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C-NAVY-1-99-1315W

January 20, 1999

Project Number N7397

Mr. James Shafer
Remedial Project Manager
Northern Division, Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, Pennsylvania 19113

Reference: CLEAN Contract No. N62472-90-D-1298
Contract Task Order No. 0269

Subject: Transmittal of OFFTA Ecorisk Data Revisions
Naval Station - Newport, Newport Rhode Island

Dear Mr. Shafer:

Enclosed you will find three copies of amendments to the Technical Support Document for the Marine Ecological Risk Assessment at Old Fire Fighting Training Area (OFFTA). These amendments consist of supplemental information and replacement tables for several sections of the Technical Support Document submitted to you on December 10, 1998. These include the following:

1. Replacement summary of tissue data - replace Appendix A-4 containing raw data with these new tables containing validated data.

2. Data validation memoranda describing analysis of tissue for organic compounds - add this material to Appendix C-3.

3. Replacement summary of elutriate data - Replace Appendix A-2: Additional metals data not reported previously are identified with shaded background on these tables.

4. Replacement summary of sediment data - Replace Appendix A-1: Revised grain size data for stations 19-23 are identified with shaded background on these tables (pages 15 and 18 only).

As you know, we are scheduled to complete the ecological risk assessment report for this site by February 23, 1998. If you have any questions regarding this material, please do not hesitate to contact me.

Very truly yours,

Stephen S. Parker
Project Manager

SSP/rt

Enclosure

c: M. Griffin, NETC (w/encl. - 4)
K. Keckler, USEPA (w/encl. - 3)
P. Kulpa, RIDEM (w/encl. - 4)
J. Stump, Gannett Fleming (w/encl. - 2)
K. Finkelstien, NOAA (w/encl. - 1)
D. Egan, TAG (w/encl. - 1)
J. Trepanowski/G. Glenn, TtNUS (w/encl. - 1)
File N7397-3.2 (w/o encl.)

# APPENDIX A-4
# RESULTS OF TISSUE CHEMICAL ANALYSES. ORGANICS, METALS

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-1-BM-052698 | | OFF-1-CN-072298 | | OFF-2-BM-052698 | | OFF-2-CN-072098 | | OFF-3-BM-052698 | | OFF-3-CN-072098 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-1 | | OFF-2 | | OFF-2 | | OFF-3 | | OFF-3 | |
| Date Sampled | 5/26/98 | | 7/22/98 | | 5/26/98 | | 7/20/98 | | 5/26/98 | | 7/20/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-CUNNER | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 6 95 | | 7 28 | | 4 30 | U | 3 12 | U | 7 12 | | 3 81 | U |
| 1-Methylphenanthrene | 2 82 | | 2 08 | U | 2 95 | | 0 88 | U | 3 36 | | 1 73 | U |
| 2,3,5-Trimethylnaphthalene | 1 40 | U | 1 22 | U | 1 20 | | 0 52 | U | 2 49 | | 1 01 | U |
| 2,6-Dimethylnaphthalene | 5 28 | | 2 50 | | 3 34 | | 1 44 | | 4 96 | | 1 92 | |
| 2-Methylnaphthalene | 12 44 | | 10 99 | | 7 32 | U | 6 32 | U | 9 88 | U | 4 67 | U |
| Acenaphthene | 3 42 | | 4 56 | | 2 50 | | 3 20 | | 2 91 | | 2 35 | |
| Acenaphthylene | 5 13 | | 1 44 | J | 4 94 | | 0 75 | | 5 89 | | 1 43 | U |
| Anthracene | 6 47 | J | 1 06 | U | 7 37 | J | 0 60 | J | 8 96 | J | 0 94 | J |
| Benzo(a)anthracene | 8 18 | | 2 58 | U | 16 39 | | 0 38 | J | 7 48 | | 0 56 | J |
| Benzo(a)pyrene | 4 79 | | 2 96 | U | 8 77 | | 1 26 | U | 5 49 | | 2 46 | U |
| Benzo(b)fluoranthene | 9 41 | | 2 17 | U | 12 41 | | 0 93 | U | 9 54 | | 1 81 | U |
| Benzo(e)pyrene | 15 29 | | 2 58 | U | 19 08 | | 0 73 | J | 17 75 | | 1 13 | J |
| Benzo(g,h,i)perylene | 9 61 | | 1 64 | U | 11 13 | | 0 70 | U | 6 84 | J | 1 36 | U |
| Benzo(k)fluoranthene | 8 47 | | 1 78 | U | 15 75 | | 0 76 | U | 10 36 | | 1 48 | U |
| Biphenyl | 3 44 | | 1 75 | | 1 33 | | 0 76 | | 2 16 | | 1 78 | |
| Chrysene | 23 07 | | 1 59 | U | 28 71 | | 0 71 | | 27 23 | | 1 13 | J |
| Dibenzo(a,h)anthracene | 1 70 | U | 1 48 | U | 1 24 | | 0 63 | U | 1 02 | J | 1 23 | U |
| Fluoranthene | 47 20 | | 2 84 | | 58 36 | | 2 92 | | 67 39 | | 2 92 | |
| Fluorene | 3 14 | | 2 20 | | 4 03 | | 1 64 | | 11 19 | | 1 54 | |
| Indeno(1,2,3-cd)pyrene | 5 29 | | 2 13 | U | 8 07 | | 0 91 | U | 3 85 | J | 1 77 | U |
| Naphthalene | 17 24 | | 12 15 | U | 9 63 | U | 7 04 | U | 11 93 | U | 9 37 | U |
| Perylene | 9 08 | | 5 29 | | 13 31 | | 2 34 | U | 18 46 | | 16 00 | |
| Phenanthrene | 17 35 | | 3 39 | U | 17 99 | | 2 70 | U | 20 48 | | 2 48 | U |
| Pyrene | 34 16 | | 2 20 | U | 46 61 | | 2 03 | U | 41 22 | | 2 26 | U |
| Total PAH | 258 23 | | 56 59 | | 306 73 | | 36 68 | | 307 96 | | 52 86 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 2 29 | | 3 12 | | 1 91 | | 1 68 | | 3 27 | | 1 10 | |
| 2,4'-DDE | 1 97 | U | 1 72 | U | 0 98 | U | 0 73 | U | 1 83 | U | 1 43 | U |
| 2,4'-DDT | 1 18 | J | 3 17 | | 2 34 | | 3 07 | | 1 76 | J | 2 06 | |
| 4,4'-DDD | 5 24 | | 11 57 | | 4 35 | | 8 21 | | 8 54 | | 5 60 | |
| 4,4'-DDE | 13 04 | | 45 15 | | 13 87 | | 39 95 | | 18 28 | | 31 03 | |
| 4,4'-DDT | 2 41 | | 12 94 | | 4 18 | | 11 87 | | 5 41 | | 10 22 | |
| Aldrin | 0 27 | U | 0 23 | U | 0 13 | U | 0 10 | U | 0 25 | U | 0 19 | U |
| alpha-Chlordane | 4 72 | | 7 97 | | 4 93 | | 6 90 | | 4 60 | | 3 63 | |
| Dieldrin | 2 42 | | 9 80 | | 2 67 | | 6 93 | | 5 66 | | 5 80 | |
| Endosulfan I | 0 89 | U | 0 77 | U | 1 80 | | 0 33 | U | 0 82 | U | 0 64 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-1-BM-052698 | | OFF-1-CN-072298 | | OFF-2-BM-052698 | | OFF-2-CN-072098 | | OFF-3-BM-052698 | | OFF-3-CN-072098 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-1 | | OFF-2 | | OFF-2 | | OFF-3 | | OFF-3 | |
| Date Sampled | 5/26/98 | | 7/22/98 | | 5/26/98 | | 7/20/98 | | 5/26/98 | | 7/20/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-CUNNER | |
| Endosulfan II | 3 03 | | 6 38 | | 2 91 | | 6 15 | | 0 64 | J | 3 53 | |
| Endrin | 1 20 | U | 1 05 | U | 0 60 | U | 0 45 | U | 1 12 | U | 0 87 | U |
| gamma-BHC | 0 37 | | 0 55 | | 0 30 | | 0 43 | | 0 41 | | 0 20 | |
| Heptachlor | 1 09 | U | 0 95 | U | 0 54 | U | 0 41 | U | 1 01 | U | 0 79 | U |
| Heptachlor epoxide | 0 44 | U | 1 00 | J | 0 22 | U | 0 84 | J | 0 48 | | 0 54 | J |
| Hexachlorobenzene | 0 42 | U | 2 74 | | 0 25 | | 1 56 | | 0 27 | J | 1 01 | |
| Mirex | 0 52 | U | 0 46 | U | 0 26 | U | 0 19 | U | 0 68 | | 0 38 | U |
| PCB 101 | 15 21 | | 31 99 | | 13 95 | | 15 05 | | 16 57 | | 27 41 | |
| PCB 103 | 39 35 | | 35 10 | | 21 61 | | 15 53 | | 37 48 | | 29 27 | |
| PCB 105 | 2 64 | | 7 87 | | 2 62 | | 9 92 | | 1 15 | U | 5 17 | |
| PCB 112 | 36 61 | | 32 41 | | 19 34 | | 15 41 | | 33 71 | | 28 69 | |
| PCB 118 | 14 49 | | 43 24 | | 11 97 | | 54 72 | | 17 92 | | 36 04 | |
| PCB 126 | 0 90 | U | 0 79 | U | 0 45 | U | 0 34 | U | 0 84 | U | 0 65 | U |
| PCB 128 | 3 86 | | 9 15 | | 4 04 | | 11 93 | | 1 44 | U | 5 10 | |
| PCB 138 | 30 84 | | 92 08 | | 29 24 | | 137 10 | | 35 06 | | 79 22 | |
| PCB 153 | 50 46 | | 137 60 | | 46 64 | | 216 63 | | 53 60 | | 120 05 | |
| PCB 166 | 107 83 | | 81 13 | | 46 11 | | 34 81 | | 88 27 | | 77 32 | |
| PCB 170 | 1 16 | U | 20 30 | | 1 24 | | 27 49 | | 1 44 | | 18 46 | |
| PCB 18 | 0 55 | U | 0 48 | U | 0 95 | J | 0 21 | U | 1 11 | | 0 40 | UJ |
| PCB 180 | 6 05 | | 42 62 | | 4 27 | | 77 14 | | 3 11 | U | 38 98 | |
| PCB 187 | 15 96 | | 42 39 | | 15 72 | | 63 16 | | 16 99 | | 36 07 | |
| PCB 188 | 1 36 | U | 1 19 | U | 0 68 | U | 0 51 | U | 1 27 | U | 0 99 | U |
| PCB 195 | 0 81 | U | 4 76 | | 0 40 | U | 5 50 | | 0 76 | U | 3 73 | |
| PCB 200 | 0 81 | U | 0 71 | U | 0 40 | U | 0 30 | U | 0 76 | U | 0 59 | U |
| PCB 206 | 0 77 | | 2 53 | | 0 29 | J | 4 35 | | 0 72 | U | 2 10 | |
| PCB 209 | 1 61 | | 2 98 | | 0 92 | | 2 83 | | 1 51 | | 2 36 | |
| PCB 28 | 0 85 | | 2 36 | | 1 05 | | 1 57 | | 1 70 | | 1 23 | |
| PCB 29 | 0 38 | U | 0 33 | U | 0 19 | U | 0 14 | U | 0 35 | U | 0 28 | U |
| PCB 34 | 38 75 | | 33 77 | | 19 28 | | 14 38 | | 35 98 | | 28 06 | |
| PCB 44 | 1 83 | | 1 93 | | 2 53 | | 1 80 | | 2 20 | | 0 32 | U |
| PCB 50 | 0 33 | U | 0 29 | U | 0 16 | U | 0 12 | U | 0 31 | U | 0 24 | U |
| PCB 52 | 4 56 | | 11 45 | | 5 92 | | 9 17 | | 4 85 | | 7 24 | |
| PCB 66 | 2 04 | | 2 75 | | 2 12 | | 1 62 | | 3 57 | | 0 69 | J |
| PCB 8 | 2 08 | J | 16 45 | | 2 39 | | 15 75 | | 2 26 | | 13 33 | |
| PCB 87 | 2 74 | | 7 89 | | 2 74 | | 6 42 | | 4 78 | | 3 90 | |
| Sum of PCB Congeners | 162 30 | | 484 14 | | 150 88 | | 663 77 | | 174 25 | | 404 56 | |
| Sum of PCB Congeners X 2 | 324 60 | | 968 27 | | 301 76 | | 1327 53 | | 348 50 | | 809 11 | |
| trans-Nonachlor | 3 44 | | 10 33 | | 4 08 | | 10 71 | | 4 31 | | 6 69 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAININ CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-1-BM-052698 | | OFF-1-CN-072298 | | OFF-2-BM-052698 | | OFF-2-CN-072098 | | OFF-3-BM-052698 | | OFF-3-CN-072098 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-1 | | OFF-2 | | OFF-2 | | OFF-3 | | OFF-3 | |
| Date Sampled | 5/26/98 | | 7/22/98 | | 5/26/98 | | 7/20/98 | | 5/26/98 | | 7/20/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-CUNNER | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 189 2 | J | 124 6 | | 58 3 | J | 141 6 | | 20 | UJ | 134 7 | |
| Arsenic | 1 4 | | 4 6 | | 2 | | 5 2 | | 1 8 | | 3 9 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 9 1 | | 2 3 | | 13 2 | | 2 9 | | 9 3 | | 2 5 | |
| Chromium | 0 5 | U | 36 9 | | 0 5 | U | 28 5 | | 0 5 | U | 25 4 | |
| Copper | 6 7 | | 32 4 | | 6 1 | | 25 6 | | 5 | U | 30 4 | |
| Iron | 320 6 | | 78 1 | | 466 1 | | 66 4 | | 378 7 | | 68 1 | |
| Lead | 4 2 | | 4 4 | | 3 | | 5 1 | | 6 3 | | 5 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 3 | | | R | 1 3 | | | R | 2 9 | | | R |
| Nickel | 7 1 | | 0 5 | U | 7 3 | | 0 5 | U | 12 4 | | 0 5 | U |
| Silver | 0 5 | U | 0 9 | | 0 5 | U | 1 | | 0 5 | U | 0 9 | |
| Zinc | | NA | 18 1 | | 157 3 | | 22 7 | | 148 | | 23 9 | |



U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-4-BM-052698 | | OFF-4-CN-071798 | | OFF-5-BM-052698 | | OFF-5-BM-052698-FD | | OFF-6-BM-052698 | | OFF-7-BM-052698 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-4 | | OFF-4 | | OFF-5 | | OFF-5 | | OFF-6 | | OFF-7 | |
| Date Sampled | 5/26/98 | | 7/17/98 | | 5/26/98 | | 5/26/98 | | 5/26/98 | | 5/26/98 | |
| QC Type | None | | None | | Dup of OFF-5-BM-052698 | | Dup of OFF-5-BM-052698 | | None | | None | |
| Matrix | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-MUSSEL | | TISSUE-MUSSEL | | TISSUE-MUSSEL | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 4 35 | U | 7 68 | | 9 55 | J | 5 61 | U | 5 22 | U | 6 46 | U |
| 1-Methylphenanthrene | 4 07 | | 6 59 | U | 5 31 | J | 3 56 | | 4 30 | | 5 31 | |
| 2,3,5-Trimethylnaphthalene | 2 58 | | 3 86 | U | 5 34 | | 3 22 | | 2 79 | | 3 10 | |
| 2,6-Dimethylnaphthalene | 3 67 | | 5 87 | J | 7 07 | | 4 27 | | 4 54 | | 5 51 | |
| 2-Methylnaphthalene | 7 59 | U | 13 12 | | 17 23 | J | 10 08 | | 9 35 | U | 12 03 | |
| Acenaphthene | 5 22 | | 6 22 | U | 7 67 | J | 3 55 | | 3 85 | | 5 27 | |
| Acenaphthylene | 4 61 | | 5 46 | U | 7 32 | | 4 51 | | 4 07 | | 4 24 | |
| Anthracene | 7 24 | J | 3 37 | U | 9 74 | J | 7 93 | J | 7 84 | J | 11 26 | J |
| Benzo(a)anthracene | 12 03 | | 8 20 | U | 15 86 | | 12 81 | | 11 82 | | 18 30 | |
| Benzo(a)pyrene | 6 80 | | 9 40 | U | 9 96 | | 6 97 | | 5 88 | | 9 80 | |
| Benzo(b)fluoranthene | 12 46 | | 6 90 | U | 17 85 | | 13 89 | | 12 89 | | 23 39 | |
| Benzo(e)pyrene | 17 97 | | 8 17 | U | 30 35 | | 28 84 | | 28 08 | | 42 73 | |
| Benzo(g,h,i)perylene | 9 09 | J | 5 19 | U | 16 41 | J | 11 34 | | 11 87 | J | 16 04 | J |
| Benzo(k)fluoranthene | 12 16 | | 5 65 | U | 18 18 | | 14 16 | | 12 54 | | 23 23 | |
| Biphenyl | 1 62 | | 5 45 | U | 4 78 | UJ | 1 15 | | 1 37 | | 1 02 | |
| Chrysene | 24 13 | | 2 33 | J | 36 59 | | 34 66 | | 29 37 | | 43 66 | |
| Dibenzo(a,h)anthracene | 1 08 | J | 4 69 | U | 4 12 | U | 1 03 | | 1 23 | J | 2 04 | J |
| Fluoranthene | 60 09 | | 5 42 | J | 90 97 | | 81 84 | | 72 08 | | 109 62 | |
| Fluorene | 7 01 | | 4 51 | U | 11 56 | J | 5 45 | | 6 39 | | 8 49 | |
| Indeno(1,2,3-cd)pyrene | 6 99 | J | 6 74 | U | 11 49 | J | 6 85 | | 7 57 | J | 10 69 | J |
| Naphthalene | 7 31 | U | 30 96 | | 29 01 | J | 9 92 | U | 8 67 | U | 9 28 | U |
| Perylene | 11 86 | | 19 85 | | 4 15 | U | 3 45 | U | 4 09 | U | 4 71 | U |
| Phenanthrene | 17 84 | | 5 94 | | 32 02 | J | 18 91 | | 18 55 | | 31 03 | |
| Pyrene | 43 04 | | 5 26 | J | 71 97 | | 57 94 | | 55 62 | | 95 78 | |
| Total PAH | 290 80 | | 96 43 | | 465 61 | | 351 94 | | 329 98 | | 502 97 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 3 01 | | 2 27 | U | 2 95 | | 2 13 | | 2 63 | | 3 97 | |
| 2,4'-DDE | 1 00 | U | 5 46 | U | 4 80 | U | 0 83 | U | 1 21 | U | 0 83 | U |
| 2,4'-DDT | 1 92 | | 2 45 | J | 2 93 | J | 1 95 | | 0 83 | J | 1 15 | |
| 4,4'-DDD | 7 16 | | 6 51 | | 9 38 | J | 5 24 | | 6 62 | | 10 57 | |
| 4,4'-DDE | 14 75 | | 33 17 | | 15 75 | | 13 50 | | 2 15 | U | 19 07 | |
| 4,4'-DDT | 4 13 | | 7 44 | | 3 85 | | 3 37 | | 4 05 | | 4 33 | |
| Aldrin | 0 13 | U | 0 74 | U | 0 65 | U | 0 11 | U | 0 16 | U | 0 11 | U |
| alpha-Chlordane | 4 01 | | 7 04 | | 4 70 | | 4 61 | | 0 24 | U | 4 47 | |
| Dieldrin | 6 41 | | 4 22 | J | 5 96 | | 3 31 | | 3 54 | | 5 28 | |
| Endosulfan I | 0 45 | U | 2 45 | U | 2 15 | U | 0 37 | U | 0 54 | U | 0 37 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWP RT, RH DE ISLAND**

| Sample Number | OFF-4-BM-052698 | | OFF-4-CN-071798 | | OFF-5-BM-052698 | | OFF-5-BM-052698-FD | | OFF-6-BM-052698 | | OFF-7-BM-052698 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-4 | | OFF-4 | | OFF-5 | | OFF-5 | | OFF-6 | | OFF-7 | |
| Date Sampled | 5/26/98 | | 7/17/98 | | 5/26/98 | | 5/26/98 | | 5/26/98 | | 5/26/98 | |
| QC Type | None | | None | | Dup of OFF-5-BM-052698 | | Dup of OFF-5-BM-052698 | | None | | None | |
| Matrix | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-MUSSEL | | TISSUE-MUSSEL | | TISSUE-MUSSEL | |
| Endosulfan II | 0 33 | J | 5 42 | | 0 71 | J | 2 98 | | 0 37 | J | 0 39 | J |
| Endrin | 0 61 | U | 3 33 | U | 2 92 | U | 0 50 | U | 0 74 | U | 0 51 | U |
| gamma-BHC | 0 58 | | 0 75 | U | 0 66 | | 0 46 | | 0 34 | | 0 72 | |
| Heptachlor | 0 55 | U | 3 02 | U | 2 65 | U | 0 46 | U | 0 67 | U | 0 46 | U |
| Heptachlor epoxide | 0 22 | U | 1 22 | UJ | 1 08 | U | 0 19 | U | 0 27 | U | 0 41 | |
| Hexachlorobenzene | 0 33 | | 1 39 | | 0 54 | J | 0 18 | J | 0 59 | | 0 24 | |
| Mirex | 0 74 | | 1 44 | U | 5 73 | J | 0 22 | U | 0 35 | | 0 33 | |
| PCB 101 | 13 16 | | 20 48 | | 15 44 | | 15 36 | | 10 59 | | 14 02 | |
| PCB 103 | 20 32 | | 105 04 | | 100 59 | | 16 97 | | 24 47 | | 16 88 | |
| PCB 105 | 3 59 | | 10 99 | | 3 93 | | 4 53 | | 3 01 | | 4 13 | |
| PCB 112 | 18 01 | | 106 00 | | 90 22 | | 15 74 | | 21 30 | | 15 22 | |
| PCB 118 | 13 74 | | 58 78 | | 15 74 | | 12 44 | | 1 90 | U | 16 28 | |
| PCB 126 | 0 46 | U | 2 50 | U | 2 20 | U | 0 38 | U | 0 56 | U | 0 38 | U |
| PCB 128 | 0 50 | J | 9 37 | | 3 77 | UJ | 3 81 | | 1 68 | | 0 65 | U |
| PCB 138 | 26 52 | | 112 84 | | 31 83 | | 27 68 | | 22 88 | | 31 92 | |
| PCB 153 | 41 28 | | 176 35 | | 48 13 | | 44 51 | | 36 68 | | 48 95 | |
| PCB 166 | 47 14 | | 232 16 | | 225 85 | | 41 57 | | 51 40 | | 43 21 | |
| PCB 170 | 0 95 | | 28 02 | | 0 85 | J | 0 49 | U | 0 84 | | 1 01 | |
| PCB 18 | 0 93 | | 1 53 | UJ | 0 82 | J | 1 16 | J | 0 78 | | 1 16 | |
| PCB 180 | 15 57 | | 64 15 | | 16 09 | J | 4 80 | | 13 36 | | 4 06 | |
| PCB 187 | 12 77 | | 54 04 | | 14 65 | | 14 61 | | 11 06 | | 15 77 | |
| PCB 188 | 0 69 | U | 3 77 | U | 3 31 | U | 0 57 | U | 0 84 | U | 0 57 | U |
| PCB 195 | 0 15 | J | 6 57 | | 1 98 | U | 0 34 | U | 0 11 | J | 0 34 | U |
| PCB 200 | 0 41 | U | 2 25 | U | 1 98 | U | 0 34 | U | 0 50 | U | 0 34 | U |
| PCB 206 | 0 26 | J | 2 86 | | 1 17 | J | 0 76 | | 0 13 | J | 0 32 | U |
| PCB 209 | 1 44 | | 5 01 | | 1 51 | J | 0 83 | | 0 97 | | 1 11 | |
| PCB 28 | 1 30 | | 1 05 | U | 1 34 | | 1 17 | | 1 51 | | 1 85 | |
| PCB 29 | 0 19 | U | 1 05 | U | 0 92 | U | 0 16 | U | 0 23 | U | 0 16 | U |
| PCB 34 | 19 55 | | 107 14 | | 94 12 | | 16 25 | | 23 80 | | 16 32 | |
| PCB 44 | 1 75 | | 1 24 | U | 1 60 | J | 3 39 | | 1 82 | | 2 55 | |
| PCB 50 | 0 17 | U | 0 92 | U | 0 80 | U | 0 14 | U | 0 20 | U | 0 14 | U |
| PCB 52 | 3 87 | | 7 10 | | 4 37 | | 4 92 | | 3 99 | | 4 08 | |
| PCB 66 | 2 88 | | 4 63 | U | 4 36 | J | 2 20 | | 2 86 | | 3 86 | |
| PCB 8 | 2 32 | | 18 08 | | 2 12 | J | 1 95 | | 2 89 | | 2 04 | |
| PCB 87 | 3 55 | | 2 48 | J | 4 84 | | 2 97 | | 3 23 | | 4 12 | |
| Sum of PCB Congeners | 148 47 | | 596 05 | | 183 77 | | 149 52 | | 122 64 | | 159 84 | |
| Sum of PCB Congeners X 2 | 296 93 | | 1192 10 | | 367 53 | | 299 04 | | 245 27 | | 319 67 | |
| trans-Nonachlor | 3 69 | | 8 11 | | 3 50 | | 3 04 | | 3 16 | | 4 06 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWP RT, RH DE ISLAND**

| Sample Number | OFF-4-BM-052698 | | OFF-4-CN-071798 | | OFF-5-BM-052698 | | OFF-5-BM-052698-FD | | OFF-6-BM-052698 | | OFF-7-BM-052698 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-4 | | OFF-4 | | OFF-5 | | OFF-5 | | OFF-6 | | OFF-7 | |
| Date Sampled | 5/26/98 | | 7/17/98 | | 5/26/98 | | 5/26/98 | | 5/26/98 | | 5/26/98 | |
| QC Type | None | | None | | Dup of OFF-5-BM-052698 | | Dup of OFF-5-BM-052698 | | None | | None | |
| Matrix | TISSUE-MUSSEL | | TISSUE-CUNNER | | TISSUE-MUSSEL | | TISSUE-MUSSEL | | TISSUE-MUSSEL | | TISSUE-MUSSEL | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 128 2 | J | 115 9 | | 20 | UJ | 101 | J | 20 | UJ | 212 6 | J |
| Arsenic | 0 9 | | 4 2 | | 2 7 | | 1 9 | | 1 4 | | 2 5 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 5 | | 2 9 | | 6 6 | | 5 5 | | 11 4 | | 17 | |
| Chromium | 10 3 | | 21 7 | | 0 5 | U | 0 5 | U | 35 3 | | 40 5 | |
| Copper | 1 4 | J | 29 4 | | 10 | | 6 2 | | 4 | | 5 | U |
| Iron | 484 3 | | 70 3 | | 538 2 | | 476 9 | | 333 4 | | 498 2 | |
| Lead | 4 1 | | 4 7 | | 5 2 | | 3 6 | | 5 8 | | 3 7 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 1 9 | | | R | 1 6 | | 2 7 | | 1 9 | | 2 1 | |
| Nickel | 5 7 | | 0 5 | U | 7 5 | | 8 1 | | 9 | | 10 3 | |
| Silver | 0 5 | U | 0 8 | | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| Zinc | 94 | | 20 9 | | 143 5 | | 148 7 | | 103 4 | | 119 6 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWP RT, RH DE ISLAND**

| Sample Number | OFF-8-HC-051498 | | OFF-10-HC-051498 | | OFF-10-HC-051498-FD | | OFF-11-HC-051498 | | OFF-12-HC-051498 | | OFF-13-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-8 | | OFF-10 | | OFF-10 | | OFF-11 | | OFF-12 | | OFF-13 | |
| Date Sampled | 5/14/98 | | 5/14/98 | | 5/21/98 | | 5/14/98 | | 5/14/98 | | 8/17/98 | |
| QC Type | None | | Dup of OFF-10-HC-051498 | | Dup of OFF-10-HC-051498 | | None | | None | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | DEPLOYED MUSSEL | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 2 34 | U | 19 31 | | 3 68 | U | 2 27 | U | 1 85 | U | 6 07 | U |
| 1-Methylphenanthrene | 1 27 | J | 11 08 | U | 1 33 | J | 3 05 | | 2 09 | | 4 53 | |
| 2,3,5-Trimethylnaphthalene | 1 01 | U | 6 49 | U | 1 21 | U | 1 04 | | 1 22 | | 4 00 | J |
| 2,6-Dimethylnaphthalene | 1 86 | | 10 08 | U | 1 90 | | 1 57 | | 1 32 | | 5 65 | |
| 2-Methylnaphthalene | 3 83 | U | 24 49 | | 4 51 | U | 3 33 | U | 2 42 | U | 10 39 | |
| Acenaphthene | 1 23 | J | 10 46 | U | 1 65 | J | 1 52 | | 1 49 | | 5 90 | |
| Acenaphthylene | 1 60 | | 9 17 | U | 1 26 | J | 1 56 | | 2 51 | | 7 43 | |
| Anthracene | 3 39 | J | 7 78 | J | 3 66 | J | 4 69 | J | 4 89 | J | 13 60 | J |
| Benzo(a)anthracene | 2 23 | | 4 47 | J | 6 87 | | 5 63 | | 7 33 | | 32 87 | |
| Benzo(a)pyrene | 1 51 | J | 5 04 | J | 5 11 | | 6 08 | | 4 23 | | 11 36 | |
| Benzo(b)fluoranthene | 3 06 | | 5 97 | J | 6 46 | | 8 12 | | 6 18 | | 46 37 | |
| Benzo(e)pyrene | 5 22 | | 10 64 | J | 8 52 | | 14 15 | | 12 49 | | 78 44 | |
| Benzo(g,h,i)perylene | 1 77 | J | 8 72 | U | 5 81 | J | 8 45 | J | 4 30 | J | 19 24 | |
| Benzo(k)fluoranthene | 2 06 | | 5 61 | J | 7 58 | | 9 84 | | 6 36 | | 37 89 | |
| Biphenyl | 1 87 | | 9 15 | U | 1 45 | J | 0 79 | J | 0 68 | J | 1 70 | |
| Chrysene | 6 59 | | 13 67 | | 12 50 | | 18 74 | | 15 83 | | 63 38 | |
| Dibenzo(a,h)anthracene | 1 23 | U | 7 88 | U | 1 47 | U | 0 97 | J | 0 63 | U | 3 07 | |
| Fluoranthene | 21 22 | | 27 95 | | 28 53 | | 38 20 | | 45 41 | | 169 45 | |
| Fluorene | 1 66 | | 7 58 | U | 1 25 | J | 1 60 | | 2 09 | | 8 22 | |
| Indeno(1,2,3-cd)pyrene | 1 77 | UJ | 11 33 | UJ | 3 46 | J | 5 43 | J | 1 97 | J | 10 51 | |
| Naphthalene | 5 79 | U | 47 00 | | 8 36 | U | 6 59 | U | 3 69 | U | 11 91 | U |
| Perylene | 1 31 | U | 5 05 | UJ | 2 40 | U | 3 17 | U | 2 64 | U | 9 18 | |
| Phenanthrene | 5 98 | | 16 43 | | 10 23 | | 10 85 | | 11 48 | | 20 31 | |
| Pyrene | 18 83 | | 24 37 | | 24 66 | | 30 20 | | 36 70 | | 122 97 | |
| Total PAH | 94 61 | | 217 76 | | 151 16 | | 187 86 | | 179 17 | | 704 46 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 2 78 | | 14 12 | | 7 75 | | 5 45 | | 2 94 | | 3 37 | |
| 2,4'-DDE | 1 43 | U | 9 17 | U | 1 71 | U | 1 27 | U | 0 74 | U | 1 61 | U |
| 2,4'-DDT | 0 16 | J | 1 62 | J | 0 26 | J | 1 53 | U | 0 16 | J | 0 99 | J |
| 4,4'-DDD | 1 39 | U | 6 80 | J | 2 63 | U | 2 93 | U | 2 83 | U | 13 00 | |
| 4,4'-DDE | 2 56 | | 1 89 | J | 3 15 | | 5 87 | | 3 79 | | 19 36 | |
| 4,4'-DDT | 1 13 | U | 7 23 | U | 0 64 | UJ | 0 54 | UJ | 0 48 | UJ | 1 15 | J |
| Aldrin | 0 19 | U | 1 24 | U | 0 23 | U | 0 17 | U | 0 10 | U | 0 22 | U |
| alpha-Chlordane | 0 97 | | 1 84 | U | 1 18 | | 1 17 | | 0 96 | | 14 54 | |
| Dieldrin | 3 67 | | 10 19 | U | 4 11 | | 2 33 | | 2 01 | | 2 98 | |
| Endosulfan I | 0 64 | U | 4 12 | U | 0 77 | U | 0 57 | U | 0 33 | U | 0 72 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAININ CENTER**
**NEWP RT, RH DE ISLAND**

