.29	0.49	0.94
ZINC	101.94	102.00	94.90	89.10	120.00

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.50	1.00	0.65	1.71
1-METHYLNAPHTHALENE	2.49	4.00	4.64	1.10	1.13
1-METHYLPHENANTHRENE	1.60	3.38	0.79	0.24	0.47
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.79	0.71	0.44	0.45
2,6-DIMETHYLNAPHTHALENE	0.95	1.42	0.57	0.41	0.47
2-METHYLNAPHTHALENE	3.12	5.75	5.00	1.63	1.42
ACENAPHTHENE	0.58	0.42	1.14	0.34	0.53
ACENAPHTHYLENE	0.30	0.25	0.64	0.28	0.05
ANTHRACENE	1.52	1.96	0.93	0.54	0.55
BENZO(A)ANTHRACENE	3.52	4.33	1.36	0.74	0.63
BENZO(A)PYRENE	3.99	4.58	5.07	1.17	1.42
BENZO(B)FLUORANTHENE	3.92	3.04	3.71	1.76	1.29
BENZO(E)PYRENE	2.62	3.42	2.64	1.56	1.05
BENZO(G,H,I)PERYLENE	1.71	2.13	2.64	1.42	1.24
BENZO(K)FLUORANTHENE	2.31	3.17	1.79	0.87	0.61
C1-CHRYSENES	1.98	3.25	0.07	0.52	0.32
C1-DIBENZOTHIOPHENES	0.76	1.17	0.64	0.02	0.16
C1-FLUORANTHENES/PYRENES	5.43	7.33	3.36	1.58	0.82
C1-FLUORENES	2.79	2.00	2.71	1.07	1.61
C1-NAPHTHALENES	5.61	9.75	9.71	2.73	2.55
C1-PHENANTHRENES/ANTHRACENES	6.05	8.50	3.71	1.20	1.05
C2-CHRYSENES	0.87	1.63	1.29	0.04	0.29
C2-DIBENZOTHIOPHENES	0.57	1.00	0.64	0.02	0.05
C2-FLUORENES	2.68	2.50	0.14	0.08	0.84
C2-NAPHTHALENES	3.57	4.46	6.71	1.42	1.11
C2-PHENANTHRENES/ANTHRACENES	4.54	5.46	1.93	0.83	0.58
C3-CHRYSENES	0.56	0.46	0.29	0.12	2.13 U
C3-DIBENZOTHIOPHENES	0.54	0.92	0.01	0.04	0.03

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.83	0.14	0.04	0.39
C3-NAPHTHALENES	3.27	5.46	2.93	0.02	0.66
C3-PHENANTHRENES/ANTHRACENES	2.54	2.75	1.79	0.05	0.16
C4-CHRYSENES	0.43	0.50 U	0.03	0.48	2.13 U
C4-NAPHTHALENES	1.57	3.71	0.07	0.04	0.21
C4-PHENANTHRENES/ANTHRACENES	0.92	2.04	0.01	0.01	0.03
CHRYSENE	6.51	7.29	3.79	2.23	1.34
DIBENZO(A,H)ANTHRACENE	0.14	0.13	0.36	0.08	0.29
DIBENZOTHIOPHENE	0.54	0.54	0.50	0.13	0.29
FLUORANTHENE	18.80	14.04	8.29	3.31	1.92
FLUORENE	1.43	1.17	2.07	0.64	1.00
INDENO(1,2,3-CD)PYRENE	1.69	1.50	2.86	0.02	1.26
NAPHTHALENE	5.03	8.08	12.14	1.90	2.08
PERYLENE	2.54	1.50	2.79	1.27	1.05
PHENANTHRENE	8.73	5.58	4.00	1.22	1.71
PYRENE	12.37	11.17	7.50	2.61	1.50
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	4.21	1.00	0.52	2.37
1,2,4,5-TETRACHLOROBENZENE	0.27	0.43	0.34 U	0.01	0.09 U
2,4'-DDD	0.19	0.04 U	0.08 U	0.08 U	0.21 U
2,4'-DDE	0.11	0.06 U	0.11 U	0.11 U	0.05 U
2,4'-DDT	0.10	0.06	0.10 U	0.10 U	0.05 U
4,4'-DDD	0.08	0.05 U	0.10 U	0.09 U	0.06 U
4,4'-DDE	1.22	0.70	0.56	0.48	0.26
4,4'-DDT	0.15	0.08 U	1.07 U	0.14 U	0.04 U
ALDRIN	0.11	0.07 U	0.13 U	0.13 U	0.04 U
ALPHA-BHC	0.16	0.14	0.06 U	0.09 U	0.04 U
ALPHA-CHLORDANE	1.36	1.30 U	0.10 U	0.09 U	0.01 U
BETA-BHC	0.11	0.05 U	0.08 U	0.12	0.09 U
CHLORPYRIFOS	1.55	0.46 U	2.21 U	0.82 U	0.42
CIS-NONACHLOR	0.06	0.05 U	0.09 U	0.09 U	0.04 U
DELTA-BHC	0.08	0.03 U	0.05 U	0.05 U	0.03 U
DIELDRIN	0.69	0.57	1.07	0.56	0.29
ENDOSULFAN II	0.07 U	0.05 U	0.10 U	0.09 U	0.03 U
ENDRIN	0.21	0.15 U	0.26 U	0.26 U	0.04 U
GAMMA-BHC (LINDANE)	0.28	0.18	0.54	0.08 U	0.29
GAMMA-CHLORDANE	0.08	0.06 U	0.10 U	0.10 U	0.02 U
HEPTACHLOR	0.11 U	0.08 U	0.15 U	0.14 U	0.04 U
HEPTACHLOR EPOXIDE	0.13 U	0.06 U	0.10 U	0.10 U	0.21 U
HEXACHLOROBENZENE	0.14	0.18	0.17	0.02	0.04 U
MIREX	0.17	0.13 U	0.24 U	0.22 U	0.08 U
OXYCHLORDANE	0.38	0.20	0.27	0.14	0.09
PCB-101/90	0.47	0.67	0.46	0.30 U	0.08 U
PCB-105	0.35	0.33	0.16	0.24	0.09
PCB-114	0.27 U	0.20 U	0.36 U	0.34 U	0.12 U
PCB-118	1.14	0.43	0.70	0.84	0.21
PCB-126	0.24 U	0.05	0.59	U	0.38 U
PCB-128	0.21	0.13	0.14	0.14	0.07 U
PCB-138/160	1.19	0.71	1.00	0.52 U	0.26
PCB-149/123	0.16	0.20	0.36	0.34 U	0.12 U
PCB-153/132	1.22	1.13	0.79 U	0.78 U	0.47
PCB-156	0.36	0.09	0.36 U	0.34 U	0.12 U
PCB-167	–0.21	0.20	0.36 U	0.34 U	0.12 U
PCB-169	0.25	0.07 U	0.36	0.34 U	0.01
PCB-170/190	0.27	0.20	0.43 U	0.07 U	0.04
PCB-18/17	1.19	1.58 U	0.93	0.34	0.12 U
PCB-180	0.43	0.37	0.37	0.22 U	0.12

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BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 06			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.29	0.46	0.48	0.13
PCB-189	0.27 U	0.20	0.36 U	0.34 U	0.12 U
PCB-195/208	0.12	0.16	0.30 U	0.28 U	0.01 U
PCB-201/157/173	0.20	0.15 U	0.27 U	0.26 U	0.12 U
PCB-206	0.15	0.17	0.31	0.06	0.05 U
PCB-209	0.24	0.06	0.39 U	0.40 U	0.03 U
PCB-28	0.17	0.04	0.28 U	0.08	0.10 U
PCB-44	0.20	0.11 U	0.21 U	0.20 U	0.04
PCB-52	0.41	0.13 U	0.58	0.24 U	0.13 U
PCB-66	0.18	0.19	0.19	0.14	0.05 U
PCB-77	0.32	0.79 U	0.36 U	0.34 U	0.38 U
PCB-8/5	0.54	0.32 U	0.57 U	0.56 U	0.06 U
PCB-81	0.43	0.79	0.93	0.07	0.38 U
PENTACHLOROANISOLE	0.12	0.13	0.17	0.03 U	0.06
PENTACHLOROBENZENE	0.43	0.75	0.11	0.06 U	0.06 U
TRANS-NONACHLOR	0.08 U	0.15 U	0.06	0.06 U	0.03 U
Inorganics (MG/KG)					
ALUMINUM	4.77	3.72	6.10	1.43 U	0.50 U
ARSENIC	12.33	9.74	15.80	4.96	19.40
CADMIUM	0.03	0.04	0.04	0.02	0.02 U
CHROMIUM	0.41	0.10 U	0.25 U	0.56	0.60 U
COPPER	45.62	41.20	47.40	41.30	43.10
IRON	11.63	5.99	8.10	21.20	4.20 U
LEAD	0.28	0.12	0.04 U	0.13 U	0.07
MANGANESE	4.28	1.95	3.70	1.65	3.90
MERCURY	0.73	0.49	0.65	0.59	0.45
NICKEL	0.65	0.10 U	0.70	1.24 U	0.80 U
SILVER	0.93	1.16	0.28	1.01	1.10
ZINC	101.94	94.60	124.00	93.10	91.20

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	24.81 U	10.68 U	11.44	5.06 U
1,2,3,4,6,7,8,9-OCDF	10.89	24.81 U	10.68 U	8.92 U	5.06 U
1,2,3,4,6,7,8-HPCDD	4.91 U	12.39 U	5.32 U	2.20	2.53 U
1,2,3,4,6,7,8-HPCDF	4.99 U	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,4,7,8,9-HPCDF	5.21 U	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,4,7,8-HXCDD	5.58	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,4,7,8-HXCDF	5.56	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,6,7,8-HXCDD	5.53	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,6,7,8-HXCDF	5.10 U	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,7,8,9-HXCDD	5.43	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,7,8,9-HXCDF	5.09 U	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,7,8-PECDD	5.14 U	12.39 U	5.32 U	4.46 U	2.53 U
1,2,3,7,8-PECDF	4.74 U	12.39 U	5.32 U	4.46 U	2.53 U
2,3,4,6,7,8-HXCDF	5.31	12.39 U	5.32 U	4.46 U	2.53 U
2,3,4,7,8-PECDF	5.46	12.39 U	5.32 U	4.46 U	2.53 U
2,3,7,8-TCDD	0.88	2.47 U	1.06 U	0.89 U	0.51 U
2,3,7,8-TCDF	1.19	2.47 U	1.06 U	0.74	0.51 U
TOTAL DIOXINS	13.95	NR	10.68 U	13.60	0.92 U
TOTAL FURANS	14.95	NR	10.68 U	0.37 U	5.06 U
TOTAL HPCDD	4.37	12.39 U	5.32 U	2.20	1.85
TOTAL HPCDF	5.05 U	12.39 U	5.32 U	4.46 U	2.53 U
TOTAL HXCDD	6.97	12.39 U	5.32 U	4.46 U	2.53 U
TOTAL HXCDF	6.02 U	12.39 U	5.32 U	4.46 U	2.53 U
TOTAL PECDD	5.14 U	12.39 U	5.32 U	4.46 U	2.53 U
TOTAL PECDF	4.53	6.11	5.32 U	4.46 U	2.53 U
TOTAL TCDD	1.00	2.47 U	1.06 U	0.89 U	0.51 U
TOTAL TCDF	1.16	2.47 U	1.06 U	0.74	0.51 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	1.17	0.42	0.62	2.12
1-METHYLNAPHTHALENE	2.49	5.00	1.18	0.95	1.21
1-METHYLPHENANTHRENE	1.60	4.06	0.86	0.30	0.33
2,3,5-TRIMETHYLNAPHTHALENE	0.95	2.89	0.44	0.30	0.30
2,6-DIMETHYLNAPHTHALENE	0.95	2.61	0.28	0.52	0.36
2-METHYLNAPHTHALENE	3.12	5.44	1.51	1.52	1.36
ACENAPHTHENE	0.58	0.22	0.63	0.66	0.36
ACENAPHTHYLENE	0.30	0.28	0.25	0.28	0.06
ANTHRACENE	1.52	0.50	0.45	0.50	0.73
BENZO(A)ANTHRACENE	3.52	0.67	1.47	3.32	1.15
BENZO(A)PYRENE	3.99	0.78	4.90	5.32	2.52
BENZO(B)FLUORANTHENE	3.92	0.94	4.52	6.20	2.15
BENZO(E)PYRENE	2.62	1.22	3.32	4.24	1.48
BENZO(G,H,I)PERYLENE	1.71	0.33	2.91	2.70	1.42
BENZO(K)FLUORANTHENE	2.31	0.89	2.58	2.17	0.82
C1-CHRYSENES	1.98	1.94	0.29	3.32	0.58
C1-DIBENZOTHIOPHENES	0.76	1.06	0.07	0.51	0.18
C1-FLUORANTHENES/PYRENES	5.43	3.39	3.31	3.79	1.64
C1-FLUORENES	2.79	2.67	2.04	1.39	0.73
C1-NAPHTHALENES	5.61	10.44	2.69	2.47	2.58
C1-PHENANTHRENES/ANTHRACENES	6.05	5.28	1.19	1.60	1.09
C2-CHRYSENES	0.87	1.94	0.31	1.33	0.42
C2-DIBENZOTHIOPHENES	0.57	1.06	0.16	0.21	0.03
C2-FLUORENES	2.68	3.22	0.19	1.58	0.67
C2-NAPHTHALENES	3.57	7.67	1.29	1.11	1.21
C2-PHENANTHRENES/ANTHRACENES	4.54	6.17	1.21	1.50	0.64
C3-CHRYSENES	0.56	0.28	0.08	0.02	2.68 U
C3-DIBENZOTHIOPHENES	0.54	0.89	0.05	0.12	0.03

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	4.17	0.51	1.53	0.03
C3-NAPHTHALENES	3.27	8.67	0.90	1.45	0.58
C3-PHENANTHRENES/ANTHRACENES	2.54	4.67	0.27	0.74	0.21
C4-CHRYSENES	0.43	2.89 U	0.21	0.02	2.68 U
C4-NAPHTHALENES	1.57	7.67	0.06	0.60	0.03
C4-PHENANTHRENES/ANTHRACENES	0.92	2.39	0.04	0.23	0.03
CHRYSENE	6.51	3.78	4.89	6.80	2.61
DIBENZO(A,H)ANTHRACENE	0.14	0.17	0.52	0.58	0.15
DIBENZOTHIOPHENE	0.54	0.28	0.26	0.18	0.15
FLUORANTHENE	18.80	5.22	4.69	6.44	3.00
FLUORENE	1.43	1.67	0.63	0.67	0.97
INDENO(1,2,3-CD)PYRENE	1.69	0.06	3.73	4.20	1.64
NAPHTHALENE	5.03	8.39	2.78	2.39	2.36
PERYLENE	2.54	0.28	1.79	2.82	1.12
PHENANTHRENE	8.73	2.50	2.32	1.64	1.91
PYRENE	12.37	4.39	6.24	6.04	2.30
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	14.66	0.57	3.64	7.88
1,2,4,5-TETRACHLOROBENZENE	0.27	0.29	0.28 U	0.02	0.12 U
2,4'-DDD	0.19	0.07 U	0.07 U	0.10 U	0.26 U
2,4'-DDE	0.11	0.10 U	0.09 U	0.14 U	0.07 U
2,4'-DDT	0.10	0.19	0.09 U	0.12 U	0.07 U
4,4'-DDD	0.08	0.09 U	0.08 U	0.12 U	0.07 U
4,4'-DDE	1.22	7.23	0.71	0.92	0.39
4,4'-DDT	0.15	0.14 U	0.12 U	0.18 U	0.05 U
ALDRIN	0.11	0.12 U	0.11 U	0.16 U	0.05 U
ALPHA-BHC	0.16	0.14	0.08 U	0.11 U	0.05 U
ALPHA-CHLORDANE	1.36	0.09 U	0.08 U	0.12 U	0.02 U
BETA-BHC	0.11	0.08 U	0.07 U	0.24	0.12 U
CHLORPYRIFOS	1.55	0.76 U	1.85 U	1.02 U	0.45
CIS-NONACHLOR	0.06	0.08 U	0.07 U	0.11 U	0.05 U
DELTA-BHC	0.08	0.05 U	0.04 U	0.06 U	0.04 U
DIELDRIN	0.69	1.03	0.82	0.72	0.39
ENDOSULFAN II	0.07 U	0.09 U	0.08 U	0.12 U	0.04 U
ENDRIN	0.21	0.24 U	0.22 U	0.32 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.40	0.24	0.10 U	0.33
GAMMA-CHLORDANE	0.08	0.09 U	0.09 U	0.12 U	0.02 U
HEPTACHLOR	0.11 U	0.13 U	0.12 U	0.18 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.19 U	0.09 U	0.12 U	0.27 U
HEXACHLOROBENZENE	0.14	0.27	0.05	0.08	0.05 U
MIREX	0.17	0.21 U	0.20 U	0.28 U	0.10 U
OXYCHLORDANE	0.38	2.13	0.88	0.24	0.08 U
PCB-101/90	0.47	0.25	0.36	0.38 U	0.10 U
PCB-105	0.35	0.25	0.26	0.24	0.18
PCB-114	0.27 U	0.33 U	0.29 U	0.44 U	0.15 U
PCB-118	1.14	5.10	1.06	1.00	0.33
PCB-126	0.24 U	0.17	0.21	U	0.00
PCB-128	0.21	0.51	0.19	0.18	0.08 U
PCB-138/160	1.19	6.51	1.29	0.58 U	0.39
PCB-149/123	0.16	0.30	0.04	0.06	0.15 U
PCB-153/132	1.22	10.18	0.88 U	0.92 U	0.67
PCB-156	0.36	0.92	0.29 U	0.44 U	0.15 U
PCB-167	0.21	0.96	0.29 U	0.44 U	0.15 U
PCB-169	0.25	1.30 U	0.05	0.01	0.47 U
PCB-170/190	0.27	1.60	0.44 U	0.06 U	0.05
PCB-18/17	1.19	0.85 U	0.29	3.12	0.05
PCB-180	0.43	3.81	0.54	0.28 U	0.15

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 07			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	3.44	0.59	0.72	0.17
PCB-189	0.27 U	0.03	0.29 U	0.44 U	0.15 U
PCB-195/208	0.12	0.34	0.25 U	0.36 U	0.02 U
PCB-201/157/173	0.20	0.25 U	0.23 U	0.34 U	0.15 U
PCB-206	0.15	0.38	0.05	0.48	0.07 U
PCB-209	0.24	0.32	0.32 U	0.48 U	0.04 U
PCB-28	0.17	1.59	0.24 U	0.34 U	0.12 U
PCB-44	0.20	0.19 U	0.17 U	0.26 U	0.06
PCB-52	0.41	0.22 U	1.18	0.30 U	0.17 U
PCB-66	0.18	1.03	0.28	0.10	0.06 U
PCB-77	0.32	1.30 U	0.29 U	0.05 U	0.47 U
PCB-8/5	0.54	0.53 U	0.47 U	0.17	0.08 U
PCB-81	0.43	0.21	0.59	0.44 U	0.00
PENTACHLOROANISOLE	0.12	0.28	0.21	0.05 U	0.06
PENTACHLOROBENZENE	0.43	0.19	0.04	0.07 U	0.08 U
TRANS-NONACHLOR	0.08 U	0.06 U	0.71	0.08 U	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	12.50	11.80	1.62 U	1.95 U
ARSENIC	12.33	10.50	15.30	3.91	21.00
CADMIUM	0.03	0.74	0.03	0.05	0.02 U
CHROMIUM	0.41	0.10 U	0.25 U	0.64	0.80 U
COPPER	45.62	34.80	44.60	58.40	29.50
IRON	11.63	16.80	16.20	10.40	14.90
LEAD	0.28	0.29	0.20	0.24 U	0.07
MANGANESE	4.28	1.89	2.80	2.42	8.70
MERCURY	0.73	0.62	0.52	0.54	0.52
NICKEL	0.65	0.11 U	0.25 U	0.99 U	0.83 U
SILVER	0.93	0.94	0.26	1.29	0.89
ZINC	101.94	106.00	100.00	93.00	97.10

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	10.52	7.19 U	4.50 U	3.21 U
1,2,3,4,6,7,8,9-OCDF	10.89	15.84 U	7.19 U	0.24 U	4.97 U
1,2,3,4,6,7,8-HPCDD	4.91 U	7.92 U	3.60 U	0.53	2.48 U
1,2,3,4,6,7,8-HPCDF	4.99 U	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,4,7,8,9-HPCDF	5.21 U	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,4,7,8-HXCDD	5.58	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,4,7,8-HXCDF	5.56	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,6,7,8-HXCDD	5.53	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,6,7,8-HXCDF	5.10 U	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,7,8,9-HXCDD	5.43	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,7,8,9-HXCDF	5.09 U	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,7,8-PECDD	5.14 U	7.92 U	3.60 U	2.25 U	2.48 U
1,2,3,7,8-PECDF	4.74 U	7.92 U	3.60 U	2.25 U	2.48 U
2,3,4,6,7,8-HXCDF	5.31	7.92 U	3.60 U	2.25 U	2.48 U
2,3,4,7,8-PECDF	5.46	7.92 U	3.60 U	2.25 U	2.48 U
2,3,7,8-TCDD	0.88	1.58 U	0.71 U	0.45 U	0.50 U
2,3,7,8-TCDF	1.19	1.58 U	0.71 U	1.01	0.50 U
TOTAL DIOXINS	13.95	NR	7.19 U	0.53	3.21 U
TOTAL FURANS	14.95	NR	7.19 U	0.74 U	4.97 U
TOTAL HPCDD	4.37	7.92 U	3.60 U	0.53	2.48 U
TOTAL HPCDF	5.05 U	7.92 U	3.60 U	2.25 U	2.48 U
TOTAL HXCDD	6.97	7.92 U	3.60 U	2.25 U	2.48 U
TOTAL HXCDF	6.02 U	7.92 U	3.60 U	2.25 U	2.48 U
TOTAL PECDD	5.14 U	7.92 U	3.60 U	2.25 U	2.48 U
TOTAL PECDF	4.53	7.92 U	3.60 U	2.25 U	2.48 U
TOTAL TCDD	1.00	1.58 U	0.71 U	0.45 U	0.50 U
TOTAL TCDF	1.16	1.58 U	0.71 U	1.01	0.50 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.64	0.81	0.86	1.95
1-METHYLNAPHTHALENE	2.49	2.96	2.23	1.25	0.93
1-METHYLPHENANTHRENE	1.60	2.28	0.58	1.33	0.47
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.44	0.19	0.95	0.29
2,6-DIMETHYLNAPHTHALENE	0.95	1.20	0.58	1.39	0.37
2-METHYLNAPHTHALENE	3.12	3.52	2.42	2.60	1.36
ACENAPHTHENE	0.58	0.40	0.65	1.63	0.48
ACENAPHTHYLENE	0.30	0.20	0.38	2.30	0.08
ANTHRACENE	1.52	1.08	0.46	4.57	0.53
BENZO(A)ANTHRACENE	3.52	2.88	0.85	6.43	2.22
BENZO(A)PYRENE	3.99	3.24	2.85	4.53	3.64
BENZO(B)FLUORANTHENE	3.92	3.24	2.38	10.37	3.12
BENZO(E)PYRENE	2.62	1.56	2.35	8.80	1.96
BENZO(G,H,I)PERYLENE	1.71	1.20	1.85	3.90	1.74
BENZO(K)FLUORANTHENE	2.31	2.16	1.12	3.83	1.07
C1-CHRYSENES	1.98	1.48	0.27	5.03	1.89
C1-DIBENZOTHIOPHENES	0.76	0.56	0.46	0.73	0.63
C1-FLUORANTHENES/PYRENES	5.43	4.08	2.08	8.43	3.73
C1-FLUORENES	2.79	1.40	1.88	8.87	1.53
C1-NAPHTHALENES	5.61	6.48	4.65	3.87	2.29
C1-PHENANTHRENES/ANTHRACENES	6.05	4.72	2.23	5.07	2.38
C2-CHRYSENES	0.87	1.08	0.15	2.92	1.33
C2-DIBENZOTHIOPHENES	0.57	0.32	0.35	1.42	0.55
C2-FLUORENES	2.68	1.52	0.42	5.27	1.52
C2-NAPHTHALENES	3.57	3.64	3.58	2.66	1.25
C2-PHENANTHRENES/ANTHRACENES	4.54	3.84	1.54	6.63	1.99
C3-CHRYSENES	0.56	0.20	0.15	0.03	0.03
C3-DIBENZOTHIOPHENES	0.54	0.60	0.04	1.34	0.25

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.32	0.04	4.87	0.58
C3-NAPHTHALENES	3.27	4.64	2.81	3.16	1.03
C3-PHENANTHRENES/ANTHRACENES	2.54	2.52	2.27	4.53	1.08
C4-CHRYSENES	0.43	0.60	0.04	0.03	2.64 U
C4-NAPHTHALENES	1.57	3.80	1.62	3.63	0.62
C4-PHENANTHRENES/ANTHRACENES	0.92	1.92	0.04	2.83	0.78
CHRYSENE	6.51	4.88	2.62	9.30	3.38
DIBENZO(A,H)ANTHRACENE	0.14	0.08	0.15	0.46	0.14
DIBENZOTHIOPHENE	0.54	0.44	0.23	0.38	0.29
FLUORANTHENE	18.80	11.72	5.27	16.43	9.45
FLUORENE	1.43	1.08	1.27	2.70	1.00
INDENO(1,2,3-CD)PYRENE	1.69	0.84	1.73	2.82	1.88
NAPHTHALENE	5.03	5.24	6.08	1.96	1.85
PERYLENE	2.54	1.24	2.31	5.00	1.30
PHENANTHRENE	8.73	3.48	2.42	6.13	4.25
PYRENE	12.37	10.60	4.42	16.37	5.36
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	1.60	0.88	0.16	5.07
1,2,4,5-TETRACHLOROBENZENE	0.27	0.19 U	0.29 U	0.10	0.15
2,4'-DDD	0.19	0.04 U	0.05 U	0.73	0.26 U
2,4'-DDE	0.11	0.06 U	0.07 U	0.09 U	0.06 U
2,4'-DDT	0.10	0.06 U	0.06 U	0.29	0.06 U
4,4'-DDD	0.08	0.12	0.24	0.73	0.07 U
4,4'-DDE	1.22	1.23	1.54	2.63	1.96
4,4'-DDT	0.15	0.08 U	1.58	0.31	0.05 U
ALDRIN	0.11	0.07 U	0.08 U	0.11 U	0.05 U
ALPHA-BHC	0.16	0.14	0.06	0.08 U	0.05 U
ALPHA-CHLORDANE	1.36	1.44	0.06 U	0.29	0.02 U
BETA-BHC	0.11	0.05 U	0.05 U	0.53	0.12 U
CHLORPYRIFOS	1.55	0.48 U	1.71 U	0.68 U	0.37
CIS-NONACHLOR	0.06	0.05 U	0.01	0.47	0.05 U
DELTA-BHC	0.08	0.03 U	0.03 U	0.04 U	0.04 U
DIELDRIN	0.69	0.62	1.15	0.32	0.42
ENDOSULFAN II	0.07 U	0.06 U	0.06 U	0.08	0.04 U
ENDRIN	0.21	0.15 U	0.15 U	0.22 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.04 U	0.25	0.03	0.27
GAMMA-CHLORDANE	0.08	0.06 U	0.06 U	0.13	0.02 U
HEPTACHLOR	0.11 U	0.08 U	4.23	0.12 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.06 U	0.06 U	0.08 U	0.26 U
HEXACHLOROBENZENE	0.14	0.13	0.12	0.08	0.05 U
MIREX	0.17	0.13 U	0.14 U	0.18 U	0.10 U
OXYCHLORDANE	0.38	0.54	0.50	0.09 U	0.30
PCB-101/90	0.47	0.21	0.32	2.67	0.09
PCB-105	0.35	0.52	0.30	0.97	0.12
PCB-114	0.27 U	0.20 U	0.21 U	0.28 U	0.16 U
PCB-118	1.14	0.71	1.19	2.57	0.59
PCB-126	0.24 U	0.06	0.17		0.00
PCB-128	0.21	0.08	0.20	0.67	0.12
PCB-138/160	1.19	1.23	2.42	4.33	0.95
PCB-149/123	0.16	0.20 U	0.06	2.23	0.04
PCB-153/132	1.22	2.00	0.90 U	6.00	1.59
PCB-156	0.36	0.17	0.13	0.30	0.16 U
PCB-167	0.21	0.20 U	0.21 U	0.27	0.16 U
PCB-169	0.25	0.81 U	0.04	0.01	0.01
PCB-170/190	0.27	0.20 U	0.35 U	0.07 U	0.14
PCB-18/17	1.19	0.30	0.15	0.77 U	0.16 U
PCB-180	0.43	0.69	0.54	2.03	0.49

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 08			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.68	0.62	2.20	0.49
PCB-189	0.27 U	0.20 U	0.21 U	0.28 U	0.16 U
PCB-195/208	0.12	0.05	0.05	0.23 U	0.02 U
PCB-201/157/173	0.20	0.16 U	0.16 U	0.05	0.16 U
PCB-206	0.15	0.18 U	0.05	0.25 U	0.06 U
PCB-209	0.24	0.22	0.23 U	0.33 U	0.04 U
PCB-28	0.17	0.16 U	1.15	0.28	0.12 U
PCB-44	0.20	0.12 U	0.07	0.12 U	0.07
PCB-52	0.41	0.14 U	0.54	0.63	0.16 U
PCB-66	0.18	0.09	0.85	0.33	0.06 U
PCB-77	0.32	0.81 U	0.16	0.03 U	0.47 U
PCB-8/5	0.54	0.33 U	0.33 U	5.67	0.08 U
PCB-81	0.43	0.81 U	0.33	0.28 U	0.47 U
PENTACHLOROANISOLE	0.12	0.13	0.09	1.27	0.04
PENTACHLOROBENZENE	0.43	0.73	0.22	0.13 U	0.08 U
TRANS-NONACHLOR	0.08 U	0.04 U	0.04	0.37	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	6.55	5.75	1.59 U	1.43 U
ARSENIC	12.33	11.80	24.65	4.64	17.45
CADMIUM	0.03	0.02 U	0.07	0.02	0.04
CHROMIUM	0.41	0.10 U	0.16 U	0.26 U	0.34 U
COPPER	45.62	34.20	63.50	46.20	21.10
IRON	11.63	10.30	11.80	13.40	9.55
LEAD	0.28	0.04 U	0.07	0.09 U	0.04 U
MANGANESE	4.28	1.69	3.05	1.62	1.95
MERCURY	0.73	0.46	0.56	0.66	0.60
NICKEL	0.65	0.10 U	0.36	0.98 U	0.91 U
SILVER	0.93	0.96	0.35	1.13	0.77
ZINC	101.94	82.00	104.35	81.00	80.30

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	20.24 U	7.64 U	1.97	5.14 U
1,2,3,4,6,7,8,9-OCDF	10.89	20.24 U	7.64 U	5.96 U	8.73
1,2,3,4,6,7,8-HPCDD	4.91 U	10.12 U	3.83 U	1.83	3.80 U
1,2,3,4,6,7,8-HPCDF	4.99 U	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,4,7,8,9-HPCDF	5.21 U	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,4,7,8-HXCDD	5.58	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,4,7,8-HXCDF	5.56	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,6,7,8-HXCDD	5.53	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,6,7,8-HXCDF	5.10 U	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,7,8,9-HXCDD	5.43	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,7,8,9-HXCDF	5.09 U	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,7,8-PECDD	5.14 U	10.12 U	3.83 U	2.98 U	3.80 U
1,2,3,7,8-PECDF	4.74 U	10.12 U	3.83 U	2.98 U	3.80 U
2,3,4,6,7,8-HXCDF	5.31	10.12 U	3.83 U	2.98 U	3.80 U
2,3,4,7,8-PECDF	5.46	10.12 U	3.83 U	2.98 U	3.80 U
2,3,7,8-TCDD	0.88	2.02 U	0.78 U	0.60 U	0.76 U
2,3,7,8-TCDF	1.19	2.02 U	0.78 U	0.60 U	1.18
TOTAL DIOXINS	13.95	NR	7.64 U	3.80	5.14 U
TOTAL FURANS	14.95	NR	7.64 U	5.96 U	6.70 U
TOTAL HPCDD	4.37	10.12 U	3.83 U	1.83	3.80 U
TOTAL HPCDF	5.05 U	10.12 U	3.83 U	2.98 U	3.80 U
TOTAL HXCDD	6.97	10.12 U	3.83 U	2.98 U	3.80 U
TOTAL HXCDF	6.02 U	10.12 U	3.83 U	2.98 U	3.55
TOTAL PECDD	5.14 U	10.12 U	3.83 U	2.98 U	3.80 U
TOTAL PECDF	4.53	3.81	3.83 U	2.98 U	3.80 U
TOTAL TCDD	1.00	2.02 U	0.78 U	0.60 U	0.76 U
TOTAL TCDF	1.16	2.02 U	0.78 U	0.60 U	1.18
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.67	0.83	0.76	3.64
1-METHYLNAPHTHALENE	2.49	3.05	2.17	1.46	3.36
1-METHYLPHENANTHRENE	1.60	2.48	1.06	0.53	0.50
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.76	0.61	0.65	0.64
2,6-DIMETHYLNAPHTHALENE	0.95	1.29	0.61	0.68	0.86
2-METHYLNAPHTHALENE	3.12	4.14	2.61	2.07	4.32
ACENAPHTHENE	0.58	0.24	1.39	0.64	1.32
ACENAPHTHYLENE	0.30	0.29	0.50	0.11	0.09
ANTHRACENE	1.52	0.62	0.94	0.90	1.50
BENZO(A)ANTHRACENE	3.52	0.76	1.61	5.65	3.18
BENZO(A)PYRENE	3.99	0.62	4.83	10.26	5.45
BENZO(B)FLUORANTHENE	3.92	0.81	4.39	9.52	5.73
BENZO(E)PYRENE	2.62	1.38	3.50	6.30	3.82
BENZO(G,H,I)PERYLENE	1.71	0.19	3.06	4.48	3.41
BENZO(K)FLUORANTHENE	2.31	0.71	2.00	5.09	2.27
C1-CHRYSENES	1.98	1.24	1.67	2.27	1.82
C1-DIBENZOTHIOPHENES	0.76	0.71	0.44	0.52	0.55
C1-FLUORANTHENES/PYRENES	5.43	1.81	3.67	3.93	4.00
C1-FLUORENES	2.79	1.71	2.56	1.60	2.41
C1-NAPHTHALENES	5.61	7.19	4.78	3.53	7.64
C1-PHENANTHRENES/ANTHRACENES	6.05	4.67	1.56	1.75	2.18
C2-CHRYSENES	0.87	0.67	0.06	0.66	1.36
C2-DIBENZOTHIOPHENES	0.57	0.62	0.67	0.01	0.05
C2-FLUORENES	–2.68	1.71	0.06	1.87	2.41
C2-NAPHTHALENES	3.57	4.38	3.39	1.70	3.18
C2-PHENANTHRENES/ANTHRACENES	4.54	4.10	2.50	1.58	1.59
C3-CHRYSENES	0.56	0.33	0.06	0.02	0.05
C3-DIBENZOTHIOPHENES	0.54	0.52	0.01	0.02	1.86 U

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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	3.00	0.22	0.07	1.09
C3-NAPHTHALENES	3.27	5.86	3.33	1.11	1.68
C3-PHENANTHRENES/ANTHRACENES	2.54	2.67	4.00	0.60	0.59
C4-CHRYSENES	0.43	2.36 U	0.01	0.01	4.68 U
C4-NAPHTHALENES	1.57	4.86	0.11	0.10	1.18
C4-PHENANTHRENES/ANTHRACENES	0.92	1.62	0.06	0.00	0.32
CHRYSENE	6.51	2.57	4.33	9.70	6.27
DIBENZO(A,H)ANTHRACENE	0.14	0.05	0.28	0.15	0.27
DIBENZOTHIOPHENE	0.54	0.33	0.33	0.31	0.36
FLUORANTHENE	18.80	5.52	8.11	10.26	6.41
FLUORENE	1.43	0.95	2.06	1.00	2.41
INDENO(1,2,3-CD)PYRENE	1.69	0.05	2.94	6.26	3.32
NAPHTHALENE	5.03	6.71	5.78	3.13	7.18
PERYLENE	2.54	0.24	4.06	4.31	2.82
PHENANTHRENE	8.73	2.19	4.06	2.67	4.36
PYRENE	12.37	5.14	9.33	9.87	4.77
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	4.22	1.33	3.00	10.00
1,2,4,5-TETRACHLOROBENZENE	0.27	0.24	0.36 U	0.20 U	0.21 U
2,4'-DDD	0.19	0.06 U	0.51	0.09 U	0.45 U
2,4'-DDE	0.11	0.08 U	0.09 U	0.13 U	0.11 U
2,4'-DDT	0.10	0.19	0.08	0.12 U	0.11 U
4,4'-DDD	0.08	0.07 U	0.08 U	0.11 U	0.13 U
4,4'-DDE	1.22	2.62	1.11	0.65	1.45
4,4'-DDT	0.15	0.11 U	1.61	0.17 U	0.09 U
ALDRIN	0.11	0.10 U	0.10 U	0.15 U	0.08 U
ALPHA-BHC	0.16	0.22	0.08	0.11 U	0.08 U
ALPHA-CHLORDANE	1.36	0.64	0.08 U	0.11 U	0.03 U
BETA-BHC	0.11	0.06 U	0.06 U	0.10 U	0.21 U
CHLORPYRIFOS	1.55	0.63 U	1.67 U	0.98 U	0.68
CIS-NONACHLOR	0.06	0.06 U	0.02	0.10 U	0.09 U
DELTA-BHC	0.08	0.04 U	0.04 U	0.06 U	0.07 U
DIELDRIN	0.69	0.85	1.50	0.52	1.09
ENDOSULFAN II	0.07 U	0.07 U	0.08 U	0.11 U	0.07 U
ENDRIN	0.21	0.20 U	0.20 U	0.30 U	0.09 U
GAMMA-BHC (LINDANE)	0.28	0.06 U	0.34	0.09 U	0.82
GAMMA-CHLORDANE	0.08	0.08 U	0.08 U	0.12 U	0.04 U
HEPTACHLOR	0.11 U	0.11 U	0.11 U	0.17 U	0.08 U
HEPTACHLOR EPOXIDE	0.13 U	0.08 U	0.08 U	0.12 U	0.48 U
HEXACHLOROBENZENE	0.14	0.18	0.17	0.08	0.09 U
MIREX	0.17	0.17 U	0.18 U	0.28 U	0.17 U
OXYCHLORDANE	0.38	0.43	0.31	0.12	1.18
PCB-101/90	0.47	0.23 U	1.00	0.21	0.18 U
PCB-105	0.35	0.67	0.28	0.19	0.38
PCB-114	0.27 U	0.27 U	0.27 U	0.41 U	0.27 U
PCB-118	1.14	2.72	1.28	0.83	1.32
PCB-126	0.24 U	0.08	0.30	0.41 U	0.00
PCB-128	0.21	0.46	0.26	0.15	0.26
PCB-138/160	1.19	2.73	2.17	0.54 U	1.55
PCB-149/123	0.16	0.27 U	0.37	0.06	0.27 U
PCB-153/132	1.22	4.93	1.39 U	0.74 U	2.45
PCB-156	0.36	0.27 U	0.18	0.41 U	0.27 U
PCB-167	0.21	0.27	0.09	0.41 U	0.27 U
PCB-169	0.25	1.06 U	0.06	0.41 U	0.84 U
PCB-170/190	0.27	0.72	0.58 U	0.12 U	0.26
PCB-18/17	1.19	0.71	0.29	0.70	0.27 U
PCB-180	0.43	1.39	1.11	0.24 U	0.86

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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 09			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	1.37	0.94	0.52	0.86
PCB-189	0.27 U	0.06	0.27 U	0.41 U	0.27 U
PCB-195/208	0.12	0.11	0.08	0.35 U	0.03 U
PCB-201/157/173	0.20	0.20 U	0.21 U	0.33 U	0.27 U
PCB-206	0.15	0.23	0.04	0.37 U	0.11 U
PCB-209	0.24	0.30 U	0.31 U	0.07	0.07 U
PCB-28	0.17	0.21 U	0.22 U	0.10 U	0.21 U
PCB-44	0.20	0.15 U	0.16 U	0.24 U	0.39 U
PCB-52	0.41	0.33	0.54	0.28 U	0.27 U
PCB-66	0.18	0.54	0.25	0.39 U	0.11 U
PCB-77	0.32	1.06 U	0.12	0.41 U	0.83 U
PCB-8/5	0.54	0.43 U	0.44 U	1.30	0.14 U
PCB-81	0.43	1.06 U	0.26	0.41 U	0.84 U
PENTACHLOROANISOLE	0.12	0.17	0.21	0.06 U	0.12
PENTACHLOROBENZENE	0.43	0.23	0.14	0.65 U	0.05
TRANS-NONACHLOR	0.08 U	0.05 U	0.05 U	0.04	0.07 U
Inorganics (MG/KG)					
ALUMINUM	4.77	21.20	4.20	9.55 U	2.25 U
ARSENIC	12.33	12.10	20.80	5.13	19.30
CADMIUM	0.03	0.06	0.07	0.04	0.04 U
CHROMIUM	0.41	0.10 U	0.26 U	0.95	0.85 U
COPPER	45.62	34.60	45.50	37.50	24.70
IRON	11.63	32.70	9.30	13.20	13.80
LEAD	0.28	0.22	0.12	2.26	0.10
MANGANESE	4.28	3.39	2.60	1.66	3.10
MERCURY	0.73	0.42	0.98	0.50	0.52
NICKEL	0.65	0.10 U	0.26 U	0.97 U	0.90 U
SILVER	0.93	0.84	0.27	0.80	0.83
ZINC	101.94	101.00	85.00	101.00	92.10

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	17.34 U	4.79	2.25	4.18 U
1,2,3,4,6,7,8,9-OCDF	10.89	17.34 U	3.21	4.22 U	4.18 U
1,2,3,4,6,7,8-HPCDD	4.91 U	8.66 U	0.34 U	2.10 U	2.10 U
1,2,3,4,6,7,8-HPCDF	4.99 U	8.66 U	4.47 U	2.10 U	2.10 U
1,2,3,4,7,8,9-HPCDF	5.21 U	8.66 U	4.47 U	2.10 U	2.10 U
1,2,3,4,7,8-HXCDD	5.58	8.66 U	4.47 U	2.10 U	2.10 U
1,2,3,4,7,8-HXCDF	5.56	8.66 U	4.47 U	2.10 U	2.10 U
1,2,3,6,7,8-HXCDD	5.53	8.66 U	4.47 U	2.10 U	2.10 U
1,2,3,6,7,8-HXCDF	5.10 U	8.66 U	0.53 U	2.10 U	2.10 U
1,2,3,7,8,9-HXCDD	5.43	8.66 U	4.47 U	2.10 U	2.10 U
1,2,3,7,8,9-HXCDF	5.09 U	8.66 U	4.47 U	2.10 U	2.10 U
1,2,3,7,8-PECDD	5.14 U	8.66 U	0.53 U	2.10 U	2.10 U
1,2,3,7,8-PECDF	4.74 U	8.66 U	0.53 U	2.10 U	2.10 U
2,3,4,6,7,8-HXCDF	5.31	8.66 U	1.05	2.10 U	2.10 U
2,3,4,7,8-PECDF	5.46	8.66 U	0.39 U	2.10 U	2.10 U
2,3,7,8-TCDD	0.88	1.73 U	0.89 U	0.42 U	0.42 U
2,3,7,8-TCDF	1.19	1.73 U	0.74 U	0.42 U	0.42 U
TOTAL DIOXINS	13.95	NR	10.79	2.25	4.18 U
TOTAL FURANS	14.95	NR	10.47	4.22 U	4.18 U
TOTAL HPCDD	4.37	8.66 U	0.34 U	2.10 U	2.10 U
TOTAL HPCDF	5.05 U	8.66 U	4.47 U	2.10 U	2.10 U
TOTAL HXCDD	6.97	4.32	4.32	2.10 U	2.10 U
TOTAL HXCDF	6.02 U	8.66 U	1.05 U	2.10 U	2.10 U
TOTAL PECDD	5.14 U	8.66 U	0.53 U	2.10 U	2.10 U
TOTAL PECDF	4.53	8.66 U	1.53 U	2.10 U	2.10 U
TOTAL TCDD	1.00	1.73 U	0.89 U	0.42 U	0.42 U
TOTAL TCDF	1.16	1.73 U	1.05 U	0.42 U	0.42 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.64	0.84	0.54	1.97
1-METHYLNAPHTHALENE	2.49	3.41	2.16	1.39	1.45
1-METHYLPHENANTHRENE	1.60	4.36	1.05	0.41	0.90
2,3,5-TRIMETHYLNAPHTHALENE	0.95	2.18	0.58	0.46	0.45
2,6-DIMETHYLNAPHTHALENE	0.95	1.55	0.68	0.60	0.42
2-METHYLNAPHTHALENE	3.12	4.41	2.53	1.62	1.68
ACENAPHTHENE	0.58	0.27	1.00	0.34	0.68
ACENAPHTHYLENE	0.30	0.27	0.11	0.21	0.06
ANTHRACENE	1.52	4.18	0.58	0.61	2.97
BENZO(A)ANTHRACENE	3.52	15.64	1.37	1.90	4.55
BENZO(A)PYRENE	3.99	17.95	5.79	4.15	7.45
BENZO(B)FLUORANTHENE	3.92	9.91	5.21	3.03	5.45
BENZO(E)PYRENE	2.62	6.14	3.89	2.09	3.61
BENZO(G,H,I)PERYLENE	1.71	5.09	3.16	1.94	3.29
BENZO(K)FLUORANTHENE	2.31	12.41	2.05	1.18	2.26
C1-CHRYSENES	1.98	5.50	1.95	0.88	2.10
C1-DIBENZOTHIOPHENES	0.76	0.82	0.63	0.21	0.26
C1-FLUORANTHENES/PYRENES	5.43	14.09	4.79	1.79	4.29
C1-FLUORENES	2.79	2.41	3.53	1.54	2.03
C1-NAPHTHALENES	5.61	7.82	4.63	3.00	3.13
C1-PHENANTHRENES/ANTHRACENES	6.05	11.95	3.58	1.33	3.10
C2-CHRYSENES	0.87	1.77	0.16	0.36	0.81
C2-DIBENZOTHIOPHENES	0.57	1.05	0.21	0.01	0.10
C2-FLUORENES	2.68	2.91	0.21	0.88	1.39
C2-NAPHTHALENES	3.57	4.23	4.11	1.67	1.68
C2-PHENANTHRENES/ANTHRACENES	4.54	8.59	3.84	0.97	1.74
C3-CHRYSENES	0.56	0.32	0.05	0.01	2.71 U
C3-DIBENZOTHIOPHENES	0.54	0.50	0.05	0.01	0.03

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.59	3.68	0.01	0.32
C3-NAPHTHALENES	3.27	6.32	4.32	1.20	1.06
C3-PHENANTHRENES/ANTHRACENES	2.54	4.59	3.26	0.33	0.61
C4-CHRYSENES	0.43	0.05	0.02	0.02	2.71 U
C4-NAPHTHALENES	1.57	4.68	0.05	0.03	0.10
C4-PHENANTHRENES/ANTHRACENES	0.92	2.64	0.42	0.02	0.06
CHRYSENE	6.51	17.86	5.53	3.35	5.61
DIBENZO(A,H)ANTHRACENE	0.14	1.55	0.26	0.08	0.23
DIBENZOTHIOPHENE	0.54	0.55	0.32	0.14	0.52
FLUORANTHENE	18.80	36.55	8.89	5.71	12.48
FLUORENE	1.43	1.36	1.68	0.65	1.81
INDENO(1,2,3-CD)PYRENE	1.69	6.32	3.74	1.97	3.61
NAPHTHALENE	5.03	7.64	6.47	2.40	2.52
PERYLENE	2.54	5.09	3.26	1.49	2.42
PHENANTHRENE	8.73	7.09	4.16	1.46	6.87
PYRENE	12.37	27.00	8.68	4.47	8.58
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	8.09	1.16	2.76	2.61
1,2,4,5-TETRACHLOROBENZENE	0.27	0.23 U	0.32 U	0.02 U	0.12 U
2,4'-DDD	0.19	0.05 U	0.34	0.06 U	0.26 U
2,4'-DDE	0.11	0.08 U	0.74	0.09 U	0.06 U
2,4'-DDT	0.10	0.07 U	0.12	0.08 U	0.06 U
4,4'-DDD	0.08	0.07 U	0.17	0.08 U	0.07 U
4,4'-DDE	1.22	0.80	1.47	0.38	0.30
4,4'-DDT	0.15	0.10 U	1.47	0.11 U	0.05 U
ALDRIN	0.11	0.09 U	0.11 U	0.10 U	0.05 U
ALPHA-BHC	0.16	0.20	0.08 U	0.07 U	0.05 U
ALPHA-CHLORDANE	1.36	3.82	0.08 U	0.08 U	0.02 U
BETA-BHC	0.11	0.53	0.07 U	0.06 U	0.12 U
CHLORPYRIFOS	1.55	0.27	1.76 U	0.65 U	0.32
CIS-NONACHLOR	0.06	0.06 U	0.08 U	0.07 U	0.05 U
DELTA-BHC	0.08	0.03 U	0.04 U	0.04 U	0.04 U
DIELDRIN	0.69	0.60	1.11	0.35	0.52
ENDOSULFAN II	0.07 U	0.07 U	0.18	0.08 U	0.04 U
ENDRIN	0.21	0.18 U	0.23 U	0.21 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.20	0.36	0.06 U	0.31
GAMMA-CHLORDANE	0.08	0.07 U	0.08	0.08 U	0.02 U
HEPTACHLOR	0.11 U	0.10 U	0.12 U	0.11 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.07 U	0.09 U	0.08 U	0.27 U
HEXACHLOROBENZENE	0.14	0.09 U	0.13	0.05	0.05 U
MIREX	0.17	0.16 U	0.07	0.18 U	0.10 U
OXYCHLORDANE	0.38	0.08 U	0.24	0.10	0.08 U
PCB-101/90	0.47	0.57	0.26 U	0.41	0.10 U
PCB-105	0.35	0.25	0.42	0.12	0.06
PCB-114	0.27 U	0.24 U	0.32 U	0.28 U	0.16 U
PCB-118	1.14	0.97	2.00	0.53	0.25
PCB-126	0.24 U	0.02	0.46	0.28 U	0.48 U
PCB-128	0.21	0.08	0.41	0.11	0.08 U
PCB-138/160	1.19	1.04	2.21	0.38 U	0.32
PCB-149/123	0.16	0.24 U	0.32 U	0.03	0.16 U
PCB-153/132	1.22	1.34	1.21 U	0.53 U	0.55
PCB-156	0.36	0.24 U	0.32 U	0.28 U	0.16 U
PCB-167	0.21	0.24 U	0.12	0.28 U	0.16 U
PCB-169	0.25	0.01	0.32 U	0.28 U	0.48 U
PCB-170/190	0.27	0.24 U	0.53 U	0.21 U	0.24 U
PCB-18/17	1.19	1.68	0.58	0.19	0.16 U
PCB-180	0.43	0.65	0.95	0.15 U	0.17

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 10			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.37	1.53	0.29	0.12
PCB-189	0.27 U	0.24 U	0.32 U	0.28 U	0.16 U
PCB-195/208	0.12	0.20 U	1.16	0.24 U	0.02 U
PCB-201/157/173	0.20	0.19 U	0.54	0.21 U	0.16 U
PCB-206	0.15	0.21 U	2.84	0.24 U	0.06 U
PCB-209	0.24	0.27 U	0.34	0.31 U	0.04 U
PCB-28	0.17	0.19 U	0.58	0.07 U	0.12 U
PCB-44	0.20	0.14 U	0.18 U	0.16 U	0.12
PCB-52	0.41	0.10	0.21 U	0.19 U	0.16 U
PCB-66	0.18	0.23 U	0.28	0.26 U	0.06 U
PCB-77	0.32	0.97 U	0.32 U	0.28 U	0.48 U
PCB-8/5	0.54	0.52	0.50 U	0.47	0.08 U
PCB-81	0.43	0.97 U	0.53	0.28 U	0.48 U
PENTACHLOROANISOLE	0.12	0.18	0.25	0.04 U	0.07
PENTACHLOROBENZENE	0.43	0.36	0.10 U	0.47 U	0.08 U
TRANS-NONACHLOR	0.08 U	0.04 U	1.00	0.04	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	9.47	4.50	1.58 U	1.35 U
ARSENIC	12.33	10.10	17.10	3.82	18.60
CADMIUM	0.03	0.02 U	0.05	0.03	0.02 U
CHROMIUM	0.41	0.10 U	0.26 U	1.63	1.30 U
COPPER	45.62	35.30	34.60	39.20	24.70
IRON	11.63	13.50	12.30	11.30	3.35 U
LEAD	0.28	0.15	0.17	0.07 U	0.11
MANGANESE	4.28	2.41	3.30	2.57	12.90
MERCURY	0.73	0.43	0.50	0.49	0.38
NICKEL	0.65	0.10 U	0.26 U	0.97 U	0.80 U
SILVER	0.93	0.99	0.21	1.08	0.94
ZINC	101.94	108.00	93.00	92.20	102.00

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	13.31 U	4.21	2.52	5.13 U
1,2,3,4,6,7,8,9-OCDF	10.89	13.31 U	11.36 U	9.12 U	5.13 U
1,2,3,4,6,7,8-HPCDD	4.91 U	6.65 U	2.85 U	4.55 U	2.56 U
1,2,3,4,6,7,8-HPCDF	4.99 U	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,4,7,8,9-HPCDF	5.21 U	6.65 U	3.06 U	4.55 U	2.56 U
1,2,3,4,7,8-HXCDD	5.58	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,4,7,8-HXCDF	5.56	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,6,7,8-HXCDD	5.53	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,6,7,8-HXCDF	5.10 U	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,7,8,9-HXCDD	5.43	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,7,8,9-HXCDF	5.09 U	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,7,8-PECDD	5.14 U	6.65 U	5.68 U	4.55 U	2.56 U
1,2,3,7,8-PECDF	4.74 U	6.65 U	3.09 U	4.55 U	2.56 U
2,3,4,6,7,8-HXCDF	5.31	6.65 U	5.68 U	4.55 U	2.56 U
2,3,4,7,8-PECDF	5.46	6.65 U	0.26 U	4.55 U	2.56 U
2,3,7,8-TCDD	0.88	1.33 U	1.09	0.91 U	0.51 U
2,3,7,8-TCDF	1.19	1.33 U	1.14 U	0.91 U	0.51 U
TOTAL DIOXINS	13.95	NR	5.15	4.45 U	5.13 U
TOTAL FURANS	14.95	NR	2.03	9.12 U	5.13 U
TOTAL HPCDD	4.37	6.65 U	2.85 U	4.55 U	2.56 U
TOTAL HPCDF	5.05 U	6.65 U	3.06 U	4.55 U	2.56 U
TOTAL HXCDD	6.97	1.57	5.68 U	4.55 U	2.56 U
TOTAL HXCDF	6.02 U	6.65 U	5.68 U	4.55 U	2.56 U
TOTAL PECDD	5.14 U	6.65 U	5.68 U	4.55 U	2.56 U
TOTAL PECDF	4.53	6.65 U	0.97 U	4.55 U	2.56 U
TOTAL TCDD	1.00	1.33 U	1.09	0.91 U	0.51 U
TOTAL TCDF	1.16	1.33 U	1.14 U	0.91 U	0.51 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.45	1.39	0.89	1.90
1-METHYLNAPHTHALENE	2.49	2.89	3.03	1.20	1.68
1-METHYLPHENANTHRENE	1.60	2.23	0.82	0.25	0.74
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.55	0.79	0.37	0.39
2,6-DIMETHYLNAPHTHALENE	0.95	1.11	0.88	0.63	0.39
2-METHYLNAPHTHALENE	3.12	3.71	2.91	1.56	2.00
ACENAPHTHENE	0.58	0.30	1.18	0.24	0.52
ACENAPHTHYLENE	0.30	0.21	0.27	0.25	0.06
ANTHRACENE	1.52	1.48	1.30	0.31	1.61
BENZO(A)ANTHRACENE	3.52	3.27	3.15	0.78	4.68
BENZO(A)PYRENE	3.99	4.89	9.88	0.68	12.74
BENZO(B)FLUORANTHENE	3.92	2.21	9.09	1.23	7.90
BENZO(E)PYRENE	2.62	2.27	4.94	1.51	4.06
BENZO(G,H,I)PERYLENE	1.71	1.45	4.09	1.38	3.77
BENZO(K)FLUORANTHENE	2.31	3.04	3.76	1.60	3.23
C1-CHRYSENES	1.98	1.93	1.52	0.48	1.58
C1-DIBENZOTHIOPHENES	0.76	0.73	0.91	0.20	0.35
C1-FLUORANTHENES/PYRENES	5.43	4.48	6.09	1.48	4.77
C1-FLUORENES	2.79	1.86	3.39	1.96	1.23
C1-NAPHTHALENES	5.61	6.63	5.94	2.76	3.71
C1-PHENANTHRENES/ANTHRACENES	6.05	7.27	6.70	1.86	2.87
C2-CHRYSENES	0.87	0.95	1.00	0.04	0.61
C2-DIBENZOTHIOPHENES	0.57	0.91	1.24	0.01	0.03
C2-FLUORENES	2.68	2.43	0.73	1.01	0.87
C2-NAPHTHALENES	3.57	3.96	5.30	1.60	1.74
C2-PHENANTHRENES/ANTHRACENES	4.54	9.07	4.61	1.23	1.26
C3-CHRYSENES	0.56	0.43	0.12	0.07	2.52 U
C3-DIBENZOTHIOPHENES	0.54	0.70	0.09	0.03	1.02 U

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	3.52	3.70	0.12	0.10
C3-NAPHTHALENES	3.27	4.82	2.45	1.13	0.81
C3-PHENANTHRENES/ANTHRACENES	2.54	3.09	2.48	0.08	0.35
C4-CHRYSENES	0.43	0.70	0.04	0.06	2.52 U
C4-NAPHTHALENES	1.57	4.05	0.15	0.53	0.03
C4-PHENANTHRENES/ANTHRACENES	0.92	1.86	0.04	0.04	0.03
CHRYSENE	6.51	6.00	7.21	1.92	6.74
DIBENZO(A,H)ANTHRACENE	0.14	0.14	0.21	0.08	0.32
DIBENZOTHIOPHENE	0.54	0.34	0.45	0.18	0.35
FLUORANTHENE	18.80	12.20	18.67	3.26	12.84
FLUORENE	1.43	0.88	2.21	0.76	1.42
INDENO(1,2,3-CD)PYRENE	1.69	1.64	5.03	0.80	5.68
NAPHTHALENE	5.03	5.09	7.94	2.38	2.94
PERYLENE	2.54	1.41	4.00	1.44	2.55
PHENANTHRENE	8.73	3.48	5.03	1.36	5.03
PYRENE	12.37	8.45	13.70	2.60	9.06
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	3.78	3.18	2.85	1.61
1,2,4,5-TETRACHLOROBENZENE	0.27	0.09	0.36 U	0.18	0.16
2,4'-DDD	0.19	0.04 U	0.43	0.11 U	0.24 U
2,4'-DDE	0.11	0.06 U	0.64	0.15 U	0.06 U
2,4'-DDT	0.10	0.05 U	0.16	0.14 U	0.06 U
4,4'-DDD	0.08	0.14	0.12	0.13 U	0.07 U
4,4'-DDE	1.22	0.74	1.70	1.12	0.28
4,4'-DDT	0.15	0.08 U	0.61	0.20 U	0.05 U
ALDRIN	0.11	0.07 U	0.18	0.18 U	0.04 U
ALPHA-BHC	0.16	0.12	0.28	0.31	0.04 U
ALPHA-CHLORDANE	1.36	9.28	0.09 U	0.13 U	0.04
BETA-BHC	0.11	0.41	0.04	0.09	0.11 U
CHLORPYRIFOS	1.55	1.02	6.21 U	1.15 U	0.48
CIS-NONACHLOR	0.06	0.05 U	0.04	0.12 U	0.05 U
DELTA-BHC	0.08	0.03 U	0.05 U	0.07 U	0.04 U
DIELDRIN	0.69	0.51	1.73	0.80	0.35
ENDOSULFAN II	0.07 U	0.05 U	0.15	0.13 U	0.04 U
ENDRIN	0.21	0.14 U	0.24 U	0.37 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.33	0.68	0.11 U	0.25
GAMMA-CHLORDANE	0.08	0.05 U	0.10 U	0.14 U	0.02 U
HEPTACHLOR	0.11 U	0.08 U	0.13 U	0.20 U	0.04 U
HEPTACHLOR EPOXIDE	0.13 U	0.05 U	0.10 U	0.14 U	0.26 U
HEXACHLOROBENZENE	0.14	0.67	0.24	0.14	0.05 U
MIREX	0.17	0.12 U	0.33	0.32 U	0.09 U
OXYCHLORDANE	0.38	0.13	0.61	0.36	0.08 U
PCB-101/90	0.47	0.48	0.53	0.41 U	0.10 U
PCB-105	0.35	1.75	0.45	0.29	0.22
PCB-114	0.27 U	0.18 U	0.33 U	0.48 U	0.15 U
PCB-118	1.14	5.67	2.30	1.32	0.77
PCB-126	0.24 U	0.07	1.77	0.48 U	0.45 U
PCB-128	0.21	0.44	0.50	0.24	0.12
PCB-138/160	1.19	3.40	3.94	0.79 U	0.55
PCB-149/123	0.16	0.18 U	0.82	0.06	0.15 U
PCB-153/132	1.22	2.83	2.68 U	1.21 U	0.74
PCB-156	0.36	0.46	0.10	0.48 U	0.17
PCB-167	0.21	0.34	0.32	0.17	0.15 U
PCB-169	0.25	0.01	1.73	0.48 U	0.00
PCB-170/190	0.27	0.53	1.48 U	0.17 U	0.23 U
PCB-18/17	1.19	2.12	0.85	2.87	0.15 U
PCB-180	0.43	0.33	4.24	0.28 U	0.17

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Parameter[1]	Mean Reference Concentration	Monitoring Station 11			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.39	2.18	0.76	0.16
PCB-189	0.27 U	0.18 U	0.08	0.48 U	0.15 U
PCB-195/208	0.12	0.15 U	0.36	0.40 U	0.01 U
PCB-201/157/173	0.20	0.14 U	0.13	0.38 U	0.15 U
PCB-206	0.15	0.16 U	0.23	0.43 U	0.06 U
PCB-209	0.24	0.21 U	0.11	0.55 U	0.04 U
PCB-28	0.17	0.15 U	0.41	0.27 U	0.11 U
PCB-44	0.20	0.11 U	0.08	0.28 U	0.07
PCB-52	0.41	0.78	0.28	0.02	0.15 U
PCB-66	0.18	0.25	0.28	0.18	0.06 U
PCB-77	0.32	0.74 U	0.79	0.32 U	0.45 U
PCB-8/5	0.54	0.29	0.07	0.97	0.08 U
PCB-81	0.43	0.74 U	1.60	0.48 U	0.45 U
PENTACHLOROANISOLE	0.12	0.17	0.24	0.06 U	0.05
PENTACHLOROBENZENE	0.43	0.64	0.20	0.55 U	0.08 U
TRANS-NONACHLOR	0.08 U	0.05	0.63	0.05	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	6.35	3.90	2.32 U	1.35 U
ARSENIC	12.33	10.25	23.75	4.76	20.40
CADMIUM	0.03	0.07	0.07	0.04	0.04 U
CHROMIUM	0.41	0.09 U	0.17 U	0.94	0.90 U
COPPER	45.62	47.90	77.10	38.20	30.00
IRON	11.63	16.01	14.25	12.14	2.25 U
LEAD	0.28	0.23	0.13	0.07 U	0.08
MANGANESE	4.28	4.60	5.95	3.76	13.60
MERCURY	0.73	0.85	1.05	0.51	0.66
NICKEL	0.65	0.31	0.85	0.91 U	0.85 U
SILVER	0.93	1.17	0.33	0.89	0.64
ZINC	101.94	139.50	108.50	94.50	97.10

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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Parameter[1]	Mean Reference Concentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	17.69 U	3.00	6.63 U	1.94 U
1,2,3,4,6,7,8,9-OCDF	10.89	17.69 U	9.08 U	0.03 U	5.32 U
1,2,3,4,6,7,8-HPCDD	4.91 U	8.83 U	4.56 U	0.27 U	2.66 U
1,2,3,4,6,7,8-HPCDF	4.99 U	8.83 U	0.31 U	3.30 U	2.66 U
1,2,3,4,7,8,9-HPCDF	5.21 U	8.83 U	0.08 U	3.30 U	2.66 U
1,2,3,4,7,8-HXCDD	5.58	8.83 U	4.56 U	3.30 U	2.66 U
1,2,3,4,7,8-HXCDF	5.56	8.83 U	4.56 U	3.30 U	2.66 U
1,2,3,6,7,8-HXCDD	5.53	8.83 U	4.56 U	3.30 U	2.66 U
1,2,3,6,7,8-HXCDF	5.10 U	8.83 U	4.56 U	3.30 U	2.66 U
1,2,3,7,8,9-HXCDD	5.43	8.83 U	4.56 U	3.30 U	2.66 U
1,2,3,7,8,9-HXCDF	5.09 U	8.83 U	4.56 U	3.30 U	2.66 U
1,2,3,7,8-PECDD	5.14 U	8.83 U	4.56 U	3.30 U	2.66 U
1,2,3,7,8-PECDF	4.74 U	8.83 U	0.25 U	3.30 U	2.66 U
2,3,4,6,7,8-HXCDF	5.31	8.83 U	9.11	3.30 U	2.66 U
2,3,4,7,8-PECDF	5.46	8.83 U	0.33 U	3.30 U	2.66 U
2,3,7,8-TCDD	0.88	1.76 U	0.92 U	0.66 U	0.53 U
2,3,7,8-TCDF	1.19	1.76 U	0.47 U	0.66 U	0.53 U
TOTAL DIOXINS	13.95	NR	6.94	6.63 U	1.94 U
TOTAL FURANS	14.95	NR	5.67	6.63 U	5.32 U
TOTAL HPCDD	4.37	6.00	4.56 U	3.30 U	2.66 U
TOTAL HPCDF	5.05 U	8.83 U	0.42 U	3.30 U	2.66 U
TOTAL HXCDD	6.97	8.83 U	2.78	3.30 U	2.66 U
TOTAL HXCDF	6.02 U	8.83 U	1.11 U	3.30 U	2.66 U
TOTAL PECDD	5.14 U	8.83 U	4.56 U	3.30 U	2.66 U
TOTAL PECDF	4.53	8.83 U	0.58 U	3.30 U	2.66 U
TOTAL TCDD	1.00	1.76 U	1.17	0.66 U	0.53 U
TOTAL TCDF	1.16	1.76 U	0.75 U	0.66 U	0.53 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.52	0.83	0.80	2.24
1-METHYLNAPHTHALENE	2.49	3.48	1.89	3.38	1.09
1-METHYLPHENANTHRENE	1.60	2.86	1.00	0.50	0.26
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.67	0.56	0.47	0.32
2,6-DIMETHYLNAPHTHALENE	0.95	1.33	0.67	0.80	0.41
2-METHYLNAPHTHALENE	3.12	4.14	2.72	4.30	1.47
ACENAPHTHENE	0.58	2.81	1.61	1.00	0.47
ACENAPHTHYLENE	0.30	0.24	0.67	0.44	0.06
ANTHRACENE	1.52	3.38	3.44	0.93	0.38
BENZO(A)ANTHRACENE	3.52	5.10	8.22	1.21	1.94
BENZO(A)PYRENE	3.99	4.29	19.11	1.08	3.59
BENZO(B)FLUORANTHENE	3.92	3.38	16.39	1.54	3.24
BENZO(E)PYRENE	2.62	2.43	9.17	0.84	1.91
BENZO(G,H,I)PERYLENE	1.71	1.05	8.28	0.70	2.18
BENZO(K)FLUORANTHENE	2.31	3.52	6.67	0.38	1.15
C1-CHRYSENES	1.98	2.00	5.11	0.67	1.06
C1-DIBENZOTHIOPHENES	0.76	0.67	1.06	0.42	0.24
C1-FLUORANTHENES/PYRENES	5.43	6.76	11.89	1.60	1.85
C1-FLUORENES	2.79	2.10	3.28	2.44	1.50
C1-NAPHTHALENES	5.61	7.62	4.61	7.70	2.53
C1-PHENANTHRENES/ANTHRACENES	6.05	7.33	7.67	1.58	1.35
C2-CHRYSENES	0.87	1.05	0.11	0.01	0.44
C2-DIBENZOTHIOPHENES	0.57	0.81	1.33	0.01	0.03
C2-FLUORENES	-2.68	2.05	1.17	1.73	1.24
C2-NAPHTHALENES	3.57	4.57	3.89	4.74	1.29
C2-PHENANTHRENES/ANTHRACENES	4.54	4.67	5.67	1.00	1.29
C3-CHRYSENES	0.56	0.33	0.50	0.10	0.03
C3-DIBENZOTHIOPHENES	0.54	0.24	0.61	0.01	0.03

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
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BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameter[1]	Mean Reference Concentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.38	3.67	0.21	0.06
C3-NAPHTHALENES	3.27	6.33	1.44	3.15	0.76
C3-PHENANTHRENES/ANTHRACENES	2.54	3.24	5.33	0.03	0.03
C4-CHRYSENES	0.43	0.19	0.39	0.03	0.03
C4-NAPHTHALENES	1.57	3.14	0.06	0.08	0.24
C4-PHENANTHRENES/ANTHRACENES	0.92	2.10	0.06	0.03	0.03
CHRYSENE	6.51	8.52	16.39	2.12	2.71
DIBENZO(A,H)ANTHRACENE	0.14	0.05	0.61	0.03	0.12
DIBENZOTHIOPHENE	0.54	1.33	0.78	0.37	0.15
FLUORANTHENE	18.80	21.05	34.72	8.65	4.29
FLUORENE	1.43	3.90	2.39	1.62	1.03
INDENO(1,2,3-CD)PYRENE	1.69	1.19	9.50	0.56	1.85
NAPHTHALENE	5.03	10.81	7.44	4.43	2.47
PERYLENE	2.54	1.10	6.72	0.59	1.21
PHENANTHRENE	8.73	17.57	11.50	3.81	2.32
PYRENE	12.37	13.00	25.39	5.04	2.26
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	3.46	5.06	2.70	4.12
1,2,4,5-TETRACHLOROBENZENE	0.27	0.08	0.27 U	0.15 U	0.04
2,4'-DDD	0.19	0.07 U	1.00	0.10 U	0.24 U
2,4'-DDE	0.11	0.08 U	0.08	0.14 U	0.06 U
2,4'-DDT	0.10	0.05 U	0.09 U	0.13 U	0.06 U
4,4'-DDD	0.08	0.07 U	0.11	0.12 U	0.06 U
4,4'-DDE	1.22	1.68	1.28	0.38	0.68
4,4'-DDT	0.15	0.10 U	1.83	0.18 U	0.05 U
ALDRIN	0.11	0.09 U	0.09	0.16 U	0.04 U
ALPHA-BHC	0.16	0.20	0.17	0.11 U	0.04 U
ALPHA-CHLORDANE	1.36	1.63	0.08 U	0.12 U	0.01 U
BETA-BHC	0.11	0.06 U	0.04	0.10 U	0.11 U
CHLORPYRIFOS	1.55	0.57 U	0.69 U	1.02 U	0.38
CIS-NONACHLOR	0.06	0.06 U	0.04	0.11 U	0.04 U
DELTA-BHC	0.08	0.04 U	0.04 U	0.06 U	0.04 U
DIELDRIN	0.69	0.75	1.39	0.52	0.62
ENDOSULFAN II	0.07 U	0.07 U	0.08 U	0.12 U	0.08
ENDRIN	0.21	0.18 U	0.22 U	0.33 U	0.04 U
GAMMA-BHC (LINDANE)	0.28	0.09	0.72	0.03	0.44
GAMMA-CHLORDANE	0.08	0.07 U	0.13	0.13 U	0.02 U
HEPTACHLOR	0.11 U	0.10 U	0.12 U	0.18 U	0.04 U
HEPTACHLOR EPOXIDE	0.13 U	0.07 U	0.09 U	0.13 U	0.25 U
HEXACHLOROBENZENE	0.14	0.31	0.12	0.08	0.05 U
MIREX	0.17	0.16 U	0.13	0.28 U	0.09 U
OXYCHLORDANE	0.38	0.69	0.33	0.11	0.15
PCB-101/90	0.47	0.85	0.25 U	0.37 U	0.82
PCB-105	0.35	0.21	0.67	0.10	0.88
PCB-114	0.27 U	0.24 U	0.31 U	0.43 U	0.14 U
PCB-118	1.14	0.92	2.83	0.48	2.82
PCB-126	0.24 U	0.97 U	0.13	0.43 U	0.43 U
PCB-128	0.21	0.19 U	0.38	0.33 U	0.53
PCB-138/160	1.19	1.20	2.50	0.37 U	2.35
PCB-149/123	0.16	0.24 U	0.11	0.03	0.22
PCB-153/132	1.22	1.71	1.75 U	0.48 U	2.32
PCB-156	0.36	0.24 U	0.56	0.43 U	0.50
PCB-167	−0.21	0.24 U	0.24	0.43 U	0.11
PCB-169	0.25	0.97 U	0.31 U	0.01	0.43 U
PCB-170/190	0.27	0.24 U	0.56 U	0.22 U	0.23
PCB-18/17	1.19	0.36	0.14	0.15	0.14 U
PCB-180	0.43	0.31	1.17	0.13 U	0.56

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Parameter[1]	Mean Reference Concentration	Monitoring Station 12			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.37	0.94	0.25	0.44
PCB-189	0.27 U	0.24 U	0.31 U	0.43 U	0.14 U
PCB-195/208	0.12	0.20 U	0.09	0.37 U	0.01 U
PCB-201/157/173	0.20	0.19 U	0.23 U	0.33 U	0.14 U
PCB-206	0.15	0.21 U	0.07	0.37 U	0.06 U
PCB-209	0.24	0.05	0.33 U	0.50 U	0.04 U
PCB-28	0.17	0.19 U	0.22	0.12 U	0.11 U
PCB-44	0.20	0.14 U	0.07	0.26 U	0.07
PCB-52	0.41	0.16 U	0.23	0.30 U	0.24
PCB-66	0.18	0.10	0.38	0.06	0.29
PCB-77	0.32	0.97 U	0.31 U	0.43 U	0.43 U
PCB-8/5	0.54	0.39 U	0.32	0.22	0.07 U
PCB-81	0.43	0.97 U	0.51	0.43 U	0.43 U
PENTACHLOROANISOLE	0.12	0.19	0.28	0.06 U	0.07
PENTACHLOROBENZENE	0.43	0.19	0.35	0.98 U	0.01
TRANS-NONACHLOR	0.08 U	0.04 U	0.04	0.04	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	3.48	7.00	1.50 U	1.35 U
ARSENIC	12.33	12.70	16.50	4.92	17.60
CADMIUM	0.03	0.04	0.07	0.04	0.02 U
CHROMIUM	0.41	0.10 U	0.27 U	0.54	0.75 U
COPPER	45.62	37.70	61.00	47.70	19.60
IRON	11.63	6.81	14.60	9.61	9.40
LEAD	0.28	0.31	0.04 U	0.07 U	0.18
MANGANESE	4.28	3.16	7.80	3.04	4.80
MERCURY	0.73	0.95	0.93	0.48	0.78
NICKEL	0.65	0.10 U	0.93	0.92 U	0.83 U
SILVER	0.93	1.39	0.26	1.16	0.60
ZINC	101.94	103.00	112.00	91.30	114.00

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.55	1.19	1.05	2.21
1-METHYLNAPHTHALENE	2.49	2.41	1.31	4.86	1.03
1-METHYLPHENANTHRENE	1.60	3.59	1.31	2.97	1.38
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.50	0.63	0.92	0.45
2,6-DIMETHYLNAPHTHALENE	0.95	1.09	0.81	1.31	0.48
2-METHYLNAPHTHALENE	3.12	3.14	2.19	6.90	1.52
ACENAPHTHENE	0.58	0.23	2.25	3.20	0.52
ACENAPHTHYLENE	0.30	0.23	0.81	0.53	0.07
ANTHRACENE	1.52	13.00	8.50	5.14	1.31
BENZO(A)ANTHRACENE	3.52	20.77	10.94	15.86	9.66
BENZO(A)PYRENE	3.99	18.00	25.31	7.71	12.03
BENZO(B)FLUORANTHENE	3.92	10.32	21.13	13.62	12.41
BENZO(E)PYRENE	2.62	6.45	9.94	7.29	5.62
BENZO(G,H,I)PERYLENE	1.71	3.73	9.06	2.67	3.62
BENZO(K)FLUORANTHENE	2.31	14.32	6.88	4.59	4.90
C1-CHRYSENES	1.98	6.14	4.81	5.38	3.93
C1-DIBENZOTHIOPHENES	0.76	1.00	1.06	0.92	0.48
C1-FLUORANTHENES/PYRENES	5.43	20.41	17.13	12.67	9.10
C1-FLUORENES	2.79	2.00	4.00	3.50	1.59
C1-NAPHTHALENES	5.61	5.59	3.50	11.76	2.52
C1-PHENANTHRENES/ANTHRACENES	6.05	11.82	8.63	10.24	5.03
C2-CHRYSENES	0.87	2.23	0.56	1.90	1.55
C2-DIBENZOTHIOPHENES	0.57	1.77	1.69	0.66	1.19 U
C2-FLUORENES	2.68	2.45	1.81	0.07	2.28
C2-NAPHTHALENES	3.57	3.41	3.88	8.62	1.52
C2-PHENANTHRENES/ANTHRACENES	4.54	7.36	5.69	5.10	4.93
C3-CHRYSENES	0.56	0.50	0.25	0.04	2.98 U
C3-DIBENZOTHIOPHENES	0.54	2.50	0.75	0.74	0.03

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Parameter[1]	Mean Reference Concentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	4.91	3.63	0.23	0.03
C3-NAPHTHALENES	3.27	5.41	2.75	5.52	1.00
C3-PHENANTHRENES/ANTHRACENES	2.54	5.36	6.81	2.49	2.90
C4-CHRYSENES	0.43	0.73	0.25	0.03	0.03
C4-NAPHTHALENES	1.57	4.59	0.06	2.80	0.45
C4-PHENANTHRENES/ANTHRACENES	0.92	2.86	0.56	0.06	0.03
CHRYSENE	6.51	25.23	23.25	19.71	12.86
DIBENZO(A,H)ANTHRACENE	0.14	1.27	0.75	0.33	0.24
DIBENZOTHIOPHENE	0.54	0.73	0.69	1.46	0.28
FLUORANTHENE	18.80	54.45	69.38	60.48	24.31
FLUORENE	1.43	2.05	3.94	5.14	1.21
INDENO(1,2,3-CD)PYRENE	1.69	5.73	11.44	3.87	4.86
NAPHTHALENE	5.03	5.91	6.69	7.33	2.17
PERYLENE	2.54	3.32	7.56	4.55	3.52
PHENANTHRENE	8.73	9.50	11.44	29.76	5.62
PYRENE	12.37	36.05	47.25	42.38	13.66
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	1.36	4.69	4.38	4.14
1,2,4,5-TETRACHLOROBENZENE	0.27	0.29	0.27 U	0.14 U	0.12
2,4'-DDD	0.19	0.06 U	1.25	0.32	0.29 U
2,4'-DDE	0.11	0.08 U	0.19	0.14 U	0.07 U
2,4'-DDT	0.10	0.08 U	0.11 U	0.13 U	0.07 U
4,4'-DDD	0.08	0.07 U	0.13	0.12 U	0.08 U
4,4'-DDE	1.22	1.26	1.63	1.14	0.83
4,4'-DDT	0.15	0.11 U	2.25	0.19 U	0.06 U
ALDRIN	0.11	0.10 U	0.18	0.16 U	0.05 U
ALPHA-BHC	0.16	0.19	0.18	0.11 U	0.05 U
ALPHA-CHLORDANE	1.36	8.27	0.11 U	0.12 U	0.02 U
BETA-BHC	0.11	0.06 U	0.09 U	0.10 U	0.13 U
CHLORPYRIFOS	1.55	0.61 U	6.88 U	1.05 U	0.41
CIS-NONACHLOR	0.06	0.06 U	0.10 U	0.11 U	0.06 U
DELTA-BHC	0.08	0.04 U	0.06 U	0.06 U	0.05 U
DIELDRIN	0.69	0.49	1.44	0.81	0.62
ENDOSULFAN II	0.07 U	0.07 U	0.11 U	0.12 U	0.05 U
ENDRIN	0.21	0.19 U	0.29 U	0.33 U	0.06 U
GAMMA-BHC (LINDANE)	0.28	0.15	0.75	0.02	0.30
GAMMA-CHLORDANE	0.08	0.08 U	0.19	0.13 U	0.03 U
HEPTACHLOR	0.11 U	0.11 U	0.16 U	0.18 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.08 U	0.11 U	0.13 U	0.29 U
HEXACHLOROBENZENE	0.14	0.50	0.31	0.12	0.06 U
MIREX	0.17	0.17 U	0.13	0.29 U	0.11 U
OXYCHLORDANE	0.38	0.08 U	0.53	0.05	0.09 U
PCB-101/90	0.47	0.49	0.34 U	0.30	0.12
PCB-105	0.35	0.38	0.94	0.36	0.17
PCB-114	0.27 U	0.26 U	0.38 U	0.45 U	0.17 U
PCB-118	1.14	0.99	3.25	1.52	0.69
PCB-126	0.24 U	0.06	0.59	0.45 U	0.00
PCB-128	0.21	0.06	0.58	0.28	0.11
PCB-138/160	1.19	1.15	3.00	0.90 U	0.79
PCB-149/123	0.16	0.26 U	0.07	0.12	0.06
PCB-153/132	1.22	1.10	2.13 U	1.38 U	1.21
PCB-156	0.36	0.92	0.38 U	0.45 U	0.17 U
PCB-167	0.21	0.17	0.36	0.45 U	0.17 U
PCB-169	0.25	0.02	0.24	0.45 U	0.00
PCB-170/190	0.27	0.26 U	0.59 U	0.36 U	0.28 U
PCB-18/17	1.19	4.61	1.00 U	0.40	0.17 U
PCB-180	0.43	0.30	1.25	0.67 U	0.32

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 13			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.31	1.13	3.86	0.34
PCB-189	0.27 U	0.26 U	0.38 U	0.45 U	0.17 U
PCB-195/208	0.12	0.22 U	0.10	3.86	0.02 U
PCB-201/157/173	0.20	0.20 U	0.29 U	0.36 U	0.17 U
PCB-206	0.15	0.23 U	0.10	9.05	0.07 U
PCB-209	0.24	0.19	0.14	2.00	0.05 U
PCB-28	0.17	0.26	0.11	0.19 U	0.14 U
PCB-44	0.20	0.15 U	0.08	0.13	0.11
PCB-52	0.41	0.30	0.26 U	0.31 U	0.17 U
PCB-66	0.18	0.10	0.49	0.30	0.12
PCB-77	0.32	1.04 U	0.38 U	0.45 U	0.01
PCB-8/5	0.54	0.54	0.28	0.26	0.09 U
PCB-81	0.43	1.04 U	1.13	0.45 U	0.00
PENTACHLOROANISOLE	0.12	0.16	0.31	0.06 U	0.09
PENTACHLOROBENZENE	0.43	0.93	0.43	0.93 U	0.09 U
TRANS-NONACHLOR	0.08 U	0.05 U	0.07 U	0.08 U	0.05 U
Inorganics (MG/KG)					
ALUMINUM	4.77	7.44	7.10	9.95 U	2.60 U
ARSENIC	12.33	12.50	17.60	3.31	33.80
CADMIUM	0.03	0.04	0.10	0.03	0.02 U
CHROMIUM	0.41	0.09 U	0.28 U	0.98	0.90 U
COPPER	45.62	28.50	56.00	60.50	31.40
IRON	11.63	12.40	14.30	27.70	12.40
LEAD	0.28	0.14	0.04 U	1.50	0.58
MANGANESE	4.28	1.90	6.30	6.07	4.80
MERCURY	0.73	0.66	0.60	0.61	0.45
NICKEL	0.65	0.09 U	0.56	0.97 U	0.86 U
SILVER	0.93	0.75	0.24	0.84	1.00
ZINC	101.94	75.00	111.00	98.60	123.00

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84				
1,2,3,4,6,7,8,9-OCDF	10.89				
1,2,3,4,6,7,8-HPCDD	4.91 U				
1,2,3,4,6,7,8-HPCDF	4.99 U				
1,2,3,4,7,8,9-HPCDF	5.21 U				
1,2,3,4,7,8-HXCDD	5.58				
1,2,3,4,7,8-HXCDF	5.56				
1,2,3,6,7,8-HXCDD	5.53				
1,2,3,6,7,8-HXCDF	5.10 U				
1,2,3,7,8,9-HXCDD	5.43				
1,2,3,7,8,9-HXCDF	5.09 U				
1,2,3,7,8-PECDD	5.14 U				
1,2,3,7,8-PECDF	4.74 U				
2,3,4,6,7,8-HXCDF	5.31				
2,3,4,7,8-PECDF	5.46				
2,3,7,8-TCDD	0.88				
2,3,7,8-TCDF	1.19				
TOTAL DIOXINS	13.95				
TOTAL FURANS	14.95				
TOTAL HPCDD	4.37				
TOTAL HPCDF	5.05 U				
TOTAL HXCDD	6.97				
TOTAL HXCDF	6.02 U				
TOTAL PECDD	5.14 U				
TOTAL PECDF	4.53				
TOTAL TCDD	1.00				
TOTAL TCDF	1.16				
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.43	0.61	1.48	2.03
1-METHYLNAPHTHALENE	2.49	2.83	0.86	6.84	0.94
1-METHYLPHENANTHRENE	1.60	2.87	0.39	1.41	0.25
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.48	0.39	0.86	0.31
2,6-DIMETHYLNAPHTHALENE	0.95	0.96	0.57	1.22	0.41
2-METHYLNAPHTHALENE	3.12	3.52	1.68	9.63	1.38
ACENAPHTHENE	0.58	0.22	0.75	2.11	0.44
ACENAPHTHYLENE	0.30	0.22	0.25	1.37	0.06
ANTHRACENE	1.52	1.43	0.50	3.45	0.63
BENZO(A)ANTHRACENE	3.52	9.48	0.54	6.53	1.41
BENZO(A)PYRENE	3.99	17.70	0.86	9.11	2.94
BENZO(B)FLUORANTHENE	3.92	13.13	0.89	8.21	2.78
BENZO(E)PYRENE	2.62	5.43	1.61	5.17	1.97
BENZO(G,H,I)PERYLENE	1.71	4.04	1.61	3.31	1.78
BENZO(K)FLUORANTHENE	2.31	8.48	0.36	3.97	1.00
C1-CHRYSENES	1.98	3.70	0.04	4.24	1.00
C1-DIBENZOTHIOPHENES	0.76	0.87	0.39	0.55	0.31
C1-FLUORANTHENES/PYRENES	5.43	12.04	1.54	6.26	2.09
C1-FLUORENES	2.79	1.78	2.86	2.58	1.84
C1-NAPHTHALENES	5.61	6.35	2.54	16.47	2.31
C1-PHENANTHRENES/ANTHRACENES	6.05	7.09	1.61	4.56	1.31
C2-CHRYSENES	0.87	1.78	0.04	2.25	0.69
C2-DIBENZOTHIOPHENES	0.57	1.09	0.36	0.02	0.06
C2-FLUORENES	2.68	2.00	1.39	3.29	1.00
C2-NAPHTHALENES	3.57	3.83	2.21	9.79	1.09
C2-PHENANTHRENES/ANTHRACENES	4.54	5.74	2.00	2.88	1.16
C3-CHRYSENES	0.56	1.93 U	0.21	0.02	0.03
C3-DIBENZOTHIOPHENES	0.54	0.70	0.46	0.03	0.03

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.22	1.86	0.33	3.86 U
C3-NAPHTHALENES	3.27	4.30	1.54	4.51	0.78
C3-PHENANTHRENES/ANTHRACENES	2.54	3.70	0.57	0.96	0.56
C4-CHRYSENES	0.43	1.43	0.04	0.03	0.03
C4-NAPHTHALENES	1.57	5.57	0.01	0.83	0.69
C4-PHENANTHRENES/ANTHRACENES	0.92	2.74	0.01	0.02	0.41
CHRYSENE	6.51	15.26	2.39	10.21	2.50
DIBENZO(A,H)ANTHRACENE	0.14	1.09	0.11	0.12	0.06
DIBENZOTHIOPHENE	0.54	0.43	0.21	0.90	0.16
FLUORANTHENE	18.80	34.83	4.36	19.95	3.63
FLUORENE	1.43	0.83	1.25	4.33	0.91
INDENO(1,2,3-CD)PYRENE	1.69	6.74	0.61	3.04	1.53
NAPHTHALENE	5.03	6.35	3.50	8.58	2.03
PERYLENE	2.54	0.83	1.68	3.28	1.19
PHENANTHRENE	8.73	4.09	2.57	12.89	2.09
PYRENE	12.37	30.57	2.50	18.11	3.22
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	1.06	0.03	1.00	5.00
1,2,4,5-TETRACHLOROBENZENE	0.27	0.19	0.16 U	0.22 U	0.12
2,4'-DDD	0.19	0.05 U	0.31	0.12 U	0.27 U
2,4'-DDE	0.11	0.07 U	0.06 U	0.16 U	0.06 U
2,4'-DDT	0.10	0.10	0.28	0.15 U	0.06 U
4,4'-DDD	0.08	0.06 U	0.21	0.04	0.07 U
4,4'-DDE	1.22	0.65	2.64	1.05	0.63
4,4'-DDT	0.15	0.09 U	0.82	0.22 U	0.05 U
ALDRIN	0.11	0.08 U	0.09	0.19 U	0.05 U
ALPHA-BHC	0.16	0.17	0.14	0.13 U	0.05 U
ALPHA-CHLORDANE	1.36	0.90	0.05 U	0.12	0.02 U
BETA-BHC	0.11	0.05 U	0.04 U	0.12 U	0.12 U
CHLORPYRIFOS	1.55	0.51 U	6.07 U	1.24 U	0.50
CIS-NONACHLOR	0.06	0.05 U	0.08	0.13 U	0.05 U
DELTA-BHC	0.08	0.03 U	0.03 U	0.08 U	0.04 U
DIELDRIN	0.69	0.69	1.29	0.68	0.44
ENDOSULFAN II	0.07 U	0.06 U	0.05 U	0.14 U	0.04 U
ENDRIN	0.21	0.16 U	0.14 U	0.39 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.21	0.36	0.12 U	0.63
GAMMA-CHLORDANE	0.08	0.06 U	0.09	0.15 U	0.02 U
HEPTACHLOR	0.11 U	0.35	0.08 U	0.21 U	0.05 U
HEPTACHLOR EPOXIDE	0.13 U	0.06 U	0.06 U	0.15 U	0.27 U
HEXACHLOROBENZENE	0.14	0.20	0.18	0.10	0.05 U
MIREX	0.17	0.14 U	0.05	0.34 U	0.10 U
OXYCHLORDANE	0.38	0.07 U	0.61	0.26	0.14
PCB-101/90	0.47	0.19 U	0.09	0.28	0.08
PCB-105	0.35	0.14	0.57	0.27	0.24
PCB-114	0.27 U	0.22 U	0.20 U	0.53 U	0.15 U
PCB-118	1.14	0.50	2.82	1.42	0.84
PCB-126	0.24 U	0.87 U	0.25	0.53 U	0.00
PCB-128	0.21	0.17 U	0.46	0.23	0.14
PCB-138/160	1.19	0.67	3.57	0.74 U	0.81
PCB-149/123	0.16	0.22 U	0.33	0.05	0.01
PCB-153/132	1.22	0.82	2.86 U	1.05 U	1.25
PCB-156	0.36	0.22 U	0.20 U	0.53 U	0.15 U
PCB-167	0.21	0.22 U	0.24	0.53 U	0.15 U
PCB-169	0.25	0.02	0.06	0.53 U	0.47 U
PCB-170/190	0.27	0.10	0.66 U	0.17 U	0.11
PCB-18/17	1.19	0.64	0.12	1.37 U	0.15 U
PCB-180	0.43	0.30	2.29	0.26 U	0.34

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Monitoring Station 14			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.20	2.14	0.53	0.38
PCB-189	0.27 U	0.22 U	0.20 U	0.53 U	0.15 U
PCB-195/208	0.12	0.18 U	0.20	0.45 U	0.02 U
PCB-201/157/173	0.20	0.17 U	0.21	0.39 U	0.15 U
PCB-206	0.15	0.19 U	0.21	0.45 U	0.06 U
PCB-209	0.24	0.25 U	0.10	0.58 U	0.04 U
PCB-28	0.17	0.17 U	0.30	0.16 U	0.12 U
PCB-44	0.20	0.13 U	0.04	0.32 U	0.08
PCB-52	0.41	0.15 U	0.13 U	0.37 U	0.16 U
PCB-66	0.18	0.21 U	0.50	0.24	0.10
PCB-77	0.32	0.87 U	0.20 U	0.22	0.01
PCB-8/5	0.54	0.47	0.10	1.16	0.08 U
PCB-81	0.43	0.87 U	0.36	0.13	0.00
PENTACHLOROANISOLE	0.12	0.16	0.25	0.08 U	0.08
PENTACHLOROBENZENE	0.43	0.78	0.24	1.03 U	0.01
TRANS-NONACHLOR	0.08 U	0.04 U	0.39	0.11	0.05
Inorganics (MG/KG)					
ALUMINUM	4.77	4.29	5.40	1.46 U	2.35 U
ARSENIC	12.33	9.38	12.60	3.43	23.50
CADMIUM	0.03	0.06	0.22	0.04	0.02 U
CHROMIUM	0.41	0.11 U	0.25 U	0.62	0.60 U
COPPER	45.62	31.00	42.60	48.50	37.10
IRON	11.63	8.89	7.90	8.45	9.60
LEAD	0.28	0.04 U	0.11	0.07 U	0.19
MANGANESE	4.28	2.15	3.80	9.30	3.90
MERCURY	0.73	0.49	0.78	0.66	0.67
NICKEL	0.65	0.13 U	0.25 U	0.90 U	0.83 U
SILVER	0.93	1.03	0.17	0.92	1.20
ZINC	101.94	83.70	90.80	90.70	112.00

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	12.98 U	36.32	3.21	6.46 U
1,2,3,4,6,7,8,9-OCDF	10.89	12.98 U	33.64	6.58 U	6.46 U
1,2,3,4,6,7,8-HPCDD	4.91 U	6.50 U	6.25 U	3.30 U	3.23 U
1,2,3,4,6,7,8-HPCDF	4.99 U	6.50 U	7.82 U	3.30 U	3.23 U
1,2,3,4,7,8,9-HPCDF	5.21 U	6.50 U	7.61 U	3.30 U	3.23 U
1,2,3,4,7,8-HXCDD	5.58	6.50 U	13.23	3.30 U	3.23 U
1,2,3,4,7,8-HXCDF	5.56	6.50 U	12.86	3.30 U	3.23 U
1,2,3,6,7,8-HXCDD	5.53	6.50 U	12.50	3.30 U	3.23 U
1,2,3,6,7,8-HXCDF	5.10 U	6.50 U	5.91 U	3.30 U	3.23 U
1,2,3,7,8,9-HXCDD	5.43	6.50 U	10.91	3.30 U	3.23 U
1,2,3,7,8,9-HXCDF	5.09 U	6.50 U	5.77 U	3.30 U	3.23 U
1,2,3,7,8-PECDD	5.14 U	6.50 U	6.55 U	3.30 U	3.23 U
1,2,3,7,8-PECDF	4.74 U	6.50 U	4.32 U	3.30 U	3.23 U
2,3,4,6,7,8-HXCDF	5.31	6.50 U	9.09	3.30 U	3.23 U
2,3,4,7,8-PECDF	5.46	13.00	4.82 U	3.30 U	3.23 U
2,3,7,8-TCDD	0.88	1.29 U	2.59	0.66 U	0.65 U
2,3,7,8-TCDF	1.19	1.29 U	1.61 U	0.89	1.35
TOTAL DIOXINS	13.95	NR	101.36	7.60	5.77 U
TOTAL FURANS	14.95	NR	118.64	0.44 U	0.67 U
TOTAL HPCDD	4.37	6.50 U	6.25 U	4.39	3.23 U
TOTAL HPCDF	5.05 U	6.50 U	8.61 U	3.30 U	3.23 U
TOTAL HXCDD	6.97	2.72	36.59	3.30 U	11.54
TOTAL HXCDF	6.02 U	6.50 U	22.66 U	3.30 U	3.23 U
TOTAL PECDD	5.14 U	6.50 U	6.55 U	3.30 U	3.23 U
TOTAL PECDF	4.53	1.86	9.14 U	3.30 U	3.23 U
TOTAL TCDD	1.00	1.29 U	2.59	0.66 U	0.65 U
TOTAL TCDF	1.16	1.29 U	2.02 U	0.89	1.35
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.38	0.77	1.06	1.54
1-METHYLNAPHTHALENE	2.49	2.90	1.73	2.91	1.50
1-METHYLPHENANTHRENE	1.60	2.07	1.18	0.30	0.46
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.21	1.50	0.36	0.50
2,6-DIMETHYLNAPHTHALENE	0.95	0.83	0.59	1.10	0.58
2-METHYLNAPHTHALENE	3.12	3.48	2.27	3.64	1.88
ACENAPHTHENE	0.58	0.14	1.09	0.58	0.62
ACENAPHTHYLENE	0.30	0.24	0.14	0.42	0.08
ANTHRACENE	1.52	0.34	0.64	0.41	0.62
BENZO(A)ANTHRACENE	3.52	0.38	1.27	0.85	1.42
BENZO(A)PYRENE	3.99	0.17	2.36	1.07	3.58
BENZO(B)FLUORANTHENE	3.92	0.38	2.27	1.55	2.62
BENZO(E)PYRENE	2.62	0.79	2.05	1.52	2.00
BENZO(G,H,I)PERYLENE	1.71	0.31	1.68	0.93	1.54
BENZO(K)FLUORANTHENE	2.31	0.34	0.91	1.16	0.96
C1-CHRYSENES	1.98	0.79	2.82	0.06	1.04
C1-DIBENZOTHIOPHENES	0.76	0.41	1.86	0.41	0.46
C1-FLUORANTHENES/PYRENES	5.43	1.69	4.23	2.34	2.69
C1-FLUORENES	2.79	1.03	4.05	2.08	1.88
C1-NAPHTHALENES	5.61	6.38	4.00	6.55	3.35
C1-PHENANTHRENES/ANTHRACENES	6.05	2.97	9.91	1.49	2.23
C2-CHRYSENES	0.87	0.97	0.50	0.10	0.62
C2-DIBENZOTHIOPHENES	0.57	0.79	2.86	0.02	0.04
C2-FLUORENES	-2.68	1.93	7.18	1.23	2.00
C2-NAPHTHALENES	3.57	2.97	3.59	2.76	1.73
C2-PHENANTHRENES/ANTHRACENES	4.54	3.66	11.41	1.61	1.77
C3-CHRYSENES	0.56	0.10	0.23	0.08	3.87 U
C3-DIBENZOTHIOPHENES	0.54	0.59	2.00	0.02	0.04

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.97	5.41	0.49	0.04
C3-NAPHTHALENES	3.27	4.17	5.27	2.36	1.58
C3-PHENANTHRENES/ANTHRACENES	2.54	2.28	11.27	0.50	0.77
C4-CHRYSENES	0.43	0.34	0.09	0.03	0.04
C4-NAPHTHALENES	1.57	2.52	2.59	0.87	0.31
C4-PHENANTHRENES/ANTHRACENES	0.92	2.14	2.64	0.04	0.19
CHRYSENE	6.51	1.83	3.86	2.58	3.27
DIBENZO(A,H)ANTHRACENE	0.14	0.03	0.23	0.04	0.12
DIBENZOTHIOPHENE	0.54	0.21	0.41	0.19	0.19
FLUORANTHENE	18.80	2.93	6.05	5.70	5.77
FLUORENE	1.43	0.69	1.73	0.89	1.31
INDENO(1,2,3-CD)PYRENE	1.69	0.07	1.14	0.36	1.58
NAPHTHALENE	5.03	5.00	4.68	3.93	2.92
PERYLENE	2.54	0.34	2.50	1.78	1.58
PHENANTHRENE	8.73	1.07	3.95	1.53	3.12
PYRENE	12.37	2.24	6.00	5.15	4.65
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	1.89	5.45	3.55	4.23
1,2,4,5-TETRACHLOROBENZENE	0.27	0.32	0.15 U	0.18 U	0.17 U
2,4'-DDD	0.19	0.04 U	0.64	0.10 U	0.38 U
2,4'-DDE	0.11	0.05 U	0.18	0.15 U	0.09 U
2,4'-DDT	0.10	0.05 U	0.18	0.13 U	0.09 U
4,4'-DDD	0.08	0.04 U	0.05	0.13 U	0.10 U
4,4'-DDE	1.22	0.91	1.50	1.00	1.00
4,4'-DDT	0.15	0.07 U	0.73	0.19 U	0.08 U
ALDRIN	0.11	0.06 U	0.13	0.17 U	0.07 U
ALPHA-BHC	0.16	0.32	0.13	0.12 U	0.07 U
ALPHA-CHLORDANE	1.36	0.83	0.07 U	0.11	0.02 U
BETA-BHC	0.11	0.09	0.06 U	0.11 U	0.17 U
CHLORPYRIFOS	1.55	0.39 U	9.55 U	1.08 U	0.96
CIS-NONACHLOR	0.06	0.04 U	0.06	0.12 U	0.07 U
DELTA-BHC	0.08	0.02 U	0.10	0.07 U	0.06 U
DIELDRIN	0.69	0.27 U	1.45	0.70	0.58
ENDOSULFAN II	0.07 U	0.04 U	0.07 U	0.13 U	0.06 U
ENDRIN	0.21	0.12 U	0.19 U	0.35 U	0.07 U
GAMMA-BHC (LINDANE)	0.28	0.58	0.45	0.10 U	0.42
GAMMA-CHLORDANE	0.08	0.05 U	0.14	0.13 U	0.03 U
HEPTACHLOR	0.11 U	0.07 U	0.10 U	0.19 U	0.07 U
HEPTACHLOR EPOXIDE	0.13 U	0.05 U	0.07 U	0.13 U	0.38 U
HEXACHLOROBENZENE	0.14	0.21	0.15	0.09	0.08 U
MIREX	0.17	0.11 U	0.20	0.30 U	0.14 U
OXYCHLORDANE	0.38	0.25	0.59	0.31	0.25
PCB-101/90	0.47	0.24	0.22 U	0.45	0.20
PCB-105	0.35	0.24	0.39	0.28	0.22
PCB-114	0.27 U	0.17 U	0.25 U	0.45 U	0.23 U
PCB-118	1.14	0.51	1.95	1.30	0.92
PCB-126	0.24 U	0.01	0.29	0.45 U	0.01
PCB-128	0.21	0.13 U	0.31	0.23	0.17
PCB-138/160	1.19	0.91	2.05	0.85 U	1.08
PCB-149/123	0.16	0.17 U	0.11	0.13	0.07
PCB-153/132	1.22	1.08	1.50 U	1.13 U	1.62
PCB-156	0.36	0.17 U	0.25 U	0.45 U	0.23 U
PCB-167	0.21	0.08	0.19	0.45 U	0.23 U
PCB-169	0.25	0.66 U	0.25 U	0.45 U	0.01
PCB-170/190	0.27	0.17 U	0.34 U	0.23 U	0.35 U
PCB-18/17	1.19	0.12	0.37	1.20 U	0.23 U
PCB-180	0.43	0.48	0.82	0.33 U	0.46

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 01			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.34	0.95	0.95	0.50
PCB-189	0.27 U	0.17 U	0.25 U	0.45 U	0.23 U
PCB-195/208	0.12	0.14 U	0.07	0.38 U	0.02 U
PCB-201/157/173	0.20	0.13 U	0.07	0.35 U	0.23 U
PCB-206	0.15	0.14 U	0.09	0.40 U	0.09 U
PCB-209	0.24	0.15	0.11	0.53 U	0.06 U
PCB-28	0.17	0.13 U	0.29	0.15 U	0.18 U
PCB-44	0.20	0.10 U	0.15 U	0.08	0.16
PCB-52	0.41	0.11 U	0.17 U	0.33 U	0.23 U
PCB-66	0.18	0.06	0.35	0.22	0.15
PCB-77	0.32	0.66 U	0.25 U	0.04	0.02
PCB-8/5	0.54	1.54	0.11	0.90	0.12 U
PCB-81	0.43	0.66 U	0.25 U	0.45 U	0.01
PENTACHLOROANISOLE	0.12	0.11	0.21	0.07 U	0.13
PENTACHLOROBENZENE	0.43	0.34	0.23	1.25 U	0.12 U
TRANS-NONACHLOR	0.08 U	0.03 U	0.15	0.08	0.06 U
Inorganics (MG/KG)					
ALUMINUM	4.77	8.67	6.30	1.52 U	8.15 U
ARSENIC	12.33	7.72	17.10	4.52	22.10
CADMIUM	0.03	0.05	0.07	0.02	0.02 U
CHROMIUM	0.41	0.50	0.25 U	0.62	0.65 U
COPPER	45.62	55.70	47.20	55.40	49.50
IRON	11.63	16.10	8.50	24.90	13.90
LEAD	0.28	0.44	0.04 U	0.06 U	0.86
MANGANESE	4.28	4.46	5.60	3.82	9.50
MERCURY	0.73	0.58	1.10	0.96	0.82
NICKEL	0.65	0.57	0.25 U	0.93 U	0.83 U
SILVER	0.93	1.72	0.29	1.63	1.40
ZINC	101.94	120.00	99.90	95.30	143.00

Footnotes:

1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.

- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

TABLE G - 3

AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	18.62 U	9.83 U	8.31 U	4.86 U
1,2,3,4,6,7,8,9-OCDF	10.89	18.62 U	9.83 U	8.31 U	4.86 U
1,2,3,4,6,7,8-HPCDD	4.91 U	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,4,6,7,8-HPCDF	4.99 U	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,4,7,8,9-HPCDF	5.21 U	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,4,7,8-HXCDD	5.58	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,4,7,8-HXCDF	5.56	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,6,7,8-HXCDD	5.53	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,6,7,8-HXCDF	5.10 U	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,7,8,9-HXCDD	5.43	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,7,8,9-HXCDF	5.09 U	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,7,8-PECDD	5.14 U	9.31 U	4.93 U	4.16 U	2.43 U
1,2,3,7,8-PECDF	4.74 U	9.31 U	4.93 U	4.16 U	2.43 U
2,3,4,6,7,8-HXCDF	5.31	9.31 U	4.93 U	4.16 U	2.43 U
2,3,4,7,8-PECDF	5.46	9.31 U	4.93 U	4.16 U	2.43 U
2,3,7,8-TCDD	0.88	1.87 U	0.10	0.83 U	0.49 U
2,3,7,8-TCDF	1.19	1.87 U	0.55 U	1.79	0.49 U
TOTAL DIOXINS	13.95	NR	0.10	2.57	4.86 U
TOTAL FURANS	14.95	NR	1.95	0.90 U	4.86 U
TOTAL HPCDD	4.37	9.31 U	4.93 U	4.16 U	2.43 U
TOTAL HPCDF	5.05 U	9.31 U	4.93 U	4.16 U	2.43 U
TOTAL HXCDD	6.97	9.31 U	4.93 U	4.16 U	2.43 U
TOTAL HXCDF	6.02 U	9.31 U	4.93 U	4.16 U	2.43 U
TOTAL PECDD	5.14 U	9.31 U	4.93 U	4.16 U	2.43 U
TOTAL PECDF	4.53	9.31 U	4.93 U	4.16 U	2.43 U
TOTAL TCDD	1.00	1.87 U	0.10	2.57	0.49 U
TOTAL TCDF	1.16	1.87 U	0.98 U	1.79	0.49 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.60	0.76	1.27	1.46
1-METHYLNAPHTHALENE	2.49	3.33	1.62	2.64	1.23
1-METHYLPHENANTHRENE	1.60	2.67	0.38	0.74	5.77
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.87	0.48	0.67	0.86
2,6-DIMETHYLNAPHTHALENE	0.95	1.67	0.62	1.07	0.40
2-METHYLNAPHTHALENE	3.12	4.24	1.76	3.89	1.63
ACENAPHTHENE	0.58	0.42	0.81	0.64	0.63
ACENAPHTHYLENE	0.30	0.27	0.14	0.46	0.09
ANTHRACENE	1.52	0.82	0.48	0.76	1.17
BENZO(A)ANTHRACENE	3.52	2.11	2.95	2.96	5.71
BENZO(A)PYRENE	3.99	2.09	6.29	5.20	5.17
BENZO(B)FLUORANTHENE	3.92	1.82	5.86	6.31	7.49
BENZO(E)PYRENE	2.62	2.00	3.05	4.38	3.91
BENZO(G,H,I)PERYLENE	1.71	1.13	2.81	2.23	1.43
BENZO(K)FLUORANTHENE	2.31	1.49	2.48	2.49	3.69
C1-CHRYSENES	1.98	1.58	2.29	2.54	3.63
C1-DIBENZOTHIOPHENES	0.76	0.53	0.67	0.33	2.20
C1-FLUORANTHENES/PYRENES	5.43	4.84	7.24	5.51	17.97
C1-FLUORENES	2.79	2.62	3.29	2.63	4.43
C1-NAPHTHALENES	5.61	7.58	3.38	6.56	2.83
C1-PHENANTHRENES/ANTHRACENES	6.05	9.24	4.05	2.74	23.20
C2-CHRYSENES	0.87	1.04	0.76	1.13	1.17
C2-DIBENZOTHIOPHENES	0.57	0.73	1.10	0.19	0.20
C2-FLUORENES	2.68	2.18	1.10	1.48	3.00
C2-NAPHTHALENES	3.57	4.80	3.29	2.64	1.91
C2-PHENANTHRENES/ANTHRACENES	4.54	12.04	3.71	2.41	7.86
C3-CHRYSENES	0.56	0.13	0.10	0.02	0.03
C3-DIBENZOTHIOPHENES	0.54	0.62	1.10	0.10	0.17

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	4.24	0.95	0.19	0.43
C3-NAPHTHALENES	3.27	5.67	1.52	1.91	2.51
C3-PHENANTHRENES/ANTHRACENES	2.54	3.16	4.05	0.75	2.09
C4-CHRYSENES	0.43	0.62	0.02	0.07	2.33 U
C4-NAPHTHALENES	1.57	7.00	0.05	1.12	0.06
C4-PHENANTHRENES/ANTHRACENES	0.92	2.64	0.05	0.03	0.60
CHRYSENE	6.51	5.20	7.43	9.44	17.71
DIBENZO(A,H)ANTHRACENE	0.14	0.07	0.24	0.15	0.09
DIBENZOTHIOPHENE	0.54	0.31	0.29	0.22	1.80
FLUORANTHENE	18.80	12.76	15.67	12.94	100.86
FLUORENE	1.43	1.00	1.38	1.10	2.63
INDENO(1,2,3-CD)PYRENE	1.69	0.84	3.43	2.14	1.83
NAPHTHALENE	5.03	5.91	5.10	5.30	2.54
PERYLENE	2.54	0.73	3.71	2.82	1.49
PHENANTHRENE	8.73	2.42	3.29	2.14	59.71
PYRENE	12.37	6.62	14.95	11.63	50.57
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	3.43	6.67	2.44	0.97
1,2,4,5-TETRACHLOROBENZENE	0.27	0.13	0.21 U	0.15 U	0.09
2,4'-DDD	0.19	0.05 U	0.67	0.13 U	0.23 U
2,4'-DDE	0.11	0.07 U	0.17	0.18 U	0.06 U
2,4'-DDT	0.10	0.07 U	0.18	0.12	0.06 U
4,4'-DDD	0.08	0.04	0.09	0.15 U	0.06 U
4,4'-DDE	1.22	1.54	1.62	2.44	0.69
4,4'-DDT	0.15	0.10 U	0.11 U	0.24 U	0.05 U
ALDRIN	0.11	0.09 U	0.19	0.20 U	0.04 U
ALPHA-BHC	0.16	0.14	0.48	0.14 U	0.04 U
ALPHA-CHLORDANE	1.36	14.96	0.07 U	0.15 U	0.01 U
BETA-BHC	0.11	0.40	0.13	0.13 U	0.10 U
CHLORPYRIFOS	1.55	0.55 U	4.29 U	1.34 U	0.46
CIS-NONACHLOR	0.06	0.06 U	0.06	0.06	0.04 U
DELTA-BHC	0.08	0.03 U	0.04 U	0.08 U	0.04 U
DIELDRIN	0.69	0.70	1.38	1.13	0.40
ENDOSULFAN II	0.07 U	0.06 U	0.07 U	0.15 U	0.04 U
ENDRIN	0.21	0.43	0.19 U	0.44 U	0.04 U
GAMMA-BHC (LINDANE)	0.28	0.34	0.39	0.13 U	0.43
GAMMA-CHLORDANE	0.08	0.07 U	0.07 U	0.16 U	0.02 U
HEPTACHLOR	0.11 U	0.10 U	0.10 U	0.23 U	0.04 U
HEPTACHLOR EPOXIDE	0.13 U	0.07 U	0.07 U	0.16 U	0.23 U
HEXACHLOROBENZENE	0.14	0.36	0.21	0.17	0.05 U
MIREX	0.17	0.15 U	0.02	0.38 U	0.09 U
OXYCHLORDANE	0.38	0.14	0.57	0.54	0.07 U
PCB-101/90	0.47	0.39	0.32	0.26	0.09 U
PCB-105	0.35	0.45	0.52	0.75	0.19
PCB-114	0.27 U	0.23 U	0.26 U	0.56 U	0.14 U
PCB-118	1.14	1.44	2.19	3.13	0.60
PCB-126	0.24 U	0.04	0.62	0.56 U	0.00
PCB-128	0.21	0.18	0.38	0.57	0.09
PCB-138/160	1.19	1.27	2.29	1.75 U	0.66
PCB-149/123	0.16	0.23 U	0.37	0.09	0.14 U
PCB-153/132	1.22	1.30	1.71 U	2.31 U	0.94
PCB-156	0.36	1.89	0.26 U	0.56 U	0.14 U
PCB-167	-0.21	0.20	0.17	0.34	0.14 U
PCB-169	0.25	0.02	0.06	0.03	0.01
PCB-170/190	0.27	0.23 U	0.45 U	0.26 U	0.21 U
PCB-18/17	1.19	10.52	0.30	0.55	0.07
PCB-180	0.43	0.24	1.43	0.56 U	0.25

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 02			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.31	1.10	1.50	0.31
PCB-189	0.27 U	0.23 U	0.26 U	0.56 U	0.14 U
PCB-195/208	0.12	0.19 U	0.09	0.10	0.01 U
PCB-201/157/173	0.20	0.18 U	0.06	0.44 U	0.14 U
PCB-206	0.15	0.20 U	0.06	0.04	0.06 U
PCB-209	0.24	0.03	0.11	0.63 U	0.04 U
PCB-28	0.17	0.18 U	0.45	0.02 U	0.11 U
PCB-44	0.20	0.14 U	0.15	0.39	0.07
PCB-52	0.41	0.30	0.38	0.38 U	0.15
PCB-66	0.18	0.10	0.30	0.51	0.05 U
PCB-77	0.32	0.16	0.26 U	0.56 U	0.00
PCB-8/5	0.54	0.48	0.43 U	0.88	0.07 U
PCB-81	0.43	0.93 U	0.57	0.56 U	0.41 U
PENTACHLOROANISOLE	0.12	0.24	0.20	0.08 U	0.07
PENTACHLOROBENZENE	0.43	0.80	0.25	0.78 U	0.02
TRANS-NONACHLOR	0.08 U	0.05	0.18	0.11	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	8.73	8.80	1.55 U	1.35 U
ARSENIC	12.33	7.07	13.90	4.13	19.50
CADMIUM	0.03	0.04	0.03	0.02	0.02 U
CHROMIUM	0.41	0.10 U	0.26 U	0.61	0.43 U
COPPER	45.62	35.20	46.00	31.80	53.40
IRON	11.63	10.55	15.00	9.56	8.90
LEAD	0.28	0.55	0.64	0.08 U	0.28
MANGANESE	4.28	2.93	7.40	3.80	8.00
MERCURY	0.73	0.84	1.00	0.74	0.75
NICKEL	0.65	0.81 U	0.69	0.95 U	0.85 U
SILVER	0.93	1.02	0.17	0.80	1.00
ZINC	101.94	99.20	129.00	84.20	109.00

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	14.00 U	6.91 U	4.58 U	4.31 U
1,2,3,4,6,7,8,9-OCDF	10.89	14.00 U	6.91 U	0.04 U	4.31 U
1,2,3,4,6,7,8-HPCDD	4.91 U	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,4,6,7,8-HPCDF	4.99 U	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,4,7,8,9-HPCDF	5.21 U	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,4,7,8-HXCDD	5.58	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,4,7,8-HXCDF	5.56	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,6,7,8-HXCDD	5.53	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,6,7,8-HXCDF	5.10 U	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,7,8,9-HXCDD	5.43	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,7,8,9-HXCDF	5.09 U	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,7,8-PECDD	5.14 U	7.00 U	3.45 U	2.29 U	2.16 U
1,2,3,7,8-PECDF	4.74 U	7.00 U	3.45 U	2.29 U	2.16 U
2,3,4,6,7,8-HXCDF	5.31	7.00 U	3.45 U	2.29 U	2.16 U
2,3,4,7,8-PECDF	5.46	7.00 U	3.45 U	2.29 U	2.16 U
2,3,7,8-TCDD	0.88	1.41 U	0.68 U	0.14	0.43 U
2,3,7,8-TCDF	1.19	1.41 U	0.68 U		0.43 U
TOTAL DIOXINS	13.95	NR	6.91 U	0.14	4.31 U
TOTAL FURANS	14.95	NR	0.59	0.29 U	4.31 U
TOTAL HPCDD	4.37	7.00 U	3.45 U	2.29 U	2.16 U
TOTAL HPCDF	5.05 U	7.00 U	3.45 U	2.29 U	2.16 U
TOTAL HXCDD	6.97	7.00 U	3.45 U	2.29 U	2.16 U
TOTAL HXCDF	6.02 U	7.00 U	3.45 U	2.29 U	2.16 U
TOTAL PECDD	5.14 U	7.00 U	3.45 U	2.29 U	2.16 U
TOTAL PECDF	4.53	7.00 U	3.45 U	2.29 U	2.16 U
TOTAL TCDD	1.00	1.41 U	0.68 U	0.14	0.43 U
TOTAL TCDF	1.16	1.41 U	0.30 U	0.51	0.43 U
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.48	1.55	0.70	1.56
1-METHYLNAPHTHALENE	2.49	2.22	2.09	1.31	0.85
1-METHYLPHENANTHRENE	1.60	3.74	1.36	0.58	0.59
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.85	0.95	0.44	0.29
2,6-DIMETHYLNAPHTHALENE	0.95	1.26	0.95	0.59	0.38
2-METHYLNAPHTHALENE	3.12	2.74	2.36	1.90	1.24
ACENAPHTHENE	0.58	0.59	0.95	0.28	0.35
ACENAPHTHYLENE	0.30	0.63	0.45	0.26	0.09
ANTHRACENE	1.52	9.33	1.09	0.53	0.62
BENZO(A)ANTHRACENE	3.52	17.63	2.41	1.90	2.06
BENZO(A)PYRENE	3.99	9.74	7.14	3.10	3.94
BENZO(B)FLUORANTHENE	3.92	6.11	6.41	2.79	3.47
BENZO(E)PYRENE	2.62	5.56	5.27	1.90	2.29
BENZO(G,H,I)PERYLENE	1.71	3.48	4.36	1.08	1.79
BENZO(K)FLUORANTHENE	2.31	10.41	2.00	1.80	1.38
C1-CHRYSENES	1.98	3.81	4.73	1.05	1.15
C1-DIBENZOTHIOPHENES	0.76	1.11	1.23	0.34	0.29
C1-FLUORANTHENES/PYRENES	5.43	10.89	4.55	2.30	2.74
C1-FLUORENES	2.79	2.41	5.41	1.48	1.68
C1-NAPHTHALENES	5.61	4.96	4.45	3.21	2.09
C1-PHENANTHRENES/ANTHRACENES	6.05	12.48	5.23	2.06	1.91
C2-CHRYSENES	0.87	1.56	2.36	0.32	0.62
C2-DIBENZOTHIOPHENES	0.57	0.44	1.05	0.01	0.06
C2-FLUORENES	2.68	2.59	8.09	1.30	1.29
C2-NAPHTHALENES	3.57	4.15	4.73	1.48	1.15
C2-PHENANTHRENES/ANTHRACENES	4.54	6.07	5.59	1.65	1.56
C3-CHRYSENES	0.56	1.70 U	0.27	0.03	0.03
C3-DIBENZOTHIOPHENES	0.54	0.67	0.55	0.03	1.04 U

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AVERAGE NORMALIZED CHEMICAL CONCENTRATIONS IN JUVENILE LOBSTERS
AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameter[1]	Mean Reference Concentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.30	3.32	0.10	0.06
C3-NAPHTHALENES	3.27	4.96	5.05	1.23	0.68
C3-PHENANTHRENES/ANTHRACENES	2.54	2.70	5.45	0.02	0.71
C4-CHRYSENES	0.43	1.70 U	0.18	0.03	0.03
C4-NAPHTHALENES	1.57	3.74	1.50	0.05	0.29
C4-PHENANTHRENES/ANTHRACENES	0.92	1.67	2.36	0.02	0.03
CHRYSENE	6.51	15.89	4.45	4.31	3.35
DIBENZO(A,H)ANTHRACENE	0.14	0.11	0.59	0.03	0.09
DIBENZOTHIOPHENE	0.54	1.63	0.45	0.15	0.21
FLUORANTHENE	18.80	44.07	9.77	6.35	5.56
FLUORENE	1.43	2.59	2.00	0.73	0.82
INDENO(1,2,3-CD)PYRENE	1.69	3.41	4.00	1.05	1.91
NAPHTHALENE	5.03	4.44	6.82	2.37	1.91
PERYLENE	2.54	3.85	11.91	1.59	1.62
PHENANTHRENE	8.73	23.56	4.18	1.58	2.85
PYRENE	12.37	29.33	9.36	5.50	4.59
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	5.52	0.07	5.00	1.47
1,2,4,5-TETRACHLOROBENZENE	0.27	0.03	1.05	0.14 U	0.10
2,4'-DDD	0.19	0.04 U	0.05 U	0.08 U	0.26 U
2,4'-DDE	0.11	0.06 U	0.14	0.11 U	0.06 U
2,4'-DDT	0.10	0.06 U	0.10	0.10 U	0.06 U
4,4'-DDD	0.08	0.05 U	0.07 U	0.10 U	0.07 U
4,4'-DDE	1.22	0.88	1.45	0.69	0.65
4,4'-DDT	0.15	0.03	0.10 U	0.15 U	0.05 U
ALDRIN	0.11	0.07 U	0.09 U	0.13 U	0.04 U
ALPHA-BHC	0.16	0.11	0.13	0.09 U	0.04 U
ALPHA-CHLORDANE	1.36	0.05 U	1.45	0.10 U	0.01 U
BETA-BHC	0.11	0.04 U	0.05 U	0.08 U	0.12 U
CHLORPYRIFOS	1.55	0.45 U	0.57 U	0.83 U	0.74
CIS-NONACHLOR	0.06	0.05 U	0.06 U	0.05	0.05 U
DELTA-BHC	0.08	0.03 U	0.39	0.05 U	0.04 U
DIELDRIN	0.69	0.58	0.82	0.54	0.56
ENDOSULFAN II	0.07 U	0.05 U	0.07 U	0.10 U	0.04 U
ENDRIN	0.21	0.14 U	0.18 U	0.27 U	0.05 U
GAMMA-BHC (LINDANE)	0.28	0.04 U	0.34 U	0.08 U	0.24
GAMMA-CHLORDANE	0.08	0.05 U	0.07 U	0.10 U	0.02 U
HEPTACHLOR	0.11 U	0.08 U	0.10 U	0.14 U	0.04 U
HEPTACHLOR EPOXIDE	0.13 U	0.06 U	0.07 U	0.10 U	0.26 U
HEXACHLOROBENZENE	0.14	0.13	0.09 U	0.06	0.05 U
MIREX	0.17	0.13 U	0.16 U	0.23 U	0.10 U
OXYCHLORDANE	0.38	0.73	0.55	0.62	0.27
PCB-101/90	0.47	0.76	1.09	0.15	0.10 U
PCB-105	0.35	0.29	0.55	0.21	0.17
PCB-114	0.27 U	0.19 U	0.25 U	0.35 U	0.15 U
PCB-118	1.14	0.49	0.50	0.65	0.47
PCB-126	0.24 U	0.06	0.17	0.35 U	0.47 U
PCB-128	0.21	0.15 U	0.24	0.14	0.10
PCB-138/160	1.19	0.66	2.18	0.42 U	0.62
PCB-149/123	0.16	0.19 U	0.32	0.05	0.15 U
PCB-153/132	1.22	1.00	1.20 U	0.06 U	1.00
PCB-156	0.36	0.19 U	0.25 U	0.12	0.15 U
PCB-167	0.21	0.19 U	0.09	0.35 U	0.15 U
PCB-169	0.25	0.77 U	0.04	0.35 U	0.47 U
PCB-170/190	0.27	0.19 U	0.30 U	0.12 U	0.24 U
PCB-18/17	1.19	0.50 U	0.61 U	0.92 U	0.15 U
PCB-180	0.43	0.29	0.34 U	0.16 U	0.27

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
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Parameter[1]	Mean Reference Concentration	Reference Station 03			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.17	0.32 U	0.38	0.28
PCB-189	0.27 U	0.19 U	0.25 U	0.35 U	0.15 U
PCB-195/208	0.12	0.01	0.20 U	0.29 U	0.01 U
PCB-201/157/173	0.20	0.15 U	0.18 U	0.27 U	0.15 U
PCB-206	0.15	0.16 U	0.21 U	0.31 U	0.06 U
PCB-209	0.24	0.22 U	0.27 U	0.40 U	0.04 U
PCB-28	0.17	0.15 U	0.19 U	0.10 U	0.12 U
PCB-44	0.20	0.11 U	0.68	0.02 U	0.12
PCB-52	0.41	0.13 U	1.73	0.25 U	0.10
PCB-66	0.18	0.05	0.08	0.12	0.06 U
PCB-77	0.32	0.77 U	0.25 U	0.35 U	0.01
PCB-8/5	0.54	0.64	0.42	0.20	0.08 U
PCB-81	0.43	0.77 U	0.10	0.35 U	0.00
PENTACHLOROANISOLE	0.12	0.13	0.13	0.05 U	0.08
PENTACHLOROBENZENE	0.43	0.09	0.41 U	0.79 U	0.08 U
TRANS-NONACHLOR	0.08 U	0.08	0.10	0.08	0.04 U
Inorganics (MG/KG)					
ALUMINUM	4.77	5.11	8.80	3.45 U	0.75 U
ARSENIC	12.33	19.90	17.90	4.15	17.30
CADMIUM	0.03	0.04	0.03	0.03	0.04 U
CHROMIUM	0.41	0.10 U	0.26 U	0.87	0.48 U
COPPER	45.62	33.90	46.10	41.60	21.40
IRON	11.63	6.52	12.20	14.80	9.40
LEAD	0.28	0.05 U	0.16	0.21 U	0.04 U
MANGANESE	4.28	2.65	2.60	2.34	3.40
MERCURY	0.73	0.50	0.69	0.74	0.57
NICKEL	0.65	0.10 U	0.56	1.06 U	0.85 U
SILVER	0.93	1.11	0.28	0.72	0.78
ZINC	101.94	90.70	106.00	77.10	76.20

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

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AT EACH MONITORING AND REFERENCE STATION ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameter[1]	Mean Reference Concentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
Dioxins (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	9.84	11.27 U	2.42 U	3.50 U	
1,2,3,4,6,7,8,9-OCDF	10.89	11.27 U	24.11 U	1.42 U	
1,2,3,4,6,7,8-HPCDD	4.91 U	5.64 U	12.06 U	0.95 U	
1,2,3,4,6,7,8-HPCDF	4.99 U	5.64 U	12.06 U	0.62 U	
1,2,3,4,7,8,9-HPCDF	5.21 U	5.64 U	12.06 U	4.07 U	
1,2,3,4,7,8-HXCDD	5.58	5.64 U	12.06 U	4.07 U	
1,2,3,4,7,8-HXCDF	5.56	5.64 U	12.06 U	4.07 U	
1,2,3,6,7,8-HXCDD	5.53	5.64 U	12.06 U	4.07 U	
1,2,3,6,7,8-HXCDF	5.10 U	5.64 U	12.06 U	4.07 U	
1,2,3,7,8,9-HXCDD	5.43	5.64 U	12.06 U	4.07 U	
1,2,3,7,8,9-HXCDF	5.09 U	5.64 U	12.06 U	4.07 U	
1,2,3,7,8-PECDD	5.14 U	5.64 U	12.06 U	4.07 U	
1,2,3,7,8-PECDF	4.74 U	5.64 U	12.06 U	0.39 U	
2,3,4,6,7,8-HXCDF	5.31	5.64 U	12.06 U	4.07 U	
2,3,4,7,8-PECDF	5.46	5.64 U	12.06 U	4.07 U	
2,3,7,8-TCDD	0.88	1.12 U	0.17	0.82 U	
2,3,7,8-TCDF	1.19	1.12 U	2.42 U	0.82 U	
TOTAL DIOXINS	13.95	NR	8.44	11.34	
TOTAL FURANS	14.95	NR	24.11 U	7.73	
TOTAL HPCDD	4.37	5.64 U	1.64 U	2.17 U	
TOTAL HPCDF	5.05 U	5.64 U	12.06 U	0.62 U	
TOTAL HXCDD	6.97	5.64 U	5.00	4.07 U	
TOTAL HXCDF	6.02 U	5.64 U	12.06 U	1.17 U	
TOTAL PECDD	5.14 U	5.64 U	12.06 U	4.07 U	
TOTAL PECDF	4.53	2.21	12.06 U	0.39 U	
TOTAL TCDD	1.00	1.12 U	0.17	0.82 U	
TOTAL TCDF	1.16	1.12 U	2.42 U	0.54	
Semi-Volatile Organics (UG/KG)					
1,1-BIPHENYL	1.11	0.48	3.50	0.58	
1-METHYLNAPHTHALENE	2.49	4.15	4.94	3.97	
1-METHYLPHENANTHRENE	1.60	3.42	0.50	0.27	
2,3,5-TRIMETHYLNAPHTHALENE	0.95	1.82	0.72	0.66	
2,6-DIMETHYLNAPHTHALENE	0.95	1.27	2.17	0.71	
2-METHYLNAPHTHALENE	3.12	5.61	5.72	4.43	
ACENAPHTHENE	0.58	0.36	0.89	0.31	
ACENAPHTHYLENE	0.30	0.39	0.56	0.28	
ANTHRACENE	1.52	5.15	0.44	0.37	
BENZO(A)ANTHRACENE	3.52	9.97	0.67	0.51	
BENZO(A)PYRENE	3.99	7.97	1.28	0.71	
BENZO(B)FLUORANTHENE	3.92	8.94	1.56	1.20	
BENZO(E)PYRENE	2.62	3.70	0.06	0.78	
BENZO(G,H,I)PERYLENE	1.71	1.88	0.67	0.32	
BENZO(K)FLUORANTHENE	2.31	3.94	0.67	1.00	
C1-CHRYSENES	1.98	3.24	0.89	0.06	
C1-DIBENZOTHIOPHENES	0.76	1.00	0.50	0.12	
C1-FLUORANTHENES/PYRENES	5.43	11.33	1.72	1.39	
C1-FLUORENES	2.79	1.88	4.67	2.29	
C1-NAPHTHALENES	5.61	9.76	10.67	8.39	
C1-PHENANTHRENES/ANTHRACENES	6.05	9.42	2.50	1.40	
C2-CHRYSENES	0.87	1.27	0.56	0.06	
C2-DIBENZOTHIOPHENES	0.57	0.52	0.56	0.01	
C2-FLUORENES	2.68	2.79	2.33	1.66	
C2-NAPHTHALENES	3.57	5.30	7.33	5.65	
C2-PHENANTHRENES/ANTHRACENES	4.54	5.67	1.78	1.26	
C3-CHRYSENES	0.56	1.52 U	0.22	0.08	
C3-DIBENZOTHIOPHENES	0.54	0.70	0.50	0.01	

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Parameter[1]	Mean Reference Concentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
C3-FLUORENES	1.61	2.94	0.67	0.10	
C3-NAPHTHALENES	3.27	5.00	2.78	4.43	
C3-PHENANTHRENES/ANTHRACENES	2.54	2.73	1.67	0.02	
C4-CHRYSENES	0.43	0.52	0.39	0.06	
C4-NAPHTHALENES	1.57	2.39	1.06	0.07	
C4-PHENANTHRENES/ANTHRACENES	0.92	1.00	0.33	0.01	
CHRYSENE	6.51	14.36	1.83	2.10	
DIBENZO(A,H)ANTHRACENE	0.14	0.06	0.22	0.03	
DIBENZOTHIOPHENE	0.54	1.67	0.28	0.16	
FLUORANTHENE	18.80	44.00	5.28	4.25	
FLUORENE	1.43	1.39	2.22	0.93	
INDENO(1,2,3-CD)PYRENE	1.69	2.42	0.83	0.32	
NAPHTHALENE	5.03	6.55	14.00	3.93	
PERYLENE	2.54	1.91	1.39	0.86	
PHENANTHRENE	8.73	16.39	3.39	1.73	
PYRENE	12.37	27.18	4.33	3.41	
Pesticides/PCB's (UG/KG)					
1,2,3,4-TETRACHLOROBENZENE	3.47	2.15	3.56	5.65	
1,2,4,5-TETRACHLOROBENZENE	0.27	0.03	1.22	0.15 U	
2,4'-DDD	0.19	0.04 U	0.07 U	0.09 U	
2,4'-DDE	0.11	0.05 U	0.09 U	0.13 U	
2,4'-DDT	0.10	0.05 U	0.09 U	0.12 U	
4,4'-DDD	0.08	0.05 U	0.08 U	0.11 U	
4,4'-DDE	1.22	1.28	1.11	1.48	
4,4'-DDT	0.15	0.07 U	0.13 U	0.17 U	
ALDRIN	0.11	0.05	0.11 U	0.15 U	
ALPHA-BHC	0.16	0.15	0.33	0.10 U	
ALPHA-CHLORDANE	1.36	0.55	1.89	0.09	
BETA-BHC	0.11	0.04 U	0.07 U	0.10 U	
CHLORPYRIFOS	1.55	0.40 U	0.72 U	0.96 U	
CIS-NONACHLOR	0.06	0.05	0.08 U	0.10 U	
DELTA-BHC	0.08	0.02 U	0.17	0.06 U	
DIELDRIN	0.69	0.34	0.41	0.57	
ENDOSULFAN II	0.07 U	0.05 U	0.08 U	0.11 U	
ENDRIN	0.21	0.13 U	0.23 U	0.30 U	
GAMMA-BHC (LINDANE)	0.28	0.22	0.31 U	0.09 U	
GAMMA-CHLORDANE	0.08	0.05 U	0.09 U	0.12 U	
HEPTACHLOR	0.11 U	0.07 U	0.13 U	0.17 U	
HEPTACHLOR EPOXIDE	0.13 U	0.05 U	0.09 U	0.12 U	
HEXACHLOROBENZENE	0.14	0.12	0.29	0.11	
MIREX	0.17	0.11 U	0.20 U	0.26 U	
OXYCHLORDANE	0.38	0.21	0.34	0.30	
PCB-101/90	0.47	1.02	1.61	0.21	
PCB-105	0.35	0.38	0.11	0.48	
PCB-114	0.27 U	0.17 U	0.31 U	0.41 U	
PCB-118	1.14	0.81	0.50	1.70	
PCB-126	0.24 U	0.02	0.21	0.41 U	
PCB-128	0.21	0.13 U	0.09	0.30	
PCB-138/160	1.19	1.22	0.89	0.96 U	
PCB-149/123	0.16	0.17 U	0.17	0.05	
PCB-153/132	1.22	1.70	0.53 U	1.22 U	
PCB-156	0.36	0.17 U	0.31 U	0.26	
PCB-167	0.21	0.06	0.31 U	0.14	
PCB-169	0.25	0.01	0.31 U	0.41 U	
PCB-170/190	0.27	0.43	0.36 U	0.19 U	
PCB-18/17	1.19	0.45 U	0.81 U	1.07 U	
PCB-180	0.43	0.48	0.15 U	0.28 U	

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Parameter[1]	Mean Reference Concentration	Reference Station 04			
		Round 1	Round 2	Round 3	Round 4
PCB-187	0.56	0.40	0.16 U	0.70	
PCB-189	0.27 U	0.17 U	0.31 U	0.41 U	
PCB-195/208	0.12	0.03	0.25 U	0.06	
PCB-201/157/173	0.20	0.13 U	0.23 U	0.30 U	
PCB-206	0.15	0.15 U	0.26 U	0.05	
PCB-209	0.24	0.19 U	0.33 U	0.46 U	
PCB-28	0.17	0.13 U	0.24 U	0.11 U	
PCB-44	0.20	0.10 U	0.56	0.24 U	
PCB-52	0.41	0.12 U	1.50	0.28 U	
PCB-66	0.18	0.09	0.31 U	0.23	
PCB-77	0.32	0.68 U	0.31 U	0.41 U	
PCB-8/5	0.54	0.87	0.94	0.38	
PCB-81	0.43	0.68 U	0.21	0.41 U	
PENTACHLOROANISOLE	0.12	0.11	0.16	0.05 U	
PENTACHLOROBENZENE	0.43	0.27	0.50 U	0.59 U	
TRANS-NONACHLOR	0.08 U	0.06	0.05 U	0.09	
Inorganics (MG/KG)					
ALUMINUM	4.77	3.12	3.70	1.60 U	
ARSENIC	12.33	9.22	16.30	4.11	
CADMIUM	0.03	0.02 U	0.03	0.03	
CHROMIUM	0.41	0.10 U	0.26 U	0.67	
COPPER	45.62	50.60	75.10	41.40	
IRON	11.63	7.58	5.90	10.70	
LEAD	0.28	0.18	0.04 U	0.66	
MANGANESE	4.28	2.20	3.80	1.66	
MERCURY	0.73	0.02 U	1.00	0.64	
NICKEL	0.65	0.10 U	0.26 U	0.98 U	
SILVER	0.93	1.52	0.47	1.03	
ZINC	101.94	106.00	92.50	101.00	

Footnotes:
1 Normalized concentrations were determined for organics by dividing tissue concentration by percent lipid. Inorganics were not normalized.
- Shaded values indicate the round with the maximum concentration
- NR - Not Reported
- Duplicate samples are averaged in this table. One half non-detects were used.
- Parameter where all samples were non-detects are designated with a "U"; values presented in the table are one-half of the non-detect, where applicable.
- Source data located in Rounds 1 - 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001)

APPENDIX H

COMPARISON OF CHEMICAL CONCENTRATIONS AT THE MONITORING STATIONS TO THE REFERENCE STATIONS

APPENDIX H

BASIC APPROACH OF THE COMPARISON OF MONITORING STATION RESULTS TO THE REFERENCE STATION RESULTS

The monitoring station data was compared to reference station data using either parametric or non-parametric analysis. The statistical methods described in the following paragraphs were used to determine if parameter concentrations detected in monitoring station samples were significantly elevated, statistically speaking, from those detected in samples from the reference stations.