| Sample Number | OFF-8-HC-051498 | | OFF-10-HC-051498 | | OFF-10-HC-051498-FD | | OFF-11-HC-051498 | | OFF-12-HC-051498 | | OFF-13-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-8 | | OFF-10 | | OFF-10 | | OFF-11 | | OFF-12 | | OFF-13 | |
| Date Sampled | 5/14/98 | | 5/14/98 | | 5/21/98 | | 5/14/98 | | 5/14/98 | | 8/17/98 | |
| QC Type | None | | Dup of OFF-10-HC-051498 | | Dup of OFF-10-HC-051498 | | None | | None | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | DEPLOYED MUSSEL | |
| Endosulfan II | 1 25 | | 4 44 | J | 2 30 | | 2 99 | | 1 43 | | 2 63 | |
| Endrin | 0 87 | U | 5 59 | U | 1 04 | U | 0 77 | U | 0 45 | U | 0 98 | U |
| gamma-BHC | 0 20 | U | 2 32 | | 2 29 | | 0 17 | U | 1 65 | | 0 51 | |
| Heptachlor | 0 79 | U | 5 07 | U | 0 95 | U | 0 70 | U | 0 41 | U | 0 89 | U |
| Heptachlor epoxide | 0 32 | U | 2 06 | U | 0 38 | U | 0 28 | U | 0 17 | U | 0 36 | U |
| Hexachlorobenzene | 0 74 | | 0 85 | J | 1 09 | | 0 97 | | 0 57 | | 0 34 | J |
| Mirex | 0 28 | J | 2 43 | U | 0 35 | J | 0 24 | J | 0 20 | | 0 43 | U |
| PCB 101 | 3 90 | | 3 03 | J | 3 17 | | 4 00 | | 3 41 | | 25 89 | |
| PCB 103 | 29 09 | | 183 05 | | 35 97 | | 26 43 | | 15 50 | | 32 56 | |
| PCB 105 | 0 90 | U | 5 74 | U | 3 88 | | 0 79 | U | 0 77 | | 2 86 | |
| PCB 112 | 28 15 | | 177 52 | | 35 03 | | 24 72 | | 14 50 | | 43 84 | |
| PCB 118 | 3 09 | | 1 13 | J | 2 24 | J | 3 64 | | 3 45 | | 12 02 | |
| PCB 126 | 0 66 | U | 4 20 | U | 0 78 | U | 0 58 | U | 0 34 | U | 0 74 | U |
| PCB 128 | 1 13 | U | 7 22 | U | 1 35 | U | 1 00 | U | 0 58 | U | 2 70 | |
| PCB 138 | 6 64 | | 7 17 | J | 5 21 | | 6 54 | | 4 86 | U | 21 68 | |
| PCB 153 | 10 71 | | 9 09 | J | 8 71 | | 12 23 | | 9 39 | | 31 59 | |
| PCB 166 | 53 16 | | 471 30 | | 83 46 | | 61 32 | | 38 99 | | 57 27 | |
| PCB 170 | 1 36 | | 8 21 | | 1 83 | | 2 60 | | 1 36 | | 0 95 | U |
| PCB 18 | 0 40 | U | 2 57 | U | 0 48 | U | 0 35 | U | 0 29 | | 0 45 | U |
| PCB 180 | 6 74 | | 5 22 | J | 5 14 | | 6 26 | | 5 08 | | 5 14 | |
| PCB 187 | 4 83 | | 2 31 | J | 2 95 | | 4 17 | | 3 49 | | 10 37 | |
| PCB 188 | 0 99 | U | 6 34 | U | 1 18 | U | 0 87 | U | 0 51 | U | 1 11 | U |
| PCB 195 | 1 52 | | 0 86 | J | 0 96 | | 1 18 | | 1 00 | | 0 66 | U |
| PCB 200 | 0 59 | U | 3 78 | U | 0 71 | U | 0 52 | U | 0 30 | U | 0 66 | U |
| PCB 206 | 1 63 | | 0 67 | J | 0 75 | | 0 94 | | 0 75 | | 0 75 | |
| PCB 209 | 2 89 | | 3 57 | J | 1 84 | | 1 84 | | 1 28 | | 0 93 | U |
| PCB 28 | 0 51 | | 1 77 | U | 0 77 | | 1 34 | | 0 95 | | 1 85 | J |
| PCB 29 | 0 28 | U | 1 77 | U | 0 33 | U | 0 24 | U | 0 14 | U | 0 31 | U |
| PCB 34 | 28 14 | | 180 04 | | 33 62 | | 24 85 | | 14 48 | | 31 65 | |
| PCB 44 | 0 39 | | 2 08 | U | 0 47 | | 0 50 | | 0 55 | | 3 77 | |
| PCB 50 | 0 24 | U | 1 54 | U | 0 29 | U | 0 21 | U | 0 12 | U | 0 27 | U |
| PCB 52 | 1 38 | | 1 54 | U | 1 84 | | 1 22 | | 1 26 | | 7 73 | |
| PCB 66 | 1 24 | | 6 54 | J | 1 61 | | 1 52 | | 1 50 | | 3 14 | |
| PCB 8 | 1 24 | J | 3 33 | J | 2 81 | | 2 95 | | 1 29 | | 1 16 | J |
| PCB 87 | 1 01 | U | 4 01 | J | 0 99 | U | 1 31 | U | 0 98 | U | 3 52 | |
| Sum of PCB Congeners | 54 25 | | 93 68 | | 50 31 | | 56 83 | | 43 65 | | 140 27 | |
| Sum of PCB Congeners X 2 | 108 50 | | 187 36 | | 100 61 | | 113 67 | | 87 30 | | 280 54 | |
| trans-Nonachlor | 0 71 | | 2 79 | U | 0 50 | J | 0 83 | | 0 77 | | 5 67 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-8-HC-051498 | | OFF-10-HC-051498 | | OFF-10-HC-051498-FD | | OFF-11-HC-051498 | | OFF-12-HC-051498 | | OFF-13-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-8 | | OFF-10 | | OFF-10 | | OFF-11 | | OFF-12 | | OFF-13 | |
| Date Sampled | 5/14/98 | | 5/14/98 | | 5/21/98 | | 5/14/98 | | 5/14/98 | | 8/17/98 | |
| QC Type | None | | Dup of OFF-10-HC-051498 | | Dup of OFF-10-HC-051498 | | None | | None | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | | DEPLOYED MUSSEL | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 536 1 | J | 474 1 | J | 574 3 | J | 508 7 | J | 518 7 | J | 193 2 | |
| Arsenic | 4 5 | | 5 5 | | 5 4 | | 4 4 | | 5 4 | | 1 5 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 5 3 | | 6 1 | | 8 3 | | 6 7 | | 8 2 | | 14 3 | |
| Chromium | 0 5 | UJ | 0 5 | UJ | 11 6 | J | 6 6 | J | 0 5 | UJ | 26 4 | |
| Copper | 4 2 | J | 5 | U | 5 | U | 5 | U | 5 | U | 8 7 | |
| Iron | 186 5 | | 241 9 | | 421 5 | | 183 3 | | 154 1 | | 387 6 | |
| Lead | 4 4 | | 5 | | 6 2 | | 3 9 | | 6 9 | | 6 9 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 1 9 | | 2 8 | | 3 7 | | 2 1 | | 2 6 | | 2 | |
| Nickel | 19 5 | | 20 5 | | 29 3 | | 18 1 | | 24 8 | | 15 8 | |
| Silver | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| Zinc | 83 9 | | 87 1 | | 100 1 | | 68 7 | | 87 3 | | 202 6 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-13-LOB-061098 | | OFF-14-DEP | | OFF-14-LOB-061298 | | OFF-14-PM-052198 | | OFF-15-HC-051498 | | OFF-15-HC-051498-FD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-13 | | OFF-14 | | OFF-14 | | OFF-14 | | OFF-15 | | OFF-15 | |
| Date Sampled | 6/10/98 | | 8/17/98 | | 6/12/98 | | 5/21/98 | | 5/14/98 | | 5/14/98 | |
| QC Type | None | | None | | None | | None | | Dup of OFF-15-HC-051498 | | Dup of OFF-15-HC-051498 | |
| Matrix | TISSUE-LOBSTER | | DEPLOYED MUSSEL | | TISSUE-LOBSTER | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 5 51 | U | 5 42 | U | 3 84 | U | 3 04 | U | 1 87 | U | 3 11 | U |
| 1-Methylphenanthrene | 1 46 | | 3 17 | | 1 35 | U | 2 55 | | 1 30 | J | 1 52 | |
| 2,3,5-Trimethylnaphthalene | 0 85 | | 2 41 | | 0 79 | U | 1 19 | U | 1 06 | | 1 03 | |
| 2,6-Dimethylnaphthalene | 2 01 | | 6 19 | | 1 23 | U | 2 26 | | 1 43 | | 1 76 | |
| 2-Methylnaphthalene | 8 17 | | 9 60 | | 4 74 | U | 4 56 | U | 3 72 | U | 5 25 | U |
| Acenaphthene | 1 50 | | 9 80 | | 1 28 | U | 3 38 | | 1 04 | J | 1 42 | U |
| Acenaphthylene | 1 17 | U | 5 25 | | 1 12 | U | 1 82 | | 2 17 | | 1 53 | |
| Anthracene | 1 48 | J | 7 04 | J | 0 69 | U | 4 89 | J | 3 78 | J | 2 79 | J |
| Benzo(a)anthracene | 7 75 | | 16 85 | | 1 13 | J | 16 39 | | 2 81 | | 3 09 | J |
| Benzo(a)pyrene | 9 27 | | 9 61 | | 1 56 | J | 10 26 | | 1 25 | J | 2 12 | J |
| Benzo(b)fluoranthene | 17 59 | | 22 25 | | 2 30 | | 11 27 | | 2 86 | | 2 78 | |
| Benzo(e)pyrene | 14 99 | | 30 82 | | 3 82 | | 11 91 | | 4 85 | | 5 67 | |
| Benzo(g,h,i)perylene | 7 81 | | 14 59 | | 2 66 | | 8 13 | J | 2 20 | J | 1 78 | J |
| Benzo(k)fluoranthene | 9 66 | | 21 65 | | 2 16 | | 14 42 | | 2 18 | | 2 81 | |
| Biphenyl | 1 16 | U | 1 19 | | 1 12 | U | 1 00 | J | 1 31 | | 1 04 | J |
| Chrysene | 31 45 | | 23 29 | | 6 05 | | 20 20 | | 6 91 | | 7 69 | |
| Dibenzo(a,h)anthracene | 0 86 | J | 2 16 | | 0 96 | U | 1 44 | U | 1 01 | U | 1 07 | U |
| Fluoranthene | 47 26 | | 43 60 | | 12 98 | | 35 83 | | 19 89 | | 23 25 | |
| Fluorene | 2 05 | | 8 37 | | 0 93 | U | 3 03 | | 1 29 | | 1 32 | |
| Indeno(1,2,3-cd)pyrene | 7 21 | | 10 63 | | 1 38 | U | 7 06 | J | 1 46 | UJ | 0 94 | J |
| Naphthalene | 11 15 | U | 11 95 | U | 9 21 | U | 7 72 | U | 5 45 | U | 7 36 | U |
| Perylene | 10 36 | | 5 40 | | 4 81 | | 4 99 | U | 0 84 | UJ | 4 30 | UJ |
| Phenanthrene | 6 61 | | 11 79 | | 3 02 | U | 16 81 | | 5 59 | U | 6 40 | |
| Pyrene | 36 40 | | 44 36 | | 6 94 | | 30 19 | | 16 84 | | 20 08 | |
| Total PAH | 241 40 | | 327 40 | | 65 23 | | 221 70 | | 90 63 | | 107 64 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 0 69 | | 2 28 | | 0 46 | U | 1 14 | | 2 37 | | 4 05 | |
| 2,4'-DDE | 1 17 | U | 1 07 | U | 1 12 | U | 1 68 | U | 1 18 | U | 1 25 | U |
| 2,4'-DDT | 0 79 | J | 1 24 | J | 0 48 | J | 2 14 | | 0 27 | J | 0 77 | J |
| 4,4'-DDD | 1 10 | | 3 64 | | 0 59 | J | 1 68 | U | 2 41 | U | 1 78 | U |
| 4,4'-DDE | 22 05 | | 10 79 | | 5 89 | | 1 95 | J | 4 31 | | 2 69 | |
| 4,4'-DDT | 0 38 | J | 0 85 | U | 0 88 | U | 1 32 | U | 0 93 | U | 0 44 | UJ |
| Aldrin | 0 16 | U | 0 15 | U | 0 15 | U | 0 23 | U | 0 16 | U | 0 17 | U |
| alpha-Chlordane | 1 34 | | 11 07 | | 0 47 | | 0 93 | | 1 65 | | 0 91 | |
| Dieldrin | 6 27 | | 2 45 | | 3 08 | | 3 03 | | 4 56 | | 2 17 | |
| Endosulfan I | 0 52 | U | 0 48 | U | 0 50 | U | 0 75 | U | 0 53 | U | 0 56 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAININ CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-13-LOB-061098 | | OFF-14-DEP | | OFF-14-LOB-061298 | | OFF-14-PM-052198 | | OFF-15-HC-051498 | | OFF-15-HC-051498-FD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-13 | | OFF-14 | | OFF-14 | | OFF-14 | | OFF-15 | | OFF-15 | |
| Date Sampled | 6/10/98 | | 8/17/98 | | 6/12/98 | | 5/21/98 | | 5/14/98 | | 5/14/98 | |
| QC Type | None | | None | | None | | None | | Dup of OFF-15-HC-051498 | | Dup of OFF-15-HC-051498 | |
| Matrix | TISSUE-LOBSTER | | DEPLOYED MUSSEL | | TISSUE-LOBSTER | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | |
| Endosulfan II | 0 64 | | 4 15 | | 0 50 | J | 0 89 | U | 0 63 | U | 2 29 | |
| Endrin | 0 71 | U | 0 65 | U | 0 68 | U | 1 02 | U | 0 72 | U | 0 76 | U |
| gamma-BHC | 1 46 | | 0 70 | | 0 60 | | 0 23 | U | 1 32 | | 1 21 | |
| Heptachlor | 0 64 | U | 0 59 | U | 0 62 | U | 0 93 | U | 0 65 | U | 0 69 | U |
| Heptachlor epoxide | 0 26 | U | 0 24 | UJ | 0 25 | U | 0 38 | U | 0 26 | U | 0 10 | J |
| Hexachlorobenzene | 0 35 | | 0 43 | | 0 44 | | 0 36 | U | 0 92 | | 0 82 | |
| Mirex | 0 45 | | 0 28 | U | 0 30 | U | 0 44 | U | 3 61 | J | 0 31 | J |
| PCB 101 | 2 80 | | 27 27 | | 1 38 | J | 4 16 | | 6 25 | | 4 15 | |
| PCB 103 | 22 36 | | 23 23 | | 20 47 | | 33 66 | | 24 14 | | 26 84 | |
| PCB 105 | 3 56 | | 3 72 | | 2 16 | | 0 93 | J | 0 65 | J | 2 74 | J |
| PCB 112 | 22 21 | | 22 80 | | 20 86 | | 31 87 | | 23 80 | | 25 14 | |
| PCB 118 | 21 44 | | 19 88 | | 13 90 | | 2 94 | | 4 36 | | 3 64 | |
| PCB 126 | 0 53 | U | 0 49 | U | 0 51 | U | 0 77 | U | 0 54 | U | 0 57 | U |
| PCB 128 | 4 66 | | 5 26 | | 0 88 | U | 1 32 | U | 0 93 | U | 0 98 | U |
| PCB 138 | 29 52 | | 41 46 | | 17 79 | | 9 19 | | 8 63 | | 6 69 | |
| PCB 153 | 50 74 | | 64 23 | | 29 49 | | 13 86 | | 13 37 | | 12 47 | |
| PCB 166 | 46 64 | | 57 86 | | 57 78 | | 69 49 | | 41 78 | | 54 23 | |
| PCB 170 | 5 31 | | 2 70 | | 5 01 | | 2 44 | | 4 51 | J | 1 78 | J |
| PCB 18 | 0 33 | U | 0 30 | UJ | 0 31 | U | 0 47 | U | 0 33 | U | 0 27 | J |
| PCB 180 | 14 32 | | 12 10 | | 10 38 | | 6 33 | | 9 12 | | 7 78 | |
| PCB 187 | 15 45 | | 18 48 | | 9 50 | | 4 42 | | 6 82 | | 5 08 | |
| PCB 188 | 0 81 | U | 0 74 | U | 0 77 | U | 1 16 | U | 0 82 | U | 0 86 | U |
| PCB 195 | 1 33 | | 0 37 | J | 1 13 | | 1 24 | | 2 10 | | 1 54 | |
| PCB 200 | 0 48 | U | 0 44 | U | 0 46 | U | 0 69 | U | 0 49 | U | 0 51 | U |
| PCB 206 | 0 46 | U | 0 82 | | 0 44 | U | 0 83 | | 2 87 | J | 1 36 | J |
| PCB 209 | 0 76 | | 0 74 | | 0 81 | | 1 42 | | 3 31 | | 2 07 | |
| PCB 28 | 0 78 | J | 1 92 | | 0 30 | J | 0 32 | U | 0 88 | | 0 76 | |
| PCB 29 | 0 22 | U | 0 21 | U | 0 22 | U | 0 32 | U | 0 23 | U | 0 24 | U |
| PCB 34 | 22 89 | | 21 05 | | 21 96 | | 32 89 | | 23 15 | | 24 46 | |
| PCB 44 | 0 26 | U | 2 70 | | 0 25 | U | 0 63 | | 0 54 | | 0 43 | |
| PCB 50 | 0 20 | U | 0 18 | U | 0 19 | U | 0 28 | U | 0 20 | U | 0 21 | U |
| PCB 52 | 2 16 | | 5 83 | | 0 19 | U | 1 73 | | 2 39 | J | 1 42 | J |
| PCB 66 | 4 33 | | 3 02 | | 1 82 | | 1 27 | J | 1 32 | | 1 59 | |
| PCB 8 | 0 55 | J | 2 46 | | 1 26 | U | 1 88 | U | 1 12 | J | 2 51 | J |
| PCB 87 | 0 48 | J | 4 75 | | 0 53 | U | 1 50 | U | 0 55 | U | 1 20 | U |
| Sum of PCB Congeners | 161 50 | | 220 10 | | 99 67 | | 60 12 | | 72 31 | | 60 86 | |
| Sum of PCB Congeners X 2 | 322 99 | | 440 20 | | 199 34 | | 120 24 | | 144 62 | | 121 72 | |
| trans-Nonachlor | 0 69 | | 3 81 | | 0 34 | U | 1 39 | | 1 09 | | 0 73 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-13-LOB-061098 | | OFF-14-DEP | | OFF-14-LOB-061298 | | OFF-14-PM-052198 | | OFF-15-HC-051498 | | OFF-15-HC-051498-FD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-13 | | OFF-14 | | OFF-14 | | OFF-14 | | OFF-15 | | OFF-15 | |
| Date Sampled | 6/10/98 | | 8/17/98 | | 6/12/98 | | 5/21/98 | | 5/14/98 | | 5/14/98 | |
| QC Type | None | | None | | None | | None | | Dup of OFF-15-HC-051498 | | Dup of OFF-15-HC-051498 | |
| Matrix | TISSUE-LOBSTER | | DEPLOYED MUSSEL | | TISSUE-LOBSTER | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-CLAM | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 382 4 | | 147 8 | | 361 4 | | 637 8 | J | 1203 8 | J | 664 5 | J |
| Arsenic | 7 7 | | 1 4 | | 8 5 | | 4 6 | | 7 2 | | 6 3 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 13 3 | | 11 3 | | 0 5 | U | 6 | | 11 2 | | 8 4 | |
| Chromium | 14 3 | | 18 7 | | 11 4 | | 4 1 | J | 64 4 | J | 6 3 | J |
| Copper | 163 7 | | 5 5 | | 141 2 | | 5 | U | 5 | U | 5 | U |
| Iron | 97 7 | | 446 2 | | 113 7 | | 243 4 | | 224 | | 321 5 | |
| Lead | 14 7 | | 4 3 | | 11 3 | | 5 2 | | 8 2 | | 9 9 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 5 4 | | 2 8 | | 7 2 | | 2 5 | | 2 | | 2 1 | |
| Nickel | 32 6 | | 10 7 | | 37 4 | | 23 | | 24 1 | | 18 8 | |
| Silver | 2 6 | | 0 5 | U | 3 8 | | 0 5 | U | 0 5 | U | 0 5 | U |
| Zinc | 231 | | 174 4 | | 271 4 | | 63 3 | | 112 | | 101 8 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWP RT, RH DE ISLAND**

| Sample Number | OFF-15-LOB-060898 | | OFF-15-PM-051498 | | OFF-16-HC-052198 | | OFF-16-LOB-060898 | | OFF-16-LOB-061098 | | OFF-17-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-15 | | OFF-15 | | OFF-16 | | OFF-16 | | OFF-16 | | OFF-17 | |
| Date Sampled | 6/8/98 | | 5/14/98 | | 5/21/98 | | 6/8/98 | | 6/10/98 | | 8/17/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | TISSUE-LOBSTER | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 3 75 | U | 2 50 | U | 2 95 | U | 10 60 | J | 4 05 | U | 6 07 | U |
| 1-Methylphenanthrene | 0 86 | J | 2 85 | | 2 65 | | 1 68 | J | 4 07 | | 4 22 | |
| 2,3,5-Trimethylnaphthalene | 0 64 | U | 1 44 | | 1 22 | | 1 38 | | 0 62 | U | 3 61 | |
| 2,6-Dimethylnaphthalene | 1 00 | U | 2 13 | | 2 36 | | 1 79 | J | 1 97 | J | 6 28 | |
| 2-Methylnaphthalene | 4 56 | U | 2 95 | UJ | 4 22 | U | 10 14 | J | 5 75 | U | 9 92 | |
| Acenaphthene | 1 04 | U | 2 07 | | 2 49 | | 7 51 | | 2 00 | | 4 55 | |
| Acenaphthylene | 0 91 | U | 1 49 | | 2 24 | | 1 45 | U | 0 88 | U | 5 71 | |
| Anthracene | 0 57 | J | 3 57 | J | 4 92 | J | 2 46 | J | 4 44 | J | 13 40 | J |
| Benzo(a)anthracene | 1 25 | J | 6 60 | | 11 45 | | 5 77 | | 34 78 | | 22 40 | |
| Benzo(a)pyrene | 3 26 | | 4 05 | | 8 18 | | 6 83 | | 41 01 | | 7 97 | |
| Benzo(b)fluoranthene | 6 47 | | 6 57 | | 12 71 | | 8 57 | | 39 47 | | 26 80 | |
| Benzo(e)pyrene | 3 09 | | 8 14 | | 18 02 | | 8 13 | | 24 75 | | 50 95 | |
| Benzo(g,h,i)perylene | 1 58 | | 1 41 | U | 11 80 | J | 3 96 | | 16 19 | | 14 67 | |
| Benzo(k)fluoranthene | 2 62 | | 7 99 | | 13 87 | | 6 52 | | 30 57 | | 23 18 | |
| Biphenyl | 0 91 | U | 1 08 | J | 0 92 | J | 1 45 | U | 0 88 | U | 1 70 | |
| Chrysene | 6 96 | | 18 63 | | 20 34 | | 15 62 | | 58 76 | | 47 81 | |
| Dibenzo(a,h)anthracene | 0 78 | U | 1 27 | U | 1 37 | J | 1 25 | U | 2 12 | | 1 72 | |
| Fluoranthene | 14 26 | | 36 42 | | 48 59 | | 30 82 | | 78 38 | | 123 82 | |
| Fluorene | 0 74 | J | 2 12 | | 2 48 | | 2 63 | | 1 39 | | 7 65 | |
| Indeno(1,2,3-cd)pyrene | 1 94 | J | 1 83 | UJ | 8 40 | J | 3 99 | J | 21 84 | J | 7 75 | |
| Naphthalene | 7 75 | U | 6 50 | U | 6 44 | U | 19 81 | | 9 02 | U | 11 35 | U |
| Perylene | 4 81 | UJ | 1 60 | U | 3 33 | U | 11 83 | UJ | 9 38 | UJ | 7 44 | |
| Phenanthrene | 3 00 | U | 10 14 | | 14 62 | | 11 21 | | 14 59 | | 18 40 | |
| Pyrene | 9 12 | | 25 23 | | 43 34 | | 31 88 | | 71 30 | | 88 60 | |
| Total PAH | 76 58 | | 154 08 | | 248 90 | | 203 12 | | 475 84 | | 515 95 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 0 38 | U | 0 62 | U | 3 59 | | 0 15 | J | 0 36 | U | 4 48 | |
| 2,4'-DDE | 0 91 | U | 1 48 | U | 1 24 | U | 1 45 | U | 0 88 | U | 1 24 | U |
| 2,4'-DDT | 0 75 | J | 0 65 | J | 0 57 | J | 0 31 | J | 0 16 | J | 1 59 | |
| 4,4'-DDD | 0 41 | J | 2 03 | U | 2 90 | U | 0 79 | J | 1 02 | J | 15 16 | |
| 4,4'-DDE | 9 17 | | 2 88 | | 2 19 | U | 5 32 | | 5 97 | | 24 74 | |
| 4,4'-DDT | 0 72 | U | 1 17 | U | 0 45 | UJ | 0 23 | J | 0 63 | J | 2 28 | |
| Aldrin | 0 12 | U | 0 20 | U | 0 17 | U | 0 20 | U | 0 12 | U | 0 17 | U |
| alpha-Chlordane | 0 16 | J | 1 28 | | 1 63 | | 0 47 | | 0 47 | | 19 09 | |
| Dieldrin | 2 70 | | 3 40 | | 3 62 | | 3 53 | | 3 20 | | 4 14 | |
| Endosulfan I | 0 41 | U | 0 67 | U | 0 55 | U | 0 65 | U | 0 39 | U | 0 56 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-15-LOB-060898 | | OFF-15-PM-051498 | | OFF-16-HC-052198 | | OFF-16-LOB-060898 | | OFF-16-LOB-061098 | | OFF-17-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-15 | | OFF-15 | | OFF-16 | | OFF-16 | | OFF-16 | | OFF-17 | |
| Date Sampled | 6/8/98 | | 5/14/98 | | 5/21/98 | | 6/8/98 | | 6/10/98 | | 8/17/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | TISSUE-LOBSTER | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | |
| Endosulfan II | 0 30 | J | 0 79 | U | 2 86 | | 0 56 | J | 0 79 | | 3 71 | |
| Endrin | 0 55 | U | 0 90 | U | 0 75 | U | 0 88 | U | 0 53 | U | 0 75 | U |
| gamma-BHC | 1 02 | | 0 20 | U | 1 66 | | 1 02 | | 1 73 | | 0 75 | |
| Heptachlor | 0 50 | U | 0 82 | U | 0 27 | J | 0 80 | U | 0 49 | U | 0 68 | U |
| Heptachlor epoxide | 0 20 | U | 0 33 | U | 0 28 | U | 0 33 | U | 0 20 | U | 0 28 | UJ |
| Hexachlorobenzene | 0 26 | | 0 34 | | 1 01 | | 0 37 | | 0 30 | | 0 44 | |
| Mirex | 0 24 | U | 0 39 | U | 0 36 | | 0 38 | U | 0 23 | U | 0 33 | U |
| PCB 101 | 0 77 | J | 5 05 | | 2 26 | U | 0 70 | J | 0 62 | J | 28 92 | |
| PCB 103 | 18 07 | | 29 23 | | 25 38 | | 29 21 | | 16 61 | | 26 06 | |
| PCB 105 | 3 38 | | 1 17 | | 2 85 | | 2 13 | | 1 68 | | 5 65 | |
| PCB 112 | 17 67 | | 27 14 | | 24 66 | | 28 43 | | 16 15 | | 24 76 | |
| PCB 118 | 21 82 | | 3 90 | | 4 54 | | 12 10 | | 8 84 | | 19 20 | |
| PCB 126 | 0 42 | U | 0 68 | U | 0 57 | U | 0 66 | U | 0 40 | U | 0 57 | U |
| PCB 128 | 4 70 | | 1 17 | U | 0 97 | U | 2 45 | | 1 98 | | 4 82 | |
| PCB 138 | 31 19 | | 11 49 | | 7 89 | | 15 51 | | 13 26 | | 34 42 | |
| PCB 153 | 50 71 | | 17 32 | | 11 13 | | 19 41 | | 20 37 | | 53 77 | |
| PCB 166 | 38 79 | | 64 45 | | 49 54 | | 54 12 | | 48 94 | | 67 32 | |
| PCB 170 | 7 59 | | 2 86 | | 2 58 | | 2 69 | | 3 09 | | 0 73 | U |
| PCB 18 | 0 26 | U | 0 42 | U | 0 18 | J | 0 41 | U | 0 25 | U | 0 35 | UJ |
| PCB 180 | 17 15 | | 8 62 | | 6 99 | | 5 55 | | 6 39 | | 4 51 | |
| PCB 187 | 15 82 | | 5 83 | | 4 36 | | 6 57 | | 6 10 | | 17 49 | |
| PCB 188 | 0 63 | U | 1 02 | U | 0 85 | U | 1 00 | U | 0 61 | U | 0 85 | U |
| PCB 195 | 1 59 | | 1 42 | | 1 49 | | 0 80 | | 0 82 | | 0 38 | J |
| PCB 200 | 0 38 | U | 0 61 | U | 0 51 | U | 0 19 | J | 0 36 | U | 0 51 | U |
| PCB 206 | 0 68 | | 1 13 | | 1 42 | | 0 25 | J | 0 58 | | 1 09 | |
| PCB 209 | 0 81 | | 1 96 | | 2 27 | | 0 57 | J | 1 11 | | 0 71 | J |
| PCB 28 | 0 34 | | 0 67 | | 1 07 | | 1 11 | | 0 35 | | 1 70 | |
| PCB 29 | 0 18 | U | 0 29 | U | 0 24 | U | 0 28 | U | 0 17 | U | 0 24 | U |
| PCB 34 | 17 86 | | 29 11 | | 24 25 | | 28 48 | | 17 22 | | 24 29 | |
| PCB 44 | 0 21 | U | 0 49 | | 0 35 | | 0 33 | U | 0 20 | U | 3 04 | |
| PCB 50 | 0 15 | U | 0 25 | U | 0 21 | U | 0 24 | U | 0 15 | U | 0 21 | U |
| PCB 52 | 0 77 | | 1 99 | | 1 29 | | 1 27 | | 1 13 | | 7 76 | |
| PCB 66 | 3 01 | | 1 27 | | 1 22 | | 3 05 | | 1 96 | | 3 59 | |
| PCB 8 | 0 40 | J | 1 66 | U | 1 81 | | 1 07 | J | 0 40 | J | 1 78 | |
| PCB 87 | 0 25 | J | 1 50 | U | 1 05 | U | 0 32 | J | 0 43 | | 5 45 | |
| Sum of PCB Congeners | 163 18 | | 72 77 | | 58 11 | | 78 67 | | 71 26 | | 197 72 | |
| Sum of PCB Congeners X 2 | 326 35 | | 145 54 | | 116 22 | | 157 34 | | 142 52 | | 395 44 | |
| trans-Nonachlor | 0 28 | | 1 63 | | 0 95 | | 0 39 | J | 0 35 | | 7 56 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-15-LOB-060898 | | OFF-15-PM-051498 | | OFF-16-HC-052198 | | OFF-16-LOB-060898 | | OFF-16-LOB-061098 | | OFF-17-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-15 | | OFF-15 | | OFF-16 | | OFF-16 | | OFF-16 | | OFF-17 | |
| Date Sampled | 6/8/98 | | 5/14/98 | | 5/21/98 | | 6/8/98 | | 6/10/98 | | 8/17/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | TISSUE-LOBSTER | | TISSUE-CLAM | | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 397 3 | | 750 5 | J | 984 8 | J | 321 5 | | 356 9 | | 179 5 | |
| Arsenic | 7 2 | | 5 5 | | 5 5 | | 6 9 | | 6 6 | | 1 2 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 1 5 | | 7 | | 9 8 | | 2 1 | | 2 4 | | 7 9 | |
| Chromium | 18 9 | | 30 2 | J | 0 5 | UJ | 14 2 | | 15 4 | | 17 8 | |
| Copper | 157 | | 5 | U | 5 | U | 138 6 | | 120 4 | | 8 1 | |
| Iron | 84 2 | | 438 6 | | 314 3 | | 76 4 | | 89 6 | | 493 4 | |
| Lead | 19 | | 7 | | 6 6 | | 17 2 | | 16 3 | | 7 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 2 5 | | 2 4 | | 4 | | 2 | | 1 7 | | 2 4 | |
| Nickel | 31 7 | | 21 8 | | 20 4 | | 28 5 | | 41 6 | | 17 | |
| Silver | 2 6 | | 0 5 | U | 0 5 | U | 2 3 | | 2 5 | | 0 5 | U |
| Zinc | 256 3 | | 82 8 | | 73 3 | | 241 8 | | 297 5 | | 181 4 | |



U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-17-HC-051498 | | OFF-17-LOB-061098 | | OFF-17-LOB-061298 | | OFF-18-DEP | | OFF-18-DEP-FD | | OFF-18-LOB-060898 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-17 | | OFF-17 | | OFF-17 | | OFF-18 | | OFF-18 | | OFF-18 | |
| Date Sampled | 5/14/98 | | 6/10/98 | | 6/12/98 | | 8/17/98 | | 8/17/98 | | 6/8/98 | |
| QC Type | None | | None | | None | | Dup of OFF-18-DEP | | Dup of OFF-18-DEP | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | | DEPLOYED MUSSEL | | TISSUE-LOBSTER | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 1 34 | U | 5 18 | U | | NA | 5 63 | U | 6 30 | U | 11 73 | |
| 1-Methylphenanthrene | 2 97 | | 2 42 | | | NA | 6 59 | | 5 49 | | 3 00 | |
| 2,3,5-Trimethylnaphthalene | 1 11 | | 0 65 | U | | NA | 4 67 | | 4 17 | | 2 07 | |
| 2,6-Dimethylnaphthalene | 1 79 | | 1 61 | J | | NA | 6 23 | | 5 95 | | 2 37 | J |
| 2-Methylnaphthalene | 2 18 | U | 7 06 | U | | NA | 9 43 | | 8 92 | | 16 78 | |
| Acenaphthene | 1 66 | | 1 23 | | | NA | 8 95 | | 7 18 | | 2 28 | |
| Acenaphthylene | 2 87 | | 0 91 | U | | NA | 8 83 | | 7 36 | | 1 25 | U |
| Anthracene | 7 43 | J | 0 90 | J | | NA | 16 92 | J | 15 73 | J | 1 30 | J |
| Benzo(a)anthracene | 9 87 | | 8 78 | | | NA | 39 08 | | 32 46 | | 9 74 | |
| Benzo(a)pyrene | 6 62 | | 19 24 | | | NA | 14 94 | | 12 85 | | 11 91 | |
| Benzo(b)fluoranthene | 9 56 | | 22 32 | | | NA | 48 42 | | 43 56 | | 19 32 | |
| Benzo(e)pyrene | 16 25 | | 13 45 | | | NA | 79 48 | | 74 66 | | 14 81 | |
| Benzo(g,h,i)perylene | 5 89 | J | 6 37 | | | NA | 19 81 | | 19 09 | | 6 69 | |
| Benzo(k)fluoranthene | 10 27 | | 12 75 | | | NA | 43 93 | | 36 61 | | 12 19 | |
| Biphenyl | 1 18 | | 0 91 | U | | NA | 1 08 | | 1 35 | | 1 24 | U |
| Chrysene | 21 47 | | 24 75 | | | NA | 72 71 | | 66 04 | | 32 49 | |
| Dibenzo(a,h)anthracene | 0 80 | J | 0 99 | | | NA | 0 64 | J | 2 84 | J | 0 87 | J |
| Fluoranthene | 55 87 | | 34 60 | | | NA | 196 23 | | 181 22 | | 73 51 | |
| Fluorene | 1 98 | | 1 13 | | | NA | 10 68 | | 8 94 | | 1 99 | |
| Indeno(1,2,3-cd)pyrene | 3 51 | J | 9 13 | J | | NA | 12 90 | | 13 48 | | 8 38 | J |
| Naphthalene | 4 10 | U | 10 34 | U | | NA | 9 16 | U | 9 66 | U | 19 44 | |
| Perylene | 2 75 | U | 3 69 | UJ | | NA | 10 05 | | 7 78 | | 7 79 | UJ |
| Phenanthrene | 13 88 | | 4 84 | | | NA | 31 75 | | 33 26 | | 10 48 | |
| Pyrene | 41 32 | | 30 69 | | | NA | 148 22 | | 137 00 | | 54 52 | |
| Total PAH | 226 68 | | 221 48 | | | NA | 806 33 | | 741 88 | | 323 67 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 2 30 | | 0 42 | | | NA | 5 19 | | 4 98 | | 0 52 | U |
| 2,4'-DDE | 0 81 | U | 0 91 | U | | NA | 0 80 | U | 0 79 | U | 1 25 | U |
| 2,4'-DDT | 0 17 | J | 0 41 | J | | NA | 1 66 | | 1 45 | | 0 46 | J |
| 4,4'-DDD | 2 80 | U | 0 68 | J | | NA | 21 67 | | 19 90 | | 1 57 | J |
| 4,4'-DDE | 5 21 | | 4 15 | | | NA | 30 01 | | 27 97 | | 11 63 | |
| 4,4'-DDT | 0 59 | UJ | 0 10 | J | | NA | 2 38 | | 2 15 | | 0 56 | J |
| Aldrin | 0 11 | U | 0 12 | U | | NA | 0 11 | U | 0 11 | U | 0 17 | U |
| alpha-Chlordane | 1 21 | | 0 23 | | | NA | 10 29 | | 14 95 | | 0 45 | |
| Dieldrin | 1 77 | | 2 50 | | | NA | 4 47 | | 4 50 | | 5 15 | |
| Endosulfan I | 0 37 | U | 0 41 | U | | NA | 0 36 | U | 0 36 | U | 0 56 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-17-HC-051498 | | OFF-17-LOB-061098 | | OFF-17-LOB-061298 | | OFF-18-DEP | | OFF-18-DEP-FD | | OFF-18-LOB-060898 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-17 | | OFF-17 | | OFF-17 | | OFF-18 | | OFF-18 | | OFF-18 | |
| Date Sampled | 5/14/98 | | 6/10/98 | | 6/12/98 | | 8/17/98 | | 8/17/98 | | 6/8/98 | |
| QC Type | None | | None | | None | | Dup of OFF-18-DEP | | Dup of OFF-18-DEP | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | | DEPLOYED MUSSEL | | TISSUE-LOBSTER | |
| Endosulfan II | 0 43 | U | 0 78 | | | NA | 3 88 | | 3 96 | | 0 80 | |
| Endrin | 0 50 | U | 0 56 | U | | NA | 0 49 | U | 0 48 | U | 0 76 | U |
| gamma-BHC | 0 11 | U | 0 90 | | | NA | 0 87 | | 0 71 | | 1 90 | |
| Heptachlor | 0 45 | U | 0 50 | U | | NA | 0 44 | U | 0 44 | U | 0 69 | U |
| Heptachlor epoxide | 0 19 | | 0 20 | U | | NA | 0 18 | UJ | 0 18 | U | 0 28 | U |
| Hexachlorobenzene | 0 63 | | 0 26 | | | NA | 0 97 | | 0 81 | | 0 55 | |
| Mirex | 0 35 | | 0 24 | U | | NA | 0 31 | J | 0 21 | UJ | 0 22 | J |
| PCB 101 | 3 95 | | 9 15 | | | NA | 21 71 | | 24 55 | | 1 03 | J |
| PCB 103 | 16 40 | | 17 83 | | | NA | 15 79 | | 16 51 | | 23 75 | |
| PCB 105 | 1 15 | | 2 54 | | | NA | 5 63 | | 4 74 | | 2 18 | |
| PCB 112 | 16 44 | | 17 44 | | | NA | 14 68 | | 15 65 | | 23 37 | |
| PCB 118 | 4 00 | | 18 44 | | | NA | 19 76 | | 19 62 | | 12 57 | |
| PCB 126 | 0 37 | U | 0 42 | U | | NA | 0 37 | U | 0 36 | U | 0 57 | U |
| PCB 128 | 0 64 | U | 3 24 | | | NA | 5 13 | | 4 82 | | 3 11 | |
| PCB 138 | 6 37 | | 17 44 | | | NA | 35 75 | | 32 71 | | 16 30 | |
| PCB 153 | 9 99 | | 25 58 | | | NA | 53 60 | | 45 84 | | 22 93 | |
| PCB 166 | 33 33 | | 37 45 | | | NA | 39 60 | | 42 43 | | 48 77 | |
| PCB 170 | 1 35 | | 3 21 | | | NA | 1 95 | | 2 11 | | 3 67 | |
| PCB 18 | 0 28 | | 3 58 | | | NA | 0 80 | J | 0 22 | UJ | 0 35 | U |
| PCB 180 | 6 44 | | 5 74 | | | NA | 8 48 | | 7 42 | | 7 44 | |
| PCB 187 | 4 59 | | 5 69 | | | NA | 15 69 | | 15 55 | | 7 66 | |
| PCB 188 | 0 56 | U | 0 63 | U | | NA | 0 55 | U | 0 55 | U | 0 86 | U |
| PCB 195 | 1 47 | | 0 60 | | | NA | 0 52 | | 0 43 | | 1 02 | |
| PCB 200 | 0 34 | U | 0 14 | J | | NA | 0 33 | U | 0 33 | U | 0 51 | U |
| PCB 206 | 1 29 | | 0 25 | J | | NA | 0 31 | U | 0 31 | U | 0 15 | J |
| PCB 209 | 2 09 | | 0 48 | J | | NA | 0 79 | | 0 81 | | 0 84 | |
| PCB 28 | 0 81 | | 30 42 | | | NA | 2 34 | | 1 76 | J | 0 69 | |
| PCB 29 | 0 16 | U | 0 18 | U | | NA | 0 15 | U | 0 15 | U | 0 24 | U |
| PCB 34 | 15 98 | | 17 90 | | | NA | 15 67 | | 15 59 | | 24 49 | |
| PCB 44 | 0 49 | | 0 31 | | | NA | 4 60 | | 4 81 | | 0 28 | U |
| PCB 50 | 0 14 | U | 0 15 | U | | NA | 0 13 | U | 0 13 | U | 0 21 | U |
| PCB 52 | 1 54 | | 20 33 | | | NA | 8 09 | | 8 06 | | 2 18 | |
| PCB 66 | 1 71 | | 9 61 | | | NA | 3 94 | | 4 03 | | 3 01 | |
| PCB 8 | 1 47 | | 4 38 | | | NA | 2 59 | | 1 66 | | 1 40 | U |
| PCB 87 | 1 15 | U | 0 88 | | | NA | 4 95 | | 5 05 | | 0 55 | J |
| Sum of PCB Congeners | 52 34 | | 163 38 | | | NA | 198 16 | | 186 02 | | 89 74 | |
| Sum of PCB Congeners X 2 | 104 68 | | 326 76 | | | NA | 396 31 | | 372 05 | | 179 48 | |
| trans-Nonachlor | 1 10 | | 0 33 | | | NA | 0 24 | UJ | 6 72 | J | 0 55 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-17-HC-051498 | | OFF-17-LOB-061098 | | OFF-17-LOB-061298 | | OFF-18-DEP | | OFF-18-DEP-FD | | OFF-18-LOB-060898 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-17 | | OFF-17 | | OFF-17 | | OFF-18 | | OFF-18 | | OFF-18 | |
| Date Sampled | 5/14/98 | | 6/10/98 | | 6/12/98 | | 8/17/98 | | 8/17/98 | | 6/8/98 | |
| QC Type | None | | None | | None | | Dup of OFF-18-DEP | | Dup of OFF-18-DEP | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | | DEPLOYED MUSSEL | | TISSUE-LOBSTER | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 622 7 | J | 364 9 | | 386 6 | | 165 3 | | 152 4 | | 367 2 | |
| Arsenic | 4 7 | | 9 3 | | 10 2 | | 1 | | 1 1 | | 5 7 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 6 2 | | 7 4 | | 7 4 | | 8 6 | | 9 2 | | 4 7 | |
| Chromium | 3 2 | J | 11 1 | | 10 5 | | 15 4 | | 13 9 | | 17 | |
| Copper | 5 | U | 172 6 | | 194 2 | | 10 4 | | 9 7 | | 154 9 | |
| Iron | 320 5 | | 127 4 | | 116 | | 412 5 | | 428 1 | | 157 6 | |
| Lead | 5 6 | | 18 5 | | 12 3 | | 8 5 | | 6 9 | | 15 4 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 3 2 | | 1 4 | | 1 9 | | 4 3 | | 3 7 | | 1 6 | |
| Nickel | 15 7 | | 38 7 | | 32 6 | | 13 3 | | 14 2 | | 35 9 | |
| Silver | 0 5 | U | 2 4 | | 2 7 | | 0 5 | U | 0 5 | U | 2 4 | |
| Zinc | 64 1 | | 281 4 | | 276 3 | | 198 2 | | 210 4 | | 266 8 | |



U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAININ CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-19-DEP | | OFF-19-LOB-060898 | | OFF-19-PM-052198 | | OFF-20-DEP | | OFF-20-HC-051498 | | OFF-20-LOB-060898 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-19 | | OFF-19 | | OFF-19 | | OFF-20 | | OFF-20 | | OFF-20 | |
| Date Sampled | 8/17/98 | | 6/8/98 | | 5/21/98 | | 8/17/98 | | 5/14/98 | | 6/8/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | DEPLOYED MUSSEL | | TISSUE-LOBSTER | | TISSUE-CLAM | | DEPLOYED MUSSEL | | TISSUE-CLAM | | TISSUE-LOBSTER | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 8 25 | | 7 27 | U | 4 10 | U | 5 61 | U | 2 32 | U | 5 67 | U |
| 1-Methylphenanthrene | 3 88 | | 1 11 | J | 4 66 | | 2 60 | | 1 96 | | 1 67 | |
| 2,3,5-Trimethylnaphthalene | 3 77 | | 0 72 | U | 1 25 | U | 2 80 | | 1 66 | | 1 28 | |
| 2,6-Dimethylnaphthalene | 8 24 | | 1 56 | J | 2 87 | | 5 67 | | 2 29 | | 1 50 | J |
| 2-Methylnaphthalene | 14 04 | | 10 24 | | 4 89 | U | 8 92 | | 3 37 | U | 8 97 | |
| Acenaphthene | 4 81 | | 1 17 | U | 4 50 | | 3 83 | | 1 61 | U | 1 17 | |
| Acenaphthylene | 4 13 | | 1 02 | U | 2 08 | | 2 77 | | 2 00 | | 1 00 | U |
| Anthracene | 7 32 | J | 0 63 | U | 11 15 | J | 6 85 | J | 3 18 | J | 0 88 | J |
| Benzo(a)anthracene | 13 90 | | 1 21 | J | 21 57 | | 10 74 | | 5 21 | | 2 52 | |
| Benzo(a)pyrene | 6 09 | | 1 96 | | 12 21 | | 3 91 | | 2 88 | | 3 65 | |
| Benzo(b)fluoranthene | 16 67 | | 1 96 | | 14 19 | | 11 96 | | 4 85 | | 7 07 | |
| Benzo(e)pyrene | 24 75 | | 2 80 | | 13 91 | | 19 12 | | 8 30 | | 5 98 | |
| Benzo(g,h,i)perylene | 9 15 | | 1 95 | | 8 80 | J | 5 85 | | 2 41 | J | 3 50 | |
| Benzo(k)fluoranthene | 14 72 | | 1 57 | | 14 81 | | 10 36 | | 4 50 | | 4 10 | |
| Biphenyl | 1 38 | | 0 99 | J | 2 04 | | 1 15 | | 1 31 | J | 1 00 | U |
| Chrysene | 22 13 | | 4 65 | | 27 30 | | 21 66 | | 12 59 | | 11 39 | |
| Dibenzo(a,h)anthracene | 1 09 | | 0 88 | U | 2 28 | J | 0 93 | | 1 21 | U | 0 86 | U |
| Fluoranthene | 60 63 | | 9 67 | | 51 81 | | 58 04 | | 30 88 | | 25 68 | |
| Fluorene | 5 80 | | 1 13 | | 5 78 | | 7 59 | | 1 38 | | 1 41 | |
| Indeno(1,2,3-cd)pyrene | 5 36 | | 1 26 | U | 8 93 | J | 3 01 | | 1 74 | UJ | 3 01 | J |
| Naphthalene | 9 78 | U | 14 50 | U | 10 08 | U | 7 93 | U | 6 45 | U | 11 82 | U |
| Perylene | 5 41 | | 3 71 | UJ | 5 58 | U | 4 98 | | 2 65 | U | 2 26 | UJ |
| Phenanthrene | 11 67 | | 2 94 | U | 27 57 | | 9 89 | | 7 75 | | 4 97 | |
| Pyrene | 52 86 | | 7 50 | | 43 45 | | 40 68 | | 22 55 | | 17 88 | |
| Total PAH | 315 84 | | 76 72 | | 304 54 | | 256 86 | | 130 50 | | 126 41 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 2 23 | | 0 43 | U | 1 24 | | 2 36 | | 17 28 | | 0 41 | U |
| 2,4'-DDE | 0 82 | U | 1 02 | U | 1 77 | U | 1 06 | U | 1 41 | U | 1 00 | U |
| 2,4'-DDT | 1 35 | | 1 24 | U | 2 24 | | 1 02 | J | 0 32 | J | 0 43 | J |
| 4,4'-DDD | 5 08 | | 0 30 | J | 1 80 | U | 5 78 | | 3 39 | U | 0 81 | J |
| 4,4'-DDE | 12 40 | | 5 32 | | 2 32 | J | 11 10 | | 3 44 | | 5 54 | |
| 4,4'-DDT | 1 77 | | 0 06 | J | 0 34 | UJ | 0 99 | | 0 61 | UJ | 0 25 | J |
| Aldrin | 0 11 | U | 0 14 | U | 0 24 | U | 0 14 | U | 0 19 | U | 0 14 | U |
| alpha-Chlordane | 12 05 | | 0 43 | | 1 18 | | 9 97 | | 0 94 | | 0 25 | |
| Dieldrin | 4 49 | | 2 56 | | 3 48 | | 2 96 | | 3 02 | | 3 93 | |
| Endosulfan I | 0 37 | U | 0 46 | U | 0 80 | U | 0 48 | U | 0 63 | U | 0 45 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAININ CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-19-DEP | | OFF-19-LOB-060898 | | OFF-19-PM-052198 | | OFF-20-DEP | | OFF-20-HC-051498 | | OFF-20-LOB-060898 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-19 | | OFF-19 | | OFF-19 | | OFF-20 | | OFF-20 | | OFF-20 | |
| Date Sampled | 8/17/98 | | 6/8/98 | | 5/21/98 | | 8/17/98 | | 5/14/98 | | 6/8/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | DEPLOYED MUSSEL | | TISSUE-LOBSTER | | TISSUE-CLAM | | DEPLOYED MUSSEL | | TISSUE-CLAM | | TISSUE-LOBSTER | |
| Endosulfan II | 3 86 | | 0 20 | J | 0 94 | U | 2 32 | | 6 81 | | 0 55 | |
| Endrin | 0 50 | U | 0 62 | U | 1 08 | U | 0 65 | U | 0 86 | U | 0 61 | U |
| gamma-BHC | 1 05 | | 0 14 | U | 0 24 | U | 0 76 | | 0 19 | U | 0 91 | |
| Heptachlor | 0 45 | U | 0 57 | U | 0 98 | U | 0 59 | U | 0 78 | U | 0 55 | U |
| Heptachlor epoxide | 0 18 | U | 0 08 | J | 0 40 | U | 0 24 | U | 0 32 | U | 0 22 | U |
| Hexachlorobenzene | 0 69 | | 0 40 | | 0 64 | | 0 35 | | 0 77 | | 0 43 | |
| Mirex | 0 22 | U | 0 50 | | 0 24 | J | 0 28 | U | 0 41 | | 0 26 | U |
| PCB 101 | 25 69 | | 0 58 | J | 4 18 | | 17 70 | | 4 20 | | 0 47 | J |
| PCB 103 | 18 73 | | 19 55 | | 35 82 | | 22 16 | | 29 61 | | 19 62 | |
| PCB 105 | 3 76 | | 1 76 | | 0 74 | J | 2 35 | | 0 88 | U | 1 70 | |
| PCB 112 | 17 15 | | 32 91 | | 34 03 | | 21 69 | | 27 66 | | 19 00 | |
| PCB 118 | 16 71 | | 12 71 | | 3 02 | | 10 22 | | 3 44 | | 10 46 | |
| PCB 126 | 0 38 | U | 0 47 | U | 0 81 | U | 0 49 | U | 0 65 | U | 0 46 | U |
| PCB 128 | 4 11 | | 2 31 | | 1 39 | U | 2 56 | | 1 11 | U | 2 66 | |
| PCB 138 | 34 80 | | 15 39 | | 9 17 | | 20 94 | | 8 32 | | 16 66 | |
| PCB 153 | 51 73 | | 29 18 | | 13 84 | | 31 37 | | 13 18 | | 25 99 | |
| PCB 166 | 42 36 | | 24 85 | | 72 96 | | 46 83 | | 72 59 | | 43 94 | |
| PCB 170 | 2 54 | | 5 20 | | 1 64 | | 1 42 | | 2 06 | | 3 67 | |
| PCB 18 | 0 23 | U | 0 29 | U | 0 12 | J | 1 36 | J | 0 40 | U | 0 28 | U |
| PCB 180 | 9 14 | | 10 91 | | 7 28 | | 6 37 | | 7 53 | | 8 28 | |
| PCB 187 | 14 53 | | 9 72 | | 4 76 | | 9 91 | | 4 23 | | 8 35 | |
| PCB 188 | 0 57 | U | 0 71 | U | 1 22 | U | 0 73 | U | 0 98 | U | 0 69 | U |
| PCB 195 | 0 34 | U | 0 93 | | 1 36 | | 0 23 | J | 1 20 | | 0 95 | |
| PCB 200 | 0 34 | U | 0 42 | U | 0 73 | U | 0 44 | U | 0 58 | U | 0 23 | J |
| PCB 206 | 0 32 | U | 0 33 | J | 1 11 | | 0 41 | U | 0 89 | | 0 24 | J |
| PCB 209 | 0 88 | | 0 52 | J | 1 68 | | 0 58 | J | 2 38 | | 0 70 | |
| PCB 28 | 1 94 | | 0 42 | | 0 67 | | 1 21 | | 0 58 | | 0 35 | |
| PCB 29 | 0 16 | U | 0 20 | U | 0 34 | U | 0 20 | U | 0 27 | U | 0 19 | U |
| PCB 34 | 16 15 | | 20 09 | | 34 78 | | 20 80 | | 27 71 | | 19 59 | |
| PCB 44 | 3 02 | | 0 23 | U | 0 65 | | 2 38 | | 0 56 | | 0 23 | U |
| PCB 50 | 0 14 | U | 0 17 | U | 0 30 | U | 0 18 | U | 0 24 | U | 0 17 | U |
| PCB 52 | 7 65 | | 0 89 | | 2 18 | | 4 83 | | 3 42 | | 0 84 | |
| PCB 66 | 4 25 | | 1 92 | | 1 34 | J | 2 82 | | 1 78 | | 1 78 | |
| PCB 8 | 1 34 | | 1 15 | U | 1 70 | J | 1 02 | J | 1 48 | J | 0 52 | J |
| PCB 87 | 5 72 | | 0 46 | J | 1 18 | U | 3 28 | | 1 37 | U | 0 24 | J |
| Sum of PCB Congeners | 190 27 | | 96 87 | | 61 42 | | 122 98 | | 61 73 | | 86 11 | |
| Sum of PCB Congeners X 2 | 380 54 | | 193 75 | | 122 84 | | 245 96 | | 123 45 | | 172 22 | |
| trans-Nonachlor | 5 26 | | 0 19 | J | 1 69 | | 3 91 | | 0 74 | | 0 23 | J |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWP RT, RHODE ISLAND**

| Sample Number | OFF-19-DEP | | OFF-19-LOB-060898 | | OFF-19-PM-052198 | | OFF-20-DEP | | OFF-20-HC-051498 | | OFF-20-LOB-060898 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-19 | | OFF-19 | | OFF-19 | | OFF-20 | | OFF-20 | | OFF-20 | |
| Date Sampled | 8/17/98 | | 6/8/98 | | 5/21/98 | | 8/17/98 | | 5/14/98 | | 6/8/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | DEPLOYED MUSSEL | | TISSUE-LOBSTER | | TISSUE-CLAM | | DEPLOYED MUSSEL | | TISSUE-CLAM | | TISSUE-LOBSTER | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 182 4 | | 327 9 | | 771 1 | J | 140 3 | | 730 7 | J | 364 3 | |
| Arsenic | 1 6 | | 8 5 | | 6 1 | | 1 7 | | 4 4 | | 7 2 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 8 1 | | 3 9 | | 5 3 | | 8 2 | | 8 7 | | 5 1 | |
| Chromium | 16 4 | | 17 5 | | 0 5 | UJ | 18 3 | | 3 1 | J | 21 1 | |
| Copper | 9 2 | | 143 6 | | 5 | U | 8 3 | | 5 | U | 101 3 | |
| Iron | 411 5 | | 149 3 | | 245 6 | | 515 9 | | 153 3 | | 160 3 | |
| Lead | 9 2 | | 16 7 | | 7 1 | | 6 1 | | 7 9 | | 13 8 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 3 6 | | 1 8 | | 3 7 | | 2 7 | | 2 5 | | 1 8 | |
| Nickel | 15 6 | | 40 2 | | 14 | | 10 6 | | 16 6 | | 44 9 | |
| Silver | 0 5 | U | 3 8 | | 0 5 | U | 0 5 | U | 0 5 | U | 5 | |
| Zinc | 188 5 | | 278 | | 58 9 | | 192 7 | | 61 3 | | 241 8 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAININ CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-21-DEP | | OFF-21-HC-051498 | | OFF-21-LOB-060898 | | OFF-21-LOB-061598 | | OFF-22-BM-052698* | | OFF-23-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-21 | | OFF-21 | | OFF-21 | | OFF-21 | | OFF-22 | | OFF-23 | |
| Date Sampled | 8/17/98 | | 5/14/98 | | 6/8/98 | | 6/15/98 | | 5/26/98 | | 8/17/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | DEPLOYED MUSSEL | | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | TISSUE-MUSSEL | | DEPLOYED MUSSEL | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 6 15 | U | 2 17 | U | 6 81 | U | 4 92 | U | 8 16 | | 6 83 | |
| 1-Methylphenanthrene | 3 50 | | 3 88 | | 1 75 | J | 3 66 | | 4 90 | | 7 30 | |
| 2,3,5-Trimethylnaphthalene | 1 70 | | 1 09 | | 1 20 | U | 1 15 | | 3 21 | | 4 81 | |
| 2,6-Dimethylnaphthalene | 6 53 | | 1 88 | | 2 21 | J | 2 18 | J | 6 62 | | 8 54 | |
| 2-Methylnaphthalene | 10 57 | | 3 24 | U | 8 59 | U | 6 02 | U | 13 33 | | 11 35 | |
| Acenaphthene | 3 59 | | 2 23 | | 1 93 | U | 1 80 | U | 4 24 | | 8 00 | |
| Acenaphthylene | 5 25 | | 3 58 | | 1 69 | U | 1 58 | U | 4 04 | | 6 34 | |
| Anthracene | 9 98 | J | 7 78 | J | 1 79 | J | 1 74 | J | 9 22 | J | 18 86 | J |
| Benzo(a)anthracene | 14 66 | | 13 88 | | 7 63 | | 101 61 | | 18 95 | | 39 56 | |
| Benzo(a)pyrene | 6 31 | | 8 35 | | 4 81 | | 258 54 | | 8 67 | | 10 64 | |
| Benzo(b)fluoranthene | 15 50 | | 11 69 | | 8 18 | | 315 45 | | 25 74 | | 32 57 | |
| Benzo(e)pyrene | 32 20 | | 17 36 | | 8 45 | | 108 10 | | 42 91 | | 64 02 | |
| Benzo(g,h,i)perylene | 10 19 | | 5 07 | J | 4 47 | | 41 84 | | 19 20 | | 15 97 | |
| Benzo(k)fluoranthene | 12 63 | | 12 15 | | 6 46 | | 160 54 | | 25 18 | | 28 22 | |
| Biphenyl | 1 05 | | 1 04 | J | 1 69 | U | 1 57 | U | 1 75 | | 1 31 | |
| Chrysene | 29 71 | | 26 10 | | 15 55 | | 225 04 | | 44 47 | | 70 38 | |
| Dibenzo(a,h)anthracene | 1 30 | | 1 10 | J | 1 45 | U | 12 08 | | 1 86 | | 2 27 | |
| Fluoranthene | 98 27 | | 58 73 | | 56 18 | | 212 24 | | 81 85 | | 231 30 | |
| Fluorene | 4 91 | | 2 94 | | 1 31 | J | 1 30 | U | 5 33 | | 7 63 | |
| Indeno(1,2,3-cd)pyrene | 5 25 | | 4 38 | J | 4 04 | J | 114 48 | J | 10 34 | | 7 24 | |
| Naphthalene | 9 05 | U | 4 88 | U | 13 68 | | 9 91 | U | 10 95 | U | 9 07 | U |
| Perylene | 8 95 | | 4 62 | U | 9 57 | UJ | 37 51 | UJ | 26 80 | | 13 69 | |
| Phenanthrene | 15 31 | | 17 83 | | 4 90 | | 5 95 | | 23 99 | | 24 08 | |
| Pyrene | 70 27 | | 45 27 | | 53 75 | | 159 98 | | 65 97 | | 153 35 | |
| Total PAH | 382 83 | | 261 24 | | 220 13 | | 1782 91 | | 467 69 | | 783 34 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 2,4'-DDD | 4 52 | | 3 30 | | 0 70 | U | 0 44 | J | 1 76 | | 3 23 | |
| 2,4'-DDE | 0 92 | U | 1 06 | U | 1 69 | U | 1 58 | U | 0 87 | U | 0 89 | U |
| 2,4'-DDT | 1 67 | | 0 13 | J | 0 61 | J | 0 70 | J | 2 84 | | 2 09 | |
| 4,4'-DDD | 11 03 | | 3 17 | U | 0 73 | J | 1 19 | J | 6 55 | | 10 51 | |
| 4,4'-DDE | 19 54 | | 4 84 | | 10 02 | | 14 51 | | 15 02 | | 18 84 | |
| 4,4'-DDT | 2 31 | | 0 84 | U | 0 24 | J | 0 30 | J | 4 10 | | 2 21 | |
| Aldrin | 0 12 | U | 0 14 | U | 0 23 | U | 0 21 | U | 0 12 | U | 0 12 | U |
| alpha-Chlordane | 13 81 | | 1 89 | | 0 35 | | 0 40 | | 4 36 | | 10 97 | |
| Dieldrin | 4 13 | | 2 60 | | 4 13 | | 3 98 | | 2 54 | | 3 74 | |
| Endosulfan I | 0 41 | U | 0 48 | U | 0 76 | U | 0 71 | U | 0 39 | U | 0 40 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFI HTER SITE**
**NAVAL EDUCATION AND TRAININ CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-21-DEP | | OFF-21-HC-051498 | | OFF-21-LOB-060898 | | OFF-21-LOB-061598 | | OFF-22-BM-052698 | | OFF-23-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-21 | | OFF-21 | | OFF-21 | | OFF-21 | | OFF-22 | | OFF-23 | |
| Date Sampled | 8/17/98 | | 5/14/98 | | 6/8/98 | | 6/15/98 | | 5/26/98 | | 8/17/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | DEPLOYED MUSSEL | | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | TISSUE-MUSSEL | | DEPLOYED MUSSEL | |
| Endosulfan II | 4 93 | | 0 56 | U | 0 82 | J | 0 84 | | 2 03 | | 3 22 | |
| Endrin | 0 56 | U | 0 65 | U | 1 03 | U | 0 96 | U | 0 53 | U | 0 54 | U |
| gamma-BHC | 0 72 | | 0 15 | U | 1 34 | | 0 75 | | 0 42 | | 0 48 | |
| Heptachlor | 0 51 | U | 0 59 | U | 0 93 | U | 0 87 | U | 0 48 | U | 0 49 | U |
| Heptachlor epoxide | 0 21 | U | 0 13 | J | 0 38 | U | 0 35 | U | 0 20 | U | 0 20 | U |
| Hexachlorobenzene | 0 50 | | 0 77 | | 0 44 | | 0 39 | | 0 19 | U | 0 55 | |
| Mirex | 0 24 | U | 0 30 | | 0 45 | U | 0 42 | U | 0 23 | U | 0 24 | U |
| PCB 101 | 24 36 | | 5 12 | | 1 19 | J | 1 22 | J | 10 08 | | 22 81 | |
| PCB 103 | 18 50 | | 21 60 | | 33 23 | | 30 59 | | 19 30 | | 18 52 | |
| PCB 105 | 4 64 | | 0 96 | | 2 51 | | 4 56 | | 1 90 | | 4 66 | |
| PCB 112 | 18 83 | | 21 24 | | 32 30 | | 29 33 | | 16 95 | | 18 66 | |
| PCB 118 | 17 56 | | 4 22 | | 16 46 | | 24 16 | | 9 31 | | 17 51 | |
| PCB 126 | 0 42 | U | 0 49 | U | 0 77 | U | 0 72 | U | 0 40 | U | 0 41 | U |
| PCB 128 | 4 45 | | 0 84 | U | 3 66 | | 5 72 | | 2 10 | | 4 21 | |
| PCB 138 | 29 81 | | 7 11 | | 23 14 | | 35 49 | | 20 80 | | 30 56 | |
| PCB 153 | 45 85 | | 11 37 | | 33 02 | | 55 50 | | 32 66 | | 47 39 | |
| PCB 166 | 53 45 | | 37 07 | | 66 42 | | 63 25 | | 52 55 | | 45 90 | |
| PCB 170 | 1 91 | | 1 85 | | 5 45 | | 6 72 | | 0 51 | U | 2 17 | |
| PCB 18 | 2 78 | J | 0 30 | U | 0 47 | U | 0 44 | U | 1 47 | J | 0 25 | U |
| PCB 180 | 4 84 | | 6 94 | | 11 44 | | 17 30 | | 2 70 | | 7 72 | |
| PCB 187 | 16 20 | | 4 51 | | 11 84 | | 14 24 | | 11 09 | | 13 07 | |
| PCB 188 | 0 63 | U | 0 73 | U | 1 17 | U | 1 09 | U | 0 60 | U | 0 62 | U |
| PCB 195 | 0 22 | J | 1 33 | | 1 38 | | 1 46 | | 0 36 | U | 0 23 | J |
| PCB 200 | 0 38 | U | 0 44 | U | 0 48 | J | 0 65 | U | 0 36 | U | 0 37 | U |
| PCB 206 | 0 36 | U | 1 30 | | 0 28 | J | 0 75 | | 0 73 | | 0 35 | U |
| PCB 209 | 0 54 | | 1 77 | | 0 76 | J | 0 75 | J | 0 64 | | 0 60 | |
| PCB 28 | 1 75 | | 0 92 | | 0 71 | | 0 94 | | 0 68 | | 1 46 | |
| PCB 29 | 0 18 | U | 0 20 | U | 0 33 | U | 0 30 | U | 0 17 | U | 0 17 | U |
| PCB 34 | 17 96 | | 20 85 | | 33 18 | | 30 93 | | 17 10 | | 17 48 | |
| PCB 44 | 2 96 | | 0 74 | | 0 38 | U | 0 36 | U | 2 11 | | 3 68 | |
| PCB 50 | 0 15 | U | 0 18 | U | 0 28 | U | 0 26 | U | 0 15 | U | 0 15 | U |
| PCB 52 | 7 29 | | 1 99 | | 1 50 | | 1 16 | | 4 43 | | 8 05 | |
| PCB 66 | 4 03 | | 1 60 | | 3 63 | | 4 76 | | 1 41 | | 4 32 | |
| PCB 8 | 1 41 | | 2 30 | | 0 84 | J | 0 49 | J | 3 02 | | 1 47 | |
| PCB 87 | 4 70 | | 1 28 | U | 0 55 | J | 0 62 | J | 2 13 | | 4 70 | |
| Sum of PCB Congeners | 177 42 | | 58 47 | | 122 25 | | 179 69 | | 109 78 | | 176 90 | |
| Sum of PCB Congeners X 2 | 354 83 | | 116 95 | | 244 51 | | 359 39 | | 219 56 | | 353 81 | |
| trans-Nonachlor | 6 36 | | 1 17 | | 0 59 | | 0 55 | | 2 74 | | 5 34 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAININ CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-21-DEP | | OFF-21-HC-051498 | | OFF-21-LOB-060898 | | OFF-21-LOB-061598 | | OFF-22-BM-052698 | | OFF-23-DEP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-21 | | OFF-21 | | OFF-21 | | OFF-21 | | OFF-22 | | OFF-23 | |
| Date Sampled | 8/17/98 | | 5/14/98 | | 6/8/98 | | 6/15/98 | | 5/26/98 | | 8/17/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Matrix | DEPLOYED MUSSEL | | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | TISSUE-MUSSEL | | DEPLOYED MUSSEL | |
| **Metals (UG/KG)** | | | | | | | | | | | | |
| Aluminum | 185 2 | | 1163 5 | J | 381 2 | | 373 4 | | 69 8 | J | 136 8 | |
| Arsenic | 1 3 | | 4 3 | | 8 3 | | 8 7 | | 2 | | 1 6 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 9 7 | | 7 9 | | 1 9 | | 1 6 | | 13 8 | | 10 3 | |
| Chromium | 11 7 | | 0 5 | UJ | 17 5 | | 16 2 | | 0 5 | U | 21 | |
| Copper | 6 5 | | 8 7 | | 147 3 | | 162 1 | | 1 7 | J | 7 | |
| Iron | 402 5 | | 307 5 | | 137 9 | | 122 4 | | 453 8 | | 455 | |
| Lead | 7 2 | | 4 9 | | 18 9 | | 16 5 | | 5 6 | | 5 3 | |
| Manganese | | NA | | NA | | NA | | NA | | NA | | NA |
| Mercury | 3 5 | | 2 9 | | 2 1 | | 1 8 | | 1 7 | | 1 8 | |
| Nickel | 17 3 | | 25 7 | | 39 6 | | 34 8 | | 11 9 | | 11 2 | |
| Silver | 0 5 | U | 0 5 | U | 3 2 | | 3 3 | | 0 5 | U | 0 5 | U |
| Zinc | 167 6 | | 92 3 | | 263 1 | | 255 1 | | 153 6 | | 157 6 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATI N AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-23-HC-051498 | | OFF-23-LOB-060898 | | OFF-23-LOB-061098 | | OFF-TO-DEP | |
|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-23 | | OFF-23 | | OFF-23 | | OFF-TO | |
| Date Sampled | 5/14/98 | | 6/8/98 | | 6/10/98 | | 6/22/98 | |
| QC Type | None | | None | | None | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | |
| 1-Methylnaphthalene | 2 99 | U | 7 60 | UJ | | NA | 11 96 | |
| 1-Methylphenanthrene | 4 52 | | 3 16 | | | NA | 6 56 | U |
| 2,3,5-Trimethylnaphthalene | 0 89 | U | 1 12 | | | NA | 3 84 | U |
| 2,6-Dimethylnaphthalene | 2 19 | | 1 73 | J | | NA | 5 96 | U |
| 2-Methylnaphthalene | 4 72 | U | 13 36 | J | | NA | 15 58 | |
| Acenaphthene | 4 89 | | 1 82 | | | NA | 7 53 | |
| Acenaphthylene | 2 49 | | 0 89 | U | | NA | 5 43 | U |
| Anthracene | 9 30 | J | 2 81 | J | | NA | 4 04 | J |
| Benzo(a)anthracene | 18 26 | | 12 80 | | | NA | 7 68 | J |
| Benzo(a)pyrene | 8 17 | | 12 79 | | | NA | 4 37 | J |
| Benzo(b)fluoranthene | 14 67 | | 19 91 | | | NA | 10 26 | |
| Benzo(e)pyrene | 21 42 | | 14 69 | | | NA | 11 42 | |
| Benzo(g,h,i)perylene | 6 51 | J | 7 17 | | | NA | 8 40 | |
| Benzo(k)fluoranthene | 13 70 | | 11 06 | | | NA | 7 66 | |
| Biphenyl | 1 45 | | 1 00 | | | NA | 5 42 | U |
| Chrysene | 27 66 | | 28 93 | | | NA | 12 28 | |
| Dibenzo(a,h)anthracene | 0 71 | J | 0 77 | U | | NA | 4 66 | U |
| Fluoranthene | 77 77 | | 81 30 | | | NA | 32 42 | |
| Fluorene | 3 38 | | 2 04 | | | NA | 4 49 | U |
| Indeno(1,2,3-cd)pyrene | 4 56 | J | 5 65 | J | | NA | 5 74 | J |
| Naphthalene | 6 24 | U | 13 25 | J | | NA | 32 55 | |
| Perylene | 3 85 | U | 3 54 | UJ | | NA | 8 08 | |
| Phenanthrene | 18 21 | | 14 62 | | | NA | 16 41 | |
| Pyrene | 64 16 | | 63 13 | | | NA | 28 79 | |
| Total PAH | 321 82 | | 323 47 | | | NA | 225 17 | |
| **PCB Congeners/Organochlorine Pesticides (UG/KG)** | | | | | | | | |
| 2,4'-DDD | 6 40 | | 0 27 | J | | NA | 2 26 | U |
| 2,4'-DDE | 1 26 | U | 0 89 | U | | NA | 5 43 | U |
| 2,4'-DDT | 0 20 | J | 0 69 | J | | NA | 6 57 | U |
| 4,4'-DDD | 2 63 | U | 0 83 | J | | NA | 2 26 | J |
| 4,4'-DDE | 2 87 | | 12 17 | | | NA | 3 63 | J |
| 4,4'-DDT | 0 77 | UJ | 0 27 | J | | NA | 4 28 | U |
| Aldrin | 0 17 | U | 0 12 | U | | NA | 0 74 | U |
| alpha-Chlordane | 0 89 | | 0 24 | | | NA | 7 27 | |
| Dieldrin | 3 42 | | 3 45 | | | NA | 1 35 | J |
| Endosulfan I | 0 57 | U | 0 40 | U | | NA | 2 44 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**LD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-23-HC-051498 | | OFF-23-LOB-060898 | | OFF-23-LOB-061098 | | OFF-TO-DEP | |
|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-23 | | OFF-23 | | OFF-23 | | OFF-TO | |
| Date Sampled | 5/14/98 | | 6/8/98 | | 6/10/98 | | 6/22/98 | |
| QC Type | None | | None | | None | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | |
| Endosulfan II | 3 21 | | 0 41 | J | | NA | 2 88 | |
| Endrin | 0 77 | U | 0 54 | U | | NA | 3 31 | U |
| gamma-BHC | 0 17 | U | 1 36 | | | NA | 0 31 | J |
| Heptachlor | 0 70 | U | 0 49 | U | | NA | 3 00 | U |
| Heptachlor epoxide | 0 18 | J | 0 20 | U | | NA | 1 22 | U |
| Hexachlorobenzene | 0 71 | | 0 30 | | | NA | 1 16 | U |
| Mirex | 0 28 | J | 0 17 | J | | NA | 1 44 | U |
| PCB 101 | 2 98 | | 1 08 | J | | NA | 9 08 | J |
| PCB 103 | 26 20 | | 17 19 | | | NA | 110 84 | |
| PCB 105 | 0 79 | U | 3 18 | | | NA | 3 40 | U |
| PCB 112 | 25 49 | | 16 74 | | | NA | 106 62 | |
| PCB 118 | 2 66 | | 20 75 | | | NA | 4 75 | J |
| PCB 126 | 0 58 | U | 0 41 | U | | NA | 2 49 | U |
| PCB 128 | 0 99 | U | 5 17 | | | NA | 0 94 | J |
| PCB 138 | 4 72 | U | 28 92 | | | NA | 12 69 | |
| PCB 153 | 8 48 | | 45 91 | | | NA | 17 25 | |
| PCB 166 | 57 30 | | 37 43 | | | NA | 237 24 | |
| PCB 170 | 1 20 | | 4 76 | | | NA | 3 19 | U |
| PCB 18 | 0 35 | U | 0 25 | U | | NA | 1 52 | U |
| PCB 180 | 3 92 | | 12 15 | | | NA | 9 22 | U |
| PCB 187 | 2 94 | | 14 02 | | | NA | 6 78 | |
| PCB 188 | 0 87 | U | 0 62 | U | | NA | 3 75 | U |
| PCB 195 | 0 89 | | 1 32 | | | NA | 2 24 | U |
| PCB 200 | 0 52 | U | 0 60 | | | NA | 2 24 | U |
| PCB 206 | 0 64 | | 0 55 | | | NA | 2 12 | U |
| PCB 209 | 1 41 | | 0 83 | | | NA | 3 13 | U |
| PCB 28 | 0 62 | | 0 38 | | | NA | 1 05 | U |
| PCB 29 | 0 24 | U | 0 17 | U | | NA | 1 05 | U |
| PCB 34 | 24 80 | | 17 54 | | | NA | 106 59 | |
| PCB 44 | 0 45 | | 0 20 | U | | NA | 1 23 | U |
| PCB 50 | 0 21 | U | 0 15 | U | | NA | 0 91 | U |
| PCB 52 | 1 16 | | 1 28 | | | NA | 0 91 | U |
| PCB 66 | 1 40 | | 3 28 | | | NA | 4 61 | U |
| PCB 8 | 0 49 | J | 0 36 | J | | NA | 6 09 | U |
| PCB 87 | 1 03 | U | 0 43 | | | NA | 2 55 | U |
| Sum of PCB Congeners | 39 57 | | 146 77 | | | NA | 103 18 | |
| Sum of PCB Congeners X 2 | 79 15 | | 293 55 | | | NA | 206 36 | |
| trans-Nonachlor | 0 66 | | 0 26 | J | | NA | 1 40 | J |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RH DE ISLAND**

| Sample Number | OFF-23-HC-051498 | | OFF-23-LOB-060898 | | OFF-23-LOB-061098 | | OFF-TO-DEP | |
|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-23 | | OFF-23 | | OFF-23 | | OFF-TO | |
| Date Sampled | 5/14/98 | | 6/8/98 | | 6/10/98 | | 6/22/98 | |
| QC Type | None | | None | | None | | None | |
| Matrix | TISSUE-CLAM | | TISSUE-LOBSTER | | TISSUE-LOBSTER | | DEPLOYED MUSSEL | |
| **Metals (UG/KG)** | | | | | | | | |
| Aluminum | 821 8 | J | 330 2 | | 314 2 | | 137 9 | |
| Arsenic | 4 9 | | 9 | | 9 3 | | 0 9 | |
| Barium | 32 | U | 32 | U | 32 | U | 32 | U |
| Cadmium | 6 4 | | 3 7 | | 3 4 | | 7 6 | |
| Chromium | 0 5 | UJ | 13 8 | | 15 1 | | 12 4 | |
| Copper | 5 | U | 112 4 | | 106 5 | | 5 3 | |
| Iron | 106 7 | | 168 8 | | 160 1 | | 380 1 | |
| Lead | 8 6 | | 12 9 | | 14 8 | | 5 8 | |
| Manganese | | NA | | NA | | NA | | NA |
| Mercury | 2 8 | | 2 4 | | 1 9 | | 1 9 | |
| Nickel | 15 3 | | 28 7 | | 30 5 | | 10 3 | |
| Silver | 0 5 | U | 2 7 | | 2 5 | | 0 5 | U |
| Zinc | 80 | | 236 6 | | | NA | 164 1 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

TETRA TECH NUS, INC. INTERNAL CORRESPONDENCE

C-Navy-12-98-1292W

To: Stephen Parker cc: File 7397-4.10

From: Maureen Parker MP

Subject: Tier II Data Validation, Navy CLEAN CTO 0269
Project No. 7397, SDG 98-369
Battelle
Old Fire Fighting Training Area, NETC, Newport, Rhode Island

PAHs/PCBs/OCPs: /20 /Tissue/
OFF-23-HC, OFF-8-HC, OFF-15-HC, OFF-15-PM,
OFF-17-HC, OFF-21-HC, OFF-12-HC, OFF-20-HC, OFF-10-HC,
OFF-11-HC, OFF-10-HC-FD, OFF-16-HC, OFF-14-PM, OFF-19-PM,
OFF-15-HC-FD, OFF-7-BM, OFF-6-BM, OFF-5-BM, OFF-4-BM, OFF-3-BM
(Field Duplicate Pairs: OFF-15-HC/OFF-15-HC-FD,
OFF-5-BM/OFF-5-BM-FD (from SDG 98-370))

Date: December 17, 1998

Tetra Tech NUS Inc., (TtNUS) performed tier II data validation on the polycyclic aromatic hydrocarbon (PAH) compounds, polychlorinated biphenyl (PCB) compounds and organo-chlorine pesticide (OCP) compounds data from Project 7397, tissue samples collected by Science Applications International Corporation at the Old Firefighting Training Area site. Tissue samples were extracted following Battelle Standard Operating Procedure (SOP) 5-190. Sample extracts were analyzed for PAH by gas chromatography/mass spectrometry (GC/MS) following Batelle SOP 5-157. Sample extracts were analyzed for pesticides and PCBs by GC equipped with electron capture detectors (ECD) following procedures defined in Battelle SOP 5-128. The data were evaluated based on data completeness; laboratory blank results; internal standard recoveries; matrix spike recoveries; laboratory duplicate precision; field duplicate precision; and NIST standard recoveries. Initial and continuing calibration data and internal standards were not included in the package and therefore the data will not be validated for these parameters. The data validation were performed according to a modified Region I, EPA Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses, November 1988 criteria.

**Data Completeness**

This data validation was performed on the summary QC forms. Chromatograms were submitted for the field samples and quality control data.

**Blanks**

The following contaminants at the maximum concentrations were found in the laboratory blanks associated with the tissue samples:

| Compound | Maximum Concentration | Action Level |
|---|---|---|
| Naphthalene | 4.78 ng/g | 23.9 ng/g |
| 2-methylnaphthalene | 2.14 ng/g | 10.7 ng/g |
| 1-methylnaphthalene | 1.41 ng/g | 7.1 ng/g |
| phenanthrene | 1.11 ng/g | 5.6 ng/g |
| fluoranthene | 1.06 ng/g | 5.3 ng/g |
| pyrene | 2.13 ng/g | 10.7 ng/g |
| perylene | 3.29 ng/g | 16.5 ng/g |
| Cl5(87) | 0.51 ng/g | 2.6 ng/g |
| 4,4-DDD | 0.77 ng/g | 3.9 ng/g |
| 4,4-DDT | 0.52 ng/g | 2.6 ng/g |
| Cl6(138) | 1.0 ng/g | 5.0 ng/g |

Blank actions are taken for naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, phenanthrene, perylene, Cl5 (87), 4,4-DDD, 4,4-DDT and Cl6 (138) in affected samples.

Sample results less than five times the blank contaminant concentration but greater than the MDL are qualified (U). Data may be biased high or be false positive.

**Blank Spike Analysis**

The following table summarizes the blank spike percent recoveries which did not meet laboratory QC limits of 70 - 130%:

| Compound | Blank Spike % Recovery | QC Criteria | Action | | Affected Samples |
|---|---|---|---|---|---|
| | | | (+) | NDs | |
| Indeno(1,2,3-cd)pyrene | 63% | 70 - 130% | J | A | All |
| Dibenz(a,h)anthracene | 68% | 70 - 130% | J | A | All |
| Benzo(g,h,i)perylene | 66% | 70 - 130% | J | A | All |

The positive results for above compounds are estimated (J) in all samples due to blank spike percent recovery results below the laboratory QC criteria.

**Laboratory Duplicate Analysis**

The following table summarizes the laboratory duplicate relative percent differences which did not meet laboratory QC limits of < 35% for sample OFF-15-HC-FD:

| Compound | OFF-15-HC-FD (ng/g) | OFF-15-HC-FD DUP (ng/g) | RPD | Action | | Affected Samples |
|---|---|---|---|---|---|---|
| | | | | (+) | NDs | |
| Benz(a)anthracene | 3.09 | 1.97 J | 44% | J | | OFF-15-HC-FD |
| Perylene | 4.3 | 1.23 | 111% | J | | OFF-15-HC-FD |

The positive results for above compounds are estimated (J) in sample OFF-15-HC-FD due to laboratory duplicate results outside the laboratory QC criteria.

**Field Duplicate Analysis**

The following table summarizes the field duplicate relative percent differences which did not meet the QC limits of < 50% for field duplicate pair OFF-15-HC/OFF-15-HC-FD:

| Compound | OFF-15-HC (ng/g) | OFF-15-HC-FD (ng/g) | RPD | Action | | Affected Samples |
|---|---|---|---|---|---|---|
| | | | | (+) | NDs | |
| Perylene | 0.84 | 4.3 | 134% | J | | OFF-15-HC, OFF-15-HC-FD |
| Cl2 (08) | 1.12 J | 2.51 | 76.6 | J | | OFF-15-HC*, OFF-15-HC-FD |
| Cl4 (52) | 2.39 | 1.42 | 50.9 | J | | OFF-15-HC, OFF-15-HC-FD |
| Cl5 (105) | 0.65 J | 2.74 | 123 | J | | OFF-15-HC*, OFF-15-HC-FD |
| Mirex | 3.61 | 0.31 J | 105 | J | | OFF-15-HC, OFF-15-HC-FD* |
| Cl7 (170) | 4.51 | 1.78 | 86.8 | J | | OFF-15-HC, OFF-15-HC-FD |
| Cl9 (206) | 2.87 | 1.36 | 71.4 | J | | OFF-15-HC, OFF-15-HC-FD |

* - Analyte detected below sample MDL; already qualified (J).

The positive results for above compounds are estimated (J) in field duplicate pair OFF-15-HC/OFF-15-HC-FD due to field duplicate results outside QC criteria.

The following table summarizes the field duplicate relative percent differences which did not meet the QC limits of < 50% for field duplicate pair OFF-5-BM/OFF-5-BM-FD (from SDG 98-370):

| Compound | OFF-5-BM (ng/g) | OFF-5-BM-FD (ng/g) | RPD | Action | | Affected Samples |
|---|---|---|---|---|---|---|
| | | | | (+) | NDs | |
| Naphthalene | 29.01 | 9.92 | 98% | J | | OFF-5-BM |
| 2-Methylnaphthalene | 17.23 | 10.08 | 52.4% | J | | OFF-5-BM |
| 1-Methylnaphthalene | 9.55 | 5.61 | 52% | J | | OFF-5-BM |
| Biphenyl | 4.78 U | 1.15 | 200% | | UJ | OFF-5-BM |
| Acenaphthene | 7.67 | 3.55 | 73.4 | J | | OFF-5-BM |
| Fluorene | 11.56 | 5.45 | 71.8 | J | | OFF-5-BM |
| Phenanthrene | 32.02 | 18.91 | 51.5 | J | | OFF-5-BM |
| Indeno(1,2,3-cd)pyrene | 11.49 | 6.85 | 50.6 | J | | OFF-5-BM |
| Dibenz(a,h)anthracene | 4.12 U | 1.03 | 200 | | UJ | OFF-5-BM |
| Cl4 (44) | 1.60 | 3.39 | 71.7 | J | | OFF-5-BM |
| Cl4 (66) | 4.36 | 2.20 | 65.8 | J | | OFF-5-BM |
| 4,4-DDD | 9.38 | 5.24 | 56.6 | J | | OFF-5-BM |
| Cl6 (128) | 3.77 U | 3.81 | 200 | | UJ | OFF-5-BM |
| Cl7 (180) | 16.09 | 4.80 | 180 | J | | OFF-5-BM |
| Mirex | 5.73 | 0.22 U | 200 | J | UJ | OFF-5-BM |
| Cl7 (170) | 0.85 J | 0.49 U | 58.1 | J | | OFF-5-BM* |
| Cl10 (209) | 1.51 J | 0.83 | 58.1 | J | | OFF-5-BM* |

* - Analyte detected below sample MDL; already qualified (J).

The positive and non-detected results for above compounds are estimated (J and UJ) in sample OFF-5-BM due to field duplicate results outside QC criteria. Sample OFF-5-BM-FD can be found in SDG 98-370.

**NIST SRM Standards Data**

The following table summarizes the NIST SRM recoveries which were outside the acceptable range:

| Compound | SRM Result | Acceptable Range | Action | | Affected Samples |
|---|---|---|---|---|---|
| | | | (+) | NDs | |
| Anthracene | 17.77 | 4.4 - 7.8 | J | A | All |
| Indeno(1,2,3-cd)pyrene | 6.78 | 11.4 - 17.0 | * | UJ | All |

The positive results for anthracene and the non-detected results for indeno(1,2,3-cd)pyrene are estimated (J and UJ) due to poor NIST SRM recoveries.

* - Already qualified due to poor blank spike recovery.

**Overall Assessment**

The results should be used as qualified. The data user is cautioned that the PAH data may be biased low due to degradation of the PAHs from data collection to data analysis (approximately 6 months) as a result of temperature fluctuations during shipping and storage. Blank actions were taken for several compounds in affected samples. Positive results for indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene are estimated due to poor blank spike percent recoveries. Benz(a)anthracene and perylene are estimated in sample OFF-15-HC-FD due to poor laboratory duplicate precision. Several compounds are estimated in field duplicate pair OFF-15-HC/OFF-15-HC-FD due to poor field duplicate precision. Several compounds are estimated in OFF-5-BM due to poor field duplicate precision. Anthracene and indeno(1,2,3-cd)pyrene are estimated due to poor NIST SRM recoveries.

NOTE: The data user is warned that the total PAH, sum of the PCB congeners and sum of the PCB congeners x 2 have not been changed to reflect the qualifications applied for blank contamination.