The Analysis of Variance, or the ANOVA technique, was the basic approach used to compare data from Reference and monitoring station locations. The ANOVA technique was used to test whether there was statistically significant evidence of contamination associated with the monitoring stations. There are two types of ANOVA: parametric and non-parametric. Parametric ANOVA methods make two important assumptions: 1) the data residuals are normally (or lognormally) distributed, and 2) the group variances are homogeneous.

If the analysis of the data demonstrated that these assumptions, critical to the parametric ANOVA, were violated, non-parametric ANOVA techniques were conducted using the ranks of the observations rather than the observations themselves (EPA, 1989). The Wilcoxon Rank-Sum test (also known as the Mann-Whitney U test) was employed as the non-parametric ANOVA for comparing the monitoring station results to the reference station results.

PARAMETRIC AND NONPARAMETRIC ANALYSIS OF VARIANCE (ANOVA)

PARAMETRIC ANOVA:

ANOVA is widely used in the examination of environmental data sets. A one-way classification ANOVA was used to determine whether or not the difference between average concentrations of a parameter detected in monitoring station locations and reference station locations was statistically significant. The assumptions that the sample concentrations were drawn from an underlying normal (or lognormal) distribution and that the reference station and monitoring station data sets have homogeneous variances were examined prior to employing the parametric ANOVA

The Shapiro-Wilk "W-test" of Normality ($n < 50$)

As stated above, the data was analyzed to determine whether they were drawn from an underlying normal, lognormal or undetermined distribution. A number of statistical evaluations may be used to determine which, if either, of the distributions are exhibited by a given data set. As recommended by the EPA, the Shapiro-Wilk "W-test" (for sample sets $\leq$ 50) and the Shapiro-Francia "W-test" (for sample sets > 50) was used to determine whether the data were normally or lognormally distributed (EPA, 1992). The sample sets for Portsmouth CTO 201 varied between 4 and 161, therefore the Shapiro-Wilk test and the Shapiro-Franica test were both used.

The Shapiro-Wilk W-test (Gilbert, 1987) is an effective method for determining whether a data set has been drawn from an underlying normal (or lognormal) distribution. In addition, by conducting the Shapiro and Wilk W-test on the log-transformed data, the test was used to determine whether the data have been drawn from an underlying lognormal distribution.

The null hypothesis (H_0) that is tested was:

> H_O: *The population has a normal (or lognormal when the data is log-transformed) distribution.*

The alternate hypothesis (H_A) was:

> H_A: *The population does not have a normal (or lognormal when the data is log-transformed) distribution.*

If H_O was rejected then H_A was accepted. If H_O was not rejected, the data set was consistent with the H_O distribution.

A "W" statistic (W_{calc}) was computed for a data set (or a log transformed data set) and compared to a test statistic (W_{test}). If $W_{calc} = W_{test}$, then the null hypothesis was not rejected (i.e. the data were assumed to be normally distributed [or lognormally distributed if log transformed data were tested]). If $W_{calc} < W_{test}$, then the null hypothesis was rejected and the alternative hypothesis was accepted (i.e., the data were not assumed to be normally distributed [or not lognormally distributed if log transformed data were tested]).

The following equations present a step-by-step procedure for conducting the W-test on the residuals.

Step 1. The equation for conducting the W-Test is:

$$W = \left[\frac{b}{Sx\sqrt{n-1}}\right]^2$$

where:

$$b = \sum_{i=1}^{k}\sum_{j=1}^{m} a_i\left(X_{[nij-1]} - X_{ij}\right) = \sum_{i=1}^{k} b_i$$

and n is the total number of sampling rounds.

- Step 2. Order the n residuals from smallest to largest to obtain the sample order statistics:

$$x_1 \leq x_2 \leq x_3 \leq \ldots \leq x_n$$

- Step 3. Compute the standard deviation by:

$$S_x = \sqrt{\sum_{i=1}^{n}\frac{\left(X_{ij} - \overline{X}\right)^2}{(n-1)}}$$

- Step 4. Determine coefficients $a_1, a_2, a_3, \ldots, a_k$ for the sample size n where:

$$k = \frac{n}{2} \quad if\, n\ is\ even;\ \text{and}$$

$$k = \frac{n-1}{2} \quad if\, n\ is\ odd$$

- Step 5. Determine b by the formula:

$$b = \sum_{i=1}^{k} a_i\left(X_{[n+i-1]} - X_i\right) = \sum_{i=1}^{k} b_i$$

- Step 6. Calculate W_{calc} using b from above:

$$W_{calc} = \left[\frac{b}{Sx\sqrt{n-1}}\right]^2$$

- Step 7. Determine W_{test} at the 5% significance.

- Step 8. Reject H_O at the 5% significance level if W_{calc} is less than W_{test}.

To test the null hypothesis that the data set has been drawn from an underlying lognormal distribution, the data was transformed to $y_1, y_2, y_3, \ldots, y_j$ where $y_j = \ln X_i$. Steps 1 through 8 as described in the preceding paragraphs were repeated. A summary of all Shapiro-Wilk results can be found in the tables in this appendix.

Shapiro-Francia Test of Normality (n > 50)

The Shapiro-Wilk test of Normality can be used for sample sizes up to 50. When the sample size is larger than 50 a slight modification of the procedure called the Shapiro-Francia test (Shapiro and Francia, 1972) can be used instead.

Like the Shapiro-Wilk test, the Shapiro-Francia test statistic (W') will tend to be large when a Probability Plot of the data indicates a nearly straight line. Only when the plotted data show significant bends or curved will the test statistic be small.

To calculate the test statistic W', the following formula was used:

$$W' = \frac{\left[\sum_i m_i x_i\right]^2}{(n-1)\sigma^2 \sum m_i^2}$$

where x_i represents the ith ordered value of the sample and m_i denotes the approximate expected value of the ith ordered Normal quantile. The values of m_i can be approximately computed as:

$$m_i = \Phi^{-1}\left(\frac{i}{n+1}\right)$$

where Φ^{-1} denotes the inverse of the standard Normal distribution with zero mean and unit variance.

Normality of the data was rejected if the Shapiro-Francia statistic was too low when compared to the critical values. Otherwise it was assumed that the data were approximately Normal for purposes of further statistical analysis.

Homogeneity of Variance

An important assumption in analysis of variance (ANOVA) is that the variances in the different groups are equal (homogeneous). A powerful and commonly used test of this assumption, when underlying distributions are the same, is Levene's test. This test has practically replaced the older and less robust Bartlett's and Chi-square tests.

Levene's test (homogeneity of variances): For each dependent variable, an analysis of variance is performed on the absolute deviations of values from the respective group means. If the Levene test is statistically significant, then the hypothesis of homogeneous variances should be rejected.

To conduct Levene's test, a standard one-way analysis of variation (ANOVA) on the variable *Xi* was first run. If the F test was significant, the hypothesis of equal group variances was rejected. Otherwise, the analysis of *Xi*'s was proceeded with as planned.

Parametric ANOVA

Assume that a monitoring station has *k* locations and that n_i data points (analyte concentrations) are available for the ith location. The following equations present a step-by-step procedure for conducting the parametric ANOVA.

- Step 1. Compute the sums and means of each station (i) as follows:

$$X_i = \sum_{j=1}^{n_i} X_{ij} \ , \ \Sigma \ of\ all\ n_i\ observations\ at\ well\ i$$

$$\overline{X} = \frac{X}{N} \ , \ grand\ mean\ of\ all\ observations$$

$$\overline{X_i} = \frac{X_i}{n_i} \ , \ average\ of\ all\ n_i\ observations\ at\ well\ i$$

$$X = \sum_{i=1}^{k} \sum_{j=1}^{n_i} X_{ij} \ , \ grand\ total\ of\ all\ n_i\ observations$$

$$N = \sum_{i=1}^{k} n_i \ , \ total\ number\ of\ observations$$

Step 2. Compute the sum of squares of differences between the individual location means and the grand mean:

$$SS_{sample} = \sum_{i=1}^{k} n_i \left(\overline{X}_i - \overline{X}\right)^2 = \sum_{i=1}^{k} \left[\frac{X_i^{\,2}}{n_i}\right] \frac{X^2}{N}$$

This sum of squares has v1 = (*k-1*) degrees of freedom associated with it and is a measure of the variability between locations.

Step 3. Compute the corrected total sum of squares

$$SS_{total} = \sum_{i=1}^{k} \sum_{j=1}^{n_i} \left(X_{ij} - \overline{X}\right)^2 = \sum_{i=1}^{k} \sum_{j=1}^{n_i} \left[\left(X_{ij}\right)^2\right] \frac{X^2}{N}$$

This sum of squares has v2 = (*N-1*) degrees of freedom associated with it and is a measure of variability in the whole data set.

Step 4. Compute the sum of squares of differences of observations within locations from the location means. This value is the sum of squares due to error and is obtained by simple subtraction:

$$SS_{Error} = SS_{Total} - SS_{Sample}$$

The sum of squares due to error has associated with it (*N-k*) degrees of freedom and is a measure of the variability within locations.

Step 5. Set up the ANOVA table. The sums of squares and their degrees of freedom were obtained from Steps 2 through 4. The mean square quantities are simply obtained by dividing each sum of squares by its corresponding degrees of freedom.

ONE-WAY PARAMETRIC ANOVA TABLE

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Squares	F
Between Locations	SS_{sample}	MS_{Sample}=k-1	SS_{Sample}/(k-1)	F= $MS_{samples}/MS_{Error}$

Error (within Locations)	SS_{Error}	MS_{Error}= N-k	$SS_{Error}/(N-k)$
Total	SS_{Total}	N-1	

Step 6. To test the hypothesis of equal means for all *k* locations, compute $F = MS_{Sample}/MS_{Error}$ (last column in above table). Compare this statistic to the tabulated F statistic with (*k-1*) and (*N-k*) degrees of freedom at the 5% significance level. If the calculated *F* value exceeds the tabulated value the monitoring station and reference station means must be compared to see if contamination is present. Reject the hypothesis of equal location means if the monitoring station mean is greater than the reference station mean. Otherwise, conclude that there is no significant difference between the concentrations of the *k* locations and thus no evidence of contamination. A summary of all parametric ANOVA results can be found in the tables in this appendix.

NONPARAMETRIC ANOVA

The parametric ANOVA technique is the preferred approach for comparing environmental measurements from monitoring station results to reference station data. However, parametric ANOVA methods make two key assumptions: (1) the results are normally (or lognormally) distributed and (2) the group variances are approximately equal. If either of these assumptions were violated, non-parametric tests were used to determine if constituent concentrations present in the monitoring station locations significantly exceed those present in reference station locations.

Non-parametric tests were conducted using the ranks of the analytical results rather than the analytical results themselves. Therefore, the data sets were inspected for extremely high values that may have been underestimated as a result of the ranking process.

The Wilcoxon Rank-Sum Test

The Wilcoxon Rank-Sum test (EPA, 1992) (also known as the Mann-Whitney U test) was employed as the non-parametric ANOVA technique. The following equations present a step-by-step procedure for conducting the Wilcoxon Rank-Sum test.

The null hypothesis (H_0) that is tested is:

H_O: The monitoring station concentration <u>IS NOT</u> statistically higher than the reference station concentration.

The alternate hypothesis (H_A) is:

H_A: The monitoring station concentration <u>IS</u> statistically higher than the reference station concentration.

If H_O is rejected then H_A is accepted. If H_O is not rejected, the data set is consistent with the H_O distribution.

- Step 1. Combine the reference station and monitoring station data and rank the ordered values from 1 to *N*. Assume there are *n* monitoring station samples and m reference station samples so that $N = m + n$.

- Step 2. Compute the Wilcoxon statistic *W*:

$$W = \sum_{i=1}^{n} E_i - \frac{1}{2}n(n+1)$$

where E_i are the ranks of the monitoring station samples (Large values of the statistic *W* give evidence of contamination in site locations).

- Step 3. Compute an approximate *Z-score*. To find the critical value of *W*, a normal approximation to its distribution is used. The expected value and standard deviation of *W* under the null hypothesis (i.e., no contamination exists) are given by the formulas:

$$E(W) = \frac{1}{2}mn; \qquad SD(W) = \sqrt{\frac{1}{12}mn(N+1)}$$

An approximate *Z-score* for the Wilcoxon Rank-Sum test may be calculated by the following equations:

$$Z = \frac{W - E(W) - \frac{1}{2}}{SD(W)}$$

The factor of 1/2 in the numerator serves as a continuity correction because the discrete distribution of the statistic W is being approximated by the continuous normal

distribution. If n or m > 10 and ties are present, an adjustment to the approximate *Z-score* must be made:

$$Z_{RS} = \frac{W - E(W) - \frac{1}{2}}{SD(W)}$$

where: $$SD'(W) = \left(\frac{mn}{12} \left[N + 1 - \frac{\sum_{j=1}^{g} t_j (t_j^2 - 1)}{N(N-1)} \right] \right)^{\frac{1}{2}}$$

g = the number of tied groups and t_j is the number of tied data in the jth group.

Step 4. For a one-tailed 95% confidence level test for H_O versus the, reject H_O and accept H_A if $Z_{ADJUSTED} > Z_{0.95} = +1.645$, which corresponds to a p-value of 0.05.

TABLE H - 1

RESULTS OF THE SHAPIRO WILK TEST
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORSTMOUTH NAVAL SHIPYARD, KITTERY MAINE

Parameters	Monitoring Station Distribution	Reference Station Distribution	Non-Parametric ANOVA or Parametric ANOVA?
Sediment			
COPPER	UNDEFINED	UNDEFINED	Non-Parametric
NICKEL	UNDEFINED	UNDEFINED	Non-Parametric
ACENAPHTHYLENE	UNDEFINED	UNDEFINED	Non-Parametric
ANTHRACENE	UNDEFINED	UNDEFINED	Non-Parametric
FLUORENE	UNDEFINED	UNDEFINED	Non-Parametric
HMW PAHs	UNDEFINED	UNDEFINED	Non-Parametric
Mussel			
COPPER	UNDEFINED	UNDEFINED	Non-Parametric
NICKEL	UNDEFINED	LOGNORMAL	Non-Parametric
ACENAPHTHYLENE	UNDEFINED	NORMAL	Non-Parametric
ANTHRACENE	UNDEFINED	NORMAL	Non-Parametric
FLUORENE	UNDEFINED	NORMAL	Non-Parametric
HMW PAHs	UNDEFINED	NORMAL	Non-Parametric
Juvenile Lobster			
COPPER	LOGNORMAL	NORMAL	Non-Parametric
NICKEL	UNDEFINED	UNDEFINED	Non-Parametric
ACENAPHTHYLENE	UNDEFINED	NORMAL	Non-Parametric
ANTHRACENE	UNDEFINED	UNDEFINED	Non-Parametric
FLUORENE	UNDEFINED	LOGNORMAL	Non-Parametric
HMW PAHs	UNDEFINED	LOGNORMAL	Non-Parametric

TABLE H - 2

COMPARISON OF CHEMICAL CONCENTRATIONS BETWEEN THE MONITORING STATIONS AND THE REFERENCE STATIONS
NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETERS	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations above Reference Stations?(1)
Sediment											
COPPER	22977.0	2448.0	368	10.8599	0.0000	10.8599	0.0000	161	64	1.645	YES
NICKEL	22311.0	3114.0	1034	9.3480	0.0000	9.3480	0.0000	161	64	1.645	YES
ACENAPHTHYLENE	19311.0	6114.0	4034	2.5379	0.0112	2.5379	0.0112	161	64	1.645	YES
ANTHRACENE	19593.0	5832.0	3752	3.1781	0.0015	3.1781	0.0015	161	64	1.645	YES
FLUORENE	19664.0	5761.0	3681	3.3392	0.0008	3.3392	0.0008	161	64	1.645	YES
HMW PAHs	19417.0	6008.0	3928	2.7785	0.0055	2.7785	0.0055	161	64	1.645	YES
Mussel											
COPPER	10449.5	2111.5	1616	1.54555	0.12222	1.545694	0.12219	127	31	1.645	NO
NICKEL	10457.5	2103.5	1608	1.58058	0.11398	1.580959	0.1139	127	31	1.645	NO
ACENAPHTHYLENE	10050	2511	1922	-0.2036	0.83867	-0.2036	0.83867	127	31	1.645	NO
ANTHRACENE	10116	2445	1949	0.08538	0.93196	0.085379	0.93196	127	31	1.645	NO
FLUORENE	10358.5	2202.5	1707	1.14712	0.25134	1.147168	0.25132	127	31	1.645	NO
HMW PAHs	10228.5	2332.5	1837	0.57794	0.56331	0.577941	0.56331	127	31	1.645	NO
Juvenile Lobster											
COPPER	1941.5	614.5	345.5	-1.0494	0.2940	-1.0494	0.2940	56	15	1.645	NO
NICKEL	1992.5	563.5	396.5	-0.3310	0.7406	-0.3311	0.7406	56	15	1.645	NO
ACENAPHTHYLENE	1979.0	577.0	383.0	-0.5212	0.6022	-0.5212	0.6022	56	15	1.645	NO
ANTHRACENE	2126.0	430.0	310.0	1.5494	0.1213	1.5496	0.1213	56	15	1.645	NO
FLUORENE	2022.0	534.0	414.0	0.0845	0.9326	0.0845	0.9326	56	15	1.645	NO
HMW PAHs	2018.0	538.0	418.0	0.0282	0.9775	0.0282	0.9775	56	15	1.645	NO

1 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples.

TABLE H - 3

COMPARISON OF CHEMICALS IN SEDIMENT AT EACH MONITORING STATION TO THE REFERENCE STATIONS
NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETERS	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations above Reference Stations?(1)
Monitoring Station 01											
COPPER	837.0	2089.0	9	5.342	0.0000	5.3419	0.0000	12	64	1.645	YES
NICKEL	737.0	2189.0	109	3.917	0.0001	3.9174	0.0001	12	64	1.645	YES
ACENAPHTHYLENE	792.0	2134.0	54	4.701	0.0000	4.7009	0.0000	12	64	1.645	YES
ANTHRACENE	731.0	2195.0	115	3.832	0.0001	3.8319	0.0001	12	64	1.645	YES
FLUORENE	775.0	2151.0	71	4.459	0.0000	4.4587	0.0000	12	64	1.645	YES
HMW PAHs	737.0	2189.0	109	3.917	0.0001	3.9174	0.0001	12	64	1.645	YES
Monitoring Station 02											
COPPER	839.0	2087.0	7	5.370	0.0000	5.3704	0.0000	12	64	1.645	YES
NICKEL	797.0	2129.0	49	4.772	0.0000	4.7721	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	366.0	2560.0	288	-1.368	0.1715	-1.3675	0.1715	12	64	1.645	NO
ANTHRACENE	379.0	2547.0	301	-1.182	0.2371	-1.1823	0.2371	12	64	1.645	NO
FLUORENE	390.0	2536.0	312	-1.026	0.3051	-1.0257	0.3051	12	64	1.645	NO
HMW PAHs	338.0	2588.0	260	-1.766	0.0773	-1.7664	0.0773	12	64	1.645	NO
Monitoring Station 03											
COPPER	840.0	2086.0	6	5.385	0.0000	5.3846	0.0000	12	64	1.645	YES
NICKEL	767.0	2159.0	79	4.345	0.0000	4.3447	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	570.0	2356.0	276	1.538	0.1239	1.5385	0.1239	12	64	1.645	NO
ANTHRACENE	569.0	2357.0	277	1.524	0.1275	1.5242	0.1275	12	64	1.645	NO
FLUORENE	577.0	2349.0	269	1.638	0.1014	1.6382	0.1014	12	64	1.645	NO
HMW PAHs	560.0	2366.0	286	1.396	0.1627	1.3960	0.1627	12	64	1.645	NO

TABLE H - 3

COMPARISON OF CHEMICALS IN SEDIMENT AT EACH MONITORING STATION TO THE REFERENCE STATIONS
NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETERS	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations above Reference Stations?(1)
Monitoring Station 04											
COPPER	834.0	2092.0	12	5.299	0.0000	5.2992	0.0000	12	64	1.645	YES
NICKEL	741.0	2185.0	105	3.974	0.0001	3.9744	0.0001	12	64	1.645	YES
ACENAPHTHYLENE	527.0	2399.0	319	0.926	0.3545	0.9259	0.3545	12	64	1.645	NO
ANTHRACENE	535.0	2391.0	311	1.040	0.2984	1.0399	0.2984	12	64	1.645	NO
FLUORENE	507.0	2419.0	339	0.641	0.5215	0.6410	0.5215	12	64	1.645	NO
HMW PAHs	561.0	2365.0	285	1.410	0.1585	1.4103	0.1585	12	64	1.645	NO
Monitoring Station 05											
COPPER	806.0	2120.0	40	4.900	0.0000	4.9003	0.0000	12	64	1.645	YES
NICKEL	779.0	2147.0	67	4.516	0.0000	4.5157	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	516.0	2410.0	330	0.769	0.4418	0.7692	0.4418	12	64	1.645	NO
ANTHRACENE	505.0	2421.0	341	0.613	0.5402	0.6125	0.5402	12	64	1.645	NO
FLUORENE	508.0	2418.0	338	0.655	0.5123	0.6553	0.5123	12	64	1.645	NO
HMW PAHs	502.0	2424.0	344	0.570	0.5688	0.5698	0.5688	12	64	1.645	NO
Monitoring Station 06											
COPPER	710.0	2216.0	136	3.533	0.0004	3.5328	0.0004	12	64	1.645	YES
NICKEL	730.0	2196.0	116	3.818	0.0001	3.8177	0.0001	12	64	1.645	YES
ACENAPHTHYLENE	504.0	2422.0	342	0.598	0.5496	0.5983	0.5496	12	64	1.645	NO
ANTHRACENE	474.0	2452.0	372	0.171	0.8643	0.1709	0.8643	12	64	1.645	NO
FLUORENE	491.0	2435.0	355	0.413	0.6795	0.4131	0.6795	12	64	1.645	NO
HMW PAHs	492.0	2434.0	354	0.427	0.6691	0.4274	0.6691	12	64	1.645	NO

TABLE H - 3

COMPARISON OF CHEMICALS IN SEDIMENT AT EACH MONITORING STATION TO THE REFERENCE STATIONS
NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETERS	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations above Reference Stations?(1)
Monitoring Station 07											
COPPER	785.0	2141.0	61	4.601	0.0000	4.6012	0.0000	12	64	1.645	YES
NICKEL	702.0	2224.0	144	3.419	0.0006	3.4188	0.0006	12	64	1.645	YES
ACENAPHTHYLENE	440.0	2486.0	362	-0.313	0.7540	-0.3134	0.7540	12	64	1.645	NO
ANTHRACENE	447.0	2479.0	369	-0.214	0.8308	-0.2137	0.8308	12	64	1.645	NO
FLUORENE	476.0	2450.0	370	0.199	0.8419	0.1994	0.8419	12	64	1.645	NO
HMW PAHs	436.0	2490.0	358	-0.370	0.7111	-0.3704	0.7111	12	64	1.645	NO
Monitoring Station 08											
COPPER	846.0	2080.0	0	5.470	0.0000	5.4701	0.0000	12	64	1.645	YES
NICKEL	835.0	2091.0	11	5.313	0.0000	5.3134	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	654.0	2272.0	192	2.735	0.0062	2.7351	0.0062	12	64	1.645	YES
ANTHRACENE	656.0	2270.0	190	2.764	0.0057	2.7635	0.0057	12	64	1.645	YES
FLUORENE	622.0	2304.0	224	2.279	0.0227	2.2792	0.0227	12	64	1.645	YES
HMW PAHs	641.0	2285.0	205	2.550	0.0108	2.5499	0.0108	12	64	1.645	YES
Monitoring Station 09											
COPPER	846.0	2080.0	0	5.470	0.0000	5.4701	0.0000	12	64	1.645	YES
NICKEL	838.0	2088.0	8	5.356	0.0000	5.3561	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	331.0	2595.0	253	-1.866	0.0620	-1.8661	0.0620	12	64	1.645	NO
ANTHRACENE	442.0	2484.0	364	-0.285	0.7757	-0.2849	0.7757	12	64	1.645	NO
FLUORENE	467.0	2459.0	379	0.071	0.9432	0.0712	0.9432	12	64	1.645	NO
HMW PAHs	410.0	2516.0	332	-0.741	0.4589	-0.7407	0.4589	12	64	1.645	NO

TABLE H - 3

COMPARISON OF CHEMICALS IN SEDIMENT AT EACH MONITORING STATION TO THE REFERENCE STATIONS
NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETERS	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations above Reference Stations?(1)
Monitoring Station 10											
COPPER	799.0	2127.0	47	4.801	0.0000	4.8006	0.0000	12	64	1.645	YES
NICKEL	769.0	2157.0	77	4.373	0.0000	4.3732	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	569.0	2357.0	277	1.524	0.1275	1.5242	0.1275	12	64	1.645	NO
ANTHRACENE	627.0	2299.0	219	2.350	0.0188	2.3504	0.0188	12	64	1.645	YES
FLUORENE	596.0	2330.0	250	1.909	0.0563	1.9089	0.0563	12	64	1.645	YES
HMW PAHs	584.0	2342.0	262	1.738	0.0822	1.7379	0.0822	12	64	1.645	YES
Monitoring Station 11											
COPPER	335.0	2080.0	0	3.703	0.0002	3.7033	0.0002	5	64	1.645	YES
NICKEL	335.0	2080.0	0	3.703	0.0002	3.7033	0.0002	5	64	1.645	YES
ACENAPHTHYLENE	188.0	2227.0	147	0.301	0.7635	0.3009	0.7635	5	64	1.645	NO
ANTHRACENE	216.0	2199.0	119	0.949	0.3426	0.9490	0.3426	5	64	1.645	NO
FLUORENE	216.0	2199.0	119	0.949	0.3426	0.9490	0.3426	5	64	1.645	NO
HMW PAHs	198.0	2217.0	137	0.532	0.5945	0.5323	0.5945	5	64	1.645	NO
Monitoring Station 12											
COPPER	840.0	2086.0	6	5.385	0.0000	5.3846	0.0000	12	64	1.645	YES
NICKEL	812.0	2114.0	34	4.986	0.0000	4.9858	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	653.0	2273.0	193	2.721	0.0065	2.7208	0.0065	12	64	1.645	YES
ANTHRACENE	766.0	2160.0	80	4.331	0.0000	4.3305	0.0000	12	64	1.645	YES
FLUORENE	814.0	2112.0	32	5.014	0.0000	5.0143	0.0000	12	64	1.645	YES
HMW PAHs	777.0	2149.0	69	4.487	0.0000	4.4872	0.0000	12	64	1.645	YES

TABLE H - 3

COMPARISON OF CHEMICALS IN SEDIMENT AT EACH MONITORING STATION TO THE REFERENCE STATIONS
NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETERS	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations above Reference Stations?(1)
Monitoring Station 13											
COPPER	845.0	2081.0	1	5.456	0.0000	5.4559	0.0000	12	64	1.645	YES
NICKEL	796.0	2130.0	50	4.758	0.0000	4.7579	0.0000	12	64	1.645	YES
ACENAPHTHYLENE	641.0	2285.0	205	2.550	0.0108	2.5499	0.0108	12	64	1.645	YES
ANTHRACENE	701.0	2225.0	145	3.405	0.0007	3.4046	0.0007	12	64	1.645	YES
FLUORENE	697.0	2229.0	149	3.348	0.0008	3.3476	0.0008	12	64	1.645	YES
HMW PAHs	671.0	2255.0	175	2.977	0.0029	2.9772	0.0029	12	64	1.645	YES
Monitoring Station 14											
COPPER	803.0	2123.0	43	4.858	0.0000	4.8576	0.0000	12	64	1.645	YES
NICKEL	661.0	2265.0	185	2.835	0.0046	2.8348	0.0046	12	64	1.645	YES
ACENAPHTHYLENE	548.0	2378.0	298	1.225	0.2206	1.2251	0.2206	12	64	1.645	NO
ANTHRACENE	533.0	2393.0	313	1.011	0.3118	1.0114	0.3118	12	64	1.645	NO
FLUORENE	516.0	2410.0	330	0.769	0.4418	0.7692	0.4418	12	64	1.645	NO
HMW PAHs	498.0	2428.0	348	0.513	0.6081	0.5128	0.6081	12	64	1.645	NO

1 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples.

TABLE H - 4

COMPARISON OF CHEMICALS IN MUSSELS AT EACH MONITORING STATION TO THE REFERENCE STATIONS
PARAMETRIC AND NON-PARAMETRIC RESULTS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

PARAMETERS	Rank Sum Monitoring	Rank Sum Reference	U	Z	p-level	Z adjusted	p-level	Valid N Monitoring	Valid N Reference	Critical Z	Monitoring Stations Above Reference Stations?(1)	Monitoring Stations Above Reference Stations?(2)
Monitoring Station 01												
COPPER	149.5	630.5	113.5	-0.3652	0.7150	-0.3654	0.7148	8	31	1.645	NO	
NICKEL											ANOVA RESULTS	NO
ACENAPHTHYLENE	**223.5**	**556.5**	**60.5**	**2.2086**	**0.0272**	**2.2088**	**0.0272**	**8**	**31**	1.645	**YES**	
ANTHRACENE	199.5	580.5	84.5	1.3738	0.1695	1.3739	0.1695	8	31	1.645	NO	
FLUORENE	191	589	93	1.0782	0.2810	1.0786	0.2808	8	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS											**ANOVA RESULTS**	**YES**
Monitoring Station 02												
COPPER	278.5	624.5	128.5	1.2015	0.2296	1.2019	0.2294	11	31	1.645	NO	
NICKEL	258.5	644.5	148.5	0.6294	0.5291	0.6298	0.5288	11	31	1.645	NO	
ACENAPHTHYLENE	240.5	662.5	166.5	0.1144	0.9089	0.1144	0.9089	11	31	1.645	NO	
ANTHRACENE	260.5	642.5	146.5	0.6866	0.4924	0.6867	0.4923	11	31	1.645	NO	
FLUORENE	259.5	643.5	147.5	0.6580	0.5106	0.6581	0.5105	11	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS	262	641	145	0.7295	0.4657	0.7295	0.4657	11	31	1.645	NO	
Monitoring Station 03												
COPPER	**259**	**521**	**25**	**3.4433**	**0.0006**	**3.4438**	**0.0006**	**8**	**31**	1.645	**YES**	
NICKEL	**275**	**505**	**9**	**3.9997**	**0.0001**	**4.0024**	**0.0001**	**8**	**31**	1.645	**YES**	
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	184	596	100	0.8347	0.4039	0.8347	0.4039	8	31	1.645	NO	
FLUORENE	167	613	117	0.2435	0.8076	0.2435	0.8076	8	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS	179	601	105	0.6608	0.5087	0.6608	0.5087	8	31	1.645	NO	
Monitoring Station 04												
COPPER	**124.5**	**505.5**	**9.5**	**2.7220**	**0.0065**	**2.7228**	**0.0065**	**4**	**31**	1.645	**YES**	
NICKEL	**124.5**	**505.5**	**9.5**	**2.7220**	**0.0065**	**2.7247**	**0.0064**	**4**	**31**	1.645	**YES**	
ACENAPHTHYLENE	77	553	57	0.2592	0.7955	0.2593	0.7954	4	31	1.645	NO	
ANTHRACENE	71.5	558.5	61.5	-0.0259	0.9793	-0.0259	0.9793	4	31	1.645	NO	
FLUORENE											ANOVA RESULTS	NO
HIGH MOLECULAR WEIGHT PAHS											ANOVA RESULTS	NO
Monitoring Station 05												
COPPER	175.5	604.5	108.5	0.5391	0.5898	0.5392	0.5897	8	31	1.645	NO	
NICKEL	178	602	106	0.6260	0.5313	0.6269	0.5307	8	31	1.645	NO	
ACENAPHTHYLENE	144.5	635.5	108.5	-0.5391	0.5898	-0.5392	0.5898	8	31	1.645	NO	
ANTHRACENE											ANOVA RESULTS	NO
FLUORENE											ANOVA RESULTS	NO
HIGH MOLECULAR WEIGHT PAHS	131	649	95	-1.0086	0.3132	-1.0086	0.3132	8	31	1.645	NO	
Monitoring Station 06												
COPPER	228	718	150	-0.9748	0.3297	-0.9750	0.3296	12	31	1.645	NO	
NICKEL											ANOVA RESULTS	NO
ACENAPHTHYLENE	185.5	760.5	107.5	-2.1255	0.0336	-2.1257	0.0335	12	31	1.645	NO	
ANTHRACENE											**ANOVA RESULTS**	**YES**
FLUORENE	228.5	717.5	150.5	-0.9612	0.3365	-0.9614	0.3363	12	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS	197	749	119	-1.8141	0.0697	-1.8141	0.0697	12	31	1.645	NO	

TABLE H - 4

COMPARISON OF CHEMICALS IN MUSSELS AT EACH MONITORING STATION TO THE REFERENCE STATIONS
PARAMETRIC AND NON-PARAMETRIC RESULTS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

PARAMETERS	Rank Sum Monitoring	Rank Sum Reference	U	Z	p-level	Z adjusted	p-level	Valid N Monitoring	Valid N Reference	Critical Z	Monitoring Stations Above Reference Stations?(1)	Monitoring Stations Above Reference Stations?(2)
Monitoring Station 07												
COPPER	138	642	102	-0.7652	0.4442	-0.7654	0.4440	8	31	1.645	NO	
NICKEL											ANOVA RESULTS	NO
ACENAPHTHYLENE											**ANOVA RESULTS**	**YES**
ANTHRACENE											**ANOVA RESULTS**	**YES**
FLUORENE											ANOVA RESULTS	NO
HIGH MOLECULAR WEIGHT PAHS											ANOVA RESULTS	NO
Monitoring Station 08												
COPPER	302	644	148	1.0289	0.3035	1.0292	0.3034	12	31	1.645	NO	
NICKEL											**ANOVA RESULTS**	**YES**
ACENAPHTHYLENE	252.5	693.5	174.5	-0.3114	0.7555	-0.3114	0.7555	12	31	1.645	NO	
ANTHRACENE	268	678	182	0.1083	0.9138	0.1083	0.9138	12	31	1.645	NO	
FLUORENE	304	642	146	1.0831	0.2788	1.0836	0.2785	12	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS	302.5	643.5	147.5	1.0424	0.2972	1.0425	0.2972	12	31	1.645	NO	
Monitoring Station 09												
COPPER	200.5	579.5	83.5	1.4086	0.1590	1.4089	0.1589	8	31	1.645	NO	
NICKEL											**ANOVA RESULTS**	**YES**
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE											ANOVA RESULTS	NO
FLUORENE											ANOVA RESULTS	NO
HIGH MOLECULAR WEIGHT PAHS	191	589	93	1.0782	0.2810	1.0782	0.2810	8	31	1.645	NO	
Monitoring Station 10												
COPPER	292.5	653.5	157.5	0.7717	0.4403	0.7718	0.4402	12	31	1.645	NO	
NICKEL											ANOVA RESULTS	NO
ACENAPHTHYLENE	175	771	97	-2.4098	0.0160	-2.4100	0.0160	12	31	1.645	NO	
ANTHRACENE											ANOVA RESULTS	NO
FLUORENE	254.5	691.5	176.5	-0.2572	0.7970	-0.2573	0.7970	12	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS	205	741	127	-1.5975	0.1102	-1.5975	0.1102	12	31	1.645	NO	
Monitoring Station 11												
COPPER	**335.5**	**610.5**	**114.5**	**1.9360**	**0.0529**	**1.9369**	**0.0528**	**12**	**31**	1.645	**YES**	
NICKEL	260	686	182	-0.1083	0.9138	-0.1084	0.9137	12	31	1.645	NO	
ACENAPHTHYLENE	195.5	750.5	117.5	-1.8547	0.0636	-1.8549	0.0636	12	31	1.645	NO	
ANTHRACENE	196	750	118	-1.8412	0.0656	-1.8412	0.0656	12	31	1.645	NO	
FLUORENE	266	680	184	0.0542	0.9568	0.0542	0.9568	12	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS	178	768	100	-2.3286	0.0199	-2.3286	0.0199	12	31	1.645	NO	
Monitoring Station 12												
COPPER	184.5	595.5	99.5	0.8521	0.3942	0.8523	0.3941	8	31	1.645	NO	
NICKEL	176	604	108	0.5565	0.5779	0.5570	0.5775	8	31	1.645	NO	
ACENAPHTHYLENE	**269**	**511**	**15**	**3.7911**	**0.0002**	**3.7913**	**0.0002**	**8**	**31**	1.645	**YES**	
ANTHRACENE	**283**	**497**	**1**	**4.2780**	**0.0000**	**4.2780**	**0.0000**	**8**	**31**	1.645	**YES**	
FLUORENE	**283**	**497**	**1**	**4.2780**	**0.0000**	**4.2791**	**0.0000**	**8**	**31**	1.645	**YES**	
HIGH MOLECULAR WEIGHT PAHS	**284**	**496**	**0**	**4.3128**	**0.0000**	**4.3128**	**0.0000**	**8**	**31**	1.645	**YES**	

TABLE H - 4

COMPARISON OF CHEMICALS IN MUSSELS AT EACH MONITORING STATION TO THE REFERENCE STATIONS
PARAMETRIC AND NON-PARAMETRIC RESULTS
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PORTSMOUTH NAVAL SHIPYARD, KITTERY MAINE

PARAMETERS	Rank Sum Monitoring	Rank Sum Reference	U	Z	p-level	Z adjusted	p-level	Valid N Monitoring	Valid N Reference	Critical Z	Monitoring Stations Above Reference Stations?(1)	Monitoring Stations Above Reference Stations?(2)
Monitoring Station 13												
COPPER	198.5	581.5	85.5	1.3390	0.1806	1.3395	0.1804	8	31	1.645	NO	
NICKEL	145	635	109	-0.5217	0.6019	-0.5223	0.6015	8	31	1.645	NO	
ACENAPHTHYLENE	**252**	**528**	**32**	**3.1998**	**0.0014**	**3.2000**	**0.0014**	**8**	**31**	1.645	**YES**	
ANTHRACENE	**259**	**521**	**25**	**3.4433**	**0.0006**	**3.4433**	**0.0006**	**8**	**31**	1.645	**YES**	
FLUORENE	**271**	**509**	**13**	**3.8606**	**0.0001**	**3.8616**	**0.0001**	**8**	**31**	1.645	**YES**	
HIGH MOLECULAR WEIGHT PAHS	**264**	**516**	**20**	**3.6172**	**0.0003**	**3.6172**	**0.0003**	**8**	**31**	1.645	**YES**	
Monitoring Station 14												
COPPER	131	649	95	-1.0086	0.3132	-1.0090	0.3130	8	31	1.645	NO	
NICKEL	123.5	656.5	87.5	-1.2695	0.2043	-1.2712	0.2037	8	31	1.645	NO	
ACENAPHTHYLENE	131.5	648.5	95.5	-0.9912	0.3216	-0.9914	0.3215	8	31	1.645	NO	
ANTHRACENE											ANOVA RESULTS	NO
FLUORENE	169	611	115	0.3130	0.7543	0.3131	0.7542	8	31	1.645	NO	
HIGH MOLECULAR WEIGHT PAHS											ANOVA RESULTS	NO

1 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater then the chemical concentrations in the reference station samples based on the non-parametric ANOVA.

2 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples based on the parametric ANOVA (see Table H - 7).

TABLE H-5

SUMMARY OF SHAPIRO-WILK RESULTS FOR MUSSELS BY MONITORING STATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Monitoring Station Distribution	Reference Station Distribution	Non-Parametric ANOVA or Parametric ANOVA?	Levene Test Result	Non-Parametric ANOVA or Parametric ANOVA?
Monitoring Station 01					
COPPER	UNDEFINED	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	LOGNORMAL	LOGNORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
FLUORENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	FAIL	NON-PARAMETRIC
HMW PAHs	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
Monitoring Station 02					
COPPER	UNDEFINED	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	UNDEFINED	LOGNORMAL	NON-PARAMETRIC	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
FLUORENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 03					
COPPER	LOGNORMAL	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	UNDEFINED	LOGNORMAL	NON-PARAMETRIC	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ANTHRACENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
FLUORENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 04					
COPPER	LOGNORMAL	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	LOGNORMAL	LOGNORMAL	LEVENE TEST OF HOMOGENIETY	FAIL	NON-PARAMETRIC
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	UNDEFINED	NORMAL	NON-PARAMETRIC	---	---
FLUORENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
HMW PAHs	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
Monitoring Station 05					
COPPER	LOGNORMAL	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	NORMAL	LOGNORMAL	NON-PARAMETRIC	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
FLUORENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
HMW PAHs	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 06					
COPPER	UNDEFINED	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	LOGNORMAL	LOGNORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
FLUORENE	UNDEFINED	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 07					
COPPER	UNDEFINED	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	LOGNORMAL	LOGNORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ACENAPHTHYLENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ANTHRACENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
FLUORENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
HMW PAHs	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
Monitoring Station 08					
COPPER	LOGNORMAL	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	LOGNORMAL	LOGNORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
FLUORENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	UNDEFINED	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 09					
COPPER	UNDEFINED	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	LOGNORMAL	LOGNORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ACENAPHTHYLENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ANTHRACENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
FLUORENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
HMW PAHs	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 10					
COPPER	LOGNORMAL	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	LOGNORMAL	LOGNORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
ACENAPHTHYLENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	FAIL	NON-PARAMETRIC
ANTHRACENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
FLUORENE	UNDEFINED	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	UNDEFINED	NORMAL	NON-PARAMETRIC	---	---

TABLE H-5

SUMMARY OF SHAPIRO-WILK RESULTS FOR MUSSELS BY MONITORING STATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Monitoring Station Distribution	Reference Station Distribution	Non-Parametric ANOVA or Parametric ANOVA?	Levene Test Result	Non-Parametric ANOVA or Parametric ANOVA?
Monitoring Station 11					
COPPER	UNDEFINED	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	NORMAL	LOGNORMAL	NON-PARAMETRIC	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	FAIL	NON-PARAMETRIC
FLUORENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	FAIL	NON-PARAMETRIC
HMW PAHs	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	FAIL	NON-PARAMETRIC
Monitoring Station 12					
COPPER	LOGNORMAL	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	NORMAL	LOGNORMAL	NON-PARAMETRIC	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
FLUORENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 13					
COPPER	UNDEFINED	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	NORMAL	LOGNORMAL	NON-PARAMETRIC	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
FLUORENE	UNDEFINED	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
Monitoring Station 14					
COPPER	LOGNORMAL	UNDEFINED	NON-PARAMETRIC	---	---
NICKEL	UNDEFINED	LOGNORMAL	NON-PARAMETRIC	---	---
ACENAPHTHYLENE	UNDEFINED	NORMAL	NON-PARAMETRIC	---	---
ANTHRACENE	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC
FLUORENE	LOGNORMAL	NORMAL	NON-PARAMETRIC	---	---
HMW PAHs	NORMAL	NORMAL	LEVENE TEST OF HOMOGENIETY	PASS	PARAMETRIC

TABLE H-6

SUMMARY OF LEVENE'S TEST OF HOMOGENIETY FOR MUSSEL
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETERS	DISTRIBUTION	MS EFFECT	MS ERROR	F	p-level	CRITICAL	PASS OR FAIL?
Monitoring Station 01							
NICKEL	LOGNORMAL	0.0687	0.0328	2.0979	0.1559	0.05	PASS
FLUORENE	NORMAL	44.9999	7.3594	6.1146	0.0181	0.05	FAIL
HIGH MOLECULAR WEIGHT PAHS	NORMAL	1883.6484	991.8220	1.8992	0.1764	0.05	PASS
Monitoring Station 02							
NO TESTS CONDUCTED							
Monitoring Station 03							
ACENAPHTHYLENE	NORMAL	0.7573	7.8847	0.0960	0.7584	0.05	PASS
Monitoring Station 04							
NICKEL	LOGNORMAL	0.2176	0.0310	7.0286	0.0122	0.05	FAIL
FLUORENE	NORMAL	0.2087	6.2368	0.0335	0.8560	0.05	PASS
HIGH MOLECULAR WEIGHT PAHS	NORMAL	569.4941	577.1395	0.9868	0.3278	0.05	PASS
Monitoring Station 05							
ANTHRACENE	NORMAL	3.0085	42.8354	0.0702	0.7925	0.05	PASS
FLUORENE	NORMAL	0.9601	6.5909	0.1457	0.7049	0.05	PASS
Monitoring Station 06							
NICKEL	LOGNORMAL	0.0900	0.0304	2.9567	0.0931	0.05	PASS
ANTHRACENE	NORMAL	57.4409	38.0322	1.5103	0.2261	0.05	PASS
Monitoring Station 07							
NICKEL	LOGNORMAL	0.0900	0.0304	2.9567	0.0931	0.05	PASS
ACENAPHTHYLENE	NORMAL	15.9611	7.6452	2.0877	0.1561	0.05	PASS
ANTHRACENE	NORMAL	57.4409	38.0322	1.5103	0.2261	0.05	PASS
FLUORENE	NORMAL	1.2590	5.2857	0.2382	0.6281	0.05	PASS
HIGH MOLECULAR WEIGHT PAHS	NORMAL	371.0195	916.9679	0.4046	0.5283	0.05	PASS
Monitoring Station 08							
NICKEL	LOGNORMAL	0.0303	0.0364	0.8312	0.3673	0.05	PASS
Monitoring Station 09							
NICKEL	LOGNORMAL	0.0575	0.0872	0.6599	0.4218	0.05	PASS
ACENAPHTHYLENE	NORMAL	8.4632	9.5498	0.8862	0.3526	0.05	PASS
ANTHRACENE	NORMAL	117.2537	48.5799	2.4136	0.1288	0.05	PASS
FLUORENE	NORMAL	2.6851	6.1086	0.4396	0.5114	0.05	PASS
Monitoring Station 10							
NICKEL	LOGNORMAL	0.0345	0.0362	0.9540	0.3344	0.05	PASS
ACENAPHTHYLENE	NORMAL	30.3499	7.3767	4.1143	0.0491	0.05	FAIL
ANTHRACENE	NORMAL	82.8003	35.9850	2.3010	0.1370	0.05	PASS
Monitoring Station 11							
ANTHRACENE	NORMAL	170.5420	33.1798	5.1399	0.0287	0.05	FAIL
FLUORENE	NORMAL	26.4107	5.3461	4.9402	0.0318	0.05	FAIL
HIGH MOLECULAR WEIGHT PAHS	NORMAL	2172.6270	507.5681	4.2805	0.0449	0.05	FAIL
Monitoring Station 12							
NO TESTS CONDUCTED							
Monitoring Station 13							
NO TESTS CONDUCTED							
Monitoring Station 14							
ANTHRACENE	NORMAL	0.0234	43.0134	0.0005	0.9815	0.05	PASS
HIGH MOLECULAR WEIGHT PAHS	NORMAL	309.4980	629.5461	0.4916	0.4876	0.05	PASS

TABLE H - 7

COMPARISON OF CHEMICALS IN MUSSELS AT EACH MONITORING STATION TO THE REFERENCE STATIONS
PARAMETRIC RESULTS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETER	DF EFFECT	MS EFFECT	DF ERROR	MS ERROR	F	p-level	Critical Value	Monitoring Stations above Reference Stations?[1]
Monitoring Station 01								
NICKEL	1	0.0089	37	0.1511	0.0586	0.8101	0.05	NO
HIGH MOLECULAR WEIGHT PAHS	**1**	**33663.9258**	**37**	**2739.3044**	**12.2892**	**0.0012**	**0.05**	**YES**
Monitoring Station 02								
NO TESTS CONDUCTED								
Monitoring Station 03								
ACENAPHTHYLENE	1	3.1216	37	26.9602	0.1158	0.7356	0.05	NO
Monitoring Station 04								
FLUORENE	1	0.0007	33	22.0461	0.0000	0.9956	0.05	NO
HIGH MOLECULAR WEIGHT PAHS	1	160.6163	33	2128.9722	0.0754	0.7853	0.05	NO
Monitoring Station 05								
ANTHRACENE	1	15.2933	37	120.0296	0.1274	0.7232	0.05	NO
FLUORENE	1	5.7981	37	21.4601	0.2702	0.6063	0.05	NO
Monitoring Station 06								
NICKEL	1	0.1160	41	0.1436	0.8075	0.3741	0.05	NO
ANTHRACENE	**1**	**443.9168**	**41**	**101.5037**	**4.3734**	**0.0427**	**0.05**	**YES**
Monitoring Station 07								
NICKEL	1	0.1160	41	0.1436	0.8075	0.3741	0.05	NO
ACENAPHTHYLENE	**1**	**109.0378**	**41**	**24.3446**	**4.4789**	**0.0404**	**0.05**	**YES**
ANTHRACENE	**1**	**443.9168**	**41**	**101.5037**	**4.3734**	**0.0427**	**0.05**	**YES**
FLUORENE	1	19.7768	41	19.8755	0.9950	0.3244	0.05	NO
HIGH MOLECULAR WEIGHT PAHS	1	5234.1934	41	2473.8396	2.1158	0.1534	0.05	NO
Monitoring Station 08								
NICKEL	**1**	**1.2007**	**41**	**0.1565**	**7.6730**	**0.0084**	**0.05**	**YES**
Monitoring Station 09								
NICKEL	**1**	**2.7801**	**37**	**0.2356**	**11.7987**	**0.0015**	**0.05**	**YES**
ACENAPHTHYLENE	1	22.0138	37	31.6889	0.6947	0.4099	0.05	NO
ANTHRACENE	1	0.5059	37	142.7771	0.0035	0.9529	0.05	NO
FLUORENE	1	0.0202	37	20.6035	0.0010	0.9752	0.05	NO
Monitoring Station 10								
NICKEL	1	0.1986	41	0.1555	1.2768	0.2651	0.05	NO
ANTHRACENE	1	242.2451	41	97.7689	2.4777	0.1232	0.05	NO
Monitoring Station 11								
NO TESTS CONDUCTED								
Monitoring Station 12								
NO TESTS CONDUCTED								
Monitoring Station 13								
NO TESTS CONDUCTED								
Monitoring Station 14								
ANTHRACENE	1	7.0383	37	117.3824	0.0600	0.8079	0.05	NO
HIGH MOLECULAR WEIGHT PAHS	1	318.6944	37	1940.8037	0.1642	0.6876	0.05	NO

1 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater then the chemical concentrations in the reference station samples based on the parametric ANOVA (see table H-4).

TABLE H - 8

COMPARISON OF CHEMICALS IN JUVENILE LOBSTERS AT THE MONITORING AND REFERENCE STATIONS
PARAMETRIC AND NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations Above Reference Stations?(1)	Monitoring Stations Above Reference Stations?(2)
Monitoring Station 01												
COPPER	43.0	147.0	27	0.3000	0.7642	0.3000	0.7642	4	15	1.645	NO	NO
NICKEL	38.5	151.5	29	-0.1500	0.8808	-0.1501	0.8807	4	15	1.645	NO	NO
ACENAPHTHYLENE	48.0	142.0	22	0.8000	0.4237	0.8000	0.4237	4	15	1.645	NO	NO
ANTHRACENE	46.0	144.0	24	0.6000	0.5485	0.6000	0.5485	4	15	1.645	NO	NO
FLUORENE	39.0	151.0	29	-0.1000	0.9203	-0.1000	0.9203	4	15	1.645	NO	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 02												
COPPER											ANOVA RESULTS	NO
NICKEL	39.0	151.0	29	-0.1000	0.9203	-0.1000	0.9203	4	15	1.645	NO	NO
ACENAPHTHYLENE	39.0	151.0	29	-0.1000	0.9203	-0.1000	0.9203	4	15	1.645	NO	NO
ANTHRACENE	49.0	141.0	21	0.9000	0.3681	0.9000	0.3681	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 03												
COPPER	40.5	149.5	30	0.0500	0.9601	0.0500	0.9601	4	15	1.645	NO	NO
NICKEL	39.0	151.0	29	-0.1000	0.9203	-0.1000	0.9203	4	15	1.645	NO	NO
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	45.0	145.0	25	0.5000	0.6171	0.5000	0.6171	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs	37.0	153.0	27	-0.3000	0.7642	-0.3000	0.7642	4	15	1.645	NO	NO
Monitoring Station 04												
COPPER	26.0	164.0	16	-1.4000	0.1615	-1.4000	0.1615	4	15	1.645	NO	NO
NICKEL	38.5	151.5	29	-0.1500	0.8808	-0.1501	0.8807	4	15	1.645	NO	NO
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	52.0	138.0	18	1.2000	0.2301	1.2000	0.2301	4	15	1.645	NO	NO
FLUORENE	38.0	152.0	28	-0.2000	0.8415	-0.2000	0.8415	4	15	1.645	NO	NO
HMW PAHs	38.0	152.0	28	-0.2000	0.8415	-0.2000	0.8415	4	15	1.645	NO	NO
Monitoring Station 05												
COPPER	42.0	148.0	28	0.2000	0.8415	0.2000	0.8415	4	15	1.645	NO	NO
NICKEL	38.0	152.0	28	-0.2000	0.8415	-0.2001	0.8414	4	15	1.645	NO	NO
ACENAPHTHYLENE	34.0	156.0	24	-0.6000	0.5485	-0.6000	0.5485	4	15	1.645	NO	NO
ANTHRACENE	43.0	147.0	27	0.3000	0.7642	0.3000	0.7642	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 06												

TABLE H - 8

COMPARISON OF CHEMICALS IN JUVENILE LOBSTERS AT THE MONITORING AND REFERENCE STATIONS
PARAMETRIC AND NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations Above Reference Stations?(1)	Monitoring Stations Above Reference Stations?(2)
COPPER	33.0	157.0	23	-0.7000	0.4839	-0.7000	0.4839	4	15	1.645	NO	NO
NICKEL	39.5	150.5	30	-0.0500	0.9601	-0.0500	0.9601	4	15	1.645	NO	NO
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	46.0	144.0	24	0.6000	0.5485	0.6000	0.5485	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 07												
COPPER	34.0	156.0	24	-0.6000	0.5485	-0.6000	0.5485	4	15	1.645	NO	NO
NICKEL	37.0	153.0	27	-0.3000	0.7642	-0.3004	0.7639	4	15	1.645	NO	NO
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	33.0	157.0	23	-0.7000	0.4839	-0.7000	0.4839	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 08												
COPPER											ANOVA RESULTS	NO
NICKEL	38.0	152.0	28	-0.2000	0.8415	-0.2001	0.8414	4	15	1.645	NO	NO
ACENAPHTHYLENE	40.0	150.0	30	0.0000	1.0000	0.0000	1.0000	4	15	1.645	NO	NO
ANTHRACENE	43.0	147.0	27	0.3000	0.7642	0.3000	0.7642	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 09												
COPPER											ANOVA RESULTS	NO
NICKEL	37.5	152.5	28	-0.2500	0.8026	-0.2502	0.8024	4	15	1.645	NO	NO
ACENAPHTHYLENE	38.0	152.0	28	-0.2000	0.8415	-0.2000	0.8415	4	15	1.645	NO	NO
ANTHRACENE	53.0	137.0	17	1.3000	0.1936	1.3000	0.1936	4	15	1.645	NO	NO
FLUORENE	46.0	144.0	24	0.6000	0.5485	0.6000	0.5485	4	15	1.645	NO	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 10												
COPPER											ANOVA RESULTS	NO
NICKEL	34.0	156.0	24	-0.6000	0.5485	-0.6003	0.5483	4	15	1.645	NO	NO
ACENAPHTHYLENE	26.0	164.0	16	-1.4000	0.1615	-1.4000	0.1615	4	15	1.645	NO	NO
ANTHRACENE	48.0	142.0	22	0.8000	0.4237	0.8000	0.4237	4	15	1.645	NO	NO
FLUORENE	39.0	151.0	29	-0.1000	0.9203	-0.1000	0.9203	4	15	1.645	NO	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 11												
COPPER	39.0	151.0	29	-0.1000	0.9203	-0.1000	0.9203	4	15	1.645	NO	NO

TABLE H - 8

COMPARISON OF CHEMICALS IN JUVENILE LOBSTERS AT THE MONITORING AND REFERENCE STATIONS
PARAMETRIC AND NON-PARAMETRIC ANOVA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Rank Sum Reference	Rank Sum Monitoring	U	Z	p-level	adjusted	p-level	Valid N Reference	Valid N Monitoring	Critical Z	Monitoring Stations Above Reference Stations?(1)	Monitoring Stations Above Reference Stations?(2)
NICKEL	44.0	146.0	26	0.4000	0.6892	0.4007	0.6886	4	15	1.645	NO	NO
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	49.0	141.0	21	0.9000	0.3681	0.9000	0.3681	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs	44.0	146.0	26	0.4000	0.6892	0.4000	0.6892	4	15	1.645	NO	NO
Monitoring Station 12												
COPPER											ANOVA RESULTS	NO
NICKEL	41.5	148.5	29	0.1500	0.8808	0.1501	0.8807	4	15	1.645	NO	NO
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	49.0	141.0	21	0.9000	0.3681	0.9000	0.3681	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs											ANOVA RESULTS	NO
Monitoring Station 13												
COPPER	40.0	150.0	30	0.0000	1.0000	0.0000	1.0000	4	15	1.645	NO	NO
NICKEL	38.5	151.5	29	-0.1500	0.8808	-0.1501	0.8807	4	15	1.645	NO	NO
ACENAPHTHYLENE											ANOVA RESULTS	NO
ANTHRACENE	65.0	125.0	5	2.5000	0.0124	2.5000	0.0124	4	15	1.645	NO	NO
FLUORENE	59.0	131.0	11	1.9000	0.0574	1.9000	0.0574	4	15	1.645	NO	NO
HMW PAHs	64.0	126.0	6	2.4000	0.0164	2.4000	0.0164	4	15	1.645	NO	NO
Monitoring Station 14												
COPPER											ANOVA RESULTS	NO
NICKEL	33.5	156.5	24	-0.6500	0.5157	-0.6506	0.5153	4	15	1.645	NO	NO
ACENAPHTHYLENE	36.0	154.0	26	-0.4000	0.6892	-0.4000	0.6892	4	15	1.645	NO	NO
ANTHRACENE	49.0	141.0	21	0.9000	0.3681	0.9000	0.3681	4	15	1.645	NO	NO
FLUORENE											ANOVA RESULTS	NO
HMW PAHs	39.0	151.0	29	-0.1000	0.9203	-0.1000	0.9203	4	15	1.645	NO	NO

1 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples based on the non-parametric ANOVA.

2 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples based on the parametric ANOVA (see Table H - 11).

TABLE H - 9

SUMMARY OF SHAPIRO-WILK RESULTS FOR JUVENILE LOBSTER BY MONITORING STATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Monitoring Station Distribution	Reference Station Distribution	Non-Parametric ANOVA or Parametric ANOVA?	Levene Test Result	Non-Parametric ANOVA or Parametric ANOVA?
Monitoring Station 01					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	Non-Parametric	---	---
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Fail	Non Parametric ANOVA
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
Monitoring Station 02					
COPPER	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
NICKEL	NORMAL	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	Non-Parametric	---	---
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
Monitoring Station 03					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
NICKEL	NORMAL	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	NORMAL	LOGNORMAL	Non-Parametric	---	---
Monitoring Station 04					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	NORMAL	LOGNORMAL	Non-Parametric	---	---
HMW PAHs	NORMAL	LOGNORMAL	Non-Parametric	---	---
Monitoring Station 05					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
NICKEL	NORMAL	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	Non-Parametric	---	---
ANTHRACENE	NORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA

TABLE H - 9

SUMMARY OF SHAPIRO-WILK RESULTS FOR JUVENILE LOBSTER BY MONITORING STATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Monitoring Station Distribution	Reference Station Distribution	Non-Parametric ANOVA or Parametric ANOVA?	Levene Test Result	Non-Parametric ANOVA or Parametric ANOVA?
Monitoring Station 06					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
NICKEL	NORMAL	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
Monitoring Station 07					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
Monitoring Station 08					
COPPER	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
NICKEL	NORMAL	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	LOGNORMAL	NORMAL	Non-Parametric	---	---
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
Monitoring Station 09					
COPPER	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ACENAPHTHYLENE	LOGNORMAL	NORMAL	Non-Parametric	---	---
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	NORMAL	LOGNORMAL	Non-Parametric	---	---
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
Monitoring Station 10					
COPPER	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ACENAPHTHYLENE	LOGNORMAL	NORMAL	Non-Parametric	---	---
ANTHRACENE	NORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	NORMAL	LOGNORMAL	Non-Parametric	---	---
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA

TABLE H - 9

SUMMARY OF SHAPIRO-WILK RESULTS FOR JUVENILE LOBSTER BY MONITORING STATION
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Monitoring Station Distribution	Reference Station Distribution	Non-Parametric ANOVA or Parametric ANOVA?	Levene Test Result	Non-Parametric ANOVA or Parametric ANOVA?
Monitoring Station 11					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
NICKEL	UNDEFINED	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ANTHRACENE	NORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	NORMAL	LOGNORMAL	Non-Parametric	---	---
Monitoring Station 12					
COPPER	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
NICKEL	UNDEFINED	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
Monitoring Station 13					
COPPER	LOGNORMAL	NORMAL	Non-Parametric	---	---
NICKEL	NORMAL	UNDEFINED	Non-Parametric	---	---
ACENAPHTHYLENE	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ANTHRACENE	NORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	NORMAL	LOGNORMAL	Non-Parametric	---	---
HMW PAHs	NORMAL	LOGNORMAL	Non-Parametric	---	---
Monitoring Station 14					
COPPER	NORMAL	NORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
ACENAPHTHYLENE	LOGNORMAL	NORMAL	Non-Parametric	---	---
ANTHRACENE	LOGNORMAL	UNDEFINED	Non-Parametric	---	---
FLUORENE	LOGNORMAL	LOGNORMAL	Levene Test of Homogeniety	Pass	Parametric ANOVA
HMW PAHs	NORMAL	LOGNORMAL	Non-Parametric	---	---

TABLE H - 10

SUMMARY OF LEVENE'S TEST OF HOMOGENIETY FOR JUVENILE LOBSTER
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Distribution	MS Effect	MS Error	F	p-level	Critical	Pass or Fail
Monitoring Station 01							
Fluorene	Lognormal	0.6456	0.0800	8.0706	0.0113	0.05	Fail
HMW PAHs	Lognormal	0.1552	0.2628	0.5907	0.4527	0.05	Pass
Monitoring Station 02							
Copper	Normal	15.9536	64.5155	0.2473	0.6254	0.05	Pass
Fluorene	Lognormal	0.2407	0.0605	3.9763	0.0624	0.05	Pass
HMW PAHs	Lognormal	0.0375	0.2827	0.1325	0.7203	0.05	Pass
Monitoring Station 03							
Acenaphthylene	Normal	0.0002	0.0095	0.0226	0.8824	0.05	Pass
Fluorene	Lognormal	0.0347	0.0639	0.5426	0.4714	0.05	Pass
Monitoring Station 04							
Acenaphthylene	Normal	0.0051	0.0087	0.5933	0.4517	0.05	Pass
Monitoring Station 05							
Fluorene	Lognormal	0.0047	0.0594	0.0784	0.7828	0.05	Pass
HMW PAHs	Lognormal	0.0050	0.2346	0.0213	0.8857	0.05	Pass
Monitoring Station 06							
Acenaphthylene	Normal	0.0011	0.0106	0.1065	0.7481	0.05	Pass
Fluorene	Lognormal	0.0047	0.0594	0.0784	0.7828	0.05	Pass
HMW PAHs	Lognormal	0.0050	0.2346	0.0213	0.8857	0.05	Pass
Monitoring Station 07							
Acenaphthylene	Normal	0.0159	0.0071	2.2397	0.1528	0.05	Pass
Fluorene	Lognormal	0.0043	0.0524	0.0825	0.7774	0.05	Pass
HMW PAHs	Lognormal	0.4911	0.2281	2.1534	0.1605	0.05	Pass
Monitoring Station 08							
Copper	Normal	63.3049	71.4228	0.8863	0.3597	0.05	Pass
Fluorene	Lognormal	0.0049	0.0541	0.0913	0.7661	0.05	Pass
HMW PAHs	Lognormal	0.3647	0.2361	1.5445	0.2308	0.05	Pass
Monitoring Station 09							
Copper	Normal	32.2898	62.3378	0.5180	0.4815	0.05	Pass
HMW PAHs	Lognormal	0.5447	0.2415	2.2552	0.1515	0.05	Pass
Monitoring Station 10							
Copper	Normal	71.1800	59.7968	1.1904	0.2905	0.05	Pass
HMW PAHs	Lognormal	0.1174	0.2606	0.4505	0.5111	0.05	Pass
Monitoring Station 11							
Acenaphthylene	Normal	0.0209	0.0070	2.9621	0.1034	0.05	Pass
Fluorene	Lognormal	0.0009	0.0501	0.0186	0.8931	0.05	Pass
Monitoring Station 12							
Copper	Normal	43.8728	72.4111	0.6059	0.4470	0.05	Pass
Acenaphthylene	Normal	0.0092	0.0090	1.0238	0.3258	0.05	Pass
Fluorene	Lognormal	0.0109	0.0568	0.1914	0.6672	0.05	Pass
HMW PAHs	Lognormal	0.0028	0.2402	0.0119	0.9146	0.05	Pass
Monitoring Station 13							
Acenaphthylene	Normal	0.0395	0.0097	4.0821	0.0594	0.05	Pass
Monitoring Station 14							
Copper	Normal	35.9207	59.6911	0.6018	0.4486	0.05	Pass
Fluorene	Lognormal	0.1086	0.0736	1.4750	0.2412	0.05	Pass

TABLE H- 11

COMMPARISON OF CHEMICALS IN JUVENILE LOBSTERS AT MONITORING STATIONS TO THE REFERENCE STATIONS
PARAMETRIC ANOVA RESULTS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Distribution	df Effect	MS Effect	df Error	MS Error	F	p-level	Critical Value	Monitoring Station Mean	Reference Station Mean	Monitoring Stations above Reference Stations?[1]
Monitoring Station 01											
HMW PAH	Lognormal	1	0.02	17	0.93	0.02	0.89	0.1	---	---	NO
Monitoring Station 02											
Copper	Normal	1	1.75	17	149.07	0.01	0.91	0.1	---	---	NO
Fluorene	Lognormal	1	0.07	17	0.28	0.24	0.63	0.1	---	---	NO
HMW	Lognormal	1	0.16	17	0.90	0.18	0.68	0.1	---	---	NO
Monitoring Station 03											
Acenaphthylene	Normal	1	0.00	17	0.03	0.00	0.97	0.1	---	---	NO
Fluorene	Lognormal	1	0.06	17	0.24	0.25	0.62	0.1	---	---	NO
Monitoring Station 04											
Acenaphthylene	Normal	1	0.00	17	0.03	0.14	0.71	0.1	---	---	NO
Monitoring Station 05											
Fluorene	Lognormal	1	0.05	17	0.21	0.25	0.62	0.1	---	---	NO
HMW PAH	Lognormal	1	1.72	17	0.74	2.31	0.15	0.1	---	---	NO
Monitoring Station 06											
Acenaphthylene	Normal	1	0.00	17	0.04	0.00	0.95	0.1	---	---	NO
Fluorene	Lognormal	1	0.07	17	0.21	0.36	0.56	0.1	---	---	NO
HMW PAH	Lognormal	1	1.02	17	0.80	1.27	0.28	0.1	---	---	NO
Monitoring Station 07											
Acenaphthylene	Normal	1	0.02	17	0.03	0.75	0.40	0.1	---	---	NO
Fluorene	Lognormal	1	0.40	17	0.20	1.99	0.18	0.1	---	---	NO
HMW PAH	Lognormal	1	0.72	17	0.71	1.01	0.33	0.1	---	---	NO
Monitoring Station 08											
Copper	Normal	1	60.31	17	188.37	0.32	0.58	0.1	---	---	NO
Fluorene	Lognormal	1	0.01	17	0.20	0.07	0.80	0.1	---	---	NO
HMW PAH	Lognormal	1	0.00	17	0.73	0.00	0.96	0.1	---	---	NO

TABLE H- 11

COMMPARISON OF CHEMICALS IN JUVENILE LOBSTERS AT MONITORING STATIONS TO THE REFERENCE STATIONS
PARAMETRIC ANOVA RESULTS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Distribution	df Effect	MS Effect	df Error	MS Error	F	p-level	Critical Value	Monitoring Station Mean	Reference Station Mean	Monitoring Stations above Reference Stations?(1)
Monitoring Station 09											
Copper	Normal	1	318.64	17	144.03	2.21	0.16	0.1	---	---	NO
HMW PAH	Lognormal	1	0.03	17	0.72	0.05	0.83	0.1	---	---	NO
Monitoring Station 10											
Copper	Normal	1	467.71	17	137.73	3.40	0.08	0.1	33.45	45.62	NO
HMW PAH	Lognormal	1	0.32	17	0.78	0.41	0.53	0.1	---	---	NO
Monitoring Station 11											
Acenaphthylene	Normal	1	0.03	17	0.03	1.11	0.31	0.1	---	---	NO
Fluorene	Lognormal	1	0.02	17	0.21	0.09	0.76	0.1	---	---	NO
Monitoring Station 12											
Copper	Normal	1	53.60	17	184.70	0.29	0.60	0.1	---	---	NO
Acenaphthylene	Normal	1	0.01	17	0.04	0.23	0.64	0.1	---	---	NO
Fluorene	Lognormal	1	0.57	17	0.22	2.56	0.13	0.1	---	---	NO
HMW PAH	Lognormal	1	0.08	17	0.83	0.10	0.75	0.1	---	---	NO
Monitoring Station 13											
Acenaphthylene	Normal	1	0.04	17	0.05	0.84	0.37	0.1	---	---	NO
Monitoring Station 14											
Copper	Normal	1	106.97	17	140.90	0.76	0.40	0.1	---	---	NO
Fluorene	Lognormal	1	0.02	17	0.27	0.09	0.77	0.1	---	---	NO

1 - The result in this column indicates if the chemical concentrations in the monitoring station samples are statistically greater than the chemical concentrations in the reference station samples based on the parametric ANOVA (see Table H-8).

APPENDIX I

AVS AND SEM TABLES

TABLE I - 1

SUMMARY OF AVS CONCENTRATIONS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Round 1 AVS Concentration		Round 2 AVS Concentration		Round 3 AVS Concentration		Round 4 AVS Concentration	
Sample Number	0-10 cm (umol/g)	0-2 cm (umol/g)	0-10 cm (umol/g)	0-2 cm (umol/g)	0-10 cm (umol/g)	0-2 cm (umol/g)	0-10 cm (umol/g)	0-2 cm (umol/g)
Monitoring Stations								
OU4-SD-M01-1	31.5	1.8	24.5	1.2	8.0	0.3	5.9	9.3
OU4-SD-M01-2	0.039	0.037	0.003	0.007	0.009	0.003	0.016	7.3
OU4-SD-M01-3	57.1	11.6	35.6	14.8	7.8	8.2	8.4	10.5
OU4-SD-M02-1	51.2	10.9	27.1	30.5	3.7	2.4	11.3	10.2
OU4-SD-M02-2	2.2	1.2	2.0	13.4	2.8	4.5	1.5	11.5
OU4-SD-M02-3	20.3	17.6	1.9	0.018	0.2	0.1	0.6	0.2
OU4-SD-M03-1	42.5	41.5	52.1	66.7	7.8	11.5	14.4	14.9
OU4-SD-M03-2	39.0	10.7	18.3	30.7	2.2	6.1	9.6	15.8
OU4-SD-M03-3	18.4	9.7	18.8	19.8	3.9	0.1	13.0	6.1
OU4-SD-M04-1	24.5	24.0	7.0	1.3	0.08	3.7	0.012	0.002
OU4-SD-M04-2	24.6	3.2	11.3	12.6	0.3	2.6	16.5	12.9
OU4-SD-M04-3	0.025	0.027	0.002	0.022	0.123	0.074	0.044	0.048
OU4-SD-M05-1	48.6	36.8	57.7	24.2	8.1	10.2	20.1	38.6
OU4-SD-M05-2	64.0	72.1	51.8	64.6	9.0	12.0	14.0	18.9
OU4-SD-M05-3	3.0	4.5	1.5	3.1	4.6	0.2	0.9	1.8
OU4-SD-M06-1	4.1	6.9	3.0	7.0	0.7	1.4	12.0	1.6
OU4-SD-M06-2	29.0	37.5	36.8	13.0	11.0	11.8	26.2	4.3
OU4-SD-M06-3	2.1	2.1	0.013	0.79	0.13	0.02	0.19	0.84
OU4-SD-M07-1	9.9	11.1	9.5	16.0	5.6	4.8	8.9	8.7
OU4-SD-M07-2	35.0	26.8	36.5	15.8	9.5	2.3	15.6	20.3
OU4-SD-M07-3	28.6	37.2	37.7	6.0	7.9	7.8	12.0	3.5
OU4-SD-M08-1	15.7	0.2	18.7	13.6	6.4	5.9	7.3	9.2
OU4-SD-M08-2	36.7	2.4	37.4	15.8	8.0	8.6	11.1	14.9
OU4-SD-M08-3	0.03	0.06	0.02	0.16	0.08	0.09	0.32	0.08
OU4-SD-M09-1	0.5	5.9	0.007	0.033	0.016	0.077	0.013	0.011
OU4-SD-M09-2	15.4	4.0	2.1	1.1	7.5	4.2	11.8	10.0
OU4-SD-M09-3	65.8	58.5	48.0	15.4	9.8	10.5	10.7	21.5
OU4-SD-M10-1	0.041	0.042	0.5	0.9	4.3	1.6	7.9	5.3
OU4-SD-M10-2	42.5	31.3	28.9	14.1	6.1	7.6	2.0	4.1
OU4-SD-M10-3	74.6	90.0	99.5	41.5	8.0	11.7	14.3	20.1
OU4-SD-M11-2	0.037							
OU4-SD-M11-3	0.2	0.5	7.6	0.018	0.007	0.004	0.8	4.3
OU4-SD-M12-1	31.6	6.2	8.6	8.2	6.3	6.1	11.4	6.9
OU4-SD-M12-2	13.2	6.4	2.1	2.9	7.8	7.2	9.3	10.9
OU4-SD-M12-3	40.5	38.0	58.6	8.6	8.5	9.3	7.6	11.8
OU4-SD-M13-1	113.1	109.0	111.4	54.0	10.8	14.1	10.9	20.1
OU4-SD-M13-2	110.6	61.6	95.8	17.7	9.6	10.1	10.9	15.7
OU4-SD-M13-3	140.8	146.8	175.3	92.0	4.8	12.3	12.9	22.3
OU4-SD-M14-1	6.1	15.8	2.1	2.7	0.4	0.1	2.5	16.3
OU4-SD-M14-2	20.8	31.1	16.6	6.6	6.2	7.0	7.2	8.8
OU4-SD-M14-3	72.2	11.3	27.7	19.0	7.3	8.7	12.2	18.5
Reference Stations								
OU4-SD-R01-1	8.4	7.0	3.1	7.1	0.47	0.24	5.0	0.9
OU4-SD-R01-2	4.2	3.8	1.5	0.1	0.36	0.03	2.7	1.2
OU4-SD-R01-3	6.8	0.5	1.6	0.9	0.03	0.14	0.3	0.09
OU4-SD-R01-4	12.2	4.1	4.9	1.0	4.3	0.2	8.0	1.2
OU4-SD-R02-1	3.4	2.6	0.6	0.5	0.07	0.01	0.14	0.03
OU4-SD-R02-2	11.2	4.7	8.6	3.0	1.94	0.09	7.87	1.09
OU4-SD-R02-3	23.5	11.8	4.5	6.1	9.4	0.4	2.1	1.1
OU4-SD-R02-4	35.2	6.6	8.7	3.0	1.2	4.0	11.7	2.6
OU4-SD-R03-1	2.6	6.1	0.4	4.7	0.0	0.2	0.5	1.7
OU4-SD-R03-2	24.1	7.6	12.6	10.8	5.6	6.8	9.7	10.2
OU4-SD-R03-3	25.8	8.5	12.9	5.2	8.1	4.9	10.1	7.7
OU4-SD-R03-4	10.9	2.3	1.7	1.5	3.4	5.1	6.6	2.8
OU4-SD-R04-1	1.6	0.4	0.0	0.2	4.0	0.013	1.6	0.1
OU4-SD-R04-2	3.4	0.4	3.4	0.5	0.8	1.5	5.6	0.6
OU4-SD-R04-3	3.3	2.2	4.0	4.7	0.3	3.7	4.4	0.4
OU4-SD-R04-4	2.2	0.9	6.5	2.7	0.085	0.032	0.306	1.0

Notes:
AVS - Acid Volatile Sulfides
Duplicates were averaged on this table

TABLE I - 2

TOTAL AVS VALUES FOR 1996-1997 SEDIMENT DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Total AVS Concentration (umol/g)							
	Sampled 12/96		Sampled 04/97		Sampled 08/97		Sampled 11/97	
Sample Number	Replicate #1	Replicate #2	Replicate #1	Replicate #2	Replicate #1	Replicate #2	Replicate #1	Replicate #2
BC-1005-SD	22.92	24.85	12.73	9.96	25.17	24.60	5.67	6.09
BC-1006-SD	6.08	5.58	17.03	18.37	45.85	55.19	3.47	3.48
BC-1012-SD	25.88	27.34	39.79	42.64	37.45	40.25	5.05	5.52
BC-1016-SD	5.19	4.70	3.15	3.34	4.30	4.65	5.99	5.33
BC-1017-SD	36.21	23.97	51.79	52.09	6.36	5.94	4.58	4.68
BC-1018-SD	11.88	11.21	104.80	106.38	19.68	20.80	86.38	88.29
BC-1020-SD	13.23	13.68	0.51	0.56	16.30	17.59	15.49	16.64
C-1004.3-SD	4.36	4.11	27.29	26.95	6.30	7.24	8.61	8.47
C-1004.5-SD	2.88	3.08	7.05	6.83	3.83	3.84	7.37	6.94
CC-1011-SD	8.83	9.00	12.75	13.93	1.60	1.95	8.96	8.76
SP-1001-SD	0.76	0.88	0.59	0.70	0.05	0.08	6.65	6.81
SP-1002-SD	0.05	0.05	0.90	1.00	0.92	0.95	0.05	0.10
SP-1003-SD	21.88	21.87	17.31	15.57	0.05	0.05	13.34	16.48

- 2 replicates of the same sample were analyzed
Source of data is Seep/Sediment Summary Report (TtNUS, May 2000)

	Total AVS Concentration (umol/g)[1]			
Sample Number	Sampled 12/96	Sampled 04/97	Sampled 08/97	Sampled 11/97
BC-1005-SD	23.89	11.35	24.89	5.88
BC-1006-SD	5.83	17.70	50.52	3.48
BC-1012-SD	26.61	41.22	38.85	5.29
BC-1016-SD	4.95	3.25	4.48	5.66
BC-1017-SD	30.09	51.94	6.15	4.63
BC-1018-SD	11.55	105.59	20.24	87.34
BC-1020-SD	13.46	0.54	16.94	16.07
C-1004.3-SD	4.24	27.12	6.77	8.54
C-1004.5-SD	2.98	6.94	3.84	7.16
CC-1011-SD	8.92	13.34	1.77	8.86
SP-1001-SD	0.82	0.65	0.06	6.73
SP-1002-SD	0.05	0.95	0.94	0.08
SP-1003-SD	21.87	16.44	0.05	14.91

1 - The values from the replicates in the above table were averaged in this table and used to create Figure 6-2
Source of data is Seep/Sediment Summary Report (TtNUS, May 2000)

TABLE I - 3

SUMMARY OF SEM CONCENTRATIONS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round 1 Total SEM Concentration (umol/g)	Round 2 Total SEM Concentration (umol/g)	Round 3 Total SEM Concentration (umol/g)	Round 4 Total SEM Concentration (umol/g)
Monitoring Stations				
OU4-SD-M01-1	0.92	0.58	1.5	1.6
OU4-SD-M01-2	1.3	1.2	0.98	1.9
OU4-SD-M01-3	0.75	1.3	1.3	2.1
OU4-SD-M02-1	1.2	1.1	0.86	2.3
OU4-SD-M02-2	0.63	0.56	1.3	1.6
OU4-SD-M02-3	1.5	0.86	2.0	1.5
OU4-SD-M03-1	1.8	1.8	2.8	4.6
OU4-SD-M03-2	3.7	2.5	14	12
OU4-SD-M03-3	1.7	0.80	0.87	1.4
OU4-SD-M04-1	3.9	6.5	168	52
OU4-SD-M04-2	0.60	0.38	1.0	1.5
OU4-SD-M04-3	1.6	1.2	7.1	2.1
OU4-SD-M05-1	2.0	0.93	2.2	2.6
OU4-SD-M05-2	1.0	0.64	1.3	1.7
OU4-SD-M05-3	0.85	0.35	0.67	0.78
OU4-SD-M06-1	0.60	0.18	0.77	2.1
OU4-SD-M06-2	0.78	0.55	1.0	1.9
OU4-SD-M06-3	0.17	0.18	0.25	0.65
OU4-SD-M07-1	0.44	0.29	0.92	1.3
OU4-SD-M07-2	0.85	0.23	1.4	2.0
OU4-SD-M07-3	0.87	0.55	0.99	2.2
OU4-SD-M08-1	6.1	1.7	9.3	16
OU4-SD-M08-2	1.3	0.94	1.8	3.9
OU4-SD-M08-3	7.9	5.0	11	19
OU4-SD-M09-1	2.0	1.6	3.2	2.4
OU4-SD-M09-2	3.1	1.6	2.0	1.6
OU4-SD-M09-3	1.7	0.67	2.6	1.7
OU4-SD-M10-1	0.78	0.44	0.94	0.78
OU4-SD-M10-2	0.43	0.34	1.9	1.2
OU4-SD-M10-3	1.1	0.84	2.8	1.5
OU4-SD-M11-2	128			
OU4-SD-M11-3	5.2	5.2	4.9	38
OU4-SD-M12-1	3.2	1.2	8.3	25
OU4-SD-M12-2	0.46	0.86	5.7	3.8
OU4-SD-M12-3	1.5	1.9	1.2	3.6
OU4-SD-M13-1	1.0	1.4	1.4	1.0
OU4-SD-M13-2	1.4	1.2	1.8	1.2
OU4-SD-M13-3	1.3	2.1	2.8	1.3
OU4-SD-M14-1	1.1	0.61	0.34	1.1
OU4-SD-M14-2	0.84	0.75	0.47	1.0
OU4-SD-M14-3	1.1	0.69	0.62	1.2

TABLE I - 3

SUMMARY OF SEM CONCENTRATIONS FOR ROUNDS 1 THROUGH 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 2

Sample Number	Round 1 Total SEM Concentration (umol/g)	Round 2 Total SEM Concentration (umol/g)	Round 3 Total SEM Concentration (umol/g)	Round 4 Total SEM Concentration (umol/g)
Reference Stations				
OU4-SD-R01-1	1.3	0.73	1.4	0.86
OU4-SD-R01-2	0.13	0.11	0.090	0.30
OU4-SD-R01-3	0.18	0.14	0.055	0.17
OU4-SD-R01-4	0.25	0.16	0.63	0.53
OU4-SD-R02-1	0.35	0.17	0.64	0.36
OU4-SD-R02-2	0.23	0.23	0.19	0.29
OU4-SD-R02-3	0.37	0.20	0.62	0.55
OU4-SD-R02-4	0.58	0.42	0.74	1.5
OU4-SD-R03-1	0.92	0.39	1.5	0.75
OU4-SD-R03-2	0.33	0.33	0.26	0.72
OU4-SD-R03-3	0.34	0.31	0.24	0.83
OU4-SD-R03-4	0.21	0.15	0.22	0.74
OU4-SD-R04-1	0.22	0.21	0.65	0.33
OU4-SD-R04-2	0.031	0.051	0.071	0.30
OU4-SD-R04-3	0.040	0.073	0.074	0.60
OU4-SD-R04-4	0.049	0.057	0.039	0.16

Notes:
SEM - Simultaneously Extracted Metals
Duplicates were averaged on this table

TABLE I - 4

TOTAL SEM VALUES FOR 1996-1997 SEDIMENT DATA
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Total SEM Concentrations (umol/g)			
	Sampled 12/96	Sampled 04/97	Sampled 08/97	Sampled 11/97
BC-1005-SD	3.01	9.02	6.55	4.31
BC-1006-SD	1.86	1.06	1.32	3.09
BC-1012-SD	1.53	2.72	1.46	2.28
BC-1016-SD	8.83	9.2	6.28	8.12
BC-1017-SD	5.04	3.46	3.43	5.32
BC-1018-SD	4.74	2.53	6.03	4.7
BC-1020-SD	6.88	9.72	3.76	8.92
C-1004.3-SD	2.99	2.84	1.41	7.69
C-1004.5-SD	9.73	7.07	0.86	13.15
CC-1011-SD	0.85	0.77	0.84	4.64
SP-1001-SD	1.47	1.04	0.69	4.51
SP-1002-SD	1.21	1.06	0.71	2.00
SP-1003-SD	2.27	2.11	16.39	5.77

Source of data is Seep/Sediment Summary Report (TtNUS, May 2000)
Duplicates were averaged on this table

APPENDIX J

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS

TABLE J - 1

BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins (NG/KG)							
TOTAL DIOXIN/FURANS (TEQ)-HALFND	6/6	1.3	16	OU4-LJ-M07-199AM	6.7189	5.1	0.76
TOTAL DIOXIN/FURANS (TEQ)-POSONLY	1/1	0.00065	0.00065	OU4-LJ-M08-199AM	0.0006	---	---
TOTAL HPCDD	1/1	0.019 J	0.019 J	OU4-LJ-M12-199AM	0.0186	---	---
Minimum BSAF					***0.001***		
Maximum BSAF					***6.719***		
Average BSAF					***2.246***		
Semivolatile Organics (UG/KG)							
1,1-BIPHENYL	3/3	0.045 J	0.15 J	OU4-LJ-M14-199AM	0.0891	0.053	0.59
1-METHYLNAPHTHALENE	3/3	0.082	0.17	OU4-LJ-M11-199AM-AVG	0.1127	0.052	0.46
1-METHYLPHENANTHRENE	14/14	0.0077 J	0.24	OU4-LJ-M02-199AM	0.0978	0.064	0.66
2,3,5-TRIMETHYLNAPHTHALENE	14/14	0.055 J	0.55 J	OU4-LJ-M07-199AM	0.2276	0.13	0.59
2,6-DIMETHYLNAPHTHALENE	14/14	0.041 J	0.44 J	OU4-LJ-M07-199AM	0.1529	0.11	0.69
2-METHYLNAPHTHALENE	3/3	0.073	0.11	OU4-LJ-M11-199AM-AVG	0.0903	0.019	0.21
ACENAPHTHENE	14/14	0.0027 J	0.33 J	OU4-LJ-M02-199AM	0.0409	0.085	2.1
ACENAPHTHYLENE	14/14	0.0021 J	0.013 J	OU4-LJ-M09-199AM	0.0062	0.0035	0.57
ANTHRACENE	14/14	0.00090 J	0.11	OU4-LJ-M02-199AM	0.0212	0.029	1.4
BENZO(A)ANTHRACENE	14/14	0.00095 J	0.22 J	OU4-LJ-M02-199AM	0.0326	0.058	1.8
BENZO(A)PYRENE	14/14	0.00063 J	0.19	OU4-LJ-M02-199AM	0.0305	0.049	1.6
BENZO(B)FLUORANTHENE	14/14	0.00063 J	0.083	OU4-LJ-M02-199AM	0.0165	0.023	1.4
BENZO(E)PYRENE	14/14	0.0020 J	0.13	OU4-LJ-M02-199AM	0.0238	0.033	1.4
BENZO(G,H,I)PERYLENE	14/14	0.0012 J	0.083	OU4-LJ-M02-199AM	0.0144	0.021	1.5
BENZO(K)FLUORANTHENE	14/14	0.0016 J	0.34 J	OU4-LJ-M02-199AM	0.0577	0.090	1.6
C1-CHRYSENES	14/14	0.0016 J	0.11	OU4-LJ-M02-199AM	0.0217	0.026	1.2
C1-DIBENZOTHIOPHENES	14/14	0.013 J	0.17 J	OU4-LJ-M02-199AM	0.0515	0.040	0.78
C1-FLUORANTHENES/PYRENES	14/14	0.0018 J	0.19	OU4-LJ-M02-199AM	0.0331	0.047	1.4
C1-FLUORENES	13/13	0.019 J	0.23 J	OU4-LJ-M07-199AM	0.0972	0.066	0.68
C1-NAPHTHALENES	5/5	0.082	0.76	OU4-LJ-M07-199AM	0.3319	0.28	0.83
C1-PHENANTHRENES/ANTHRACENES	14/14	0.0055 J	0.20	OU4-LJ-M02-199AM	0.0533	0.047	0.89
C2-CHRYSENES	14/14	0.0020 J	0.081	OU4-LJ-M02-199AM	0.0235	0.019	0.80
C2-DIBENZOTHIOPHENES	14/14	0.010 J	0.11 J	OU4-LJ-M02-199AM	0.0424	0.025	0.59
C2-FLUORENES	14/14	0.022 J	0.17 J	OU4-LJ-M07-199AM	0.0826	0.040	0.48
C2-NAPHTHALENES	7/7	0.041 J	0.36	OU4-LJ-M07-199AM	0.1407	0.11	0.81
C2-PHENANTHRENES/ANTHRACENES	14/14	0.0059 J	0.15	OU4-LJ-M02-199AM	0.0593	0.043	0.73
C3-CHRYSENES	13/13	0.0038 J	0.17 J	OU4-LJ-M11-199AM-AVG	0.0618	0.046	0.75
C3-DIBENZOTHIOPHENES	14/14	0.010 J	0.092 J	OU4-LJ-M02-199AM	0.0404	0.022	0.54
C3-FLUORENES	14/14	0.047 J	0.33 J	OU4-LJ-M07-199AM	0.1392	0.081	0.58
C3-NAPHTHALENES	14/14	0.035 J	0.29	OU4-LJ-M07-199AM	0.1199	0.070	0.58
C3-PHENANTHRENES/ANTHRACENES	14/14	0.0034 J	0.094 J	OU4-LJ-M07-199AM	0.0515	0.025	0.48
C4-CHRYSENES	12/12	0.0013 J	0.25 J	OU4-LJ-M14-199AM	0.0633	0.081	1.3
C4-NAPHTHALENES	14/14	0.056 J	0.52	OU4-LJ-M07-199AM	0.2024	0.15	0.73
C4-PHENANTHRENES/ANTHRACENES	14/14	0.010 J	0.28	OU4-LJ-M02-199AM	0.0919	0.062	0.68
CHRYSENE	14/14	0.0029	0.23	OU4-LJ-M02-199AM	0.0420	0.059	1.4
DIBENZO(A,H)ANTHRACENE	14/14	0.00024 J	0.13 J	OU4-LJ-M02-199AM	0.0156	0.034	2.2
DIBENZOTHIOPHENE	14/14	0.0040 J	0.18	OU4-LJ-M02-199AM	0.0343	0.045	1.3

TABLE J - 1

BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
FLUORANTHENE	14/14	0.0023 J	0.30 J	OU4-LJ-M02-199AM	0.0506	0.078	1.5
FLUORENE	14/14	0.0062 J	0.25 J	OU4-LJ-M02-199AM	0.0545	0.062	1.1
INDENO(1,2,3-CD)PYRENE	14/14	0.00013 J	0.11 J	OU4-LJ-M02-199AM	0.0169	0.029	1.7
NAPHTHALENE	3/3	0.062	0.33	OU4-LJ-M09-199AM	0.1751	0.14	0.79
PERYLENE	14/14	0.0018 J	0.22 J	OU4-LJ-M02-199AM	0.0365	0.056	1.5
PHENANTHRENE	14/14	0.0020 J	0.25	OU4-LJ-M02-199AM	0.0344	0.062	1.8
PYRENE	14/14	0.0021	0.24	OU4-LJ-M02-199AM	0.0424	0.063	1.5
HMW PAHs					0.2057		
Minimum BSAF					***0.0062***		
Maximum BSAF					***0.3319***		
Average BSAF					***0.0762***		

Pesticides (UG/KG)

1,2,3,4-TETRACHLOROBENZENE	13/13	12	197	OU4-LJ-M02-199AM	70.82	71	1.00
1,2,4,5-TETRACHLOROBENZENE	11/11	0.10 J	1.2	OU4-LJ-M06-199AM	0.48	0.38	0.79
2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL	2/2	0.039 J	0.43 J	OU4-LJ-M07-199AM	0.23	0.27	1.2
2,2',3,3',4,4'-HEXACHLOROBIPHENYL	10/10	0.042 J	1.2	OU4-LJ-M07-199AM	0.32	0.39	1.2
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	14/14	0.017 J	4.1	OU4-LJ-M07-199AM	0.77	1.3	1.7
2,2',5,5'-TETRACHLOROBIPHENYL	6/6	0.067 J	0.78	OU4-LJ-M02-199AM	0.32	0.27	0.85
2,3',4,4',5-PENTACHLOROBIPHENYL	14/14	0.19 J	7.3	OU4-LJ-M07-199AM	1.29	1.8	1.4
2,3',4,4'-TETRACHLOROBIPHENYL	8/8	0.073 J	2.3	OU4-LJ-M07-199AM	0.52	0.74	1.4
2,3,3',4,4'-PENTACHLOROBIPHENYL	14/14	0.080 J	1.8	OU4-LJ-M05-199AM	0.61	0.48	0.79
2,4'-DDT	3/3	0.21	2.8 J	OU4-LJ-M14-199AM	1.12	1.4	1.3
2,4,4'-TRICHLOROBIPHENYL	4/4	0.13 J	3.5	OU4-LJ-M07-199AM	1.01	1.7	1.7
4,4'-DDD	3/3	0.00089	0.034	OU4-LJ-M11-199AM-AVG	0.02	0.017	1.1
4,4'-DDE	14/14	0.019	4.5	OU4-LJ-M07-199AM	1.01	1.3	1.3
ALPHA-BHC	2/2	2.6	3.2	OU4-LJ-M14-199AM	2.94	0.42	0.14
ALPHA-CHLORDANE	12/12	0.14	18	OU4-LJ-M13-199AM	6.20	6.4	1.0
BETA-BHC	1/1	5.2	5.2	OU4-LJ-M10-199AM	5.18	---	---
CHLORPYRIFOS	2/2	2.9 J	6.1 J	OU4-LJ-M11-199AM-AVG	4.47	2.3	0.51
CIS-NONACHLOR	2/2	0.064 J	0.12 J	OU4-LJ-M01-199AM	0.09	0.040	0.43
DECACHLOROBIPHENYL	10/10	0.025 J	0.78 J	OU4-LJ-M07-199AM	0.18	0.23	1.2
DIELDRIN	13/13	0.10	36	OU4-LJ-M12-199AM	8.75	9.5	1.1
GAMMA-BHC (LINDANE)	1/1	0.56	0.56	OU4-LJ-M01-199AM	0.56	---	---
HEPTACHLOR	1/1	5.7	5.7	OU4-LJ-M14-199AM	5.66	---	---
HEXACHLOROBENZENE	3/3	0.21 J	2.6 J	OU4-LJ-M11-199AM-AVG	1.15	1.3	1.1
OXYCHLORDANE	7/7	1.4	66	OU4-LJ-M07-199AM	15.26	24	1.6
PENTACHLOROANISOLE	13/13	0.54	4.0	OU4-LJ-M12-199AM	1.73	1.0	0.59
PENTACHLOROBENZENE	13/13	1.1 J	15	OU4-LJ-M06-199AM	5.29	4.8	0.91
TRANS-NONACHLOR	4/4	0.19	2.4	OU4-LJ-M06-199AM	1.26	1.0	0.80
Minimum BSAF					***0.015***		
Maximum BSAF					***70.8***		
Average BSAF					***5.08***		

TABLE J - 1

BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL MONITORING STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
PCBS (UG/KG)							
PCB-101/90	11/11	0.041 J	1.1	OU4-LJ-M05-199AM	0.4681	0.35	0.74
PCB-126	11/11	0.040 J	1.3 J	OU4-LJ-M09-199AM	0.6698	0.43	0.65
PCB-149/123	2/2	0.11 J	0.40 J	OU4-LJ-M07-199AM	0.2543	0.20	0.80
PCB-153/132	14/14	0.053	7.5	OU4-LJ-M07-199AM	1.3085	2.0	1.5
PCB-156	6/6	0.033 J	2.5	OU4-LJ-M07-199AM	0.5844	0.96	1.6
PCB-167	5/5	0.13 J	1.9	OU4-LJ-M07-199AM	0.7621	0.79	1.0
PCB-169	4/4	0.029 J	1.4 J	OU4-LJ-M06-199AM	0.4621	0.62	1.3
PCB-170/190	5/5	0.042 J	1.0	OU4-LJ-M09-199AM	0.4281	0.41	0.95
PCB-18/17	10/10	0.38 J	43	OU4-LJ-M06-199AM	9.4279	15	1.6
PCB-187	14/14	0.021 J	4.1	OU4-LJ-M07-199AM	0.6882	1.2	1.8
PCB-189	3/3	0.35 J	0.73 J	OU4-LJ-M09-199AM	0.5025	0.20	0.40
PCB-195/208	4/4	0.017 J	0.87 J	OU4-LJ-M07-199AM	0.2937	0.39	1.3
PCB-201/157/173	1/1	0.29 J	0.29 J	OU4-LJ-M02-199AM	0.2938	---	---
PCB-8/5	5/5	0.62 J	1.9 J	OU4-LJ-M14-199AM	1.1338	0.60	0.53
PCB-81	2/2	0.39 J	7.6 J	OU4-LJ-M07-199AM	4.0100	5.1	1.3
Minimum BSAF					***0.254***		
Maximum BSAF					***9.43***		
Average BSAF					***1.42***		
Inorganics (MG/KG)							
ALUMINUM	14/14	0.000061 J	0.00039 J	OU4-LJ-M09-199AM	0.0002	0.000087	0.58
ARSENIC	14/14	0.50	1.7	OU4-LJ-M05-199AM	1.0314	0.31	0.30
CADMIUM	12/12	0.062 J	1.9 J	OU4-LJ-M07-199AM	0.3579	0.58	1.6
COPPER	14/14	0.0054	2.0	OU4-LJ-M06-199AM	0.6867	0.57	0.83
IRON	14/14	0.00020	0.0010	OU4-LJ-M09-199AM	0.0005	0.00023	0.48
LEAD	11/11	0.000027 J	0.0052 J	OU4-LJ-M07-199AM	0.0020	0.0013	0.66
MANGANESE	14/14	0.0027	0.011	OU4-LJ-M02-199AM	0.0054	0.0019	0.35
MERCURY	14/14	0.47	3.4	OU4-LJ-M10-199AM	1.7604	0.96	0.55
NICKEL	2/2	0.00011	0.017	OU4-LJ-M02-199AM	0.0087	0.012	1.4
SILVER	14/14	0.69 J	5.8 J	OU4-LJ-M06-199AM	2.5182	1.4	0.55
ZINC	14/14	0.032	1.3	OU4-LJ-M06-199AM	0.5907	0.37	0.62

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

TABLE J - 2

BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL MONITORING STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins							
1,2,3,4,6,7,8,9-OCDD	3/3	0.005 J	0.015 J	OU4-LJ-M11-100B-AVG	0.01	0.01	0.51
1,2,3,4,6,7,8,9-OCDF	1/1	0.151 J	0.151 J	OU4-LJ-M10-100B	0.15		
2,3,4,6,7,8-HXCDF	2/2	2.274 J	7.415 J	OU4-LJ-M12-100B	4.84	3.63	0.75
2,3,7,8-TCDD	1/1	9.431 J	9.431 J	OU4-LJ-M11-100B-AVG	9.43		
TOTAL DIOXINS	3/3	0.007 J	0.023 J	OU4-LJ-M10-100B	0.01	0.01	0.60
TOTAL FURANS	3/3	0.008 J	0.141 J	OU4-LJ-M10-100B	0.07	0.07	1.00
TOTAL HXCDD	2/2	0.094 J	0.216 J	OU4-LJ-M10-100B	0.16	0.09	0.55
TOTAL TCDD	2/2	0.142 J	0.427 J	OU4-LJ-M12-100B	0.28	0.20	0.71
Minimum BSAF					***0.01***		
Maximum BSAF					***9.43***		
Average BSAF					***1.87***		
Semi-Volatile Organics							
1,1-BIPHENYL	14/14	0.033 J	0.415 J	OU4-LJ-M02-100B	0.18	0.10	0.57
1-METHYLNAPHTHALENE	14/14	0.031 J	0.726	OU4-LJ-M06-100B	0.28	0.22	0.79
1-METHYLPHENANTHRENE	14/14	0.007 J	0.065 J	OU4-LJ-M02-100B	0.03	0.02	0.65
2,3,5-TRIMETHYLNAPHTHALENE	14/14	0.014 J	0.185 J	OU4-LJ-M02-100B	0.07	0.05	0.68
2,6-DIMETHYLNAPHTHALENE	14/14	0.011 J	0.174 J	OU4-LJ-M01-100B-AVG	0.07	0.04	0.64
2-METHYLNAPHTHALENE	14/14	0.033 J	0.491	OU4-LJ-M02-100B	0.20	0.15	0.75
ACENAPHTHENE	14/14	0.005 J	0.193 J	OU4-LJ-M02-100B	0.06	0.05	0.78
ACENAPHTHYLENE	14/14	0.001 J	0.041	OU4-LJ-M01-100B-AVG	0.01	0.01	0.88
ANTHRACENE	14/14	0.001 J	0.029 J	OU4-LJ-M02-100B	0.01	0.01	0.85
BENZO(A)ANTHRACENE	14/14	0.002 J	0.033	OU4-LJ-M02-100B	0.01	0.01	0.83
BENZO(A)PYRENE	14/14	0.002 J	0.056	OU4-LJ-M02-100B	0.02	0.02	0.72
BENZO(B)FLUORANTHENE	14/14	0.003 J	0.051 J	OU4-LJ-M02-100B	0.02	0.01	0.72
BENZO(E)PYRENE	14/14	0.008 J	0.082	OU4-LJ-M02-100B	0.03	0.02	0.70
BENZO(G,H,I)PERYLENE	14/14	0.008 J	0.071 J	OU4-LJ-M02-100B	0.03	0.02	0.69
BENZO(K)FLUORANTHENE	14/14	0.004 J	0.055 J	OU4-LJ-M02-100B	0.02	0.02	0.70
C1-CHRYSENES	14/14	0.000 J	0.046 J	OU4-LJ-M02-100B	0.01	0.01	1.07
C1-DIBENZOTHIOPHENES	14/14	0.010 J	0.143 J	OU4-LJ-M02-100B	0.05	0.03	0.69
C1-FLUORANTHENES/PYRENES	14/14	0.005 J	0.058	OU4-LJ-M02-100B	0.02	0.01	0.66
C1-FLUORENES	14/14	0.020 J	0.215 J	OU4-LJ-M02-100B	0.09	0.05	0.57
C1-NAPHTHALENES	14/14	0.033 J	0.563	OU4-LJ-M06-100B	0.23	0.18	0.77
C1-PHENANTHRENES/ANTHRACENES	14/14	0.012 J	0.073 J	OU4-LJ-M02-100B	0.02	0.02	0.70
C2-CHRYSENES	14/14	0.000 J	0.102 J	OU4-LJ-M02-100B	0.02	0.03	1.60
C2-DIBENZOTHIOPHENES	14/14	0.002 J	0.082 J	OU4-LJ-M02-100B	0.04	0.02	0.58

TABLE J - 2

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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
C2-FLUORENES	14/14	0.002 J	0.073 J	OU4-LJ-M02-100B	0.02	0.02	0.93
C2-NAPHTHALENES	14/14	0.025 J	0.360 J	OU4-LJ-M06-100B	0.13	0.10	0.78
C2-PHENANTHRENES/ANTHRACENES	14/14	0.012 J	0.066 J	OU4-LJ-M02-100B	0.03	0.01	0.50
C3-CHRYSENES	14/14	0.009 J	0.062 J	OU4-LJ-M14-100B	0.04	0.02	0.55
C3-DIBENZOTHIOPHENES	14/14	0.000 J	0.044 J	OU4-LJ-M01-100B-AVG	0.02	0.02	1.00
C3-FLUORENES	14/14	0.001 J	0.171 J	OU4-LJ-M11-100B-AVG	0.06	0.05	0.84
C3-NAPHTHALENES	14/14	0.018 J	0.263 J	OU4-LJ-M02-100B	0.08	0.07	0.78
C3-PHENANTHRENES/ANTHRACENES	14/14	0.004 J	0.144 J	OU4-LJ-M02-100B	0.05	0.04	0.78
C4-CHRYSENES	14/14	0.007 J	0.189 J	OU4-LJ-M07-100B	0.07	0.07	0.95
C4-NAPHTHALENES	14/14	0.001 J	0.102 J	OU4-LJ-M08-100B-AVG	0.02	0.03	1.56
C4-PHENANTHRENES/ANTHRACENES	14/14	0.000 J	0.133 J	OU4-LJ-M02-100B	0.02	0.03	1.66
CHRYSENE	14/14	0.006	0.076	OU4-LJ-M02-100B	0.02	0.02	0.76
DIBENZO(A,H)ANTHRACENE	14/14	0.002 J	0.022 J	OU4-LJ-M07-100B	0.01	0.01	0.81
DIBENZOTHIOPHENE	14/14	0.008 J	0.116 J	OU4-LJ-M02-100B	0.03	0.03	0.82
FLUORANTHENE	14/14	0.007	0.082	OU4-LJ-M02-100B	0.03	0.02	0.81
FLUORENE	14/14	0.006 J	0.183 J	OU4-LJ-M02-100B	0.05	0.05	0.93
INDENO(1,2,3-CD)PYRENE	14/14	0.003 J	0.076 J	OU4-LJ-M02-100B	0.02	0.02	0.82
NAPHTHALENE	14/14	0.044	0.652	OU4-LJ-M06-100B	0.27	0.19	0.70
PERYLENE	14/14	0.032 J	0.136 J	OU4-LJ-M09-100B	0.07	0.03	0.46
PHENANTHRENE	14/14	0.008	0.094	OU4-LJ-M02-100B	0.02	0.02	0.93
PYRENE	14/14	0.005	0.074	OU4-LJ-M02-100B	0.03	0.02	0.71
HMW PAHs					0.02		
Minimum BSAF					***0.01***		
Maximum BSAF					***0.28***		
Average BSAF					***0.06***		
Pesticides							
1,2,3,4-TETRACHLOROBENZENE	14/14	0.281 J	84.877	OU4-LJ-M13-100B	23.28	30.67	1.32
2,4'-DDD	9/9	0.000 J	1.906 J	OU4-LJ-M02-100B	0.64	0.61	0.95
2,4'-DDE	7/7	0.429 J	22.830 J	OU4-LJ-M03-100B	4.74	8.05	1.70
2,4'-DDT	8/8	0.013 J	8.125	OU4-LJ-M14-100B	1.31	2.77	2.12
4,4'-DDD	9/9	0.004 J	0.479 J	OU4-LJ-M14-100B	0.11	0.15	1.39
4,4'-DDE	14/14	0.027	5.838	OU4-LJ-M13-100B	1.35	1.52	1.12
4,4'-DDT	12/12	0.011 J	5.408 J	OU4-LJ-M13-100B	1.90	1.88	0.99
ALDRIN	4/4	0.026 J	0.187 J	OU4-LJ-M14-100B	0.11	0.07	0.59
ALPHA-BHC	10/10	0.600 J	4.196	OU4-LJ-M11-100B-AVG	1.55	1.21	0.78
BETA-BHC	4/4	0.047 J	0.383 J	OU4-LJ-M01-100B-AVG	0.16	0.15	0.97

TABLE J - 2

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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
CIS-NONACHLOR	7/7	0.012 J	0.498 J	OU4-LJ-M14-100B	0.18	0.18	0.99
DELTA-BHC	1/1	1.710	1.710	OU4-LJ-M04-100B	1.71		
DIELDRIN	14/14	0.485 J	42.373 J	OU4-LJ-M09-100B	11.24	13.30	1.18
ENDOSULFAN II	3/3	0.241 J	1.718	OU4-LJ-M04-100B	0.78	0.82	1.06
ENDRIN	1/1	19.471 J	19.471 J	OU4-LJ-M04-100B	19.47		
GAMMA-BHC (LINDANE)	14/14	1.214	8.283	OU4-LJ-M02-100B	4.00	2.18	0.55
GAMMA-CHLORDANE	5/5	0.020 J	4.161 J	OU4-LJ-M14-100B	1.83	2.04	1.11
HEPTACHLOR	1/1	28.856 J	28.856 J	OU4-LJ-M08-100B-AVG	28.86		
HEXACHLOROBENZENE	13/13	0.109 J	11.173	OU4-LJ-M14-100B	4.50	4.19	0.93
MIREX	7/7	0.267 J	29.789 J	OU4-LJ-M11-100B-AVG	6.83	10.31	1.51
OXYCHLORDANE	14/14	1.201 J	27.574 J	OU4-LJ-M07-100B	9.08	9.26	1.02
PENTACHLOROANISOLE	14/14	0.507 J	8.477	OU4-LJ-M14-100B	2.96	2.06	0.69
PENTACHLOROBENZENE	12/12	0.090 J	4.137	OU4-LJ-M12-100B	1.61	1.47	0.92
TRANS-NONACHLOR	8/8	0.026 J	11.091	OU4-LJ-M14-100B	2.90	4.21	1.45
Minimum BSAF					***0.11***		
Maximum BSAF					***28.86***		
Average BSAF					***5.46***		
PCBs							
PCB-101/90	10/10	0.029	0.934 J	OU4-LJ-M01-100B-AVG	0.43	0.35	0.81
PCB-105	14/14	0.070 J	1.950	OU4-LJ-M13-100B	0.54	0.51	0.93
PCB-118	14/14	0.206	2.422	OU4-LJ-M13-100B	1.17	0.66	0.56
PCB-126	14/14	0.041 J	13.501 J	OU4-LJ-M01-100B-AVG	5.58	4.94	0.88
PCB-128	14/14	0.090 J	2.426 J	OU4-LJ-M13-100B	0.78	0.66	0.85
PCB-138/160	14/14	0.107	3.280	OU4-LJ-M10-100B	1.38	1.13	0.81
PCB-149/123	12/12	0.004 J	0.663 J	OU4-LJ-M14-100B	0.23	0.21	0.94
PCB-156	6/6	0.039 J	0.918 J	OU4-LJ-M09-100B	0.35	0.31	0.89
PCB-167	11/11	0.153 J	0.935 J	OU4-LJ-M13-100B	0.47	0.28	0.60
PCB-169	9/9	0.232 J	231.538	OU4-LJ-M11-100B-AVG	26.87	76.76	2.86
PCB-18/17	12/12	0.134 J	24.339 J	OU4-LJ-M03-100B	7.13	8.02	1.13
PCB-180	14/14	0.023	4.453	OU4-LJ-M14-100B	1.14	1.14	1.00
PCB-187	14/14	0.054	7.543	OU4-LJ-M14-100B	1.68	2.06	1.23
PCB-189	2/2	0.242 J	0.307 J	OU4-LJ-M11-100B-AVG	0.27	0.05	0.17
PCB-195/208	11/11	0.016 J	7.615	OU4-LJ-M10-100B	0.96	2.23	2.32
PCB-201/157/173	6/6	0.118 J	6.347	OU4-LJ-M10-100B	1.85	2.27	1.23
PCB-206	12/12	0.006 J	12.448	OU4-LJ-M10-100B	1.21	3.55	2.92
PCB-209	6/6	0.114 J	1.028 J	OU4-LJ-M10-100B	0.36	0.34	0.94

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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
PCB-28	9/9	0.079 J	1.467	OU4-LJ-M04-100B	0.53	0.42	0.80
PCB-44	7/7	0.035 J	0.235 J	OU4-LJ-M13-100B	0.12	0.08	0.69
PCB-52	10/10	0.041 J	1.969	OU4-LJ-M07-100B	0.62	0.61	0.99
PCB-66	14/14	0.141 J	3.511 J	OU4-LJ-M02-100B	1.11	0.86	0.78
PCB-77	5/5	0.144 J	2.242 J	OU4-LJ-M01-100B-AVG	0.80	0.87	1.09
PCB-8/5	5/5	0.081 J	1.439 J	OU4-LJ-M04-100B	0.42	0.57	1.35
PCB-81	13/13	0.311 J	27.263 J	OU4-LJ-M14-100B	9.08	9.82	1.08
Minimum BSAF					***0.12***		
Maximum BSAF					***26.87***		
Average BSAF					***2.60***		
Inorganics							
ALUMINUM	14/14	0.000	0.000	OU4-LJ-M04-100B	0.00012	0.00	0.45
ARSENIC	14/14	1.173	2.185	OU4-LJ-M08-100B-AVG	1.52	0.37	0.24
CADMIUM	14/14	0.049	0.496	OU4-LJ-M14-100B	0.14	0.12	0.81
COPPER	14/14	0.030	2.418	OU4-LJ-M06-100B	0.81	0.68	0.84
IRON	14/14	0.000	0.001	OU4-LJ-M04-100B	0.00049	0.00	0.36
LEAD	11/11	0.000	0.070	OU4-LJ-M01-100B-AVG	0.0080	0.02	2.60
MANGANESE	14/14	0.003 J	0.017 J	OU4-LJ-M12-100B	0.0078	0.00	0.49
MERCURY	14/14	0.408	15.185	OU4-LJ-M02-100B	3.18	3.67	1.15
NICKEL	7/7	0.004 J	0.028 J	OU4-LJ-M12-100B	0.016	0.01	0.49
SILVER	14/14	0.108	1.680	OU4-LJ-M06-100B	0.58	0.41	0.71
ZINC	14/14	0.126	1.881	OU4-LJ-M06-100B	0.66	0.46	0.71

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

TABLE J - 3

BSAF AND BAF VALUES FOR JUVENILE LOBSTER
ACROSS ALL MONITORING STATIONS FOR ROUND 3
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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins							
1,2,3,4,6,7,8,9-OCDD	4/4	0.0046 J	0.0333 J	OU4-LJ-M07-100A	0.02	0.02	0.85
1,2,3,4,6,7,8-HPCDD	3/3	0.0109 J	0.0539 J	OU4-LJ-M07-100A	0.03	0.02	0.65
2,3,7,8-TCDF	2/2	0.5679 J	1.1835 J	OU4-LJ-M07-100A	0.88	0.44	0.50
TOTAL DIOXINS	4/4	0.0008 J	0.0292 J	OU4-LJ-M07-100A	0.01	0.01	0.91
TOTAL HPCDD	3/3	0.0040 J	0.0229 J	OU4-LJ-M07-100A	0.01	0.01	0.69
TOTAL TCDF	2/2	0.0962 J	0.6168 J	OU4-LJ-M07-100A	0.36	0.37	1.03
Minimum BSAF					***0.01***		
Maximum BSAF					***0.88***		
Average BSAF					***0.22***		
Semi-Volatile Organics							
1,1-BIPHENYL	14/14	0.0245 J	0.2340 J	OU4-LJ-M14-100A	0.13	0.07	0.54
1-METHYLNAPHTHALENE	14/14	0.0158 J	0.3902 J	OU4-LJ-M13-100A	0.09	0.09	1.01
1-METHYLPHENANTHRENE	14/14	0.0019 J	0.0375 J	OU4-LJ-M09-100A	0.02	0.01	0.84
2,3,5-TRIMETHYLNAPHTHALENE	14/14	0.0097 J	0.0993 J	OU4-LJ-M08-100A	0.05	0.03	0.54
2,6-DIMETHYLNAPHTHALENE	14/14	0.0089 J	0.0953 J	OU4-LJ-M08-100A	0.05	0.03	0.56
2-METHYLNAPHTHALENE	14/14	0.0105 J	0.3790 J	OU4-LJ-M13-100A	0.09	0.09	1.00
ACENAPHTHENE	14/14	0.0010 J	0.0817 J	OU4-LJ-M02-100A	0.03	0.03	0.77
ACENAPHTHYLENE	14/14	0.0014 J	0.0276 J	OU4-LJ-M08-100A	0.01	0.01	1.02
ANTHRACENE	14/14	0.0011 J	0.0249 J	OU4-LJ-M08-100A	0.01	0.01	0.83
BENZO(A)ANTHRACENE	14/14	0.0005 J	0.0391	OU4-LJ-M09-100A	0.01	0.01	0.95
BENZO(A)PYRENE	14/14	0.0003 J	0.1591	OU4-LJ-M09-100A	0.03	0.04	1.38
BENZO(B)FLUORANTHENE	14/14	0.0005 J	0.0424	OU4-LJ-M09-100A	0.01	0.01	0.94
BENZO(E)PYRENE	14/14	0.0006 J	0.0530	OU4-LJ-M09-100A	0.02	0.02	0.85
BENZO(G,H,I)PERYLENE	14/14	0.0005 J	0.0360	OU4-LJ-M09-100A	0.01	0.01	0.83
BENZO(K)FLUORANTHENE	14/14	0.0004 J	0.0642	OU4-LJ-M09-100A	0.02	0.02	0.94
C1-CHRYSENES	14/14	0.0007 J	0.0415 J	OU4-LJ-M02-100A	0.01	0.01	0.91
C1-DIBENZOTHIOPHENES	14/14	0.0023 J	0.0715 J	OU4-LJ-M09-100A	0.03	0.02	0.77
C1-FLUORANTHENES/PYRENES	14/14	0.0011 J	0.0417 J	OU4-LJ-M02-100A	0.01	0.01	0.86
C1-FLUORENES	14/14	0.0108 J	0.4167	OU4-LJ-M08-100A	0.08	0.10	1.22
C1-NAPHTHALENES	14/14	0.0129 J	0.3837	OU4-LJ-M13-100A	0.09	0.09	1.00
C1-PHENANTHRENES/ANTHRACENES	14/14	0.0019 J	0.0369	OU4-LJ-M08-100A	0.02	0.01	0.70
C2-CHRYSENES	14/14	0.0000 J	0.0405 J	OU4-LJ-M02-100A	0.02	0.01	0.93
C2-DIBENZOTHIOPHENES	14/14	0.0002 J	0.0711 J	OU4-LJ-M08-100A	0.01	0.02	1.61
C2-FLUORENES	14/14	0.0013 J	0.1446 J	OU4-LJ-M08-100A	0.05	0.04	0.96
C2-NAPHTHALENES	14/14	0.0068 J	0.1773 J	OU4-LJ-M13-100A	0.05	0.04	0.93

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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
C2-PHENANTHRENES/ANTHRACENES	14/14	0.0022 J	0.0729	OU4-LJ-M08-100A	0.02	0.02	0.91
C3-CHRYSENES	14/14	0.0017 J	0.0242 J	OU4-LJ-M06-100A	0.01	0.01	0.69
C3-DIBENZOTHIOPHENES	14/14	0.0003 J	0.0567 J	OU4-LJ-M08-100A	0.01	0.01	2.16
C3-FLUORENES	14/14	0.0004 J	0.1888 J	OU4-LJ-M08-100A	0.04	0.06	1.66
C3-NAPHTHALENES	14/14	0.0008 J	0.0836 J	OU4-LJ-M13-100A	0.03	0.02	0.75
C3-PHENANTHRENES/ANTHRACENES	14/14	0.0002 J	0.0619 J	OU4-LJ-M08-100A	0.02	0.02	1.09
C4-CHRYSENES	14/14	0.0010 J	0.0605 J	OU4-LJ-M06-100A	0.01	0.02	1.37
C4-NAPHTHALENES	14/14	0.0007 J	0.1317 J	OU4-LJ-M08-100A	0.03	0.04	1.24
C4-PHENANTHRENES/ANTHRACENES	14/14	0.0002 J	0.0567 J	OU4-LJ-M08-100A	0.01	0.01	2.87
CHRYSENE	14/14	0.0008 J	0.0707	OU4-LJ-M02-100A	0.02	0.02	0.89
DIBENZO(A,H)ANTHRACENE	14/14	0.0001 J	0.0163 J	OU4-LJ-M07-100A	0.00	0.00	1.14
DIBENZOTHIOPHENE	14/14	0.0019 J	0.0860 J	OU4-LJ-M14-100A	0.02	0.02	0.95
FLUORANTHENE	14/14	0.0015	0.0520	OU4-LJ-M14-100A	0.02	0.02	0.88
FLUORENE	14/14	0.0018 J	0.0955 J	OU4-LJ-M14-100A	0.03	0.03	0.81
INDENO(1,2,3-CD)PYRENE	14/14	0.0001 J	0.0480 J	OU4-LJ-M09-100A	0.02	0.02	1.10
NAPHTHALENE	14/14	0.0125 J	0.2298 J	OU4-LJ-M13-100A	0.07	0.06	0.76
PERYLENE	14/14	0.0012 J	0.0888	OU4-LJ-M09-100A	0.03	0.03	0.74
PHENANTHRENE	14/14	0.0009 J	0.0380 J	OU4-LJ-M13-100A	0.01	0.01	0.87
PYRENE	14/14	0.0011	0.0628	OU4-LJ-M02-100A	0.02	0.02	0.95
HMW PAHs					0.019		
Minimum BSAF					***0.0040***		
Maximum BSAF					***0.1280***		
Average BSAF					***0.0316***		
Pesticides							
1,2,3,4-TETRACHLOROBENZENE	14/14	0.9237 J	65.3747	OU4-LJ-M05-100A	31.15	20.10	0.65
1,2,4,5-TETRACHLOROBENZENE	9/9	0.0416 J	0.7183 J	OU4-LJ-M04-100A	0.21	0.22	1.06
2,4'-DDD	3/3	0.0119 J	0.1859	OU4-LJ-M13-100A	0.07	0.10	1.36
2,4'-DDT	2/2	0.0068 J	0.0108	OU4-LJ-M08-100A	0.01	0.00	0.32
4,4'-DDD	3/3	0.0025 J	0.0861 J	OU4-LJ-M14-100A	0.03	0.05	1.47
4,4'-DDE	14/14	0.0237	2.0990	OU4-LJ-M14-100A	0.68	0.72	1.05
4,4'-DDT	1/1	0.0025 J	0.0025 J	OU4-LJ-M08-100A	0.00		
ALPHA-BHC	1/1	3.9953	3.9953	OU4-LJ-M11-100A-AVG	4.00		
ALPHA-CHLORDANE	2/2	0.1463 J	0.8691 J	OU4-LJ-M14-100A	0.51	0.51	1.01
BETA-BHC	8/8	0.0802 J	2.6922	OU4-LJ-M08-100A	0.85	0.81	0.96
CIS-NONACHLOR	2/2	0.1518 J	0.7669 J	OU4-LJ-M08-100A	0.46	0.43	0.95
DELTA-BHC	1/1	1.0695 J	1.0695 J	OU4-LJ-M01-100A-AVG	1.07		

TABLE J - 3

BSAF AND BAF VALUES FOR JUVENILE LOBSTER
ACROSS ALL MONITORING STATIONS FOR ROUND 3
BASELINE INTERIM OFFSHORE MONITORING REPORT
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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
DIELDRIN	14/14	0.0382 J	33.8618 J	OU4-LJ-M13-100A	9.26	11.43	1.23
ENDOSULFAN II	2/2	0.0691 J	0.1247 J	OU4-LJ-M08-100A	0.10	0.04	0.41
GAMMA-BHC (LINDANE)	3/3	0.1416 J	0.3110 J	OU4-LJ-M12-100A	0.22	0.09	0.39
GAMMA-CHLORDANE	2/2	0.0267 J	0.0511 J	OU4-LJ-M08-100A	0.04	0.02	0.44
HEPTACHLOR EPOXIDE	1/1	5.7376 J	5.7376 J	OU4-LJ-M01-100A-AVG	5.74		
HEXACHLOROBENZENE	14/14	0.0551 J	5.0880 J	OU4-LJ-M12-100A	1.81	1.70	0.93
MIREX	1/1	7.1522 J	7.1522 J	OU4-LJ-M01-100A-AVG	7.15		
OXYCHLORDANE	13/13	0.4723 J	22.9638	OU4-LJ-M02-100A	6.23	6.85	1.10
PENTACHLOROANISOLE	1/1	2.7755 J	2.7755 J	OU4-LJ-M08-100A	2.78		
TRANS-NONACHLOR	9/9	0.0348 J	2.4487 J	OU4-LJ-M14-100A	0.53	0.78	1.45
Minimum BSAF					***0.0025***		
Maximum BSAF					***31.15***		
Average BSAF					***3.31***		
PCBs							
PCB-101/90	10/10	0.0550 J	0.7175 J	OU4-LJ-M05-100A	0.33	0.21	0.64
PCB-105	14/14	0.0262 J	2.2401	OU4-LJ-M05-100A	0.60	0.61	1.02
PCB-118	14/14	0.0496 J	3.9233	OU4-LJ-M05-100A	1.33	1.18	0.89
PCB-126	1/1	2.2972 J	2.2972 J	OU4-LJ-M01-100A-AVG	2.30		
PCB-128	13/13	0.0259 J	2.5332 J	OU4-LJ-M05-100A	0.68	0.71	1.04
PCB-138/160	3/3	0.2085 J	2.2182	OU4-LJ-M05-100A	1.42	1.06	0.75
PCB-149/123	13/13	0.0022 J	0.1483 J	OU4-LJ-M08-100A	0.06	0.05	0.81
PCB-153/132	1/1	0.2863 J	0.2863 J	OU4-LJ-M08-100A	0.29		
PCB-156	2/2	0.0889 J	0.1019 J	OU4-LJ-M08-100A	0.10	0.01	0.10
PCB-167	4/4	0.0558 J	1.0561 J	OU4-LJ-M05-100A	0.33	0.48	1.45
PCB-169	7/7	0.4082 J	10.5965 J	OU4-LJ-M02-100A	2.66	3.80	1.43
PCB-18/17	12/12	0.1932 J	41.6959 J	OU4-LJ-M01-100A-AVG	8.07	11.89	1.47
PCB-180	1/1	0.1277 J	0.1277 J	OU4-LJ-M08-100A	0.13		
PCB-187	14/14	0.0203	3.9837	OU4-LJ-M13-100A	1.10	1.18	1.08
PCB-195/208	6/6	0.0249 J	7.2219	OU4-LJ-M13-100A	1.40	2.86	2.05
PCB-201/157/173	2/2	0.0517 J	0.1485 J	OU4-LJ-M01-100A-AVG	0.10	0.07	0.68
PCB-206	8/8	0.0206 J	16.3547	OU4-LJ-M13-100A	2.29	5.69	2.48
PCB-209	3/3	0.0741 J	3.1671	OU4-LJ-M13-100A	1.11	1.78	1.60
PCB-28	7/7	0.0719 J	0.4676 J	OU4-LJ-M04-100A	0.31	0.13	0.43
PCB-44	1/1	0.2692 J	0.2692 J	OU4-LJ-M13-100A	0.27		
PCB-52	7/7	0.0015 J	0.6858 J	OU4-LJ-M05-100A	0.26	0.26	1.01
PCB-66	12/12	0.0216 J	3.8562 J	OU4-LJ-M04-100A	0.96	1.29	1.35

TABLE J - 3

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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
PCB-77	1/1	3.5206 J	3.5206 J	OU4-LJ-M14-100A	3.52		
PCB-8/5	12/12	0.0837 J	12.3270 J	OU4-LJ-M08-100A	2.37	3.47	1.47
PCB-81	2/2	0.4869 J	3.3495 J	OU4-LJ-M14-100A	1.92	2.02	1.06
Minimum BSAF					***0.002***		
Maximum BSAF					***31.15***		
Average BSAF					***2.82***		
Inorganics							
ARSENIC	14/14	0.1505 J	0.3848 J	OU4-LJ-M06-100A	0.28	0.07	0.23
CADMIUM	14/14	0.0392	0.1627	OU4-LJ-M01-100A-AVG	0.080	0.03	0.44
CHROMIUM	12/12	0.0053	0.0272	OU4-LJ-M10-100A	0.010	0.01	0.55
COPPER	14/14	0.0056	2.3676	OU4-LJ-M07-100A	0.93	0.82	0.89
IRON	14/14	0.0003 J	0.0010 J	OU4-LJ-M06-100A	0.00043	0.00	0.50
LEAD	3/3	0.0036	0.0238	OU4-LJ-M09-100A	0.016	0.01	0.68
MANGANESE	14/14	0.0029	0.0296	OU4-LJ-M14-100A	0.0086	0.01	0.85
MERCURY	14/14	0.4474	3.2909	OU4-LJ-M01-100A-AVG	2.08	0.94	0.45
SILVER	14/14	0.1159 J	0.3798 J	OU4-LJ-M07-100A	0.26	0.08	0.30
ZINC	14/14	0.0887 J	2.0166 J	OU4-LJ-M06-100A	0.87	0.62	0.72

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

TABLE J - 4

BSAF AND BAF VALUES FOR JUVENILE LOBSTER
ACROSS ALL MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins							
1,2,3,4,6,7,8,9-OCDF	1/1	1.5696 J	1.5696 J	OU4-LJ-M09-101B	1.57		
2,3,7,8-TCDF	1/1	7.9518 J	7.9518 J	OU4-LJ-M09-101B	7.95		
TOTAL HPCDD	1/1	0.0192 J	0.0192 J	OU4-LJ-M07-101B	0.02		
TOTAL HXCDF	1/1	0.7789 J	0.7789 J	OU4-LJ-M09-101B	0.78		
TOTAL TCDF	1/1	0.5344 J	0.5344 J	OU4-LJ-M09-101B	0.53		
Minimum BSAF					***0.02***		
Maximum BSAF					***7.95***		
Average BSAF					***2.17***		
Semi-Volatile Organics							
1,1-BIPHENYL	14/14	0.0695 J	1.3907 J	OU4-LJ-M09-101B	0.412	0.335	0.81
1-METHYLNAPHTHALENE	14/14	0.0196 J	0.5990	OU4-LJ-M09-101B	0.126	0.143	1.14
1-METHYLPHENANTHRENE	14/14	0.0017 J	0.0344 J	OU4-LJ-M13-101B	0.013	0.009	0.70
2,3,5-TRIMETHYLNAPHTHALENE	14/14	0.0131 J	0.1604 J	OU4-LJ-M09-101B	0.053	0.039	0.73
2,6-DIMETHYLNAPHTHALENE	14/14	0.0085 J	0.1443 J	OU4-LJ-M09-101B	0.043	0.034	0.79
2-METHYLNAPHTHALENE	14/14	0.0159 J	0.4719	OU4-LJ-M09-101B	0.102	0.113	1.11
ACENAPHTHENE	14/14	0.0007 J	0.0760 J	OU4-LJ-M09-101B	0.023	0.020	0.86
ACENAPHTHYLENE	14/14	0.0007 J	0.0042 J	OU4-LJ-M09-101B	0.001	0.001	0.62
ANTHRACENE	14/14	0.0003 J	0.0132 J	OU4-LJ-M09-101B	0.004	0.003	0.79
BENZO(A)ANTHRACENE	14/14	0.0014 J	0.0283	OU4-LJ-M13-101B	0.009	0.008	0.93
BENZO(A)PYRENE	14/14	0.0018	0.0326	OU4-LJ-M13-101B	0.012	0.010	0.87
BENZO(B)FLUORANTHENE	14/14	0.0018	0.0315	OU4-LJ-M13-101B	0.011	0.009	0.83
BENZO(E)PYRENE	14/14	0.0024	0.0396	OU4-LJ-M09-101B	0.015	0.011	0.75
BENZO(G,H,I)PERYLENE	14/14	0.0031	0.0409	OU4-LJ-M09-101B	0.016	0.012	0.77
BENZO(K)FLUORANTHENE	14/14	0.0020 J	0.0356	OU4-LJ-M13-101B	0.015	0.011	0.76
C1-CHRYSENES	14/14	0.0014 J	0.0225 J	OU4-LJ-M13-101B	0.009	0.006	0.73
C1-DIBENZOTHIOPHENES	14/14	0.0056 J	0.0866 J	OU4-LJ-M09-101B	0.027	0.021	0.78
C1-FLUORANTHENES/PYRENES	14/14	0.0018 J	0.0348 J	OU4-LJ-M09-101B	0.013	0.010	0.78
C1-FLUORENES	14/14	0.0107 J	0.1956 J	OU4-LJ-M09-101B	0.057	0.049	0.85
C1-NAPHTHALENES	14/14	0.0154 J	0.5172	OU4-LJ-M09-101B	0.110	0.124	1.12
C1-PHENANTHRENES/ANTHRACENES	14/14	0.0024 J	0.0374	OU4-LJ-M13-101B	0.014	0.010	0.73
C2-CHRYSENES	14/14	0.0006 J	0.0308 J	OU4-LJ-M09-101B	0.010	0.008	0.83
C2-DIBENZOTHIOPHENES	11/11	0.0010 J	0.0283 J	OU4-LJ-M08-101B-AVG	0.006	0.008	1.36

TABLE J - 4

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ACROSS ALL MONITORING STATIONS FOR ROUND 4
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
C2-FLUORENES	14/14	0.0085 J	0.1976 J	OU4-LJ-M09-101B	0.050	0.048	0.96
C2-NAPHTHALENES	14/14	0.0102 J	0.2623 J	OU4-LJ-M09-101B	0.057	0.062	1.08
C2-PHENANTHRENES/ANTHRACENES	14/14	0.0040 J	0.0510 J	OU4-LJ-M13-101B	0.016	0.013	0.83
C3-CHRYSENES	7/7	0.0015 J	0.0141 J	OU4-LJ-M09-101B	0.005	0.004	0.87
C3-DIBENZOTHIOPHENES	9/9	0.0014 J	0.0185 J	OU4-LJ-M08-101B-AVG	0.005	0.005	1.15
C3-FLUORENES	13/13	0.0007 J	0.1202 J	OU4-LJ-M09-101B	0.024	0.033	1.38
C3-NAPHTHALENES	14/14	0.0086 J	0.1469 J	OU4-LJ-M09-101B	0.035	0.035	1.01
C3-PHENANTHRENES/ANTHRACENES	14/14	0.0003 J	0.0535 J	OU4-LJ-M13-101B	0.013	0.014	1.05
C4-CHRYSENES	5/5	0.0002 J	0.0837	OU4-LJ-M01-101B-AVG	0.018	0.037	2.09
C4-NAPHTHALENES	14/14	0.0007 J	0.1575 J	OU4-LJ-M09-101B	0.022	0.041	1.81
C4-PHENANTHRENES/ANTHRACENES	13/13	0.0006 J	0.0380 J	OU4-LJ-M09-101B	0.009	0.012	1.45
CHRYSENE	14/14	0.0021	0.0388	OU4-LJ-M09-101B	0.015	0.011	0.77
DIBENZO(A,H)ANTHRACENE	14/14	0.0006 J	0.0122 J	OU4-LJ-M09-101B	0.005	0.004	0.79
DIBENZOTHIOPHENE	14/14	0.0013 J	0.0504 J	OU4-LJ-M09-101B	0.017	0.012	0.69
FLUORANTHENE	14/14	0.0012	0.0283	OU4-LJ-M13-101B	0.012	0.009	0.73
FLUORENE	14/14	0.0017 J	0.0934 J	OU4-LJ-M09-101B	0.026	0.023	0.87
INDENO(1,2,3-CD)PYRENE	14/14	0.0022 J	0.0344 J	OU4-LJ-M13-101B	0.014	0.011	0.75
NAPHTHALENE	14/14	0.0110 J	0.5354 J	OU4-LJ-M09-101B	0.105	0.130	1.24
PERYLENE	14/14	0.0044 J	0.0837	OU4-LJ-M09-101B	0.031	0.020	0.66
PHENANTHRENE	14/14	0.0009 J	0.0314 J	OU4-LJ-M09-101B	0.012	0.009	0.74
PYRENE	14/14	0.0012	0.0214	OU4-LJ-M13-101B	0.010	0.007	0.69
HMW PAHs					0.0103		
Minimum BSAF					***0.001***		
Maximum BSAF					***0.412***		
Average BSAF					***0.036***		

Pesticides

1,2,3,4-TETRACHLOROBENZENE	14/14	3.8376	336.8178 J	OU4-LJ-M01-101B-AVG	100.818	110.178	1.09
1,2,4,5-TETRACHLOROBENZENE	6/6	0.1205 J	0.3312 J	OU4-LJ-M13-101B	0.217	0.082	0.38
4,4'-DDD	1/1	0.0358	0.0358	OU4-LJ-M03-101B	0.036		
4,4'-DDE	14/14	0.0063	1.7146	OU4-LJ-M13-101B	0.520	0.609	1.17
ALPHA-CHLORDANE	2/2	0.0204	0.1333	OU4-LJ-M02-101B	0.077	0.080	1.04
CHLORPYRIFOS	14/14	3.2303 J	23.3154	OU4-LJ-M05-101B	11.316	6.013	0.53
DIELDRIN	14/14	0.0907 J	15.5686 J	OU4-LJ-M09-101B	5.201	5.688	1.09