Attachments
cc: File 7397-4.10

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-23-HC | OFF-8-HC | OFF-15-HC | OFF-15-PM |
|---|---|---|---|---|
| Battelle ID | Y5269 | Y5270 | Y5271 | Y5272 |
| Sample Weight (g, dry weight) | 2.42 | 2.13 | 2.59 | 2.06 |
| Sample Weight (g, wet weight) | 25.15 | 22.37 | 24.28 | 25.68 |
| % Lipid | 4.05 | 3.05 | 4.71 | 6.91 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/10/98 | 11/10/98 | 11/10/98 | 11/10/98 |
| Battelle Sample Batch | 98-369 | 98-369 | 98-369 | 98-369 |
| Naphthalene | 6.24 U | 5.79 U | 5.45 U | 6.50 U |
| 2-Methylnaphthalene | 4.72 U | 3.83 U | 3.72 U | 2.95 UJ |
| 1-Methylnaphthalene | 2.99 U | 2.34 U | 1.87 U | 2.50 U |
| 2,6-Dimethylnaphthalene | 2.19 | 1.86 | 1.43 | 2.13 |
| 2,3,5-Trimethylnaphthalene | 0.89 U | 1.01 U | 1.06 | 1.44 |
| Biphenyl | 1.45 | 1.87 | 1.31 | 1.08 J |
| Acenaphthylene | 2.49 | 1.60 | 2.17 | 1.49 |
| Acenaphthene | 4.89 | 1.23 J | 1.04 J | 2.07 |
| Fluorene | 3.38 | 1.66 | 1.29 | 2.12 |
| Phenanthrene | 18.21 | 5.98 | 5.59 U | 10.14 |
| Anthracene | 9.30 J | 3.39 J | 3.78 J | 3.57 J |
| 1-Methylphenanthrene | 4.52 | 1.27 J | 1.30 J | 2.85 |
| Fluoranthene | 77.77 | 21.22 | 19.89 | 36.42 |
| Pyrene | 64.16 | 18.83 | 16.84 | 25.23 |
| Benz(a)anthracene | 18.26 | 2.23 | 2.81 | 6.60 |
| Chrysene | 27.66 | 6.59 | 6.91 | 18.63 |
| Benzo(b)fluoranthene | 14.67 | 3.06 | 2.86 | 6.57 |
| Benzo(k)fluoranthene | 13.70 | 2.06 | 2.18 | 7.99 |
| Benzo(e)pyrene | 21.42 | 5.22 | 4.85 | 8.14 |
| Benzo(a)pyrene | 8.17 | 1.51 J | 1.25 J | 4.05 |
| Perylene | 3.85 U | 1.31 U | 0.84 UJ | 1.60 U |
| Indeno(1,2,3-c,d)pyrene | 4.56 J | 1.77 UJ | 1.46 UJ | 1.83 UJ |
| Dibenz(a,h)anthracene | 0.71 J | 1.23 U | 1.01 U | 1.27 U |
| Benzo(g,h,i)perylene | 6.51 J | 1.77 J | 2.20 J | 1.41 U |
| Total PAH | 321.82 | 94.61 | 90.63 | 154.08 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MDL.
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-17-HC | OFF-21-HC | OFF-12-HC | OFF-20-HC |
|---|---|---|---|---|
| Battelle ID | Y5273 | Y5274 | Y5275 | Y5276 |
| Sample Weight (g, dry weight) | 3.76 | 2.88 | 4.14 | 2.17 |
| Sample Weight (g, wet weight) | 25.02 | 22.91 | 25.03 | 25.24 |
| % Lipid | 3.25 | 6.50 | 2.75 | 4.93 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/10/98 | 11/11/98 | 11/11/98 | 11/11/98 |
| Battelle Sample Batch | 98-369 | 98-369 | 98-369 | 98-369 |
| | | | | |
| Naphthalene | 4.10 U | 4.88 U | 3.69 U | 6.45 U |
| 2-Methylnaphthalene | 2.18 U | 3.24 U | 2.42 U | 3.37 U |
| 1-Methylnaphthalene | 1.34 U | 2.17 U | 1.85 U | 2.32 U |
| 2,6-Dimethylnaphthalene | 1.79 | 1.88 | 1.32 | 2.29 |
| 2,3,5-Trimethylnaphthalene | 1.11 | 1.09 | 1.22 | 1.66 |
| Biphenyl | 1.18 | 1.04 J | 0.68 J | 1.31 J |
| Acenaphthylene | 2.87 | 3.58 | 2.51 | 2.00 |
| Acenaphthene | 1.66 | 2.23 | 1.49 | 1.61 U |
| Fluorene | 1.98 | 2.94 | 2.09 | 1.38 |
| Phenanthrene | 13.88 | 17.83 | 11.48 | 7.75 |
| Anthracene | 7.43 J | 7.78 J | 4.89 J | 3.18 J |
| 1-Methylphenanthrene | 2.97 | 3.88 | 2.09 | 1.96 |
| Fluoranthene | 55.87 | 58.73 | 45.41 | 30.88 |
| Pyrene | 41.32 | 45.27 | 36.70 | 22.55 |
| Benz(a)anthracene | 9.87 | 13.88 | 7.33 | 5.21 |
| Chrysene | 21.47 | 26.10 | 15.83 | 12.59 |
| Benzo(b)fluoranthene | 9.56 | 11.69 | 6.18 | 4.85 |
| Benzo(k)fluoranthene | 10.27 | 12.15 | 6.36 | 4.50 |
| Benzo(e)pyrene | 16.25 | 17.36 | 12.49 | 8.30 |
| Benzo(a)pyrene | 6.62 | 8.35 | 4.23 | 2.88 |
| Perylene | 2.75 U | 4.62 U | 2.64 U | 2.65 U |
| Indeno(1,2,3-c,d)pyrene | 3.51 J | 4.38 J | 1.97 J | 1.74 UJ |
| Dibenz(a,h)anthracene | 0.80 J | 1.10 J | 0.63 U | 1.21 U |
| Benzo(g,h,i)perylene | 5.89 J | 5.07 J | 4.30 J | 2.41 J |
| | | | | |
| Total PAH | 226.68 | 261.24 | 179.17 | 130.50 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-10-HC | OFF-11-HC | OFF-10-HC-FD | OFF-16-HC |
|---|---|---|---|---|
| Battelle ID | Y5277 | Y5278 | Y5279 | Y5280 |
| Sample Weight (g, dry weight) | 0.33 | 2.41 | 1.78 | 2.47 |
| Sample Weight (g, wet weight) | 4.86 | 24.17 | 24.51 | 25.46 |
| % Lipid | 5.40 | 6.09 | 4.54 | 3.96 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/11/98 | 11/11/98 | 11/11/98 | 11/11/98 |
| Battelle Sample Batch | 98-369 | 98-369 | 98-369 | 98-369 |
| Naphthalene | 47.00 | 6.59 U | 8.36 U | 6.44 U |
| 2-Methylnaphthalene | 24.49 | 3.33 U | 4.51 U | 4.22 U |
| 1-Methylnaphthalene | 19.31 | 2.27 U | 3.68 U | 2.95 U |
| 2,6-Dimethylnaphthalene | 10.08 U | 1.57 | 1.90 | 2.36 |
| 2,3,5-Trimethylnaphthalene | 6.49 U | 1.04 | 1.21 U | 1.22 |
| Biphenyl | 9.15 U | 0.79 J | 1.45 J | 0.92 J |
| Acenaphthylene | 9.17 U | 1.56 | 1.26 J | 2.24 |
| Acenaphthene | 10.46 U | 1.52 | 1.65 J | 2.49 |
| Fluorene | 7.58 U | 1.60 | 1.25 J | 2.48 |
| Phenanthrene | 16.43 | 10.85 | 10.23 | 14.62 |
| Anthracene | 7.78 J | 4.69 J | 3.66 J | 4.92 J |
| 1-Methylphenanthrene | 11.08 U | 3.05 | 1.33 J | 2.65 |
| Fluoranthene | 27.95 | 38.20 | 28.53 | 48.59 |
| Pyrene | 24.37 | 30.20 | 24.66 | 43.34 |
| Benz(a)anthracene | 4.47 J | 5.63 | 6.87 | 11.45 |
| Chrysene | 13.67 | 18.74 | 12.50 | 20.34 |
| Benzo(b)fluoranthene | 5.97 J | 8.12 | 6.46 | 12.71 |
| Benzo(k)fluoranthene | 5.61 J | 9.84 | 7.58 | 13.87 |
| Benzo(e)pyrene | 10.64 J | 14.15 | 8.52 | 18.02 |
| Benzo(a)pyrene | 5.04 J | 6.08 | 5.11 | 8.18 |
| Perylene | 5.05 UJ | 3.17 U | 2.40 U | 3.33 U |
| Indeno(1,2,3-c,d)pyrene | 11.33 UJ | 5.43 J | 3.46 J | 8.40 J |
| Dibenz(a,h)anthracene | 7.88 U | 0.97 J | 1.47 U | 1.37 J |
| Benzo(g,h,i)perylene | 8.72 U | 8.45 J | 5.81 J | 11.80 J |
| Total PAH | 217.76 | 187.86 | 151.16 | 248.90 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-14-PM | OFF-19-PM | OFF-15-HC-FD | OFF-7-BM |
|---|---|---|---|---|
| Battelle ID | Y5281 | Y5282 | Y5283 | Y5284 |
| Sample Weight (g, dry weight) | 1.82 | 1.72 | 2.45 | 3.68 |
| Sample Weight (g, wet weight) | 25.27 | 23.65 | 17.65 | 24.55 |
| % Lipid | 4.93 | 6.59 | 3.30 | 8.21 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/12/98 | 11/12/98 | 11/10/98 | 11/12/98 |
| Battelle Sample Batch | 98-369 | 98-369 | 98-369 | 98-369 |
| Naphthalene | 7.72 U | 10.08 U | 7.36 U | 9.28 U |
| 2-Methylnaphthalene | 4.56 U | 4.89 U | 5.25 U | 12.03 |
| 1-Methylnaphthalene | 3.04 U | 4.10 U | 3.11 U | 6.46 U |
| 2,6-Dimethylnaphthalene | 2.26 | 2.87 | 1.76 | 5.51 |
| 2,3,5-Trimethylnaphthalene | 1.19 U | 1.25 U | 1.03 | 3.10 |
| Biphenyl | 1.00 J | 2.04 | 1.04 J | 1.02 |
| Acenaphthylene | 1.82 | 2.08 | 1.53 | 4.24 |
| Acenaphthene | 3.38 | 4.50 | 1.42 U | 5.27 |
| Fluorene | 3.03 | 5.78 | 1.32 | 8.49 |
| Phenanthrene | 16.81 | 27.57 | 6.40 | 31.03 |
| Anthracene | 4.89 J | 11.15 J | 2.79 J | 11.26 J |
| 1-Methylphenanthrene | 2.55 | 4.66 | 1.52 | 5.31 |
| Fluoranthene | 35.83 | 51.81 | 23.25 | 109.62 |
| Pyrene | 30.19 | 43.45 | 20.08 | 95.78 |
| Benz(a)anthracene | 16.39 | 21.57 | 3.09 J | 18.30 |
| Chrysene | 20.20 | 27.30 | 7.69 | 43.66 |
| Benzo(b)fluoranthene | 11.27 | 14.19 | 2.78 | 23.39 |
| Benzo(k)fluoranthene | 14.42 | 14.81 | 2.81 | 23.23 |
| Benzo(e)pyrene | 11.91 | 13.91 | 5.67 | 42.73 |
| Benzo(a)pyrene | 10.26 | 12.21 | 2.12 J | 9.80 |
| Perylene | 4.99 U | 5.58 U | 4.30 UJ | 4.71 U |
| Indeno(1,2,3-c,d)pyrene | 7.06 J | 8.93 J | 0.94 J | 10.69 J |
| Dibenz(a,h)anthracene | 1.44 U | 2.28 J | 1.07 U | 2.04 J |
| Benzo(g,h,i)perylene | 8.13 J | 8.80 J | 1.78 J | 16.04 J |
| Total PAH | 221.70 | 304.54 | 107.64 | 502.97 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-6-BM | OFF-5-BM | OFF-4-BM | OFF-3-BM |
|---|---|---|---|---|
| Battelle ID | Y5285 | Y5286 | Y5287 | Y5288 |
| Sample Weight (g, dry weight) | 2.52 | 0.64 | 3.07 | 1.67 |
| Sample Weight (g, wet weight) | 23.97 | 4.13 | 21.74 | 11.09 |
| % Lipid | 6.11 | 17.18 | 7.95 | 8.76 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/12/98 | 11/12/98 | 11/12/98 | 11/9/98 |
| Battelle Sample Batch | 98-369 | 98-369 | 98-369 | 98-369 |
| Naphthalene | 8.67 U | 29.01 J | 7.31 U | 11.93 U |
| 2-Methylnaphthalene | 9.35 U | 17.23 J | 7.59 U | 9.88 U |
| 1-Methylnaphthalene | 5.22 U | 9.55 J | 4.35 U | 7.12 |
| 2,6-Dimethylnaphthalene | 4.54 | 7.07 | 3.67 | 4.96 |
| 2,3,5-Trimethylnaphthalene | 2.79 | 5.34 | 2.58 | 2.49 |
| Biphenyl | 1.37 | 4.78 UJ | 1.62 | 2.16 |
| Acenaphthylene | 4.07 | 7.32 | 4.61 | 5.89 |
| Acenaphthene | 3.85 | 7.67 J | 5.22 | 2.91 |
| Fluorene | 6.39 | 11.56 J | 7.01 | 11.19 |
| Phenanthrene | 18.55 | 32.02 J | 17.84 | 20.48 |
| Anthracene | 7.84 J | 9.74 J | 7.24 J | 8.96 J |
| 1-Methylphenanthrene | 4.30 | 5.31 J | 4.07 | 3.36 |
| Fluoranthene | 72.08 | 90.97 | 60.09 | 67.39 |
| Pyrene | 55.62 | 71.97 | 43.04 | 41.22 |
| Benz(a)anthracene | 11.82 | 15.86 | 12.03 | 7.48 |
| Chrysene | 29.37 | 36.59 | 24.13 | 27.23 |
| Benzo(b)fluoranthene | 12.89 | 17.85 | 12.46 | 9.54 |
| Benzo(k)fluoranthene | 12.54 | 18.18 | 12.16 | 10.36 |
| Benzo(e)pyrene | 28.08 | 30.35 | 17.97 | 17.75 |
| Benzo(a)pyrene | 5.88 | 9.96 | 6.80 | 5.49 |
| Perylene | 4.09 U | 4.15 U | 11.86 | 18.46 |
| Indeno(1,2,3-c,d)pyrene | 7.57 J | 11.49 J | 6.99 J | 3.85 J |
| Dibenz(a,h)anthracene | 1.23 J | 4.12 U | 1.08 J | 1.02 J |
| Benzo(g,h,i)perylene | 11.87 J | 16.41 J | 9.09 J | 6.84 J |
| Total PAH | 329.98 | 465.61 | 290.80 | 307.96 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-3-BM | OFF-23-HC | OFF-8-HC | OFF-15-HC | OFF-15-PM |
|---|---|---|---|---|---|
| Battelle ID | Y5288 | Y5269 | Y5270 | Y5271 | Y5272 |
| Sample Weight (g, dry weight) | 1.67 | 2.42 | 2.13 | 2.59 | 2.06 |
| Sample Weight (g, wet weight) | 11.09 | 25.15 | 22.37 | 24.28 | 25.68 |
| % Lipid | 8.76 | 4.05 | 3.05 | 4.71 | 6.91 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/17/98 | 11/15/98 | 11/15/98 | 11/15/98 | 11/15/98 |
| Battelle Batch | 98-369 | 98-369 | 98-369 | 98-369 | 98-369 |
| | | | | | |
| Cl2(08) | 2.26 | 0.49 J | 1.24 J | 1.12 J | 1.66 U |
| Hexachlorobenzene | 0.27 J | 0.71 | 0.74 | 0.92 | 0.34 |
| g-BHC | 0.41 | 0.17 U | 0.20 U | 1.32 | 0.20 U |
| Cl3(18) | 1.11 | 0.35 U | 0.40 U | 0.33 U | 0.42 U |
| Cl3(29) | 0.35 U | 0.24 U | 0.28 U | 0.23 U | 0.29 U |
| Cl3(28) | 1.70 | 0.62 | 0.51 | 0.88 | 0.67 |
| Heptachlor | 1.01 U | 0.70 U | 0.79 U | 0.65 U | 0.82 U |
| Cl4(52) | 4.85 | 1.16 | 1.38 | 2.39 J | 1.99 |
| Aldrin | 0.25 U | 0.17 U | 0.19 U | 0.16 U | 0.20 U |
| Cl4(44) | 2.20 | 0.45 | 0.39 | 0.54 | 0.49 |
| Heptachlor epoxide | 0.48 | 0.18 J | 0.32 U | 0.26 U | 0.33 U |
| Cl4(66) | 3.57 | 1.40 | 1.24 | 1.32 | 1.27 |
| 2,4 DDE | 1.83 U | 1.26 U | 1.43 U | 1.18 U | 1.48 U |
| Cl5(101) | 16.57 | 2.98 | 3.90 | 6.25 | 5.05 |
| cis Chlordane | 4.60 | 0.89 | 0.97 | 1.65 | 1.28 |
| trans Nonachlor | 4.31 | 0.66 | 0.71 | 1.09 | 1.63 |
| Cl5(87) | 4.78 | 1.03 U | 1.01 U | 0.55 U | 1.50 U |
| 4,4 DDE | 18.28 | 2.87 | 2.56 | 4.31 | 2.88 |
| Cl5(118) | 17.92 | 2.66 | 3.09 | 4.36 | 3.90 |
| 4,4 DDD | 8.54 | 2.63 U | 1.39 U | 2.41 U | 2.03 U |
| 2,4 DDT | 1.76 J | 0.20 J | 0.16 J | 0.27 J | 0.65 J |
| Cl6(153) | 53.60 | 8.48 | 10.71 | 13.37 | 17.32 |
| Cl5(105) | 1.15 U | 0.79 U | 0.90 U | 0.65 J | 1.17 |
| 4,4 DDT | 5.41 | 0.77 UJ | 1.13 U | 0.93 U | 1.17 U |
| Cl6(138) | 35.06 | 4.72 U | 6.64 | 8.63 | 11.49 |
| Cl5(126) | 0.84 U | 0.58 U | 0.66 U | 0.54 U | 0.68 U |
| Cl7(187) | 16.99 | 2.94 | 4.83 | 6.82 | 5.83 |
| Cl6(128) | 1.44 U | 0.99 U | 1.13 U | 0.93 U | 1.17 U |
| Cl7(180) | 3.11 U | 3.92 | 6.74 | 9.12 | 8.62 |
| Mirex | 0.68 | 0.28 J | 0.28 J | 3.61 J | 0.39 U |
| Cl7(170) | 1.44 | 1.20 | 1.36 | 4.51 J | 2.86 |
| Cl8(195) | 0.76 U | 0.89 | 1.52 | 2.10 | 1.42 |
| Cl9(206) | 0.72 U | 0.64 | 1.63 | 2.87 J | 1.13 |
| Cl10(209) | 1.51 | 1.41 | 2.89 | 3.31 | 1.96 |
| Cl4(50) | 0.31 U | 0.21 U | 0.24 U | 0.20 U | 0.25 U |
| Cl7(188) | 1.27 U | 0.87 U | 0.99 U | 0.82 U | 1.02 U |
| Cl8(200) | 0.76 U | 0.52 U | 0.59 U | 0.49 U | 0.61 U |
| | | | | | |
| Sum of 24 Congeners | 174.25 | 39.57 | 54.25 | 72.31 | 72.77 |
| Sum of 24 Congeners x 2 | 348.50 | 79.15 | 108.50 | 144.62 | 145.54 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-17-HC | OFF-21-HC | OFF-12-HC | OFF-20-HC | OFF-10-HC |
|---|---|---|---|---|---|
| Battelle ID | Y5273 | Y5274 | Y5275 | Y5276 | Y5277 |
| Sample Weight (g, dry weight) | 3.76 | 2.88 | 4.14 | 2.17 | 0.33 |
| Sample Weight (g, wet weight) | 25.02 | 22.91 | 25.03 | 25.24 | 4.86 |
| % Lipid | 3.25 | 6.50 | 2.75 | 4.93 | 5.40 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/15/98 | 11/15/98 | 11/15/98 | 11/15/98 | 11/16/98 |
| Battelle Batch | 98-369 | 98-369 | 98-369 | 98-369 | 98-369 |
| | | | | | |
| Cl2(08) | 1.47 | 2.30 | 1.29 | 1.48 J | 3.33 J |
| Hexachlorobenzene | 0.63 | 0.77 | 0.57 | 0.77 | 0.85 J |
| g-BHC | 0.11 U | 0.15 U | 1.65 | 0.19 U | 2.32 |
| Cl3(18) | 0.28 | 0.30 U | 0.29 | 0.40 U | 2.57 U |
| Cl3(29) | 0.16 U | 0.20 U | 0.14 U | 0.27 U | 1.77 U |
| Cl3(28) | 0.81 | 0.92 | 0.95 | 0.58 | 1.77 U |
| Heptachlor | 0.45 U | 0.59 U | 0.41 U | 0.78 U | 5.07 U |
| Cl4(52) | 1.54 | 1.99 | 1.26 | 3.42 | 1.54 U |
| Aldrin | 0.11 U | 0.14 U | 0.10 U | 0.19 U | 1.24 U |
| Cl4(44) | 0.49 | 0.74 | 0.55 | 0.56 | 2.08 U |
| Heptachlor epoxide | 0.19 | 0.13 J | 0.17 U | 0.32 U | 2.06 U |
| Cl4(66) | 1.71 | 1.60 | 1.50 | 1.78 | 6.54 J |
| 2,4 DDE | 0.81 U | 1.06 U | 0.74 U | 1.41 U | 9.17 U |
| Cl5(101) | 3.95 | 5.12 | 3.41 | 4.20 | 3.03 J |
| cis Chlordane | 1.21 | 1.89 | 0.96 | 0.94 | 1.84 U |
| trans Nonachlor | 1.10 | 1.17 | 0.77 | 0.74 | 2.79 U |
| Cl5(87) | 1.15 U | 1.28 U | 0.98 U | 1.37 U | 4.01 J |
| 4,4 DDE | 5.21 | 4.84 | 3.79 | 3.44 | 1.89 J |
| Cl5(118) | 4.00 | 4.22 | 3.45 | 3.44 | 1.13 J |
| 4,4 DDD | 2.80 U | 3.17 U | 2.83 U | 3.39 U | 6.80 J |
| 2,4 DDT | 0.17 J | 0.13 J | 0.16 J | 0.32 J | 1.62 J |
| Cl6(153) | 9.99 | 11.37 | 9.39 | 13.18 | 9.09 J |
| Cl5(105) | 1.15 | 0.96 | 0.77 | 0.88 U | 5.74 U |
| 4,4 DDT | 0.59 UJ | 0.84 U | 0.48 UJ | 0.61 U | 7.23 U |
| Cl6(138) | 6.37 | 7.11 | 4.86 U | 8.32 | 7.17 J |
| Cl5(126) | 0.37 U | 0.49 U | 0.34 U | 0.65 U | 4.20 U |
| Cl7(187) | 4.59 | 4.51 | 3.49 | 4.23 | 2.31 J |
| Cl6(128) | 0.64 U | 0.84 U | 0.58 U | 1.11 U | 7.22 U |
| Cl7(180) | 6.44 | 6.94 | 5.08 | 7.53 | 5.22 J |
| Mirex | 0.35 | 0.30 | 0.20 | 0.41 | 2.43 U |
| Cl7(170) | 1.35 | 1.85 | 1.36 | 2.06 | 8.21 |
| Cl8(195) | 1.47 | 1.33 | 1.00 | 1.20 | 0.86 J |
| Cl9(206) | 1.29 | 1.30 | 0.75 | 0.89 | 0.67 J |
| Cl10(209) | 2.09 | 1.77 | 1.28 | 2.38 | 3.57 J |
| Cl4(50) | 0.14 U | 0.18 U | 0.12 U | 0.24 U | 1.54 U |
| Cl7(188) | 0.56 U | 0.73 U | 0.51 U | 0.98 U | 6.34 U |
| Cl8(200) | 0.34 U | 0.44 U | 0.30 U | 0.58 U | 3.78 U |
| | | | | | |
| Sum of 24 Congeners | 52.34 | 58.47 | 43.65 | 61.73 | 93.68 |
| Sum of 24 Congeners x 2 | 104.68 | 116.95 | 87.30 | 123.45 | 187.36 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt

| Client ID | OFF-11-HC | OFF10HCFD | OFF-16-HC | OFF-14-PM | OFF-19-PM |
|---|---|---|---|---|---|
| Battelle ID | Y5278 | Y5279 | Y5280 | Y5281 | Y5282 |
| Sample Weight (g, dry weight) | 2.41 | 1.78 | 2.47 | 1.82 | 1.72 |
| Sample Weight (g, wet weight) | 24.17 | 24.51 | 25.46 | 25.27 | 23.65 |
| % Lipid | 6.09 | 4.54 | 3.96 | 4.93 | 6.59 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/16/98 | 11/16/98 | 11/16/98 | 11/16/98 | 11/16/98 |
| Battelle Batch | 98-369 | 98-369 | 98-369 | 98-369 | 98-369 |
| | | | | | |
| Cl2(08) | 2.95 | 2.81 | 1.81 | 1.88 U | 1.70 J |
| Hexachlorobenzene | 0.97 | 1.09 | 1.01 | 0.36 U | 0.64 |
| g-BHC | 0.17 U | 2.29 | 1.66 | 0.23 U | 0.24 U |
| Cl3(18) | 0.35 U | 0.48 U | 0.18 J | 0.47 U | 0.12 J |
| Cl3(29) | 0.24 U | 0.33 U | 0.24 U | 0.32 U | 0.34 U |
| Cl3(28) | 1.34 | 0.77 | 1.07 | 0.32 U | 0.67 |
| Heptachlor | 0.70 U | 0.95 U | 0.27 J | 0.93 U | 0.98 U |
| Cl4(52) | 1.22 | 1.84 | 1.29 | 1.73 | 2.18 |
| Aldrin | 0.17 U | 0.23 U | 0.17 U | 0.23 U | 0.24 U |
| Cl4(44) | 0.50 | 0.47 | 0.35 | 0.63 | 0.65 |
| Heptachlor epoxide | 0.28 U | 0.38 U | 0.28 U | 0.38 U | 0.40 U |
| Cl4(66) | 1.52 | 1.61 | 1.22 | 1.27 J | 1.34 J |
| 2,4 DDE | 1.27 U | 1.71 U | 1.24 U | 1.68 U | 1.77 U |
| Cl5(101) | 4.00 | 3.17 | 2.26 U | 4.16 | 4.18 |
| cis Chlordane | 1.17 | 1.18 | 1.63 | 0.93 | 1.18 |
| trans Nonachlor | 0.83 | 0.50 J | 0.95 | 1.39 | 1.69 |
| Cl5(87) | 1.31 U | 0.99 U | 1.05 U | 1.50 U | 1.18 U |
| 4,4 DDE | 5.87 | 3.15 | 2.19 U | 1.95 J | 2.32 J |
| Cl5(118) | 3.64 | 2.24 J | 4.54 | 2.94 | 3.02 |
| 4,4 DDD | 2.93 U | 2.63 U | 2.90 U | 1.68 U | 1.80 U |
| 2,4 DDT | 1.53 U | 0.26 J | 0.57 J | 2.14 | 2.24 |
| Cl6(153) | 12.23 | 8.71 | 11.13 | 13.86 | 13.84 |
| Cl5(105) | 0.79 U | 3.88 | 2.85 | 0.93 J | 0.74 J |
| 4,4 DDT | 0.54 UJ | 0.64 UJ | 0.45 UJ | 1.32 U | 0.34 UJ |
| Cl6(138) | 6.54 | 5.21 | 7.89 | 9.19 | 9.17 |
| Cl5(126) | 0.58 U | 0.78 U | 0.57 U | 0.77 U | 0.81 U |
| Cl7(187) | 4.17 | 2.95 | 4.36 | 4.42 | 4.76 |
| Cl6(128) | 1.00 U | 1.35 U | 0.97 U | 1.32 U | 1.39 U |
| Cl7(180) | 6.26 | 5.14 | 6.99 | 6.33 | 7.28 |
| Mirex | 0.24 J | 0.35 J | 0.36 | 0.44 U | 0.24 J |
| Cl7(170) | 2.60 | 1.83 | 2.58 | 2.44 | 1.64 |
| Cl8(195) | 1.18 | 0.96 | 1.49 | 1.24 | 1.36 |
| Cl9(206) | 0.94 | 0.75 | 1.42 | 0.83 | 1.11 |
| Cl10(209) | 1.84 | 1.84 | 2.27 | 1.42 | 1.68 |
| Cl4(50) | 0.21 U | 0.29 U | 0.21 U | 0.28 U | 0.30 U |
| Cl7(188) | 0.87 U | 1.18 U | 0.85 U | 1.16 U | 1.22 U |
| Cl8(200) | 0.52 U | 0.71 U | 0.51 U | 0.69 U | 0.73 U |
| | | | | | |
| Sum of 24 Congeners | 56.83 | 50.31 | 58.11 | 60.12 | 61.42 |
| Sum of 24 Congeners x 2 | 113.67 | 100.61 | 116.22 | 120.24 | 122.84 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-7-BM | OFF-6-BM | OFF-5-BM | OFF-4-BM | OFF-15-HC-FD |
|---|---|---|---|---|---|
| Battelle ID | Y5284 | Y5285 | Y5286 | Y5287 | Y5283 |
| Sample Weight (g, dry weight) | 3.68 | 2.52 | 0.64 | 3.07 | 2.45 |
| Sample Weight (g, wet weight) | 24.55 | 23.97 | 4.13 | 21.74 | 17.65 |
| % Lipid | 8.21 | 6.11 | 17.18 | 7.95 | 3.30 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/17/98 | 11/17/98 | 11/17/98 | 11/17/98 | 11/16/98 |
| Battelle Batch | 98-369 | 98-369 | 98-369 | 98-369 | 98-369 |
| Cl2(08) | 2.04 | 2.89 | 2.12 J | 2.32 | 2.51 J |
| Hexachlorobenzene | 0.24 | 0.59 | 0.54 J | 0.33 | 0.82 |
| g-BHC | 0.72 | 0.34 | 0.66 | 0.58 | 1.21 |
| Cl3(18) | 1.16 | 0.78 | 0.82 J | 0.93 | 0.27 J |
| Cl3(29) | 0.16 U | 0.23 U | 0.92 U | 0.19 U | 0.24 U |
| Cl3(28) | 1.85 | 1.51 | 1.34 | 1.30 | 0.76 |
| Heptachlor | 0.46 U | 0.67 U | 2.65 U | 0.55 U | 0.69 U |
| Cl4(52) | 4.08 | 3.99 | 4.37 | 3.87 | 1.42 J |
| Aldrin | 0.11 U | 0.16 U | 0.65 U | 0.13 U | 0.17 U |
| Cl4(44) | 2.55 | 1.82 | 1.60 J | 1.75 | 0.43 |
| Heptachlor epoxide | 0.41 | 0.27 U | 1.08 U | 0.22 U | 0.10 J |
| Cl4(66) | 3.86 | 2.86 | 4.36 J | 2.88 | 1.59 |
| 2,4 DDE | 0.83 U | 1.21 U | 4.80 U | 1.00 U | 1.25 U |
| Cl5(101) | 14.02 | 10.59 | 15.44 | 13.16 | 4.15 |
| cis Chlordane | 4.47 | 0.24 U | 4.70 | 4.01 | 0.91 |
| trans Nonachlor | 4.06 | 3.16 | 3.50 | 3.69 | 0.73 |
| Cl5(87) | 4.12 | 3.23 | 4.84 | 3.55 | 1.20 U |
| 4,4 DDE | 19.07 | 2.15 U | 15.75 | 14.75 | 2.69 |
| Cl5(118) | 16.28 | 1.90 U | 15.74 | 13.74 | 3.64 |
| 4,4 DDD | 10.57 | 6.62 | 9.38 J | 7.16 | 1.78 U |
| 2,4 DDT | 1.15 | 0.83 J | 2.93 J | 1.92 | 0.77 J |
| Cl6(153) | 48.95 | 36.68 | 48.13 | 41.28 | 12.47 |
| Cl5(105) | 4.13 | 3.01 | 3.93 | 3.59 | 2.74 J |
| 4,4 DDT | 4.33 | 4.05 | 3.85 | 4.13 | 0.44 UJ |
| Cl6(138) | 31.92 | 22.88 | 31.83 | 26.52 | 6.69 |
| Cl5(126) | 0.38 U | 0.56 U | 2.20 U | 0.46 U | 0.57 U |
| Cl7(187) | 15.77 | 11.06 | 14.65 | 12.77 | 5.08 |
| Cl6(128) | 0.65 U | 1.68 | 3.77 UJ | 0.50 J | 0.98 U |
| Cl7(180) | 4.06 | 13.36 | 16.09 J | 15.57 | 7.78 |
| Mirex | 0.33 | 0.35 | 5.73 J | 0.74 | 0.31 J |
| Cl7(170) | 1.01 | 0.84 | 0.85 J | 0.95 | 1.78 J |
| Cl8(195) | 0.34 U | 0.11 J | 1.98 U | 0.15 J | 1.54 |
| Cl9(206) | 0.32 U | 0.13 J | 1.17 J | 0.26 J | 1.36 J |
| Cl10(209) | 1.11 | 0.97 | 1.51 J | 1.44 | 2.07 |
| Cl4(50) | 0.14 U | 0.20 U | 0.80 U | 0.17 U | 0.21 U |
| Cl7(188) | 0.57 U | 0.84 U | 3.31 U | 0.69 U | 0.86 U |
| Cl8(200) | 0.34 U | 0.50 U | 1.98 U | 0.41 U | 0.51 U |
| Sum of 24 Congeners | 159.84 | 122.64 | 183.77 | 148.47 | 60.86 |
| Sum of 24 Congeners x 2 | 319.67 | 245.27 | 367.53 | 296.93 | 121.72 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

**TETRA TECH NUS, INC.** **INTERNAL CORRESPONDENCE**

C-Navy-12-98-1293W

To: Stephen Parker cc: File 7397-4.10

From: Maureen Parker MP

Subject: Tier II Data Validation, Navy CLEAN CTO 0269
Project No. 7397, SDG 98-370
Battelle
Old Fire Fighting Training Area, NETC, Newport, Rhode Island

PAHs/PCBs/OCPs: /20 /Tissue/
OFF-2-BM, OFF-1-BM, OFF-22-BM, OFF-5-BM-FD,
OFF-1-CN, OFF-2-CN, OFF-3-CN, OFF-4-CN, OFF-13-DEP,
OFF-14-DEP, OFF-17-DEP, OFF-18-DEP, OFF-19-DEP, OFF-20-DEP,
OFF-21-DEP, OFF-23-DEP, OFF-TO-DEP, OFF-18-DEP-FD, OFF-13-LOB,
OFF-14-LOB
(Field Duplicate Pairs: OFF-5-BM (from SDG 98-369)/OFF-5-BM-FD,
OFF-18-DEP/OFF-18-DEP-FD)

Date: December 17, 1998

Tetra Tech NUS Inc., (TtNUS) performed tier II data validation on the polycyclic aromatic hydrocarbon (PAH) compounds, polychlorinated biphenyl (PCB) compounds and organo-chlorine pesticide (OCP) compounds data from Project 7397, SDG 98-370 tissue samples collected by Science Applications International Corporation at the Old Firefighting Training Area site. This is a reanalysis of samples originally analyzed by University of Mississippi. Tissue samples were extracted following Battelle Standard Operating Procedure (SOP) 5-190. Sample extracts were analyzed for PAH by gas chromatography/mass spectrometry (GC/MS) following Batelle SOP 5-157. Sample extracts were analyzed for pesticides and PCBs by GC equipped with electron capture detectors (ECD) following procedures defined in Battelle SOP 5-128. The data were evaluated based on data completeness; laboratory blank results; internal standard recoveries; matrix spike recoveries; laboratory duplicate precision; field duplicate precision; and NIST standard recoveries. Initial and continuing calibration data and internal standards were not included in the package and therefore the data will not be validated for these parameters. The data validation were performed according to a modified Region I, EPA Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses, November 1988 criteria.

**Data Completeness**

This data validation was performed on the summary QC forms. Chromatograms were submitted for the field samples and quality control data.

**Blanks**

The following contaminants at the maximum concentrations were found in the laboratory blanks associated with the tissue samples:

| Compound | Maximum Concentration | Action Level |
|---|---|---|
| Naphthalene | 3.39 ng/g | 16.9 ng/g |
| 2-methylnaphthalene | 1.71 ng/g | 8.55 ng/g |
| 1-methylnaphthalene | 1.32 ng/g | 6.6 ng/g |
| Phenanthrene | 0.94 ng/g | 4.7 ng/g |
| Fluoranthene | 0.41 ng/g | 2.1 ng/g |
| Pyrene | 0.92 ng/g | 4.6 ng/g |
| Perylene | 0.71 ng/g | 3.6 ng/g |

Blank actions are taken for naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, phenanthrene, pyrene, and perylene, in affected samples.

Sample results less than five times the blank contaminant concentration but greater than the MDL are qualified (U). Data may be biased high or be false positive.

**Blank Spike Analysis**

The following table summarizes the blank spike percent recoveries which did not meet laboratory QC limits of 70 – 130%:

| Compound | Blank Spike % Recovery | QC Criteria | Action | | Affected Samples |
|---|---|---|---|---|---|
| | | | (+) | NDs | |
| Cl3 (18) | 44% | 70 - 130% | J | A | All |
| Heptachlor epoxide | 55% | 70 - 130% | J | A | All |

The positive results for above compounds are estimated (J) in all samples due to blank spike percent recovery results below the laboratory QC criteria.

**Lab ratory Duplicate Analysis**

The following table summarizes the laboratory duplicate relative percent differences which did not meet laboratory QC limits of < 35% for sample OFF-13-DEP:

| Compound | OFF-13-DEP (ng/g) | OFF-13-DEP DUP (ng/g) | RPD | Action | | Affected Samples |
|---|---|---|---|---|---|---|
| | | | | (+) | NDs | |
| 2,3,5-Trimethylnaphthalene | 4.0 | 2.34 | 52% | J | | OFF-13-DEP |

The positive results for 2,3,5-trimethylnaphthalene are estimated (J) in sample OFF-13-DEP due to laboratory duplicate results outside the laboratory QC criteria.

**Field Duplicate Analysis**

The following table summarizes the field duplicate relative percent differences which did not meet the QC limits of < 50% for field duplicate pair OFF-18-DEP/OFF-18-DEP-FD:

| Compound | OFF-18-DEP (ng/g) | OFF-18-DEP-FD (ng/g) | RPD | Action | | Affected Samples |
|---|---|---|---|---|---|---|
| | | | | (+) | NDs | |
| Dibenz(a,h)anthracene | 0.64 J | 2.84 | 126% | J | | OFF-18-DEP*, OFF-18-DEP-FD |
| Cl3 (18) | 0.80 | 0.22 U | 200 % | J | UJ | OFF-18-DEP, OFF-18-DEP-FD |
| Trans Nonachlor | 0.24 U | 6.72 | 200 % | J | UJ | OFF-18-DEP, OFF-18-DEP-FD |
| Mirex | 0.31 | 0.21 U | 200 % | J | UJ | OFF-18-DEP, OFF-18-DEP-FD |

* - Analyte detected below sample MDL; already qualified (J).

The positive and non-detected results for above compounds are estimated (J and UJ) in field duplicate pair OFF-18-DEP/OFF-18-DEP-FD due to field duplicate results outside QC criteria.

The following table summarizes the field duplicate relative percent differences which did not meet the QC limits of < 50% for field duplicate pair OFF-5-BM (from SDG 98-369)/OFF-5-BM-FD:

| Compound | OFF-5-BM (ng/g) | OFF-5-BM-FD (ng/g) | RPD | Action (+) | Action NDs | Affected Samples |
|---|---|---|---|---|---|---|
| Naphthalene | 29.01 | 9.92 | 98% | J | | OFF-5-BM-FD |
| 2-Methylnaphthalene | 17.23 | 10.08 | 52.4% | J | | OFF-5-BM-FD |
| 1-Methylnaphthalene | 9.55 | 5.61 | 52% | J | | OFF-5-BM-FD |
| Biphenyl | 4.78 U | 1.15 | 200% | J | | OFF-5-BM-FD |
| Acenaphthene | 7.67 | 3.55 | 73.4 | J | | OFF-5-BM-FD |
| Fluorene | 11.56 | 5.45 | 71.8 | J | | OFF-5-BM-FD |
| Phenanthrene | 32.02 | 18.91 | 51.5 | J | | OFF-5-BM-FD |
| Indeno(1,2,3-cd)pyrene | 11.49 | 6.85 | 50.6 | J | | OFF-5-BM-FD |
| Dibenz(a,h)anthracene | 4.12 U | 1.03 | 200 | J | | OFF-5-BM-FD |
| Cl4 (44) | 1.60 | 3.39 | 71.7 | J | | OFF-5-BM-FD |
| Cl4 (66) | 4.36 | 2.20 | 65.8 | J | | OFF-5-BM-FD |
| 4,4-DDD | 9.38 | 5.24 | 56.6 | J | | OFF-5-BM-FD |
| Cl6 (128) | 3.77 U | 3.81 | 200 | J | | OFF-5-BM-FD |
| Cl7 (180) | 16.09 | 4.80 | 180 | J | | OFF-5-BM-FD |
| Mirex | 5.73 | 0.22 U | 200 | | UJ | OFF-5-BM-FD |
| Cl7 (170) | 0.85 J | 0.49 U | 58.1 | | UJ | OFF-5-BM-FD |
| Cl10 (209) | 1.51 J | 0.83 | 58.1 | J | | OFF-5-BM-FD |

* - Analyte detected below sample MDL; already qualified (J).

The positive and non-detected results for above compounds are estimated (J and UJ) in sample OFF-5-BM-FD due to field duplicate results outside QC criteria. Sample OFF-5-BM can be found in SDG 98-369.

**NIST SRM Standards Data**

The following table summarizes the NIST SRM recoveries which were outside the acceptable range:

| Compound | SRM Result | Acceptable Range | Action | | Affected Samples |
|---|---|---|---|---|---|
| | | | (+) | NDs | |
| Anthracene | 12.94 | 4.4 - 7.8 | J | A | All |

The positive results for anthracene are estimated (J) due to poor NIST SRM recoveries.

**Overall Assessment**

The results should be used as qualified. The data user is cautioned that the PAH data may be biased low due to degradation of the PAHs from data collection to data analysis (approximately 3 to 6 months) as a result of temperature fluctuations during shipping and storage. Blank actions were taken for several compounds in affected samples. Positive results for heptachlor epoxide and Cl3 (18) are estimated (J) due to poor blank spike percent recoveries. 2,3,5-Trimethylnaphthalene is estimated in sample OFF-13-DEP due to poor laboratory duplicate precision. Several compounds are estimated in field duplicate pair OFF-18-DEP/OFF-18-DEP-FD due to poor field duplicate precision. Several compounds are estimated in OFF-5-BM-FD due to poor field duplicate precision. The positive anthracene results are estimated due to poor NIST SRM recoveries.

NOTE: The data user is warned that the total PAH, sum of the PCB congeners and sum of the PCB congeners x 2 have not been changed to reflect the qualifications applied for blank contamination.

Attachments
cc: File 7397-4.10

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-2-BM | OFF-1-BM | OFF-22-BM | OFF-5-BM-FD |
|---|---|---|---|---|
| Battelle ID | Y5289 | Y5290 | Y5291 | Y5292 |
| Sample Weight (g, dry weight) | 3.11 | 1.55 | 3.51 | 3.69 |
| Sample Weight (g, wet weight) | 21.45 | 12.41 | 23.41 | 22.94 |
| % Lipid | 6.36 | 5.10 | 5.92 | 7.04 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/12/98 | 11/13/98 | 11/12/98 | 11/13/98 |
| Battelle Sample Batch | 98-370 | 98-370 | 98-370 | 98-370 |
| | | | | |
| Naphthalene | 9.63 U | 17.24 | 10.95 U | 9.92 U |
| 2-Methylnaphthalene | 7.32 U | 12.44 | 13.33 | 10.08 |
| 1-Methylnaphthalene | 4.30 U | 6.95 | 8.16 | 5.61 U |
| 2,6-Dimethylnaphthalene | 3.34 | 5.28 | 6.62 | 4.27 |
| 2,3,5-Trimethylnaphthalene | 1.20 | 1.40 U | 3.21 | 3.22 |
| Biphenyl | 1.33 | 3.44 | 1.75 | 1.15 |
| Acenaphthylene | 4.94 | 5.13 | 4.04 | 4.51 |
| Acenaphthene | 2.50 | 3.42 | 4.24 | 3.55 |
| Fluorene | 4.03 | 3.14 | 5.33 | 5.45 |
| Phenanthrene | 17.99 | 17.35 | 23.99 | 18.91 |
| Anthracene | 7.37 J | 6.47 J | 9.22 J | 7.93 J |
| 1-Methylphenanthrene | 2.95 | 2.82 | 4.90 | 3.56 |
| Fluoranthene | 58.36 | 47.20 | 81.85 | 81.84 |
| Pyrene | 46.61 | 34.16 | 65.97 | 57.94 |
| Benz(a)anthracene | 16.39 | 8.18 | 18.95 | 12.81 |
| Chrysene | 28.71 | 23.07 | 44.47 | 34.66 |
| Benzo(b)fluoranthene | 12.41 | 9.41 | 25.74 | 13.89 |
| Benzo(k)fluoranthene | 15.75 | 8.47 | 25.18 | 14.16 |
| Benzo(e)pyrene | 19.08 | 15.29 | 42.91 | 28.84 |
| Benzo(a)pyrene | 8.77 | 4.79 | 8.67 | 6.97 |
| Perylene | 13.31 | 9.08 | 26.80 | 3.45 U |
| Indeno(1,2,3-c,d)pyrene | 8.07 | 5.29 | 10.34 | 6.85 |
| Dibenz(a,h)anthracene | 1.24 | 1.70 U | 1.86 | 1.03 |
| Benzo(g,h,i)perylene | 11.13 | 9.61 | 19.20 | 11.34 |
| | | | | |
| Total PAH | 306.73 | 258.23 | 467.69 | 351.94 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MDL.
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-1-CN | OFF-2-CN | OFF-3-CN | OFF-4-CN |
|---|---|---|---|---|
| Battelle ID | Y5293 | Y5294 | Y5295 | Y5296 |
| Sample Weight (g, dry weight) | 1.78 | 4.17 | 2.14 | 0.56 |
| Sample Weight (g, wet weight) | 7.34 | 16.80 | 9.12 | 2.67 |
| % Lipid | 19.38 | 17.50 | 10.55 | 25.84 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/13/98 | 11/13/98 | 11/13/98 | 11/13/98 |
| Battelle Sample Batch | 98-370 | 98-370 | 98-370 | 98-370 |
| | | | | |
| Naphthalene | 12.15 U | 7.04 U | 9.37 U | 30.96 |
| 2-Methylnaphthalene | 10.99 | 6.32 U | 4.67 U | 13.12 |
| 1-Methylnaphthalene | 7.28 | 3.12 U | 3.81 U | 7.68 |
| 2,6-Dimethylnaphthalene | 2.50 | 1.44 | 1.92 | 5.87 J |
| 2,3,5-Trimethylnaphthalene | 1.22 U | 0.52 U | 1.01 U | 3.86 U |
| Biphenyl | 1.75 | 0.76 | 1.78 | 5.45 U |
| Acenaphthylene | 1.44 J | 0.75 | 1.43 U | 5.46 U |
| Acenaphthene | 4.56 | 3.20 | 2.35 | 6.22 U |
| Fluorene | 2.20 | 1.64 | 1.54 | 4.51 U |
| Phenanthrene | 3.39 U | 2.70 U | 2.48 U | 5.94 |
| Anthracene | 1.06 U | 0.60 J | 0.94 J | 3.37 U |
| 1-Methylphenanthrene | 2.08 U | 0.88 U | 1.73 U | 6.59 U |
| Fluoranthene | 2.84 | 2.92 | 2.92 | 5.42 J |
| Pyrene | 2.20 U | 2.03 U | 2.26 U | 5.26 J |
| Benz(a)anthracene | 2.58 U | 0.38 J | 0.56 J | 8.20 U |
| Chrysene | 1.59 U | 0.71 | 1.13 J | 2.33 J |
| Benzo(b)fluoranthene | 2.17 U | 0.93 U | 1.81 U | 6.90 U |
| Benzo(k)fluoranthene | 1.78 U | 0.76 U | 1.48 U | 5.65 U |
| Benzo(e)pyrene | 2.58 U | 0.73 J | 1.13 J | 8.17 U |
| Benzo(a)pyrene | 2.96 U | 1.26 U | 2.46 U | 9.40 U |
| Perylene | 5.29 | 2.34 U | 16.00 | 19.85 |
| Indeno(1,2,3-c,d)pyrene | 2.13 U | 0.91 U | 1.77 U | 6.74 U |
| Dibenz(a,h)anthracene | 1.48 U | 0.63 U | 1.23 U | 4.69 U |
| Benzo(g,h,i)perylene | 1.64 U | 0.70 U | 1.36 U | 5.19 U |
| | | | | |
| Total PAH | 56.59 | 36.68 | 52.86 | 96.43 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-13-DEP | OFF-14-DEP | OFF-17-DEP | OFF-18-DEP |
|---|---|---|---|---|
| Battelle ID | Y5297 | Y5298 | Y5299 | Y5300 |
| Sample Weight (g, dry weight) | 1.90 | 2.85 | 2.47 | 3.83 |
| Sample Weight (g, wet weight) | 12.13 | 22.29 | 14.51 | 23.10 |
| % Lipid | 8.51 | 7.56 | 8.96 | 10.43 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/13/98 | 11/13/98 | 11/13/98 | 11/13/98 |
| Battelle Sample Batch | 98-370 | 98-370 | 98-370 | 98-370 |
| | | | | |
| Naphthalene | 11.91 U | 11.95 U | 11.35 U | 9.16 U |
| 2-Methylnaphthalene | 10.39 | 9.60 | 9.92 | 9.43 |
| 1-Methylnaphthalene | 6.07 U | 5.42 U | 6.07 U | 5.63 U |
| 2,6-Dimethylnaphthalene | 5.65 | 6.19 | 6.28 | 6.23 |
| 2,3,5-Trimethylnaphthalene | 4.00 J | 2.41 | 3.61 | 4.67 |
| Biphenyl | 1.70 | 1.19 | 1.70 | 1.08 |
| Acenaphthylene | 7.43 | 5.25 | 5.71 | 8.83 |
| Acenaphthene | 5.90 | 9.80 | 4.55 | 8.95 |
| Fluorene | 8.22 | 8.37 | 7.65 | 10.68 |
| Phenanthrene | 20.31 | 11.79 | 18.40 | 31.75 |
| Anthracene | 13.60 J | 7.04 J | 13.40 J | 16.92 J |
| 1-Methylphenanthrene | 4.53 | 3.17 | 4.22 | 6.59 |
| Fluoranthene | 169.45 | 43.60 | 123.82 | 196.23 |
| Pyrene | 122.97 | 44.36 | 88.60 | 148.22 |
| Benz(a)anthracene | 32.87 | 16.85 | 22.40 | 39.08 |
| Chrysene | 63.38 | 23.29 | 47.81 | 72.71 |
| Benzo(b)fluoranthene | 46.37 | 22.25 | 26.80 | 48.42 |
| Benzo(k)fluoranthene | 37.89 | 21.65 | 23.18 | 43.93 |
| Benzo(e)pyrene | 78.44 | 30.82 | 50.95 | 79.48 |
| Benzo(a)pyrene | 11.36 | 9.61 | 7.97 | 14.94 |
| Perylene | 9.18 | 5.40 | 7.44 | 10.05 |
| Indeno(1,2,3-c,d)pyrene | 10.51 | 10.63 | 7.75 | 12.90 |
| Dibenz(a,h)anthracene | 3.07 | 2.16 | 1.72 | 0.64 J |
| Benzo(g,h,i)perylene | 19.24 | 14.59 | 14.67 | 19.81 |
| | | | | |
| Total PAH | 704.46 | 327.40 | 515.95 | 806.33 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-19-DEP | OFF-20-DEP | OFF-21-DEP | OFF-23-DEP |
|---|---|---|---|---|
| Battelle ID | Y5301 | Y5302 | Y5303 | Y5304 |
| Sample Weight (g, dry weight) | 3.72 | 2.89 | 3.34 | 3.43 |
| Sample Weight (g, wet weight) | 21.89 | 19.25 | 20.98 | 21.50 |
| % Lipid | 9.65 | 8.69 | 8.37 | 8.87 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/14/98 | 11/14/98 | 11/14/98 | 11/14/98 |
| Battelle Sample Batch | 98-370 | 98-370 | 98-370 | 98-370 |
| Naphthalene | 9.78 U | 7.93 U | 9.05 U | 9.07 U |
| 2-Methylnaphthalene | 14.04 | 8.92 | 10.57 | 11.35 |
| 1-Methylnaphthalene | 8.25 | 5.61 U | 6.15 U | 6.83 |
| 2,6-Dimethylnaphthalene | 8.24 | 5.67 | 6.53 | 8.54 |
| 2,3,5-Trimethylnaphthalene | 3.77 | 2.80 | 1.70 | 4.81 |
| Biphenyl | 1.38 | 1.15 | 1.05 | 1.31 |
| Acenaphthylene | 4.13 | 2.77 | 5.25 | 6.34 |
| Acenaphthene | 4.81 | 3.83 | 3.59 | 8.00 |
| Fluorene | 5.80 | 7.59 | 4.91 | 7.63 |
| Phenanthrene | 11.67 | 9.89 | 15.31 | 24.08 |
| Anthracene | 7.32 J | 6.85 J | 9.98 J | 18.86 J |
| 1-Methylphenanthrene | 3.88 | 2.60 | 3.50 | 7.30 |
| Fluoranthene | 60.63 | 58.04 | 98.27 | 231.30 |
| Pyrene | 52.86 | 40.68 | 70.27 | 153.35 |
| Benz(a)anthracene | 13.90 | 10.74 | 14.66 | 39.56 |
| Chrysene | 22.13 | 21.66 | 29.71 | 70.38 |
| Benzo(b)fluoranthene | 16.67 | 11.96 | 15.50 | 32.57 |
| Benzo(k)fluoranthene | 14.72 | 10.36 | 12.63 | 28.22 |
| Benzo(e)pyrene | 24.75 | 19.12 | 32.20 | 64.02 |
| Benzo(a)pyrene | 6.09 | 3.91 | 6.31 | 10.64 |
| Perylene | 5.41 | 4.98 | 8.95 | 13.69 |
| Indeno(1,2,3-c,d)pyrene | 5.36 | 3.01 | 5.25 | 7.24 |
| Dibenz(a,h)anthracene | 1.09 | 0.93 | 1.30 | 2.27 |
| Benzo(g,h,i)perylene | 9.15 | 5.85 | 10.19 | 15.97 |
| Total PAH | 315.84 | 256.86 | 382.83 | 783.34 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-T0-DEP | OFF-18-DEP-FD | OFF-13-LOB | OFF-14-LOB |
|---|---|---|---|---|
| Battelle ID | Y5305 | Y5306 | Y5307 | Y5308 |
| Sample Weight (g, dry weight) | 0.56 | 3.85 | 2.62 | 2.73 |
| Sample Weight (g, wet weight) | 6.45 | 24.83 | 16.86 | 16.53 |
| % Lipid | 3.15 | 9.03 | 5.11 | 3.90 |
| Extraction Date | 11/2/98 | 11/2/98 | 11/2/98 | 11/2/98 |
| Analysis Date | 11/14/98 | 11/14/98 | 11/14/98 | 11/14/98 |
| Battelle Sample Batch | 98-370 | 98-370 | 98-370 | 98-370 |
| | | | | |
| Naphthalene | 32.55 | 9.66 U | 11.15 U | 9.21 U |
| 2-Methylnaphthalene | 15.58 | 8.92 | 8.17 | 4.74 U |
| 1-Methylnaphthalene | 11.96 | 6.30 U | 5.51 U | 3.84 U |
| 2,6-Dimethylnaphthalene | 5.96 U | 5.95 | 2.01 | 1.23 U |
| 2,3,5-Trimethylnaphthalene | 3.84 U | 4.17 | 0.85 | 0.79 U |
| Biphenyl | 5.42 U | 1.35 | 1.16 U | 1.12 U |
| Acenaphthylene | 5.43 U | 7.36 | 1.17 U | 1.12 U |
| Acenaphthene | 7.53 | 7.18 | 1.50 | 1.28 U |
| Fluorene | 4.49 U | 8.94 | 2.05 | 0.93 U |
| Phenanthrene | 16.41 | 33.26 | 6.61 | 3.02 U |
| Anthracene | 4.04 J | 15.73 J | 1.48 J | 0.69 U |
| 1-Methylphenanthrene | 6.56 U | 5.49 | 1.46 | 1.35 U |
| Fluoranthene | 32.42 | 181.22 | 47.26 | 12.98 |
| Pyrene | 28.79 | 137.00 | 36.40 | 6.94 |
| Benz(a)anthracene | 7.68 J | 32.46 | 7.75 | 1.13 J |
| Chrysene | 12.28 | 66.04 | 31.45 | 6.05 |
| Benzo(b)fluoranthene | 10.26 | 43.56 | 17.59 | 2.30 |
| Benzo(k)fluoranthene | 7.66 | 36.61 | 9.66 | 2.16 |
| Benzo(e)pyrene | 11.42 | 74.66 | 14.99 | 3.82 |
| Benzo(a)pyrene | 4.37 J | 12.85 | 9.27 | 1.56 J |
| Perylene | 8.08 | 7.78 | 10.36 | 4.81 |
| Indeno(1,2,3-c,d)pyrene | 5.74 J | 13.48 | 7.21 | 1.38 U |
| Dibenz(a,h)anthracene | 4.66 U | 2.84 J | 0.86 J | 0.96 U |
| Benzo(g,h,i)perylene | 8.40 | 19.09 | 7.81 | 2.66 |
| | | | | |
| Total PAH | 225.17 | 741.88 | 241.40 | 65.23 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-1-BM | OFF-2-BM | OFF-22-BM | OFF-5-BM-FD | OFF-1-CN |
|---|---|---|---|---|---|
| Battelle ID | Y5290 | Y5289 | Y5291 | Y5292 | Y5293 |
| Sample Weight (g, dry weight) | 1.55 | 3.11 | 3.51 | 3.69 | 1.78 |
| Sample Weight (g, wet weight) | 12.41 | 21.45 | 23.41 | 22.94 | 7.34 |
| % Lipid | 5.10 | 6.36 | 5.92 | 7.04 | 19.38 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/12/98 | 11/12/98 | 11/12/98 | 11/13/98 | 11/13/98 |
| Battelle Batch | 98-370 | 98-370 | 98-370 | 98-370 | 98-370 |
| | | | | | |
| Cl2(08) | 2.08 J | 2.39 | 3.02 | 1.95 | 16.45 |
| Hexachlorobenzene | 0.42 U | 0.25 | 0.19 U | 0.18 J | 2.74 |
| g-BHC | 0.37 | 0.30 | 0.42 | 0.46 | 0.55 |
| Cl3(18) | 0.55 U | 0.95 J | 1.47 J | 1.16 J | 0.48 U |
| Cl3(29) | 0.38 U | 0.19 U | 0.17 U | 0.16 U | 0.33 U |
| Cl3(28) | 0.85 | 1.05 | 0.68 | 1.17 | 2.36 |
| Heptachlor | 1.09 U | 0.54 U | 0.48 U | 0.46 U | 0.95 U |
| Cl4(52) | 4.56 | 5.92 | 4.43 | 4.92 | 11.45 |
| Aldrin | 0.27 U | 0.13 U | 0.12 U | 0.11 U | 0.23 U |
| Cl4(44) | 1.83 | 2.53 | 2.11 | 3.39 | 1.93 |
| Heptachlor epoxide | 0.44 U | 0.22 U | 0.20 U | 0.19 U | 1.00 J |
| Cl4(66) | 2.04 | 2.12 | 1.41 | 2.20 | 2.75 |
| 2,4 DDE | 1.97 U | 0.98 U | 0.87 U | 0.83 U | 1.72 U |
| Cl5(101) | 15.21 | 13.95 | 10.08 | 15.36 | 31.99 |
| cis Chlordane | 4.72 | 4.93 | 4.36 | 4.61 | 7.97 |
| trans Nonachlor | 3.44 | 4.08 | 2.74 | 3.04 | 10.33 |
| Cl5(87) | 2.74 | 2.74 | 2.13 | 2.97 | 7.89 |
| 4,4 DDE | 13.04 | 13.87 | 15.02 | 13.50 | 45.15 |
| Cl5(118) | 14.49 | 11.97 | 9.31 | 12.44 | 43.24 |
| 4,4 DDD | 5.24 | 4.35 | 6.55 | 5.24 | 11.57 |
| 2,4 DDT | 1.18 J | 2.34 | 2.84 | 1.95 | 3.17 |
| Cl6(153) | 50.46 | 46.64 | 32.66 | 44.51 | 137.60 |
| Cl5(105) | 2.64 | 2.62 | 1.90 | 4.53 | 7.87 |
| 4,4 DDT | 2.41 | 4.18 | 4.10 | 3.37 | 12.94 |
| Cl6(138) | 30.84 | 29.24 | 20.80 | 27.68 | 92.08 |
| Cl5(126) | 0.90 U | 0.45 U | 0.40 U | 0.38 U | 0.79 U |
| Cl7(187) | 15.96 | 15.72 | 11.09 | 14.61 | 42.39 |
| Cl6(128) | 3.86 | 4.04 | 2.10 | 3.81 | 9.15 |
| Cl7(180) | 6.05 | 4.27 | 2.70 | 4.80 | 42.62 |
| Mirex | 0.52 U | 0.26 U | 0.23 U | 0.22 U | 0.46 U |
| Cl7(170) | 1.16 U | 1.24 | 0.51 U | 0.49 U | 20.30 |
| Cl8(195) | 0.81 U | 0.40 U | 0.36 U | 0.34 U | 4.76 |
| Cl9(206) | 0.77 | 0.29 J | 0.73 | 0.76 | 2.53 |
| Cl10(209) | 1.61 | 0.92 | 0.64 | 0.83 | 2.98 |
| Cl4(50) | 0.33 U | 0.16 U | 0.15 U | 0.14 U | 0.29 U |
| Cl7(188) | 1.36 U | 0.68 U | 0.60 U | 0.57 U | 1.19 U |
| Cl8(200) | 0 81 U | 0.40 U | 0.36 U | 0.34 U | 0.71 U |
| | | | | | |
| Sum of 24 Congeners | 162.30 | 150.88 | 109.78 | 149.52 | 484.14 |
| Sum of 24 Congeners x 2 | 324.60 | 301.76 | 219.56 | 299.04 | 968.27 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-2-CN | OFF-3-CN | OFF-4-CN | OFF-14-DEP | OFF-17-DEP |
|---|---|---|---|---|---|
| Battelle ID | Y5294 | Y5295 | Y5296 | Y5298 | Y5299 |
| Sample Weight (g, dry weight) | 4.17 | 2.14 | 0.56 | 2.85 | 2.47 |
| Sample Weight (g, wet weight) | 16.80 | 9.12 | 2.67 | 22.29 | 14.51 |
| % Lipid | 17.50 | 10.55 | 25.84 | 7.56 | 8.96 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/13/98 | 11/13/98 | 11/13/98 | 11/13/98 | 11/13/98 |
| Battelle Batch | 98-370 | 98-370 | 98-370 | 98-370 | 98-370 |
| Cl2(08) | 15.75 | 13.33 | 18.08 | 2.46 | 1.78 |
| Hexachlorobenzene | 1.56 | 1.01 | 1.39 | 0.43 | 0.44 |
| g-BHC | 0.43 | 0.20 | 0.75 U | 0.70 | 0.75 |
| Cl3(18) | 0.21 U | 0.40 UJ | 1.53 UJ | 0.30 UJ | 0.35 UJ |
| Cl3(29) | 0.14 U | 0.28 U | 1.05 U | 0.21 U | 0.24 U |
| Cl3(28) | 1.57 | 1.23 | 1.05 U | 1.92 | 1.70 |
| Heptachlor | 0.41 U | 0.79 U | 3.02 U | 0.59 U | 0.68 U |
| Cl4(52) | 9.17 | 7.24 | 7 10 | 5.83 | 7.76 |
| Aldrin | 0.10 U | 0.19 U | 0.74 U | 0.15 U | 0.17 U |
| Cl4(44) | 1.80 | 0.32 U | 1.24 U | 2.70 | 3.04 |
| Heptachlor epoxide | 0.84 J | 0.54 J | 1.22 UJ | 0.24 UJ | 0.28 UJ |
| Cl4(66) | 1.62 | 0.69 J | 4.63 U | 3.02 | 3.59 |
| 2,4 DDE | 0.73 U | 1.43 U | 5.46 U | 1.07 U | 1.24 U |
| Cl5(101) | 15.05 | 27.41 | 20.48 | 27.27 | 28.92 |
| cis Chlordane | 6.90 | 3.63 | 7.04 | 11.07 | 19.09 |
| trans Nonachlor | 10.71 | 6.69 | 8.11 | 3.81 | 7.56 |
| Cl5(87) | 6.42 | 3.90 | 2.48 J | 4.75 | 5.45 |
| 4,4 DDE | 39.95 | 31.03 | 33.17 | 10.79 | 24.74 |
| Cl5(118) | 54.72 | 36.04 | 58.78 | 19.88 | 19.20 |
| 4,4 DDD | 8.21 | 5.60 | 6.51 | 3.64 | 15.16 |
| 2,4 DDT | 3.07 | 2.06 | 2.45 J | 1.24 J | 1.59 |
| Cl6(153) | 216.63 | 120.05 | 176 35 | 64.23 | 53.77 |
| Cl5(105) | 9.92 | 5.17 | 10.99 | 3.72 | 5.65 |
| 4,4 DDT | 11.87 | 10.22 | 7.44 | 0.85 U | 2.28 |
| Cl6(138) | 137.10 | 79.22 | 112.84 | 41.46 | 34.42 |
| Cl5(126) | 0.34 U | 0.65 U | 2.50 U | 0.49 U | 0.57 U |
| Cl7(187) | 63.16 | 36.07 | 54.04 | 18.48 | 17.49 |
| Cl6(128) | 11.93 | 5.10 | 9.37 | 5.26 | 4.82 |
| Cl7(180) | 77.14 | 38.98 | 64.15 | 12.10 | 4.51 |
| Mirex | 0.19 U | 0.38 U | 1.44 U | 0.28 U | 0.33 U |
| Cl7(170) | 27.49 | 18.46 | 28.02 | 2.70 | 0.73 U |
| Cl8(195) | 5.50 | 3.73 | 6.57 | 0.37 J | 0.38 J |
| Cl9(206) | 4 35 | 2.10 | 2.86 | 0 82 | 1.09 |
| Cl10(209) | 2.83 | 2.36 | 5.01 | 0.74 | 0.71 J |
| Cl4(50) | 0.12 U | 0.24 U | 0.92 U | 0.18 U | 0.21 U |
| Cl7(188) | 0.51 U | 0.99 U | 3.77 U | 0.74 U | 0.85 U |
| Cl8(200) | 0.30 U | 0.59 U | 2.25 U | 0.44 U | 0.51 U |
| Sum of 24 Congeners | 663.77 | 404.56 | 596.05 | 220.10 | 197.72 |
| Sum of 24 Congeners x 2 | 1327.53 | 809.11 | 1192.10 | 440 20 | 395.44 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-18-DEP | OFF-19-DEP | OFF-20-DEP | OFF-21-DEP |
|---|---|---|---|---|
| Battelle ID | Y5300 | Y5301 | Y5302 | Y5303 |
| Sample Weight (g, dry weight) | 3.83 | 3.72 | 2.89 | 3.34 |
| Sample Weight (g, wet weight) | 23.10 | 21.89 | 19.25 | 20.98 |
| % Lipid | 10.43 | 9.65 | 8.69 | 8.37 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/14/98 | 11/14/98 | 11/14/98 | 11/14/98 |
| Battelle Batch | 98-370 | 98-370 | 98-370 | 98-370 |
| | | | | |
| Cl2(08) | 2.59 | 1.34 | 1.02 J | 1.41 |
| Hexachlorobenzene | 0.97 | 0.69 | 0.35 | 0.50 |
| g-BHC | 0.87 | 1.05 | 0.76 | 0.72 |
| Cl3(18) | 0.80 J | 0.23 U | 1.36 J | 2.78 J |
| Cl3(29) | 0.15 U | 0.16 U | 0.20 U | 0.18 U |
| Cl3(28) | 2.34 | 1.94 | 1.21 | 1.75 |
| Heptachlor | 0.44 U | 0.45 U | 0.59 U | 0.51 U |
| Cl4(52) | 8.09 | 7.65 | 4.83 | 7.29 |
| Aldrin | 0.11 U | 0.11 U | 0.14 U | 0.12 U |
| Cl4(44) | 4.60 | 3.02 | 2.38 | 2.96 |
| Heptachlor epoxide | 0.18 UJ | 0.18 U | 0.24 U | 0.21 U |
| Cl4(66) | 3.94 | 4.25 | 2.82 | 4.03 |
| 2,4 DDE | 0.80 U | 0.82 U | 1.06 U | 0.92 U |
| Cl5(101) | 21.71 | 25.69 | 17.70 | 24.36 |
| cis Chlordane | 10.29 | 12.05 | 9.97 | 13.81 |
| trans Nonachlor | 0.24 UJ | 5.26 | 3.91 | 6.36 |
| Cl5(87) | 4.95 | 5.72 | 3.28 | 4.70 |
| 4,4 DDE | 30.01 | 12.40 | 11.10 | 19.54 |
| Cl5(118) | 19.76 | 16.71 | 10.22 | 17.56 |
| 4,4 DDD | 21.67 | 5.08 | 5.78 | 11.03 |
| 2,4 DDT | 1.66 | 1.35 | 1.02 J | 1.67 |
| Cl6(153) | 53.60 | 51.73 | 31.37 | 45.85 |
| Cl5(105) | 5.63 | 3.76 | 2.35 | 4.64 |
| 4,4 DDT | 2.38 | 1.77 | 0.99 | 2.31 |
| Cl6(138) | 35.75 | 34.80 | 20.94 | 29.81 |
| Cl5(126) | 0.37 U | 0.38 U | 0.49 U | 0.42 U |
| Cl7(187) | 15.69 | 14.53 | 9.91 | 16.20 |
| Cl6(128) | 5.13 | 4.11 | 2.56 | 4.45 |
| Cl7(180) | 8.48 | 9.14 | 6.37 | 4.84 |
| Mirex | 0.31 J | 0.22 U | 0.28 U | 0.24 U |
| Cl7(170) | 1.95 | 2.54 | 1.42 | 1.91 |
| Cl8(195) | 0.52 | 0.34 U | 0.23 J | 0.22 J |
| Cl9(206) | 0.31 U | 0.32 U | 0.41 U | 0.36 U |
| Cl10(209) | 0.79 | 0.88 | 0.58 J | 0.54 |
| Cl4(50) | 0.13 U | 0.14 U | 0.18 U | 0.15 U |
| Cl7(188) | 0.55 U | 0.57 U | 0.73 U | 0.63 U |
| Cl8(200) | 0.33 U | 0.34 U | 0.44 U | 0.38 U |
| | | | | |
| Sum of 24 Congeners | 198.16 | 190.27 | 122.98 | 177.42 |
| Sum of 24 Congeners x 2 | 396.31 | 380.54 | 245.96 | 354.83 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-23-DEP | OFF-T0-DEP | OFF-18-DEP-FD | OFF-13-LOB |
|---|---|---|---|---|
| Battelle ID | Y5304 | Y5305 | Y5306 | Y5307 |
| Sample Weight (g, dry weight) | 3.43 | 0.56 | 3.85 | 2.62 |
| Sample Weight (g, wet weight) | 21.50 | 6.45 | 24.83 | 16.86 |
| % Lipid | 8.87 | 3.15 | 9.03 | 5.11 |
| Extraction Date | 11/02/98 | 11/02/98 | 11/02/98 | 11/02/98 |
| Analysis Date | 11/15/98 | 11/15/98 | 11/15/98 | 11/15/98 |
| Battelle Batch | 98-370 | 98-370 | 98-370 | 98-370 |
| | | | | |
| Cl2(08) | 1.47 | 6.09 U | 1.66 | 0 55 J |
| Hexachlorobenzene | 0.55 | 1.16 U | 0.81 | 0.35 |
| g-BHC | 0.48 | 0.31 J | 0.71 | 1.46 |
| Cl3(18) | 0.25 U | 1.52 U | 0.22 UJ | 0.33 U |
| Cl3(29) | 0.17 U | 1.05 U | 0.15 U | 0.22 U |
| Cl3(28) | 1.46 | 1.05 U | 1.76 J | 0.78 J |
| Heptachlor | 0.49 U | 3.00 U | 0.44 U | 0.64 U |
| Cl4(52) | 8.05 | 0.91 U | 8.06 | 2.16 |
| Aldrin | 0.12 U | 0.74 U | 0.11 U | 0.16 U |
| Cl4(44) | 3.68 | 1.23 U | 4.81 | 0.26 U |
| Heptachlor epoxide | 0.20 U | 1.22 U | 0.18 U | 0.26 U |
| Cl4(66) | 4.32 | 4.61 U | 4 03 | 4.33 |
| 2,4 DDE | 0.89 U | 5.43 U | 0.79 U | 1.17 U |
| Cl5(101) | 22.81 | 9.08 J | 24.55 | 2.80 |
| cis Chlordane | 10.97 | 7.27 | 14.95 | 1.34 |
| trans Nonachlor | 5.34 | 1.40 J | 6.72 J | 0.69 |
| Cl5(87) | 4.70 | 2.55 U | 5.05 | 0.48 J |
| 4,4 DDE | 18.84 | 3.63 J | 27.97 | 22.05 |
| Cl5(118) | 17.51 | 4.75 J | 19.62 | 21.44 |
| 4,4 DDD | 10.51 | 2.26 J | 19.90 | 1.10 |
| 2,4 DDT | 2.09 | 6.57 U | 1.45 | 0.79 J |
| Cl6(153) | 47.39 | 17.25 | 45.84 | 50.74 |
| Cl5(105) | 4.66 | 3.40 U | 4.74 | 3.56 |
| 4,4 DDT | 2.21 | 4.28 U | 2.15 | 0.38 J |
| Cl6(138) | 30.56 | 12.69 | 32.71 | 29.52 |
| Cl5(126) | 0.41 U | 2.49 U | 0.36 U | 0.53 U |
| Cl7(187) | 13.07 | 6.78 | 15.55 | 15.45 |
| Cl6(128) | 4.21 | 0.94 J | 4.82 | 4.66 |
| Cl7(180) | 7.72 | 9.22 U | 7.42 | 14.32 |
| Mirex | 0.24 U | 1.44 U | 0.21 UJ | 0.45 |
| Cl7(170) | 2.17 | 3.19 U | 2.11 | 5.31 |
| Cl8(195) | 0.23 J | 2.24 U | 0.43 | 1.33 |
| Cl9(206) | 0.35 U | 2.12 U | 0.31 U | 0.46 U |
| Cl10(209) | 0.60 | 3.13 U | 0.81 | 0.76 |
| Cl4(50) | 0.15 U | 0.91 U | 0.13 U | 0.20 U |
| Cl7(188) | 0.62 U | 3.75 U | 0.55 U | 0.81 U |
| Cl8(200) | 0.37 U | 2.24 U | 0.33 U | 0.48 U |
| | | | | |
| Sum of 24 Congeners | 176 90 | 103.18 | 186.02 | 161.50 |
| Sum of 24 Congeners x 2 | 353.81 | 206.36 | 372.05 | 322.99 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-14-LOB | | OFF-13-DEP | |
|---|---|---|---|---|
| Battelle ID | Y5308 | | Y5297 | |
| Sample Weight (g, dry weight) | 2.73 | | 1.90 | |
| Sample Weight (g, wet weight) | 16.53 | | 12.13 | |
| % Lipid | 3.90 | | 8.51 | |
| Extraction Date | 11/02/98 | | 11/02/98 | |
| Analysis Date | 11/15/98 | | 11/13/98 | |
| Battelle Batch | 98-370 | | 98-370 | |
| | | | | |
| Cl2(08) | 1.26 | U | 1.16 | J |
| Hexachlorobenzene | 0.44 | | 0.34 | J |
| g-BHC | 0.60 | | 0.51 | |
| Cl3(18) | 0.31 | U | 0.45 | U |
| Cl3(29) | 0.22 | U | 0.31 | U |
| Cl3(28) | 0.30 | J | 1.85 | J |
| Heptachlor | 0.62 | U | 0.89 | U |
| Cl4(52) | 0.19 | U | 7.73 | |
| Aldrin | 0.15 | U | 0.22 | U |
| Cl4(44) | 0.25 | U | 3.77 | |
| Heptachlor epoxide | 0.25 | U | 0.36 | U |
| Cl4(66) | 1.82 | | 3.14 | |
| 2,4 DDE | 1.12 | U | 1.61 | U |
| Cl5(101) | 1.38 | J | 25.89 | |
| cis Chlordane | 0.47 | | 14.54 | |
| trans Nonachlor | 0.34 | U | 5.67 | |
| Cl5(87) | 0.53 | U | 3.52 | |
| 4,4 DDE | 5.89 | | 19.36 | |
| Cl5(118) | 13.90 | | 12.02 | |
| 4,4 DDD | 0.59 | J | 13.00 | |
| 2,4 DDT | 0.48 | J | 0.99 | J |
| Cl6(153) | 29.49 | | 31.59 | |
| Cl5(105) | 2.16 | | 2.86 | |
| 4,4 DDT | 0.88 | U | 1.15 | J |
| Cl6(138) | 17.79 | | 21.68 | |
| Cl5(126) | 0.51 | U | 0.74 | U |
| Cl7(187) | 9.50 | | 10.37 | |
| Cl6(128) | 0.88 | U | 2.70 | |
| Cl7(180) | 10.38 | | 5.14 | |
| Mirex | 0.30 | U | 0.43 | U |
| Cl7(170) | 5.01 | | 0.95 | U |
| Cl8(195) | 1.13 | | 0.66 | U |
| Cl9(206) | 0.44 | U | 0.75 | |
| Cl10(209) | 0.81 | | 0.93 | U |
| Cl4(50) | 0.19 | U | 0.27 | U |
| Cl7(188) | 0.77 | U | 1.11 | U |
| Cl8(200) | 0.46 | U | 0.66 | U |
| | | | | |
| Sum of 24 Congeners | 99.67 | | 140.27 | |
| Sum of 24 Congeners x 2 | 199.34 | | 280.54 | |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

TETRA TECH NUS, INC. INTERNAL CORRESPONDENCE

C-Navy-12-98-1294W

To: Stephen Parker cc: File 7397-4.10

From: Maureen Parker MP

Subject: Tier II Data Validation, Navy CLEAN CTO 0269
Project No. 7397, SDG 98-371
Battelle
Old Fire Fighting Training Area, NETC, Newport, Rhode Island

PAHs/PCBs/OCPs: /10 /Tissue/
OFF-15-LOB, OFF-16-LOB, OFF-16-LOB-FD, OFF-17-LOB, OFF-18-LOB, OFF-19-LOB, OFF-20-LOB, OFF-21-LOB, OFF-21-LOB-FD, OFF-23-LOB

Date: December 17, 1998

Tetra Tech NUS Inc., (TtNUS) performed tier II data validation on the polycyclic aromatic hydrocarbon (PAH) compounds, polychlorinated biphenyl (PCB) compounds and organo-chlorine pesticide (OCP) compounds data from Project 7397, SDG 98-371 tissue samples collected by Science Applications International Corporation at the Old Firefighting Training Area site. This is a reanalysis of samples originally analyzed by University of Mississippi. Tissue sampl s were extracted following Battelle Standard Operating Procedure (SOP) 5-190. Sample extracts were analyzed for PAH by gas chromatography/mass spectrometry (GC/MS) following Batelle SOP 5-157. Sample extracts were analyzed for pesticides and PCBs by GC equipped with electron capture detectors (ECD) following procedures defined in Battelle SOP 5-128. The data were evaluated based on data completeness; laboratory blank results; internal standard recoveries; matrix spike recoveries; laboratory duplicate precision; field duplicate precision; and NIST standard recoveries. Initial and continuing calibration data and internal standards w re not included in the package and therefore the data will not be validated for these parameters. The data validation were performed according to a modified Region I, EPA Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses, November 1988 criteria.

**Data Completeness**

The laboratory was contacted on December 15, 1998 requesting information on which compounds are associated with the surrogate naphthalene-d8. The laboratory faxed the surrogate information on December 15, 1998. This data validation was performed on the summary QC forms. Chromatograms were submitted for the field samples and quality control data. The field duplicate samples were collected on different days and therefore the samples were not qualified for this parameter.

**Blanks**

The following contaminants at the maximum concentrations were found in the laboratory blanks associated with the tissue samples:

| Compound | Maximum Concentration | Action Level |
|---|---|---|
| Naphthalene | 3.72 ng/g | 18.6 ng/g |
| 2-methylnaphthalene | 1.73 ng/g | 8.65 ng/g |
| 1-methylnaphthalene | 1.54 ng/g | 7.7 ng/g |
| Phenanthrene | 0.85 ng/g | 4.3 ng/g |
| Fluoranthene | 0.52 ng/g | 2.6 ng/g |
| Pyrene | 0.75 ng/g | 3.8 ng/g |
| Perylene | 4.6 ng/g | 23 ng/g |

Blank actions are taken for naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, phenanthrene, and perylene, in affected samples.

Sample results less than five times the blank contaminant concentration but greater than the MDL are qualified (U). Data may be biased high or be false positive.

**Surrogate Spike Recoveries**

The following sample had naphthalene-d8 outside of the recovery limits:

| Sample Number | Surrogate | % Recovery | QC Criteria | Action | |
|---|---|---|---|---|---|
| | | | | (+) | NDs |
| OFF-23-LOB | Naphthalene-d8 | 27 | 30 – 130% | J | |

The positive compounds associated with the surrogate naphthalene-d8 are qualified in sample OFF-23-LOB as estimated, (J).

**Blank Spike Analysis**

The following table summarizes the blank spike percent recoveries which did not meet laboratory QC limits of 70 – 130%:

| Compound | Blank Spike % Recovery | QC Criteria | Action | | Affected Samples |
|---|---|---|---|---|---|
| | | | (+) | NDs | |
| 2,6-Dimethylnaphthalene | 68% | 70 - 130% | J | A | All |
| Acenaphthylene | 55% | 70 - 130% | | A | All |
| Indeno(1,2,3-cd)pyrene | 65% | 70 - 130% | J | A | All |
| Heptachlor epoxide | 65% | 70 - 130% | | A | All |
| 4,4-DDD | 48% | 70 - 130% | J | A | All |

The positive results for above compounds are estimated (J) in all samples due to blank spike percent recovery results below the laboratory QC criteria.

**Matrix Spike Analysis**

The following table summarizes the matrix spike percent recoveries which did not meet laboratory QC limits of 50 – 150%:

| Compound | Matrix Spike % Recovery | QC Criteria | Action | | Affected Samples |
|---|---|---|---|---|---|
| | | | (+) | NDs | |
| 2-Methylnaphthalene | 175% | 50 – 150% | J | | OFF-16-LOB |
| 1-Methylnaphthalene | 196% | 50 – 150% | J | | OFF-16-LOB |

2-Methylnaphthalene and 1-methylnaphthalene were surrogate corrected with naphthalene d-8, which was under-recovered in the matrix spike sample. The positive results for 2-methylnaphthalene and 1-methylnaphthalene are estimated (J) in sample OFF-16-LOB due to matrix spike percent recovery results above the laboratory QC criteria.

**NIST SRM Standards Data**

The following table summarizes the NIST SRM recoveries which were outside the acceptable range:

| Compound | SRM Result | Acceptable Range | Action | | Affected Samples |
|---|---|---|---|---|---|
| | | | (+) | NDs | |
| Anthracene | 13.03 | 4.4 - 7.8 | J | A | All |
| Perylene | 174.45 | 7.41 - 7.95 | J | A | All |

The positive results for anthracene and perylene are estimated (J) due to poor NIST SRM recoveries.

**Overall Assessment**

The results should be used as qualified. The data user is cautioned that the PAH data may be biased low due to degradation of the PAHs from data collection to data analysis (approximately 5 months) as a result of temperature fluctuations during shipping and storage. Blank actions were taken for several compounds in affected samples. The positive compounds associated with the surrogate naphthalene-d8 are qualified in sample OFF-23-LOB due to poor surrogate spike recovery. The positive results for 2,6-dimethylnaphthalene, biphenyl, acenaphthylene, indeno(1,2,3-cd)pyrene, heptachlor epoxide and 4,4-DDD are estimated due to poor blank spike percent recoveries. 2-Methylnaphthalene and 1-methylnaphthalene are estimated in sample OFF-16-LOB due to high matrix spike recoveries. The positive results for anthracene and perylene ar estimated due to poor NIST SRM recoveries.

NOTE: The data user is warned that the total PAH, sum of the PCB congeners and sum of the PCB congeners x 2 have not been changed to reflect the qualifications applied for blank contamination.