TABLE J - 4

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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
ENDOSULFAN II	1/1	0.0745	0.0745	OU4-LJ-M12-101B	0.075		
GAMMA-BHC (LINDANE)	14/14	0.7322	16.3155	OU4-LJ-M09-101B	4.433	4.460	1.01
OXYCHLORDANE	10/10	1.5973 J	79.2124	OU4-LJ-M02-101B	14.211	23.940	1.68
PENTACHLOROANISOLE	14/14	0.2911 J	5.9264 J	OU4-LJ-M14-101B	1.84	1.52	0.82
PENTACHLOROBENZENE	5/5	0.1555 J	1.7040 J	OU4-LJ-M01-101B-AVG	0.60	0.63	1.06
TRANS-NONACHLOR	1/1	1.6847 J	1.6847 J	OU4-LJ-M14-101B	1.68		
Minimum BSAF					***0.036***		
Maximum BSAF					***100.818***		
Average BSAF					***10.848***		
PCBs							
PCB-101/90	4/4	0.0087 J	0.1961	OU4-LJ-M12-101B	0.110	0.080	0.72
PCB-105	14/14	0.0648 J	1.0842 J	OU4-LJ-M14-101B	0.395	0.372	0.94
PCB-118	14/14	0.0862	1.2256	OU4-LJ-M09-101B	0.569	0.420	0.74
PCB-126	7/7	0.0089 J	0.0774 J	OU4-LJ-M09-101B	0.041	0.024	0.59
PCB-128	10/10	0.0448 J	0.6426 J	OU4-LJ-M09-101B	0.233	0.200	0.86
PCB-138/160	14/14	0.0270	0.8861	OU4-LJ-M05-101B	0.334	0.317	0.95
PCB-149/123	4/4	0.0014 J	0.0648 J	OU4-LJ-M13-101B	0.033	0.029	0.88
PCB-153/132	14/14	0.0394	3.7796	OU4-LJ-M05-101B	0.622	0.980	1.58
PCB-156	2/2	0.0421 J	0.1355	OU4-LJ-M12-101B	0.089	0.066	0.74
PCB-167	1/1	0.0806 J	0.0806 J	OU4-LJ-M12-101B	0.081		
PCB-169	9/9	0.0150 J	5.9178 J	OU4-LJ-M02-101B	0.849	1.909	2.25
PCB-170/190	10/10	0.0035 J	0.0492 J	OU4-LJ-M09-101B	0.018	0.015	0.83
PCB-18/17	2/2	0.0876 J	0.4796 J	OU4-LJ-M02-101B	0.284	0.277	0.98
PCB-180	14/14	0.0061 J	0.9442 J	OU4-LJ-M05-101B	0.269	0.310	1.15
PCB-187	14/14	0.0084 J	1.0152 J	OU4-LJ-M05-101B	0.188	0.285	1.52
PCB-28	1/1	0.3006 J	0.3006 J	OU4-LJ-M01-101B-AVG	0.301		
PCB-44	12/12	0.0408 J	1.7299 J	OU4-LJ-M05-101B	0.504	0.587	1.16
PCB-52	1/1	0.0850 J	0.0850 J	OU4-LJ-M12-101B	0.085		
PCB-66	4/4	0.1051	0.4298 J	OU4-LJ-M14-101B	0.245	0.145	0.59
PCB-77	5/5	0.0233 J	0.0843 J	OU4-LJ-M13-101B	0.058	0.024	0.42
PCB-81	3/3	0.0257 J	0.0689 J	OU4-LJ-M14-101B	0.050	0.022	0.44
Minimum BSAF					***0.018***		
Maximum BSAF					***0.849***		
Average BSAF					***0.255***		

TABLE J - 4

BSAF AND BAF VALUES FOR JUVENILE LOBSTER
ACROSS ALL MONITORING STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Inorganics							
ARSENIC	14/14	0.8543	2.4534	OU4-LJ-M13-101B	1.65	0.39	0.24
CADMIUM	2/2	0.1328	0.3306	OU4-LJ-M01-101B-AVG	0.23	0.14	0.60
CHROMIUM	1/1	0.0279	0.0279	OU4-LJ-M04-101B	0.028		
COPPER	14/14	0.0135	2.2917	OU4-LJ-M06-101B	0.69	0.65	0.95
IRON	11/11	0.0002	0.0006	OU4-LJ-M07-101B	0.00040	0.00	0.30
LEAD	13/13	0.0001 J	0.0077	OU4-LJ-M13-101B	0.0022	0.00	0.93
MANGANESE	14/14	0.0052 J	0.0510 J	OU4-LJ-M10-101B	0.015	0.01	0.79
MERCURY	14/14	0.2340	4.9615	OU4-LJ-M01-101B-AVG	2.10	1.09	0.52
SILVER	14/14	0.1839	4.5205	OU4-LJ-M06-101B	1.87	1.33	0.71
ZINC	14/14	0.0867	1.2954	OU4-LJ-M14-101B	0.76	0.48	0.64

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

TABLE J - 5

BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL REFERENCE STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins (NG/KG)							
TOTAL DIOXIN/FURANS (TEQ)-HALFND	4/4	2.9	9.7	OU4-LJ-R02-199AM-AVG	7.030	3.09	0.44
TOTAL DIOXIN/FURANS (TEQ)-POSONLY	1/1	5.8	5.8	OU4-LJ-R01-199AM	5.836	---	---
Minimum BSAF					***5.84***		
Maximum BSAF					***7.03***		
Average BSAF					***6.43***		
Semivolatile Organics (UG/KG)							
1,1-BIPHENYL	2/2	0.074 J	0.21 J	OU4-LJ-R02-199AM-AVG	0.142	0.10	0.67
1-METHYLPHENANTHRENE	4/4	0.052	0.59	OU4-LJ-R04-199AM	0.196	0.26	1.4
2,3,5-TRIMETHYLNAPHTHALENE	4/4	0.084 J	1.0	OU4-LJ-R04-199AM	0.370	0.45	1.2
2,6-DIMETHYLNAPHTHALENE	4/4	0.078 J	0.30 J	OU4-LJ-R04-199AM	0.165	0.10	0.58
2-METHYLNAPHTHALENE	1/1	0.41	0.41	OU4-LJ-R02-199AM-AVG	0.415	---	---
ACENAPHTHENE	4/4	0.019 J	0.24 J	OU4-LJ-R04-199AM	0.077	0.11	1.4
ACENAPHTHYLENE	4/4	0.0032 J	0.028 J	OU4-LJ-R04-199AM	0.012	0.011	0.96
ANTHRACENE	4/4	0.0036 J	0.21	OU4-LJ-R04-199AM	0.059	0.10	1.7
BENZO(A)ANTHRACENE	4/4	0.0021 J	0.22	OU4-LJ-R04-199AM	0.063	0.11	1.7
BENZO(A)PYRENE	4/4	0.00069 J	0.12	OU4-LJ-R04-199AM	0.034	0.057	1.7
BENZO(B)FLUORANTHENE	4/4	0.0016 J	0.13	OU4-LJ-R04-199AM	0.037	0.065	1.8
BENZO(E)PYRENE	4/4	0.0063 J	0.11	OU4-LJ-R04-199AM	0.034	0.049	1.4
BENZO(G,H,I)PERYLENE	4/4	0.0020 J	0.05 J	OU4-LJ-R04-199AM	0.017	0.024	1.4
BENZO(K)FLUORANTHENE	4/4	0.0047 J	0.15 J	OU4-LJ-R04-199AM	0.052	0.069	1.3
C1-CHRYSENES	4/4	0.0065 J	0.11	OU4-LJ-R04-199AM	0.033	0.048	1.5
C1-DIBENZOTHIOPHENES	4/4	0.015 J	0.20 J	OU4-LJ-R04-199AM	0.066	0.090	1.4
C1-FLUORANTHENES/PYRENES	4/4	0.0076 J	0.21	OU4-LJ-R04-199AM	0.061	0.10	1.6
C1-FLUORENES	3/3	0.034 J	0.087 J	OU4-LJ-R01-199AM	0.057	0.027	0.48
C1-PHENANTHRENES/ANTHRACENES	4/4	0.028	0.30	OU4-LJ-R04-199AM	0.099	0.14	1.4
C2-CHRYSENES	4/4	0.010 J	0.074 J	OU4-LJ-R04-199AM	0.029	0.031	1.1
C2-DIBENZOTHIOPHENES	4/4	0.0059 J	0.066 J	OU4-LJ-R04-199AM	0.032	0.026	0.82
C2-FLUORENES	4/4	0.029 J	0.42 J	OU4-LJ-R04-199AM	0.148	0.18	1.2
C2-NAPHTHALENES	1/1	0.086 J	0.086 J	OU4-LJ-R03-199AM	0.086	---	---
C2-PHENANTHRENES/ANTHRACENES	4/4	0.017	0.18	OU4-LJ-R04-199AM	0.077	0.071	0.93
C3-CHRYSENES	2/2	0.024 J	0.045 J	OU4-LJ-R01-199AM	0.034	0.015	0.43
C3-DIBENZOTHIOPHENES	4/4	0.013 J	0.11 J	OU4-LJ-R04-199AM	0.045	0.045	0.99
C3-FLUORENES	4/4	0.032 J	0.33 J	OU4-LJ-R04-199AM	0.161	0.13	0.78
C3-NAPHTHALENES	4/4	0.035	0.40	OU4-LJ-R04-199AM	0.187	0.16	0.83
C3-PHENANTHRENES/ANTHRACENES	4/4	0.011 J	0.11 J	OU4-LJ-R04-199AM	0.049	0.042	0.85
C4-CHRYSENES	3/3	0.052 J	0.15 J	OU4-LJ-R04-199AM	0.086	0.052	0.60
C4-NAPHTHALENES	4/4	0.027 J	0.29 J	OU4-LJ-R04-199AM	0.186	0.12	0.67
C4-PHENANTHRENES/ANTHRACENES	4/4	0.014 J	0.13 J	OU4-LJ-R01-199AM	0.070	0.046	0.66
CHRYSENE	4/4	0.010	0.31	OU4-LJ-R04-199AM	0.091	0.15	1.6
DIBENZO(A,H)ANTHRACENE	4/4	0.0010 J	0.0068 J	OU4-LJ-R04-199AM	0.003	0.0028	1.1
DIBENZOTHIOPHENE	4/4	0.012 J	0.57	OU4-LJ-R04-199AM	0.161	0.28	1.7
FLUORANTHENE	4/4	0.011 J	0.51 J	OU4-LJ-R04-199AM	0.142	0.25	1.7
FLUORENE	4/4	0.021 J	0.32 J	OU4-LJ-R04-199AM	0.107	0.14	1.3
INDENO(1,2,3-CD)PYRENE	4/4	0.00042 J	0.058 J	OU4-LJ-R04-199AM	0.017	0.027	1.6

TABLE J - 5

BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL REFERENCE STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
PERYLENE	4/4	0.011 J	0.13 J	OU4-LJ-R04-199AM	0.046	0.058	1.3
PHENANTHRENE	4/4	0.0072	0.51	OU4-LJ-R04-199AM	0.143	0.25	1.7
PYRENE	4/4	0.0081	0.36	OU4-LJ-R04-199AM	0.102	0.17	1.7
HMW PAHs					0.434		
Minimum BSAF					***0.00***		
Maximum BSAF					***0.43***		
Average BSAF					***0.11***		
Pesticides (UG/KG)							
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	2/2	0.44 J	1.9	OU4-LJ-R01-199AM	1.150	1.0	0.87
2,2',5,5'-TETRACHLOROBIPHENYL	1/1	0.33 J	0.33 J	OU4-LJ-R02-199AM-AVG	0.330	---	---
2,3',4,4',5-PENTACHLOROBIPHENYL	2/2	2.4	3.9	OU4-LJ-R01-199AM	3.160	1.0	0.33
2,3',4,4'-TETRACHLOROBIPHENYL	4/4	0.12 J	0.66 J	OU4-LJ-R01-199AM	0.378	0.22	0.59
2,3,3',4,4'-PENTACHLOROBIPHENYL	4/4	1.1	1.8 J	OU4-LJ-R03-199AM	1.404	0.27	0.20
4,4'-DDD	1/1	0.034 J	0.034 J	OU4-LJ-R02-199AM-AVG	0.034	---	---
4,4'-DDE	4/4	1.1	3.5 J	OU4-LJ-R02-199AM-AVG	2.181	0.96	0.44
ALDRIN	1/1	0.65 J	0.65 J	OU4-LJ-R04-199AM	0.645	---	---
ALPHA-BHC	4/4	1.0	3.6	OU4-LJ-R01-199AM	2.148	1.2	0.57
ALPHA-CHLORDANE	3/3	3.0	94 J	OU4-LJ-R02-199AM-AVG	35.467	51	1.4
BETA-BHC	2/2	0.79	3.7 J	OU4-LJ-R02-199AM-AVG	2.254	2.1	0.92
CIS-NONACHLOR	1/1	1.4 J	1.4 J	OU4-LJ-R04-199AM	1.372	---	---
DECACHLOROBIPHENYL	2/2	0.12 J	1.1 J	OU4-LJ-R01-199AM	0.590	0.66	1.1
DIELDRIN	1/1	15	15	OU4-LJ-R02-199AM-AVG	15.474	---	---
ENDRIN	1/1	4.0 J	4.0 J	OU4-LJ-R02-199AM-AVG	3.965	---	---
HEXACHLOROBENZENE	2/2	2.3 J	8.2 J	OU4-LJ-R03-199AM	5.242	4.2	0.79
OXYCHLORDANE	2/2	5.6 J	20	OU4-LJ-R03-199AM	12.709	10	0.80
PENTACHLOROANISOLE	4/4	1.3	7.4	OU4-LJ-R02-199AM-AVG	3.378	2.8	0.84
PENTACHLOROBENZENE	4/4	1.0 J	7.2	OU4-LJ-R01-199AM	3.946	3.3	0.84
TRANS-NONACHLOR	2/2	0.68 J	1.5 J	OU4-LJ-R02-199AM-AVG	1.090	0.58	0.53
Minimum BSAF					***0.03***		
Maximum BSAF					***35.5***		
Average BSAF					***4.85***		
PCBs (UG/KG)							
PCB-101/90	2/2	0.69 J	0.85 J	OU4-LJ-R01-199AM	0.767	0.11	0.15
PCB-126	4/4	0.019 J	1.3 J	OU4-LJ-R03-199AM	0.404	0.58	1.4
PCB-153/132	2/2	2.0	3.0	OU4-LJ-R01-199AM	2.515	0.69	0.28
PCB-156	1/1	2.2 J	2.2 J	OU4-LJ-R02-199AM-AVG	2.200	---	---
PCB-167	3/3	0.12 J	0.25 J	OU4-LJ-R04-199AM	0.177	0.069	0.39
PCB-169	1/1	0.032 J	0.032 J	OU4-LJ-R04-199AM	0.032	---	---
PCB-18/17	2/2	1.1 J	137 J	OU4-LJ-R02-199AM-AVG	68.973	96	1.4
PCB-187	2/2	0.28	2.5	OU4-LJ-R01-199AM	1.387	1.6	1.1
PCB-195/208	2/2	0.094 J	0.45 J	OU4-LJ-R04-199AM	0.272	0.25	0.93
PCB-77	1/1	1.6 J	1.6 J	OU4-LJ-R02-199AM-AVG	1.618	---	---
PCB-8/5	4/4	1.3	3.5	OU4-LJ-R01-199AM	1.914	1.1	0.56
Minimum BSAF					***0.03***		
Maximum BSAF					***69.0***		
Average BSAF					***7.30***		

TABLE J - 5

BSAF AND BAF VALUES FOR JUVENILE LOBSTER ACROSS ALL REFERENCE STATIONS FOR ROUND 1
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Inorganics (MG/KG)							
ALUMINUM	4/4	0.000065 J	0.00018 J	OU4-LJ-R01-199AM	0.000	0.000058	0.45
ARSENIC	4/4	1.0	3.7	OU4-LJ-R04-199AM	2.265	1.2	0.51
CADMIUM	3/3	0.18 J	0.24 J	OU4-LJ-R02-199AM-AVG	0.205	0.028	0.14
CHROMIUM	1/1	0.013	0.013	OU4-LJ-R01-199AM	0.013	---	---
COPPER	4/4	1.8	12	OU4-LJ-R04-199AM	5.521	4.7	0.84
IRON	4/4	0.00037	0.0012	OU4-LJ-R01-199AM	0.001	0.00036	0.48
LEAD	3/3	0.0080 J	0.013 J	OU4-LJ-R01-199AM	0.010	0.0027	0.27
MANGANESE	4/4	0.0058	0.010	OU4-LJ-R01-199AM	0.007	0.0022	0.32
MERCURY	3/3	1.1	5.3	OU4-LJ-R02-199AM-AVG	3.669	2.3	0.62
NICKEL	1/1	0.045	0.045	OU4-LJ-R01-199AM	0.045	---	---
SILVER	4/4	5.3 J	41 J	OU4-LJ-R04-199AM	17.185	16	0.94
ZINC	4/4	1.5	4.1	OU4-LJ-R04-199AM	2.382	1.2	0.52

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

TABLE J - 6

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins							
1,2,3,4,6,7,8,9-OCDD	1/1	0.078 J	0.078 J	OU4-LJ-R01-100B	0.08		
1,2,3,4,6,7,8,9-OCDF	1/1	1.540 J	1.540 J	OU4-LJ-R01-100B	1.54		
1,2,3,4,7,8-HXCDD	1/1	9.941 J	9.941 J	OU4-LJ-R01-100B	9.94		
1,2,3,4,7,8-HXCDF	1/1	10.105 J	10.105 J	OU4-LJ-R01-100B	10.10		
1,2,3,6,7,8-HXCDD	1/1	7.673 J	7.673 J	OU4-LJ-R01-100B	7.67		
1,2,3,7,8,9-HXCDD	1/1	6.700 J	6.700 J	OU4-LJ-R01-100B	6.70		
2,3,4,6,7,8-HXCDF	1/1	6.832 J	6.832 J	OU4-LJ-R01-100B	6.83		
2,3,7,8-TCDD	3/3	0.429 J	10.031 J	OU4-LJ-R01-100B	3.64	5.54	1.52
TOTAL DIOXINS	3/3	0.000 J	0.152 J	OU4-LJ-R01-100B	0.05	0.08	1.56
TOTAL FURANS	3/3	0.014 J	1.664 J	OU4-LJ-R01-100B	0.56	0.95	1.69
TOTAL HXCDD	2/2	0.156 J	1.232 J	OU4-LJ-R01-100B	0.69	0.76	1.10
TOTAL TCDD	3/3	0.028 J	1.345 J	OU4-LJ-R01-100B	0.47	0.76	1.60
Minimum BSAF					***0.05***		
Maximum BSAF					***10.10***		
Average BSAF					***4.02***		
Semi-Volatile Organics							
1,1-BIPHENYL	4/4	0.162 J	1.601	OU4-LJ-R04-100B	0.63	0.66	1.04
1-METHYLNAPHTHALENE	4/4	0.149 J	2.216	OU4-LJ-R04-100B	0.75	0.98	1.31
1-METHYLPHENANTHRENE	4/4	0.008 J	0.072 J	OU4-LJ-R04-100B	0.03	0.03	0.87
2,3,5-TRIMETHYLNAPHTHALENE	4/4	0.041 J	0.453 J	OU4-LJ-R04-100B	0.18	0.19	1.03
2,6-DIMETHYLNAPHTHALENE	4/4	0.058 J	0.546 J	OU4-LJ-R04-100B	0.20	0.23	1.16
2-METHYLNAPHTHALENE	4/4	0.112 J	1.688	OU4-LJ-R04-100B	0.58	0.74	1.27
ACENAPHTHENE	4/4	0.029 J	0.340 J	OU4-LJ-R04-100B	0.13	0.14	1.10
ACENAPHTHYLENE	4/4	0.002 J	0.051 J	OU4-LJ-R04-100B	0.02	0.02	1.29
ANTHRACENE	4/4	0.002 J	0.022 J	OU4-LJ-R04-100B	0.01	0.01	0.98
BENZO(A)ANTHRACENE	4/4	0.006	0.026 J	OU4-LJ-R04-100B	0.01	0.01	0.77
BENZO(A)PYRENE	4/4	0.012	0.030 J	OU4-LJ-R04-100B	0.02	0.01	0.45
BENZO(B)FLUORANTHENE	4/4	0.012	0.032 J	OU4-LJ-R04-100B	0.02	0.01	0.50
BENZO(E)PYRENE	4/4	0.002 J	0.026	OU4-LJ-R03-100B	0.02	0.01	0.69
BENZO(G,H,I)PERYLENE	4/4	0.012 J	0.026 J	OU4-LJ-R04-100B	0.02	0.01	0.30
BENZO(K)FLUORANTHENE	4/4	0.014 J	0.047 J	OU4-LJ-R04-100B	0.02	0.02	0.71
C1-CHRYSENES	4/4	0.008 J	0.043 J	OU4-LJ-R04-100B	0.02	0.01	0.67
C1-DIBENZOTHIOPHENES	4/4	0.031 J	0.181 J	OU4-LJ-R04-100B	0.10	0.07	0.68
C1-FLUORANTHENES/PYRENES	4/4	0.013	0.056 J	OU4-LJ-R04-100B	0.03	0.02	0.70
C1-FLUORENES	4/4	0.076 J	0.947 J	OU4-LJ-R04-100B	0.31	0.43	1.40
C1-NAPHTHALENES	4/4	0.128 J	1.926	OU4-LJ-R04-100B	0.66	0.85	1.29
C1-PHENANTHRENES/ANTHRACENES	4/4	0.019	0.082 J	OU4-LJ-R04-100B	0.05	0.03	0.69
C2-CHRYSENES	4/4	0.006 J	0.053 J	OU4-LJ-R04-100B	0.02	0.02	0.98

TABLE J - 6

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 2
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
C2-DIBENZOTHIOPHENES	4/4	0.040 J	0.165 J	OU4-LJ-R04-100B	0.10	0.06	0.64
C2-FLUORENES	4/4	0.023 J	0.288 J	OU4-LJ-R04-100B	0.15	0.11	0.72
C2-NAPHTHALENES	4/4	0.103 J	0.935 J	OU4-LJ-R04-100B	0.34	0.40	1.18
C2-PHENANTHRENES/ANTHRACENES	4/4	0.027	0.117 J	OU4-LJ-R04-100B	0.07	0.05	0.71
C3-CHRYSENES	4/4	0.019 J	0.152 J	OU4-LJ-R04-100B	0.07	0.06	0.91
C3-DIBENZOTHIOPHENES	4/4	0.043 J	0.207 J	OU4-LJ-R04-100B	0.11	0.08	0.70
C3-FLUORENES	4/4	0.026 J	0.162 J	OU4-LJ-R01-100B	0.08	0.06	0.72
C3-NAPHTHALENES	4/4	0.041 J	0.460 J	OU4-LJ-R04-100B	0.20	0.19	0.96
C3-PHENANTHRENES/ANTHRACENES	4/4	0.058 J	0.200	OU4-LJ-R01-100B	0.12	0.07	0.55
C4-CHRYSENES	4/4	0.011 J	0.314 J	OU4-LJ-R04-100B	0.13	0.13	1.01
C4-NAPHTHALENES	4/4	0.004 J	0.752 J	OU4-LJ-R04-100B	0.26	0.34	1.28
C4-PHENANTHRENES/ANTHRACENES	4/4	0.002 J	0.146 J	OU4-LJ-R01-100B	0.08	0.06	0.73
CHRYSENE	4/4	0.014	0.055 J	OU4-LJ-R04-100B	0.03	0.02	0.67
DIBENZO(A,H)ANTHRACENE	4/4	0.003 J	0.036 J	OU4-LJ-R04-100B	0.01	0.01	1.02
DIBENZOTHIOPHENE	4/4	0.017 J	0.150 J	OU4-LJ-R04-100B	0.06	0.06	1.12
FLUORANTHENE	4/4	0.015	0.082	OU4-LJ-R04-100B	0.03	0.03	0.97
FLUORENE	4/4	0.029 J	0.399 J	OU4-LJ-R04-100B	0.13	0.18	1.38
INDENO(1,2,3-CD)PYRENE	4/4	0.013 J	0.030 J	OU4-LJ-R04-100B	0.02	0.01	0.43
NAPHTHALENE	4/4	0.195	2.075	OU4-LJ-R04-100B	0.75	0.89	1.19
PERYLENE	4/4	0.047 J	0.159	OU4-LJ-R03-100B	0.10	0.05	0.45
PHENANTHRENE	4/4	0.012	0.126	OU4-LJ-R04-100B	0.04	0.06	1.33
PYRENE	4/4	0.016	0.073	OU4-LJ-R04-100B	0.03	0.03	0.81
HMW PAHs					0.023		
Minimum BSAF					***0.01***		
Maximum BSAF					***0.75***		
Average BSAF					***0.15***		

TABLE J - 6

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 2
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Pesticides							
1,2,3,4-TETRACHLOROBENZENE	4/4	0.692 J	43.080	OU4-LJ-R02-100B	28.04	19.96	0.71
1,2,4,5-TETRACHLOROBENZENE	2/2	3.286	11.543	OU4-LJ-R04-100B	7.41	5.84	0.79
2,4'-DDD	2/2	0.558 J	3.774 J	OU4-LJ-R01-100B	2.17	2.27	1.05
2,4'-DDE	3/3	0.642 J	1.570 J	OU4-LJ-R02-100B	1.11	0.46	0.42
2,4'-DDT	3/3	0.394	7.158	OU4-LJ-R01-100B	3.14	3.56	1.13
4,4'-DDD	2/2	0.032 J	0.205 J	OU4-LJ-R01-100B	0.12	0.12	1.03
4,4'-DDE	4/4	2.269	5.153	OU4-LJ-R01-100B	3.51	1.42	0.40
4,4'-DDT	1/1	4.577 J	4.577 J	OU4-LJ-R01-100B	4.58		0.00
ALDRIN	2/2	2.697 J	4.557 J	OU4-LJ-R02-100B	3.63	1.32	0.36
ALPHA-BHC	4/4	1.173	3.226	OU4-LJ-R02-100B	2.27	0.88	0.39
ALPHA-CHLORDANE	2/2	12.360	15.189	OU4-LJ-R03-100B	13.77	2.00	0.15
BETA-BHC	1/1	0.685	0.685	OU4-LJ-R02-100B	0.68		0.00
CIS-NONACHLOR	2/2	0.131 J	0.527 J	OU4-LJ-R01-100B	0.33	0.28	0.85
DELTA-BHC	3/3	2.278	8.564	OU4-LJ-R03-100B	4.53	3.50	0.77
DIELDRIN	4/4	3.433 J	16.425 J	OU4-LJ-R01-100B	8.80	5.97	0.68
GAMMA-BHC (LINDANE)	2/2	2.297	5.667	OU4-LJ-R02-100B	3.98	2.38	0.60
GAMMA-CHLORDANE	1/1	2.558 J	2.558 J	OU4-LJ-R01-100B	2.56		0.00
HEXACHLOROBENZENE	3/3	0.074	5.126	OU4-LJ-R04-100B	2.77	2.54	0.92
MIREX	2/2	1.311 J	7.757 J	OU4-LJ-R01-100B	4.53	4.56	1.01
OXYCHLORDANE	4/4	1.122	64.810 J	OU4-LJ-R01-100B	18.02	31.21	1.73
PENTACHLOROANISOLE	4/4	1.316 J	4.147	OU4-LJ-R01-100B	2.55	1.29	0.51
PENTACHLOROBENZENE	2/2	1.209	1.554	OU4-LJ-R02-100B	1.38	0.24	0.18
TRANS-NONACHLOR	3/3	1.025	2.028	OU4-LJ-R01-100B	1.38	0.56	0.41
Minimum BSAF					***0.12***		
Maximum BSAF					***28.04***		
Average BSAF					***5.27***		
PCBs							
PCB-101/90	3/3	0.032 J	2.593	OU4-LJ-R03-100B	1.33	1.28	0.96
PCB-105	4/4	0.093	2.863	OU4-LJ-R03-100B	1.40	1.28	0.92
PCB-118	4/4	0.208	4.319	OU4-LJ-R01-100B	1.58	1.86	1.18
PCB-126	4/4	1.185 J	22.593	OU4-LJ-R02-100B	8.05	10.08	1.25
PCB-128	4/4	0.162 J	4.835 J	OU4-LJ-R01-100B	1.66	2.14	1.28
PCB-138/160	4/4	0.260	4.376	OU4-LJ-R01-100B	2.40	1.78	0.74
PCB-149/123	4/4	0.162 J	1.276 J	OU4-LJ-R03-100B	0.80	0.49	0.62
PCB-167	3/3	0.209 J	1.418 J	OU4-LJ-R01-100B	0.62	0.69	1.10
PCB-169	2/2	0.556 J	0.657 J	OU4-LJ-R02-100B	0.61	0.07	0.12
PCB-18/17	2/2	5.024 J	5.244 J	OU4-LJ-R02-100B	5.13	0.16	0.03
PCB-180	2/2	0.884	3.622	OU4-LJ-R01-100B	2.25	1.94	0.86

TABLE J - 6

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 2
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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
PCB-187	2/2	1.869	6.142	OU4-LJ-R01-100B	4.01	3.02	0.75
PCB-195/208	2/2	0.297 J	0.790 J	OU4-LJ-R01-100B	0.54	0.35	0.64
PCB-201/157/173	2/2	0.137 J	0.993 J	OU4-LJ-R01-100B	0.56	0.61	1.07
PCB-206	2/2	0.289 J	0.962 J	OU4-LJ-R01-100B	0.63	0.48	0.76
PCB-209	2/2	0.113 J	0.276 J	OU4-LJ-R01-100B	0.19	0.12	0.59
PCB-28	2/2	0.242 J	0.321	OU4-LJ-R02-100B	0.28	0.06	0.20
PCB-44	3/3	0.094 J	5.343	OU4-LJ-R03-100B	2.58	2.64	1.02
PCB-52	3/3	0.073	5.362	OU4-LJ-R04-100B	3.12	2.73	0.88
PCB-66	3/3	0.194 J	3.155 J	OU4-LJ-R01-100B	1.31	1.61	1.23
PCB-8/5	3/3	0.201 J	1.998 J	OU4-LJ-R04-100B	0.86	0.99	1.15
PCB-81	3/3	0.990 J	5.114	OU4-LJ-R02-100B	2.69	2.15	0.80
Minimum BSAF					***0.19***		
Maximum BSAF					***8.05***		
Average BSAF					***1.94***		
Inorganics							
ALUMINUM	4/4	0.000	0.000	OU4-LJ-R02-100B	0.00014	0.00004	0.31
ARSENIC	4/4	1.904	5.015	OU4-LJ-R04-100B	3.01	1.41	0.47
CADMIUM	4/4	0.088	0.308	OU4-LJ-R04-100B	0.21	0.11	0.50
COPPER	4/4	2.533	14.237	OU4-LJ-R04-100B	6.08	5.48	0.90
IRON	4/4	0.001 J	0.001 J	OU4-LJ-R02-100B	0.0006	0.0002	0.30
LEAD	2/2	0.004	0.013	OU4-LJ-R02-100B	0.0082	0.0064	0.78
MANGANESE	4/4	0.005 J	0.013 J	OU4-LJ-R02-100B	0.0091	0.0032	0.35
MERCURY	4/4	3.833	14.286	OU4-LJ-R04-100B	8.43	4.33	0.51
NICKEL	2/2	0.022	0.034	OU4-LJ-R02-100B	0.03	0.01	0.31
SILVER	4/4	1.133	6.267	OU4-LJ-R04-100B	2.64	2.45	0.93
ZINC	4/4	1.362	3.263	OU4-LJ-R04-100B	2.13	0.80	0.38

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

TABLE J - 7

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 3
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PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins							
1,2,3,4,6,7,8,9-OCDD	1/1	0.010 J	0.010 J	OU4-LJ-R01-100A	0.010		
2,3,7,8-TCDD	1/1	1.018 J	1.018 J	OU4-LJ-R03-100A	1.018		
2,3,7,8-TCDF	2/2	1.310 J	9.034 J	OU4-LJ-R02-100A	5.172	4.795	0.927
TOTAL DIOXINS	4/4	0.000 J	0.045 J	OU4-LJ-R04-100A	0.019	0.019	0.978
TOTAL FURANS	1/1	0.320 J	0.320 J	OU4-LJ-R04-100A	0.320		
TOTAL HPCDD	1/1	0.049 J	0.049 J	OU4-LJ-R01-100A	0.049		
TOTAL TCDD	2/2	0.058 J	3.674 J	OU4-LJ-R02-100A	1.866	2.557	1.370
TOTAL TCDF	4/4	0.139 J	1.005 J	OU4-LJ-R02-100A	0.506	0.365	0.720
Minimum BSAF					***0.010***		
Maximum BSAF					***5.172***		
Average BSAF					***1.120***		
Semi-Volatile Organics							
1,1-BIPHENYL	4/4	0.157 J	0.320 J	OU4-LJ-R01-100A	0.228	0.078	0.341
1-METHYLNAPHTHALENE	4/4	0.092 J	1.139 J	OU4-LJ-R04-100A	0.453	0.485	1.071
1-METHYLPHENANTHRENE	4/4	0.007 J	0.046 J	OU4-LJ-R04-100A	0.020	0.018	0.899
2,3,5-TRIMETHYLNAPHTHALENE	4/4	0.031 J	0.341 J	OU4-LJ-R04-100A	0.130	0.144	1.108
2,6-DIMETHYLNAPHTHALENE	4/4	0.054 J	0.201 J	OU4-LJ-R01-100A	0.114	0.066	0.581
2-METHYLNAPHTHALENE	4/4	0.104 J	0.807 J	OU4-LJ-R04-100A	0.346	0.329	0.951
ACENAPHTHENE	4/4	0.009 J	0.164 J	OU4-LJ-R04-100A	0.073	0.071	0.970
ACENAPHTHYLENE	4/4	0.004 J	0.023 J	OU4-LJ-R04-100A	0.010	0.009	0.895
ANTHRACENE	4/4	0.003 J	0.023 J	OU4-LJ-R04-100A	0.009	0.010	1.044
BENZO(A)ANTHRACENE	4/4	0.005 J	0.019 J	OU4-LJ-R04-100A	0.009	0.006	0.707
BENZO(A)PYRENE	4/4	0.006	0.019 J	OU4-LJ-R04-100A	0.010	0.006	0.563
BENZO(B)FLUORANTHENE	4/4	0.005	0.027 J	OU4-LJ-R04-100A	0.012	0.010	0.785
BENZO(E)PYRENE	4/4	0.008 J	0.034 J	OU4-LJ-R04-100A	0.018	0.012	0.664
BENZO(G,H,I)PERYLENE	4/4	0.005 J	0.021 J	OU4-LJ-R04-100A	0.011	0.007	0.663
BENZO(K)FLUORANTHENE	4/4	0.011 J	0.078 J	OU4-LJ-R04-100A	0.031	0.032	1.022
C1-CHRYSENES	4/4	0.001 J	0.009 J	OU4-LJ-R03-100A	0.005	0.004	0.771
C1-DIBENZOTHIOPHENES	4/4	0.011 J	0.069 J	OU4-LJ-R01-100A	0.037	0.029	0.783
C1-FLUORANTHENES/PYRENES	4/4	0.011 J	0.051 J	OU4-LJ-R04-100A	0.024	0.019	0.780
C1-FLUORENES	4/4	0.022 J	0.262 J	OU4-LJ-R04-100A	0.124	0.114	0.919
C1-NAPHTHALENES	4/4	0.099 J	0.934	OU4-LJ-R04-100A	0.387	0.389	1.004
C1-PHENANTHRENES/ANTHRACENES	4/4	0.009 J	0.083 J	OU4-LJ-R04-100A	0.033	0.034	1.038
C2-CHRYSENES	4/4	0.004 J	0.008 J	OU4-LJ-R02-100A	0.006	0.002	0.342
C2-DIBENZOTHIOPHENES	4/4	0.000 J	0.004 J	OU4-LJ-R02-100A	0.002	0.002	0.757
C2-FLUORENES	4/4	0.021 J	0.100 J	OU4-LJ-R04-100A	0.048	0.037	0.775
C2-NAPHTHALENES	4/4	0.032 J	0.357 J	OU4-LJ-R04-100A	0.145	0.151	1.044

TABLE J - 7

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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
C2-PHENANTHRENES/ANTHRACENES	4/4	0.010 J	0.080 J	OU4-LJ-R04-100A	0.036	0.033	0.904
C3-CHRYSENES	4/4	0.014 J	0.085 J	OU4-LJ-R04-100A	0.043	0.033	0.759
C3-DIBENZOTHIOPHENES	4/4	0.002 J	0.004 J	OU4-LJ-R04-100A	0.003	0.001	0.314
C3-FLUORENES	4/4	0.002 J	0.034 J	OU4-LJ-R01-100A	0.012	0.015	1.237
C3-NAPHTHALENES	4/4	0.018 J	0.389 J	OU4-LJ-R04-100A	0.139	0.172	1.240
C3-PHENANTHRENES/ANTHRACENES	4/4	0.000 J	0.021 J	OU4-LJ-R01-100A	0.008	0.010	1.249
C4-CHRYSENES	4/4	0.007 J	0.261 J	OU4-LJ-R04-100A	0.075	0.124	1.664
C4-NAPHTHALENES	4/4	0.001 J	0.062 J	OU4-LJ-R01-100A	0.026	0.026	1.016
C4-PHENANTHRENES/ANTHRACENES	4/4	0.001 J	0.003 J	OU4-LJ-R04-100A	0.002	0.001	0.749
CHRYSENE	4/4	0.012	0.064 J	OU4-LJ-R04-100A	0.029	0.024	0.816
DIBENZO(A,H)ANTHRACENE	4/4	0.000 J	0.008 J	OU4-LJ-R04-100A	0.003	0.003	1.143
DIBENZOTHIOPHENE	4/4	0.007 J	0.090 J	OU4-LJ-R04-100A	0.037	0.039	1.051
FLUORANTHENE	4/4	0.009	0.078	OU4-LJ-R04-100A	0.034	0.031	0.925
FLUORENE	4/4	0.012 J	0.204 J	OU4-LJ-R04-100A	0.077	0.089	1.160
INDENO(1,2,3-CD)PYRENE	4/4	0.004 J	0.013 J	OU4-LJ-R04-100A	0.006	0.004	0.664
NAPHTHALENE	4/4	0.078 J	0.458 J	OU4-LJ-R04-100A	0.206	0.177	0.861
PERYLENE	4/4	0.016 J	0.056 J	OU4-LJ-R04-100A	0.035	0.020	0.554
PHENANTHRENE	4/4	0.004 J	0.080 J	OU4-LJ-R04-100A	0.029	0.035	1.227
PYRENE	4/4	0.009	0.068	OU4-LJ-R04-100A	0.031	0.026	0.864
HMW PAHs					0.019		
Minimum BSAF					***0.002***		
Maximum BSAF					***0.453***		
Average BSAF					***0.071***		
Pesticides							
1,2,3,4-TETRACHLOROBENZENE	4/4	15.156	26.423	OU4-LJ-R03-100A	20.275	4.644	0.229
2,4'-DDT	1/1	1.110 J	1.110 J	OU4-LJ-R02-100A	1.110		
4,4'-DDE	4/4	0.775	4.156	OU4-LJ-R02-100A	2.221	1.427	0.642
ALPHA-CHLORDANE	2/2	0.293 J	0.689 J	OU4-LJ-R01-100A	0.491	0.280	0.569
CIS-NONACHLOR	2/2	0.202 J	0.443 J	OU4-LJ-R02-100A	0.323	0.171	0.528
DIELDRIN	4/4	4.449 J	14.549 J	OU4-LJ-R03-100A	8.880	4.209	0.474
HEXACHLOROBENZENE	4/4	0.262 J	6.032 J	OU4-LJ-R02-100A	2.528	2.513	0.994
OXYCHLORDANE	4/4	3.820	13.446	OU4-LJ-R01-100A	8.474	4.351	0.513
TRANS-NONACHLOR	4/4	0.286 J	1.104 J	OU4-LJ-R01-100A	0.657	0.341	0.518
Minimum BSAF					***0.323***		
Maximum BSAF					***20.275***		
Average BSAF					***4.995***		

TABLE J - 7

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
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Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
PCBs							
PCB-101/90	4/4	0.128 J	0.921 J	OU4-LJ-R01-100A	0.401	0.356	0.889
PCB-105	4/4	0.371 J	3.923 J	OU4-LJ-R04-100A	1.806	1.503	0.832
PCB-118	4/4	0.497 J	5.427	OU4-LJ-R04-100A	2.736	2.031	0.742
PCB-128	4/4	0.395 J	2.316 J	OU4-LJ-R04-100A	1.680	0.874	0.520
PCB-149/123	4/4	0.068 J	0.583 J	OU4-LJ-R01-100A	0.233	0.236	1.013
PCB-156	2/2	0.272 J	2.535 J	OU4-LJ-R04-100A	1.403	1.600	1.140
PCB-167	2/2	0.429 J	0.535 J	OU4-LJ-R02-100A	0.482	0.075	0.155
PCB-169	1/1	0.635 J	0.635 J	OU4-LJ-R02-100A	0.635		
PCB-18/17	1/1	11.397 J	11.397 J	OU4-LJ-R02-100A	11.397		
PCB-187	4/4	1.052 J	5.387	OU4-LJ-R04-100A	3.489	1.818	0.521
PCB-195/208	2/2	0.443 J	0.699 J	OU4-LJ-R04-100A	0.571	0.181	0.317
PCB-206	2/2	0.307 J	0.342 J	OU4-LJ-R02-100A	0.325	0.025	0.076
PCB-44	2/2	0.328 J	1.706 J	OU4-LJ-R02-100A	1.017	0.974	0.958
PCB-66	4/4	0.413 J	1.336 J	OU4-LJ-R01-100A	0.911	0.385	0.422
PCB-77	1/1	1.750 J	1.750 J	OU4-LJ-R01-100A	1.750		
PCB-8/5	4/4	0.297 J	6.218 J	OU4-LJ-R01-100A	2.651	2.674	1.009
Minimum BSAF					***0.233***		
Maximum BSAF					***11.397***		
Average BSAF					***1.968***		
Inorganics							
ARSENIC	4/4	0.361 J	0.694 J	OU4-LJ-R04-100A	0.486	0.156	0.322
CADMIUM	4/4	0.070	0.239	OU4-LJ-R04-100A	0.125	0.078	0.619
CHROMIUM	4/4	0.010	0.018	OU4-LJ-R04-100A	0.015	0.004	0.254
COPPER	4/4	1.511	10.273	OU4-LJ-R04-100A	5.090	3.911	0.768
IRON	4/4	0.000 J	0.002 J	OU4-LJ-R01-100A	0.001	0.001	0.577
LEAD	1/1	0.025	0.025	OU4-LJ-R04-100A	0.025		
MANGANESE	4/4	0.006	0.011	OU4-LJ-R02-100A	0.008	0.003	0.332
MERCURY	4/4	3.123	9.878	OU4-LJ-R04-100A	6.398	3.053	0.477
SILVER	4/4	0.251 J	0.636 J	OU4-LJ-R01-100A	0.436	0.211	0.483
ZINC	4/4	1.377 J	5.767 J	OU4-LJ-R04-100A	2.783	2.060	0.740

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

TABLE J - 8

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
Dioxins							
2,3,7,8-TCDF	1/1	2.160 J	2.160 J	OU4-LJ-R01-101B	2.160		
TOTAL HXCDD	1/1	0.113 J	0.113 J	OU4-LJ-R01-101B	0.113		
TOTAL TCDF	1/1	1.570 J	1.570 J	OU4-LJ-R01-101B	1.570		
Minimum BSAF					***0.11***		
Maximum BSAF					***2.16***		
Average BSAF					***1.28***		
Semi-Volatile Organics							
1,1-BIPHENYL	3/3	0.321 J	0.636 J	OU4-LJ-R01-101B	0.442	0.169	0.383
1-METHYLNAPHTHALENE	3/3	0.085 J	0.459 J	OU4-LJ-R01-101B	0.224	0.205	0.914
1-METHYLPHENANTHRENE	3/3	0.007 J	0.069 J	OU4-LJ-R02-101B	0.034	0.032	0.933
2,3,5-TRIMETHYLNAPHTHALENE	3/3	0.019 J	0.131 J	OU4-LJ-R01-101B	0.073	0.056	0.776
2,6-DIMETHYLNAPHTHALENE	3/3	0.033 J	0.083 J	OU4-LJ-R01-101B	0.051	0.028	0.544
2-METHYLNAPHTHALENE	3/3	0.076 J	0.212 J	OU4-LJ-R01-101B	0.134	0.071	0.528
ACENAPHTHENE	3/3	0.016 J	0.043 J	OU4-LJ-R01-101B	0.031	0.013	0.433
ACENAPHTHYLENE	3/3	0.001 J	0.002 J	OU4-LJ-R03-101B	0.002	0.0002	0.091
ANTHRACENE	3/3	0.002 J	0.005 J	OU4-LJ-R02-101B	0.004	0.002	0.406
BENZO(A)ANTHRACENE	3/3	0.006 J	0.019	OU4-LJ-R02-101B	0.012	0.007	0.536
BENZO(A)PYRENE	3/3	0.008	0.016	OU4-LJ-R01-101B	0.013	0.004	0.327
BENZO(B)FLUORANTHENE	3/3	0.008	0.019	OU4-LJ-R02-101B	0.013	0.005	0.415
BENZO(E)PYRENE	3/3	0.011	0.026	OU4-LJ-R02-101B	0.019	0.007	0.382
BENZO(G,H,I)PERYLENE	3/3	0.010	0.016 J	OU4-LJ-R01-101B	0.012	0.004	0.298
BENZO(K)FLUORANTHENE	3/3	0.009 J	0.024	OU4-LJ-R02-101B	0.016	0.008	0.459
C1-CHRYSENES	3/3	0.005 J	0.016 J	OU4-LJ-R02-101B	0.010	0.006	0.555
C1-DIBENZOTHIOPHENES	3/3	0.014 J	0.093	OU4-LJ-R02-101B	0.058	0.040	0.698
C1-FLUORANTHENES/PYRENES	3/3	0.007 J	0.049	OU4-LJ-R02-101B	0.024	0.022	0.933
C1-FLUORENES	3/3	0.029 J	0.119 J	OU4-LJ-R01-101B	0.078	0.045	0.580
C1-NAPHTHALENES	3/3	0.080 J	0.236 J	OU4-LJ-R01-101B	0.143	0.082	0.576
C1-PHENANTHRENES/ANTHRACENES	3/3	0.006 J	0.095	OU4-LJ-R02-101B	0.048	0.045	0.926
C2-CHRYSENES	3/3	0.005 J	0.013 J	OU4-LJ-R01-101B	0.009	0.004	0.458
C2-DIBENZOTHIOPHENES	3/3	0.002 J	0.007 J	OU4-LJ-R02-101B	0.004	0.003	0.623
C2-FLUORENES	3/3	0.020 J	0.118 J	OU4-LJ-R01-101B	0.066	0.050	0.751
C2-NAPHTHALENES	3/3	0.040 J	0.131 J	OU4-LJ-R01-101B	0.081	0.046	0.566
C2-PHENANTHRENES/ANTHRACENES	3/3	0.003 J	0.055 J	OU4-LJ-R01-101B	0.033	0.027	0.812
C3-CHRYSENES	2/2	0.002 J	0.004 J	OU4-LJ-R02-101B	0.003	0.001	0.422
C3-DIBENZOTHIOPHENES	2/2	0.004 J	0.011 J	OU4-LJ-R02-101B	0.008	0.005	0.628
C3-FLUORENES	3/3	0.001 J	0.011 J	OU4-LJ-R02-101B	0.005	0.005	1.184
C3-NAPHTHALENES	3/3	0.013 J	0.169 J	OU4-LJ-R01-101B	0.085	0.079	0.927
C3-PHENANTHRENES/ANTHRACENES	3/3	0.002 J	0.041 J	OU4-LJ-R01-101B	0.021	0.020	0.924
C4-CHRYSENES	2/2	0.001 J	0.002 J	OU4-LJ-R01-101B	0.002	0.001	0.316

TABLE J - 8

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
C4-NAPHTHALENES	3/3	0.002 J	0.035 J	OU4-LJ-R01-101B	0.015	0.018	1.217
C4-PHENANTHRENES/ANTHRACENES	3/3	0.000 J	0.022 J	OU4-LJ-R02-101B	0.013	0.012	0.870
CHRYSENE	3/3	0.011	0.069	OU4-LJ-R02-101B	0.033	0.031	0.931
DIBENZO(A,H)ANTHRACENE	3/3	0.002 J	0.005 J	OU4-LJ-R01-101B	0.003	0.002	0.619
DIBENZOTHIOPHENE	3/3	0.014 J	0.098	OU4-LJ-R02-101B	0.047	0.045	0.961
FLUORANTHENE	3/3	0.009	0.143	OU4-LJ-R02-101B	0.056	0.075	1.351
FLUORENE	3/3	0.015 J	0.056 J	OU4-LJ-R02-101B	0.042	0.023	0.553
INDENO(1,2,3-CD)PYRENE	3/3	0.007 J	0.014 J	OU4-LJ-R01-101B	0.011	0.003	0.318
NAPHTHALENE	3/3	0.059 J	0.266 J	OU4-LJ-R01-101B	0.151	0.106	0.701
PERYLENE	3/3	0.020	0.036 J	OU4-LJ-R01-101B	0.027	0.009	0.329
PHENANTHRENE	3/3	0.009	0.166	OU4-LJ-R02-101B	0.066	0.086	1.304
PYRENE	3/3	0.007	0.094	OU4-LJ-R02-101B	0.041	0.047	1.138
HMW PAHs					0.026		
Minimum BSAF					***0.0016***		
Maximum BSAF					***0.2242***		
Average BSAF					***0.0369***		
Pesticides							
1,2,3,4-TETRACHLOROBENZENE	3/3	3.837	62.147	OU4-LJ-R01-101B	25.088	32.209	1.284
1,2,4,5-TETRACHLOROBENZENE	2/2	0.179 J	0.484 J	OU4-LJ-R03-101B	0.332	0.216	0.652
4,4'-DDE	3/3	1.083	1.449	OU4-LJ-R01-101B	1.235	0.190	0.154
CHLORPYRIFOS	3/3	0.657	7.777	OU4-LJ-R03-101B	3.095	4.056	1.311
DIELDRIN	3/3	9.246 J	42.500 J	OU4-LJ-R03-101B	20.912	18.716	0.895
GAMMA-BHC (LINDANE)	3/3	2.340	3.671	OU4-LJ-R02-101B	2.918	0.683	0.234
OXYCHLORDANE	2/2	1.538	5.988	OU4-LJ-R01-101B	3.763	3.147	0.836
PENTACHLOROANISOLE	3/3	0.437 J	1.903 J	OU4-LJ-R01-101B	1.044	0.764	0.732
PENTACHLOROBENZENE	1/1	0.159 J	0.159 J	OU4-LJ-R02-101B	0.159		
Minimum BSAF					***0.16***		
Maximum BSAF					***25.09***		
Average BSAF					***6.51***		
PCBs							
PCB-101/90	1/1	0.247 J	0.247 J	OU4-LJ-R01-101B	0.247		
PCB-105	3/3	0.105 J	0.426 J	OU4-LJ-R01-101B	0.299	0.170	0.571
PCB-118	3/3	0.149	1.639	OU4-LJ-R01-101B	0.723	0.802	1.110
PCB-126	2/2	0.019 J	0.057 J	OU4-LJ-R01-101B	0.038	0.027	0.702
PCB-128	3/3	0.064 J	0.255 J	OU4-LJ-R01-101B	0.161	0.096	0.594
PCB-138/160	3/3	0.107	0.772	OU4-LJ-R01-101B	0.397	0.341	0.859
PCB-149/123	1/1	0.189 J	0.189 J	OU4-LJ-R01-101B	0.189		
PCB-153/132	3/3	0.218	2.957	OU4-LJ-R01-101B	1.245	1.493	1.199
PCB-169	2/2	0.042 J	0.050 J	OU4-LJ-R02-101B	0.046	0.006	0.120

TABLE J - 8

BSAF AND BAF VALUES FOR JUVENILE LOBSTERS
ACROSS ALL REFERENCE STATIONS FOR ROUND 4
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Parameters	Frequency of Detection[1]	Minimum BAF/BSAF	Maximum BAF/BSAF	Sample of Maximum BAF/BSAF	Mean BAF/BSAF	Standard Deviation	Coefficient of Variation
PCB-18/17	1/1	0.271 J	0.271 J	OU4-LJ-R02-101B	0.271		
PCB-180	3/3	0.235 J	0.716 J	OU4-LJ-R01-101B	0.476	0.241	0.506
PCB-187	3/3	0.140 J	0.718 J	OU4-LJ-R03-101B	0.406	0.292	0.720
PCB-44	3/3	0.094 J	0.460 J	OU4-LJ-R03-101B	0.217	0.211	0.972
PCB-52	2/2	0.075 J	0.145 J	OU4-LJ-R03-101B	0.110	0.050	0.453
PCB-66	1/1	0.739 J	0.739 J	OU4-LJ-R01-101B	0.739		
PCB-77	3/3	0.053 J	0.154 J	OU4-LJ-R01-101B	0.099	0.051	0.517
PCB-81	2/2	0.095 J	0.128 J	OU4-LJ-R01-101B	0.111	0.023	0.210
Minimum BSAF					***0.038***		
Maximum BSAF					***1.245***		
Average BSAF					***0.340***		
Inorganics							
ARSENIC	3/3	2.144	2.939	OU4-LJ-R01-101B	2.498	0.404	0.162
COPPER	3/3	1.670	6.070	OU4-LJ-R01-101B	3.892	2.200	0.565
IRON	3/3	0.000	0.001	OU4-LJ-R01-101B	0.001	0.000	0.473
LEAD	2/2	0.005	0.024	OU4-LJ-R01-101B	0.015	0.014	0.941
MANGANESE	3/3	0.010 J	0.039 J	OU4-LJ-R01-101B	0.024	0.014	0.604
MERCURY	3/3	3.619	6.150	OU4-LJ-R01-101B	4.626	1.342	0.290
SILVER	3/3	3.759	7.943	OU4-LJ-R01-101B	5.610	2.133	0.380
ZINC	3/3	1.342	2.613	OU4-LJ-R01-101B	1.981	0.636	0.321

Footnotes:

1 - The frequency of detection is the number of samples for which BSAFs or BAFs could be calculated because the chemical was detected in both the sediment sample and juvenile lobster sample.

The BAFs and BSAFs are calculated as described in Section 4.2 of this report.

The BSAF for HMW PAHS was calculated by averaging the BSAFs for the individual HMW PAHs (benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene).

APPENDIX K

DIOXIN RISK EVALUATION TABLES AND EXAMPLE CALCULATIONS

APPENDIX K

CONVERSION OF DRY WEIGHT TO WET WEIGHT TEQ CONCENTRATIONS FOR MUSSELS AND JUVENILE LOBSTERS BASELINE INTERIM OFFSHORE MONITORING REPORT PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

To convert wet weight to dry weight TEQ concentration the following equation is used:

Wet weight TEQ concentration (ng/kg) = dry weight TEQ concentration (ng/kg) x % solids

Percent moistures were previously determined for each sample the Data Packages for Rounds 1 through 4 (TtNUS, February 2000, October 2000, January 2001, and September 2001). From these values, percent solid can be calculated:

$$\% \text{ Solids} = \frac{(100 - \% \text{ moisture})}{100}$$

For the following mussel example, sample OU4-MU-M08-100B will be used. Dry weight TEQ concentrations were derived as previously described in this appendix.

For sample OU4-MU-M08-100B:

Dry weight TEQ = 4.4435 ng/kg
% moisture = 87.2

To calculate the % solids:

$$\% \text{ Solids} = \frac{(100 - 87.2)}{100} \times 100 = 12.8\%$$

Then to calculate the wet weight TEQ concentration:

Wet weight TEQ (ng/kg) = 4.4435 ng/kg x 0.128 = 0.569 ng/kg

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE ____ OF ____

CLIENT: U.S. Navy - North Div.	JOB NUMBER: 5003-4305
SUBJECT: Calculation of Toxic Equivalent Concentrations	
BASED ON: VanderBerg et al, 1998	DRAWING NUMBER:
BY: L.A. SINAGOGA / CHECKED BY: J.E. Hinck	APPROVED BY: / DATE: 10/18/01

The following example calculation demonstrates the calculation of the toxic equivalent concentration (TEQ) based on toxic equivalency factors (TEFs) provided in VanderBerg et al, 1998. (The TEQs presented match those presented for sample OU4-MU-M08-100B):

EXAMPLE:

Reported concentration of OCDD (175 ng/kg) × TEF for OCDD (0.0001) = TEQ for OCDD in sample OU4-MU-M08-100B (0.0175 ng/kg)

TEQ for sample = ∑ TEQs for each congener in sample.

Sample OU4-MU-M08-100B						
Parameters		TEFs		TEQs (Positive Detects only)		TEQs (Use 1/2 "u" values)
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8-HPCDD	36.8 J	0.01	36.8	0.368	36.8	0.368
1,2,3,4,6,7,8-HPCDF	12.6 J	0.01	12.6	0.126	12.6	0.126
1,2,3,4,7,8,9-HPCDF	5.5 J	0.01	5.5	0.055	5.5	0.055
1,2,3,4,7,8-HXCDD	34.4 U	0.1		0	17.2	1.72
1,2,3,4,7,8-HXCDF	34.4 U	0.1		0	17.2	1.72
1,2,3,6,7,8-HXCDD	4.1 U	0.1		0	2.1	0.21
1,2,3,6,7,8-HXCDF	34.4 U	0.1		0	17.2	1.72
1,2,3,7,8,9-HXCDD	2.5 J	0.1	2.5	0.25	2.5	0.25
1,2,3,7,8,9-HXCDF	34.4 U	0.1		0	17.2	1.72
1,2,3,7,8-PECDD	1.7 J	1	1.7	1.7	1.7	1.7
1,2,3,7,8-PECDF	9.5 J	0.05	9.5	0.475	9.5	0.475
2,3,4,6,7,8-HXCDF	34.4 U	0.1		0	17.2	1.72
2,3,4,7,8-PECDF	2.9 J	0.5	2.9	1.45	2.9	1.45
2,3,7,8-TCDD	6.9 U	1		0	3.5	3.5
2,3,7,8-TCDF	6.9 U	0.1		0	3.5	0.35
OCDD	175 J	0.0001	175	0.0175	175	0.0175
OCDF	20 J	0.0001	20	0.002	20	0.002
TEQs for Sample				4.4435		17.1035
TOTAL DIOXINS	220 J	Not applicable (NA)				
TOTAL FURANS	126 J	NA				
TOTAL HPCDD	36.8 J	NA				
TOTAL HPCDF	18 J	NA				
TOTAL HXCDD	6.6 U	NA				
TOTAL HXCDF	18.4 U	NA				
TOTAL PECDD	1.7 J	NA				
TOTAL PECDF	32.2 U	NA				
TOTAL TCDD	6.9 U	NA				
TOTAL TCDF	37.7 J	NA				

Reference: "Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife", VandenBerg et al, Environmental Health Perspectives, Volume 106, Number 12, December 1998.

TABLE K - 1

DIOXIN TEQS IN JUVENILE LOBSTERS, MUSSELS, AND SEDIMENT USING POSITIVE DETECTIONS ONLY
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Juvenile Lobster								Mussel								Sediment			
	(dry wt TEQs) ng/kg				(wet wt TEQs) ng/kg				(dry wt TEQs) ng/kg				(wet wt TEQs) ng/kg				(dry wt TEQs) ng/kg			
Station	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
M07-1	8.9 U	3.6 U	0.24186	3.34 U	1.83 U	0.871 U	0.046	0.735 U	0.00479	3.779	0.8	0.0105	0.001	0.472	0.092	0.001	1.5	1.9	3.5	0.73
M07-2																	0.15	1.1	0.50	0.10
M07-3									1.06092	0.0143	0.601	5.32 U	0.107	0.002	0.072	0.724 U	0.60	1.3	0.38	0.02
M08-1	0.00263	3.7 U	0.3179	3.625 U	0.0005	0.818 U	0.073	0.846 U	2.33751	4.4435	0.209	0.29485	0.363	0.569	0.029	0.031	1.5	5.5	5.2	0.21
M08-2									0.89667	1.58182	0.173	5.78 U	0.121	0.191	0.017	0.775 U	4.6	0.58	0.56	0.14
M08-3									0.35258	7.4691	0.00953	5.46 U	0.046	0.956	0.001	0.710 U	0.43	1.0	0.22	0.05
M08-4																		0.41		
M09-1	8.5 U	2.8 U	0.04265	0.26192	1.68 U	0.652 U	0.009	0.402 U	0.00288	8.9993	1.1248	0.849	0.000	0.972	0.157	0.142	1.5	11.2	6.1	0.38
M09-2									0.32385	6.6744	2.3818	0.187	0.043	1.108	0.234	0.023	0.78	1.4	7.7	0.02
M09-3																	0.321	13.8	13.5	2.74
M09-4																		0.85		
M10-1	7.6 U	0.20152	0.00076	2.59 U	1.54 U	0.041	0.0002	0.640 U	4.98842	2.56838	0.9244	5.05 U	0.738	0.361	0.111	0.702 U	0.3	0.9	0.66	1.23
M10-2									0.01230	0.6255	0.0128	5.81 U	0.002	0.083	0.001	0.779 U	1.71	3.42	0.27 U	0.03
M10-3									0.0056	6.5143	0.0102	6.71 U	0.001	0.795	0.001	0.805 U	6.54	0.79	0.070	1.75
M11-1	7.45 U	1.80070	0.00052	3.18 U	1.22 U	0.387	0.0001	0.763 U	0.27498	6.4913	8.77 U	0.3	0.036	1.110	1.253 U	0.047				
M11-2									6.8 U	4.42664	0.64963	0.0121	0.646 U	0.688	0.071	0.089 U	0.60			
M11-3									0.00756	1.4343	5.52 U	4.65 U	0.001	0.192	0.616 U	0.698 U	1.32	13.04	32.57	2.32
M12-1	7.4 U	1.64054	0.12 U	3.62 U	1.33 U	0.349	0.025 U	0.822 U	0.0196	0.7534	0.75119	0.00091	0.001	0.105	0.081	0.0001	3.56	4.65	7.41	3.24
M12-2									13.3 U	23.85199	0.0148	0.02033	0.638 U	3.196	0.002	0.003	2.27	1.38	3.25	4.03
M12-3																	4.22	3.75	0.13	0.18
R01-1	18.85	18.60539	0.17764	0.35	3.15	4.04	0.04	0.08									2.41	2.44	0.80	4.02
R01-2																	0.64	0.32	0.10	0.77
R01-3									4.9 U	2.43699	0.92898	0.00138	0.647 U	0.417	0.109	0.091 U	0.38	0.34	0.06	0.13
R01-4									4.5 U	2.5792	0.21062	3.12 U	0.644 U	0.351	0.025	0.518 U	1.15	1.57	2.14	2.95
R02-1	8.4 U	0.2	0.287	3.4 U	1.80 U	0.05	0.06	0.80 U									0.54	1.76	0.06	1.72
R02-2																	0.64	1.63	0.12	0.01
R02-3									0.25188	0.30674	4.59 U	0.045	0.032	0.044	0.593 U	0.007	0.76	1.21	1.20	0.59
R02-4									2.00117	0.0132		5.26 U	0.245	0.002		0.689 U	2.60	3.06	0.43 U	7.13
R03-1	7.6 U	3 U	0.37	2.93 U	1.53 U	0.66 U	0.08	0.72 U									0.19	1.06	10.75	0.72
R03-2																	1.43	2.14	0.32 U	4.23
R03-3									0.77482	0.9089	0.89599	5.65 U	0.102	0.174	0.108	0.729 U	0.06	1.32	1.01	0.83
R03-4									3.5 U	0.3055	4.5 U	0.317	0.602	0.049	0.536 U	0.049	0.55	1.13	3.02	3.54
R04-1	7.4 U	0.3	1.78 U		1.41 U	0.07	0.38 U										0.22	2.70	3.52	2.16
R04-2																	0.2 U	0.32	0.21 U	0.12
R04-3									4.8 U	0.47748	0.00794	0.077	0.643 U	0.075	0.001	0.011	0.10	0.31	0.02	0.05
R04-4									4.3 U	0.4755	0.4125	0.248	0.593 U	0.081	0.059	0.039	0.29	0.52	0.2 U	0.03

- Duplicates samples are averaged in this table
- The wet-weight concentrations were calculated by multiplying the dry weight concentrations by the sample-specific percent solids.

TABLE K - 2

DIOXIN TEQS IN JUVENILE LOBSTERS, MUSSELS, AND SEDIMENT ASSUMING ONE-HALF THE SQL FOR NON-DETECT RESULTS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Juvenile Lobster								Mussel								Sediment			
	(dry wt TEQs) ng/kg				(wet wt TEQs) ng/kg				(dry wt TEQs) ng/kg				(wet wt TEQs) ng/kg				(dry wt TEQs) ng/kg			
Station	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
M07-1	55.75	22.62	27.78	20.88	11.48	5.47	5.33	4.59	29.99	39.48	28.50	33.64	3.96	4.94	3.26	4.44	3.12	3.47	3.86	2.75
M07-2																	2.42	3.74	1.14	3.95
M07-3									33.34	36.04	30.73	33.26	3.37	4.69	3.68	4.52	2.87	2.22	1.66	3.39
M08-1	49.50	23.36	16.99	22.63	9.26	5.16	3.93	5.28	28.29	17.04	23.91	53.55	4.40	2.18	3.33	5.70	3.67	6.54	5.26	1.93
M08-2									23.95	23.73	30.18	36.13	3.23	2.87	2.98	4.84	8.96	1.82	1.46	2.11
M08-3									26.09	17.57	31.27	34.13	3.42	2.25	3.03	4.44	1.39	1.59	1.33	1.38
M08-4																		1.66		
M09-1	53.13	17.27	17.10	20.97	10.52	4.03	3.68	5.01	122.13	40.99	26.55	25.06	14.41	4.43	1.05	4.18	9.96	11.74	6.76	2.03
M09-2									27.28	25.88	33.42	31.19	3.63	4.30	3.28	3.90	4.55	2.91	7.82	2.29
M09-3																	2.88	15.73	13.53	4.98
M09-4																		2.60		
M10-1	47.62	7.99	17.88	16.25	9.64	1.63	3.63	4.01	25.18	31.79	37.54	31.62	3.73	3.32	4.50	4.40	1.06	2.28	1.18	2.14
M10-2									28.10	33.12	40.64	36.38	4.02	4.41	4.09	4.87	4.08	4.38	1.71	1.05
M10-3									34.47	17.46	29.89	42.00	4.00	2.13	3.90	5.04	11.40	2.63	2.31	6.75
M11-1	46.57	18.59	23.32	19.88	7.64	4.00	4.69	4.77	27.93	19.37	50.27	36.91	3.69	3.31	7.18	5.72				
M11-2									42.42	23.58	41.00	35.14	4.03	3.67	4.49	4.85	3.12			
M11-3									45.90	29.60	31.61	29.12	3.72	3.97	3.53	4.37	8.89	14.18	34.31	4.45
M12-1	46.37	16.91	18.94	22.63	8.35	3.60	3.88	5.14	97.21	35.82	40.42	33.26	3.89	5.01	4.37	4.36	6.08	5.72	9.67	3.28
M12-2									59.11	28.74	31.62	26.40	2.78	3.85	3.44	4.46	4.20	3.31	4.68	4.89
M12-3																	7.46	5.43	2.23	3.19
R01-1	56.54	42.18	16.54	21.19	9.44	9.15	3.71	4.68									5.96	5.70	2.62	8.13
R01-2																	1.59	2.26	1.53	2.20
R01-3									21.77	9.89	30.33	31.76	2.87	1.69	3.56	4.48	1.58	2.00	1.38	1.96
R01-4									19.76	29.41	28.95	19.51	2.83	4.00	3.49	3.24	2.41	3.71	2.23	4.49
R02-1	52.39	23.92	16.78	21.25	11.21	5.50	3.61	4.97									1.87	2.02	1.36	2.78
R02-2																	2.01	3.00	1.35	0.75
R02-3									28.72	27.08	26.23	29.18	3.65	3.90	3.39	4.32	2.48	2.56	2.25	1.26
R02-4									29.29	31.89		32.88	3.59	3.73		4.31	4.79	5.17	2.67	8.44
R03-1	47.28	0.00	13.94	18.37	9.50	0.00	2.97	4.52									3.21	1.69	12.73	2.72
R03-2																	3.37	2.55	2.04	5.70
R03-3									26.45	27.13	29.16	35.26	3.49	5.18	3.50	4.55	1.93	1.70	2.36	1.67
R03-4									25.77	28.03	28.13	31.20	4.43	4.49	3.35	4.80	2.62	1.42	4.61	4.00
R04-1	46.49	50.22	22.81		9.16	11.10	4.86										2.52	4.78	4.09	2.92
R04-2																	1.40	0.84	1.33	1.64
R04-3									21.16	34.61	25.62	29.09	2.84	5.47	3.01	4.28	1.41	1.59	1.38	1.55
R04-4									27.11	21.32	27.25	26.89	3.74	3.62	3.92	4.28	1.57	1.21	1.25	1.82

- Duplicates samples are averaged in this table
- The wet-weight concentrations were calculated by multiplying the dry weight concentrations by the sample-specific percent solids.