Attachments
cc: File 7397-4.10

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-15-LOB | OFF-16-LOB | OFF-16-LOB-FD | OFF-17-LOB |
|---|---|---|---|---|
| Battelle ID | Y5309 | Y5310 | Y5311 | Y5312 |
| Sample Weight (g, dry weight) | 3.36 | 2.11 | 3.48 | 3.35 |
| Sample Weight (g, wet weight) | 18.73 | 12.18 | 24.75 | 21.05 |
| % Lipid | 7.10 | 7.15 | 4.45 | 8.22 |
| Extraction Date | 11/5/98 | 11/5/98 | 11/5/98 | 11/5/98 |
| Analysis Date | 11/15/98 | 11/15/98 | 11/15/98 | 11/15/98 |
| Battelle Sample Batch | 98-371 | 98-371 | 98-371 | 98-371 |
| Naphthalene | 7.75 U | 19.81 | 9.02 U | 10.34 U |
| 2-Methylnaphthalene | 4.56 U | 10.14 J | 5.75 U | 7.06 U |
| 1-Methylnaphthalene | 3.75 U | 10.60 J | 4.05 U | 5.18 U |
| 2,6-Dimethylnaphthalene | 1.00 U | 1.79 J | 1.97 J | 1.61 J |
| 2,3,5-Trimethylnaphthalene | 0.64 U | 1.38 | 0.62 U | 0.65 U |
| Biphenyl | 0.91 U | 1.45 U | 0.88 U | 0.91 U |
| Acenaphthylene | 0.91 U | 1.45 U | 0.88 U | 0.91 U |
| Acenaphthene | 1.04 U | 7.51 | 2.00 | 1.23 |
| Fluorene | 0.74 J | 2.63 | 1.39 | 1.13 |
| Phenanthrene | 3.00 U | 11.21 | 14.59 | 4.84 |
| Anthracene | 0.57 J | 2.46 J | 4.44 J | 0.90 J |
| 1-Methylphenanthrene | 0.86 J | 1.68 J | 4.07 | 2.42 |
| Fluoranthene | 14.26 | 30.82 | 78.38 | 34.60 |
| Pyrene | 9.12 | 31.88 | 71.30 | 30.69 |
| Benz(a)anthracene | 1.25 J | 5.77 | 34.78 | 8.78 |
| Chrysene | 6.96 | 15.62 | 58.76 | 24.75 |
| Benzo(b)fluoranthene | 6.47 | 8.57 | 39.47 | 22.32 |
| Benzo(k)fluoranthene | 2.62 | 6.52 | 30.57 | 12.75 |
| Benzo(e)pyrene | 3.09 | 8.13 | 24.75 | 13.45 |
| Benzo(a)pyrene | 3.26 | 6.83 | 41.01 | 19.24 |
| Perylene | 4.81 U | 11.83 U | 9.38 U | 3.69 U |
| Indeno(1,2,3-c,d)pyrene | 1.94 J | 3.99 J | 21.84 J | 9.13 J |
| Dibenz(a,h)anthracene | 0.78 U | 1.25 U | 2.12 | 0.99 |
| Benzo(g,h,i)perylene | 1.58 | 3.96 | 16.19 | 6.37 |
| Total PAH | 76.58 | 203.12 | 475.84 | 221.48 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MDL.
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-18-LOB | OFF-19-LOB | OFF-20-LOB |
|---|---|---|---|
| Battelle ID | Y5313 | Y5314 | Y5315 |
| Sample Weight (g, dry weight) | 2.45 | 2.99 | 3.06 |
| Sample Weight (g, wet weight) | 20.08 | 16.38 | 14.44 |
| % Lipid | 6.02 | 3.75 | 5.85 |
| Extraction Date | 11/5/98 | 11/5/98 | 11/5/98 |
| Analysis Date | 11/15/98 | 11/15/98 | 11/15/98 |
| Battelle Sample Batch | 98-371 | 98-371 | 98-371 |
| | | | |
| Naphthalene | 19.44 | 14.50 U | 11.82 U |
| 2-Methylnaphthalene | 16.78 | 10.24 | 8.97 |
| 1-Methylnaphthalene | 11.73 | 7.27 U | 5.67 U |
| 2,6-Dimethylnaphthalene | 2.37 J | 1.56 J | 1.50 J |
| 2,3,5-Trimethylnaphthalene | 2.07 | 0.72 U | 1.28 |
| Biphenyl | 1.24 U | 0.99 J | 1.00 U |
| Acenaphthylene | 1.25 U | 1.02 U | 1.00 U |
| Acenaphthene | 2.28 | 1.17 U | 1.17 |
| Fluorene | 1.99 | 1.13 | 1.41 |
| Phenanthrene | 10.48 | 2.94 U | 4.97 |
| Anthracene | 1.30 J | 0.63 U | 0.88 J |
| 1-Methylphenanthrene | 3.00 | 1.11 J | 1.67 |
| Fluoranthene | 73.51 | 9.67 | 25.68 |
| Pyrene | 54.52 | 7.50 | 17.88 |
| Benz(a)anthracene | 9.74 | 1.21 J | 2.52 |
| Chrysene | 32.49 | 4.65 | 11.39 |
| Benzo(b)fluoranthene | 19.32 | 1.96 | 7.07 |
| Benzo(k)fluoranthene | 12.19 | 1.57 | 4.10 |
| Benzo(e)pyrene | 14.81 | 2.80 | 5.98 |
| Benzo(a)pyrene | 11.91 | 1.96 | 3.65 |
| Perylen | 7.79 UJ | 3.71 UJ | 2.26 UJ |
| Indeno(1,2,3-c,d)pyrene | 8.38 J | 1.26 U | 3.01 J |
| Dibenz(a,h)anthracene | 0.87 J | 0.88 U | 0.86 U |
| Benzo(g,h,i)perylene | 6.69 | 1.95 | 3.50 |
| | | | |
| Total PAH | 323.67 | 76.72 | 126.41 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PAH Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-21-LOB | OFF-21-LOB-FD | OFF-23-LOB |
|---|---|---|---|
| Battelle ID | Y5316 | Y5317 | Y5318 |
| Sample Weight (g, dry weight) | 1.81 | 1.94 | 3.42 |
| Sample Weight (g, wet weight) | 13.25 | 12.05 | 21.12 |
| % Lipid | 9.84 | 3.75 | 4.01 |
| Extraction Date | 11/5/98 | 11/5/98 | 11/5/98 |
| Analysis Date | 11/15/98 | 11/15/98 | 11/15/98 |
| Battelle Sample Batch | 98-371 | 98-371 | 98-371 |
| | | | |
| Naphthalene | 13.68 | 9.91 U | 13.25 J |
| 2-Methylnaphthalene | 8.59 U | 6.02 U | 13.36 J |
| 1-Methylnaphthalene | 6.81 U | 4.92 U | 7.60 U |
| 2,6-Dimethylnaphthalene | 2.21 J | 2.18 J | 1.73 J |
| 2,3,5-Trimethylnaphthalene | 1.20 U | 1.15 | 1.12 |
| Biphenyl | 1.69 U | 1.57 U | 1.00 |
| Acenaphthylene | 1.69 U | 1.58 U | 0.89 U |
| Acenaphthene | 1.93 U | 1.80 U | 1.82 |
| Fluorene | 1.31 J | 1.30 U | 2.04 |
| Phenanthrene | 4.90 | 5.95 | 14.62 |
| Anthracene | 1.79 J | 1.74 J | 2.81 J |
| 1-Methylphenanthrene | 1.75 J | 3.66 | 3.16 |
| Fluoranthene | 56.18 | 212.24 | 81.30 |
| Pyrene | 53.75 | 159.98 | 63.13 |
| Benz(a)anthracene | 7.63 | 101.61 | 12.80 |
| Chrysene | 15.55 | 225.04 | 28.93 |
| Benzo(b)fluoranthene | 8.18 | 315.45 | 19.91 |
| Benzo(k)fluoranthene | 6.46 | 160.54 | 11.06 |
| Benzo(e)pyrene | 8.45 | 108.10 | 14.69 |
| Benzo(a)pyrene | 4.81 | 258.54 | 12.79 |
| Perylene | 9.57 U | 37.51 U | 3.54 U |
| Indeno(1,2,3-c,d)pyrene | 4.04 J | 114.48 J | 5.65 J |
| Dibenz(a,h)anthracene | 1.45 U | 12.08 | 0.77 U |
| Benzo(g,h,i)perylene | 4.47 | 41.84 | 7.17 |
| | | | |
| Total PAH | 220.13 | 1782.91 | 323.47 |

B = Analyte detected in the blank.
& = QC data outside DQOs.
J = Analyte detected below sample MD
U = Analyte not detected, sample MDL.
NA = Not Applicable.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-16-LOB | OFF-15-LOB | OFF-16-LOB-FD | OFF-17-LOB |
|---|---|---|---|---|
| Battelle ID | Y5310 | Y5309 | Y5311 | Y5312 |
| Sample Weight (g, dry weight) | 2.11 | 3.36 | 3.48 | 3.35 |
| Sample Weight (g, wet weight) | 12.18 | 18.73 | 24.75 | 21.05 |
| % Lipid | 7 | 7 | 4 | 8 |
| Extraction Date | 11/05/98 | 11/05/98 | 11/05/98 | 11/05/98 |
| Analysis Date | 11/16/98 | 11/15/98 | 11/16/98 | 11/16/98 |
| Battelle Batch | 98-371 | 98-371 | 98-371 | 98-371 |
| | | | | |
| Cl2(08) | 1.07 J | 0.40 J | 0.40 J | 4.38 |
| Hexachlorobenzene | 0.37 | 0.26 | 0.30 | 0.26 |
| g-BHC | 1.02 | 1.02 | 1.73 | 0.90 |
| Cl3(18) | 0.41 U | 0.26 U | 0.25 U | 3.58 |
| Cl3(29) | 0.28 U | 0.18 U | 0.17 U | 0.18 U |
| Cl3(28) | 1.11 | 0.34 | 0.35 | 30.42 |
| Heptachlor | 0.80 U | 0.50 U | 0.49 U | 0.50 U |
| Cl4(52) | 1.27 | 0.77 | 1.13 | 20.33 |
| Aldrin | 0.20 U | 0.12 U | 0.12 U | 0.12 U |
| Cl4(44) | 0.33 U | 0.21 U | 0.20 U | 0.31 |
| Heptachlor epoxide | 0.33 U | 0.20 U | 0.20 U | 0.20 U |
| Cl4(66) | 3.05 | 3.01 | 1.96 | 9.61 |
| 2,4 DDE | 1.45 U | 0.91 U | 0.88 U | 0.91 U |
| Cl5(101) | 0.70 J | 0.77 J | 0.62 J | 9.15 |
| cis Chlordane | 0.47 | 0.16 J | 0.47 | 0.23 |
| trans Nonachlor | 0.39 J | 0.28 | 0.35 | 0.33 |
| Cl5(87) | 0.32 J | 0.25 J | 0.43 | 0.88 |
| 4,4 DDE | 5.32 | 9.17 | 5.97 | 4.15 |
| Cl5(118) | 12.10 | 21.82 | 8.84 | 18.44 |
| 4,4 DDD | 0.79 J | 0.41 J | 1.02 J | 0.68 J |
| 2,4 DDT | 0.31 J | 0.75 J | 0.16 J | 0.41 J |
| Cl6(153) | 19.41 | 50.71 | 20.37 | 25.58 |
| Cl5(105) | 2.13 | 3.38 | 1.68 | 2.54 |
| 4,4 DDT | 0.23 J | 0.72 U | 0.63 J | 0.10 J |
| Cl6(138) | 15.51 | 31.19 | 13.26 | 17.44 |
| Cl5(126) | 0.66 U | 0.42 U | 0.40 U | 0.42 U |
| Cl7(187) | 6.57 | 15.82 | 6.10 | 5.69 |
| Cl6(128) | 2.45 | 4.70 | 1.98 | 3.24 |
| Cl7(180) | 5.55 | 17.15 | 6.39 | 5.74 |
| Mirex | 0.38 U | 0.24 U | 0.23 U | 0.24 U |
| Cl7(170) | 2.69 | 7.59 | 3.09 | 3.21 |
| Cl8(195) | 0.80 | 1.59 | 0.82 | 0.60 |
| Cl9(206) | 0.25 J | 0.68 | 0.58 | 0.25 J |
| Cl10(209) | 0.57 J | 0.81 | 1.11 | 0.48 J |
| Cl4(50) | 0.24 U | 0.15 U | 0.15 U | 0.15 U |
| Cl7(188) | 1.00 U | 0.63 U | 0.61 U | 0.63 U |
| Cl8(200) | 0.19 J | 0.38 U | 0.36 U | 0.14 J |
| | | | | |
| Sum of 24 Congeners | 78.67 | 163.18 | 71.26 | 163.38 |
| Sum of 24 Congeners x 2 | 157.34 | 326.35 | 142.52 | 326.76 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-18-LOB | OFF-19-LOB | OFF-20-LOB | OFF-21-LOB |
|---|---|---|---|---|
| Battelle ID | Y5313 | Y5314 | Y5315 | Y5316 |
| Sample Weight (g, dry weight) | 2.45 | 2.99 | 3.06 | 1.81 |
| Sample Weight (g, wet weight) | 20.08 | 16.38 | 14.44 | 13.25 |
| % Lipid | 6 | 4 | 6 | 10 |
| Extraction Date | 11/05/98 | 11/05/98 | 11/05/98 | 11/05/98 |
| Analysis Date | 11/16/98 | 11/16/98 | 11/16/98 | 11/16/98 |
| Battelle Batch | 98-371 | 98-371 | 98-371 | 98-371 |
| Cl2(08) | 1.40 U | 1.15 U | 0.52 J | 0.84 J |
| Hexachlorobenzene | 0.55 | 0.40 | 0.43 | 0.44 |
| g-BHC | 1.90 | 0.14 U | 0.91 | 1.34 |
| Cl3(18) | 0.35 U | 0.29 U | 0.28 U | 0.47 U |
| Cl3(29) | 0.24 U | 0.20 U | 0.19 U | 0.33 U |
| Cl3(28) | 0.69 | 0.42 | 0.35 | 0.71 |
| Heptachlor | 0.69 U | 0.57 U | 0.55 U | 0.93 U |
| Cl4(52) | 2.18 | 0.89 | 0.84 | 1.50 |
| Aldrin | 0.17 U | 0.14 U | 0.14 U | 0.23 U |
| Cl4(44) | 0.28 U | 0.23 U | 0.23 U | 0.38 U |
| Heptachlor epoxide | 0.28 U | 0.08 J | 0.22 U | 0.38 U |
| Cl4(66) | 3.01 | 1.92 | 1.78 | 3.63 |
| 2,4 DDE | 1.25 U | 1.02 U | 1.00 U | 1.69 U |
| Cl5(101) | 1.03 J | 0.58 J | 0.47 J | 1.19 J |
| cis Chlordane | 0.45 | 0.43 | 0.25 | 0.35 |
| trans Nonachlor | 0.55 | 0.19 J | 0.23 J | 0.59 |
| Cl5(87) | 0.55 J | 0.46 J | 0.24 J | 0.55 J |
| 4,4 DDE | 11.63 | 5.32 | 5.54 | 10.02 |
| Cl5(118) | 12.57 | 12.71 | 10.46 | 16.46 |
| 4,4 DDD | 1.57 J | 0.30 J | 0.81 J | 0.73 J |
| 2,4 DDT | 0.46 J | 1.24 U | 0.43 J | 0.61 J |
| Cl6(153) | 22.93 | 29.18 | 25.99 | 33.02 |
| Cl5(105) | 2.18 | 1.76 | 1.70 | 2.51 |
| 4,4 DDT | 0.56 J | 0.06 J | 0.25 J | 0.24 J |
| Cl6(138) | 16.30 | 15.39 | 16.66 | 23.14 |
| Cl5(126) | 0.57 U | 0.47 U | 0.46 U | 0.77 U |
| Cl7(187) | 7.66 | 9.72 | 8.35 | 11.84 |
| Cl6(128) | 3.11 | 2.31 | 2.66 | 3.66 |
| Cl7(180) | 7.44 | 10.91 | 8.28 | 11.44 |
| Mirex | 0.22 J | 0.50 | 0.26 U | 0.45 U |
| Cl7(170) | 3.67 | 5.20 | 3.67 | 5.45 |
| Cl8(195) | 1.02 | 0.93 | 0.95 | 1.38 |
| Cl9(206) | 0.15 J | 0.33 J | 0.24 J | 0.28 J |
| Cl10(209) | 0.84 | 0.52 J | 0.70 | 0.76 J |
| Cl4(50) | 0.21 U | 0.17 U | 0.17 U | 0.28 U |
| Cl7(188) | 0.86 U | 0.71 U | 0.69 U | 1.17 U |
| Cl8(200) | 0.51 U | 0.42 U | 0.23 J | 0.48 J |
| Sum of 24 Congeners | 89.74 | 96.87 | 86.11 | 122.25 |
| Sum of 24 Congeners x 2 | 179.48 | 193.75 | 172.22 | 244.51 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

Laboratory Name: Battelle Duxbury Operations
Project Name: OFFTA ERA TISSUE ANALYSIS
PCB/Pesticide Surrogate Corrected Data
Units: ng/g dry wt.

| Client ID | OFF-23-LOB | OFF-21-LOB-FD |
|---|---|---|
| Battelle ID | Y5318 | Y5317 |
| Sample Weight (g, dry weight) | 3.42 | 1.94 |
| Sample Weight (g, wet weight) | 21.12 | 12.05 |
| % Lipid | 4 | 4 |
| Extraction Date | 11/05/98 | 11/05/98 |
| Analysis Date | 11/17/98 | 11/16/98 |
| Battelle Batch | 98-371 | 98-371 |
| Cl2(08) | 0.36 J | 0.49 J |
| Hexachlorobenzene | 0.30 | 0.39 |
| g-BHC | 1.36 | 0.75 |
| Cl3(18) | 0.25 U | 0.44 U |
| Cl3(29) | 0.17 U | 0.30 U |
| Cl3(28) | 0.38 | 0.94 |
| Heptachlor | 0.49 U | 0.87 U |
| Cl4(52) | 1.28 | 1.16 |
| Aldrin | 0.12 U | 0.21 U |
| Cl4(44) | 0.20 U | 0.36 U |
| Heptachlor epoxide | 0.20 U | 0.35 U |
| Cl4(66) | 3.28 | 4.76 |
| 2,4 DDE | 0.89 U | 1.58 U |
| Cl5(101) | 1.08 J | 1.22 J |
| cis Chlordane | 0.24 | 0.40 |
| trans Nonachlor | 0.26 J | 0.55 |
| Cl5(87) | 0.43 | 0.62 J |
| 4,4 DDE | 12.17 | 14.51 |
| Cl5(118) | 20.75 | 24.16 |
| 4,4 DDD | 0.83 J | 1.19 J |
| 2,4 DDT | 0.69 J | 0.70 J |
| Cl6(153) | 45.91 | 55.50 |
| Cl5(105) | 3.18 | 4.56 |
| 4,4 DDT | 0.27 J | 0.30 J |
| Cl6(138) | 28.92 | 35.49 |
| Cl5(126) | 0.41 U | 0.72 U |
| Cl7(187) | 14.02 | 14.24 |
| Cl6(128) | 5.17 | 5.72 |
| Cl7(180) | 12.15 | 17.30 |
| Mirex | 0.17 J | 0.42 U |
| Cl7(170) | 4.76 | 6.72 |
| Cl8(195) | 1.32 | 1.46 |
| Cl9(206) | 0.55 | 0.75 |
| Cl10(209) | 0.83 | 0.75 J |
| Cl4(50) | 0.15 U | 0.26 U |
| Cl7(188) | 0.62 U | 1.09 U |
| Cl8(200) | 0.60 | 0.65 U |
| Sum of 24 Congeners | 146.77 | 179.69 |
| Sum of 24 Congeners x 2 | 293.55 | 359.39 |

J = Analyte detected below sample specific MDL.
U = Analyte not detected, sample specific MDL.
NA - Not Applicable
& = QC result outside acceptance criteria.

# APPENDIX A-2
# RESULTS OF SEDIMENT ELUTRIATE CHEMICAL: ORGANICS, INORGANICS

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-1-ELU-032798 | | OFF-1-ELU-042798 | | OFF-2-ELU-032798 | | OFF-2-ELU-042798 | | OFF-3-ELU-032798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-1 | | OFF-2 | | OFF-2 | | OFF-3 | |
| Date Sampled | 3/27/98 | | 4/27/98 | | 3/27/98 | | 4/27/98 | | 3/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| **Polyaromatic Hydrocarbons (PAH) (NG/L)** | | | | | | | | | | |
| 1-Methylnaphthalene | | NA | 15 9 | UJ | | NA | 15 9 | U | | NA |
| 1-Methylphenanthrene | | NA | 4 5 | U | | NA | 4 5 | U | | NA |
| 2,3,5-Trimethylnaphthalene | | NA | 5 7 | U | | NA | 5 7 | U | | NA |
| 2,6-Dimethylnaphthalene | | NA | 5 7 | UJ | | NA | 5 7 | U | | NA |
| 2-Methylnaphthalene | | NA | 8 7 | UJ | | NA | 8 7 | U | | NA |
| Acenaphthene | | NA | 8 1 | U | | NA | 5 8 | J | | NA |
| Acenaphthylene | | NA | 8 3 | U | | NA | 1 1 | J | | NA |
| Anthracene | | NA | 1 9 | U | | NA | 3 | | | NA |
| Benzo(a)anthracene | | NA | 8 9 | U | | NA | 19.5 | | | NA |
| Benzo(a)pyrene | | NA | 6 8 | J | | NA | 29 | J | | NA |
| benzo(b,j,k)fluoranthene | | NA | 55 3 | J | | NA | 92 3 | J | | NA |
| benzo(e)pyrene | | NA | 24 6 | J | | NA | 42 | J | | NA |
| Benzo(g,h,i)Perylene | | NA | 4 6 | UJ | | NA | 34 | J | | NA |
| Biphenyl | | NA | 10 6 | UJ | | NA | 14 6 | J | | NA |
| chrysene/triphenylene | | NA | 10.7 | U | | NA | 18 5 | U | | NA |
| Dibenzo(a,h)Anthracene | | NA | 9 5 | UJ | | NA | 23 3 | J | | NA |
| Fluoranthene | | NA | 45 6 | | | NA | 74 | | | NA |
| Fluorene | | NA | 4 2 | U | | NA | 3 2 | J | | NA |
| Indeno(1,2,3-cd)pyrene | | NA | 7 4 | UJ | | NA | 29 2 | J | | NA |
| Naphthalene | | NA | 6 6 | UJ | | NA | 14 9 | U | | NA |
| Perylene | | NA | 6 1 | UJ | | NA | 7 5 | J | | NA |
| Phenanthrene | | NA | 9 5 | U | | NA | 26 2 | | | NA |
| Pyrene | | NA | 41 9 | | | NA | 81 5 | | | NA |
| Sum PAHs (6 High Molecular Weight) | | NA | 113 | | | NA | 246 | | | NA |
| Sum PAHs (7 Low Molecular Weight) | | NA | 10 | | | NA | 54 | | | NA |
| Sum PAHs (NOAA Status &Trends) | | NA | 202 | | | NA | 520 | | | NA |
| **PCB Congeners/Organochlorine Pesticides (NG/L)** | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | | NA | 0 3 | J | | NA | 2 2 | J | | NA |
| 2,4'-DDE | | NA | 0 1 | J | | NA | 0 7 | J | | NA |
| 2,4'-DDT | | NA | 1 2 | J | | NA | 0 2 | J | | NA |
| 4,4'-DDD | | NA | 0 8 | J | | NA | 0 7 | J | | NA |
| 4,4'-DDE | | NA | 0 4 | J | | NA | 1.1 | J | | NA |
| 4,4'-DDT | | NA | 3 7 | U | | NA | 1.9 | J | | NA |
| Aldrin | | NA | 3 3 | U | | NA | 3 3 | U | | NA |
| alpha-Chlordane | | NA | 0 3 | J | | NA | 0 5 | J | | NA |
| Heptachlor | | NA | 0 2 | J | | NA | 0 3 | J | | NA |
| Heptachlor Epoxide | | NA | 0 5 | J | | NA | 0 8 | J | | NA |
| Hexachlorobenzene | | NA | 3 8 | U | | NA | 3 8 | U | | NA |
| Mirex | | NA | 2 1 | U | | NA | 2 1 | U | | NA |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-1-ELU-032798 | | OFF-1-ELU-042798 | | OFF-2-ELU-032798 | | OFF-2-ELU-042798 | | OFF-3-ELU-032798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-1 | | OFF-2 | | OFF-2 | | OFF-3 | |
| Date Sampled | 3/27/98 | | 4/27/98 | | 3/27/98 | | 4/27/98 | | 3/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| PCB 101/90 | | NA | 1 2 | J | | NA | 1 9 | | | NA |
| PCB 105 | | NA | 0 3 | J | | NA | 1 | U | | NA |
| PCB 118 | | NA | 0 2 | J | | NA | 1 | U | | NA |
| PCB 126 | | NA | 1 3 | U | | NA | 1.3 | U | | NA |
| PCB 128 | | NA | 1 9 | | | NA | 2 1 | | | NA |
| PCB 138/163/164 | | NA | 1 9 | U | | NA | 2 2 | | | NA |
| PCB 153 | | NA | 1 2 | U | | NA | 4 3 | | | NA |
| PCB 170 | | NA | 1 3 | | | NA | 3 4 | | | NA |
| PCB 18 | | NA | 2 9 | U | | NA | 1 1 | J | | NA |
| PCB 180 | | NA | 2 5 | | | NA | 1 | U | | NA |
| PCB 187/182/159 | | NA | 1 5 | U | | NA | 2 2 | U | | NA |
| PCB 188 | | NA | 0 4 | J | | NA | 1 1 | J | | NA |
| PCB 195 | | NA | 2 8 | | | NA | 3 2 | | | NA |
| PCB 200 | | NA | 0 6 | U | | NA | 2.2 | | | NA |
| PCB 206 | | NA | 1 4 | U | | NA | 2 9 | | | NA |
| PCB 209 | | NA | 0 7 | J | | NA | 4 7 | | | NA |
| PCB 28/50 | | NA | 0 5 | J | | NA | 0 3 | J | | NA |
| PCB 29 | | NA | 2 3 | U | | NA | 2 3 | U | | NA |
| PCB 44 | | NA | 0 4 | J | | NA | 0.5 | J | | NA |
| PCB 50 | | NA | 2 9 | U | | NA | 2 9 | U | | NA |
| PCB 52 | | NA | 0 7 | J | | NA | 1.5 | J | | NA |
| PCB 66/95 | | NA | 1.4 | U | | NA | 1 4 | U | | NA |
| PCB 8 | | NA | 1 3 | J | | NA | 0 9 | J | | NA |
| PCB 87 | | NA | 0 1 | J | | NA | 0 6 | J | | NA |
| Sum of PCB Congeners | | NA | 14 3 | | | NA | 32 9 | | | NA |
| Sum of PCB Congeners X 2 | | NA | 28 6 | | | NA | 65 8 | | | NA |
| trans-Nonachlor | | NA | 0 1 | J | | NA | 0 4 | J | | NA |
| **Metals (UG/L)** | | | | | | | | | | |
| Aluminum | 48 1 | | | NA | 73 2 | | | NA | 20 4 | |
| Arsenic | 10 | U | | NA | 10 | U | | NA | 10 | U |
| Cadmium | 0 2 | U | | NA | 0 2 | U | | NA | 0 2 | |
| Chromium | 0.8 | U | | NA | 0.8 | U | | NA | 0.8 | U |
| Copper | 5 3 | | | NA | 6 3 | | | NA | 4 7 | |
| Iron | 200 | | | NA | 672 | | | NA | 527 | |
| Lead | 3 4 | U | | NA | 4 2 | U | | NA | 3 5 | U |
| Mercury | 0.42 | UJ | | NA | 0.42 | UJ | | NA | 0 42 | UJ |
| Nickel | 0.8 | U | | NA | 0.8 | U | | NA | 0.8 | U |
| Silver | 0 5 | U | | NA | 0 5 | U | | NA | 0 5 | U |
| Zinc | 13.4 | U | | NA | 14.6 | U | | NA | 8.3 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-3-ELU-042798 | | OFF-4-ELU-032798 | | OFF-4-ELU-042798 | | OFF-5-ELU-032798 | | OFF-5-ELU-042798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-3 | | OFF-4 | | OFF-4 | | OFF-5 | | OFF-5 | |
| Date Sampled | 4/27/98 | | 3/27/98 | | 4/27/98 | | 3/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| **Polyaromatic Hydrocarbons (PAH) (NG/L)** | | | | | | | | | | |
| 1-Methylnaphthalene | 15 9 | UJ | | NA | 15 9 | U | | NA | 14 6 | J |
| 1-Methylphenanthrene | 4 6 | | | NA | 16 | | | NA | 32.2 | |
| 2,3,5-Trimethylnaphthalene | 5 7 | U | | NA | 5 7 | U | | NA | 3 5 | J |
| 2,6-Dimethylnaphthalene | 5 7 | UJ | | NA | 2 | J | | NA | 5 7 | UJ |
| 2-Methylnaphthalene | 8 7 | UJ | | NA | 8 7 | U | | NA | 6 7 | J |
| Acenaphthene | 1.5 | J | | NA | 6 4 | J | | NA | 13 5 | |
| Acenaphthylene | 3 | J | | NA | 20 | | | NA | 28 | |
| Anthracene | 4 8 | | | NA | 17 3 | | | NA | 53 7 | |
| Benzo(a)anthracene | 28 | J | | NA | 83 3 | J | | NA | 184 | J |
| Benzo(a)pyrene | 26 2 | | | NA | 79 7 | | | NA | 250 | |
| benzo(b,j,k)fluoranthene | 107 | | | NA | 214 | | | NA | 717 | |
| benzo(e)pyrene | 50 2 | J | | NA | 85 3 | J | | NA | 280 | J |
| Benzo(g,h,i)Perylene | 25 1 | J | | NA | 99 1 | J | | NA | 249 | J |
| Biphenyl | 10 6 | UJ | | NA | 4 | J | | NA | 5 3 | J |
| chrysene/triphenylene | 30 5 | UJ | | NA | 83 9 | J | | NA | 163 | J |
| Dibenzo(a,h)Anthracene | 9 5 | U | | NA | 37 5 | | | NA | 119 | |
| Fluoranthene | 154 | | | NA | 289 | | | NA | 659 | |
| Fluorene | 4 2 | U | | NA | 6 3 | | | NA | 22 2 | |
| Indeno(1,2,3-cd)pyrene | 26 | | | NA | 80 4 | | | NA | 222 | |
| Naphthalene | 6 6 | U | | NA | 21 8 | U | | NA | 22 4 | UJ |
| Perylene | 7 5 | | | NA | 24 2 | | | NA | 73 2 | |
| Phenanthrene | 31 3 | | | NA | 153 | | | NA | 206 | |
| Pyrene | 122 | | | NA | 237 | | | NA | 565 | |
| Sum PAHs (6 High Molecular Weight) | 360 | | | NA | 810 | | | NA | 1940 | |
| Sum PAHs (7 Low Molecular Weight) | 45 | | | NA | 225 | | | NA | 352 | |
| Sum PAHs (NOAA Status &Trends) | 626 | | | NA | 1560 | | | NA | 3890 | |
| **PCB Congeners/Organochlorine Pesticides (NG/L)** | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 3 | J | | NA | 0 1 | J | | NA | 0 3 | J |
| 2,4'-DDE | 1 8 | U | | NA | 1 8 | U | | NA | 0 4 | J |
| 2,4'-DDT | 0 1 | J | | NA | 0 2 | J | | NA | 0 2 | J |
| 4,4'-DDD | 2 4 | U | | NA | 2 4 | U | | NA | 0 6 | J |
| 4,4'-DDE | 0 2 | J | | NA | 0 4 | J | | NA | 0.6 | J |
| 4,4'-DDT | 3 7 | U | | NA | 3 7 | U | | NA | 2.8 | J |
| Aldrin | 3 3 | U | | NA | 3 3 | U | | NA | 3 3 | U |
| alpha-Chlordane | 0 1 | J | | NA | 0 2 | J | | NA | 0 7 | J |
| Heptachlor | 1 2 | U | | NA | 0 2 | J | | NA | 1 1 | J |
| Heptachlor Epoxide | 2 9 | U | | NA | 0 3 | J | | NA | 0 5 | J |
| Hexachlorobenzene | 3 8 | U | | NA | 3 8 | U | | NA | 3 8 | U |
| Mirex | 2 1 | U | | NA | 2 1 | U | | NA | 2 1 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-3-ELU-042798 | | OFF-4-ELU-032798 | | OFF-4-ELU-042798 | | OFF-5-ELU-032798 | | OFF-5-ELU-042798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-3 | | OFF-4 | | OFF-4 | | OFF-5 | | OFF-5 | |
| Date Sampled | 4/27/98 | | 3/27/98 | | 4/27/98 | | 3/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| PCB 101/90 | 0 7 | J | | NA | 0 9 | J | | NA | 1.4 | J |
| PCB 105 | 1 | U | | NA | 0 1 | J | | NA | 0 3 | J |
| PCB 118 | 1 | U | | NA | 0 2 | J | | NA | 0 5 | J |
| PCB 126 | 1 3 | U | | NA | 1 3 | U | | NA | 1 2 | J |
| PCB 128 | 1 1 | U | | NA | 1.1 | U | | NA | 1 1 | U |
| PCB 138/163/164 | 0 9 | U | | NA | 0 9 | UJ | | NA | 3 7 | |
| PCB 153 | 1 2 | U | | NA | 2 5 | | | NA | 1 2 | U |
| PCB 170 | 1 2 | U | | NA | 1 2 | U | | NA | 1 2 | U |
| PCB 18 | 2 9 | U | | NA | 2 9 | U | | NA | 2 9 | U |
| PCB 180 | 0 7 | U | | NA | 0 7 | U | | NA | 0 8 | U |
| PCB 187/182/159 | 0 9 | U | | NA | 0 9 | U | | NA | 0 9 | UJ |
| PCB 188 | 0 1 | J | | NA | 0 1 | J | | NA | 0 1 | J |
| PCB 195 | 1 1 | U | | NA | 0 1 | J | | NA | 1 1 | U |
| PCB 200 | 0 7 | J | | NA | 0 6 | U | | NA | 0 6 | U |
| PCB 206 | 2 1 | | | NA | 1 9 | U | | NA | 2 5 | |
| PCB 209 | 1 1 | U | | NA | 0 4 | J | | NA | 0 7 | J |
| PCB 28/50 | 0 1 | J | | NA | 0 3 | J | | NA | 0 5 | J |
| PCB 29 | 2 3 | U | | NA | 2 3 | U | | NA | 2 3 | U |
| PCB 44 | 0 1 | J | | NA | 0 3 | J | | NA | 0 7 | J |
| PCB 50 | 2 9 | U | | NA | 2 9 | U | | NA | 2 9 | UJ |
| PCB 52 | 0 4 | J | | NA | 0 9 | J | | NA | 1 | J |
| PCB 66/95 | 1 4 | U | | NA | 1 4 | U | | NA | 1 4 | U |
| PCB 8 | 2 4 | U | | NA | 2 4 | U | | NA | 1 1 | J |
| PCB 87 | 0 1 | J | | NA | 0 1 | J | | NA | 0 3 | J |
| Sum of PCB Congeners | 4 3 | | | NA | 5 9 | | | NA | 14 | |
| Sum of PCB Congeners X 2 | 8 6 | | | NA | 11 8 | | | NA | 28 | |
| trans-Nonachlor | 0 1 | J | | NA | 0 1 | J | | NA | 0 2 | J |
| **Metals (UG/L)** | | | | | | | | | | |
| Aluminum | | NA | 55 5 | | | NA | 156 1 | | | NA |
| Arsenic | | NA | 10 | U | | NA | 10 | U | | NA |
| Cadmium | | NA | 0 3 | | | NA | 0 2 | U | | NA |
| Chromium | | NA | 0.8 | U | | NA | 1.1 | | | NA |
| Copper | | NA | 37 3 | | | NA | 3 7 | | | NA |
| Iron | | NA | 72 | | | NA | 335 | | | NA |
| Lead | | NA | 7 2 | U | | NA | 6.9 | U | | NA |
| Mercury | | NA | 0 42 | UJ | | NA | 0 42 | UJ | | NA |
| Nickel | | NA | 0.8 | U | | NA | 0.8 | U | | NA |
| Silver | | NA | 0 5 | U | | NA | 0 5 | U | | NA |
| Zinc | | NA | 8 | U | | NA | 13 | U | | NA |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-6-ELU-032798 | | OFF-6-ELU-042798 | | OFF-7-ELU-032798 | | OFF-7-ELU-042798 | | OFF-8-ELU-040798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-6 | | OFF-6 | | OFF-7 | | OFF-7 | | OFF-8 | |
| Date Sampled | 3/27/98 | | 4/27/98 | | 3/27/98 | | 4/27/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| **Polyaromatic Hydrocarbons (PAH) (NG/L)** | | | | | | | | | | |
| 1-Methylnaphthalene | | NA | 15 9 | UJ | | NA | 9 7 | J | 7 7 | J |
| 1-Methylphenanthrene | | NA | 4 5 | U | | NA | 4.5 | U | 2 | J |
| 2,3,5-Trimethylnaphthalene | | NA | 5 7 | U | | NA | 5 7 | U | 0 4 | J |
| 2,6-Dimethylnaphthalene | | NA | 5 7 | UJ | | NA | 5 7 | U | 5 7 | U |
| 2-Methylnaphthalene | | NA | 8 7 | UJ | | NA | 8 7 | U | 8 4 | J |
| Acenaphthene | | NA | 6 8 | J | | NA | 5 2 | J | 2 1 | J |
| Acenaphthylene | | NA | 8 3 | U | | NA | 2 | J | 2 9 | J |
| Anthracene | | NA | 8 3 | | | NA | 1 2 | J | 5 1 | |
| Benzo(a)anthracene | | NA | 29 1 | J | | NA | 15 7 | | 8 3 | UJ |
| Benzo(a)pyrene | | NA | 29 4 | J | | NA | 11 9 | J | 12 1 | |
| benzo(b,j,k)fluoranthene | | NA | 161 | J | | NA | 61 5 | J | 68 9 | |
| benzo(e)pyrene | | NA | 80.6 | J | | NA | 25 | J | 39 | |
| Benzo(g,h,i)Perylene | | NA | 69.2 | J | | NA | 21 4 | J | 38 | |
| Biphenyl | | NA | 10 6 | UJ | | NA | 3 5 | J | 7 8 | J |
| chrysene/triphenylene | | NA | 21 1 | UJ | | NA | 13 7 | U | 10 7 | U |
| Dibenzo(a,h)Anthracene | | NA | 9 5 | UJ | | NA | 9 5 | UJ | 9 3 | J |
| Fluoranthene | | NA | 134 | | | NA | 54 6 | | 20 5 | |
| Fluorene | | NA | 5 9 | | | NA | 5 2 | | 2 8 | J |
| Indeno(1,2,3-cd)pyrene | | NA | 49 5 | J | | NA | 21 8 | J | 24 5 | |
| Naphthalene | | NA | 14 1 | UJ | | NA | 8 4 | U | 26 6 | |
| Perylene | | NA | 6 1 | UJ | | NA | 1 4 | J | 5 4 | J |
| Phenanthrene | | NA | 45 5 | | | NA | 23 2 | | 14 3 | U |
| Pyrene | | NA | 141 | | | NA | 98 3 | | 25 3 | |
| Sum PAHs (6 High Molecular Weight) | | NA | 355 | | | NA | 194 | | 79 | |
| Sum PAHs (7 Low Molecular Weight) | | NA | 81 | | | NA | 45 | | 62 | |
| Sum PAHs (NOAA Status &Trends) | | NA | 796 | | | NA | 384 | | 335 | |
| **PCB Congeners/Organochlorine Pesticides (NG/L)** | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | | NA | 0 3 | J | | NA | 0 2 | J | 0 1 | J |
| 2,4'-DDE | | NA | 0.1 | J | | NA | 0.2 | J | 0 1 | J |
| 2,4'-DDT | | NA | 0.3 | J | | NA | 0 4 | J | 0 3 | J |
| 4,4'-DDD | | NA | 0.8 | J | | NA | 0 7 | J | 0 6 | J |
| 4,4'-DDE | | NA | 0.6 | J | | NA | 0 5 | J | 0 4 | J |
| 4,4'-DDT | | NA | 2 1 | J | | NA | 3 7 | U | 1 7 | J |
| Aldrin | | NA | 3 3 | U | | NA | 3 3 | U | 3 3 | U |
| alpha-Chlordane | | NA | 0 3 | J | | NA | 0 6 | J | 0 3 | J |
| Heptachlor | | NA | 1 2 | U | | NA | 1 2 | U | 1 2 | U |
| Heptachlor Epoxide | | NA | 1 5 | J | | NA | 0 3 | J | 2 9 | U |
| Hexachlorobenzene | | NA | 3 8 | U | | NA | 3 8 | U | 3 8 | U |
| Mirex | | NA | 2 1 | UJ | | NA | 2 1 | UJ | 2 1 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected; B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-6-ELU-032798 | | OFF-6-ELU-042798 | | OFF-7-ELU-032798 | | OFF-7-ELU-042798 | | OFF-8-ELU-040798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-6 | | OFF-6 | | OFF-7 | | OFF-7 | | OFF-8 | |
| Date Sampled | 3/27/98 | | 4/27/98 | | 3/27/98 | | 4/27/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| PCB 101/90 | | NA | 2 | | | NA | 1 4 | J | 1 2 | J |
| PCB 105 | | NA | 0 4 | J | | NA | 0 4 | J | 0 5 | J |
| PCB 118 | | NA | 1 | J | | NA | 0 5 | J | 0 6 | J |
| PCB 126 | | NA | 0 6 | J | | NA | 1 3 | U | 0 5 | J |
| PCB 128 | | NA | 1 1 | U | | NA | 1 1 | U | 1.1 | U |
| PCB 138/163/164 | | NA | 1 3 | UJ | | NA | 0 9 | U | 1.7 | U |
| PCB 153 | | NA | 1 2 | U | | NA | 1 2 | U | 1 2 | U |
| PCB 170 | | NA | 1 6 | J | | NA | 1 2 | U | 1 2 | U |
| PCB 18 | | NA | 2 3 | J | | NA | 2 9 | U | 2 9 | U |
| PCB 180 | | NA | 0 7 | UJ | | NA | 0 7 | U | 2 3 | |
| PCB 187/182/159 | | NA | 0 9 | U | | NA | 0 9 | U | 0 9 | U |
| PCB 188 | | NA | 0 1 | J | | NA | 0.1 | J | 0 3 | J |
| PCB 195 | | NA | 1 8 | J | | NA | 1.1 | UJ | 2 7 | |
| PCB 200 | | NA | 0 6 | UJ | | NA | 0.6 | U | 0 6 | J |
| PCB 206 | | NA | 2 9 | J | | NA | 3 5 | J | 1 5 | U |
| PCB 209 | | NA | 0 8 | J | | NA | 0 8 | J | 1 | J |
| PCB 28/50 | | NA | 1 6 | J | | NA | 0 4 | J | 0 5 | J |
| PCB 29 | | NA | 2 3 | U | | NA | 2 3 | U | 2 3 | U |
| PCB 44 | | NA | 2 7 | | | NA | 0 7 | J | 0 5 | J |
| PCB 50 | | NA | 2 9 | U | | NA | 2 9 | U | 2 9 | U |
| PCB 52 | | NA | 2 4 | J | | NA | 0 8 | J | 0 7 | J |
| PCB 66/95 | | NA | 2 1 | J | | NA | 1 4 | U | 1 | J |
| PCB 8 | | NA | 2 | J | | NA | 0 8 | J | 0 6 | J |
| PCB 87 | | NA | 0 5 | J | | NA | 0 4 | J | 0 2 | J |
| Sum of PCB Congeners | | NA | 24 8 | | | NA | 9 8 | | 13 2 | |
| Sum of PCB Congeners X 2 | | NA | 49 6 | | | NA | 19 6 | | 26 4 | |
| trans-Nonachlor | | NA | 0 2 | J | | NA | 0 1 | J | 1 7 | U |
| **Metals (UG/L)** | | | | | | | | | | |
| Aluminum | 126 2 | | | NA | 66 7 | | | NA | 61 2 | |
| Arsenic | 26.1 | | | NA | 1.10 | U | | NA | 21.9 | U |
| Cadmium | 0 2 | U | | NA | 0 2 | | | NA | 0 2 | U |
| Chromium | 0.8 | U | | NA | 0 8 | U | | NA | 0.8 | U |
| Copper | 2 5 | U | | NA | 2 5 | U | | NA | 2 5 | U |
| Iron | 1102 | | | NA | 225 | | | NA | 82 | |
| Lead | 5 3 | U | | NA | 5 5 | U | | NA | 6 3 | U |
| Mercury | 0 42 | UJ | | NA | 0 42 | UJ | | NA | 0 42 | UJ |
| Nickel | 0 8 | U | | NA | 0.8 | U | | NA | 0.8 | U |
| Silver | 0 5 | U | | NA | 0 5 | U | | NA | 0 5 | U |
| Zinc | 8 | U | | NA | 4.3 | U | | NA | 7 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis; R - Rejected, B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-9-ELU-040798 | | OFF-10-ELU-040398 | | OFF-11-ELU-040398 | | OFF-12-ELU-040398 | | OFF-13-ELU-040398 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-9 | | OFF-10 | | OFF-11 | | OFF-12 | | OFF-13 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/3/98 | | 4/3/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| **Polyaromatic Hydrocarbons (PAH) (NG/L)** | | | | | | | | | | |
| 1-Methylnaphthalene | 8 2 | J | 13 2 | J | 16 6 | | 16 2 | | 13 1 | J |
| 1-Methylphenanthrene | 2 | J | 2 6 | J | 2 | J | 4 5 | U | 4 5 | U |
| 2,3,5-Trimethylnaphthalene | 5 7 | U | 0 8 | J | 0 4 | J | 2 2 | J | 1 3 | J |
| 2,6-Dimethylnaphthalene | 5 7 | UJ | 9 3 | | 14 4 | | 19 9 | | 12 5 | J |
| 2-Methylnaphthalene | 13 2 | J | 7 2 | J | 8 2 | J | 23 4 | | 14 2 | J |
| Acenaphthene | 3 5 | J | 3 3 | J | 5 | J | 29 | | 5 4 | J |
| Acenaphthylene | 2 1 | J | 11 | | 9 4 | | 8 3 | J | 14 8 | |
| Anthracene | 4 6 | | 11 7 | | 10 8 | | 42 | | 21 2 | |
| Benzo(a)anthracene | 7 3 | UJ | 14 4 | | 11 7 | | 20 1 | | 39 7 | |
| Benzo(a)pyrene | 35 2 | J | 21 2 | | 23 3 | | 57 1 | J | 41 4 | |
| benzo(b,j,k)fluoranthene | 109 | J | 66 5 | | 61 1 | | 191 | J | 141 | |
| benzo(e)pyrene | 42.8 | J | 35 2 | | 34 5 | | 115 | J | 90 2 | |
| Benzo(g,h,i)Perylene | 68 2 | J | 45 1 | U | 40 7 | U | 119 | UJ | 97 7 | U |
| Biphenyl | 11 2 | J | 10 6 | U | 10 6 | U | 10 6 | U | 10 6 | UJ |
| chrysene/triphenylene | 10 7 | U | 20 9 | | 17 5 | | 27 1 | | 17 3 | J |
| Dibenzo(a,h)Anthracene | 79 | J | 9 6 | U | 9 5 | U | 21 2 | UJ | 17 2 | UJ |
| Fluoranthene | 24 5 | | 38 6 | | 41 1 | | 55 1 | | 39 7 | |
| Fluorene | 3 8 | J | 5 4 | | 6 4 | | 23 2 | | 6 1 | |
| Indeno(1,2,3-cd)pyrene | 62 | J | 28 3 | U | 28 1 | U | 78 3 | UJ | 52 7 | UJ |
| Naphthalene | 36 1 | J | 17 9 | | 15 6 | | 24 9 | | 6 6 | UJ |
| Perylene | 17 | J | 6 1 | U | 6 7 | U | 7 8 | UJ | 10 6 | U |
| Phenanthrene | 14 3 | U | 16 | | 13 9 | | 42 5 | | 16 2 | |
| Pyrene | 22 1 | | 39 8 | | 42 3 | | 191 | | 100 | |
| Sum PAHs (6 High Molecular Weight) | 174 | | 145 | | 145 | | 372 | | 255 | |
| Sum PAHs (7 Low Molecular Weight) | 78 | | 73 | | 69 | | 193 | | 77.9 | |
| Sum PAHs (NOAA Status &Trends) | 572 | | 428 | | 423 | | 1120 | | 761 | |
| **PCB Congeners/Organochlorine Pesticides (NG/L)** | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 5 | J | 1 8 | U | 0 9 | J | 1 5 | J | 1 8 | U |
| 2,4'-DDE | 0.1 | J | 1.8 | U | 1 8 | U | 1 8 | U | 1 8 | U |
| 2,4'-DDT | 2 9 | U | 0 3 | J | 2 9 | U | 0 4 | J | 2 9 | U |
| 4,4'-DDD | 0.7 | J | 2 5 | | 1 8 | J | 9 2 | | 8.8 | |
| 4,4'-DDE | 0 3 | J | 0 7 | J | 0 9 | J | 3 4 | | 3.2 | |
| 4,4'-DDT | 1 5 | J | 1 | J | 0.8 | J | 1 3 | J | 2 7 | J |
| Aldrin | 3 3 | U | 0 1 | J | 0 3 | J | 3 3 | U | 0.1 | J |
| alpha-Chlordane | 0 3 | J | 1 9 | U | 1 9 | U | 0 8 | J | 1 3 | J |
| Heptachlor | 0 4 | J | 0 1 | J | 0 1 | J | 1 2 | U | 1 2 | U |
| Heptachlor Epoxide | 2 9 | U | 2 9 | U | 2 9 | U | 2 9 | U | 2 9 | U |
| Hexachlorobenzene | 3 8 | U | 0 5 | J | 3 8 | U | 2 4 | J | 0 7 | J |
| Mirex | 2 1 | U | 2 1 | U | 2 1 | U | 2 1 | U | 2 1 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected; B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-9-ELU-040798 | | OFF-10-ELU-040398 | | OFF-11-ELU-040398 | | OFF-12-ELU-040398 | | OFF-13-ELU-040398 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-9 | | OFF-10 | | OFF-11 | | OFF-12 | | OFF-13 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/3/98 | | 4/3/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| PCB 101/90 | 1 2 | J | 1 7 | U | 1 7 | U | 3 4 | | 2 6 | U |
| PCB 105 | 0 4 | J | 0.9 | J | 0 6 | J | 1 2 | J | 1 7 | J |
| PCB 118 | 0 5 | J | 1 1 | | 1 2 | | 2 | | 2 1 | |
| PCB 126 | 1 6 | | 0 9 | J | 1 3 | U | 0 8 | J | 2 7 | |
| PCB 128 | 1 1 | U | 1.2 | | 0 9 | J | 0 9 | | 2 2 | |
| PCB 138/163/164 | 1 9 | U | 2 | U | 1 9 | U | 3 7 | | 4 4 | |
| PCB 153 | 1 8 | | 2 1 | | 1 7 | | 3.8 | | 3 9 | |
| PCB 170 | 1 6 | | 1 2 | J | 0 6 | J | 1 3 | | 1 | J |
| PCB 18 | 2 9 | U | 2 9 | U | 2 9 | U | 0 8 | J | 2 9 | U |
| PCB 180 | 3 5 | | 1 2 | | 1 3 | | 3 | | 2 5 | |
| PCB 187/182/159 | 1 6 | U | 0 8 | J | 0 7 | J | 1 8 | | 1 9 | |
| PCB 188 | 0 4 | J | 0 9 | J | 1 4 | U | 1 | J | 1 | J |
| PCB 195 | 3 4 | | 1 | U | 0 6 | J | 0 9 | J | 1 1 | U |
| PCB 200 | 1 2 | | 0 5 | J | 0 6 | U | 0 7 | J | 1 3 | |
| PCB 206 | 2 1 | | 0.4 | J | 0 7 | J | 2 4 | | 1 3 | J |
| PCB 209 | 1 1 | | 0 9 | J | 0 9 | J | 2 2 | | 2 | |
| PCB 28/50 | 1 7 | J | 1 8 | J | 1 8 | J | 1 2 | J | 1 1 | J |
| PCB 29 | 2 3 | U | 2.3 | U | 2 3 | U | 2 3 | U | 0 5 | J |
| PCB 44 | 0 4 | J | 0 9 | J | 0 6 | J | 1 | J | 1 1 | J |
| PCB 50 | 2 9 | U | 0 5 | J | 0 6 | J | 2 9 | U | 2 9 | U |
| PCB 52 | 0 6 | J | 0.8 | J | 0 9 | J | 1 3 | J | 1 2 | J |
| PCB 66/95 | 1 1 | J | 1 5 | U | 1 7 | U | 2 7 | | 1 9 | U |
| PCB 8 | 1 5 | J | 2 4 | U | 2 4 | U | 0 6 | J | 0 5 | J |
| PCB 87 | 0 2 | J | 1 2 | U | 0 5 | J | 0 8 | J | 0 9 | J |
| Sum of PCB Congeners | 24 3 | | 16 1 | | 13 6 | | 37 5 | | 33 3 | |
| Sum of PCB Congeners X 2 | 48 6 | | 32 2 | | 27 2 | | 75 | | 66 6 | |
| trans-Nonachlor | 0 3 | J | 0 3 | J | 0 3 | J | 1 7 | U | 1 6 | J |
| **Metals (UG/L)** | | | | | | | | | | |
| Aluminum | 86 6 | | 176 9 | | 134 2 | | 65 | | 134 | |
| Arsenic | 36 4 | | 10 | U | 10 | U | 20.5 | U | 10 | U |
| Cadmium | 0 2 | U | 0 2 | U | 0 2 | U | 0 2 | U | 0 2 | U |
| Chromium | 0.8 | | 0.8 | U | 0.8 | U | 1.6 | | 2 3 | |
| Copper | 2 5 | U | 2 6 | | 2 6 | | 5 1 | | 13 2 | |
| Iron | 238 | | 277 | | 161 | | 690 | | 451 | |
| Lead | 5 8 | U | 6 1 | U | 5 3 | U | 4 4 | U | 5 1 | U |
| Mercury | 0 42 | UJ | 0 42 | UJ | 0 42 | UJ | 0 42 | UJ | 0 42 | UJ |
| Nickel | 8.3 | | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U |
| Silver | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| Zinc | 11.5 | U | 5.3 | U | 17.5 | U | 18.9 | U | 18.4 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-14-ELU-040798 | | OFF-15-ELU-040798 | | OFF-16-ELU-040398 | | OFF-17-ELU-040398 | | OFF-18-ELU-040398 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-14 | | OFF-15 | | OFF-16 | | OFF-17 | | OFF-18 | |
| Date Sampled | 4/7/98 | | 4/7/98 | | 4/3/98 | | 4/3/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| **Polyaromatic Hydrocarbons (PAH) (NG/L)** | | | | | | | | | | |
| 1-Methylnaphthalene | 15 9 | U | 3 1 | J | 6 2 | J | 8 1 | J | 4 3 | J |
| 1-Methylphenanthrene | 4 5 | U | 1 6 | J | 1 2 | J | 4 5 | U | 4 5 | U |
| 2,3,5-Trimethylnaphthalene | 5 7 | U | 5 7 | U | 5 7 | U | 1 | J | 0 6 | J |
| 2,6-Dimethylnaphthalene | 5 7 | U | 5 7 | UJ | 6 2 | | 4 8 | J | 5 2 | J |
| 2-Methylnaphthalene | 8 7 | U | 3 3 | J | 4 8 | J | 5 8 | J | 5 2 | J |
| Acenaphthene | 8 1 | U | 8.1 | U | 2 7 | J | 1 5 | J | 3 4 | J |
| Acenaphthylene | 1 9 | J | 3 9 | J | 3 2 | J | 3 5 | J | 6 7 | J |
| Anthracene | 1 9 | U | 4 6 | | 3 7 | | 6 8 | | 13 4 | |
| Benzo(a)anthracene | 22 5 | | 8 9 | UJ | 5 2 | J | 10 8 | | 30 1 | |
| Benzo(a)pyrene | 27 6 | J | 19 2 | | 13 3 | UJ | 39 6 | J | 41 2 | J |
| benzo(b,j,k)fluoranthene | 160 | J | 74 1 | | 38 9 | UJ | 172 | J | 162 | J |
| benzo(e)pyrene | 69 9 | J | 40 6 | | 22 | UJ | 99 5 | J | 87 2 | J |
| Benzo(g,h,i)Perylene | 85 9 | J | 32 5 | | 25 | UJ | 225 | J | 117 | UJ |
| Biphenyl | 7 1 | J | 2 6 | J | 10 6 | U | 10 6 | U | 10 6 | U |
| chrysene/triphenylene | 31 7 | U | 10 7 | U | 5 | J | 8 1 | J | 16 2 | J |
| Dibenzo(a,h)Anthracene | 51 1 | J | 9 5 | U | 9 5 | UJ | 54 3 | J | 52 4 | J |
| Fluoranthene | 55 2 | | 23 8 | | 15 1 | | 26 5 | | 60 | |
| Fluorene | 4 2 | U | 2 2 | J | 2 2 | J | 3 1 | J | 4 8 | |
| Indeno(1,2,3-cd)pyrene | 64 1 | J | 36 | | 15 4 | UJ | 120 | J | 79 4 | UJ |
| Naphthalene | 9 6 | U | 12 3 | UJ | 11 5 | | 9 5 | | 6 6 | U |
| Perylene | 4 | J | 2 6 | J | 6 1 | UJ | 21 5 | J | 15 3 | UJ |
| Phenanthrene | 22 6 | | 14 1 | U | 6 7 | U | 9 4 | U | 16 | |
| Pyrene | 71 5 | | 27 5 | | 23 1 | | 41.8 | | 80 7 | |
| Sum PAHs (6 High Molecular Weight) | 260 | | 86 | | 66 | | 181 | | 281 | |
| Sum PAHs (7 Low Molecular Weight) | 34 | | 40 | | 35 | | 39 6 | | 49 5 | |
| Sum PAHs (NOAA Status &Trends) | 685 | | 319 | | 222 | | 881 | | 807 | |
| **PCB Congeners/Organochlorine Pesticides (NG/L)** | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 1 8 | U | 0 4 | J | 0 3 | J | 1 8 | U | 1 8 | U |
| 2,4'-DDE | 0 2 | J | 0.1 | J | 1.8 | U | 1 8 | U | 1 8 | U |
| 2,4'-DDT | 2 9 | U | 2 9 | UJ | 2 9 | U | 2 9 | U | 0 3 | J |
| 4,4'-DDD | 0 8 | J | 0 5 | J | 2 99875 | | 1.8 | J | 5 1 | |
| 4,4'-DDE | 0 6 | J | 0 2 | J | 0 59765 | J | 1 2 | J | 2 3 | J |
| 4,4'-DDT | 2 | J | 3.7 | U | 6 87 | | 0 8 | J | 2 8 | J |
| Aldrin | 3 3 | U | 3 3 | U | 3 3 | U | 3 3 | U | 3 3 | U |
| alpha-Chlordane | 0 3 | J | 0.2 | J | 0 45266 | J | 0 6 | J | 0 7 | J |
| Heptachlor | 1.2 | U | 1.2 | U | 1 2 | U | 1 2 | U | 1.2 | U |
| Heptachlor Epoxide | 0 6 | J | 2 9 | UJ | 2 9 | U | 2 9 | U | 2 9 | U |
| Hexachlorobenzene | 3 8 | U | 3 8 | U | 3 8 | U | 0 9 | J | 2 5 | J |
| Mirex | 2 1 | U | 0 5 | J | 2 1 | U | 2.1 | U | 2 1 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-14-ELU-040798 | | OFF-15-ELU-040798 | | OFF-16-ELU-040398 | | OFF-17-ELU-040398 | | OFF-18-ELU-040398 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-14 | | OFF-15 | | OFF-16 | | OFF-17 | | OFF-18 | |
| Date Sampled | 4/7/98 | | 4/7/98 | | 4/3/98 | | 4/3/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| PCB 101/90 | 1 8 | | 1 5 | J | 1 7 | U | 1 7 | U | 2 5 | U |
| PCB 105 | 0 4 | J | 0 1 | J | 1 3 | J | 1 | U | 1 2 | J |
| PCB 118 | 2 1 | J | 1 | UJ | 1 | U | 1 | U | 1 8 | |
| PCB 126 | 0.5 | J | 1 3 | U | 0 5 | J | 3 9 | | 0 7 | J |
| PCB 128 | 1 1 | U | 1.1 | U | 1 2 | | 0 8 | J | 1 | J |
| PCB 138/163/164 | 1 7 | U | 0 9 | U | 2 3 | U | 1 8 | U | 2.8 | |
| PCB 153 | 2 | | 1 2 | U | 1 4 | | 1 1 | J | 2 9 | |
| PCB 170 | 1 2 | U | 1 2 | U | 1 4 | | 0 4 | J | 1 2 | |
| PCB 18 | 2 9 | U | 2 9 | U | 2 9 | U | 2 9 | U | 2 9 | U |
| PCB 180 | 0 8 | U | 0 7 | U | 1 9 | | 1 1 | | 2 3 | |
| PCB 187/182/159 | 0 9 | U | 1 | U | 1 4 | | 0 8 | J | 1 4 | |
| PCB 188 | 0 5 | J | 0 1 | J | 1 4 | U | 1 4 | U | 0 7 | J |
| PCB 195 | 0 2 | J | 0 6 | J | 2.4 | U | 1 1 | U | 1 9 | U |
| PCB 200 | 0 6 | U | 0 6 | U | 0 6 | U | 0 7 | J | 0 5 | J |
| PCB 206 | 4 7 | | 1.3 | U | 1 | J | 1.1 | J | 1.6 | |
| PCB 209 | 1 8 | | 3.1 | | 1 2 | J | 1 8 | | 1 3 | |
| PCB 28/50 | 0 4 | J | 0 1 | J | 1 5 | U | 1 5 | U | 1 5 | U |
| PCB 29 | 2 3 | U | 2 3 | U | 2.3 | U | 2 3 | U | 2 3 | U |
| PCB 44 | 0 7 | J | 1.6 | UJ | 0 6 | J | 1 6 | U | 1 6 | U |
| PCB 50 | 2 9 | U | 2 9 | U | 2 9 | U | 2 9 | U | 2 9 | U |
| PCB 52 | 0 9 | J | 0 2 | J | 2 7 | U | 2 7 | U | 1 2 | J |
| PCB 66/95 | 1 3 | J | 1 4 | U | 1 4 | U | 1 4 | U | 2 | |
| PCB 8 | 0.9 | J | 2 4 | U | 0 4 | J | 0 3 | J | 2 4 | U |
| PCB 87 | 0 5 | J | 0 1 | J | 1 2 | U | 1 2 | U | 0 6 | J |
| Sum of PCB Congeners | 18 7 | | 5 8 | | 12 3 | | 12 | | 23 2 | |
| Sum of PCB Congeners X 2 | 37 4 | | 11 6 | | 24 6 | | 24 | | 46 4 | |
| trans-Nonachlor | 0 1 | J | 0 1 | J | 0 89006 | J | 0 6 | J | 0 9 | J |
| **Metals (UG/L)** | | | | | | | | | | |
| Aluminum | 126 1 | | 110.4 | | 106 1 | | 150 8 | | 210 | |
| Arsenic | 20.4 | U | 16 | U | 17.6 | U | 10 | U | 10 | U |
| Cadmium | 0 2 | | 0.2 | | 0 2 | U | 0 2 | U | 0 2 | U |
| Chromium | 0.8 | U | 0.8 | | 0.8 | U | 0.8 | U | 2.5 | |
| Copper | 7 | | 3 8 | | 3 1 | | 2 5 | U | 3 4 | |
| Iron | 66 | | 77 | | 137 | | 127 | | 693 | |
| Lead | 4 4 | U | 4.8 | U | 5 6 | U | 5.8 | U | 6 2 | U |
| Mercury | 0 42 | UJ | 0 42 | UJ | 0 42 | UJ | 0 42 | UJ | 0 42 | UJ |
| Nickel | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U |
| Silver | 0 5 | U | 0.5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| Zinc | 3 | U | 3 | U | 3 | U | 4 7 | U | 6.3 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis; R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-19-ELU-040798 | | OFF-20-ELU-040398 | | OFF-21-ELU-040398 | | OFF-22-ELU-032798 | | OFF-22-ELU-042798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-19 | | OFF-20 | | OFF-21 | | OFF-22 | | OFF-22 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/3/98 | | 3/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| **Polyaromatic Hydrocarbons (PAH) (NG/L)** | | | | | | | | | | |
| 1-Methylnaphthalene | | R | 2 2 | J | 15 9 | UJ | | NA | 6 2 | J |
| 1-Methylphenanthrene | 4 5 | U | 1.2 | J | 4 5 | U | | NA | 4 5 | U |
| 2,3,5-Trimethylnaphthalene | 5 7 | U | 5 7 | U | 5 7 | U | | NA | 5 7 | U |
| 2,6-Dimethylnaphthalene | | R | 1.4 | J | 5 7 | UJ | | NA | 2 | J |
| 2-Methylnaphthalene | | R | 1 1 | J | 8 7 | UJ | | NA | 10 7 | J |
| Acenaphthene | 8 1 | U | 8 1 | U | 8 1 | U | | NA | 6 3 | J |
| Acenaphthylene | 7 3 | J | 1 4 | J | 2 2 | J | | NA | 3 2 | J |
| Anthracene | 5 3 | | 1 4 | J | 6 4 | | | NA | 3 8 | |
| Benzo(a)anthracene | 9 3 | UJ | 6 | J | 31 5 | J | | NA | 10 9 | U |
| Benzo(a)pyrene | 12 | | 10 7 | U | 46 1 | J | | NA | 15 1 | J |
| benzo(b,j,k)fluoranthene | 39 9 | U | 34 8 | U | 198 2 | J | | NA | 62 8 | J |
| benzo(e)pyrene | 24 6 | | 18 1 | U | 76 3 | J | | NA | 34 4 | J |
| Benzo(g,h,i)Perylene | 28 8 | | 39 8 | U | 96 4 | J | | NA | 33 3 | J |
| Biphenyl | | R | 10 6 | U | 10 6 | UJ | | NA | 3 7 | J |
| chrysene/triphenylene | 10 7 | U | 2 9 | J | 16 3 | UJ | | NA | 10 7 | U |
| Dibenzo(a,h)Anthracene | 9 5 | U | 36 5 | UJ | 15 6 | J | | NA | 3 4 | J |
| Fluoranthene | 18 3 | | 12 1 | | 37 5 | | | NA | 40 4 | |
| Fluorene | 4 2 | U | 0 9 | J | 4.2 | U | | NA | 10 | |
| Indeno(1,2,3-cd)pyrene | 19 7 | | 38 5 | UJ | 66 5 | J | | NA | 23 | J |
| Naphthalene | | R | 6 6 | U | 6 6 | UJ | | NA | 28 | |
| Perylene | 3 9 | J | 6 1 | U | 26 1 | J | | NA | 4 4 | J |
| Phenanthrene | 10 | U | 4 5 | U | 11 7 | U | | NA | 27 4 | |
| Pyrene | 24 5 | | 13 8 | | 79 2 | | | NA | 37 3 | |
| Sum PAHs (6 High Molecular Weight) | 69 | | 82 | | 236 | | | NA | 116 | |
| Sum PAHs (7 Low Molecular Weight) | 23 | | 9 3 | | 20 | | | NA | 90 | |
| Sum PAHs (NOAA Status &Trends) | 209 | | 233 | | 720 | | | NA | 376 | |
| **PCB Congeners/Organochlorine Pesticides (NG/L)** | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 5 | J | 1 8 | U | 0 5 | J | | NA | 1 8 | U |
| 2,4'-DDE | 0.1 | J | 1 8 | U | 0 6 | J | | NA | 0 2 | J |
| 2,4'-DDT | 2 9 | U | 2 9 | U | 0 6 | J | | NA | 0 2 | J |
| 4,4'-DDD | 2 4 | U | 0 78523 | J | 2 3 | J | | NA | 0 5 | J |
| 4,4'-DDE | 0 2 | J | 2 4 | U | 1 1 | J | | NA | 0 9 | J |
| 4,4'-DDT | 2 | J | 3 77072 | | 1 5 | J | | NA | 3 7 | U |
| Aldrin | 3 3 | U | 3 3 | U | 3 3 | U | | NA | 3 3 | U |
| alpha-Chlordane | 0 2 | J | 1 9 | U | 0 6 | J | | NA | 0 5 | J |
| Heptachlor | 1 2 | U | 0 16483 | J | 0 2 | J | | NA | 1 2 | U |
| Heptachlor Epoxide | 0 5 | J | 2 9 | U | 1 | J | | NA | 0 2 | J |
| Hexachlorobenzene | 3 8 | U | 3 8 | U | 3 8 | U | | NA | 3 8 | U |
| Mirex | 2 1 | U | 2 1 | U | 2 1 | U | | NA | 2 1 | UJ |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis; R - Rejected; B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-19-ELU-040798 | | OFF-20-ELU-040398 | | OFF-21-ELU-040398 | | OFF-22-ELU-032798 | | OFF-22-ELU-042798 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-19 | | OFF-20 | | OFF-21 | | OFF-22 | | OFF-22 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/3/98 | | 3/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Matrix | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | | ELUTRIATE | |
| PCB 101/90 | 1 1 | J | 1 7 | U | 2 1 | | | NA | 1 8 | |
| PCB 105 | 1 | U | 0 9 | J | 1 3 | J | | NA | 0 2 | J |
| PCB 118 | 0 1 | J | 1 | U | 1 5 | J | | NA | 0 6 | J |
| PCB 126 | 1 3 | U | 1 2 | J | 1 9 | | | NA | 1 3 | UJ |
| PCB 128 | 1 1 | U | 0 7 | J | 2 1 | | | NA | 1.1 | U |
| PCB 138/163/164 | 1 1 | U | 1 3 | U | 3 | | | NA | 1 | UJ |
| PCB 153 | 1 2 | U | 1 1 | J | 2 4 | | | NA | 1 2 | U |
| PCB 170 | 1 2 | U | 1 4 | | 2 4 | | | NA | 1 2 | U |
| PCB 18 | 2 9 | U | 2.9 | U | 2 9 | U | | NA | 2 9 | U |
| PCB 180 | 1 2 | U | 2 2 | | 3 3 | | | NA | 0 8 | UJ |
| PCB 187/182/159 | 0 9 | U | 0 7 | J | 2 9 | U | | NA | 0 9 | U |
| PCB 188 | 0 2 | J | 1 4 | U | 1 | J | | NA | 0 1 | J |
| PCB 195 | 1 | J | 1 1 | U | 2 7 | | | NA | 1 2 | UJ |
| PCB 200 | 0 6 | U | 0 6 | U | 1 9 | | | NA | 0 5 | J |
| PCB 206 | 1 6 | U | 1 1 | J | 2 5 | | | NA | 4 5 | J |
| PCB 209 | 1 3 | | 1 1 | U | 1 5 | | | NA | 0 5 | J |
| PCB 28/50 | 0 4 | J | 1 5 | U | 0 6 | J | | NA | 0 4 | J |
| PCB 29 | 2 3 | U | 2 3 | U | 2 3 | U | | NA | 2 3 | U |
| PCB 44 | 0 2 | J | 1 6 | U | 1 | J | | NA | 0 7 | J |
| PCB 50 | 2 9 | U | 0 2 | J | 2 9 | U | | NA | 2 9 | U |
| PCB 52 | 0 9 | J | 0 5 | J | 1 3 | J | | NA | 0 7 | J |
| PCB 66/95 | 1 4 | U | 1 4 | U | 1 8 | J | | NA | 1 | J |
| PCB 8 | 2 4 | U | 0.3 | J | 0 98301 | J | | NA | 1 3 | J |
| PCB 87 | 0 1 | J | 1 2 | U | 0 7 | J | | NA | 0 4 | J |
| Sum of PCB Congeners | 5 3 | | 10 3 | | 35 98301 | | | NA | 12 7 | |
| Sum of PCB Congeners X 2 | 10 6 | | 20 6 | | 71 96602 | | | NA | 25 4 | |
| trans-Nonachlor | 1 7 | UJ | 0 43188 | J | 0 6 | J | | NA | 0 2 | J |
| **Metals (UG/L)** | | | | | | | | | | |
| Aluminum | 36 5 | | 45 9 | | 119 2 | | 235 5 | | | NA |
| Arsenic | 11.2 | U | 10 | U | 10 | U | 18.3 | U | | NA |
| Cadmium | 0 2 | U | 0 2 | U | 0 2 | U | 0 2 | U | | NA |
| Chromium | 0.8 | U | 0.8 | U | 4.4 | | 0.8 | | | NA |
| Copper | 2.5 | U | 2 5 | U | 2 5 | U | 11 4 | | | NA |
| Iron | 206 | | 25 | | 109 | | 504 | | | NA |
| Lead | 5 6 | U | 4 | U | 5 8 | U | 6 3 | U | | NA |
| Mercury | 0 42 | UJ | 0 42 | UJ | 0.42 | UJ | 0 42 | UJ | | NA |
| Nickel | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U | | NA |
| Silver | 0 5 | U | 0.5 | U | 0 5 | U | 0 5 | U | | NA |
| Zinc | 6.1 | U | 3 | U | 11.7 | U | 3 | U | | NA |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| | | |
|---|---|---|
| Sample Number | OFF-23-ELU-040398 | |
| Sample Location | OFF-23 | |
| Date Sampled | 4/3/98 | |
| QC Type | None | |
| Matrix | ELUTRIATE | |
| **Polyaromatic Hydrocarbons (PAH) (NG/L)** | | |
| 1-Methylnaphthalene | 10 | J |
| 1-Methylphenanthrene | 1 7 | J |
| 2,3,5-Trimethylnaphthalene | 0 8 | J |
| 2,6-Dimethylnaphthalene | 6 9 | J |
| 2-Methylnaphthalene | 15 2 | J |
| Acenaphthene | 7 | J |
| Acenaphthylene | 11 | |
| Anthracene | 25 2 | |
| Benzo(a)anthracene | 36 1 | J |
| Benzo(a)pyrene | 58 5 | |
| benzo(b,j,k)fluoranthene | 204 | |
| benzo(e)pyrene | 118 | |
| Benzo(g,h,i)Perylene | 109 | |
| Biphenyl | 6 9 | J |
| chrysene/triphenylene | 28 8 | UJ |
| Dibenzo(a,h)Anthracene | 36 1 | |
| Fluoranthene | 58 7 | |
| Fluorene | 7 2 | |
| Indeno(1,2,3-cd)pyrene | 64 9 | |
| Naphthalene | 24 | J |
| Perylene | 11 1 | |
| Phenanthrene | 21 5 | |
| Pyrene | 132 | |
| Sum PAHs (6 High Molecular Weight) | 351 | |
| Sum PAHs (7 Low Molecular Weight) | 111 | |
| Sum PAHs (NOAA Status &Trends) | 994 | |
| **PCB Congeners/Organochlorine Pesticides (NG/L)** | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 2 | J |
| 2,4'-DDE | 0 2 | J |
| 2,4'-DDT | 0 4 | J |
| 4,4'-DDD | 3 2 | |
| 4,4'-DDE | 1 9 | J |
| 4,4'-DDT | 3 7 | J |
| Aldrin | 3 3 | U |
| alpha-Chlordane | 0 4 | J |
| Heptachlor | 0 1 | J |
| Heptachlor Epoxide | 0 6 | J |
| Hexachlorobenzene | 3 8 | U |
| Mirex | 2 1 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| | | |
|---|---|---|
| Sample Number | OFF-23-ELU-040398 | |
| Sample Location | OFF-23 | |
| Date Sampled | 4/3/98 | |
| QC Type | None | |
| Matrix | ELUTRIATE | |
| PCB 101/90 | 1 8 | |
| PCB 105 | 1 1 | J |
| PCB 118 | 1 8 | J |
| PCB 126 | 1 2 | J |
| PCB 128 | 1 3 | U |
| PCB 138/163/164 | 3 2 | |
| PCB 153 | 2 9 | |
| PCB 170 | 1 7 | |
| PCB 18 | 2 9 | U |
| PCB 180 | 2 6 | |
| PCB 187/182/159 | 1 4 | U |
| PCB 188 | 0 7 | J |
| PCB 195 | 1 9 | |
| PCB 200 | 0 9 | |
| PCB 206 | 1 8 | U |
| PCB 209 | 2 6 | |
| PCB 28/50 | 0 9 | J |
| PCB 29 | 2 3 | U |
| PCB 44 | 0 5 | J |
| PCB 50 | 2 9 | U |
| PCB 52 | 0 8 | J |
| PCB 66/95 | 1 6 | J |
| PCB 8 | 0 5 | J |
| PCB 87 | 0 7 | J |
| Sum of PCB Congeners | 27 4 | |
| Sum of PCB Congeners X 2 | 54 8 | |
| trans-Nonachlor | 0 6 | J |
| **Metals (UG/L)** | | |
| Aluminum | 171 | |
| Arsenic | 11.1 | U |
| Cadmium | 0 2 | U |
| Chromium | 1.8 | |
| Copper | 5 2 | |
| Iron | 502 | |
| Lead | 6 2 | U |
| Mercury | 0 42 | UJ |
| Nickel | 0.8 | U |
| Silver | 0 5 | |
| Zinc | 14.5 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL; NA - Not Analyzed

# APPENDIX A-1
# RESULTS OF SEDIMENT CHEMICAL ANALYSES: ORGANIC, INORGANICS, SEM/AVS, TOC, GRAIN-SIZE

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-1-SD-0015 | | OFF-2-SD-0015 | | OFF-3-SD-0015 | | OFF-4-SD-0015 | | OFF-5-SD-0015 | | OFF-5-SD-2025 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-2 | | OFF-3 | | OFF-4 | | OFF-5 | | OFF-5 | |
| Date Sampled | 3/27/98 | | 3/27/98 | | 3/27/98 | | 3/27/98 | | 3/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 14 8 | J | 52 4 | J | 62.2 | J | 35.8 | J | 278 | J | 35 | |
| 1-Methylphenanthrene | 132 | | 364 | | 539 | | 282 | | 1460 | | 121 | |
| 2,3,5-Trimethylnaphthalene | 7 7 | J | 45 2 | J | 22 | J | 22 6 | J | 121 | J | 13 | |
| 2,6-Dimethylnaphthalene | 18 9 | J | 103 | J | 66.9 | J | 53 5 | J | 476 | J | 30 3 | |
| 2-Methylnaphthalene | 26 | J | 77 6 | J | 89 2 | J | 38 1 | J | 330 | J | 42 5 | |
| Acenaphthene | 23 | | 88 1 | | 371 | | 54 | | 966 | | 132 | J |
| Acenaphthylene | 93 | | 488 | | 350 | | 424 | | 509 | | 144 | |
| Anthracene | 255 | J | 1100 | J | 1460 | J | 774 | J | 2810 | J | 380 | |
| Benzo(a)anthracene | 100 | | 3600 | | 5690 | | 2280 | | 9300 | | 882 | |
| Benzo(a)pyrene | 595 | | 2410 | | 3450 | J | 2090 | | 4830 | | 973 | |
| benzo(b,j,k)fluoranthene | 2780 | | 7710 | | 17300 | J | 3500 | | 25000 | | 1610 | |
| benzo(e)pyrene | 910 | J | 2370 | J | 5250 | J | 1310 | J | 7590 | J | 616 | |
| Benzo(g,h,i)Perylene | 876 | J | 2520 | J | 5370 | J | 1290 | J | 5990 | J | 547 | |
| Biphenyl | 7 2 | | 22 1 | | 38 6 | | 6 6 | | 151 | | 8 9 | J |
| chrysene/triphenylene | 790 | | 2340 | | 4560 | | 1850 | | 7300 | | 790 | J |
| Dibenzo(a,h)Anthracene | 441 | J | 1290 | J | 2810 | J | 352 | J | 3410 | J | 345 | |
| Fluoranthene | 1950 | | 8350 | | 14600 | | 5580 | | 19200 | | 2300 | |
| Fluorene | 40 3 | J | 303 | J | 598 | J | 177 | J | 1360 | J | 124 | J |
| Indeno(1,2,3-cd)pyrene | 1010 | | 3070 | | 6560 | J | 1200 | | 7390 | | 524 | |
| Naphthalene | 31 9 | | 171 | | 149 | | 136 | | 258 | | 88 3 | |
| Perylene | 225 | | 818 | | 1490 | J | 607 | | 1460 | | 262 | |
| Phenanthrene | 1060 | | 5610 | | 10700 | | 3030 | | 14600 | | 1440 | |
| Pyrene | 1780 | | 6750 | | 10700 | | 4810 | | 16900 | | 2090 | |
| Sum PAHs (6 High Molecular Weight) | 6660 | | 24700 | | 41800 | | 16700 | | 60900 | | 7370 | |
| Sum PAHs (7 Low Molecular Weight) | 1530 | | 7830 | | 13700 | | 4640 | | 20800 | | 2350 | |
| Sum PAHs (NOAA Status &Trends) | 14200 | | 49600 | | 92100 | | 29900 | | 132000 | | 13500 | |
| **PCB Cong./Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0.6 | U |
| 2,4'-DDE | 0 5 | U | 0 8 | U | 0 8 | U | 0 8 | U | 0 8 | U | 0.8 | U |
| 2,4'-DDT | 1 1 | | 1 8 | | 0 7 | J | 2 6 | | 1 7 | | 1 | U |
| 4,4'-DDD | 3 | J | 1 4 | J | 1 8 | J | 2 4 | J | 2 | J | 1 1 | |
| 4,4'-DDE | 2 5 | U | 2 5 | U | 2 2 | U | 2 | U | 3 | U | 1.1 | U |
| 4,4'-DDT | 4 3 | | 10 | | 4 | | 11 5 | | 11 3 | | 1 8 | J |
| Aldrin | 0 7 | U | 0 7 | U | 0 7 | U | 0.7 | U | 0 7 | U | 0 7 | U |
| alpha-Chlordane | 0 8 | | 0 7 | J | 0 7 | J | 1.2 | | 1 4 | | 0.8 | U |
| Heptachlor | 0 5 | U | 0.5 | U | 0 5 | U | 1.4 | U | 0.5 | U | 0 5 | U |
| Heptachlor Epoxide | 0 5 | U | 0 5 | U | 0 5 | U | 0 6 | J | 0.5 | U | 0 7 | |
| Hexachlorobenzene | 0 4 | U | 0 4 | U | 0 4 | U | 0 4 | U | 0 5 | U | 0 4 | U |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected, B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-1-SD-0015 | | OFF-2-SD-0015 | | OFF-3-SD-0015 | | OFF-4-SD-0015 | | OFF-5-SD-0015 | | OFF-5-SD-2025 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-2 | | OFF-3 | | OFF-4 | | OFF-5 | | OFF-5 | |
| Date Sampled | 3/27/98 | | 3/27/98 | | 3/27/98 | | 3/27/98 | | 3/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Mirex | 0 3 | J | 0 6 | U | 0 6 | U | 0 6 | U | 0.6 | | 0 6 | U |
| PCB 101/90 | 1 2 | U | 2.1 | U | 2 4 | U | 2 9 | | 2 2 | U | 4 6 | |
| PCB 105 | 0 6 | U | 1 2 | U | 1 4 | U | 0 7 | U | 1 7 | J | 1 1 | U |
| PCB 118 | 0 7 | J | 2.1 | | 1 8 | | 1 3 | | 1 1 | | 3 6 | |
| PCB 126 | 0 5 | U | 0 9 | J | 1 3 | J | 1 7 | J | 2.5 | J | 1 | J |
| PCB 128 | 0 6 | | 0 6 | J | 0 8 | J | 2 1 | | 0 9 | J | 1 4 | |
| PCB 138/163/164 | 1 9 | | 10 7 | J | 11 2 | J | 11 4 | | 16 2 | J | 7 2 | |
| PCB 153 | 1 5 | | 2.5 | | 2 5 | | 1 9 | | 4 | | 3 6 | J |
| PCB 170 | 0 9 | U | 0 7 | U | 0 7 | U | 1 8 | | 1 8 | | 1 1 | |
| PCB 18 | 1 3 | J | 0 7 | U | 1 7 | | 0 7 | U | 1 4 | | 0 7 | U |
| PCB 180 | 1 1 | | 1 5 | | 2 4 | | 2 | | 3 9 | | 1 1 | |
| PCB 187/182/159 | 0 6 | | 0.7 | | 0 6 | | 2 8 | | 1 6 | | 1 | |
| PCB 188 | 0 6 | U | 0 6 | U | 0 8 | | 0 6 | U | 1.3 | | 0.6 | |
| PCB 195 | 0 5 | U | 0 6 | U | 0 6 | U | 1 2 | | 3 5 | | 0 7 | J |
| PCB 200 | 0 3 | J | 1 2 | | 1 | | 1 8 | | 2 | | 0 5 | U |
| PCB 206 | 0 5 | U | 0 5 | U | 0 5 | U | 2 4 | U | 0 6 | U | 0 8 | U |
| PCB 209 | 0 5 | U | 0 5 | U | 0.5 | U | 0.5 | U | 0 7 | U | 0 6 | U |
| PCB 28/50 | 0 7 | | 0 7 | U | 0.6 | J | 0 7 | U | 1 8 | | 1 2 | |
| PCB 29 | 0 7 | U | 0.7 | U | 0.7 | U | 0 7 | U | 0 7 | U | 0 7 | U |
| PCB 44 | 0 6 | J | 0 4 | J | 1 4 | J | 1 4 | J | 1 4 | J | 1.2 | |
| PCB 50 | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| PCB 52 | 0 8 | U | 0 7 | U | 1 | U | 1 4 | J | 1 8 | J | 2 8 | |
| PCB 66/95 | 1 1 | | 1.4 | | 2 | | 1 7 | | 3 9 | | 4 2 | |
| PCB 8 | 8 5 | J | 0.3 | U | 0 9 | J | 0 3 | U | 0 3 | U | 0 7 | J |
| PCB 87 | 0 6 | UJ | 0.9 | J | 0 8 | J | 0 7 | J | 0 8 | J | 1 | |
| Sum of PCB Congeners | 18 9 | | 22.9 | | 29 8 | | 36 1 | | 51 6 | | 37 | |
| Sum of PCB Congeners X 2 | 37 8 | | 45.8 | | 59 6 | | 72 2 | | 103 2 | | 74 | |
| trans-Nonachlor | 0 6 | J | 0 8 | U | 0 7 | J | 0 8 | U | 1.3 | | 0 8 | U |
| **Metals (MG/KG)** | | | | | | | | | | | | |
| Aluminum | 21671 8 | J | 26983 7 | J | 23218 6 | J | 16491 8 | J | 16256 3 | J | 25226 7 | J |
| Arsenic | 6 3 | J | 8 | J | 3 6 | J | 4 3 | J | 3 6 | J | 4 9 | J |
| Cadmium | 0 31 | | 0 14 | | 0 18 | | 0 06 | | 0.23 | | 0 55 | |
| Chromium | 31 1 | | 36 6 | | 26 5 | | 24 3 | | 27 4 | | 17.6 | |
| Copper | 58 3 | | 23 7 | | 12 3 | | 31.4 | | 16 9 | | 13 5 | |
| Iron | 24310 | J | 29486.5 | J | 22871 7 | J | 22907.6 | J | 17649.2 | J | 21741.8 | J |
| Lead | 131 4 | | 90 2 | | 60 1 | | 95 5 | | 138 7 | | 59 8 | |
| Manganese | 353 6 | | 302 2 | | 387.4 | | 369 | | 166.8 | | 282 | |
| Mercury | 0 371 | | 0.081 | | 0 05 | U | 0 05 | U | 0 05 | U | 0 071 | |
| Nickel | 34 | | 26 2 | | 22 2 | | 20 2 | | 19 | | 22 8 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis; R - Rejected; B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-1-SD-0015 | | OFF-2-SD-0015 | | OFF-3-SD-0015 | | OFF-4-SD-0015 | | OFF-5-SD-0015 | | OFF-5-SD-2025 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-1 | | OFF-2 | | OFF-3 | | OFF-4 | | OFF-5 | | OFF-5 | |
| Date Sampled | 3/27/98 | | 3/27/98 | | 3/27/98 | | 3/27/98 | | 3/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Silver | 0 46 | J | 0 13 | UJ | 0 13 | UJ | 0 13 | UJ | 0 13 | UJ | 0.13 | UJ |
| Zinc | 156 4 | | 314 8 | | 100 8 | U | 106 | | 79 8 | U | 105 2 | U |
| **AVS/SEM (µMOLE/GRAM DRY WT)** | | | | | | | | | | | | |
| Acid Volatile Sulfide | 0 1 | U | 0 1 | U | 0 23 | | 0 1 | U | 23 82 | | | NA |
| Cadmium | 0 001 | | 0 001 | | 0 001 | | 0 | | 0 002 | | | NA |
| Copper | 0 341 | | 0 117 | U | 0 108 | U | 0 413 | | 0 156 | U | | NA |
| Lead | 0.505 | | 0 215 | | 0 119 | | 0 507 | | 0 386 | | | NA |
| Nickel | 0 052 | U | 0 04 | U | 0 036 | U | 0 126 | | 0 152 | | | NA |
| SEM-AVS | | NA | | NA | 0 562 | J | | NA | -22 144 | J | | NA |
| SEM/AVS | | NA | | NA | 3 442 | J | | NA | 0 07 | J | | NA |
| Zinc | 0 407 | | 0 549 | | 0.527 | | 0 517 | | 0 982 | | | NA |
| **Total Organic Carbon (PERCENT)** | | | | | | | | | | | | |
| % Water | 32 | | 19 4 | | 20 | | 20 1 | | 26 2 | | 17 3 | |
| Loss on Ignition | 4 1 | | 2 5 | | 2 2 | | 2 1 | | 2 4 | | 1 9 | |
| Total Organic Carbon | 1 8 | | 1 1 | | 0 9 | | 0.9 | | 1 | | 0 8 | |
| **Grain Size (PERCENT)** | | | | | | | | | | | | |
| CLAY | 0 2 | | 0 1 | | 0 2 | | 0 1 | | 0 3 | | 0 3 | |
| SAND | 96 | | 97.1 | | 95.2 | | 98 5 | | 97 1 | | 91 4 | |
| SILT | 3 9 | | 2 8 | | 4 6 | | 1 5 | | 2 6 | | 8 3 | |