TABLE K - 3

PERCENT SOLIDS IN MUSSELS FROM ALL STATIONS ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round 1	Round 2	Round 3	Round 4
Monitoring Stations				
OU4-MU-M01-2	0.140	0.137	0.146	0.135
OU4-MU-M01-3	0.081	0.117	0.091	0.171
OU4-MU-M02-1	0.108	NA	0.099	0.108
OU4-MU-M02-2	0.085	0.118	0.128	0.154
OU4-MU-M02-3	0.107	0.127	0.128	0.143
OU4-MU-M03-1	0.112	0.132	0.117	0.158
OU4-MU-M03-2	0.046	0.132	0.142	0.148
OU4-MU-M04-1	0.088	0.112	0.109	0.154
OU4-MU-M05-1	0.122	0.113	0.139	0.176
OU4-MU-M05-3	0.102	0.111	0.124	0.176
OU4-MU-M06-1	0.113	0.133	0.112	0.157
OU4-MU-M06-2	0.134	0.160	0.145	0.163
OU4-MU-M06-3	0.131	0.090	0.091	0.161
OU4-MU-M07-1	0.132	0.125	0.115	0.132
OU4-MU-M07-3	0.101	0.130	0.120	0.136
OU4-MU-M08-1	0.156	0.128	0.139	0.107
OU4-MU-M08-2	0.135	0.121	0.099	0.134
OU4-MU-M08-3	0.131	0.128	0.097	0.130
OU4-MU-M09-1	0.118	0.108	0.140	0.167
OU4-MU-M09-2	0.133	0.166	0.098	0.125
OU4-MU-M10-1	0.148	0.105	0.120	0.139
OU4-MU-M10-2	0.143	0.133	0.101	0.134
OU4-MU-M10-3	0.116	0.122	0.131	0.120
OU4-MU-M11-1	0.132	0.171	0.143	0.155
OU4-MU-M11-2	0.095	0.156	0.109	0.138
OU4-MU-M11-3	0.081	0.134	0.112	0.150
OU4-MU-M12-1	0.040	0.140	0.108	0.131
OU4-MU-M12-2	0.047	0.134	0.109	0.169
OU4-MU-M13-1	0.122	0.122	0.128	0.135
OU4-MU-M13-3	0.130	0.142	0.127	0.149
OU4-MU-M14-1	0.067	0.136	0.096	0.146
OU4-MU-M14-2	0.099	0.159	0.124	0.175
Reference Stations				
OU4-MU-R01-3	0.132	0.171	0.117	0.141
OU4-MU-R01-4	0.143	0.136	0.121	0.166
OU4-MU-R02-3	0.127	0.144	0.129	0.148
OU4-MU-R02-4	0.123	0.117	NA	0.131
OU4-MU-R03-3	0.132	0.191	0.120	0.129
OU4-MU-R03-4	0.172	0.160	0.119	0.154
OU4-MU-R04-3	0.134	0.158	0.118	0.147
OU4-MU-R04-4	0.138	0.170	0.144	0.159

- Source data located in Appendix G the Data Packages for Rounds 1 through 4 (TtNUS, February 2000, October 2000, January 2001, and September 2001).
- NA - Not available; Sample was removed from dataset as per Section 5.3 of the report.

TABLE K - 4

PERCENT SOLIDS IN JUVENILE LOBSTERS FROM ALL STATIONS ACROSS ROUNDS
BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Sample Number	Round 1	Round 2	Round 3	Round 4
Monitoring Stations				
OU4-LJ-M01-1	0.172	0.231	0.200	0.223
OU4-LJ-M02-1	0.190	0.225	0.202	0.235
OU4-LJ-M03-1	0.171	0.212	0.232	0.220
OU4-LJ-M04-1	0.185	0.197	0.199	0.214
OU4-LJ-M05-1	0.205	0.239	0.189	0.236
OU4-LJ-M06-1	0.212	0.236	0.227	0.242
OU4-LJ-M07-1	0.206	0.242	0.192	0.220
OU4-LJ-M08-1	0.187	0.221	0.231	0.234
OU4-LJ-M09-1	0.198	0.233	0.215	0.239
OU4-LJ-M10-1	0.203	0.204	0.203	0.247
OU4-LJ-M11-1	0.164	0.215	0.201	0.240
OU4-LJ-M12-1	0.180	0.213	0.205	0.227
OU4-LJ-M13-1	0.185	0.194	0.214	0.217
OU4-LJ-M14-1	0.179	0.228	0.213	0.211
Reference Stations				
OU4-LJ-R01-1	0.167	0.217	0.224	0.221
OU4-LJ-R02-1	0.214	0.230	0.215	0.234
OU4-LJ-R03-1	0.201	0.221	0.213	0.246
OU4-LJ-R04-1	0.197	0.221	0.213	NA

- Source data located in Appendix G the Data Packages for Rounds 1 through 4 (TtNUS, February 2000, October 2000, January 2001, and September 2001).

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE ____ OF ____

CLIENT: U.S. Navy - North Div	JOB NUMBER: 5003-4305
SUBJECT: Calculation of Screening Level for 2,3,7,8-TCDD in Sediments	
BASED ON: USEPA Method + Professional judgment	DRAWING NUMBER:
BY: L.A. SINAGOGA / CHECKED BY:	APPROVED BY: [signature] / DATE: 10/18/2001

This calculation demonstrates the derivation of screening levels for 2,3,7,8-TCDD in sediments.

Screening Level for 2,3,7,8-TCDD (mg/Kg):

$$\frac{TR}{\left[\frac{IR \cdot FI \cdot EF \cdot ED \cdot CSF \cdot CF}{BW \cdot AT_c} + \frac{AD \cdot AB \cdot SA \cdot EF \cdot ED \cdot CSF_o \cdot CF}{BW \cdot AT_c}\right]}$$

Where for the reasonable maximum exposure case [central tendency exposure case]:

TR = target risk level (1E-06 unitless)
BW = body weight (70 Kg - adult)
AT_c = averaging time for carcinogens (25550 d)
IR = sediment ingestion rate (RME = 100 mg/d [CTE = 50 mg/d])
FI = fraction ingested from site (assume 0.5, unitless)
EF = exposure frequency (assume RME = 7 days/yr [CTE = 4 days/yr])
ED = exposure duration (RME = 30 yrs [CTE = 9 yrs])
CSF_o = Cancer slope factor (1.5 E+05 $(mg/Kg/d)^{-1}$)
CF = Conversion factor (10^{-6} Kg/mg)
AD = Adherence factor (1 mg soil/cm^2 skin area [CTE = 0.2 mg/cm^2])
AB = Chemical specific absorption factor (0.3 unitless [RAGS E])
SA = Exposed skin surface area (1960 cm^2)

Therefore, RME screening level:

$$= \frac{10^{-6}}{\left[\left(\frac{100\,mg/d \cdot 0.5 \cdot 7\,d/yr \cdot 30\,yrs \cdot 1.5E{+}5\,[mg/Kg/d]^{-1} \cdot 10^{-6}\,\frac{Kg}{mg}}{70\,Kg \cdot 25550\,d}\right) + \left(\frac{1.0\,mg/cm^2 \cdot 0.03 \cdot 1960\,cm^2 \cdot 7\,d/yr \cdot 30\,yrs \cdot 1.5E{+}5\,[mg/Kg/d]^{-1} \cdot 10^{-6}\,Kg/mg}{70\,Kg \cdot 25550\,d}\right)\right.}$$

= 5E-4 mg/Kg

CTE screening level:

$$= \frac{10^{-6}}{\left[\left(\frac{50\,mg/d \cdot 0.5 \cdot 4\,d/yr \cdot 9\,yrs \cdot 1.5E{+}5\,[mg/Kg/d]^{-1} \cdot 10^{-6}\,\frac{Kg}{mg}}{70\,Kg \cdot 25550\,d}\right) + \left(\frac{0.2\,mg/cm^2 \cdot 0.03 \cdot 1960\,cm^2 \cdot 4\,d/yr \cdot 9\,yrs \cdot 1.5E{+}5\,[mg/Kg/d]^{-1} \cdot 10^{-6}\,Kg/mg}{70\,Kg \cdot 25550\,d}\right)\right.}$$

= 9E-03 mg/Kg

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT: U.S. Navy - North Div	JOB NUMBER: 5003-4305
SUBJECT: Calculation of Screening Levels for Lobster & Mussels for 2,3,7,8-TCDD	
BASED ON: USEPA + State of Maine Methods	DRAWING NUMBER:
BY: LeeAnn SINAGOGA / CHECKED BY: RJ	APPROVED BY: / DATE:

the following calculation demonstrates the derivation of the screening levels for lobsters and mussels:

Screening level for seafood consumption (mg/Kg): $\dfrac{TR \cdot BW \cdot AT_c}{FI \cdot EF \cdot ED \cdot IR \cdot CSF_o}$

where for Reasonable maximum exposure case [Central tendency case]:

TR = Target risk (unitless) (1E-06)
BW = Body wight (70Kg - adult)
AT_c = Averaging time for carcinogens (25550d)
FI = Fraction ingested from source (assume 0.5 [unitless])
EF = Exposure frequency (350 days/yr)
ED = Exposure duration (30yrs) [CTE = 9yrs]
IR = Ingestion rate (0.0324 Kg/day) [CTE = 0.0056 Kg/day]
CSF_o = 1.5E+05 $(mg/Kg/day)^{-1}$

therefore, RME screening level:

$$= \frac{\overbrace{(1\times10^{-6}) \times (70\,Kg) \times (25550\,d)}^{1.7885}}{\underbrace{(0.5) \times (350\,d/yr) \times (30\,yr) \times (0.0324\,Kg/d) \times (1.5E+05\,[mg/Kg/d]^{-1})}_{2.5515E+7}}$$

= 7E-08 mg/Kg → 7E-05 ug/Kg → 7E-02 ng/Kg ✓

therefore, CTE screening level:

$$= \frac{\overbrace{(1\times10^{-6}) \times (70\,Kg) \times (25550\,d)}^{1.7885}}{\underbrace{(0.5) \times (350\,d/yr) \times (9\,yr) \times (0.0056\,Kg/d) \times (1.5E+05\,[mg/Kg/d]^{-1})}_{1.323E6}}$$

= 1.4 E-06 mg/Kg → 1.4E-03 mg/Kg → 1.4 mg/Kg ✓

Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife

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An expert meeting was organized by the World Health Organization (WHO) and held in Stockholm on 15–18 June 1997. The objective of this meeting was to derive consensus toxic equivalency factors (TEFs) for polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs) and dioxinlike polychlorinated biphenyls (PCBs) for both human, fish, and wildlife risk assessment. Based on existing literature data, TEFs were (re)evaluated and either revised (mammals) or established (fish and birds). A few mammalian WHO-TEFs were revised, including 1,2,3,7,8-pentachlorinated DD, octachlorinated DD, octachlorinated DF, and PCB 77. These mammalian TEFs are also considered applicable for humans and wild mammalian species. Furthermore, it was concluded that there was insufficient *in vivo* evidence to continue the use of TEFs for some di-*ortho* PCBs, as suggested earlier by Ahlborg et al. [Chemosphere 28:1049–1067 (1994)]. In addition, TEFs for fish and birds were determined. The WHO working group attempted to harmonize TEFs across different taxa to the extent possible. However, total synchronization of TEFs was not feasible, as there were orders of a magnitude difference in TEFs between taxa for some compounds. In this respect, the absent or very low response of fish to mono-*ortho* PCBs is most noticeable compared to mammals and birds. Uncertainties that could compromise the TEF concept were also reviewed, including nonadditive interactions, differences in shape of the dose–response curve, and species responsiveness. In spite of these uncertainties, it was concluded that the TEF concept is still the most plausible and feasible approach for risk assessment of halogenated aromatic hydrocarbons with dioxinlike properties. *Key words:* dioxins, humans, PCBs, polychlorinated biphenyls, TEFs, toxic equivalency, uncertainties, wildlife. *Environ Health Perspect* 106:775–792 (1998). [Online 10 November 1998]
http://ehpnet1.niehs.nih.gov/docs/1998/106p775-792vandenberg/abstract.html

Polychlorinated dibenzo-*p*-dioxins (PCDDs), dibenzofurans (PCDFs), and biphenyls (PCBs) constitute a group of persistent environmental chemicals. Due to their hydrophobic nature and resistance towards metabolism, these chemicals have been found in fatty tissues of animals and humans. Several PCDDs, PCDFs, and PCBs have been shown to cause toxic responses similar to those caused by 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD), the most potent congener within these groups of compounds. These toxic responses include dermal toxicity, immunotoxicity, carcinogenicity, and adverse effects on reproduction, development, and endocrine functions.

PCDDs, PCDFs, and PCBs exist in environmental and biological samples as complex mixtures of various congeners whose relative concentrations differ across trophic levels. These differences are caused by environmental degradation, which refers to the different environmental fates of congeners with different solubilities, volatilities, and rates of degradation/metabolism. As a result, these mixtures change spatially and temporally into the environment and are very different from the technical mixtures originally released into the environment.

The complex nature of PCDD, PCDF, and PCB mixtures complicates the risk evaluation for humans, fish, and wildlife. For this purpose, the concept of toxic equivalency factors (TEFs) has been developed and introduced to facilitate risk assessment and regulatory control of exposure to these mixtures. To apply this TEF concept, a fundamental understanding of the mechanism of action is a prerequisite. At present, there is sufficient evidence available that there is a common mechanism for these compounds, involving binding to the aryl hydrocarbon (Ah) receptor as an initial step. When applying the TEF concept, the toxicity of these compounds relative to that of 2,3,7,8-TCDD is determined on the basis of available *in vivo* and *in vitro* data. However, it should also be understood that the TEF concept is based on a number of

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We thank Kareen Hol and Floor Felix from the European Centre for Environment and Health of the World Health Organization for their assistance in the preparation of this manuscript.
Received 4 June 1998; accepted 20 August 1998.

assumptions and has limitations. In this respect, the most basic assumption is that the combined effects of the different congeners are dose or concentration additive, and results of many studies support this assumption.

In the last decade, several different TEF schemes have been developed for PCDDs, PCDFs, and dioxinlike PCBs. Recognizing the need for a harmonized approach in setting internationally agreed upon TEFs, the European Centre of Environmental Health of the World Health Organization (ECEH-WHO) and the International Programme on Chemical Safety (IPCS) have initiated a program to derive TEFs for these compounds for assessing the impact of these compounds on human and environmental health.

At an initial WHO consultation on the derivation of TEFs for wildlife for dioxinlike compounds, held on 9–10 August 1996 in Bilthoven, The Netherlands, the question was addressed whether it is appropriate to use TEFs derived for the purpose of human risk assessment to estimate the risk for fish and wildlife species. The meeting concluded that there was a need to derive separate sets of TEFs for fish and wildlife, and recommended to combine this effort with a reevaluation and possible update of existing TEFs for human health risk assessment. In addition, it was recommended that the same TEFs for human health and wildlife should be used as much as possible.

For the (re)evaluation process, experimental data on the relative potencies (REPs) of PCDDs, PCDFs, and dioxinlike PCBs for mammalian, avian, and fish species have been collected by the Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden, and inserted into a database. Following collection of all available information, an ECEH-WHO/IPCS meeting was held at the Karolinska Institute on 15–18 June 1997. The objective of the meeting was to assess the REP values in the database and to derive consensus TEFs for PCDDs, PCDFs, and dioxinlike PCBs for both human, fish, and wildlife risk assessment. The results of this process are presented in this paper.

TEF Concept and Data Requirements

Toxic Equivalency Factors, Relative Potencies, and Toxic Equivalents

In the literature, there is some confusion regarding the definition of the term toxic equivalency factor (TEF). One reason for confusion is the fact that the term TEF has been used in two different ways: 1) as a relative potency value that is based on the results of several *in vivo* and *in vitro* studies; or 2) as the relative potency of a compound relative to TCDD to cause a particular toxic or biological effect in a single study. Furthermore, TEF is frequently used to refer to an end point that is not a toxic response per se, such as binding affinity to the aryl hydrocarbon (Ah) receptor or induction of cytochrome P4501A1, although these biochemical effects may in some way be associated with subsequent toxic responses.

It is important to realize that in this paper and associated WHO publications TEF indicates an order of magnitude estimate of the toxicity of a compound relative to TCDD. This consensus TEF value has been derived using careful scientific judgment after considering all available scientific data. However, when the potency of a compound relative to TCDD has been obtained in a single *in vivo* or *in vitro* study, it will be referred to as a REP value.

TEF values, in combination with chemical residue data, can be used to calculate toxic equivalent (TEQ) concentrations in various environmental samples, including animal tissues, soil, sediment, and water. TEQ concentrations in samples are calculated using the following equation:

$$TEQ = \Sigma_{n1}[PCDD_i \times TEF_i] + \Sigma_{n2}[PCDF_i \times TEF_i] + \Sigma_{n3}[PCB_i \times TEF_i]. \quad (1)$$

TEFs and TEQs are used for risk characterization and management purposes, e.g., to help prioritize areas of concern for cleanup. However, in relation to the use of TEFs for abiotic compartments, the biological meaning of these values is obscure. This is caused by the fact that the assumed biological or toxicological effect is influenced by many physicochemical factors before the actual uptake of the compounds by the organism takes place. Nevertheless, TEQ values can be used as relative measures between different abiotic samples, e.g., sediment and soil, to prioritize remedial actions. In relation to the initial transport of these compounds from the abiotic to biotic compartment, it was recognized that congener-specific biota-sediment accumulation factors (BSAFs) can be used to predict the concentrations in fish tissue, after which these can be converted to TEQs using TEFs.

The TEFs presented in this paper apply only to AhR-mediated responses, and this concept assumes a model of dose additivity. In relation to this prerequisite, we decided that for PCDDs, PCDFs, and some planar PCBs there is sufficient evidence from both *in vivo* and *in vitro* studies supporting the dose or concentration-additivity model for Ah receptor-mediated responses. In addition, it should be emphasized that the TEF concept cannot be applied to effects that are not Ah receptor-mediated, and it does not consider modulating effects of compounds that are not Ah receptor ligands.

TEF values were determined for the following classes of vertebrates: mammals, fish, and birds. TEFs that were determined for mammalian species were also considered to be applicable for human risk assessment purposes. It was concluded that, to date, not enough information was available to determine REP values in amphibians and reptiles, such that TEFs could not be proposed for these classes of vertebrates. At this time, development of TEFs for invertebrates is not recommended because there is limited evidence for ligand activation of AhR or for TCDD-like toxicity in invertebrates.

The criteria for including a compound in a fish and wildlife TEF scheme are the same criteria as those used for the derivation human TEFs (*1*). These are 1) a compound must show a structural relationship to the PCDDs and PCDFs; 2) a compound must bind to the Ah receptor; 3) a compound must elicit Ah receptor-mediated biochemical and toxic responses; and 4) a compound must be persistent and accumulate in the food chain.

Compilation of the Database

Since 1993, the data of all available mammalian, bird, and fish studies on relative toxicity of dioxinlike compounds that meet the criteria of inclusion in a TEF scheme (*1*) have been collected, and this information has been stored in a database at the Karolinska Institute in Stockholm (Sweden). These publications were analyzed and the data to be included in the database were selected using the following criteria:

1. At least one PCDD, PCDF, or PCB congener and a reference compound must be included in the study.
2. Either TCDD or PCB 126 must be included as a reference compound in the same experiment or studied with the same experimental design by the same authors in another experiment.
3. The relevant end point should be affected by the congener studied as well as the reference compound.

PCB 126 was used as reference in some cases, with an assigned REP of 0.1 for mammals and birds or 0.005 for fish, based on a variety of *in vivo* studies covering various end points. The use of PCB 77 and PCB 169 as reference compounds was no longer included in this evaluation due to the limited comparative information available for these two compounds. Only dioxin-specific end points were included in the database (see criteria 3).

However, it is recognized that some end points such as liver enlargement and tumor promotion are affected by both dioxinlike and nondioxinlike halogenated aryl hydrocarbons (HAHs; e.g., mono- or di-*ortho* PCBs). In addition, several biological or toxic effects have been described for PCBs, for example, which are probably not related to an Ah receptor-mediated mechanism of action. Among others, these effects include a decrease in dopamine levels (*2,3*), alterations in retinoid and thyroid hormone levels (*4,5*), and binding to the estrogen receptor (*6*). These effects show distinctly different structure–activity relationships for PCBs than those observed for Ah receptor binding involving multiple *ortho* chlorine substitution or hydroxylated metabolites. Based on the four criteria mentioned earlier, these effects, how biologically relevant they might be, are not covered in this TEF concept. For these compounds and their associated effects, a different approach for risk assessment is needed, which might possibly involve the development of an alternative toxic equivalency concept.

Compounds included in the database are the 2,3,7,8-substituted PCDDs and PCDFs and those PCBs with established dioxinlike activity, especially the non- and mono-*ortho* PCBs. We agreed that there are a large number of other halogenated compounds that meet the criteria for inclusion in the TEF concept and could contribute to the total concentration of TEQs in environmental samples. These include any or all of the following classes of polychlorinated compounds: naphthalenes, diphenyl ethers, diphenyl toluenes, phenoxy anisoles, biphenyl anisoles, xanthenes, xanthones, anthracenes, fluorenes, dihydroanthracenes, biphenyl methanes, phenylxylylethanes, dibenzothiophenes, quaterphenyls, quaterphenyl ethers, and biphenylenes. In addition to the chlorinated compounds, brominated and chloro/bromo-substituted analogues of PCDDs (PBDDs) and PCDFs (PBDFs) have been found in the environment (*7–10*) and are known to induce CYP1A1 activity *in vivo* and *in vitro* (*11*). PBDDs and PBDFs have also been shown to cause developmental toxicity, and REPs have been determined in mammals and fish (*12–14*). However, it was decided that, at present, insufficient environmental and toxicological data are available to establish a TEF value for any of the above compounds.

Calculation of REPs

The following methods were used to derive REPs from the available data:

- REPs were used as reported in each publication; if experimental data were also reported, these were used to calculate the REPs using one of the methods below.
- REPs were calculated by comparing dose–response curves or by using linear interpolation of log-doses, comparing the same effect level; if necessary, corrections were made for different control levels.
- REPs were determined from ratios of medium effective dose (ED_{50}), median lethal dose (LD_{50}), and median effective concentration (EC_{50}) values, tumor promotion indexes, dissociation constant (K_d) values for Ah receptor binding, or directly estimated from the graphs presented.

All the data were compiled into a spreadsheet format using Quattro Pro (version 6.0) for Windows (Corel Corporation Limited). The database used for the derivation of TEF values is available from The European Centre for Environment and Health, World Health Organization, Bilthoven, The Netherlands.

Basis for the Review Process

TEFs for Mammalian Wildlife

The TEF values, which are mainly based on rodent studies, should be suitable for both human risk assessment and for estimating the risk for species of mammalian wildlife.

Based on two semichronic studies with mink and TCDD and PCB 169, the REP of PCB 169 was evaluated. In the first study with adult male mink, a 28-day oral LD_{50} value (single dose) of 4.2 µg TCDD/kg body weight (bw) was reported (*15,16*), and a 28-day dietary median lethal concentration (LC_{50}) of 4.3 ppb was calculated for female mink. In the second study, PCB 169 was given to mink via the diet (*17*). Exposure of adult females to dietary concentrations of 0.05 mg PCB 169/kg bw for 131 days resulted in 50% mortality. Assuming a daily feed consumption of 150 g and a body weight of 1 kg, the total intake of PCB 169 was about 1,000 µg/kg bw. By using the LD_{50} values of 4.2 for TCDD and 1,000 for PCB 169, a value of 0.0042 can be calculated as a first estimate for the relative potency of PCB 169 in mink. Based on these calculations, the previous assigned TEF value of 0.01 for PCB 169 for human risk assessment seems fairly reasonable for mink and gives some support to the use of similar TEF values for humans and wild mammals.

The TEF concept is further supported in mink by comparison of the no observed adverse effect level (NOAEL) derived from a meta-analysis of mink reproductive toxicity data (*18*) with the NOAEL calculated from a mink laboratory reproductive study in which the diets were subject to complete chemical characterization (*19*). These two independent analyses of the TEF approach, utilizing different effects data sets and the same set of international TEFs (*1,20*) for the assessment of mink reproductive toxicity, confirmed one another. Overall these results suggest that the relative potencies of the PCBs, PCDDs, and PCDFs toward mink reproductive toxicity are not different from those of the rodent models from which most of the data were derived.

One argument that might be considered to refine future risk assessment of mammalian wildlife is the substance-specific biotransformation capacity of different mammalian species. Certain marine mammals might have a higher capacity to metabolize dioxins and dioxinlike congeners than certain terrestrial mammals, but due to their position in the foodchain and strictly aquatic diet, body burdens can still be high. Due to these differences in metabolic CYP1A1 capacities, it has been suggested that terrestrial mammals, when compared to highly exposed marine mammals, may experience a greater threat from dioxinlike compounds, e.g., PCB 126, than mammalian top predators in the aquatic food webs (*21–25*).

Furthermore, pharmacokinetic differences will undoubtedly contribute to the interspecies variability observed with different congeners. At present, the mammalian TEF scheme is based on administered dose. Although it has been discussed whether mammalian TEFs should be derived based on target tissue concentrations, this is at present considered not feasible due to the limited amount of scientific information available.

TEFs for Ah Receptor-mediated Toxicity for Fish

Fish, including all salmonids that have been studied, express CYP4501A activity (*26,27*), which is an Ah receptor-mediated process and can be induced by many (halogenated) aromatic hydrocarbons (*28–31*). This mechanism indicates that fish should be sensitive to the effects of Ah receptor-active compounds; but compared to mammals, fish are less responsive to mono-*ortho* PCBs. The hepatic cytochrome P450-dependent enzymes in fish are considered to be functionally similar to those of mammals (*32*). In those instances where adequate data are available, it appears that fish enzymes are influenced by some of the same factors that affect these enzymes in mammals: species (*32*), strain (*33*), size and/or age (*34*), developmental stage (*35*), sex (*36*), reproductive state (*37*), nutrition (*38*), and exposure to certain types of organic xenobiotic inducers as well as environmental conditions (*39*).

The inclusion of fish in the TEF concept is justified by the common Ah receptor-mediated mechanism of response; this was confirmed by many toxicological and

biochemical studies during the last decades. Fish-specific REPs have been derived from mortality in early life stages in rainbow trout (*40–42*) and from *in vivo* CYP1A induction in adult rainbow trout (*43*) and *in vitro* in rainbow trout liver (RTL-W1) (*44–46*) and gonadal cell lines (*47*). These have been developed for ecological risk assessments involving fish exposed to complex mixtures of dioxinlike PCBs, PCDDs, and PCDFs. Generally, the REPs derived from CYP1A induction either *in vivo* or *in vitro* are higher than those derived from early life stage mortality (*48*). Injection of trout eggs with TCDD has been shown to result in the same effects and LD_{50} as with maternal transfer of the chemical (*41*) and has confirmed the application of the TEF concept in fish.

In addition, it has been established that REPs determined for mortality in rainbow trout sac fry following waterborne exposure are nearly identical to those determined for the same end point after egg injection (*40,42,49*). Thus, the REPs based on sac fry mortality were not influenced by the route of exposure. Zabel et al. (*50*) also showed that the REP for PCB 126 in producing lake

Table 1. Toxic equivalency factors (TEFs) for human risk assessment and mammals

Congener	Description	Old TEF	WHO TEF
Dioxins			
1,2,3,7,8-PentaCDD	Based on new *in vivo* tumor promotion data and CYP1A1/A2 induction potencies from subchronic studies (*79–81*); a value closer to 1.0 is recommended.	0.5	1
1,2,3,4,7,8-HexaCDD	Limited *in vivo* data are available, but more recent LD_{50} values continue to support the current value (*82,83*); no revision is recommended.	0.1	0.1
1,2,3,6,7,8-HexaCDD	No new *in vivo* data. Recent *in vitro* data support the current value (*84*); no revision is recommended.	0.1	0.1
1,2,3,7,8,9-HexaCDD	No new *in vivo* information; no revision is recommended.	0.1	0.1
1,2,3,4,6,7,8-HeptaCDD	Two recent semichronic studies indicate values between 0.02 and 0.03 for various end points (*85,86*); no revision is recommended.	0.01	0.01
OctaCDD	A recalculation of the old data in which exposure versus tissue concentrations were compared suggests that a lower value is more appropriate (*87*).	0.001	0.0001
Furans			
2,3,7,8-TetraCDF	Recent semichronic studies generally support a value of 0.1 (*88,89*); less emphasis was put on LD_{50} values; no revision is recommended.	0.1	0.1
1,2,3,7,8-PentaCDF	Although new semichronic data suggest that mice are more responsive (*81,90*), the combined potency values indicate the current value is adequately protective; no revision is recommended.	0.05	0.05
2,3,4,7,8-PentaCDF	Most REPs dealing with relevant toxic end points [e.g., (*79*)] support the continued use of a value of 0.5. Due to the fact that this congener is a major contributor to total TEQs in biological samples, confirmation of recent immunotoxicity data indicating a higher value is strongly recommended (*91*); at present, no revision is recommended.	0.5	0.5
1,2,3,4,7,8-HexaCDF	Additional *in vivo* potency values on nonspecific biological end points (liver, thymus, body weight alterations) are in the range of the current TEF (*92*); no revision is recommended.	0.1	0.1
1,2,3,6,7,8-HexaCDF	No new information; no revision is recommended.	0.1	0.1
1,2,3,7,8,9-HexaCDF	Very limited data (*93*) and no new *in vitro* and QSAR data that suggest a change in value is warranted; no revision is recommended.	0.1	0.1
2,3,4,6,7,8-HexaCDF	Limited new *in vitro* and QSAR information indicate a change of value is not warranted (*93*); no revision is recommended.	0.1	0.1
1,2,3,4,6,7,8-HeptaCDF	Recent values greater than 0.01 are under discussion due to possible impurity of test compound and the fact that no reference (TCDD/PCB126) was included at the time of studies (*94*). In addition, the same study reports approximately the same response with 1,2,3,4,7,8,9-heptaCDF, whereas this congener is known to be less persistent *in vivo* (*95*). Confirmation of REPs >0.01 is required; no revision is recommended.	0.01	0.01
1,2,3,4,7,8,9-HeptaCDF	A very limited data set is available and the same comment holds as for 1,2,3,4,6,7,8-heptaCDF; no revision is recommended.	0.01	0.01
OctaCDF	New *in vivo* EROD induction potency values (*81*) and an expected structural similarity with octaCDD for the *in vivo* situation support a change in analogy with octaCDD.	0.001	0.0001
Non-*ortho* PCBs			
3,3′,4,4′-TetraCB (77)[a]	Recent subchronic studies with EROD induction and hepatic retinol decreases suggest a value around or below 0.0001 (*96–98*), which is lower than the previous value based on tumor promotion (*99*); however, impurity and background contamination (e.g, PCB 126) is an identified problem with this congener. A change in value to 0.0001 is recommended.	0.0005	0.0001
3,4,4′,5-TetraCB (81)	Based on Ah receptor binding, *in vitro* CYP1A induction, and QSAR calculations, a value similar to PCB 77 was suggested (*100–102*). It should be noted that *in vitro* REPs possibly overestimate the potency of this compound, as in analogy with PCB 77, it is likely to be metabolized efficiently by higher organisms; however, this congener is detectable in certain wildlife species and human samples. A value of 0.0001 is recommended.	–	0.0001
3,3′,4,4′,5-PentaCB (126)	Multiple *in vivo* end points in semichronic studies with rats, including CYP1A1/A2 induction, tumor promotion, and hepatic retinol decreases, support the current value (*89,103,104*); no revision is recommended.	0.1	0.1
3,3′,4,4′,5,5′-HexaCB (169)	Recent *in vivo* EROD induction and thymic atrophy values support a conservative value of 0.01 for this congener. Confirmation of recent immunotoxicity data possibly indicating a higher REP is strongly recommended (*91,105*); no revision is recommended.	0.01	0.01

continued, next page

trout early life stage mortality is similar to the REP for the same response in rainbow trout. These results are significant because they suggest that TCDD-like congeners show similar REPs in rainbow trout and lake trout and support both the use of rainbow trout REPs in assessments of risks to lake trout and, perhaps, other fish species. While this agreement in REPs for PCB 126 between trout species is encouraging, further comparisons of REPs for other potent congeners and more disparate fish species are needed. In relation to environmental risk assessment, the use of early life stage mortality-specific TEFs and the egg toxicity equivalent additivity model predicted that PCDDs, PCDFs, and PCBs in Great Lakes lake trout are currently below levels that cause early life stage mortality (*51*). This information is in agreement with recent observations of juvenile lake trout survival in this area of the Great Lakes and gives further support for the use of the TEF concept in fish.

One of the major differences between the TEFs determined for mammals and fish is the lack or low response to mono-*ortho* PCBs in the latter taxa. Even with an extremely sensitive Ah receptor-mediated effect, the induction of CYP1A1, it was found that fish are very insensitive, if sensitive at all, to mono-*ortho*-substituted PCBs (*45,48,52–55*). Similar lack of responses toward mono-*ortho* PCBs have been observed for early life stage mortality in rainbow trout (*40,42*). Based on the above considerations, we decided that fish should be included in the TEF concept, but due to the deviations found for PCBs, fish should be treated as a separate taxa in this TEF evaluation.

TEFs for Birds

Although many studies with young or adult birds have shown dioxinlike toxic and biochemical effects of TCDD and PCBs, these studies were not designed for REPs of compounds to be reliably derived (*56–63*). At present, TEFs for birds can only be derived from egg injection studies, studies with cultured avian hepatocytes, and studies with cultured thymus cells.

The end points mentioned above have been studied in a number of avian species. These species include domestic chicken, duck, domestic goose, turkey, pheasant, gull, common tern, double-crested cormorant, and American kestrel (*64–68*). As with fish and mammals, Ah receptor-mediated CYP1A1 induction has been found in a large number of avian species, clearly indicating an Ah receptor responsiveness in this taxa. This justifies the inclusion of birds in the TEF concept. The induction of CYP1A1 in avian systems has been studied for most of the environmentally relevant PCDDs, PCDFs, and dioxinlike PCBs. However, the number of studies that could be used for this evaluation was limited. REPs for Tier 1 studies were not available for PCDDs and PCDFs, but for some PCBs, Tier 1 studies (*in ovo* lethality) were available. In general, REPs for ethoxyresorufin-*O*-deethylase (EROD) induction for dioxins, furans, and non-*ortho*-PCBs in birds are in the same range as those reported from mammalian systems. The major exception is TCDF, which can be more potent than TCDD in hepatocyte cultures from several species of birds (*65,66,69*).

Based on studies with chicken embryos, it has been concluded that birds can be highly responsive toward non-*ortho* PCBs, although much of the information available concerns induction of CYP1A1 and not distinct toxic

Table 1. (*continued*)

Congener	Description	Old TEF	WHO TEF
Mono-*ortho* PCBs	For this group of congeners, more than one mechanism of action (not only Ah receptor specific) is involved. A variety of *in vivo* mammalian experiments have demonstrated distinct Ah receptor-mediated biochemical and toxic effects. Among these are CYP1A1/1A2 induction and reproductive and teratogenic effects similar to TCDD.		
2,3,3′,4,4′-PentaCB (105)	The majority of potency values from subchronic bioassays support a value of less than 0.0002, including those for tumor promotion and thymus atrophy (*97,106*). The immunotoxicity data suggest a TEF between 10^{-5} and 10^{-7} while acute *in vivo* values for nonspecific end points, e.g., liver weight gain and body weight decrease, are in the range of 10^{-3} and 10^{-4}; no revision is recommended.	0.0001	0.0001
2,3,4,4′,5-PentaCB (114)	There are no new data which suggest that the current value is not appropriate. Older Ah receptor binding and enzyme induction data need confirmation regarding the present value (*100,101,107*); at present no revision is recommended.	0.0005	0.0005
2,3′,4,4′,5-PentaCB (118)	New data support the original value (*91,96,108*); no revision is recommended.	0.0001	0.0001
2′,3,4,4′,5-PentaCB (123)	No new data are available; no revision is recommended.	0.0001	0.0001
2,3,3′,4,4′,5-HexaCB (156)	Recent data from semichronic studies suggest that the old value is appropriate (*109*). Higher REPs measuring nonspecific end points, e.g., effects on thyroid hormones and body and thymus weight, were not included in the evaluation. Some concern was raised about identity and purity of test compounds in some studies; no revision is recommended.	0.0005	0.0005
2,3,3′,4,4′,5′-HexaCB (157)	No new relevant *in vivo* data available; no revision is recommended.	0.0005	0.0005
2,3′,4,4′,5,5′-HexaCB (167)	No new data are available; no revision is recommended.	0.00001	0.00001
2,3,3′,4,4′,5,5′-HeptaCB (189)	New data for immunotoxicity (*91*) are within the range of the current value; no revision is recommended.	0.0001	0.0001
Di-*ortho* PCBs	The limited data set as recognized in 1993 still exists. *In vivo* subchronic assay results with relevant end points, including CYP1A1/A2 induction and reproductive toxicity, with the structurally similar congener PCB 153 (*98,104,110–112*) do not confirm the weak Ah receptor agonist properties reported from *in vitro* experiments (*11,113,114*); as a result, the previous TEF values for di-*ortho* PCBs have been withdrawn.		
2,2′,3,3′4,4′,5 HeptaCB (170)	Withdrawn.	0.0001	–
2,2′,3,4,4′,5,5′-OCB (180)	Withdrawn.	0.00001	–

Abbreviations: WHO, World Health Organization; CDD, chlorinated dibenzodioxin; CDF, chlorinated dibenzofurans; CB, chlorinated biphenyls, LD_{50}, median lethal dose; REPs, relative potencies; QSAR, quantitative structure–activity relationship; EROD, ethoxyresorufin-*O*-deethylase; Ah, aryl hydrocarbon; PCBs, polychlorinated biphenyls.

[a]International Union of Pure and Applied Chemistry numbers are shown in parentheses.

end points (70–72). Birds, in contrast with fish, show a more pronounced response to mono-*ortho* PCBs, and REPs resemble those found in mammalian systems. In addition, studies with cultured chicken embryo hepatocytes indicate that some di-*ortho* PCBs, e.g., PCBs 128, 138, 170, and 180, are also EROD inducers (69,73,74). However, *in ovo* studies with either biochemical or toxic end points have not been done with these di-*ortho* PCBs, which could confirm an Ah receptor-mediated response by these congeners.

When REPs for CYP1A1 induction and embryo mortality in avian systems are compared, it can be concluded that no significant

Table 2. Toxic equivalency factors (TEFs) for fish

Congener	Description	WHO TEF
Dioxins		
1,2,3,7,8-PentaCDD	In a rainbow trout egg injection study, this compound was found to be 0.7 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*40*); a value of 1.0 is recommended.	1
1,2,3,4,7,8-HexaCDD	In a rainbow trout egg injection study, this compound was found to be 0.3 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*40*); a value of 0.5 is recommended.	0.5
1,2,3,6,7,8-HexaCDD	In a rainbow trout egg injection study, this compound was found to be 0.02 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*42*); a value of 0.01 is recommended.	0.01
1,2,3,7,8,9-HexaCDD	No *in vivo* studies have been carried out with this compound. It was determined to be 0.02 times as potent as 2,3,7,8-TCDD at inducing EROD in PLHC-1 cells (*115*); a value of 0.01 is recommended.	0.01
1,2,3,4,6,7,8-HeptaCDD	In a rainbow trout egg injection study, this compound was found to be 0.002 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*42*); a value of 0.001 is recommended.	0.001
OctaCDD	A two week study in carp using a single ip dose of this compound failed to detect any dose or hepatic concentration relationship with CYP1A induction (*53*). Based on structure homology with OCDF, a value <0.0001 is recommended.[a]	<0.0001
Furans		
2,3,7,8-TetraCDF	In a rainbow trout egg injection study, this compound was found to be 0.03 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*40*); a value of 0.05 is recommended.	0.05
1,2,3,7,8-PentaCDF	In a rainbow trout egg injection study, this compound was found to be 0.03 times as potent as 2,3,7,8-TCDD at causing early life stage mortality revision (*40*); a value of 0.05 is recommended.	0.05
2,3,4,7,8-PentaCDF	In a rainbow trout egg injection study this compound was found to be 0.3 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*40*); a value of 0.5 is recommended.	0.5
1,2,3,4,7,8-HexaCDF	In a rainbow trout egg injection study, this compound was found to be 0.2 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*40*); a value of 0.1 is recommended.	0.1
1,2,3,6,7,8-HexaCDF	At present, available data are only from QSAR studies (*93,116*). Also based on structural similarity between the hexaCDF isomers generally observed in experiments, a value of 0.1 is recommended.	0.1
1,2,3,7,8,9-HexaCDF	Data from EROD induction in PLHC-1 cells and QSAR studies indicate an REP between 0.04 and 0.09 (*116*); a value of 0.1 is recommended.	0.1
2,3,4,6,7,8-HexaCDF	Based on the structural similarity of this compound with other hexaCDFs and supported by QSAR modeling (*93,116*); a value of 0.1 is recommended.	0.1
1,2,3,4,6,7,8-HepaCDF	At present, no *in vivo* or *in vitro* data are available from fish studies, but based on structure homology with 1,2,3,4,7,8,9-heptaCDF, a value of 0.01 is recommended.	0.01
1,2,3,4,7,8,9-HeptaCDF	Data from EROD induction in PLHC-1 cells indicate an REP of 0.01 (*116*); a value of 0.01 is recommended.	0.01
OctaCDF	A two week study in carp using a single ip dose of this compound failed to detect any dose or hepatic concentration relationship with CYP1A induction (*53*). In the PLHC-1 cell line, this compound was 0.0008 times as potent as 2,3,7,8-TCDD at inducing EROD activity (*115*). However, both studies do not accurately reflect the environmental *in vivo* situation in which extreme low solubility and large molecular size limiting transport over the gill membranes (*117*) should reduce the octaCDF potency for fish significantly. A value <0.0001 is recommended.[a]	<0.0001
Non-*ortho* PCBs		
3,4,4′,5-TetraCB (81)[b]	In a rainbow trout egg injection study, this compound was found to be 0.0006 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*42*); a value of 0.0005 is recommended.	0.0005
3,3′,4,4′-TetraCB (77)	In a rainbow trout egg injection study, this compound was found to be 0.0002 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*40*); a value of 0.0001 is recommended.	0.0001
3,3′,4,4′,5-PentaCB (126)	In a rainbow trout egg injection study this compound was found to be 0.005 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*40*); a value of 0.005 is recommended.	0.005
3,3′,4,4′,5,5′-HexaCB (169)	In a rainbow trout egg injection study, this compound was found to be 0.00004 times as potent as 2,3,7,8-TCDD at causing early life stage mortality (*42*); a value of 0.00005 is recommended.	0.00005
Mono-*ortho* PCBs		
2,3,3′,4,4′-PentaCB (105)	In a rainbow trout egg injection study, this compound did not cause early life stage mortality at the highest dose administered (*40*); a value of <0.000005 is recommended.	<0.000005
2,3,4,4′,5-PentaCB (114)	A value of <0.000005 was assigned based on the similarity of the structure of this compound with other mono-*ortho* pentaCBs.	<0.000005
2,3′,4,4′,5-PentaCB (118)	In a rainbow trout egg injection study, this compound did not cause early life stage mortality at the highest dose administered (*40*); a value of <0.000005 is recommended.	<0.000005
2′,3,4,4′,5-PentaCB (123)	A value of <0.000005 was assigned based on structural similarity of this compound with other mono-*ortho* pentaCBs.	<0.000005
2,3,3′,4,4′,5-HexaCB (156)	An *in vitro* study with the rainbow trout RTG-2 cell line supports the earlier assigned value of <0.000005 for the other mono-*ortho* PCBs (*47*). In another *in vitro* study with the rainbow trout cell line RTL-2, this compound was 0.00003 times as potent as TCDD in inducing EROD activity (*45*); a value of <0.000005 is recommended.	<0.000005
2,3,3′,4,4′,5′-HexaCB (157)	A value of <0.000005 was assigned based on structural similarity of this compound with other mono-*ortho* pentaCBs; this value is also supported by QSAR modeling (*118*).	<0.000005
2,3′,4,4′,5,5′-HexaCB (167)	A value of <0.000005 was assigned based on structural similarity of this compound with other mono-*ortho* pentaCBs.	<0.000005
2,3,3′,4,4′,5,5′-HeptaCB (189)	A value of <0.000005 was assigned based on structural similarity of this compound with other mono-*ortho* pentaCBs.	<0.000005

Abbreviations: WHO, World Health Organization; CDD, chlorinated dibenzodioxins; ip, intraperitoneal; EROD, ethoxyresorufin-*O*-deethylase; CDF, chlorinated dibenzofurans; QSAR, quantitative structure–activity relationship; REP, relative potency; CB, chlorinated biphenyl.

[a]After a postmeeting consultation in February 1998, we agreed upon a revision of the TEF values for octaCDD and octaCDF in fish and birds, which were presented at the 17th International Symposium on Chlorinated Dioxins and Related Compounds on 25–29 August 1997 in Indianapolis, Indiana.

[b]International Union of Pure and Applied Chemistry numbers are shown in parentheses.

differences have been found between these values. Thus, the relative potencies of these compounds, as determined by CYP1A1 induction in cultured avian hepatocytes, appear to be predictive for the relative toxicity in the developing embryo (66).

However, some toxic end points, such as porphyrin accumulation in cultured avian hepatocytes, should be approached with caution because structure–activity relationships differ significantly from those of CYP1A induction (74–76). Based on this information, it is unclear if porphyrin accumulation in birds is uniquely an Ah receptor-mediated effect. Therefore, it is unclear whether it should be included in the TEF concept. This case again stresses the importance to include only those end points in which the Ah receptor-mediated mechanism is shown to be involved and is the major determining factor.

Review of TEFs

Approach for Deriving TEFs

For reevaluation of the existing mammalian TEFs for PCDDs, PCDFs, and PCBs, both previously reviewed and new data were examined. These included all congeners that have been selected before and also published data of multiple *ortho*-substituted PCBs (1,11,77,78). For prioritization, a rank order was followed as was suggested at an earlier WHO/IPCS TEF meeting (1). The TEFs for humans and mammals were primarily derived from *in vivo* toxicity data, which were given more weight than *in vitro* and/or quantitative structure–activity relationship (QSAR) data. *In vivo* toxicity data were prioritized according to the following ranking scheme: chronic > subchronic > subacute > acute. In the final TEF selection, different Ah receptor-specific end points were also ranked according to toxic > biochemical (e.g., enzyme induction) response. For revision of the existing mammalian TEFs, we agreed that if the available information was considered insufficient to warrant a change, the existing value would remain. The suggested TEFs for humans and mammals, including a short description, are given in Table 1.

A tiered approach was followed in deriving TEFs for fish and birds. Following this approach, we noted that the number of bird and fish studies, which could be used for the derivation of a TEF, was often very limited when compared with mammalian data. For all congeners, the studies that were given the most weight were tier 1 studies, followed by tiers 2, 3, and 4. The tiers were as follows:

- Tier 1: Overt toxicity observed in developing embryos; the only end point used was the LD_{50}
- Tier 2: Biochemical effects observed in developing embryos; the only end point used was the relative potency to induce CYP1A
- Tier 3: Biochemical effects observed in *in vitro* systems; the only endpoint used was the REP to induce CYP1A in cultured cells
- Tier 4: Estimates from QSAR studies.

Fish studies that determined early life stage mortality were considered to be most useful for determining TEF values (40,42). In addition, there was a preference to use results from egg injection studies in which the dose to the egg was known, rather than results from waterborne studies in which this was not determined. Furthermore, TEF values for octaCDD, octaCDF, and the mono-*ortho* PCBs for fish were given a "lower than" value. This approach was chosen because fish appear to be very insensitive, if sensitive at all, toward an Ah receptor-mediated response of octaCDD, octaCDF, or these types of PCBs. Nevertheless, we recognized that some regulatory agencies would like to have some directions for possible TEF values of these compounds in fish. Therefore, based on the present state of the science, a "smaller than" TEF value was given for these compounds, which should be considered to be the expected upper limit of such a compound in fish. The suggested TEFs for fish, including a short description, are given in Table 2.

Few studies have been carried out to determine the overt toxic effects of PCBs in bird embryos after injection of compounds into eggs. Where data from tier 1 studies were available, they were used to derive TEFs, but TEF values of PCDDs and PCDFs for birds were mainly derived from tier 2, 3, or 4 studies. These data include mainly studies that measured EROD induction in cultured hepatocytes or derived QSAR. The suggested avian TEFs, including a short motivation, are given in Table 3.

In line with the already existing TEF values, new TEFs were rounded to a value of either 1 or 5, irrespective of the order of magnitude difference with the reference compound, TCDD.

Discussion

Molecular Basis for TEFs across Species

A strict criterion for application of the TEF concept is that a compound must be demonstrated to bind to the Ah receptor since most (if not all) biological effects of these compounds appear to be mediated by the Ah receptor (128,129). Studies of biological effects of 2,3,7,8-TCDD and related polyhalogenated polyaromatic hydrocarbons have made it apparent that there are extensive and important species differences in the functional responses elicited by these compounds (130). However, for a number of common biological effects, many species can respond at dose levels that are within one order of magnitude (131).

With regard to the ligand binding properties of the Ah receptor, most data on receptor interaction with PCDDs, PCDFs, and PCBs have been generated using rodent experimental model systems. In addition, there are data on the ligand binding specificity of the human Ah receptor (129,132–134). The mouse has been studied in most detail with regard to determinants in Ah receptor structure of ligand binding activity. Four differently sized allelic variants of the receptor have been described, which show extended C-terminal parts as well as point mutations that affect binding of 2,3,7,8-TCDD and other polyhalogenated aromatic hydrocarbons (135,136).

With regard to humans, the Ah receptor is detected in a wide variety of tissues (e.g., placenta, liver, lung) and primary/established human-derived cell lines. Moreover, the Ah receptor can be activated both *in vivo* and *in vitro* into a DNA binding state by a variety of halogenated aromatic hydrocarbons (134,137,138). As in mice, a similar situation with several different allelic variants of the receptor might be present in humans. Although the mean 2,3,7,8-TCDD binding affinity (K_d) for the human Ah receptor may be lower than that observed in responsive mouse strains (C57BL/6J), there exisits a range of K_d values similar in magnitude to the range observed between responsive and nonresponsive mouse strains (135).

The extension of the TEF concept to other classes of vertebrates such as fish and birds is supported by data on ligand binding properties of the Ah receptor in these species. In this respect it should be noted that the Ah receptor has been detected in both bony and cartilagenous fish (139–141). Thus, it appears that the Ah receptor is phylogenetically very old, which is supported by the fact that development of these fish groups diverged from one another about 450–550 million years ago. Moreover, there exist homologs of both the receptor gene and the gene encoding the dimerization partner of the receptor, Arnt, in the nearly entirely sequenced genome of the nematode worm *Caenorhabditis elegans*. Studies using species-specific recombinant cells and primary cultures from birds also suggest that the ligand binding specificity of the Ah receptor may not be identical between species (66,142). Furthermore, one study determined the specific binding characteristics of TCDD to the Ah receptor in four different avian species and found differences in binding affinity of over an order of magnitude (67). Consequently, some caution in

the absolute homology of ligand binding properties of the Ah receptor between species may be justified.

In conclusion, the Ah receptor and Arnt have been very well conserved during evolution, indicating that they may have important physiological functions, possibly in development (27). This evolutionary conservation, in combination with the ligand binding properties of the Ah receptor, support the use of the TEF concept across taxa.

The Role of Pharmacokinetics and Food Chain Transport in the TEF Concept

The pharmacokinetic behavior of dioxinlike compounds and PCBs is largely governed by three major factors: 1) lipophilicity, 2) binding to CYP1A2 leading to hepatic sequestration, and 3) relative rates of metabolism. Lipophilicity controls the rate and extent of absorption, tissue distribution, and passive elimination. In addition, the chlorine substitution pattern determines hepatic sequestration and rate of metabolism. Pharmacokinetic properties have been shown to play a role in the determination of TEF values for a number

Table 3. Toxic equivalency factors (TEFs) for birds

Congener	Description	WHO TEF
Dioxins		
1,2,3,7,8-PentaCDD	In a chicken embryo egg injection study, this compound was found to be approximately equipotent to 2,3,7,8-TCDD as an inducer of EROD (*119*). In addition, a study with chick embryo hepatocytes from several bird species determined that the potency of this compound to induce EROD is similar or even higher than that of TCDD (*68,69*); a value of 1 is recommended.	1.0
1,2,3,4,7,8-HexaCDD	In a chicken embryo egg injection study this compound was found to be approximately 0.05 times less potent than 2,3,7,8-TCDD as an inducer of EROD (*119*); a value of 0.05 is recommended.	0.05
1,2,3,6,7,8-HexaCDD	In a chicken embryo egg injection study, this compound was found to be approximately 0.01 times less potent than 2,3,7,8-TCDD as an inducer of EROD (*119*); a value of 0.01 is recommended.	0.01
1,2,3,7,8,9-HexaCDD	In two chicken embryo egg injection studies, this compound was found to be approximately 0.1–0.4 times less potent than 2,3,7,8-TCDD as an inducer of EROD (*119,120*); a value of 0.1 is recommended.	0.1
1,2,3,4,6,7,8-HeptaCDD	In a chicken embryo egg injection study, this compound was found to be a poor inducer of EROD (*119*); a lower than value of 0.001 is recommended.	<0.001
OctaCDD	At present, no *in vivo* or *in vitro* data are available for this compound in birds; a value of 0.0001 was recommended based on data from mammalian studies.[a]	0.0001
Furans		
2,3,7,8-TetraCDF	Chicken embryo egg injection studies and one study with chicken embryo hepatocytes of several species of birds found this compound to be approximately equipotent or even more potent than 2,3,7,8-TCDD as an inducer of EROD (*66,119,121*); a value of 1 is recommended.	1.0
1,2,3,7,8-PentaCDF	In a chicken embryo egg injection study, this compound was found to be approximately 0.3 times less potent than 2,3,7,8-TCDD as an inducer of EROD (*119*); a value of 0.1 is recommended.	0.1
2,3,4,7,8-PentaCDF	Studies with chicken embryo egg injections and chick embryo hepatocytes from several bird species indicated that this compound is approximately equipotent to 2,3,7,8-TCDD as an inducer of EROD (*68,119*); a value of 1.0 is recommended.	1.0
1,2,3,4,7,8-HexaCDF	This compound was reported to be 0.01 times as potent as 2,3,7,8-TCDD as an inducer of EROD in chicken embryos after egg injection (*119*). However, examination of the dose–response curves indicates problems with rigorous comparison to that of 2,3,7,8-TCDD. Based on QSAR calculations with other existing bird data (M. Tysklind and P.L. Anderson, University of Umea, Sweden), a value of 0.1 is recommended.	0.1
1,2,3,6,7,8-HexaCDF	In a chicken embryo egg injection study, this compound was found to be approximately 0.4 times less potent than 2,3,7,8-TCDD as an inducer of EROD (*119*). In combination with QSAR calculations with other existing bird data (M. Tysklind and P.L. Anderson, University of Umea, Sweden), a value of 0.1 is recommended.	0.1
1,2,3,7,8,9-HexaCDF	No *in vivo* or *in vitro* data are available. Based on QSAR calculations with other existing bird data (M. Tysklind and P.L. Anderson, University of Umea, Sweden), a value of 0.1 is recommended.	0.1
2,3,4,6,7,8-HexaCDF	No *in vivo* or *in vitro* data are available. Based on QSAR calculations with other existing bird data (M. Tysklind and P.L. Anderson, University of Umea, Sweden); a value of 0.1 is recommended.	0.1
1,2,3,4,6,7,8-HeptaCDF	At present no data are available for this compound in birds; a value of 0.01 is recommended based on similar homolog class REPs across taxa for the hexaCDFs and heptaCDFs.	0.01
1,2,3,4,7,8,9-HeptaCDF	At present, no data are available for this compound in birds; a value of 0.01 is recommended based on similar homolog class REPs across taxa for the hexaCDFs and heptaCDFs.	0.01
OctaCDF	At present, no *in vivo* or *in vitro* data are available for this compound in birds; a value of 0.0001 was recommended based on data from mammalian studies.[a]	0.0001
Non-*ortho* PCBs		
3,3′,4,4′-TetraCB (77)	Studies with chickens and wild avian species reported *in vitro* and *in ovo* effects, with REPs ranging from <0.0003 to 0.15 depending on the species (*66,68,69,122,123*). A value of 0.05 is recommended.	0.05
3,4,4′,5-TetraCB (81)	Egg injection studies have not been carried out with this compound. Two studies with chick embryo hepatocytes from several bird species indicate a wide range of REPs (0.001–0.5) of this compound to induce EROD relative to TCDD (*66,68*). As for most species, REPs were close to a value of 0.1, which is the recommended value.	0.1
3,3′,4,4′,5-PentaCB (126)	A 24-hr study with chickens determined a REP of 0.07 (*124*); a value of 0.1 is recommended.	0.1
3,3′,4,4′,5,5′-HexaCB (169)	One study determined the LD_{50} in chicken embryos after injection of the compound into the egg, and a REP of 0.002 was reported (*125,126*). A value of 0.001 is recommended.	0.001

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of dioxinlike chemicals. These factors can include alterations in absorption, tissue distribution, and metabolism between individual congeners.

The importance of pharmacokinetic factors has been illustrated with studies using octaCDD in rodents. This compound initiated dioxinlike responses following subchronic exposure to rats, with an estimated relative potency of 0.01 based on hepatic levels correlated with the induction of CYP1A1 (*87*). However, earlier acute toxicity studies had suggested that octaCDD was essentially nontoxic, with a TEF value less than 0.000001. These subchronic studies also showed that octaCDD is extremely poorly absorbed and absorption from the gastro-intestinal tract decreased with increasing dose (*143*). Consequently, very little is stored from a (single) high dose of octaCDD in tissues of animals. In contrast, repeated exposure to relatively low doses can lead to significant tissue accumulation and hence a biological response. Based on these findings, it can be discussed whether future TEF values should be based on intake or tissue level values to bridge differences between species.

Differences in tissue distribution can also significantly influence TEF values based on tissue concentrations. The liver/adipose tissue distribution can vary significantly between the species and dose levels used (*95*). A number of highly toxic congeners such as 2,3,4,7,8-pentaCDF, 2,3,7,8-TCDD, and PCB 126 bind very tightly to CYP1A2 and subsequently concentrate in the liver in many rodent species, even at very low dose levels (*88,131,144–148*). In this respect, it should be noted that the structure–activity relationship for binding to the Ah receptor and to CYP1A2 are not identical (*149*). As the level of CYP1A2 is increased, dioxinlike compounds redistribute from the adipose tissue back to the liver. Thus, depending on the species and dose level, the binding of an Ah receptor agonist to CYP1A2 can alter tissue distribution. As a result of this CYP1A2 binding, hepatic REPs for these compounds are lower than those based on intake because of disproportionately high liver concentrations. However, if other tissues are considered, e.g., skin and lung, the REP values would be higher because the tissue concentrations are lower than expected based on administered dose (*81*).

The distribution of PCBs in laboratory animals differs significantly from that of the 2,3,7,8-substituted PCDFs and PCDDs with respect to liver distribution. Highly biopersistent PCBs, e.g, PCB 153, are predominantly stored in adipose tissue and skin and not in the liver (*150*). Nevertheless, PCB congeners that are isostereomers of TCDD, such as PCB 126, attain a high liver concentration. With the addition of one *ortho* chlorine, the hepatic accumulation decreases dramatically, as was shown in comparative semichronic studies with rats and PCBs 126 and 156 (*103,109*). These differences again appear to be related to induction of and binding to CYP1A2. It has also been shown that coadministration of PCDDs, PCDFs, or dioxinlike PCBs with the nondioxinlike congener PCB 153 can result in modulation of the hepatic disposition and elimination (*151–153*). These toxicokinetic interactions are quantitatively limited, compound and dose dependent, and probably the result of multiple mechanisms involving, among others, *de novo* synthesis of both the Ah receptor and CYP1A2 (*151*). To some extent, these toxicokinetic interactions could explain the nonadditive effects that were observed when combinations of dioxins and PCB 153 were used in rodent studies (*95*). To what extent these toxicokinetic interactions are also relevant at low-level environmental exposure is still unknown.

The position and degree of halogenation determines the rate and extent of metabolism, which is the key determinant of excretion or bioaccumulation of these compounds (*95,154*). Full lateral halogenation at the 2,3,7,8-positions produces PCDDs and PCDFs that lack two adjacent unsubstituted carbon atoms. These congeners tend to be very resistant to metabolism, as these positions are also preferentially oxidized by the cytochrome P450 system, most likely by the CYP1A enzymes. Because of the stress on the furan ring, PCDFs are more susceptible to biochemical degradation than PCDDs. In addition, the positions adjacent to the oxygen bridge in the PCDF molecule (positions 4 and 6) are more sensitive to metabolic attack than those in the PCDD molecule (*95*).

For PCBs the presence of two adjacent unsubstituted carbon atoms also facilitates the metabolic conversion to more polar metabolites. As with PCDFs and PCDDs, the cytochrome P450 1A enzyme(s) seems to play an important role in metabolism of

Table 3. (*continued*)

Congener	Description	WHO TEF
Mono-*ortho* PCBs		
2,3,3′,4,4′-PentaCB (105)	One study determined the LD_{50} in chicken embryos after injection of the compound into the egg, and a REP value of 0.00014 was reported (*125,126*). A value of 0.0001 is recommended.	0.0001
2,3,4,4′,5-PentaCB (114)	At present, available data are only from QSAR studies (*74,102,127*); based on these calculations, a value of 0.0001 is recommended.	0.0001
2,3′,4,4′,5-PentaCB (118)	One study was carried out to determine the LD_{50} in chicken embryos after injection of the compound into the egg; at the highest doses, no lethality was observed (*126*). This compound is also a poor inducer of EROD in avian hepatocyte cultures (*66*); a value of 0.00001 is recommended.	0.00001
2′,3,4,4′,5-PentaCB (123)	At present, available data are only from QSAR studies (*74,102*); based on these calculations, a value of 0.00001 is recommended.	0.00001
2,3,3′,4,4′,5-HexaCB (156)	One study determined the LD_{50} in chicken embryos after injection of the compound into the egg and reported a REP of 0.0002 (*126*). A value of 0.0001 is recommended.	0.0001
2,3,3′,4,4′,5′-HexaCB (157)	One study determined the LD_{50} in chicken embryos after injection of the compound into the egg, and reported a REP of 0.0001 (*126*). A value of 0.0001 is recommended.	0.0001
2,3′,4,4′,5,5′-HexaCB (167)	One study determined the LD_{50} in chicken embryos after egg injection and reported a REP <0.00008 (*126*). A value of 0.00001 is recommended.	0.00001
2,3,3′,4,4′,5,5′-HeptaCB (189)	No *in vivo* or *in vitro* data are available. Based on QSAR calculations with other existing bird data (M. Tysklind and P.L. Anderson, University of Umea, Sweden), a value of 0.00001 is recommended.	0.00001

Abbreviations: WHO, World Health Organization; CDD, chlorinated dibenzodioxins; EROD, ethoxyresorufin-*O*-deethylse; CDF, chlorinated dibenzofurans; QSAR, quantitative structure–activity relationship; REPs, relative potencies; CB, chlorinated biphenyl, LD_{50}, median lethal dose.

[a]After a postmeeting consultation in February 1998, we agreed upon a revision of the TEF values for octaCDD and octaCDF in fish and birds, which were presented at the 17th International Symposium on Chlorinated Dioxins and Related Compounds on 25–29 August 1997 in Indianapolis, Indiana.

those PCB congeners that are more or less isosteric with 2,3,7,8-TCDD (*155*). This is based on a study with rats, marine mammals, and wild bird species in which it was observed that the metabolic degradation of PCB 77 correlated well with EROD activity. However, the same study indicated that for fish species this isoenzyme might be less effective in metabolizing these PCBs (*156*). In addition, several other P450 isoenzymes, e.g., P450 2B and 3A, might be involved in the metabolism of PCBs that have an *ortho*-substitution pattern. With an increasing *ortho* chlorine substitution pattern, the induction of P450 2B1 and 2B2 isoenzymes increases significantly (*155,157*). Studies with PCB patterns and enzyme activities in wild mammals indicate that, at least in seals and polar bears, the involvement of CYP2B isoenzymes in metabolism of PCBs cannot be excluded (*158,159*).

The role of metabolism can also be important when comparing acute and subchronic studies. In rodent studies using both 2,3,7,8-TCDF and TCDD, it was demonstrated that the REP of 2,3,7,8-TCDF for enzyme induction was almost equal to that of TCDD after acute exposure. However, when subchronic studies were done, 2,3,7,8-TCDF was much less potent than TCDD due to its rapid metabolism and lack of bioaccumulation (*88*). A similar explanation was suggested when comparing the relative potencies for the induction of cleft palate in mice by 1,2,3,7,8-pentaCDF versus 2,3,4,7,8-pentaCDF (*160*). When comparing the brominated dioxins and dibenzofurans with the chorinated ones, it appears that at least some brominated compounds can be more resistant to metabolism than their corresponding chlorinated analogs (*12*). Species differences in metabolism might also be one of the causes for the observed differential TEFs between fish, birds, and laboratory mammals. For example, some fish and birds may have limited ability to metabolize PCB 77 and 2,3,7,8-TCDF. However, both lay eggs and embryos have little depuration capability compared to adults. The respective avian and mammalian PCB 77 and 2,3,7,8-TCDF TEFs demonstrate more potency *in ovo* than *in vivo*. The PCB 77 and 2,3,7,8-TCDF TEFs are higher in bird eggs/embryos without a postconception maternal influence than in mammalian embryos with maternal metabolic protection. Conversely, a similar fish and mammalian comparison shows almost identical fish egg/embryo and mammalian TEFs. The role of metabolism, subsequent elimination, and reproductive strategy differences, especially through maternal egg deposition for most nonmammalian vertebrate species, points to the need to focus future REP/TEF determinations on *in vivo* or *in ovo* studies with comparisons between target organ or tissue exposure measurements and toxicity end points. In addition, it points to the need to base future TEF values on *in vivo* studies in which steady-state conditions are obtained or at least have been approached. Utilizing this approach will greatly increase the value of laboratory-determined exposure measurements for data interpretation in similar environmental samples regardless of taxonomic group.

As illustrated above, many PCBs, PCDFs, and PCDDs are relatively resistant to metabolism and can therefore accumulate in different trophic levels, causing biomagnification and toxicity higher in the foodchain (*161*). For PCDDs and PCDFs, the structure–activity relationships for bioaccumulation are relatively simple and involve primarily the 2,3,7,8-substituted congeners for most vertebrate species. Only in some invertebrates and the guinea pig has the accumulation of non-2,3,7,8-substituted PCDDs and PCDFs been found to be significant, but the guinea pig has been found to have low metabolic capacities for these compounds (*95*). Thus, from a pharmacokinetic point of view, only the 2,3,7,8-substituted congeners should be considered when TEFs must be determined for ecotoxicological risk assessment of vertebrates.

For PCBs the situation is more complex, as structure–activity relationships are less well defined for metabolism and associated bioaccumulation. The degree of accumulation is strongly determined by the capability of the organism to metabolize the various PCB congeners (*22,162*). This can differ qualitatively as well as quantitatively between species. In general, it can be stated that fish are less capable of metabolizing PCBs than most birds and mammals. In spite of the complexity of the above processes, the lack of chlorine substitution on both the *meta* and *para* positions in the PCB molecule appears to facilitate the metabolism of these compounds in most higher vertebrate species (*21,156,158,163*). As a result of this "biofiltering" by metabolism at different levels in the foodchain, the qualitative PCB pattern in top predators shows some resemblance, which allows selection of PCB congeners of major concern for risk assessment (*164*).

Qualitative and quantitative changes occur in PCDD, PCDF, and PCB patterns among different trophic levels and between the abiotic and biotic components of different ecosystems. This is especially confounded when attempts are made to perform risk and exposure assessments from a contaminated soil or sediment. It is preferable and indeed desirable to model Ah receptor-active congeners from abiotic to biotic components of ecosystems because of differential partitioning across these matrices, which are influenced by physicochemical properties, physiological differences, food chain position, and different reproductive strategies.

Depending on the assessment and toxicity end points identified in a particular ecological risk assessment, application of the appropriate TEFs for fish, birds, or mammals, as well as resulting TEQs should only be determined in biotic matrices after the quantitative estimates of congener concentrations are made in a particular target species or generic food chains. Conversely, TEQs in abiotic matrices could be misused and have obscure value. For example, calculating TEQs in sediment or soil does not harm or place any risk on these abiotic matrices, regardless of TEF scheme. The application of the TEF concept for foodchain transport out of the abiotic compartments is clearly an area for future research.

Application of *in Vitro* Assays in the Derivation of TEFs

A number of *in vitro* assays, either in primary cultures or immortalized cells, have been used to establish REPs for mammals, birds, and fish. These include assays for Ah receptor competitive ligand binding, CYP1A1 gene induction, cell differentiation, plaque-forming cell (PFC) response, and porphyrin accumulation.

The most extensively used biological *in vitro* response studied so far is the induction of the *CYP1A1* gene. *CYP1A1* gene induction has been measured by monitoring changes in mRNA (*165,166*), protein levels (*66,167*), and/or enzyme activity [i.e., EROD or aryl hydrocarbon hydroxylase (AHH)] (*168,169*).

In addition, permanently transfected cells have also been established that contain CYP1A-regulated reporter genes. These cell lines contain a permanently incorporated reporter gene that is regulated by the mouse CYP1A1 regulatory region (*55,142,170,171*). These cell lines have a number of advantages over conventional enzyme induction assays such as 1) a sensitive and more easily measurable enzyme activity; 2) chemical inducers do not act as competitive inhibitors of the reporter gene; and 3) a larger number of available species- and tissue-specific assays.

Only two studies have compared endogenous EROD induction to reporter gene induction (*55,172*). The structure–activity relationship of the tested chemicals was comparable between wild-type and recombinant H4IIE cells. Dose–response relationships exhibited comparable dynamic ranges, and binary mixtures of TCDD, PCB 126, and PCB 77 did not depart from additivity in either cell line. In addition, PCB 153 significantly antagonized induction by

TCDD and PCB 126 in both cell lines. The recombinant cell line was found to be generally more sensitive to PCDDs, PCDFs, and PCBs when compared to the wild-type cells (*172*). Additionally, Richter et al. (*55*) recently reported that a recombinant trout cell line (RLT 2.0) could be used as an approximate predictor of responses in fish. However, the use of this assay was not advocated to develop REPs for ecological risk assessment since it was still plagued by the same drawbacks that limit the utility of other *in vitro* assays.

In vitro CYP1A induction has also been used to assess the level of dioxin equivalents (TEQs) in a number of environmental samples (*69,173–177*). In general, the TEF/TEQ approach using CYP1A induction accurately predicted dioxin equivalents within a complex mixture when compared to gas chromatography-mass spectrometry analysis or *in vivo* assessments, but may overestimate the TEQs when using other responses such as PFC (*91*). The accuracy of this *in vitro* approach also depends on the composition of the sample. The presence of high amounts of Ah receptor agonists that are not covered by the TEF concept (e.g, polycyclic aromatic hydrocarbons) can result in a considerable overestimation of TEQs in environmental samples. Furthermore, these *in vitro* studies have shown that some responses (i.e., PFC, reporter gene, and AHH/EROD induction) and cell lines (H4IIE, recombinant reporter cells) are susceptible to nonadditive interactions. This is especially true if the complex mixture contains PCB congeners that are partial Ah receptor agonists (*91,142,178,179*).

In summary, a single *in vitro* assay based on a single surrogate species may not accurately predict the toxicity of a chemical or complex mixture following exposure to other species. Nevertheless, the use of *in vitro* assays provides a general tool as a prescreening method of TEQs in environmental samples. However, it does not replace *in vivo* experiments when determining TEFs for dioxinlike compounds.

The Use of QSARs for Identification and Screening of Dioxinlike Compounds

PCDDs, PCDFs, and PCBs consist of a large number of possible congeners with varying degrees of chlorination and substitution patterns. Thus, from a practical point of view, it does not seem feasible to test extensive numbers of congeners for their biological or toxic properties. The determination of QSARs could facilitate future risk assessment procedures significantly. Based on a limited number of compounds, structure–activity relationships have been developed for Ah receptor-mediated effects, e.g., induction of CYP1A1 and binding to this protein (*11,129,180*). In addition, structure–activity relationships have also been determined for effects that are not directly related to the Ah receptor and involve both parent compounds and their hydroxylated metabolites. These non-Ah receptor-mediated structure–activity relationships include binding to transthyretin and thyroxin-binding globulin (*6,181,182*), binding to the estrogen receptor (*183,184*), and decrease in dopamine levels (*2,3*). Based on these studies it can be concluded that the structure–activity relationships of the latter effects deviate significantly from those observed for the Ah receptor-mediated effects. As only Ah receptor-mediated effects are considered in the present TEF concept, these structure–activity relationships will not further be considered in this evaluation (see criteria above).

Most biological systems are complex, and it is unlikely that only one or a few chemical properties will suffice to describe them. Thus, it is necessary to characterize these compounds with a multitude of physicochemical descriptors. Such a broad chemical characterization may capture the underlying, hidden factors that correlate with the response of interest. This information can then be used as the future base for the selection of congeners for biological testing (*185*).

Within the TEF concept, the critical question is how to identify the physicochemical properties that determine if a compound can be expected to be dioxinlike or not. The planar structure of the PCDDs and the PCDFs is characteristic for high Ah receptor binding affinity. Furthermore, the 2,3,7,8-chlorine substitution pattern is of great importance as well. PCBs show a larger chemical variation due to the possible rotation of the two phenyl rings. The number of chlorine atoms in the *ortho*-position will, in this case, define the degree of dioxinlike properties. However, from a chemical point of view, it is difficult to define the point at which the compounds lose their dioxinlike properties. As a consequence of this, no single PCB congener can be identified as being structurally representative for the whole class of compounds. Hence, a number of congeners must be investigated in order to include the many facets of chemical structure within the PCB class of chemicals.

The use of multivariate chemical characterization (*118*) in combination with factorial design provides a tool by which small sets of structurally representative congeners can be selected. This tool can be used in the design of *in vitro* and *in vivo* experiments in order to introduce systematic structural variation in the congeners to be tested. In studies of complex environmental mixtures, indicator congeners can be selected from the structural variation found in such matrices as flue gases from incineration plants or Aroclor mixtures. The use of these systematic and balanced sets of congeners in the experimental protocol will provide increased knowledge of the biological behavior of the compounds studied.

Small sets of congeners, representative for the PCDDs, PCDFs, and PCBs, have been suggested (*186,187*). Twenty congeners were selected based only on their physicochemical properties and not on expected biological activity. As a first screening of possible dioxinlike effects, PCDFs and PCBs were tested in different *in vitro* systems using primary hepatocytes from different species as well as rat and fish hepatoma cell lines. Based on these results, QSARs have been established to define the correlation between chemical properties and a dioxinlike biochemical response. As can be seen in Table 4, these studies predict that a large number of PCBs, and also PCDFs, exhibit dioxinlike activity measured as *in vitro* induction of CYP1A(1) activity.

The systematic selection approach makes it possible to make interpolations and predictions of not yet tested congeners. In this way, all congeners within the chemical range in which the selection of test congeners were made can be ranked according to expected dioxinlike activity and the congeners of special interest can be identified and investigated further. This method has so far mainly focused on CYP1A1 induction, but could also be used in the screening of other dioxin-linked effects or other groups of halogenated aromatics, e.g., polychlorinated naphthalenes and polybrominated diphenylethers.

Based on the information presented in Table 4 about the predicted dioxinlike activity of PCBs, it should be noted that experimental data were used from *in vitro* experiments. Therefore, the structure–activity relationships determined with this multivariate characterization await further confirmation from *in vivo* experiments, including the role of pharmacokinetics, before these dioxinlike PCBs can be included in the TEF concept. Nevertheless these QSAR data indicate that more PCBs might be considered in the future for inclusion in the TEF concept. In relation to the large number of PCDFs that are predicted to induce CYP1A 1 *in vitro* activity, it should be noted that in *in vivo* situations only the 2,3,7,8-substituted PCDFs exhibit a significant tissue retention. In this case, a pharmacokinetic factor (metabolism) seems to dominate the toxicodynamic aspects of these non-2,3,7,8-PCDFs (*in vitro* Ah receptor binding and CYP1A1 induction).

Uncertainties Associated with the TEF Concept

Toxic equivalency factors were initially developed for calculating the TEQs in mixtures of PCDDs and PCDFs. The TEF

approach for hazard assessment of reconstituted PCDD/PCDF mixtures has been validated using standardized TEF or response-specific TEF values. In a limited number of validation studies using mixtures, a good correlation was found between the observed *in vivo* or *in vitro* response and TEQ values calculated from the relative concentrations of individual congeners in the mixture (*84,188–190*). The non-*ortho* and mono-*ortho* PCBs also elicit Ah receptor-mediated responses. As a consequence, TEFs have been assigned to these PCBs (*1,11,77*). From a risk assessment point of view this was a logical decision, as most environmental matrices contain PCDDs, PCDFs, and PCBs. In fact, in some environmental samples, the overall contributions of PCBs to TEQs exceed that of the PCDDs and PCDFs (*191*). When concentrations of TEQs in complex mixtures from environmental matrices were determined *in vitro* and compared to TEQs by using REPs from the same *in vitro* system, the results were generally within a factor of 2 (*192*).

However, the inclusion of PCBs in the TEF concept also poses a problem due to the nonadditive effects, which have been observed in laboratory studies with mixtures containing PCDDs, PCDFs, and PCBs. Ah receptor antagonist activities of certain PCB congeners, including the major environmental contaminant PCB 153, have been reported in several experimental systems. Recently, these nonadditive interactions of PCB on dioxinlike effects have been reviewed (*193*). In summary, the following antagonistic effects of nondioxinlike PCBs were described: induction of EROD activity in chick embryo hepatocytes (*194*), splenic PFC response to sheep erythrocytes in mice (*195*), splenic PFC response to trinitrophenyl-lipopolysaccharide in mice (*196*), serum IgM units in mice (*91*), mouse fetal cleft palate (*110,195*), and chick embryo malformations and edema and liver lesions (*197*). The apparent antagonism by PCB 153 of the TCDD-induced immunosupression is due to the enhanced immune response induced by PCB 153 (*198*). In addition, synergistic interactions have also been reported between PCBs and dioxins in the development of porphyria in rats (*199*) and mice (*89*), the induction of CYP1A1 (*152,178*) and thyroid hormone levels and associated enzyme activities (*200,201*). These multiple nonadditive interactions between dioxinlike and nondioxinlike HAHs require further investigation to establish the extent to which they compromise the TEF concept.

Several reports have also questioned the relative contributions of TEQs associated with dioxinlike compounds versus the substantial daily intakes of natural nonchlorinated Ah receptor agonists in cooked foods and vegetables (*193,202,203*). The Ah receptor agonist and antagonist activities of indole-3-carbinol have been reported (*204–206*). Perinatal exposure of pregnant rats to indole-3-carbinol resulted in reproductive abnormalities in male rat offspring, which were also elicited by TCDD in the same study. However, when comparing the effects caused by indole-3-carbinol or TCDD, both similar and different responses were observed (*205*). In contrast, a recent study with TCDD or indole-3-carbizole in rats did not find characteristic TCDD-like responses, e.g., hypophagia, body weight loss, and CYP1A1 induction (*207*). These results suggest that at least in some animal and cell models, the potential effects of the natural Ah receptor agonists could be significant. However, it has been suggested that the difference in pharmacokinetics between natural and halogenated Ah receptor agonists may decrease the potential impact of the natural agonists in *in vivo* situations. These possible differences between halogenated and natural Ah receptor agonists, such as indole-3-carbinol, in pharmacokinetics and toxicodynamics should be examined in more detail in *in vivo* experiments.

In view of the nonadditive effects mentioned above, a question has been raised as to which effect would compromise the TEF concept more: antagonism or synergism. From the available experimental data, it appears that antagonism is the most commonly reported nonadditive effect between individual dioxinlike compounds and complex mixtures (*195,208–212*). However, it should be noted that the occurrence of either antagonism or synergism is ratio and dose dependent. With respect to nonadditive effects between TCDD and PCB 153 on CYP1A1 induction in rodents, it was observed that synergism prevailed at the lower dose levels, while antagonism dominated at higher dose levels (*95*). Mechanistically, this antagonism can be explained by the fact that less potent congeners still have Ah receptor binding affinities and therefore are effective competitors for binding the site (*195,209*). This reduces the probability of the more toxic dioxinlike compounds to bind to the Ah receptor. However, the less active congeners do not bind with such a high affinity that they would effectively induce EROD activity or cause other Ah receptor-mediated adverse effects (*11*). In this respect, some results of interactive studies with these compounds are equivocal. For instance, 3,3′,4,4′-tetraCB and TCDD caused greater than additive induction of AHH activity in the liver of rainbow trout at doses calculated to produce 50% or less of the maximum response. However, in rainbow trout at greater doses, the same mixture was found less than additive (*213*). In addition, PCB 153 had an antagonistic effect on the induction of EROD activity by TCDD (*214*), but was found to be synergistic in another study (*215*).

In conclusion, there has been much discussion about the possible interactions between and among individual congeners in complex technical mixtures and extracts of environmental matrices (*216*). Based on receptor theory and the proposed mechanism of action of Ah receptor-active compounds, an additive model for the prediction of TCDD TEQs still seems most plausible in spite of the also observed nonadditive interactions. It is unlikely that the use of additivity in the TEF concept will result in a great deal of error in predicting the concentrations of TEQs due to synergism or antagonism.

Table 4. Screening of compounds with a relative potency (REP) for PCDFs of at least 10^{-3} TCDD and for PCBs of 10^{-5} of PCB 126 in different *in vitro* systems

Compounds and assay	Number of dioxinlike congeners	Reference
PCDFs in H4IIE rat hepatoma bioassay	40 out of 87 tetra- through octaCDFs	(*93*)
PCDFs in PLHC-1 fish hepatoma bioassay	47 out of 87 tetra- through octaCDFs	(*127*)
PCBs in primary hepatocytes from chicken	56 out of 154 tetra- through heptaCBs	(*102*)
PCBs in primary hepatocytes from monkey	79 out of 154 tetra- through hepta CBs	(*102*)
PCBs in primary hepatocytes from pig	101 out of 154 tetra- through heptaCBs	(*102*)

Abbreviations: PCDFs, chlorinated dibenzofurans; PCBs, chlorinated biphenyls. Congeners tested and creating the quantitative structure–activity relationship models were selected based on multivariate chemical characterization in combination with experimental design.

Validation of the TEF Concept for Environmental Risk Assessments

A range of validation studies with fish and birds have examined the suitability of an additive model of toxicity for these compounds. These span from isobolographic studies of several pairs of Ah receptor agonists (and/or antagonists) to the testing of complex environmental mixtures found in the environment.

In rainbow trout and lake trout embryos, binary mixtures of Ah receptor agonists were tested following the isobolographic method (*14,50,217*). These interactions on embryo lethality between congener pairs were, in general, found to be additive. However, for the combinations of TCDD and some non-*ortho* PCBs, deviations from additivity that were dependent on the ratio of the congeners were also reported (*49,213,218*). With respect to these nonadditive interactions,

Table 5. World Health Organization toxic equivalency factors (TEFs) for humans, mammals, fish, and birds

Congener	TEF		
	Humans/mammals	Fish[a]	Birds[a]
2,3,7,8-TCDD	1	1	1
1,2,3,7,8-PentaCDD	1	1	1[c]
1,2,3,4,7,8-HexaCDD	0.1[a]	0.5	0.05[c]
1,2,3,6,7,8-HexaCDD	0.1[a]	0.01	0.01[c]
1,2,3,7,8,9-HexaCDD	0.1[a]	0.01[c]	0.1[b]
1,2,3,4,6,7,8-HeptaCDD	0.01	0.001	<0.001[b]
OctaCDD	0.0001[a]	<0.0001	0.0001
2,3,7,8-TetraCDF	0.1	0.05	1[b]
1,2,3,7,8-PentaCDF	0.05	0.05	0.1[b]
2,3,4,7,8-PentaCDF	0.5	0.5	1[b]
1,2,3,4,7,8-HexaCDF	0.1	0.1	0.1[b,d]
1,2,3,6,7,8-HexaCDF	0.1	0.1[d]	0.1[b,d]
1,2,3,7,8,9-HexaCDF	0.1[a]	0.1[c,d]	0.1[d]
2,3,4,6,7,8-HexaCDF	0.1[a]	0.1[d,e]	0.1[d]
1,2,3,4,6,7,8-HeptaCDF	0.01[a]	0.01[e]	0.01[e]
1,2,3,4,7,8,9-HeptaCDF	0.01[a]	0.01[c,e]	0.01[e]
OctaCDF	0.0001[a]	<0.0001[c,e]	0.0001[e]
3,4,4′,5-TetraCB (81)	0.0001[a,c,d,e]	0.0005	0.1[c]
3,3′,4,4′-TetraCB (77)	0.0001	0.0001	0.05
3,3′,4,4′,5-PentaCB (126)	0.1	0.005	0.1
3,3′,4,4′,5,5′-HexaCB (169)	0.01	0.00005	0.001
2,3,3′,4,4′-PentaCB (105)	0.0001	<0.000005	0.0001
2,3,4,4′,5-PentaCB (114)	0.0005[a,d,e,f]	<0.000005[e]	0.0001[g]
2,3′,4,4′,5-PentaCB (118)	0.0001	<0.000005	0.00001
2′,3,4,4′5-PentaCB (123)	0.0001[a,d,f]	<0.000005[e]	0.00001[g]
2,3,3′,4,4′,5-HexaCB (156)	0.0005[d,e]	<0.000005	0.0001
2,3,3′,4,4′,5′-HexaCB (157)	0.0005[d,e,f]	<0.000005[d,e]	0.0001
2,3′,4,4′,5,5′-HexaxCB (167)	0.00001[a,f]	<0.000005[e]	0.00001[g]
2,3,3′,4,4′,5,5′-HeptaCB (189)	0.0001[a,d]	<0.000005	0.00001[g]

Abbreviations: CDD, chlorinated dibenzodioxins; CDF, chlorinated denzofurans; CB, chlorinated biphenyls; QSAR, quantitative structure–activity relationship.

[a]Limited data set.

[b]*In vivo* CYP1A induction after *in ovo* exposure.

[c]*In vitro* CYP1A induction.

[d]QSAR modeling prediction from CYP1A induction (monkey, pig, chicken, or fish).

[e]Structural similarity.

[f]No new data from 1993 review (*1*).

[g]QSAR modeling prediction from class specific TEFs.

deviations from strict additivity were less than a factor of two in the LD_{50} values (*50,217*). In addition, brominated analogs of 2,3,7,8-TCDD and other dioxin, furan, and biphenyl congeners also showed additive interactions (*14*).

When testing synthetic or complex environmental mixtures of chemicals in fish, additivity also appears to be the general case (*219*). This was shown with a synthetic mixture of Ah agonists and non-Ah receptor compounds in rainbow trout early life stage mortality tests in which results simply followed an additive model (*40*). The additivity model has also been investigated in fish through the use of environmentally derived mixtures. One study used the organic extract made from lake trout, which was injected into eggs of hatchery-reared rainbow trout (*220*) and lake trout (*221*). Additive toxicity of PCDDs, PCDFs, and planar PCBs to developing trout embryos was also evaluated through the direct injection of environmentally derived mixtures into newly fertilized eggs (*220*). The good agreement between $TEQs_{egg}$ calculated with the trout early life stage mortality TEFs for concentrations of PCDDs, PCDFs, and PCBs measured in Lake Michigan lake trout and $TEQs_{egg}$ measured on the basis of toxicity of the lake trout extract to rainbow trout sac fry following egg injection again suggests that $TEQs_{egg}$ are strictly additive and TEFs for all significant Ah receptor agonists present were included (*220*).

The results from these studies showed again that the mixture of these compounds present in lake trout acted in an additive fashion when compared with experiments using single congeners (*40*). The additive model of toxicity is also supported by studies of embryotoxicity in birds. The toxicity of an environmentally derived mixture of chemicals, including dioxinlike chemicals, was tested in chicken and found to be additive (*222*).

Additionally, the TEF approach could also be validated by using TEF factors derived from experiments in chickens that were successfully used to predict the embryo lethality for double crested cormorant eggs (*175,223*). The TEF and TEQ approaches were also succesfully applied in a biological monitoring study with great blue herons and double crested cormorants (*224,225*). Thus, as with fish, the additivity in the TEF concept is also supported by studies with (wild) birds. Based on the use of more environmentally relevant species, it can be concluded that the type of interaction that is most prevalent among Ah receptor agonists and non-Ah receptor compounds is additivity. However, more studies to validate the additivity in fish and wildlife are required to better understand the limitations of the TEF and TEQ approachs. Yet, evidence from fish and bird studies indicates that the hazards of not using such an approach are greater than the uncertainties currently observed with the TEF/TEQ approaches.

Conclusions

Based on an extension of the existing database (*1*), TEFs for PCDDs, PCDFs, and PCBs were reevaluated and either revised (mammals) or established (fish and birds). A limited number of existing mammalian TEFs for HAHs were revised based on new scientific information or reevaluation of existing data. These HAHs included 1,2,3,7,8-pentaCDD, octaCDD, octaCDF, and PCB 77. In addition, we decided that there was insufficient *in vivo* evidence to support Ah receptor agonist activity and thus determine TEF values for some di-*ortho* PCBs. Therefore, we recommended the withdrawal of the TEF values for PCB 170 and 180 that were assigned earlier (see Table 1) (*1*).

The mammalian TEFs established by this WHO expert meeting and presented here are considered to be applicable for the human situation as well as for wild mammalian species. In addition, TEFs for fish and birds were determined, which could be used in ecotoxicological risk assessments of these vertebrate classes.

When deriving TEFs for humans/mammals, fish, and birds, we attempted to harmonize the TEFs across different taxa to the extent possible, as this would have a clear advantage from a risk assessment and management perspective. However, total synchronization of TEFs between mammals, birds, and fish was not feasible, as there were obvious indications of orders of a magnitude difference in TEFs between the taxa for some compounds. In this respect the absent or very low response of fish to mono-*ortho* PCBs compared to mammals and birds is most noticeable. It is also important to note that mammalian TEFs are based on intake (administered dose) while fish and bird TEFs are based on residue analysis (tissue concentration and administered dose in egg injection studies).

We also reviewed a number of uncertainties that could compromise the TEF concept when used for risk assessment purposes. These uncertainties include nonadditive interactions, differences in shape of the dose–response curve, and species responsiveness. This was based on the proposed Ah receptor mechanism of action for PCDDs, PCDFs, and dioxinlike PCBs, but was also based on a number of combination studies with mammals, birds, and fish that predicted the measured TEQ adequately according to the dose additive model.

Therefore, the prediction of TEQs according to the TEF model is considered to be plausible and to be the most feasible approach for risk assessment of HAHs with dioxinlike properties. In view of the available scientific evidence from studies with mixtures, it was concluded that it is unlikely for the use of this additive model to result in a great deal of error in predicting the concentrations of TCDD TEQs or responses at environmentally relevant levels due to nonadditive interactions.

A summary of the suggested WHO TEFs for PCDDs, PCDFs, and dioxinlike PCBs is shown in Table 5.

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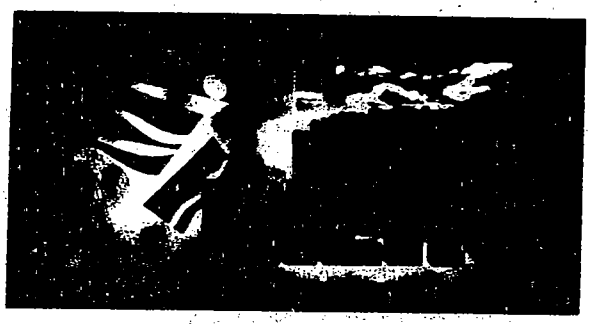
Big Ideas



Future

- An enviro[illegible] disease-susceptibility genes vary from person to person in a represen[illegible]n, to help us see why you might get a nerve disorder from an exposure [illegible]iend Lee might not . . . information to protect you *and* Lee, without gu[illegible]
- A survey o[illegible]od—a look at what we, as a population, have been exposed to.
- Customize[illegible]nicals and drugs, and help conquer diseases like breast cancer.
- A study o[illegible]micals one on one. Why should science?

These ideas are now at the National Institute of Environmental Health Sciences, one of the National Institutes of Health, and at the National Toxicology Program, which is headquartered at NIEHS.

Call our Jobline: (919) 541-4331.
Visit NIEHS at 111 Alexander Drive, Research Triangle Park, North Carolina.
See our home page: http://www.niehs.nih.gov.

APPENDIX L

CONFIRMATION LETTER FOR DISCONTINUING JUVELINE LOBSTER SAMPLING AND THE LATE WINTER/EARLY SPRING SAMPLING EVENT

RESPONSE TO COMMENTS ON THE DRAFT BASELINE INTERIM OFFSHORE MONITORING REPORT

MINUTES FROM THE COMMENT RESOLUTION ON THE DRAFT BASELINE INTERIM OFFSHORE MONITORING REPORT

RESPONSE TO COMMENTS ON THE DRAFT FINAL BASELINE INTERIM OFFSHORE MONITORING REPORT

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
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LESTER, PA 19113-2090

IN REPLY REFER TO
5090
Code EV23/FE
12 March 2002

Ms. Meghan Cassidy
U.S. Environmental Protection Agency, Region I
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Boston, MA 02114-2023

Mr. Iver McLeod
Maine Department of Environmental Protection
State House Station 17
Augusta, ME 04333-0017

Dear Ms. Cassidy/Mr. McLeod:

SUBJECT: INTERIM OFFSHORE MONITORING FOR OPERABLE UNIT 4; PORTSMOUTH NAVAL SHIPYARD, KITTERY, ME

Based on comments received on the Draft Baseline Monitoring Report, the Navy will be discontinuing collection and analysis of Juvenile lobsters, and the late winter/early spring sampling event. This letter confirms the discussions during the RPM Conference Call on Wednesday, January 27, 2002 and the RPM Meeting on Thursday, March 6, 2002

If additional information is required please contact Mr. Fred Evans at (610) 595-0567 x159.

Sincerely,

Frederick J. Evans

FREDERICK J. EVANS
Remedial Project Manager
By Direction of the
Commanding Officer

5090
Code EV23/FE
12 March 2002

Copy to:
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Mr. Alan Davis
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PITT-03-2-062

March 29, 2002

Project Number 2833

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State House Station 17
Augusta, Maine 04333-0017

Reference: Contract No. N62467-94-D-0888 (CLEAN)
Contract Task Order No. 815

Subject: Response to USEPA, NOAA, and MEDEP Comments on the Draft Baseline Interim Offshore Monitoring Report for Operable Unit 4
Portsmouth Naval Shipyard (PNS), Kittery, Maine

Dear Ms. Cassidy/Mr. McLeod:

On behalf of the U.S. Navy, Tetra Tech NUS, Inc. is pleased to provide to the U.S. Environmental Protection Agency Region I (USEPA) and to the Maine Department of Environmental Protection (MEDEP) 4 copies each of the Response to USEPA (February 20, 2002), NOAA (January 28, 2002), and MEDEP (February 19, 2002) Comments on the Draft Baseline Interim Offshore Monitoring Report for Operable Unit.

As per the project schedule, comments are due by **May 1, 2002**.

For the Community Restoration Advisory Board (RAB) members; if you have any comments or questions on these issues, they can be provided to the Navy at a RAB meeting, by calling the Public Affairs office at (207) 438-1140 or by writing to:

Portsmouth Naval Shipyard
Code 106.3R Bldg. 44
Attn: Marty Raymond
Portsmouth, NH 03804-5000

If you have any comments or questions, or if additional information is required, please contact Mr. Fred Evans at 610-595-0567 x 159.

Sincerely,

Aaron Bernhardt
Project Manager

AB/kf
Enclosure

EFANE, (Code 1823/FE, F. Evans) (4 copies)
PNS (Code 106.3R, M. Raymond) (4 copies)
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RESPONSES TO COMMENTS FROM USEPA DATED FEBRUARY 20, 2002
DRAFT BASELINE INTERIM OFFSHORE MONITORING REPORT FOR OU4
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

General

1. **Comment:** EPA agrees with the Navy's recommended changes to the monitoring program with the exception of discontinuing the Acid Volatile Sulfide sampling from the 0-2 cm interval. Further information regarding this matter is provided below.

   Response: The Navy suggests a conference call to discuss the Acid Volatile Sulfide sampling from the 0-2 cm interval.

2. **Comment:** A review of the rates of non-qualified data (page 17, Appendix A.4) indicates that data quality has been reasonably good after the first round, but that there were high rates of hold time noncompliance on round 2 and 4, and problems with PAH quantification in mussel tissue in round 3 and 4. The Navy should ensure that hold time compliance and analytical procedures improve in the future.

   Response: The laboratory was contacted regarding the hold time non-compliance and they indicated that "If analyte degradation was a problem then our QC samples (e.g. MS/MSD/SRM) would indicate low recoveries of analytes. Generally they do not have low recoveries and have acceptable recoveries. This indicates that there is not a problem caused by holding times for your samples." However, in the future, the Navy will instruct the laboratory to analyze the samples within the appropriate holding time. The Navy will also work with the laboratory to see if some of the other non-compliance issues can be corrected.

3. **Comment:** Although EPA agrees that there is little difference in AVS values between 0-2 cm and 0-10 cm sediment samples, the data indicate that the AVS is usually lower in the 0-2 cm samples than in the 0-10 cm samples, as would be expected. EPA would recommend that only 0-2 cm samples be collected and analyzed rather than only 0-10cm samples. Bioavailability in the 0-2 cm depth is more biologically important because this is where most of the biological activity takes place, and where the bioavailability is likely to be higher than in the deeper more reduced sediment layers.

   Response: Please see Navy's response to EPA Comment No. 1

4. **Comment:** The reference for EPA (1996) on page 6-2 is not provided in the references.

   Response: Comment noted. The reference to "EPA (1996)" will be revised to "USEPA (1997)". "The incidence and severity of sediment contamination in surface waters of the United States, Vol. 1: National sediment quality survey. EPA/823-R-97-006, Office of Science and Technology, Washington, DC. September."

Specific

1. **Comment:** Figure 1-2: Table 1-1 does a good job of describing the majority of associations among Operable Units, sites and remedial activities. However, the Sullivan Point AOC and the purpose of the MS-10 monitoring station have not been explained.

   Response: Table 1-1 discusses OU designation and does not discuss the specific AOCs or monitoring stations. The discussion of AOCs is provided in Section 1.1.2, the AOCs were identified based on the conceptual model for contamination migration as part of the EERA. The AOCs were identified in the EERA as the depositional and nearshore areas adjacent to the shipyard. The Sullivan Point AOC is a depositional area located near Site 8. The EERA characterized the risks associated with the Sullivan Point AOC as intermediate and therefore this AOC was included in the interim offshore monitoring program (which addresses the low and intermediate risk offshore areas). MS-10 was located to monitor this AOC. The rationale for the monitoring station location is provided in Section 3.1.2 of the Interim Offshore Monitoring Plan. For clarity on how the AOCs and monitoring stations relate to OU4, the following text will be added to Table 1-1 (in the description for "Offshore Area Potentially Impacted by PNS Onshore Sites"): "OU4 is split into 6 AOCs based on the EERA. For the Interim Offshore Monitoring program, a total of 14 monitoring stations were located in the 6 AOCs."

2. **Comment:** Figure 7: Site 10 has not been assigned to the area adjacent to the Dry Dock sampling location MS-12. Please clarify.

   Response: The Navy is not sure which figure EPA is referring to. However, Figure 2-6 will be revised to show the Site 10 is on-shore of sampling location MS-12.

3. **Comment:** Section 2.1: It is unclear why monitoring station M13-1 had sediment and mussels collected from different tidal zones when all other sediment-biota sampling appears to be matched. This presents a potential data gap in light of PAH exceedances in this area. PAH exceedances noted for stations M12 and M13 are attributed to Dry Dock activities and potential interferences from outside sources in the main channel of the Piscataqua River. However, according to Figure 1-3, it appears that all three locations sampled for both stations are within close proximity to the Dry Docks. This would infer that elevated concentrations of PAHs could be attributable to PNS sources, in particular sites in the Dry Dock vicinity. If in fact the stations are farther away from the Dry Docks, as implied, then it becomes less clear as to the source of contribution and could imply the need for further source sampling closer to the Dry Docks. Please clarify.

   Response: Station M13-3 is where the Navy indicated that the mussels were intertidal, but the sediment was subtidal. However, based on further discussions with the personnel from the University of Rhode Island, the TtNUS subcontractor who conducted the sampling, it was determined that the use of the word "intertidal" to describe the mussels that were collected was incorrect. Monitoring station M13 is located in the dry dock, which does not have any intertidal sediment because it is surrounded by vertical concrete walls on three sides, and the Piscataqua River on the fourth side. The mussels at Station M13-3 were collected from the concrete wall adjacent to where the sediment was collected. Some of the mussels on the wall are exposed during low tide, however, the mussels that were actually collected were the ones that are not exposed at low tide. Therefore, the mussels were actually subtidal, not intertidal. It does not

affect any of the intertidal vs. subtidal comparisons in Section 4.4 because those comparisons were only done for sediment. The following changes will be made to the Baseline Report:

- Section 2.1 Second Paragraph: Last sentence will be deleted.
- Table 2-1: The "X" in the intertidal zone column for M13-3 will be deleted, and footnote 4 (from the "X" in the subtidal zone column for M13-3) at the end of the table will be changed to: "The mussels from the location were previously identified as being collected from the intertidal zone in the Rounds 1 through 4 data packages (TtNUS, February 2000, October 2000, January 2001, and September 2001). However, it was recently learned that the mussel samples from the location that were collected for chemical analysis were actually collected from the subtidal zone."
- Table 2-2: The following text will be deleted from the last column in the M13-3 Round 2 row: "mussel collection was subtidal/intertidal."
- Appendix A, DQA Report for Round 4, Page 2, last paragraph: The following sentence will be deleted from that paragraph "The mussels from OU4-MU-M13-301B are intertidal, but are covered with water most of the time."
- Page 4-12, First Paragraph: The second complete sentence in that paragraph, which begins with "Also, mussels from M13-3 ..." will be deleted.
- Any other references to intertidal mussels at M13 also will be changed, if found in other sections of the report.

Based on the above response, the comment indicating a "potential data gap in light of PAH exceedances in this area" is no longer applicable.

Stations M12 and M13 are located within the Dry Dock AOC, which is located within the Main Channel of the Piscataqua River, as opposed, for example, the Back Channel of the River. All three of the sample locations for Monitoring Station M13 are located within the dry dock, but the open end of the dry dock is the Piscataqua River. Therefore, it is possible that chemicals from the Piscataqua River could be transported into the dry dock.

The second sentence in the fourth bullet on page ES-3 will be rewritten as follows: "These monitoring stations are within the Dry Dock AOC. This AOC is located in the main channel of the Piscataqua River and includes the dry docks (location of M13) and the area offshore of the dry docks (location of M12)."

4. **Comment:** Section 2.2.2: Collection of 50 mussels for each round may not be necessary in the future based on minimum tissue requirements and statistical power. This may allow for collection of a sufficient number of individuals closer than the previous standard 10 meter radius from sediment locations and decrease potential impacts to localized mussel populations due to multiple round sampling.

   Response: As was presented in the Round 5 data package, and in accordance with Section 5.1.2 of the Monitoring Plan (TtNUS, October 1999), the number of mussels was decreased in Round 5 to 30 mussels per sample, because 30 mussels provide an adequate volume of tissue for chemical analysis. The mussels are collected as close to the location of the sediment sample as possible, and that procedure will be continued. If the radius of 10 meters is decreased, there may be some locations where adequate numbers of mussels could not be collected within the designated radius.

5. **Comment:** Table 2-2: The comments for all locations at Station M-13 mention oil sheens on waste water but only for Round 2. It is unclear where the wastewater originated and if any source for the oil sheens was discovered. Provide additional details.

   Response: The wastewater that is mentioned on Table 2-2, is the water and excess sediment that is drained from the sediment sampler. This material is placed in buckets until all three of the grabs are collected at the station. The following footnote will be added to the end of the table regarding the wastewater: "The wastewater is the water and excess sediment that is drained from the sediment sampler during sample collection."

6. **Comment:** Section 3.2.1: Please explain the procedures for determining an overall average reference concentration of analytes, lipids, total organic carbon and AVS/SEM for the four reference areas, including intertidal and subtidal data.

   Response: Averages for AVS and SEM were only calculated per station. Overall average reference station average concentrations for AVS and SEM were not calculated. The following sentences will be added to the end of Section 3.2.1: "The overall reference station concentration for the analytes, lipids, and total organic carbon over the four rounds was calculated in the same manner as was done for each individual station." Also, the first sentence in the last paragraph on Page 3-1 will be modified, and follows: "Organic and inorganic chemical concentrations, ***lipids, total organic carbon, and AVS/SEM results*** from each location ..." The bold and italicized text will be added.

7. **Comment:** Section 4.0: Monitoring data are effectively presented in a few different formats in this section in order to detect trends based on contaminant detection/magnitude, historical comparison and habitat/tidal area. It would also be useful to chart the major contaminants of concern in an individual monitoring station profile compared to reference and IRG values. This would allow comparison of overall conditions at each site, over time, to reference conditions and remedial goals. As it stands now, it is difficult to piece together contaminant profiles/fluxes and assess overall trends and potential risk for individual sites.

   Response: The major contaminants (i.e., chemicals that have IRGs) have been charted and compared to reference concentrations (Figure 5-7 (reference data to be added) through Figure 5-12. The reference data were not included on the IRG charts (Figures 5-1 through 5-6) because the more appropriate comparisons of site data to reference data should be done using normalized data. The IRGs were not calculated on a normalized basis, so non-normalized data needs to be compared to these values. Also, as presented in Section 3.3.2 (page 3-27) of the Monitoring Plan (TtNUS, October 1999), trending of the data will be completed as part of the 5-year review Interim Monitoring Report, and was not to be presented in this Baseline Report. As presented in Section 3.3.4 of the Monitoring Plan (TtNUS, October 1999), trending of data and comparisons of chemical concentrations in the sediment to IRGs will be based on average chemical concentrations at each station. The chemical data for each location at each stations are provided in Appendix B.

8. **Comment:** Section 4.2: BAFs and BSAFs calculated are within the range of literature values for most analytes. While some individual analytes had markedly elevated BAF/BSAF values in certain instances, overall sediment concentrations were relatively low. Notable exceptions are the following maximum detections for specific inorganic analytes in mussel tissue: copper

(317 ppm at M13, not at M04, as inferred by the sediment data), lead (199ppm at M11, correlated with the sediment data), mercury (maximum of 2.3 ppm at M05) and zinc (maximum of 404 ppm at M10). These levels in biota warrant further discussion even though not all of these inorganics are IRG COCs. Other notable non-IRG COCs were maximum sediment concentrations of 4'4-DDT at 1.4 ppm for M-01 and total PCBs>1 ppm at M-02.

An uncertainty section should be added to the document to address assumptions, modeling and irregularities in data interpretation. For example, it should be noted that sediment to biota accumulation factors are based on sediment grabs taken from a localized position whereas biota are sampled from within a 10-meter or greater radius outside the sediment station based on availability. This may result in a misrepresentation of BAFs/BSAFs based on non-homogeneity of contamination, especially in intertidal situations. Additionally, single contaminant evaluations continue to be the standard practice. It is apparent that a number of elevated contaminant concentrations may be potentially impacting biota in several locations. Cumulative or synergistic impacts from multiple stressors to indicator species are not necessarily addressed by the IRGs. Current conditions could potentially be discussed relative to contaminant levels and species results from the previous toxicity tests.

Response: There was an error in the calculation of a duplicate pair at OU4-MU-M13-101B. The maximum copper concentration in mussels at the monitoring stations is actually 101 mg/kg at OU4-MU-M03-200A. The error in the calculation of a duplicate pair at OU4-MU-M13-101B, as well as the maximum detections for other parameters that may have been affected will be corrected. The corrections also will be made on other tables that were affected such as Appendix Tables A.4.2 and G-2 and Appendix Figure E-1. As presented in Section 3.3.4 of the Monitoring Plan (TtNUS, October 1999), comparisons of chemical concentrations in the sediment to IRGs will be based on average chemical concentrations at each station, not maximum detections. Also, the Monitoring Plan did not indicate that chemicals that did not have IRGs would be evaluated because chemicals without IRGs would not be driving any decisions of the monitoring program.

Uncertainties will be added to the "Background" sections of the report, where appropriate, to discuss the uncertainties in some of the evaluations. Section 2.2, Subsection 5, page 12 of Attachment 1 of the Preliminary Remediation Goals for OU4 (TtNUS, November 2001) explains how cumulative or synergistic effects are accounted for in the PRGs.

9. **Comment:** Section 4.4.3: Graphing of the TOC and grain size data, as was done for lipid data would be beneficial for comparison of habitat characteristics.

   Response: The Navy agrees that having this data graphed would be beneficial. These graphs will be included in the Draft Final Baseline Report.

10. **Comment:** Section 4.4.4: Six of the monitoring stations included only one intertidal sampling location. In light of the higher concentrations that seem to be occurring in intertidal versus subtidal areas, it may be prudent to consider augmentation or reconfiguration of sampling locations at those stations. It would be appropriate to weight coverage in calculating station contaminant averages if significant differences are found among habitat concentrations, as mentioned.

Response: Only five of the monitoring stations (M01, M07, M10, M12, and M14) have one intertidal station. A sixth station (M13) does not have any intertidal stations. As discussed in the Navy's response to USEPA Comment No. 3, there is no intertidal sediment at M13. The area offshore of Site 34 (by Monitoring Station M01) is of being further as part of the planning for that investigation. Monitoring station M07 is not associated with any sites. At M10, no onshore IRP site has been identified as a potential source of contamination. A qualitative review at the data indicates that the PAHs and several metals were detected at greater concentrations in the subtidal stations, while pesticides were detected are greater concentrations in the intertidal station. Monitoring Stations M12 and M14 are monitoring the Dry Docks AOC, which consists primarily of subtidal areas. Therefore, it may be more appropriate to have two subtidal stations at these monitoring stations. Also, the onshore area of Monitoring Station M14 is not associated with any sites.

As presented in Section 3.3.4, weighting of data between habitats may be done if it is determined that there are statistical differences between the chemical results in the different habitats. The method of weighting the data was not proposed in the Monitoring Plan (TtNUS, October 1999). The need and approach for weighting the data should be discussed prior to submitting the 5-Year Review Interim Monitoring Report.

11. **Comment:** Section 4.2.3.1: Normalization of analytes via percent lipids and total organic carbon is an accepted technique for comparison of organism, seasonal and location differences. However, total body burden of contaminants may outweigh the perceived parity among locations based on impacts to individuals and upper food chain consumers. Seasonal differences appear to account for widely variable levels of percent lipids in blue mussels. Pre-spawn average lipid levels reach as high as 13.6 percent (Figure 4-1), four times greater than juvenile lobster levels, and my be accounting for a proportionally larger retention of organic contaminants during the most critical reproductive time period. Mobilization or maternal transfer of contaminants is typical during spawning and may warrant additional consideration. It may be worth investigating whether elevated levels of organics coincide with elevated lipid levels and pre-spawn conditions.

    Response: Plots will be included in the Baseline Report that present the non-normalized chemical concentrations in the mussel and lobster tissue samples for the organic chemicals with IRGs. These plots will be added to Appendix G-2 and will be discussed in Section 5.3 of the Baseline Report.

12. **Comment:** Section 4.5.4: It appears that the Back Channel may be exhibiting enough variability within and among sampling rounds to potentially warrant an increased level of sampling. As stated, monitoring rounds 5 and 6 may offer additional insights into this issue.

    Response: Comment noted. The Navy is already on the process of evaluating three of the four back channel monitoring stations. Stations M03 and M04 are being evaluated as part of the Site 32 investigation, and M01 will be evaluated as part of the Site 34 investigation.

13. **Comment:** Table 4-1: It would be helpful to have total DDT (DDT and metabolites), total PAHs (at least Heavy Molecular Weight (HMW) analytes) and total PCBs included in all analytical results tables, as was done for dioxins.

    Response: Total DDTs, LMW, HMW and total PAHs, and total PCBs will be added to Tables 4-1 through 4-6. The LMW, HMW, total PAHS and total PCBs will be calculated as they were in the Preliminary Remediation Goals for OU4 Report (TtNUS, November, 2001).

14. **Comment:** Table 4-3: The maximum lipid levels in mussels were 19.2% compared to the average station maximum of 13.6%, as stated in 4.2.3.1. This further underscores the potential for elevated concentrations of organics in tissues during spawning and increase the potential for risks to mussels and upper food chain consumers of mussels.

    Response: Comment noted. Also, please see the Navy's response to USEPA Comment No. 11 regarding the plotting of non-normalized tissue data.

15. **Comment:** Table 4-13: It would be helpful to have the grain size and total organic carbon data plotted graphically for easier onsite versus reference area comparison, as mentioned previously.

    Response: Please see the Navy's response to USEPA Comment No. 9.

16. **Comment:** Figure 4-3: Footnotes should be added to all Coefficient of Variation graphs explaining the meaning of the values associated with the individual variability intervals.

    Response: The following footnote will be added to Figure 4-3 through Figure 4-5: "The numbers on the graphs from top to bottom represent the maximum, average, and minimum coefficient of variations, respectively."

17. **Comment:** Figure 4-4: It would be beneficial to include reference data in the coefficient of variation discussions and graphs.

    Response: As presented in Section 3.1.2 of the Monitoring Plan (TtNUS, October 1999), the number of samples selected per monitoring station was based on an assumption of the coefficient of variation (CV) in the analytical data. The number of samples per reference station was selected to represent the different habitats (intertidal, subtidal, saltmarsh, and eelgrass) and to obtain an adequate number of reference samples for comparison purposes. Therefore, the CV of chemical data at the reference stations was not used to select the number of reference samples per reference station. For that reason, the reference CVs will not be added to Figure 4-4.

18. **Comment:** Section 5.1.3.1: As stated, PAH levels for specific analytes were exceeded in several rounds, also noteworthy are the total PAHs for stations M01, M04, M12, and M13. Cumulative risk for PAHs at these stations appears elevated during all rounds of sampling. Inorganics for certain rounds approach but do not exceed IRGs and in combination with other contaminants may be contributing to elevated risk. The table should state that nickel exceeds the IRG in the first rather than the second monitoring round.

Response: It is not clear what is meant by cumulative risks for the PAHs, because as addressed in the Navy's response to Comment No. 8, the PRGs were developed to account for cumulative risks. The table on page 5-3 will be changed to indicate that at M04, nickel exceeded the IRG in Round 1.

19. **Comment:** Figures 5-1 to Figure 5-7 (acenaphthylene): These graphs should have the reference station values included. Stations M01 and M04 have generally increasing trends of PAH sediment concentrations over the four rounds, with the fourth round being markedly higher than all previous rounds. This trend is not followed by stations M12 and M13 which have much higher average concentrations and in some instances markedly elevated concentrations in one round. These results are inconsistent and would not be apparent by assessing average concentrations. Additionally, elevated concentrations may be restricted to one location within a sampling station and may not be representative of the majority of the station's contaminant status. Similar conditions are apparent for specific inorganic concentrations over the four rounds of sampling.

    Response: The reference data by round inadvertently was not included on Figure 5-7 and will be included in the draft final report. The reference data were not included on the IRG charts (Figures 5-1 through 5-6) because it is more appropriate to compare normalized monitoring station results to normalized reference station results. The IRGs were not calculated on a normalized basis, so non-normalized data were compared to the IRGs. As presented in Section 3.3.2 (page 3-27) of the Monitoring Plan (TtNUS, October 1999), trending of the data will be completed as part of the 5-year review Interim Monitoring Report, and was not to be presented in this Baseline Report.

20. **Comment:** Figure 5-7/5-10: It appears that all individual and combined PAH data for mussel tissue were elevated during the third round for stations M12, M13 and the reference. Elevated tissue levels do not appear to be well-correlated with sediment data based on previous sampling rounds. These results are confusing and merit further discussion.

    Response: As discussed in Section 5.2, one mussel sample from reference station R02 had elevated PAH levels during Round 3. After the PAHs in the sample were identified as statistical outliers, and it was noticed that the levels of PAHs were similar to those in the mussel sample from one of the locations at monitoring M13, the Navy asked the laboratory to reanalyze the mussel sample from reference station R02. The PAHs levels were low in the mussel sample from reference station R02 after reanalysis. The most likely reason for the elevated levels of PAHs in the initial analysis of the reference mussel sample was that the tissue from mussel sample from monitoring station M13 was inadvertently analyzed as the reference mussel sample. [FJEI]Therefore, this sample will be removed from the data set. The Navy agrees that the correlations between sediment and mussel concentrations at particular stations for the same round at stations M12 and M13 are low. As per the Navy's response to USEPA Comment No. 8, an uncertainty discussion will be added to the report to address this issue.

21. **Comment:** Figure 5-9: It appears that sediment concentrations in both Rounds 3 and 4 exceed the upper limit of the graph but only one value is provided for an upper bounds. Please clarify.

    Response: In Figure 5-9, sediment concentrations exceed the upper limit of the graph in Round 3 at M12 (910 ug/kg) and Round 4 at M12 (618 ug/kg) and M13 (705 ug/kg). All of these values are present on the graph. The number 910 will be moved closer to the Round 3 line.

22. **Comment:** Figure 5-12: The flat-lined values for the rounds/stations for juvenile lobster should be footnoted.

Response: The following footnote will be added "For juvenile lobsters, if all concentrations at a station were non-detect for a sampling round, a value of zero was assigned to that particular station."

23. **Comment:** In Figure 5-1 to 5-12, the bars for round 2 and 4 are solid black on a black and white copy, and therefore cannot be distinguished. Please revise the figure.

Response: The bars are in order of Round 1, Round 2, Round 3, and Round 4. Cross hatching was initially added to the bars but they became difficult to read. The following footnote will be added to the bottom of the page to clarify: "The bars for each station are in order from Rounds 1 through 4."

24. **Comment:** Section 6-1: As mentioned in Section 2.2, if homogenization of the 0-10 cm sediment sample occurred prior to securing an AVS sample, it is possible that oxygenation changed the AVS content. Resulting levels of AVS in 0-10 cm sediments would potentially be more similar to AVS levels in 0-2 cm sediments. Please discuss and clarify.

Response: The fourth sentence in the last paragraph in Section 6.1 on Page 6-1 will be changed as follows: "AVS samples collected in the 0 to 10 cm range may result in potential overestimation of the bioavailability of metals in the sediment, because the sediment may become oxygenated during homogenization of the sediment sample, which would results in lower AVS concentrations."

25. **Comment:** Table 6-1: Please explain how identical 0-10 cm and 0-2 cm SEM-AVS values were calculated for Round 1 and Round 4 at stations M04/M08.

Response: The 0-10 cm and 0-2 cm SEM-AVS values appear to be identical in Table 6-1 because the same Total SEM value was used in both scenarios and AVS values were very low at some sampling locations. The calculations for these values can be found in Tables 3-6 and 3-7 of the Rounds 1 through 4 Data Packages (TtNUS, February 2000, October 2000, January 2001, September 2001). For M04-1, a duplicate sample was averaged into the value and should have been 51.7 instead of 51.5 for both 0-10 cm and 0-2 cm SEM-AVS. This change will be made on Table 6-1.

26. **Comment:** Figure 6-1/6-2: It would be helpful to footnote the time periods of the sample rounds to aid in assessing seasonal AVS fluxes. It would also be pertinent to footnote the locations for the 1996/1997 data.

Response: The following footnote will be added to Figure 6-1: "Rounds 1 and 3 were collected in September/August and Rounds 2 and 4 were collected in May."

The word "Round" in the legends in Figures 6-2 and 6-4 will be changed to "Sampled." Also, the following footnote will be added to Figures 6-2 and 6-4: "Sampled 12/96 was collected in December, Sampled 04/97 was collected in April, Samples 08/97 was collected in August, and Sampled 11/97 was collected in November."

27. **Comment:** In Figure 6-1, cross-hatching should be added to the 0-2 cm histographs in the top two graphs.

Response: Cross-hatching is present in all histographs in Figure 6-1. However, during reproduction, the top of that figure was lightened. The problem will be rectified in draft final report.

28. **Comment:** Section 6.3.1: It would be pertinent to discuss the method of collection and location of the 1996/1997 samples for comparability to current monitoring data.

Response: The sampling procedures used to collect the sediment samples during the 1993/1997 sediment investigation are presented in the Seep/Sediment Summary Report for Data Collected Between December 1996 and November 1997 for Portsmouth Naval Shipyard (TtNUS, August 2000). The historical samples are discussed in Section 4.3 of the report. The location of the sediment samples are listed on Table 4-9 and presented on Figure 4-2. In general, the sediment samples were collected from between 0 to 6 inches. The first complete sentence in Section 4.3.2 on Page 4-9 will be revised as follows: "In 1996 and 1997, sediment and seep samples were collected ***from depths between 0 and 6 inches*** over four sampling rounds to evaluate chemical concentrations in the seeps and associated sediment (TtNUS, August 2000)." The bold and italicized text will be added.

29. **Comment:** Section 6.4: The seasonal data appear to be inconsistent when compared to literature-based AVS-SEM relationships. It is possible that oxygenation of sediments during collection is causing the disparity between onsite data and expected seasonal variation. It is also possible that AVS concentrations in May are not reflective of the lowest expected AVS concentrations that should be evident in winter. Further consultation AVS-SEM experts, as suggested by NOAA, seems warranted. Collection of future AVS-SEM data in summer is acceptable based on the data as presented.

Response: The Navy agrees that by homogenizing the sediment samples, they may have become oxygenated and may have led to lower AVS concentrations than if they had not been homogenized. The reason for doing so was presented in Section 5.1.1 of the Monitoring Plan (TtNUS, October 1999). Also, please see Navy's response to USEPA Comment No. 1.

30. **Comment:** Section 7.0: After review of all data, we agree that the continuation of lobster sampling will add little additional data to future rounds of sampling and can be discontinued.

Response: Comment noted. Juvenile lobster sampling will be discontinued in future sampling rounds.

31. **Comment:** Some details of the BAF and BASF calculation should be clarified for the reader. It is unclear whether the correlation plots between sediment concentration and tissue concentration are based on individual co-located sediment and mussel samples (as they should be) or on average concentrations within a station or average concentrations for a particular station over all rounds. The analysis of correlation between sediment concentrations and tissue concentrations should be conducted by statistical analysis and plotting of co-located sediment and mussel samples, taken at the same time, regardless of monitoring station, and independent of round. Although it is stated that the sediment and tissue concentrations are normalized to organic carbon and lipid, respectively, for organics but not inorganics, this is not reflected in the

axis labels for figures 7-1 to 7-10 or E-1 to E-10. The concentration terms should be specified in these figures. Each data pair used in the analysis should be provided in a table, plotted individually, and included in the statistical analysis. Although tissue and sediment concentrations are normalized for organics, EPA does not believe that the data should be pooled across rounds prior to the correlation analysis because there are differences among rounds in these values that may be related to season and location in some unknown fashion.

Response: The correlation plots for the mussels are based on individual co-located sediment and mussel samples within a station. The correlation plots for the lobsters are based on the one lobster sample at a station compared to the average of the three sediment samples from that station because the lobster can move throughout that station. The analysis of correlation between sediment concentrations and tissue concentrations was conducted by statistical analysis and plotting of co-located sediment and mussel samples, taken at the same time, regardless of monitoring station, and independent of round. All this information will be added to the draft final Baseline Report.

The following footnotes will be added to the figures for the organic chemicals (Figures 7-1 through 7-6 and E-5 through E-10): "The sediment data were normalized to percent total organic carbon and the tissue data were normalized to percent lipids." The following footnotes will be added to the figures for the inorganic chemicals (Figures 7-7 through 7-10 and E-1 through E-4): "Neither the sediment or tissue data were normalized." The concentration terms will be added to Figures 7-1 through 7-10 and E-1 through E-10. A table will be added to Appendix E that presents each data pair used in the analysis. The data were not pooled among rounds, as will be apparent from the table that will be added to Appendix E.

32. **Comment:** Section 8.0 Human health screening level for dioxin in sediment

The exposure factors for sediment exposure are reasonable. However, the derivation of RME and CTE human health screening levels for dioxin in sediment (Appendix K) should be checked. As shown below, I substituted the RME screening level (5E-04 mg/kg) into the equations for ingestion and dermal contact and calculated a risk level of 1.8E-05. Since the screening level is supposed to represent a risk of 1E-06 (see page 8-4), this suggests that the RME screening level should be about an order of magnitude lower. I also substituted the CTE screening level (9E-03 mg/kg) into the equations for ingestion and dermal contact and calculated a risk level of 1E-06, which is correct. Please revise the document as appropriate.

The calculations are shown below:

RME Screening Level Dose =

Ingestion:
5E-04 mg/kg x 100 mg/d x 0.5 x 7d/yr x 30 yr x 1E-06 kg/mg x 1/70 kg x 1/25550 d
= 2.94E-12 mg/kg-d

Dermal:
5E-04 mg/kg x 1 mg/cm^2 x 1960 cm^2/d x 7 d/yr x 30 yr x 1E-06 kg/mg x 1/70 kg x 1/25550 d
= 1.15E-10 mg/kg-d

Total screening level dose = 2.94E-12 + 1.15E-10 = 1.18E-10 mg/kg-d
Risk at RME screening level dose = dose x cancer slope factor
= 1.18E-10 x 1.5E+05 = 1.8E-05

Response: The reviewer did not include the 0.03 dermal absorption factor (Exhibit 3-4, RAGS Part E, September 2001) in the RME screening level dose calculation presented in the comment. Note that if the absorption factor is included, the dermal dose becomes 3.45E-12 (i.e., 1.15E-10 mg/kg/day [i.e., the dermal dose suggested by the EPA] * 0.03). The risk for the RME receptor then becomes:

$[(2.94E\text{-}12 \text{ mg/kg/day}) + (3.45E\text{-}12)]^* [1.5 E+5 (\text{mg/kg/day})^{-1}] = 1E\text{-}6$

Please note that the dermal absorption factor for dioxins (third bullet on Page 8-4) will be corrected from 0.3 to 0.03 as presented in the sample calculation in Appendix K. The correct dermal absorption factor (0.03) was used in the calculations.

33. **Comment:** Section 8.0: Please explain why biota samples were diluted for dioxin analysis resulting in elevated quantitation limits. It appears that this has resulted in consistent non-detects throughout the dataset in biota, specifically mussels, of dioxin/furan congeners at detection limits markedly above those concentrations detected in same station sediments. This also appears to happen in reverse, where mussels have detected concentrations below undetected sediment quantitation limits. In light of the extremely high BAFs usually associated with dioxin, it is unlikely that biota and sediment would not be consistently linked. These data gaps have potential implications and warrant further discussion.

It is stated that calculations for data assuming on-half the sample quantitation limit for non-detects for biota and sediments were conducted but not presented. Please provide the data. Typically, throughout the dataset there is a noticeable discrepancy between the total HPCDD value and the only reported HPCDD congener (1,2,2,4,6,7,8 HPCDD). The same is true for total TCDD versus 2,3,7,8 TCDD and several other total dioxin/furan classes versus specific congener values listed. Please clarify.

Total dioxins are not included in the first round data and are for subsequent data rounds. Please rectify.

There was a maximum detection of 4,300 ng/kg total dioxins (average 1,900 ng/kg) at station M12 during the third monitoring round. It also appears that the 4,300 ng/kg are not accounted for by the reported dioxin congener values or fully represented in the TEQ calculations. This also appears to be a consistent issue throughout the dataset. Please clarify.

Stations M09, M11, and M12 had total TEQ concentrations that exceeded 1 ng/kg in mussel tissue. These levels have been shown to cause elevated concentrations and addling in eggs of fish eating birds. Therefore, it is pertinent to continue monitoring dioxin concentrations during the next two rounds of data and evaluate the status of the data as part of the Five-Year Review, as indicated.

Response: The laboratory that conducted the chemical analysis indicated that the biota samples were not diluted prior to analyses. The differences in the quantitation limits were that the IDLs for dioxin/furans are based on 10 grams wet weight. When sample concentrations are reported on a dry weight bases, the IDL is ~ 5 times higher (based on 20% dry weight). It is not clear what discussion should be added to Section 8 since the BSAFs are discussed in Section 4.2 of the Baseline Report.

The TEQs calculated using one-half the sample quantitation limit are presented in Table K-2. The "total" concentrations are not a sum of only the dioxins that are analyzed for and reported, they are the sum of all the dioxins, including those that are not specifically analyzed for and

reported. Therefore, although the "total" concentrations should either be equal or greater than the concentrations of the individual dioxins that make up that total.

During the first round, the laboratory did not initially provide the "totals" for the various dioxin groups. The "totals" were later provided and included in the Round 1 Data Package (TtNUS, February 2000), except for "total dioxins." These were included in the subsequent data packages. The Navy does not feel that there is any benefit to trying to track down and include the "total dioxin" analytical data at this time, because risks are only calculated based on individual dioxins, not the "totals." Therefore, this data would not be used to make any decisions.

There are 2 reasons why the total dioxin concentration reported for Station 12, Round 3 on Table B-3 does not appear to be reflected in the toxic equivalent concentration (TEQ) (same location, same round) presented in the Appendix K tables. First, according to EPA guidance, the TEQ is based on the dioxin/furan congeners that have chlorine molecules attached at locations 2, 3, 7, and 8 on the molecule (at a minimum). Based on currently available information, this group of congeners is the most significant in terms of human and ecological risk assessment. In contrast, the total dioxin concentration (4306 ng/kg) reported by the analytical laboratory contains the "2, 3, 7, 8-congeners" and all other congeners. Second, the TEQ concentration is based on the 2, 3, 7, 8-congeners and the toxic equivalency factors (TEFs) as presented in the example calculation in Appendix K. For the sample in question, OCDD is the predominant congener (3173 ng/kg) and is included in the calculation of the TEQ. However, as noted in the Appendix K example, the TEF for OCDD is 0.0001. Consequently, the TEQ concentration related to the OCDD concentration in the referenced sample is 0.3 ng/kg.

Based on the mussel data available for the study area, TEQs greater than 1 ng/kg are atypical, and not representative of the study area. Most TEQs presented for mussel data on Table K-1 are 1 or even 2 orders of magnitude less. The referenced TEQs reported for Stations 9 and 11 (1.1 ng/kg) marginally exceed the 1 ng/kg concentration cited by the reviewer. The TEQ of 3.2 ng/kg for Station 12 (Round 2 only) is the only TEQ clearly exceeding 1 ng/kg. Therefore, for birds, that will be consuming food over an area, it is not appropriate to evaluate risks to birds at individual stations.

34. **Comment:** The equations on the first page of Appendix K should be corrected as discussed in a phone conversation with Dave Barclift of the Navy on February 12, 2002. The correct equations are:

$$\% \text{ solids} = \frac{(100-87.2)}{100} \times 100 = 12.8\%$$

Wet weight (TEQ) (ng/kg) = 4.4435 ng/kg X 0.128 = 0.569 ng/kg

Dave Barclift said that the equations were in error but that the calculations had been done correctly. Based on the fact that the wet weight concentrations are always less than the dry weight concentrations for the same sample (as they should be) in Table K-1, this appears to be the case.

Response: As discussed between Mr. Jason Speicher, EFA Northeast, and Mr. Rick Sugat, EPA Region I, the equations in Appendix K will be changed to the following:

$$\% \text{ solids} = \frac{(100-87.2)}{100} \times 100 = 12.8\%$$

Wet weight (TEQ) (ng/kg) = 4.4435 ng/kg X 0.128 = 0.569 ng/kg

RESPONSES TO COMMENTS FROM NOAA DATED JANUARY 28, 2002
DRAFT BASELINE INTERIM OFFSHORE MONITORING REPORT FOR OU4
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

1. **Comment:** Section 5.1.3 (Results) provides a valuable table that summarizes the stations that have sediment chemical concentrations greater than IRGs for all four rounds. But the values used in this table are Monitoring Station averages. For example, Round 4 results from Station M03 show one copper value (564 mg/kg) of the three substations above the IRG. But because the average of the three fall below the IRG of 486 mg/kg, the station is not included as exceeding the IRG (see Table on Page 5-3). On the other hand Station M04 shows a high copper average but only because of one substation yet, the entire Monitoring Station is recorded as exceeding the IRG. NOAA thinks it is more appropriate to separate the results based on substation otherwise one might require clean-up at the entire Monitoring Station M04 rather than only the offending substation (if, indeed, the metal slag issue is not resolved). And it follows that one might eliminate M03 for potential remedial action because the average is below the IRG although one substation may exhibit concentrations of contaminants above, and possibly well-above, IRGs.

   Response: As presented in Section 3.3.4, monitoring station trending will be based on the average chemical concentrations of the sediment samples collected within each monitoring station for each sampling round. However, the Navy has been evaluating the data on a substation basis, and has reprioritized some sites based on the results. For example, because of elevated levels of copper and nickel at monitoring stations M03 and M04, the Navy made the investigation of Site 32 a priority. The data on a substation basis is compiled in Appendix B for review, but the Navy does not see the need for additional discussions of the results from individual substations in the Baseline Report.

2. **Comment:** Monitoring Station M11 is shown exceeding the copper IRG in all four rounds, the Navy should also point out that although there is no IRG for lead, such concentrations in the sediment are very high. This is of value because it provides concrete evidence for the release of lead from the DRMO; however, the extent of contamination likely is quite limited.

   Response: The third bullet on Page 4-4 in Section 4.1.4 discusses the elevated level of lead at M11. The second sentence will be modified as follows: "Monitoring station M11 is the location by the DRMO where soil containing elevated levels of metals ***(i.e., lead and copper)*** had eroded into the river prior to the first round of sampling." The bold and italicized text will be added.

3. **Comment:** Given that PCBs are a relatively minor chemical constituent, the total PCB concentration may be of more value and should be provided in the Tables found in Appendix B.

   Response: Total PCBs will be included as a separate table in Appendix B. Also, please Please see the Navy's response to USEPA Comment No. 13.

4. **Comment:** Some discussion concerning Station 08 is warranted. Although average concentration of IRG-contaminants do not exceed their respective IRG, nickel is exceeded three times (rounds 1-3) and copper once (Round 2) in substations. Monitoring Station 08 is

in Clark Cove adjacent to the Jamaica Island Landfill where a draft remedial Design Report was produced this month. In addition, there has been some talk with regard to restoring some of the wetland area.

Response: The bullets on Page 5-9 in Section 5.3.3 discuss the elevated levels of copper and nickel at monitoring station M08. The Navy does not feel that further discussion is needed. The area where some of the wetland area is proposed on being constructed is in Jamaica Cove only. No wetland construction is proposed for Clark Cove.

5. **Comment:** The Executive Summary correctly points out that PAH concentrations at monitoring stations M12 and M13 exceed IRGs (Page ES-3). The text goes on to state that such PAH sources may not be related to the PNS and may be caused by: potential migration of transport from IR sites, discharges from barges/boats, storm water outfalls and dockside activities. NOAA agrees with this assessment but does not understand why those sources are not related to PNS.

   Response: Some of these sources may be related to PNS but other sources within the Piscataqua River also have the potential to add chemicals to the sediment at stations M12 and M13.

6. **Comment:** In Section 4.4.3, concentrations of contaminants are correlated with habitat. The results show that chemical concentrations in the subtidal were less than the intertidal. Did the Navy observe a trend of decreasing sediment contamination in the subtidal through the four rounds reflecting possible deposition of clean sediment?

   Response: As presented in Section 3.3.2 (page 3-27) of the Monitoring Plan (TtNUS, October, 1999), trending of the data will be completed as part of the 5-year review Interim Monitoring Report (based on 4 years of sampling), and will not be presented in the Baseline Report.

7. **Comment:** The entire SEM and AVS analyses are very troubling with regard to the results comparing the 0-2 cm and 0-10 cm data. NOAA suggests that EPA contact Walter Berry from the EPA ERL- Narragansett laboratory to discuss this variability. Researchers that we have spoken to in the past have made clear the need to collect SEM and AVS concentrations from the top two cm; this data clearly does not support that effort.

   Response: Please see response to USEPA Comment No. 1.

8. **Comment:** A typo exists in the second sentence of Page 6-4. The high AVS minus SEM values....should be The high SEM minus AVS values....

   Response: The sentence will be rewritten to read as follows: "The high SEM minus AVS values in Rounds 1 and 3 are caused by single samples.....".

9. **Comment:** Figures 5-11 and 5-12 infer in the footnote that tissue concentrations are normalized yet the figure title states they are not. Please explain.

Response: The footnote will be rewritten to read as follows on Figures 5-11 and 5-12: "Normalized concentrations were determined by dividing sediment concentrations by aluminum concentrations. Tissues concentrations were not normalized."

RESPONSES TO COMMENTS FROM MEDEP DATED FEBRUARY 19, 2002
DRAFT BASELINE INTERIM OFFSHORE MONITORING REPORT FOR OU4
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

General Comments

1. **Comment:** The MEDEP does not object to scheduling future sample collection events in late August to early September. However, see Comment 17.

   Response: Comment noted. Please see the Navy's letter dated March 12, 2002.

2. **Comment:** The MEDEP does not object to discontinuing the juvenile lobster sampling, although we would prefer to have it continued. See comment 18

   Response: Comment noted.

3. **Comment:** The MEDEP does not agree that the Navy can discontinue the Acid Volatile Sulfide sampling from the 0 to 2 cm interval. See Comment 16.

   Response: Please see the Navy's response to USEPA Comment No. 1.

4. **Comment:** 2.3.2 Round 2, p. 2-5

   Please indicate whether or not the results of the two additional samples collected for PRG data needs agree with samples taken at those stations.

   Response: The additional samples were collected only for the purposes calculating PRGs. While the additional samples are representative of the concentrations at that station, the goal of collecting the data for PRGs was to collect samples along concentration and toxicity gradients.

5. **Comment:** 4.2.3.1 Percent Lipids, p. 4-6

   a) The reference in the first paragraph, Lefkowitz et. al., 1999 should be changed to Lefkowitz et. al., 2000.

   b) p. 4-7 third bullet: The SAIC (1995) reference in not in the references section.

   Response:
   a) Lefkowitz et. Al., 1999 will be changed to Lefkowitz et. al., 2000, which is included in the reference section.

   b) The following reference will be added to the reference section:
   "Science Applications International Corporation (SAIC). 1995. Allen Harbor Landfill and Calf Pasture Point Offshore Ecological Risk Assessment Report: Technical Report and Appendices A-D. SAIC Report to EA Engineering under U.S. Navy Northern Division Contract No. N624-92-D-1296, Contract Task Order 0032. 81 pp. + Appendices."

6. **Comment:** 4.2.3.2 Mussel BAFs and BSAFs, p. 4-7, 3rd bullet

The first sentence in this bullet makes no sense. The phrase, "...the mean BSAFs and BAFs were greatest for pesticides, PCBs, and dioxins..." seems to indicate that BAFs were calculated for organic compounds which is not the case. Likewise, the phrase "...the mean BSAFs and BAFs were...lowest for the PAHs and inorganics" seems to indicate that BSAFs were calculated for inorganics (as well as for organics). In fact, the reference to BAFs should be omitted from this sentence. BAFs apply only to inorganics and therefore are not "highest" or "lowest" for any group. Furthermore, BAFs and BSAFs cannot be compared to each other as they are calculated differently. Either rephrase this sentence or delete it.

Response: The sentence will be rephrased to read as follows: "In summary, the mean BSAFs were greatest for pesticides, PCBs, and dioxins, and lowest for the PAHs."

7. **Comment:** 4.3.3 Results, p. 4-9 bullets at bottom of page

Please indicate the magnitude of differences in the PAH and pesticide concentrations between the EERA samples and the Offshore Monitoring Program samples.

Response: As per the Monitoring Plan (TtNUS, October, 1999), the comparison of data from the Interim Offshore Monitoring Program to historical data was only intended to be a qualitative comparison because most of the samples between the different investigations were not collected at the same locations. For example, the EERA samples were mostly subtidal, while the 1996/1997 sediment samples were all intertidal. Also, the magnitude of differences will be different for different chemicals even within the same station. All of the data are provided in Appendix C for further review by the regulators. However, the Navy does not feel that it is necessary to add a more detailed discussion of the magnitude of differences to the report.

8. **Comment:** 4.4.2 Background, p. 4-12, para 1

"...mussels from M13-3 were intertidal because they were collected from a floating raft while the sediment was subtidal."

Please explain this more. If the mussels are always submerged they are subtidal. If they are exposed to air due to tidal fluctuations then they would be considered intertidal.

Response: Please see the Navy's response to USEPA Comment No. 3.

9. **Comment:** 4.4.3 Results, p. 4-12, last bullet

We assume the "ratios for the PAHs" refer to eelgrass/saltmarsh, not saltmarsh/eelgrass. Please clarify.

Response: For clarity, the sentence will be revised to read as follows: "In general, the ratios of eelgrass to saltmarsh for the PAHs were greater for the monitoring stations, whereas the ratios of eelgrass to saltmarsh for the pesticides and PCBs were greater for the reference stations."

10. **Comment:** 4.5.4 Conclusions, p. 4-16, last paragraph

"PCBs were not limiting COCs and pesticides and dioxins are not considered to be COCs for OU4."

In a letter dated 1/23/01 the MEDEP wrote, "...we hold the Navy responsible for DDT in the sediments around the Shipyard, regardless of its status as a CoC. Therefore a PRG acceptable to the MEDEP for DDT must be developed."

The Navy did develop a PRG for pesticides, including p,p'-DDT, should they become COCs in the future. The PRG for p,p'-DDT is 66.4 ppb. MEDEP notes that monitoring stations 1, 4 and 8 had samples that exceeded 66.4 ppb in the first 3 rounds. Monitoring station 1 had samples that exceeded the PRG in all 4 rounds. Five of the 14 exceedances were in the same order of magnitude as the PRG, 8 were an order of magnitude higher, and one was two orders of magnitude higher. Stations 1 and 4 are in the Back Channel, station 8 is in Clark's Cove.

The MEDEP is concerned about these elevated levels of p,p'-DDT in the sediments at these stations. As stated before we hold the Navy responsible for DDT in the sediments around the Shipyard whether or not p,p'-DDT is a COC.

Response: Comment noted. However, the evaluation of pesticides will not be included in the Baseline report. The Navy recognizes MEDEP's concerns with pesticides, however, pesticides have not been determined to be an on-shore CoC at this time.

11. **Comment:** Fig. 4-2, Historic Sampling Locations
This map is very cluttered and hard to read. It might be easier to read if the map was printed in color with different colors for each symbol.

Response: Comment noted. It is a busy map so the Navy agrees to provide it as a color figure for ease of review as requested.

12. **Comment:** Table 4-7
The min, max, and avg reported at the end of each parameter group should refer to BSAFs, not BAFs, as these are all organic compounds.

Response: The minimum, maximum, and average BAF reported in Tables 4-7 and 4-8 will be changed to the minimum, maximum, and average BSAF for each parameter group (except for inorganics).

13. **Comment:** 5.1.3.1 Sediment concentrations compared to IRGs, p. 5-3, first sentence
Please clarify what "the other two stations" are.

Response: For clarity, the sentences will be revised to read as follows: "Two other stations, M03 and M13, had exceedances of only one chemical in one or two rounds (copper at M03 in two rounds and fluorene at M13 in one round)."

14. **Comment:** 5.2.4 Conclusions, p. 5-7
"After the laboratory reanalysis is complete and/or the results from Rounds 5 and 6 are evaluated, the Navy will determine if the sample (or only the PAH results) will be removed from the data set prior to trending the data."

Please insert "with input from regulators" after "the Navy will determine".

Response: As presented in Response to USEPA Comment No. 20, the mussel sample from reference station R02 with the elevated PAH levels during Round 3 was caused by an error at the laboratory. Therefore, this sample will be removed from the data set and all associated text, tables, and figures will be revised accordingly.

15. **Comment:** 5.3.3 Results, p. 5-8
"...only the six chemicals for which IRGs are developed (copper, nickel, acenaphthylene, anthracene, fluorene, and HMW PAHs) are discussed below *with the understanding that these six chemicals represent the majority of risk concerns.*" [emphasis added]

The MEDEP disagrees that these six chemicals represent the majority of risk concerns. We believe the November 2001 Preliminary Remediation Goals for Operable Unit 4 provides enough information to indicate that p,p-DDT is also a risk driver at monitoring stations 1, 4 and 8. The only reason it has not been carried forward is because the Navy has not linked this COC to an onshore IRP site. As indicated earlier, the MEDEP holds the Navy responsible for DDT in the sediments around the Shipyard.

Response: Comment noted. Please see Navy's response to MEDEP Comment No. 10.

16. **Comment:** 6.3.1 AVS and SEM Evaluation, p. 6-4
"Based on the above table, there does not appear to be a significant difference in SEM minus AVS concentrations...between the 0 to 2 cm and 0 to 10 cm samples."

The MEDEP strongly disagrees that the 0-2 cm and 0-10 cm samples can be compared to each other. As indicated in Section 2.2.1, Sediment Sample Collection, the 0-2 cm samples were collected directly from the grab sampler and "placed directly into the sample bottle for AVS analysis..."

However, the "remaining portion from each grab (from 0 to 10 cm) was removed from the sampler and placed in a chemically cleaned, stainless-steel mixing bowl to form a single composite sample for each sampling location...For each sampling location, when a sufficient volume of sediment was collected in the bowl, it was mixed until homogenous..."

According to Table 6-3 the redox discontinuity for each sediment sample was, on average, below 5 cm depth. Therefore, a substantial portion of each core, that had been relatively anoxic, became significantly aerated. This substantially changes the sulfide concentrations of the core below the redox discontinuity. Therefore, the sulfide concentrations measured in the 0-10 cm interval are not truly representative of actual conditions.

We note that the October 1999 Interim Offshore Monitoring Plan (TtNUS, October 1999) for OU4, p. 5-2, states, "The SEM and AVS sample from the 0 to 10 cm portion will be collected after homogenization so that the sediment analyzed for SEM and AVS will be treated in a similar manner as the sediment used for the toxicity tests." This is perfectly acceptable for comparison to the toxicity tests. However, because the 0-2 cm interval samples and the 0-10 cm interval samples were collected using different methodology the MEDEP cannot accept any decisions regarding the 0-2 cm interval vs. the 0-10 cm sampling interval.

We would not be opposed to dropping the 0 to 10 cm interval but the Navy must continue sampling the 0 to 2 cm interval.

Response: Please see the Navy's response to USEPA Comment No. 1.

17. **Comment:** 6.4 Conclusions and Recommendations, p. 6-6

The MEDEP does not object to scheduling future sample collection events in late August to early September as long as the Navy continues to analyze organisms for lipids. Results from this time-frame do not present worst case conditions as in the spring mussels are loaded with gametes that have high concentrations of contamination. Therefore, collecting in the spring would be more conservative. MEDEP will continue to review the lipid data in case we wish to calculate total body burdens in the spring.

Response: Comment noted. The next round of sampling, and all future rounds will be conducted in the late August to early September time-frame.

18. **Comment:** 7.4 Conclusions/Recommendations, p. 7-3

As stated above we do not object to discontinuing juvenile lobster sampling although we would prefer to see it continue. As the Navy notes, there is no correlation between contaminant concentrations in juvenile lobster tissue and contaminant concentrations in sediment. There is also very little correlation between mussels and sediment. Therefore, we cannot look at either species to get an idea of sediment concentrations. However, there is still a very good reason to sample these species since they will reflect any potential future releases of hazardous substances from the Shipyard. In other words, we can use these species as another medium to sample for inputs. It's useful to use two different species since they have different physiology and feeding habits. That is, they are two different "sampling devices" and therefore we are more likely to detect any potential future releases.

Response: Comment noted. Juvenile lobster sampling will be discontinued in future sampling rounds.

19. **Comment:** 8.3.1 Human Health Screening Level, p. 8-4, first bullet

The MEDEP believes the exposure frequency of 4 days per year for the CTE case is too low. We will consider this further and inform the Navy of where we stand on this issue.

Response: Comment acknowledged. However, please note that, for purposes of risk assessment and risk-management-decision-making, the screening level based on reasonable maximum exposure (RME) assumptions is more critical. Also, there are orders of magnitude differences between the RME and CTE screening levels, and the sediment TEQs presented on Table 8-1. The Navy believes that the exposure frequency assumptions presented for the RME and CTE (7 days per year and 4 days per year, respectively) are appropriate based on site specific conditions. However, the conclusions of the human health risk evaluation (Section 8) would not change even if the exposure frequencies used to establish the screening levels were increased by an order of magnitude (i.e. 10 times).

References

TtNUS (Tetra Tech NUS, Inc), 1999. Interim Offshore Monitoring Plan Operable Unit 4 for Portsmouth Naval Shipyard, Kittery, Maine. King of Prussia, Pennsylvania, October.

TtNUS, 2000. Seep/Sediment Summary Report for Data Collected Between December 1996 and November 1997 for Portsmouth Naval Shipyard, Kittery, Maine. King of Prussia, Pennsylvania, August.

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PITT-05-2-002

May 1, 2002

Project Number 2833

Ms. Meghan Cassidy
Environmental Protection Agency
Region I (Mail Code: HBT)
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Mr. Iver McLeod
Maine Department of Environmental Protection
State House Station 17
Augusta, Maine 04333-0017

Reference: Contract No. N62467-94-D-0888 (CLEAN)
Contract Task Order No. 815

Subject: April 2, 2002 Conference Call Minutes for the Draft Baseline Interim Offshore Monitoring Report for Operable Unit 4, Portsmouth Naval Shipyard (PNS), Kittery, Maine

Dear Ms. Cassidy/Mr. McLeod:

On behalf of the U.S. Navy, Tetra Tech NUS, Inc. is pleased to provide to the U.S. Environmental Protection Agency Region I (USEPA) and to the Maine Department of Environmental Protection (MEDEP) 4 and 3 copies, respectively, of the April 2, 2002 conference call minutes for the comment resolution on the Draft Baseline Interim Offshore Monitoring Report for Operable Unit 4.

As per the project schedule, comments are due by June 3, 2002.

For the Community Restoration Advisory Board (RAB) members; if you have any comments or questions on these issues, they can be provided to the Navy at a RAB meeting, by calling the Public Affairs office at (207) 438-1140 or by writing to:

Portsmouth Naval Shipyard
Code 106.3R Bldg. 44
Attn: Marty Raymond
Portsmouth, NH 03804-5000

If you have any comments or questions, or if additional information is required, please contact Mr. Fred Evans at 610-595-0567 x 159.

Sincerely,

Aaron Bernhardt
Project Manager

AB/kf
Enclosure

EFANE, (Code 1823/FE, F. Evans) (4 copies)
PNS (Code 106.3R, M. Raymond) (4 copies)
NOAA (K. Finkelstein)
ME Dept. of Marine Resources (D. Card)
D. Cohen, TtNUS, Pittsburgh
Mr. Peter Britz
Ms. Diane McNabb
Mr. Alan Davis
Mr. Doug Bogen
Ms. Michele Dionne
Ms. Mary Marshall
Mr. Jack McKenna
Dr. Roger Wells
PNS Code 100PAO (w/o enclosure)
US Fish & Wildlife Service (K. Munney)
NH Fish & Game (C. McBane)
Mr. Onil Roy
Mr. Jeff Clifford
Mr. Phil McCarthy
Mr. James Horrigan
Ms. Carolyn Lepage
COMSUBGRU TWO (R. Jones) (w/o enclosure)

bcc: R. Boucher, (NORTHDIV (w/o enclosure)
J. Trepanowski, TtNUS, King of Prussia
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Conference Call to Discuss Regulator Comments on the Draft Baseline Interim Offshore Monitoring Report Portsmouth Naval Shipyard, Kittery, Maine April 2, 2002

Conference Call Participants:

- Navy - Engineering Field Activity North East (EFANE): Fred Evans (Remedial Project Manager, Engineer), Jason Speicher (Risk Assessor)
- U.S. Environmental Protection Agency (USEPA): Meghan Cassidy (Remedial Project Manager, Geologist)
- National Oceanic and Atmospheric Administration (NOAA): Ken Finkelstein
- U.S. Fish and Wildlife Service (USFWS): Ken Munney
- Maine Department of Environmental Protection (MEDEP): Iver McLeod (Remedial Project Manager, Oceanography), Katie Zeeman (Risk Assessor, Toxicology)
- Carolyn Lepage (Hydrogeologist, Technical Consultant to Seacoast Anti-Pollution League)
- Tetra Tech NUS, Inc. (TtNUS, Navy Contractor): Aaron Bernhardt (Project Manager, Ecological Risk Assessor); Debbie Cohen (Facility Coordinator)

SEVERAL COMMENTS (USEPA, MEDEP, AND NOAA): CONTINUATION OF 0-2 CM AVS SAMPLING

Issue: Navy recommended discontinuing the AVS samples from 0 to 2 cm. USEPA (and NOAA) and MEDEP recommended that only 0 to 2 cm interval be sampled for AVS.

Discussion: The discussion focused on the need to continue AVS and SEM sampling. Ken Finkelstein (NOAA) indicated that the results were confusing because the deeper sediments (0 to 10 cm) are expected to have more AVS than the shallower sediments (0 to 2 cm), but for the OU4 data, the AVS results were similar for the two depths. NOAA also indicated that the Navy might be able to use the AVS/SEM data to show that metals are not bioavailable even if they exceed PRGs, before a removal action is conducted. Fred indicated the PRGs are not based on AVS/SEM data, and just because a PRG is exceeded, the Navy is not committed to a removal action. An exceedence of a PRG would trigger additional evaluations, which could include AVS/SEM sampling at that time. Aaron and Jason indicated that because all decisions were being made using the 0 to 10 cm, the usefulness of the 0 to 2 cm data is not apparent, especially because there are no PRGs based on AVS/SEM. Ken Munney (U.S. FWS) indicated that if the AVS and SEM data were dropped from future rounds, the Navy may need to analyze AVS and SEM (and other chemistry parameters as well) in the future if that data are needed. NOAA indicated that an AVS expert should be contacted to explain the reason that PNS sediments have similar AVS in the two depths that were sampled. Megan wanted it recognized that if we drop AVS/SEM from future rounds, we would not forget about the confusion with the results in case we need to analyze future samples for AVS. Aaron indicated that someone like Water Berry from USEPA, Narragansett Lab could be contacted for his input. NOAA said that he would contact Walter, so that the discussions could begin sometime over the next few months.

Resolution: It was decided that the AVS/SEM sampling would be discontinued for both depth intervals, because the data are not being used at this time to make any decisions (as part of the interim offshore monitoring program). The Navy recognizes that future samples may need to be analyzed for AVS/SEM, which will be discussed in future DQOs. The Navy also agreed to evaluate the reasons why the AVS results were similar in the 0 to 2 cm and 0 to 10 cm intervals before submission of the 5-year review report, and preferable in the next few months. NOAA will contact Walter Berry from USEPA Naragansett Lab to get his input.

USEPA COMMENT #7

Comment Excerpt: It would also be useful to chart the major contaminants of concern in an individual monitoring station profile compared to reference and IRG values. This would allow comparison of overall conditions at each site, over time, to reference conditions, and remedial goals. As it stands now, it is difficult to piece together contaminant profiles/fluxes and assess overall trends and potential risk for individual sites.

Discussion: This was U.S. FWS's comment, but NOAA also had a similar comment (NOAA #1). They are looking for an easy way to compare the data from each location within the stations to the IRGs.

Resolution: The Navy will add a table to Appendix B that presents the data for the chemicals with IRGs in an easy format to review. However, it was noted that the intent of monitoring program is to make decisions based on average concentrations for each monitoring station and not individual sampling locations.

USEPA COMMENT #8

Comment Excerpt: These levels [of inorganics] in biota warrant further discussion even though not all of these inorganics are IRG COCs. Other notable non-IRG COCs were maximum sediment concentrations of 4'4-DDT at 1.4 ppm for M-01 and total PCBs>1 ppm at M-02.

An uncertainty section should be added to the document to address assumptions, modeling and irregularities in data interpretation. ... Additionally, single contaminant evaluations continue to be the standard practice. It is apparent that a number of elevated contaminant concentrations may be potentially impacting biota in several locations. Cumulative or synergistic impacts from multiple stressors to indicator species are not necessarily addressed by the IRGs. Current conditions could potentially be discussed relative to contaminant levels and species results from the previous toxicity tests.

Discussion: U.S. FWS said that although the Baseline Report focuses on chemicals with IRGs, he wants to make sure that the chemicals without IRGs are somehow evaluated in case something "strange" is happening with the data. Jason and Aaron pointed out that the DQA discussion in Appendix A looks at all chemicals.

Katie Zeeman (MEDEP), U.S. FWS, and NOAA indicated that they prefer to have one uncertainty section at the end of the report that incorporates all of the uncertainties, versus a small discussion in each section.

Resolution: The Navy will continue to evaluate chemicals without IRGs in future DQA reports. An uncertainty section will be added to the end of the report.

USEPA COMMENT #10

Comment Excerpt: It would be appropriate to weight coverage in calculating station contaminant averages if significant differences are found among habitat concentrations, as mentioned.

Discussion: The technical people need to discuss this before the 5-year review and a schedule needs to be developed to ensure that it gets done prior to preparing the 5-Year review report. U.S. FWS indicated he didn't think this would be an easy thing to resolve.

Resolution: The Navy agreed that discussion about weighting station habitats in the calculation of the average monitoring station concentration would need to start in the next few months. The Navy will need to look at funding and develop a schedule.

USEPA COMMENT #18

Comment Excerpt: "Cumulative risk for PAHs at these stations appears elevated during all rounds of sampling. Inorganics for certain rounds approach but do not exceed IRGs and in combination with other contaminants may be contributing to elevated risk."

Discussion: Aaron indicated that the issue of cumulative risk was discussed in the PRG document. After U.S. FWS rereads that section of the PRG document, he will see if he has any additional questions.

Resolution: This will be resolved after U.S. FWS has reviewed the PRG document and the Navy's response to his comment.

USEPA COMMENT #33

Comment Excerpt: In light of the extremely high BAFs usually associated with dioxin, it is unlikely that biota and sediment would not be consistently linked. These data gaps have potential implications and warrant further discussion.

Discussion: U.S. FWS referred to Table B-4, in Appendix B. At M12, there are a lot of J and U values in table. Sometimes the dioxin is detected in the sediment and not the biota, and vice-versa. It appeared that the reason may be the variability of the detection limit in sediment versus the biota. Usually the sediment detection limit is lower than the biota detection limit, but not always. U.S. FWS wants to see this discussed in the uncertainty section. U.S. FWS would like to see the TEQ with ½ the detection limit presented and Jason indicated it is in Appendix K (Table K-2).

U.S. FWS said that Section 8 of the Baseline Report indicates that some samples for dioxins were diluted. Aaron indicated that the lab said that they were not diluted, but he would check back with the lab to get this issue clarified. Aaron also would ask the lab why, overall, the detection limits for tissue are higher than those for sediment. There also was a discussion

about the dioxin "totals" because they were not the same number as the sum of the various dioxins listed on the tables. Aaron indicated that the "total" include dioxins that are not reported as individual congeners by the lab. That is why the dioxin "totals" are greater than the sum of the various dioxins listed on the tables. Aaron would check with the lab to determine the exact method for that calculation. U.S. FWS asked if the dioxin "totals" were included in the TEQ calculation. Aaron and MEDEP said that they were not because TEFs are not available for the "totals."

U.S. FWS wondered if a BSAF could be used to calculate dioxin concentrations for either sediment or tissue when dioxins were only detected in one of the media, although he has not seen it done before. Aaron indicated that it would be very difficult because it would have to be done for every dioxin in every sample. MEDEP mentioned this could be very messy and doesn't think it would likely give you an answer your question.

Resolution: TtNUS will check to see if the dioxin samples were diluted, and why there were higher detection limits for tissue versus sediment. TtNUS also will check on how the various dioxin "totals" are calculated by lab. After U.S. FWS reviews the Navy's response to this comment, he will determine if he had any additional questions.

[Post conference call note: The laboratory was contacted and the database was reviewed and it was determined that none of the dioxin samples were diluted. Therefore, the text in Section 8 of the draft Baseline Report will be revised to indicate that no dioxin samples were diluted. The laboratory indicated that the reason why the detection limits were greater for the tissue samples is that they need to take a smaller volume of tissue for analysis because of potential interferences. For example, the laboratory use an aliquot of ~10 grams for tissue and ~40 grams for sediment. Also, the tissues are ~80 to 90% water vs. ~40% water (on average) for the sediment. Therefore, the combination of these two factors yields higher detection limits for the tissue samples.

The laboratory indicated that the dioxin totals are determined from the same chromatogram as the 2,3,7,8-congeners. First the retention time window that the peaks appear in is looked at and if peaks are present for both ions, the areas are entered into a spreadsheet. If the ratio of the two ions for the peak is within the acceptable range, then the spreadsheet allows for quantitation of that peak. All 2,3,7,8 (from the initial analyses) and non 2,3,7,8- peaks are then summed to produce the total. If the ratio of the ions are outside the acceptance range the peak is not included in the total. That is the reason why the totals for the various dioxins on the tables in the Baseline Report are different than the summation of the individual dioxins in the tables.]

NOAA COMMENT #1

Comment Excerpt: NOAA thinks it is more appropriate to separate the results based on substation otherwise one might require clean-up at the entire Monitoring Station M04 rather than only the offending substation (if, indeed, the metal slag issue is not resolved).

Resolution: This was resolved in USEPA Comment #7 above.

MEDEP COMMENT #14

Comment Excerpt: After the laboratory reanalysis is complete and/or the results from Rounds 5 and 6 are evaluated, the Navy will determine if the sample (or only the PAH results) will be removed from the data set prior to trending the data.

Discussion: Aaron explained that the PAH results of the mussels from reference station 02, location 4 (R02-4) for Round 3 were suspiciously similar to the results from the mussels collected at monitoring station 13 for Round 3. The reference mussel concentrations for PAHs at R02-4 for Round 3 were well above the results from other reference stations and from the same station during previous rounds. The Navy requested that laboratory reanalyze the reference sample. The results of the reanalysis confirm that the initial PAH results were in error, because the results of the reanalysis were similar to those in previous rounds. However, because the holding time was exceeded in that sample, the Navy recommended that this sample be removed from the data set (for all parameters) for the draft final report. The Navy will attach a memorandum and appropriate back-up documentation and letter to the conference call minutes.

Resolution: It was agreed that the sample could be removed from the data set at this time (for all analytes). The Navy will attach the memorandum to the minutes that explains the situation with the sample and what the Navy is doing with the sample. [Post conference call note: The memorandum is included at the end of these minutes at Attachment 1].

ATTACHMENT 1

MEMORANDUM FOR REMOVAL OF ONE MUSSEL SAMPLE FROM REFERENCE STATION M02

Memorandum for Removal of One Mussel Sample from Reference Station M02
Interim Offshore Monitoring Program for OU4
Portsmouth Naval Shipyard, Kittery Maine

As presented in Section 5.2.3.1 in the Draft Baseline Interim Offshore Monitoring Report for OU 4 for Portsmouth Naval Shipyard (TtNUS, December 2001), one mussel sample from one of the four reference samples (OU4-MU-R02-400A) had elevated levels of polyaromatic hydrocarbons (PAHs) in the third sampling round. The levels of PAHs were approximately two orders of magnitude greater than the PAH concentrations in the mussel samples at other reference stations and across other sampling rounds for the same station. The PAH concentrations were similar to a mussel sample collected from monitoring station M13 during the same round (OU4-MU-M13-100A). The attached sheets from Appendix B of the Baseline Report provided the analytical data for mussel samples OU4-MU-M13-100A and OU4-MU-R02-400A. These two samples were analyzed by the laboratory at the same time, so it was thought that the mussel tissue from monitoring station M13 may have been used for the analysis of the reference mussel. Therefore, the laboratory was asked to reanalyze sample MU-R02-400A for PAHs, pesticides and PCBs.

On December 13, 2001 mussel tissue from sample OU4-MU-R02-400A was re-extracted. The sample extract was analyzed for PAHs on December 19, 2001, and on February 2, 2002 for pesticides and PCBs. The raw data sheets from the laboratory for the reanalysis are attached to this letter. As is presented in the laboratory data sheets, the results from the reanalysis were more indicative of historical levels. As agreed upon in the conference call on April 2, 12002, because the holding time for the sample analysis was exceeded, the data from the reanalysis will not be included in any of the data evaluations. Also, the Navy will remove sample OU4-MU-R02-400A from the database for all analytes. The removal of the sample is not expected to impact any of the evaluations because there are still an adequate number of reference station mussel samples from each round.

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	100A-DUP	300A	100A
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	65.4 J	18	22.8	105	94.1	5.6 J	1.94 J
1-METHYLNAPHTHALENE	22.3 J	27.5 J	23.9 J	109	88.7	16.5	10.2 J
1-METHYLPHENANTHRENE	508 J	63.3	51.8	553	457	7.93	6.24 J
2,6-DIMETHYLNAPHTHALENE	48 J	21.5	22.2	154	130	10.6	2.76 J
2-METHYLNAPHTHALENE	29.8 J	40.2 J	37.8 J	161	130	31.5	14.5 J
ACENAPHTHENE	1033 J	29 J	71.4 J	1269 J	1093 J	11.4 J	6.71 J
ACENAPHTHYLENE	215 J	150	131	180	289 J	31.4 J	1.11 J
ANTHRACENE	1283 J	340	359	1996 J	2022 J	74.8 J	10.8 J
BENZO(A)ANTHRACENE	1778 J	631	585	4333	3540	65.9	33.3
BENZO(A)PYRENE	1321 J	150 J	160 J	3461 J	2835	25.6 J	16.2
BENZO(B)FLUORANTHENE	1461 J	1008 J	949 J	4479	3622	87.5	28.6
BENZO(E)PYRENE	764 J	518	509	2075	1681	67.7	15.3
BENZO(G,H,I)PERYLENE	426 J	417 J	433 J	907	793	21.3	5.6
BENZO(K)FLUORANTHENE	475 J	298	324	131	1198 J	29.1	9.63
BIPHENYL	13.4 J	9.12	13	86.9	72.7	2.19 J	2.21 J
CHRYSENE	1733 J	867	684	4976	4491	76.6	41.4
DIBENZO(A,H)ANTHRACENE	106 J	109 J	113 J	353	273	2.91	0.7 J
DIBENZOTHIOPHENE	269 J	20.2	29.9	239	199 J	3.47	3.06 J
FLUORANTHENE	8447 J	1075	1256	8955	7958	186	127
FLUORENE	834 J	65	116	1870 J	1668 J	21 J	10.8 J
INDENO(1,2,3-CD)PYRENE	425 J	435	488	1207	985 J	18.3	8.12 J
NAPHTHALENE	84.2 J	50 J	60.1 J	128 J	104 J	22.2 J	15.4 J
PERYLENE	270 J	134	174	563	522	23.4 J	9.55
PHENANTHRENE	4389 J	289	359	6561	5222 J	78.2	62.5 J
PYRENE	5957 J	946 J	1166 J	5747	5246	152	89
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.1 U	0.07 U	0.93	0.52	0.48	0.26 J	9.2
1,2,4,5-TETRACHLOROBENZENE	0.44 U	0.5 U	0.87 J	0.31 J	4.8 U	2.5	0.58 U
2,4'-DDD	6.6	1.8	2.3	364 J	1.4 J	2.5	0.67
2,4'-DDE	0.16 U	0.08 J	0.17 U	0.34 UJ	0.6 J	0.79	0.59 UJ
2,4'-DDT	0.08	0.05	0.05	0.33 J	1.4 J	1	0.54 U
4,4'-DDD	1.4	0.98	2	4.3	3.5	2.2	0.51 U
4,4'-DDE	1.5	1	1.3	11	8	7.1	2.4
4,4'-DDT	2.4	0.79	0.62	3.5 J	1.3 J	2.7	0.78 UJ
ALDRIN	0.12 U	0.1 U	0.12 U	0.39 UJ	0.59 J	0.39 U	0.68 U
ALPHA-BHC	0.05 J	0.05 J	0.06 J	2	1.7	0.45	0.48 U
ALPHA-CHLORDANE	1.3	0.48	0.33	3.2 J	1.7 J	1.4	0.51 U
BETA-BHC	0.3 J	1.8	1.3	6.3	8	1.1	0.44 U
CHLORPYRIFOS	0.56 U	0.48 U	0.58 U	2.6 U	2.5 U	2.6 U	4.4 U
CIS-NONACHLOR	0.31	0.15	0.18	2	2.1	1.3	0.47 U
DELTA-BHC	0.088 U	0.08	0.11	0.16 U	0.03 J	0.16 U	0.27 U
DIELDRIN	0.13 U	0.04 J	0.04 J	0.31 UR	0.3 U	0.69	1.7 J
ENDOSULFAN II	3.8	0.87	0.76	6.3 J	1.4 J	0.15 J	0.51 U
ENDRIN	0.26 U	0.23 U	0.27 U	0.81 U	0.8 U	0.81 U	1.4 U

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FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	100A	200A	300A	100A	100A-DUP	300A	100A
GAMMA-BHC (LINDANE)	0.25 J	0.4 U	0.49 U	0.24 U	0.18 J	0.05 J	0.05 J
GAMMA-CHLORDANE	0.13 U	0.06 J	0.09 J	0.31 UJ	0.82 J	0.51	0.54 U
HEPTACHLOR	0.34 U	0.29 U	0.35 U	0.44 U	0.31 J	0.45 U	0.77 U
HEPTACHLOR EPOXIDE	0.058 U	0.05 U	0.061 U	0.31 U	0.31 U	0.32 U	0.54 U
HEXACHLOROBENZENE	0.63	0.07 J	0.25	0.63 J	0.13 J	0.27 J	0.25 J
MIREX	0.058 U	0.05 U	0.061 U	0.71 U	0.06 J	0.72 U	1.2 U
OXYCHLORDANE	0.029 U	0.12	0.24	19 J	1.5 J	0.08 J	0.11 J
PCB-101/90	2.3	1.5	3.7	16	10	13	0.63 J
PCB-105	1.1 J	0.93 J	2 J	6.5 J	2.4 J	4.8	0.75 J
PCB-114	0.35 U	0.3 U	0.36 U	1.1 U	1.1 U	1.1 U	1.9 U
PCB-118	1.9	1.4	3	24 J	12 J	11	3.2
PCB-126	0.35 U	0.3 U	0.36 U	1.1 UR	1.1 U	1.1 U	1.9 U
PCB-128	0.77	0.49	0.94	3.1	2.9	2.5	0.58 J
PCB-138/160	4.2	2.5	5.5	21	17	17	3.8 U
PCB-149/123	3.8	1.4	4.3	11	10	9.2	0.25 J
PCB-153/132	4.4	2.1	5.8	26	23	22	5.8 U
PCB-156	2.8	1.3	1.5	1.7	2.2	0.66 J	1.9 U
PCB-167	2.4	2	2	5.9 J	2.7 J	1.6	1.9 U
PCB-169	0.09 U	0.3 U	0.04 U	1.1 U	1.1 U	0.12 J	1.9 U
PCB-170/190	65 J	20 J	24 J	49 J	16 J	0.43 J	1.5 U
PCB-18/17	0.92	0.13 J	1.9	38 J	2.8 UJ	0.37 J	0.84 J
PCB-180	2.9	1.4	4.2	11 J	8 U	7.9	2.8 U
PCB-187	1.6	1.4	2.9	11	8.3	7.8	8.1
PCB-189	0.56	0.47	0.3 J	1.1 U	0.72 J	1.1 U	1.9 U
PCB-195/208	1.6	0.69	1	1.1 J	0.65 J	0.91 U	8.1
PCB-201/157/173	1.3	0.36	0.43	1.1 J	2.2 J	0.52 J	1.5 U
PCB-206	1.3	0.54	1.6	0.94 U	0.93 U	0.95 U	19
PCB-209	1.5	0.95	1.4	1.2 U	1.2 U	1.2 U	4.2
PCB-28	1.5	0.78	3.4	3.7	5.2 U	2.9	0.81 U
PCB-44	0.79	0.39	1.8	2.4 U	2.2 U	2.8	0.27 J
PCB-52	2.9	1.2	4	4.8 J	8.8 J	5.7	1.3 U
PCB-66	1.3	0.5	1.7	6.2 J	2.7 J	3.8	0.63 J
PCB-77	0.28 U	0.05 U	0.08 U	0.53 U	1.1 U	0.3 J	1.9 U
PCB-8/5	1.2	0.68	1.9	36 J	1.7 UJ	7.5	0.54 J
PCB-81	0.31 J	0.3 U	0.36 U	0.25 J	0.17 J	1.1 U	1.9 U
PENTACHLOROANISOLE	0.24 U	0.09 U	0.19 U	3.1 U	0.85 U	1.1	0.27 U
PENTACHLOROBENZENE	0.22 U	0.23 U	0.33 U	0.86 U	2.8 U	1.8	3.9 U
TRANS-NONACHLOR	0.1	0.05 J	0.05 J	1.5	1.2	1.4	0.33 U
Metals (mg/kg)							
ALUMINUM	56558	54863	56930	415	457 J	288	19.9 U
ARSENIC	18.7	17.3	20.6	4.19	4.97	4.01	3.31 J
CADMIUM	0.48 J	0.58 J	0.59 J	1.42	1.48	1.51	0.0329
CHROMIUM	84.1	81.7	104	3.74	3.04	2.39	0.98
COPPER	44.5 J	35.7 J	87.3 J	32.8 J	34.5 J	6.98	60.5
IRON	33229 J	30133 J	35859 J	675	745	399	27.7 J

TABLE B-3

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FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Monitoring Station 13						
	Sediment			Mussel			Lobster
Parameters	**100A**	**200A**	**300A**	**100A**	**100A-DUP**	**300A**	**100A**
LEAD	70.7 J	63.5 J	88.4 J	4.55	4.59	3.19 J	1.5
MANGANESE	360	346	365	49.9	50.4	13.9	6.07
MERCURY	0.19	0.35	0.23	0.26	0.27	0.21	0.61
NICKEL	24.9 J	22.9 J	28.8 J	4.74 U	3.49 U	0.3 U	1.94 U
SILVER	3.44	3.92	3.9	0.32 U	0.45 U	1.33 U	0.84 J
ZINC	107 J	94.1 J	147 J	129 J	121	81.6	98.6 J
Miscellaneous Parameters (%)							
% LIPID				7.4	4.6	6.4	2.1
TOTAL ORGANIC CARBON	2.18 J	1.73 J	2.13 J				

Notes:

MS-13 includes the following samples:
OU4-SD-M13-100A
OU4-SD-M13-200A
OU4-SD-M13-300A
OU4-MU-M13-100A
OU4-MU-M13-100A-LD
OU4-MU-M13-300A
OU4-LJ-M13-100A

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HPCDD	29 U	7.67	22.6	2.13 U	22.9 UR	27 U	13.3 U
1,2,3,4,6,7,8-HPCDF	7.3 U	1.85	6.31	2.13 U	22.9 U	27 U	13.3 U
1,2,3,4,7,8,9-HPCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 UJ	27 U	13.3 U
1,2,3,4,7,8-HXCDD	0.91 UJ	1 U	0.45 J	2.13 U	22.9 U	27 UJ	13.3 UJ
1,2,3,4,7,8-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	27 U	13.3 U
1,2,3,6,7,8-HXCDD	0.91 UJ	1 U	0.68 J	2.13 U	22.9 U	27 UJ	13.3 UJ
1,2,3,6,7,8-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	27 U	13.3 U
1,2,3,7,8,9-HXCDD	0.91 UJ	1 U	0.83 J	2.13 U	22.9 U	27 UJ	13.3 UJ
1,2,3,7,8,9-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	27 U	13.3 U
1,2,3,7,8-PECDD	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	27 UJ	13.3 UJ
1,2,3,7,8-PECDF	1.2 J	1 U	0.94 J	2.13 U	22.9 U	27 U	13.3 U
2,3,4,6,7,8-HXCDF	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	27 U	13.3 U
2,3,4,7,8-PECDF	0.91 UJ	1 U	1.23 J	2.13 U	22.9 U	27 U	13.3 U
2,3,7,8-TCDD	0.18 UJ	0.2 U	0.26 U	0.43 U	4.59 UR	5.41 U	2.66 U
2,3,7,8-TCDF	0.18 UJ	0.24	0.26 U	0.43 U	4.59 U	10.3 J	2.87 J
OCDD	257 U	53.1	524	52 U	45.9 U	54.1 U	26.6 U
OCDF	1.82 UJ	3.22	7.68	4.5 U	45.9 U	54.1 U	26.6 U
TOTAL DIOXINS	333 U	74.1	601	62.1 U	71.8 J	54.1 U	4.11 J
TOTAL FURANS	45.5 U	11.8	26.9	5.5 U	23.2 J	10.3 U	2.87 U
TOTAL HPCDD	64.5 U	17.8	57.8	8.2 U	33.2 J	27 U	13.3 U
TOTAL HPCDF	14.4 U	4.83	6.31	2.13 U	22.9 U	27 U	13.3 U
TOTAL HXCDD	10.3 J	3.14	16.6	1.9 J	22.9 U	27 U	13.3 U
TOTAL HXCDF	8.7 J	1.63	5.65	1 J	23.2 J	27 U	13.3 U
TOTAL PECDD	0.91 UJ	1 U	1.29 U	2.13 U	22.9 U	27 U	13.3 U
TOTAL PECDF	6.1 J	1.88	3.18	2.13 U	22.9 U	27 U	13.3 U
TOTAL TCDD	1.2 J	0.2 U	1.72	0.43 U	38.6 J	5.41 U	4.11 J
TOTAL TCDF	3.4 J	0.24	4.11	0.43 U	4.59 U	10.3 J	2.87 J
Polyaromatic Hydrocarbons (ug/kg)							
1,6,7-TRIMETHYLNAPHTHALENE	12	9.89	17.1	15.7	2.4 J	114	1.07 J
1-METHYLNAPHTHALENE	19.4 J	9.53 J	35.7	35.2 J	6.7 J	104	4.22 J
1-METHYLPHENANTHRENE	93.6	44.7	102	94.7	3 J	547	1.18 J
2,6-DIMETHYLNAPHTHALENE	11.2	8.76	28.4	19.3	2.9 J	160	1.71 J
2-METHYLNAPHTHALENE	24.8	15.4	73.9	53.7	8.8 J	150	6.23 J
ACENAPHTHENE	16.3	22.1	36 J	26.3	6.3 J	1368	1.02 J
ACENAPHTHYLENE	164 J	63.5	180	163 J	18.6 J	192	0.74 J
ANTHRACENE	294	146	355	295	28	2103 J	1.22 J
BENZO(A)ANTHRACENE	599 J	344 J	715	506 J	22.7	4302	4.73 J
BENZO(A)PYRENE	831 J	496	797	338 J	18.2	3430	8.32
BENZO(B)FLUORANTHENE	899	465 J	1227	896	37.9 J	4383	10.1
BENZO(E)PYRENE	506	210 J	558 J	400	39.9 J	2012	7.01
BENZO(G,H,I)PERYLENE	415	189 J	438	357	13.5	843 J	3.56 J
BENZO(K)FLUORANTHENE	327	116	258 J	189	18.4 J	1398 J	3.98 J
BIPHENYL	4.97 J	3.88	16.8	10.1 J	2.5 J	90.5	2.03 J
CHRYSENE	667	285	665	625	38.7 J	5443	15.1
DIBENZO(A,H)ANTHRACENE	123 J	55.6	131	96.1 J	1.6 J	310 J	0.24 J
DIBENZOTHIOPHENE	24.5	14.6	44.8	22.6	1.1 J	251	0.35 J
FLUORANTHENE	1155	414 J	1396 J	860	61.7	9053	20.7
FLUORENE	50.2	47.2	111	53.7	5.6 J	1974 J	1.76 J
INDENO(1,2,3-CD)PYRENE	467 J	229 J	561	419 J	9.8 J	1068 J	3.42 J
NAPHTHALENE	28.4	33.3	155	79.9	11.5 J	122 J	8.48 J
PERYLENE	108 J	101	192	104 J	19.4 J	602 J	4.51 J
PHENANTHRENE	440	269	345	342	10.8	6477	3.43 J
PYRENE	950	367 J	1285 J	818	69.7	6226	18.6
Pesticides/PCBs (ug/kg)							
1,2,3,4-TETRACHLOROBENZENE	0.03 J	0.19 J	0.19 J	0.18 J	0.13 U	2.9	3.9
1,2,4,5-TETRACHLOROBENZENE	0.98 U	0.59 U	2.4	1.6 U	0.76 U	1.4	0.48 U
2,4'-DDD	1.2	1	3	2.3	2	357 J	0.41 U
2,4'-DDE	0.04 J	0.05 J	0.097 U	0.04 J	0.11 J	0.39 U	0.57 UJ
2,4'-DDT	0.32	0.01 J	0.026 U	0.07	1	1.5	0.19 J

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
4,4'-DDD	0.49	0.61	0.48	1.3	3.1	5.9	0.49 U
4,4'-DDE	0.81	0.21	0.29	1.6	6.5	11	3.9
4,4'-DDT	2.4	0.35	0.17 J	1.1	0.93 J	3.5	0.76 UJ
ALDRIN	0.054 U	0.01 J	0.03 J	0.075 U	0.39 U	0.45 U	0.65 U
ALPHA-BHC	0.16	0.1	0.12 J	0.2	0.31	2.1	0.46 U
ALPHA-CHLORDANE	0.75	0.21	0.52 J	0.75	0.99	2	0.49 U
BETA-BHC	0.37	0.18 U	0.24 U	0.25 U	1.3 U	6.2	0.42 U
CHLORPYRIFOS	0.75 U	0.52 U	0.33 U	0.64 U	2.6 U	2.9 U	4.3 U
CIS-NONACHLOR	0.08	0.08	0.21 J	0.34	1.1	2.3	0.1 J
DELTA-BHC	0.04 U	0.041 U	0.053 U	0.056 U	0.16 U	0.18 U	0.26 U
DIELDRIN	0.02 J	0.21	0.079 U	0.05 J	0.82 J	0.37	1.8 J
ENDOSULFAN II	0.12	0.06 J	0.33	0.16	0.19 J	11	0.49 U
ENDRIN	0.12 U	0.12 U	0.16 U	0.17 U	0.81 U	0.93 U	1.4 U
GAMMA-BHC (LINDANE)	0.21 U	0.22 U	0.28 U	0.3 U	0.08 J	0.03 J	0.41 U
GAMMA-CHLORDANE	0.43	0.07	0.079 U	0.39	0.42	0.36 U	0.52 U
HEPTACHLOR	0.07 J	0.16 U	0.2 U	0.57	0.45 U	0.53	0.74 U
HEPTACHLOR EPOXIDE	0.027 U	0.027 U	0.035 U	0.037 U	0.32 U	0.36 U	0.52 U
HEXACHLOROBENZENE	0.04 U	0.041 U	0.05 J	0.056 U	0.21 J	0.92	0.27 J
MIREX	0.027 U	0.027 U	0.035 U	0.037 U	0.72 U	0.82 U	1.2 U
OXYCHLORDANE	0.09	0.08	0.08	0.07	0.33 U	9.7	0.86
PCB-101/90	0.6	0.91	0.79	3.1	7.7	12	0.42 J
PCB-105	0.33 J	0.37 J	0.25 J	1.4	2.9 J	6.5	1.2 J
PCB-114	0.16 U	0.16 U	0.21 U	0.22 U	1.1 U	1.3 U	1.8 U
PCB-118	0.74	0.95	0.83	3.6	9.2	22	5
PCB-126	0.16 U	0.16 U	0.21 U	0.22 U	1.1 UJ	1.3 U	1.8 U
PCB-128	0.19	0.2	0.053 U	1.1	2	5.3	0.91 J
PCB-138/160	1.3	0.91	0.42 U	4.7	13	21	5.6 U
PCB-149/123	0.84	0.43	0.24	1.9	5.6	14	0.15 J
PCB-153/132	1.2	0.91	0.2 U	4.3	17	27	7.4 U
PCB-156	0.6	0.35	0.87 J	1.1	1.1 U	1.2 J	1.8 U
PCB-167	0.16 J	0.09 J	3.1	0.38	1.1	6.5	0.55 J
PCB-169	0.03 U	0.16 U	0.01 U	0.04 U	1.1 U	1.3 U	0.05 J
PCB-170/190	10 J	3.7 J	9 J	15 J	0.37 U	53	0.82 U
PCB-18/17	0.08 U	0.081 U	0.11 U	0.11 U	0.48 J	28	0.88 J
PCB-180	0.98	0.48	0.14 U	1.4	7.9 J	12	1.8 U
PCB-187	0.5	0.14 J	0.16 J	1	6	12	2.4
PCB-189	0.15 J	0.09 J	0.18 J	0.36	1.1 U	0.59 J	1.8 U
PCB-195/208	0.34	0.11	0.08 J	0.47	0.91 U	1.1	0.16 J
PCB-201/157/173	0.33	0.27	0.37	0.58	0.31 J	1.1	1.4 U
PCB-206	0.02 J	0.04 J	0.17 J	0.59	0.95 U	1.1 U	0.07 J
PCB-209	0.61	0.17	0.27	1.1	1.2 U	1.4 U	2 U
PCB-28	0.45	0.24	0.24 U	1	0.66 J	3.6	0.05 U
PCB-44	0.2	0.21	0.18 U	0.4	0.82 U	2.5	0.63 J
PCB-52	13	0.59	0.05 J	3.1	2.3 U	5.3	1.2 U
PCB-66	0.2	0.39	0.44	1.3	1.4	5.6	0.81 J
PCB-77	0.14 U	0.03 U	0.01 J	0.55 U	0.23 J	0.53 J	1.8 U
PCB-8/5	0.62	0.24 U	0.2 U	0.36 U	6	46	1.4 J
PCB-81	0.02 J	0.03 J	0.21 U	0.22 U	1.1 U	0.55 J	1.8 U
PENTACHLOROANISOLE	0.39 J	0.07 U	0.04 U	0.15 U	0.89 U	4	0.24 U
PENTACHLOROBENZENE	0.4 U	0.22 U	0.6 U	0.34 U	0.99 U	0.52	2.5 U
TRANS-NONACHLOR	0.31	0.07	0.07 J	0.23	0.94	1.3	0.18 J
Metals (mg/kg)							
ALUMINUM	44541	49863	46164	55986	353	401	3.1 U
ARSENIC	8.56	11.8	9.4	14.8	4.22	5.14	4.13 J
CADMIUM	0.12 J	0.33 J	0.26 J	0.44 J	1.22	1.03	0.0202
CHROMIUM	37.2	51.6	64	86.1	3.79	3.76	0.61
COPPER	13.9 J	29.2 J	12.8 J	28.3 J	8.3 J	6.44 J	31.8
IRON	15229 J	21926 J	18220 J	25988 J	563	695	9.56 J
LEAD	86.1 J	88.6 J	45.2 J	107 J	3.54	5.31	0.15 U
MANGANESE	217	380	401	367	12.6	11.8	3.8

TABLE B-3

SUMMARY OF ROUND 3 ANALYTICAL DATA FOR SEDIMENT, MUSSEL, AND LOBSTER SAMPLES
FOR EACH MONITORING AND REFERENCE STATION
ROUND 3 - BASELINE INTERIM OFFSHORE MONITORING REPORT
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

	Reference Station 02						
	Sediment				Mussel		Lobster
Parameters	100A	200A	300A	400A	300A	400A	100A
MERCURY	0.0756 U	0.23	0.4	0.28	0.26	0.29	0.74
NICKEL	16.6 J	17.3 J	14.9 J	24.6 J	5.03 U	1.93 U	1.9 U
SILVER	1.98	3.15	3.15	4.15	0.29 U	0.32 U	0.8 J
ZINC	64 J	70.7 J	34.6 J	75.3 J	87.9 J	76.4 J	84.2 J
Miscellaneous Parameters (%)							
% LIPID					4.5	3	1.6
TOTAL ORGANIC CARBON	0.88 J	0.48 J	1.54 J	2 J			

Notes:
RF-2 includes the following samples:

OU4-SD-R02-100A
OU4-SD-R02-200A
OU4-SD-R02-300A
OU4-SD-R02-400A
OU4-MU-R02-300A
OU4-MU-R02-400A
OU4-LJ-R02-100A

GERG

GEOCHEMICAL & ENVIRONMENTAL
RESEARCH GROUP

College of Geosciences
Texas A&M University

January 29, 2002

Mr. Aaron Bernhardt
Tetra Tech NUS
Foster Plaza 7
661 Andersen Drive
Pittsburgh, Pa 15220-2745
412-921-7118 Phone

Dear Aaron:

Enclosed are PAH Addendum T1173 Re-analyses for the Portsmouth Naval Shipyard Project: Round 3. This data will be supplied electronically via email. If you have any questions please contact me.

Sincerely,

Terry L. Wade

Terry L. Wade, Ph.D.
Deputy Director, Environmental Sciences

TLW/tw

XC: C. Miller, TAMRF
G. Ekman, GERG
G. Denoux, GERG

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http://www.gerg.tamu.edu
email: terry@gerg.tamu.edu

Addendum: T1173 Re-analyses

Tetra Tech

Case Narrative: Polynuclear Aromatic Hydrocarbons (PAH)

I. Background

This addendum contains the results of the PAH analyses of tissue sample OU4-MU-RO2-400A (GERG file # C36642). This sample was originally analyzed and reported with QC batch T1173. Data review of the PAH data for this sample found much higher than expected concentrations based on historical data from this site. The sample chromatogram for C36642 was nearly identical to that for sample OU4-MU-M13-100A (GERG file # C36640) which was expected to have high PAH concentrations. Sample C36642 was therefore re-extracted on 12/13/01 and re-analyzed on 12/19/01 as QC batch T1295. The PAH concentrations reported here should replace those reported for C36642 in QC batch T1173.

II. Analytical Results/Methodology

The samples were extracted and analyzed following the procedures contained in GERG SOP 9801 and GERG SOP 9733. The analyte concentrations were determined using labeled surrogates added to the sample prior to extraction.

III. Quality Control

Calibrations

The analytes are calculated using an average response factor based on the form:

$$RRF = (A_S C_{su})/(A_{su} C_S)$$

where:

A_S = Area of the quantitation ion for the target compound.
A_{su} = Area of the quantitation ion for the surrogate.
C_{su} = Concentration of the surrogate (ng/μL).
C_S = Concentration of the target compound to be measured (ng/μL).

Calibration data used in the quantitation of detected analytes met the calibration criteria; no deviations beyond the control limits were observed. The average percent deviation was less than 15%, and no analyte had a percent deviation greater than 25% deviation.

Example Calculations

The concentration of the target analytes and the recovery of the labeled quantitation standards are calculated using the following equations:

$$C = \frac{(A_S)(C_{SU})}{(A_{SU})(\overline{RRF})\,(Sa)} \qquad \text{Eq.2}$$

where:

C	=	Concentration in sample (ng/gram or ng/liter).
Sa	=	Sample amount (grams, liters).
A_S	=	Area of the quantitation ion for the target compound to be measured.
A_{SU}	=	Area of the quantitation ion for the surrogate.
C_{SU}	=	Amount of surrogate added to each extract (ng).
$\overline{RRF}$	=	Average response factor

Laboratory Qualifiers

All of the analytical data have been qualified based on the most recent method detection limits determined. Concentrations that were less than the MDL adjusted for sample sizes are qualified "J" and those analytes not detected are qualified "ND". Concentrations that exceeded the calibration limits are qualified "EC". The concentrations that are determined by analyses of a diluted aliquot are qualified "D". If interference is encountered with the quantification of an analyte due to high concentration of another analyte, the concentration is qualified "I" to denote this interference.

Analytical Difficulties

Surrogate recoveries were acceptable for all samples with the exception of d8-naphthalene (low for all samples except the blank and the MSD) and d12 chrysene (high in the MSD). These low recoveries did not appear to affect the concentrations for naphthalenes. The high recovery did not cause the MSD to fail. No further action was taken. The blank contained no analytes at concentrations above the MDL. The matrix spike (MS) and matrix spike duplicate (MSD) were all acceptable except for benzo (a) anthracene (121.5%) which was slightly above the acceptance criteria of 120%. No further action was taken The SRM (NIST 1974a) had acceptable concentrations in view of the low concentrations of the target analytes. No further variances or difficulties were observed.

IV. Discussion

This tissue sample had PAH concentrations in the expected range based on historical data from this site.

Reviewed and approved: Terry L. Wade 4/25/2

Terry L. Wade Date

Deputy Director, Environmental Sciences

I, Grace Ekman, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness, and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (979) 862-2323; ext. 165 if there are any questions or problems with the enclosed electronic deliverables.

Reviewed and approved: Grace E Ekman

Grace Ekman Date

Quality Assurance Manager, GERG

Summary Data
For Samples Extracted
In QC Batch T1295

Tetra Tech, Inc.

Client Sample ID	OU4-MU-R02-400A
Sample Descriptor	
Original Sample	
GERG ID	C36642
Sample Type	SAMP
SDG	A9234

Dry Weight	1.75
Wet Weight	15.91
Sample Size Units	Grams
Matrix	Tissue
% solid	11.0
% Lipid	5.2
Reporting Units	ng/g
Calculation Basis (dry/wet)	Dry

QC Batch ID	T1295
Method	GCMS
Collection Date	08/29/00
Receive Date	08/30/00
Extraction Date	12/13/01
Analysis Date	12/19/01

Surrogate Compounds	**%Recovery**	
d8-Naphthalene	30.6	Q
d10-Acenaphthene	46.4	
d10-Phenanthrene	71.5	
d12-Chrysene	99.9	
d12-Perylene	58.1	

Total PAHs	**Concentration**
Total PAHs with Perylene	643.7
Total PAHs without Perylene	631.0
Total NS&T PAHs	316.4

ND	Not Detected
J	<MDL
NA	Not Applicable
Q	Results Outside QC
I	Interference
B	Blank Contamination >3xMDL
D	Dilution

Tetra Tech, Inc.

Client Sample ID	OU4-MU-R02-400A
Sample Descriptor	
Original Sample	
GERG ID	C36642
Sample Type	SAMP
SDG	A9234

PAH Compounds	Concentration	DLs
Naphthalene	3.6	10.0 J
C1-Naphthalenes	5.4	8.1 J
C2-Naphthalenes	6.5	15.9 J
C3-Naphthalenes	9.7	12.5 J
C4-Naphthalenes	11.8	12.5 J
Biphenyl	2.4	8.2 J
Acenaphthylene	12.2	6.6
Acenaphthene	5.8	10.1 J
Fluorene	4.3	8.9 J
C1-Fluorenes	9.6	17.8 J
C2-Fluorenes	0.2	17.8 J
C3-Fluorenes	13.0	17.8 J
Phenanthrene	10.4	6.0
Anthracene	25.3	6.0
C1-Phenanthrenes/Anthracenes	28.7	10.1
C2-Phenanthrenes/Anthracenes	27.3	10.1
C3-Phenanthrenes/Anthracenes	38.7	10.1
C4-Phenanthrenes/Anthracenes	16.3	10.1
Dibenzothiophene	1.3	2.4 J
C1-Dibenzothiophenes	2.9	4.8 J
C2-Dibenzothiophenes	2.8	4.8 J
C3-Dibenzothiophenes	3.7	4.8 J
Fluoranthene	69.6	4.5
Pyrene	75.6	4.2
C1-Fluoranthenes/Pyrenes	58.0	8.8
Benzo(a)anthracene	28.1	6.4
Chrysene	27.8	6.1
C1-Chrysenes	20.0	12.1
C2-Chrysenes	17.5	12.1 J
C3-Chrysenes	0.0	12.1 J
C4-Chrysenes	0.2	12.1 J
Benzo(b)fluoranthene	29.0	4.0
Benzo(k)fluoranthene	9.8	4.4
Benzo(e)pyrene	25.7	4.1
Benzo(a)pyrene	11.1	4.4
Perylene	12.7	3.5
Indeno(1,2,3-c,d)pyrene	6.4	2.1
Dibenzo(a,h)anthracene	1.5	2.0 J
Benzo(g,h,i)perylene	8.8	2.7
2-Methylnaphthalene	3.2	4.2 J
1-Methylnaphthalene	2.2	3.9 J
2,6-Dimethylnaphthalene	1.9	8.0 J
1,6,7-Trimethylnaphthalene	2.3	6.3 J
1-Methylphenanthrene	5.2	5.0 J

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

GERG

GEOCHEMICAL & ENVIRONMENTAL RESEARCH GROUP

College of Geosciences
Texas A&M University

February 18, 2002

Mr. Aaron Bernhardt
Tetra Tech NUS
Foster Plaza 7
661 Andersen Drive
Pittsburgh, Pa 15220-2745
412-921-7118 Phone

Dear Aaron:

Enclosed are PCB/pesticide Addendum T1173 Re-analyses for the Portsmouth Naval Shipyard Project: Round 3. This data will be supplied electronically via email. If you have any questions please contact me.

Sincerely,

Terry L. Wade

Terry L. Wade, Ph.D.
Deputy Director, Environmental Sciences

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Addendum: T1173 Re-analyses
Tetra Tech
Case Narrative: PCB and Pesticides

I. Background

This addendum contains the results of the PCB and pesticide analyses of tissue sample OU4-MU-RO2-400A (GERG file # C36642). This sample was originally analyzed and reported with QC batch T1173. Data review of the PAH data for this sample found much higher than expected concentrations based on historical data from this site. The sample chromatogram for C36642 was nearly identical to that for sample OU4-MU-M13-100A (GERG file # C36640) which was expected to have high PAH concentrations. Sample C36642 was therefore re-extracted on 12/13/01 and re-analyzed on 02/02/01 as QC batch T1295. The PCB and pesticide concentrations reported here should be used to replace those reported for C36642 in QC batch T1173.

II. Analytical Results/Methodology

The samples were extracted and analyzed following the procedures contained in GERG SOP 9807 and SOP 9810. The analyte concentrations were determined using the surrogate, PCB 103 or PCB 198, added to the sample prior to extraction and confirmed on a DB-17 column.

III. Quality Control

Calibrations

The instrument calibration is performed using a regression calibration curve because the ECD is a non-linear detector. The regression applied was a quadratic regression:

$$y=b_0 + \Sigma\, b_i x^i$$

where i has a value of 2 for a quadratic type curve. The calibration allows both the x and y variables to be optionally transformed prior to fitting the calibration curve. The curve is then fitted to the transformed data and the calibration statistics reported apply to the transformed data.

The two calibration statistics calculated are the coefficient of determination (r2) and the standard error of the y estimate (SE). The standard error of the y estimate provides a measure of the deviation of the calibration curve. It is expressed by the following equation:

$$SE = (RSS / (n-p-1))^{1/2}$$

where RSS is the residual sum of the squares, n is the number of data points in the calibration (including zero if a force through zero is used), and p is the degree of the polynomial fit for the regression.

The coefficient of determination (r2) represents the proportion of the variation accounted for by the regression, and is a ratio of the model sum of the squares (MSS) to the corrected sum of squares (CSS):

$$r^2 = MSS/CSS$$

$$r^2 = (CSS-RSS)/CSS$$

where the following definitions apply:

$RSS = \Sigma (y_i - y_{i,pred})^2$

$CSS = \Sigma (y_i - y_{i,mean})^2$

where y is a data point; $y_{i,pred}$ is a data point predicted from the value of y; $(y_i - y_{i,pred})$ is the residual between actual and predicted; $y_{i,mean}$ is the mean value of y; and $(y_i - y_{i,mean})$ is the corrected difference. Calibration data met the calibration criteria with none exceeding the control limits. The average percent deviation was less than 15%, and no analyte had a percent deviation greater than 25%.

Example Calculations

The analytes are calculated using a quadratic equation of the form:

$$y = b_0 + (b_1 * x) + (b_2 * x^2)$$

where:

y = The ratio of the area of the analyte to the area of the internal standard times the amount of the internal standard in micrograms;

b_0, b_1, b_2 = coefficients for the quadratic equation;

x = is the amount of the analyte in micrograms.

The calibration standards analyzed with each set of samples are subjected to the method of least squares for the equation for each analyte. Each analyte has different coefficients (b_0, b_1, b_2) based on the relative response of the analyte compared to the internal standard and as a function of the amount of the analyte. The amount of the internal standard is held constant for the calibration standards.

The sample concentration is calculated using the equation:

$$concentration = x * df / wt$$

where:

concentration = the concentration of the analyte (ng/g or ng/L);

x = amount of the analyte as found from solving the quadratic equation;

df = dilution factor;

wt = the sample dry weight in grams or volume in L.

Analytical Difficulties

Surrogate recoveries were all with in the acceptable range. In the procedural blank all analyte concentrations were either not detected (ND), below the detection limit (J) or <3 times the MDL. The recoveries of analytes in the matrix spike (MS) and matrix spike duplicate (MSD) were all within the acceptable range. The concentrations for the analytes that were determined in SRM 1974a were acceptable. No other variances or difficulties were observed.

IV. Discussion

This sample contained analytes at low concentrations. This is expected for some near-shore locations.

Reviewed and approved: Terry L. Wade

Terry L. Wade, Ph.D. Date

Deputy Director, Environmental Sciences

I, Grace Ekman, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness, and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (979) 862-2323; ext. 165 if there are any questions or problems with the enclosed electronic deliverables.

Reviewed and approved: Grace E Ekman 2/15/02

Grace Ekman Date

Quality Assurance Manager, GERG

OC and PCB Data
For Samples Extracted
In QC Batch T1295

Tetra Tech: Portsmouth Naval Shipyard

Client Sample ID	OU4-MU-R02-400A
Sample Descriptor	
Original Sample	
GERG ID	C36642
Sample Type	SAMP
SDG	A9234

Dry Weight	1.75
Wet Weight	15.91
Sample Size Units	Grams
Matrix	Tissue
% solid	11.0
% Lipid	5.2
Reporting Units	ng/g
Calculation Basis (dry/wet)	Dry

QC Batch ID	T1295
Method	GCECD
Collection Date	8/29/00
Receive Date	8/30/00
Extraction Date	12/13/01
Analysis Date	2/2/02

Surrogate Compounds	**%Recovery**
DBOFB	88.9
PCB103*	91.8
PCB198	96.5

Pesticides	**Concentration**	**DLs**
Chlorinated Benzenes		
Tetrachlorobenzene 1,2,4,5	0.82	0.53
Tetrachlorobenzene 1,2,3,4	1.29	0.81
Pentachlorobenzene		0.36 ND
Hexachlorobenzene	0.14	0.24 J
Hexachlorocyclohexanes		
Alpha HCH	0.41	0.21
Beta HCH		0.53 ND
Gamma HCH		0.34 ND
Delta HCH		0.19 ND
Chlordane-related Compounds		
Heptachlor		0.21 ND
Heptachlor Epoxide		1.22 ND
Oxychlordane	0.49	0.36
Alpha Chlordane	0.91	0.07
Gamma Chlordane	0.43	0.10
Cis-Nonachlor	1.35	0.23
Trans-Nonachlor	0.99	0.18
Other Cyclodiene Pesticides		
Aldrin		0.21 ND
Dieldrin	0.81	0.68
Endrin		0.22 ND

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
d Dilution
EC Exceeds Calibration

Tetra Tech: Portsmouth Naval Shipyard

Client Sample ID	OU4-MU-R02-400A
Sample Descriptor	
Original Sample	
GERG ID	C36642
Sample Type	SAMP
SDG	A9234

Pesticides	Concentration		
Other Chlorinated Pesticides			
Pentachloroanisole	0.48	0.22	
Chlorpyrifos	2.05	0.26	
Mirex		0.45	ND
Endosulfan II		0.20	ND
DDTs and Related Compounds			
2,4' DDE	0.18	0.29	J
4,4' DDE	7.03	0.56	
2,4' DDD	1.21	1.18	
4,4' DDD	3.29	0.33	
2,4' DDT	0.37	0.30	
4,4' DDT	0.70	0.23	

Individual PCBs	Concentration		
PCB8/5	2.22	0.37	
PCB18/17	3.51	0.70	
PCB28	0.98	0.56	
PCB52	2.91	0.73	
PCB44	0.91	1.01	J
PCB66	1.59	0.28	
PCB101/90	7.59	0.46	
PCB149/123*	7.35	0.70	
PCB118	7.47	0.32	
PCB114*		0.70	ND
PCB153/132	15.50	0.84	
PCB105	2.75	0.57	
PCB138 /160	11.93	0.69	
PCB187	4.78	1.72	
PCB128	1.97	0.38	
PCB167*	0.64	0.70	J
PCB156*		0.70	ND
PCB201/157/173*		0.70	ND
PCB180	4.88	2.61	
PCB170/190	0.64	1.10	J
PCB189*		0.70	ND
PCB195/208		0.07	ND
PCB206		0.29	ND
PCB209		0.19	ND
Planar PCBs			
PCB81		0.71	ND
PCB77	0.07	0.71	J
PCB126		0.71	ND
PCB169		0.71	ND

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
d Dilution
EC Exceeds Calibration

000003

COMMENTS ON NAVY RESPONSES TO COMMENTS FROM USEPA DATED APRIL 30, 2002 DRAFT BASELINE INTERIM OFFSHORE MONITORING REPORT FOR OU4 PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE RESPONSES TO COMMENTS

1. **Comment:** Navy Response to EPA Comment No. 2: the laboratory asserts that violating holding time was not a problem because QC samples did not have low recoveries and had acceptable recoveries. This comparison is valid only if the QC samples were held for as long after preparation as were the test samples. Provide additional information as to whether this was the case.

   Response: The laboratory that conducted the analysis indicated that the QC samples were treated the same as all samples in the analytical set. This includes being held for as long after preparation as the test samples (e.g. analyzed in the same analytical run).

2. **Comment:** Navy Response to EPA Comment No. 17: Please clarify the rationale for not adding reference CVs to Figure 4-4 or the discussion. A valid reason for not comparing CVs may be that the reference samples were taken from intrinsically more variable habitat than the site samples. The variation in habitat itself could account in part for variation in contaminant concentrations, rather than variation in contaminant sources. The point of his comment is to graphically compare coefficients of variation for the same habitat type (intertidal, subtidal, saltmarsh, eelgrass) between the reference and sites. One reason for not comparing CVs would be if there is a large difference in the number of habitat-specific reference samples vs. the number of site samples of the same habitat type.

   Response: As presented in the Navy Response to EPA Comment No. 17, the number of samples per reference station was selected to represent the different habitats (intertidal, subtidal, saltmarsh, and eelgrass) and to obtain an adequate number of reference samples for comparison purposes. The four reference stations were also spread spatially throughout the Piscataqua River in an effort to account for variation of chemical levels in the estuary. Therefore, it is expected that the reference station data set could have more variability than individual monitoring stations so it does not appear appropriate to include the reference station CVs to Figure 4-4 in the Baseline Report. As part of the Five-Year Review Report, the CVs at the reference stations (especially the CVs within the different habitats) may be evaluated as part of the discussions between the Navy, regulators, and RAB, regarding the need for weighting data from different areas within a monitoring station.

RESPONSES TO COMMENTS FROM MEDEP DATED JULY 2, 2002
DRAFT FINAL BASELINE INTERIM OFFSHORE MONITORING REPORT FOR OU4
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

General

1. **Comment:** Tables 4-7 and 4-8: These tables show BSAFs for organics as requested in our Feb. 19, 2002 comments. However, no BAFs are shown for the inorganic compounds. This omission should be explained or corrected.

   Response: Tables 4-7 and 4-8 present the minimum, maximum, and mean BAFs for the individual metals. The overall minimum, maximum, and average BAFs were not calculated for metals as a group as they were for the organic chemical groups. For the organic chemicals, BSAFs are typically used as groupings of similar chemicals (e.g., PAH BSAFs, dioxin BSAFs). However, this is not usually done for metals. The following footnote will be added to the minimum, maximum, and average BSAF values in Tables 4-7 and 4-8 to clarify this: "1 - These BSAFs are the minimum, maximum, and average values of the mean BSAFs across each chemical class (i.e., dioxins, PAHs, pesticides, and PCBs). Minimum, maximum, and average BAFs were not calculated across the metals, but the table has the minimum, maximum, and average BAF for each individual metal, which is how they are typically reported."

2. **Comment:** 6.3.1 AVS and SEM Evaluation, p. 6-4; "Based on the above table, there does not appear to be a significant difference in SEM minus AVS concentrations...between the 0 to 2 cm and 0 to 10 cm samples."

   In our Feb. 19, 2002 comment letter we objected to the above wording. The MEDEP strongly disagreed that the 0-2 cm and 0-10 cm samples could be compared to each other due to differences in collecting the samples at each interval. The phrase "...or between the 0 to 2 cm and 0 to 10 cm samples" should be omitted.

   Response: The Navy agrees that there is uncertainty in comparing the AVS and SEM data between the two depth intervals because of differences in sampling techniques. However, the results of the evaluation of the two depths was conducted in the Baseline Report, in accordance with the monitoring plan. Therefore, the Navy does not feel that it is appropriate to delete the phrase, because it is more of a factual statement, and the results of the evaluations conducted in the report need to be explained. The following text will be added to the end of the first sentence after the table on Page 6-4: "(see Section 9.9 for a discussion of the uncertainties regarding comparison of the 0 to 2 cm and 0 to 10 cm AVS data)."