U - Not detected, UJ - DL approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-5-SD-5560 | | OFF-6-SD-0015 | | OFF-6-SD-2025 | | OFF-6-SD-3540 | | OFF-7-SD-0015 | | OFF-8-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-5 | | OFF-6 | | OFF-6 | | OFF-6 | | OFF-7 | | OFF-8 | |
| Date Sampled | 4/27/98 | | 3/27/98 | | 4/27/98 | | 4/27/98 | | 3/27/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 7 1 | U | 132 | J | 120 | | 7.9 | | 34 6 | | 11 | |
| 1-Methylphenanthrene | 6 2 | U | 680 | | 185 | | 9 8 | | 104 | | 22 | |
| 2,3,5-Trimethylnaphthalene | 4 8 | U | 36 3 | J | 48 1 | | 1 7 | J | 17.7 | | 2 3 | J |
| 2,6-Dimethylnaphthalene | 8 6 | U | 148 | J | 261 | | 10 | | 59 8 | | 24 5 | |
| 2-Methylnaphthalene | 3 6 | U | 170 | J | 280 | | 9 6 | | 54 9 | | 14 4 | |
| Acenaphthene | 8 2 | U | 344 | | 249 | J | 52 5 | J | 120 | | 34 | |
| Acenaphthylene | 4 6 | U | 195 | | 95 8 | | 3 1 | J | 169 | | 18 5 | |
| Anthracene | 8 4 | U | 1170 | J | 629 | | 61 5 | | 393 | | 70 1 | |
| Benzo(a)anthracene | 8 | U | 4250 | | 988 | | 118 | | 1160 | | 214 | |
| Benzo(a)pyrene | 3 | U | 1990 | | 1750 | | 116 | | 1330 | | 218 | |
| benzo(b,j,k)fluoranthene | 9 | U | 9390 | | 3580 | | 237 | | 2850 | | 411 | |
| benzo(e)pyrene | 6 | U | 3270 | J | 1490 | | 81 2 | | 966 | | 161 | |
| Benzo(g,h,i)Perylene | 2 2 | J | 2630 | J | 1260 | | 74 3 | | 1020 | | 141 | |
| Biphenyl | 6 4 | UJ | 46 7 | | 42 | J | 3 | J | 14 7 | | 6 4 | U |
| chrysene/triphenylene | 10 | U | 3350 | | 791 | J | 103 | J | 519 | J | 196 | |
| Dibenzo(a,h)Anthracene | 2 8 | U | 1390 | J | 357 | | 22.3 | | 293 | | 41 5 | |
| Fluoranthene | 9 | U | 11200 | | 2840 | | 322 | | 2190 | | 455 | |
| Fluorene | 7 | UJ | 392 | J | 253 | J | 25 7 | J | 160 | | 34 7 | |
| Indeno(1,2,3-cd)pyrene | 1 2 | J | 3030 | | 1140 | | 72 2 | | 968 | | 136 | |
| Naphthalene | 3 6 | U | 161 | | 174 | | 10 | | 70 | | 22 8 | |
| Perylene | 4 4 | U | 734 | | 407 | | 32 9 | | 363 | | 60 4 | |
| Phenanthrene | 10 | U | 9470 | | 2040 | | 249 | | 1320 | | 261 | |
| Pyrene | 8 | U | 9770 | | 3340 | | 286 | | 2120 | | 401 | |
| Sum PAHs (6 High Molecular Weight) | 9 | | 32000 | | 10100 | | 966 | | 7620 | | 1530 | |
| Sum PAHs (7 Low Molecular Weight) | 1 | | 11900 | | 3720 | | 412 | | 2280 | | 456 | |
| Sum PAHs (NOAA Status &Trends) | 27 | | 64000 | | 22300 | | 1910 | | 16300 | | 2960 | |
| **PCB Cong./Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 6 | U | 0 8 | J | 0 6 | U | 0 6 | U | 0 2 | J | 0 3 | J |
| 2,4'-DDE | 0 8 | U | 0 8 | U | 0,8 | U | 0 8 | U | 0 8 | U | 0 8 | U |
| 2,4'-DDT | 1 | U | 1 4 | | 1 | U | 1 | U | 1 | U | 1 | U |
| 4,4'-DDD | 0 9 | U | 3 8 | J | 2 2 | | 0 9 | U | 3 8 | | 0 8 | J |
| 4,4'-DDE | 0 9 | U | 3 8 | | 3 1 | | 0 9 | U | 3 1 | | 0 7 | J |
| 4,4'-DDT | 2 | J | 9 8 | | 2 2 | J | 0 6 | U | 2 7 | | 1 1 | |
| Aldrin | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 1 | J |
| alpha-Chlordane | 0 8 | U | 0 6 | J | 0 8 | U | 0 8 | U | 0 7 | J | 0 1 | J |
| Heptachlor | 0 5 | U | 0 5 | U | 0 5 | U | 0 8 | U | 0 3 | J | 0 5 | U |
| Heptachlor Epoxide | 0 5 | U | 0 5 | U | 4 7 | | 0 5 | U | 0 5 | U | 0 5 | U |
| Hexachlorobenzene | 0 4 | U | 0 6 | U | 0 4 | U | 0 4 | U | 0 4 | U | 0 4 | U |

U - Not detected, UJ - DL approximate; J - Quantitation approximate;
* - From dilution analysis, R - Rejected, B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-5-SD-5560 | | OFF-6-SD-0015 | | OFF-6-SD-2025 | | OFF-6-SD-3540 | | OFF-7-SD-0015 | | OFF-8-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-5 | | OFF-6 | | OFF-6 | | OFF-6 | | OFF-7 | | OFF-8 | |
| Date Sampled | 4/27/98 | | 3/27/98 | | 4/27/98 | | 4/27/98 | | 3/27/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Mirex | 0 6 | U | 0 5 | J | 0 6 | U | 0 6 | U | 0 4 | J | 0 6 | U |
| PCB 101/90 | 0 6 | U | 2 | U | 3 3 | | 0 6 | U | 2 7 | | 1 1 | U |
| PCB 105 | 0 6 | U | 0 7 | U | 2 | J | 0 6 | U | 1 3 | UJ | 0 6 | U |
| PCB 118 | 0 7 | U | 1 6 | | 3 1 | | 0 7 | U | 2 3 | | 1 1 | |
| PCB 126 | 0 5 | U | 0 5 | UJ | 2 | J | 0 5 | U | 0 8 | U | 0 5 | UJ |
| PCB 128 | 0 4 | U | 1.8 | J | 2.2 | | 0 4 | U | 1 | | 0 6 | U |
| PCB 138/163/164 | 0 6 | U | 3 | J | 9 7 | | 0 6 | | 5 2 | | 2 4 | |
| PCB 153 | 0 4 | UJ | 2 7 | | 3 6 | J | 0 4 | UJ | 3.5 | | 2 | |
| PCB 170 | 0 5 | U | 1 8 | J | 2 5 | | 0 6 | U | 1 2 | U | 0.9 | U |
| PCB 18 | 0 7 | U | 2 8 | | 11.6 | | 0 7 | U | 0 6 | J | 0 7 | U |
| PCB 180 | 0 5 | U | 2 1 | J | 5.5 | | 0 5 | U | 2 5 | | 1 2 | |
| PCB 187/182/159 | 0 5 | U | 1 9 | J | 4.3 | | 0 6 | | 1 6 | | 0 9 | U |
| PCB 188 | 0 6 | U | 2 6 | | 0 7 | | 0 6 | U | 0 7 | | 0 5 | J |
| PCB 195 | 0 6 | U | 0 6 | UJ | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U |
| PCB 200 | 0 5 | U | 1.1 | J | 1.2 | | 0 5 | U | 0 4 | J | 0 4 | J |
| PCB 206 | 0 7 | U | 0 6 | UJ | 2 7 | U | 0 7 | U | 0 6 | | 0 8 | |
| PCB 209 | 0 5 | U | 4 1 | J | 3 5 | | 0.5 | U | 0 8 | | 0 8 | |
| PCB 28/50 | 0 7 | U | 2 7 | | 20 | | 1 | | 1 | | 0 3 | J |
| PCB 29 | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0.7 | U | 0 7 | U |
| PCB 44 | 0 5 | U | 1 8 | J | 6 9 | | 0 5 | | 1.9 | | 0 5 | U |
| PCB 50 | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| PCB 52 | 0 7 | U | 2 6 | J | 8 1 | | 0 7 | U | 1 4 | | 0 7 | U |
| PCB 66/95 | 0 5 | U | 3 4 | | 10 7 | | 0 5 | U | 3 3 | | 1 1 | |
| PCB 8 | 0 3 | U | 0 6 | | 4 4 | J | 0 3 | U | 0 3 | U | 0 3 | U |
| PCB 87 | 0 6 | U | 1 6 | J | 1 6 | | 0 6 | U | 1 | | 0 6 | U |
| Sum of PCB Congeners | 3 | | 38 2 | | 106 9 | | 2 7 | | 30 5 | | 10 6 | |
| Sum of PCB Congeners X 2 | 5 | | 76 4 | | 213 8 | | 5 4 | | 61 | | 21 2 | |
| trans-Nonachlor | 0 8 | U | 0 8 | U | 0 8 | U | 0.8 | U | 0 8 | | 0 2 | J |
| **Metals (MG/KG)** | | | | | | | | | | | | |
| Aluminum | 32802 5 | J | 22706 9 | J | 24964 6 | J | 26685 6 | J | 21885 3 | J | 27137 | J |
| Arsenic | 5 3 | J | 4 1 | J | 7 5 | J | 3 7 | J | 6 8 | J | 4 3 | J |
| Cadmium | 1 29 | | 0 15 | | 0 68 | | 0 14 | | 0 29 | | 0 19 | |
| Chromium | 29.5 | | 23 | | 35 3 | | 29 7 | | 43 1 | | 42 3 | |
| Copper | 5 7 | | 11 | | 42 | | 6 6 | | 32.8 | | 11 | |
| Iron | 22845 6 | J | 19992 8 | J | 23113 2 | J | 18709 | J | 27506 2 | J | 21704 3 | J |
| Lead | 12 2 | | 47.2 | | 156 3 | | 18 7 | | 294 | | 37 9 | |
| Manganese | 345 | | 257.5 | | 285.1 | | 211 9 | | 331.6 | | 356 2 | |
| Mercury | 0.05 | U | 0 05 | U | 0 176 | | 0.05 | U | 0.119 | | 0 148 | |
| Nickel | 24 5 | | 19.3 | | 24 8 | | 21 6 | | 28.1 | | 15 8 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis; R - Rejected; B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-5-SD-5560 | | OFF-6-SD-0015 | | OFF-6-SD-2025 | | OFF-6-SD-3540 | | OFF-7-SD-0015 | | OFF-8-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-5 | | OFF-6 | | OFF-6 | | OFF-6 | | OFF-7 | | OFF-8 | |
| Date Sampled | 4/27/98 | | 3/27/98 | | 4/27/98 | | 4/27/98 | | 3/27/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Silver | 0 13 | UJ | 0 13 | UJ | 0.19 | J | 0 13 | UJ | 0 18 | J | 0 17 | J |
| Zinc | 53.7 | U | 105.7 | U | 267 1 | | 75 8 | U | 155.5 | | 93 4 | U |
| **AVS/SEM (µMOLE/GRAM DRY WT)** | | | | | | | | | | | | |
| Acid Volatile Sulfide | | NA | 26 06 | | | NA | | NA | 38 21 | | 6 21 | |
| Cadmium | | NA | 0 002 | | | NA | | NA | 0 002 | | 0 003 | |
| Copper | | NA | 0 177 | U | | NA | | NA | 0 09 | U | 0 397 | |
| Lead | | NA | 0 168 | | | NA | | NA | 0 221 | | 0 122 | |
| Nickel | | NA | 0 077 | U | | NA | | NA | 0 068 | U | 0 065 | U |
| SEM-AVS | | NA | -24 841 | J | | NA | | NA | -37 331 | J | -4 647 | J |
| SEM/AVS | | NA | 0 047 | J | | NA | | NA | 0 023 | J | 0 252 | J |
| Zinc | | NA | 0 794 | | | NA | | NA | 0 499 | | 0 976 | |
| **Total Organic Carbon (PERCENT)** | | | | | | | | | | | | |
| % Water | 19 4 | | 31 7 | | 22 5 | | 18 | | 34 | | 34 9 | |
| Loss on Ignition | 1 6 | | 4.2 | | 3 1 | | 1 7 | | 4 5 | | 3 | |
| Total Organic Carbon | 0.7 | | 1 8 | | 1 3 | | 0 7 | | 1 9 | | 1 3 | |
| **Grain Size (PERCENT)** | | | | | | | | | | | | |
| CLAY | 0 5 | | 0.3 | | 1 | | 0 8 | | 0 6 | | 0 4 | |
| SAND | 89 6 | | 94 2 | | 81.8 | | 90 6 | | 86.7 | | 72 8 | |
| SILT | 9 9 | | 5.5 | | 17.2 | | 8.6 | | 12.7 | | 26 7 | |

U - Not detected, UJ - DL approximate; J - Quantitation approximate,
* - From dilution analysis; R - Rejected; B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-9-SD-0015 | | OFF-10-SD-0015 | | OFF-10-SD-1520 | | OFF-10-SD-2530 | | OFF-11-SD-0015 | | OFF-11-SD-105110 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-9 | | OFF-10 | | OFF-10 | | OFF-10 | | OFF-11 | | OFF-11 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 1.7 | J | 2 2 | J | 2 1 | J | 0 7 | J | 6 2 | J | 7.1 | U |
| 1-Methylphenanthrene | 4 4 | J | 3 | J | 3.3 | J | 1 9 | J | 14 8 | | 6 2 | U |
| 2,3,5-Trimethylnaphthalene | 0 4 | J | 4 8 | U | 0.3 | J | 0 7 | J | 2 | J | 4 8 | U |
| 2,6-Dimethylnaphthalene | 12 4 | | 9 | J | 6.2 | J | 2 5 | J | 18 5 | J | 5 | J |
| 2-Methylnaphthalene | 3 1 | J | 3 1 | J | 3 | J | 2 6 | J | 17.5 | J | 3 6 | U |
| Acenaphthene | 4 1 | J | 2 5 | J | 1 8 | J | 0 9 | J | 27 9 | | 8 2 | U |
| Acenaphthylene | 5 7 | | 4 1 | J | 3 | J | 2 1 | J | 9 | | 4 6 | U |
| Anthracene | 11 3 | | 9 8 | J | 8 9 | | 3 5 | J | 64 | J | 0 4 | J |
| Benzo(a)anthracene | 57 3 | | 35 2 | | 23 4 | | 15 5 | | 168 | | 8 | U |
| Benzo(a)pyrene | 76 1 | | 45 1 | | 31 3 | | 19 8 | | 148 | | 3 | U |
| benzo(b,j,k)fluoranthene | 152 | | 94 6 | | 70.8 | | 34.2 | | 284 | | 9 | U |
| benzo(e)pyrene | 58 4 | | 41 3 | J | 31 2 | | 16 5 | | 107 | J | 6 | U |
| Benzo(g,h,i)Perylene | 52 5 | | 40 5 | J | 31 8 | | 18 6 | | 95 2 | J | 1 8 | J |
| Biphenyl | 6 4 | U | 1 2 | J | 1 4 | J | 1 6 | J | 3 7 | J | 6 4 | UJ |
| chrysene/triphenylene | 59 6 | | 31 8 | | 31 | J | 15 | J | 117 | | 10 | U |
| Dibenzo(a,h)Anthracene | 13 6 | U | 8.6 | J | 6.6 | | 4 8 | | 23 9 | J | 0 8 | J |
| Fluoranthene | 117 | | 86.2 | | 70 4 | | 35 7 | | 388 | | 9 | U |
| Fluorene | 5 3 | J | 2 8 | J | 2 | J | 1 6 | J | 25 1 | J | 0 3 | J |
| Indeno(1,2,3-cd)pyrene | 48 1 | | 35 3 | | 26 9 | | 14 8 | | 86 3 | | 1.5 | J |
| Naphthalene | 4 3 | | 4 | | 3 5 | J | 2 7 | J | 9 8 | | 3 6 | U |
| Perylene | 21 4 | | 12 8 | | 8 9 | | 6 3 | | 34 8 | | 6 4 | |
| Phenanthrene | 46 3 | | 31.3 | | 26 7 | | 16.2 | | 238 | | 1 | U |
| Pyrene | 102 | | 87.5 | | 63 5 | | 40 2 | | 337 | | 8 | U |
| Sum PAHs (6 High Molecular Weight) | 425 | | 294 | | 226 | | 131 | | 1180 | | 6 | |
| Sum PAHs (7 Low Molecular Weight) | 80 | | 58 | | 49 | | 30 | | 391 | | 1 | |
| Sum PAHs (NOAA Status &Trends) | 858 | | 592 | | 458 | | 258 | | 2230 | | 25 | |
| **PCB Cong./Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 1 | J | 0 6 | U | 0 6 | U | 0.6 | U | 0 6 | U | 0 6 | U |
| 2,4'-DDE | 0 8 | U | 0 8 | U | 0.8 | U | 0.8 | U | 0 8 | U | 0 5 | U |
| 2,4'-DDT | 1 | U | 1 | U | 1 | U | 1 | U | 1 | U | 1 | U |
| 4,4'-DDD | 0 9 | U | 0.8 | U | 0 9 | U | 0.9 | U | 0 8 | U | 0 8 | U |
| 4,4'-DDE | 0 9 | U | 0.9 | U | 0 9 | U | 0 9 | U | 0 9 | U | 1 | U |
| 4,4'-DDT | 0 8 | | 0 7 | | 0 6 | J | 0 6 | U | 1 6 | | 0.6 | U |
| Aldrin | 0.7 | U | 0.7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0.7 | U |
| alpha-Chlordane | 0 1 | J | 0.8 | U | 0 8 | U | 0 8 | U | 0 8 | U | 0.8 | U |
| Heptachlor | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0.5 | U |
| Heptachlor Epoxide | 0 5 | U | 0.5 | U | 0 5 | U | 0 5 | U | 2 8 | J | 0 5 | U |
| Hexachlorobenzene | 0 4 | U | 0 4 | U | 0.4 | U | 0 4 | U | 0 4 | U | 0.4 | U |

U - Not detected, UJ - DL approximate; J - Quantitation approximate;
* - From dilution analysis, R - Rejected; B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-9-SD-0015 | | OFF-10-SD-0015 | | OFF-10-SD-1520 | | OFF-10-SD-2530 | | OFF-11-SD-0015 | | OFF-11-SD-105110 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-9 | | OFF-10 | | OFF-10 | | OFF-10 | | OFF-11 | | OFF-11 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Mirex | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0.6 | U | 0 6 | U |
| PCB 101/90 | 0 6 | U | 0 7 | U | 0 6 | U | 0 6 | U | 2 2 | U | 0 6 | U |
| PCB 105 | 0 6 | U | 0 3 | U | 0 6 | U | 0 6 | U | 1 3 | U | 0 6 | U |
| PCB 118 | 0 5 | J | 0 7 | J | 0 6 | J | 0 7 | U | 2 | | 0 7 | U |
| PCB 126 | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 7 | J | 0 5 | U |
| PCB 128 | 0 4 | UJ | 0 5 | U | 0 4 | U | 0 4 | U | 0 6 | | 0 4 | U |
| PCB 138/163/164 | 1 | | 1 2 | | 1 | | 0 6 | U | 3 5 | | 0 6 | |
| PCB 153 | 1 | | 1 1 | | 0 9 | J | 0 4 | UJ | 3 3 | | 0 4 | UJ |
| PCB 170 | 0 5 | UJ | 0.7 | U | 0 5 | U | 0.5 | U | 1 5 | | 0 5 | U |
| PCB 18 | 0 7 | U | 0.7 | U | 0 7 | U | 0 7 | U | 3 5 | | 0 7 | U |
| PCB 180 | 0 7 | | 0 6 | | 0 5 | U | 0 5 | U | 3 2 | | 0 5 | U |
| PCB 187/182/159 | 0 6 | U | 0 6 | | 0.5 | U | 0 5 | U | 2 | | 0 5 | U |
| PCB 188 | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | J | 0 6 | U |
| PCB 195 | 0 6 | U | 0 6 | U | 0 6 | U | 0.6 | U | 0 7 | | 0 6 | U |
| PCB 200 | 0 3 | J | 0 4 | J | 0 1 | J | 0 1 | J | 0 4 | J | 0 1 | J |
| PCB 206 | 0 4 | J | 1 3 | U | 1 | U | 1 3 | U | 1 5 | U | 0 5 | U |
| PCB 209 | 0 3 | J | 0 7 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| PCB 28/50 | 0 5 | J | 0 7 | U | 0 1 | J | 0 1 | J | 7 4 | | 0 7 | U |
| PCB 29 | 0 7 | U | 0.7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U |
| PCB 44 | 0 5 | U | 0 3 | J | 0 2 | J | 0 2 | J | 3 3 | J | 0 5 | U |
| PCB 50 | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| PCB 52 | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 3 4 | J | 0 7 | U |
| PCB 66/95 | 0 5 | UJ | 0 6 | | 0 5 | U | 0 5 | U | 6 5 | | 0 5 | U |
| PCB 8 | 0 3 | U | 0 3 | U | 0 3 | U | 0 3 | U | 0 8 | | 0 3 | U |
| PCB 87 | 0 6 | U | 0 6 | UJ | 0 6 | U | 0 6 | U | 0 8 | J | 0 6 | U |
| Sum of PCB Congeners | 4 7 | | 5.5 | | 2 9 | | 0 4 | | 44 2 | | 0 7 | |
| Sum of PCB Congeners X 2 | 9 4 | | 11 | | 5 8 | | 0 8 | | 88 4 | | 1 4 | |
| trans-Nonachlor | 0 1 | J | 0 8 | U | 0 8 | U | 0 8 | U | 0 8 | U | 0 8 | U |
| **Metals (MG/KG)** | | | | | | | | | | | | |
| Aluminum | 26673 4 | J | 26243 8 | J | 28365 8 | J | 32370 2 | J | 19537 4 | J | 28758 7 | J |
| Arsenic | 4 3 | J | 3.4 | J | 2 9 | J | 3 3 | J | 2.7 | J | 4 7 | J |
| Cadmium | 0 11 | | 0 15 | | 0 18 | | 0 07 | | 0 22 | | 0 2 | |
| Chromium | 38 6 | | 32.1 | | 30 1 | | 39 2 | | 30 2 | | 231 7 | |
| Copper | 6 9 | | 9.8 | | 9 | | 7.7 | | 9 1 | | 5 3 | |
| Iron | 24714 | J | 17984.9 | J | 18630 6 | J | 21863 5 | J | 14918 6 | J | 17217 | J |
| Lead | 25 2 | | 27.3 | | 17 1 | | 16 9 | | 38 7 | | 12.7 | |
| Manganese | 515 8 | | 357.1 | | 409 5 | | 252 6 | | 331 | | 290 | |
| Mercury | 0 05 | U | 0 07 | | 0 07 | | 0 073 | | 0 125 | | 0 051 | |
| Nickel | 18 3 | | 12 5 | | 14.1 | | 19 7 | | 10 9 | U | 12 8 | |

U - Not detected; UJ - DL approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected, B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-9-SD-0015 | | OFF-10-SD-0015 | | OFF-10-SD-1520 | | OFF-10-SD-2530 | | OFF-11-SD-0015 | | OFF-11-SD-105110 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-9 | | OFF-10 | | OFF-10 | | OFF-10 | | OFF-11 | | OFF-11 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | | 4/7/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Silver | 0 13 | UJ | 0 13 | UJ | 0 13 | UJ | 0.13 | UJ | 0 17 | J | 0 13 | UJ |
| Zinc | 79 9 | U | 53.3 | U | 60 6 | U | 48 5 | U | 55 5 | U | 26 3 | U |
| **AVS/SEM (µMOLE/GRAM DRY WT)** | | | | | | | | | | | | |
| Acid Volatile Sulfide | 4 44 | | 7 29 | | | NA | | NA | 13 03 | | | NA |
| Cadmium | 0 001 | | 0 002 | | | NA | | NA | 0 002 | | | NA |
| Copper | 0 269 | | 0 212 | | | NA | | NA | 0 183 | U | | NA |
| Lead | 0.061 | | 0 079 | | | NA | | NA | 0 094 | | | NA |
| Nickel | 0 049 | U | 0 062 | U | | NA | | NA | 0 066 | U | | NA |
| SEM-AVS | -3 624 | J | -6 363 | J | | NA | | NA | -12 018 | J | | NA |
| SEM/AVS | 0 184 | J | 0 127 | J | | NA | | NA | 0 078 | J | | NA |
| Zinc | 0.435 | | 0 572 | | | NA | | NA | 0 667 | | | NA |
| **Total Organic Carbon (PERCENT)** | | | | | | | | | | | | |
| % Water | 28 | | 31 4 | | 17 1 | | 15.2 | | 33 4 | | 33 6 | |
| Loss on Ignition | 2.7 | | 2 5 | | 1 6 | | 1 9 | | 2 4 | | 3 7 | |
| Total Organic Carbon | 1 2 | | 1 1 | | 0.7 | | 0 8 | | 1.1 | | 1 6 | |
| **Grain Size (PERCENT)** | | | | | | | | | | | | |
| CLAY | 0 4 | | 3 7 | | 0 5 | | 0.4 | | 0 8 | | 0 3 | |
| SAND | 88 1 | | 85 7 | | 89 | | 94 3 | | 87 8 | | 49 8 | |
| SILT | 11 5 | | 10 7 | | 10 5 | | 5 3 | | 11.4 | | 49 9 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis; R - Rejected; B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-11-SD-5055 | | OFF-12-SD-0015 | | OFF-13-SD-0015 | | OFF-14-SD-0015 | | OFF-15-SD-0015 | | OFF-16-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-11 | | OFF-12 | | OFF-13 | | OFF-14 | | OFF-15 | | OFF-16 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 7.1 | U | 78 8 | J | 43.2 | J | 9 4 | | 4 6 | J | 17 6 | J |
| 1-Methylphenanthrene | 7 9 | | 220 | | 177 | J | 20 1 | | 11 4 | | 43 6 | J |
| 2,3,5-Trimethylnaphthalene | 1 8 | J | 20 8 | J | 12 9 | J | 2 6 | J | 0 8 | J | 6 | J |
| 2,6-Dimethylnaphthalene | 15 9 | | 88 9 | J | 55 2 | J | 15 6 | | 7 3 | J | 37 8 | J |
| 2-Methylnaphthalene | 3 6 | U | 117 | J | 65.6 | J | 15 5 | | 9 5 | | 23 9 | J |
| Acenaphthene | 13 4 | J | 321 | | 110 | J | 11 4 | | 5 1 | J | 37 6 | J |
| Acenaphthylene | 1 1 | J | 58 3 | | 156 | J | 25 2 | | 11 9 | | 35 8 | J |
| Anthracene | 21 4 | | 572 | J | 482 | J | 51 8 | | 35 | | 88 | J |
| Benzo(a)anthracene | 44 7 | | 1200 | | 1160 | J | 216 | | 106 | | 195 | J |
| Benzo(a)pyrene | 37 5 | | 1420 | | 1150 | J | 255 | | 103 | | 220 | J |
| benzo(b,j,k)fluoranthene | 71 1 | | 2730 | | 2430 | J | 457 | | 366 | | 435 | J |
| benzo(e)pyrene | 22 5 | | 1080 | J | 939 | J | 213 | | 140 | | 187 | J |
| Benzo(g,h,i)Perylene | 25 2 | | 815 | J | 744 | J | 195 | | 100 | | 181 | J |
| Biphenyl | 2 4 | J | 28.8 | | 20.5 | J | 6 4 | U | 6 4 | U | 9 1 | J |
| chrysene/triphenylene | 44 2 | J | 998 | | 774 | J | 190 | | 87 3 | | 151 | J |
| Dibenzo(a,h)Anthracene | 4 8 | | 280 | J | 213 | J | 52 2 | | 44 | | 49 6 | J |
| Fluoranthene | 146 | | 3120 | | 2600 | J | 308 | | 185 | | 444 | J |
| Fluorene | 12 | J | 271 | J | 123 | J | 17.2 | | 7 6 | | 34 1 | J |
| Indeno(1,2,3-cd)pyrene | 23 1 | | 777 | | 646 | J | 172 | | 116 | | 156 | J |
| Naphthalene | 3 6 | U | 128 | | 61.2 | J | 20 6 | | 11 3 | | 19 9 | J |
| Perylene | 40 2 | | 257 | | 253 | J | 79 4 | | 32 9 | | 62 9 | J |
| Phenanthrene | 136 | | 2510 | | 1440 | J | 130 | | 87 4 | | 331 | J |
| Pyrene | 125 | | 3020 | | 2530 | J | 344 | | 187 | | 513 | J |
| Sum PAHs (6 High Molecular Weight) | 402 | | 10000 | | 8430 | | 1360 | | 712 | | 1570 | |
| Sum PAHs (7 Low Molecular Weight) | 184 | | 3980 | | 2440 | | 271 | | 168 | | 570 | |
| Sum PAHs (NOAA Status &Trends) | 796 | | 20100 | | 16200 | | 2800 | | 1660 | | 3280 | |
| **PCB Cong /Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 5 | J | 0.6 | U |
| 2,4'-DDE | 0 8 | U | 0 9 | | 0 8 | U | 0 8 | U | 0 8 | U | 0 8 | U |
| 2,4'-DDT | 1 | U | 0 6 | J | 1 2 | | 1 | U | 1 | U | 1 2 | |
| 4,4'-DDD | 0 9 | U | 11 2 | J | 19 7 | J | 1 4 | | 0 6 | J | 2 2 | J |
| 4,4'-DDE | 0 9 | U | 6 2 | | 10 8 | | 0 9 | J | 0.5 | J | 1 8 | U |
| 4,4'-DDT | 0 6 | U | 4 8 | | 10.9 | | 2 | | 0.8 | | 1 6 | |
| Aldrin | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0.7 | U | 0 7 | U |
| alpha-Chlordane | 0 8 | U | 1 2 | | 1 4 | | 0 2 | J | 0 1 | J | 0 9 | |
| Heptachlor | 0 5 | U | 0 5 | U | 1 3 | U | 0 2 | J | 0 1 | J | 0 5 | U |
| Heptachlor Epoxide | 0 5 | U | 2.4 | J | 1.1 | J | 0 5 | U | 0.5 | U | 0 5 | U |
| Hexachlorobenzene | 0.4 | U | 0 8 | U | 0 4 | U | 0 4 | U | 0 4 | U | 0 4 | U |

U - Not detected, UJ - DL approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-11-SD-5055 | | OFF-12-SD-0015 | | OFF-13-SD-0015 | | OFF-14-SD-0015 | | OFF-15-SD-0015 | | OFF-16-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-11 | | OFF-12 | | OFF-13 | | OFF-14 | | OFF-15 | | OFF-16 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Mirex | 0 6 | U | 0 6 | U | 0 6 | U | 0.4 | J | 0 4 | J | 0 6 | U |
| PCB 101/90 | 0 6 | U | 4 1 | | 5.9 | | 2 2 | | 0 9 | U | 1 9 | U |
| PCB 105 | 0 6 | U | 1 7 | J | 3 5 | J | 0 9 | UJ | 0 6 | U | 0 9 | U |
| PCB 118 | 0 7 | U | 3.2 | | 6 6 | | 2 3 | | 0 8 | | 2 3 | |
| PCB 126 | 0 5 | U | 1 8 | J | 4 9 | J | 1 1 | | 0 5 | UJ | 1.2 | J |
| PCB 128 | 0 4 | U | 1.8 | | 4 | | 0 8 | U | 0 4 | UJ | 1 | |
| PCB 138/163/164 | 0 6 | U | 7 7 | | 13 3 | | 3 1 | | 1 7 | | 4 9 | |
| PCB 153 | 0 4 | UJ | 5 4 | | 9 3 | | 3 4 | | 1 7 | | 3 3 | |
| PCB 170 | 0 5 | U | 3 8 | | 5 8 | | 0 9 | U | 0 6 | U | 1 5 | |
| PCB 18 | 0 7 | U | 2 4 | | 0.5 | J | 1 1 | | 0 7 | U | 0 3 | J |
| PCB 180 | 0 5 | U | 6 4 | | 9 3 | | 1 6 | | 1 1 | | 1 7 | |
| PCB 187/182/159 | 0 5 | U | 3 7 | | 5 5 | | 1 8 | | 0 7 | U | 1 7 | |
| PCB 188 | 0 6 | U | 1 | | 1.6 | | 0 8 | | 0 6 | U | 1 | |
| PCB 195 | 0 6 | U | 0 8 | J | 3 7 | | 0 6 | U | 0 6 | U | 0 6 | U |
| PCB 200 | 0 5 | U | 1 6 | | 0 5 | U | 0 4 | J | 0 4 | J | 0 5 | U |
| PCB 206 | 0 5 | U | 1 9 | U | 4 | | 1 | | 0 7 | | 0 6 | U |
| PCB 209 | 0 5 | U | 2 2 | | 3 | | 1 2 | | 0 6 | | 0 8 | U |
| PCB 28/50 | 0 7 | U | 4 2 | | 1 3 | | 0 9 | | 0 3 | J | 0 7 | U |
| PCB 29 | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U |
| PCB 44 | 0 5 | U | 2 | J | 2 4 | J | 0 6 | | 0 5 | U | 0 8 | J |
| PCB 50 | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| PCB 52 | 0 7 | U | 3 2 | J | 2.9 | J | 1 1 | | 0 7 | U | 0 8 | U |
| PCB 66/95 | 0 5 | U | 5 | | 4.6 | | 2 2 | | 0 9 | U | 1 7 | |
| PCB 8 | 0 3 | U | 1 5 | | 0.9 | | 0 5 | U | 0.3 | U | 0 6 | |
| PCB 87 | 0 6 | U | 1 6 | J | 2.5 | J | 0 6 | U | 0 6 | U | 0 7 | J |
| Sum of PCB Congeners | 2 | | 65 1 | | 95 5 | | 24 8 | | 7 3 | | 22 7 | |
| Sum of PCB Congeners X 2 | 4 | | 130.2 | | 191 | | 49 6 | | 14 6 | | 45 4 | |
| trans-Nonachlor | 0.8 | U | 0 6 | J | 1 | J | 0 4 | J | 0 2 | J | 0 8 | U |
| **Metals (MG/KG)** | | | | | | | | | | | | |
| Aluminum | 25777.2 | J . | 35681 1 | J | 40998.8 | J | 28275 6 | J | 26842 7 | J | 29666 5 | J |
| Arsenic | 5 | J | 5.2 | J | 6 | J | 8 5 | J | 3 7 | J | 5 | J |
| Cadmium | 0 27 | | 0 53 | | 0 8 | | 0 12 | | 0 18 | | 0 36 | |
| Chromium | 32 1 | | 58 6 | | 73 7 | | 44 9 | | 41 | | 48 | |
| Copper | 4 9 | | 37 | | 80 8 | | 18 9 | | 11 6 | | 23 9 | |
| Iron | 20471 9 | J | 27717 3 | J | 33406 4 | J | 21879 | J | 21010 4 | J | 24706 3 | J |
| Lead | 11 6 | | 114 2 | | 201 9 | | 44 6 | | 33 1 | | 61 2 | |
| Manganese | 364 | | 368 1 | | 335 9 | | 324 | | 366 5 | | 341 6 | |
| Mercury | 0 05 | U | 0.376 | | 1 355 | | 0.196 | | 0 1 | | 0.208 | |
| Nickel | 75 8 | | 21 4 | | 29 7 | | 15 9 | | 14 2 | | 18 2 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate;
* - From dilution analysis, R - Rejected; B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-11-SD-5055 | | OFF-12-SD-0015 | | OFF-13-SD-0015 | | OFF-14-SD-0015 | | OFF-15-SD-0015 | | OFF-16-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-11 | | OFF-12 | | OFF-13 | | OFF-14 | | OFF-15 | | OFF-16 | |
| Date Sampled | 4/7/98 | | 4/3/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Silver | 0 13 | UJ | 0 48 | J | 1.06 | J | 0 23 | J | 0 19 | J | 0 44 | J |
| Zinc | 257 3 | | 146 5 | | 263 4 | | 96 8 | U | 73 3 | U | 101.8 | U |
| **AVS/SEM (µMOLE/GRAM DRY WT)** | | | | | | | | | | | | |
| Acid Volatile Sulfide | | NA | 24.03 | | 48 59 | | 10.3 | | 7 1 | | 23 68 | |
| Cadmium | | NA | 0 005 | | 0.009 | | 0 002 | | 0.002 | | 0 005 | |
| Copper | | NA | 0 079 | U | 0 062 | U | 0 417 | | 0 393 | | 0 303 | |
| Lead | | NA | 0 249 | | 0 589 | | 0 15 | | 0 121 | | 0 17 | |
| Nickel | | NA | 0 041 | U | 0 132 | | 0 108 | U | 0 071 | U | 0 053 | U |
| SEM-AVS | | NA | -23 024 | J | -46 678 | J | -8 347 | J | -5 555 | J | -22 058 | J |
| SEM/AVS | | NA | 0 042 | J | 0 039 | J | 0.19 | J | 0 218 | J | 0 069 | J |
| Zinc | | NA | 0.632 | | 1 12 | | 1 277 | | 0 957 | | 1 091 | |
| **Total Organic Carbon (PERCENT)** | | | | | | | | | | | | |
| % Water | 28 7 | | 48 9 | | 60 2 | | 41 6 | | 32 3 | | 49 | |
| Loss on Ignition | 3.1 | | 5 7 | | 9 3 | | 4 5 | | 2 8 | | 5 9 | |
| Total Organic Carbon | 1 3 | | 2 5 | | 4 | | 2 | | 1 2 | | 2 6 | |
| **Grain Size (PERCENT)** | | | | | | | | | | | | |
| CLAY | 0 9 | | 1 | | 6 1 | | 1 3 | | 0 5 | | 3.9 | |
| SAND | 79 8 | | 44 2 | | 14.5 | | 59 1 | | 87 3 | | 3 3 | |
| SILT | 19 3 | | 54.7 | | 79 5 | | 39 7 | | 12 2 | | 92 8 | |

U - Not detected, UJ - DL approximate; J - Quantitation approximate,
* - From dilution analysis, R - Rejected; B - Below CRDL, NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-17-SD-0015 | | OFF-18-SD-0015 | | OFF-18-SD-105110 | | OFF-18-SD-5055 | | OFF-19-SD-0015 | | OFF-20-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-17 | | OFF-18 | | OFF-18 | | OFF-18 | | OFF-19 | | OFF-20 | |
| Date Sampled | 4/3/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | | | |
| 1-Methylnaphthalene | 11 | J | 31 4 | J | 59 | | 64 4 | | 18 9 | | 43 7 | J |
| 1-Methylphenanthrene | 25 3 | | 108 | | 168 | | 359 | | 20 2 | | 44.4 | |
| 2,3,5-Trimethylnaphthalene | 2 5 | J | 11 5 | J | 17 7 | | 13 6 | | 3 6 | J | 5 6 | J |
| 2,6-Dimethylnaphthalene | 22 1 | J | 45 3 | J | 82 4 | | 245 | | 54 3 | | 43 9 | J |
| 2-Methylnaphthalene | 19.7 | J | 63 8 | J | 91 1 | | 210 | | 31 5 | | 40 4 | J |
| Acenaphthene | 25 6 | | 59 7 | | 208 | J | 52 8 | J | 43 8 | | 75 3 | |
| Acenaphthylene | 41 1 | | 141 | | 80 2 | | 210 | | 40 6 | | 14 8 | |
| Anthracene | 120 | J | 340 | J | 799 | | 741 | | 104 | | 217 | J |
| Benzo(a)anthracene | 251 | | 730 | | 1260 | | 787 | | 316 | | 320 | |
| Benzo(a)pyrene | 333 | | 964 | | 1170 | | 931 | | 322 | | 257 | |
| benzo(b,j,k)fluoranthene | 654 | | 2290 | | 2190 | | 1790 | | 618 | | 588 | |
| benzo(e)pyrene | 273 | J | 963 | J | 841 | | 772 | | 234 | | 197 | J |
| Benzo(g,h,i)Perylene | 270 | J | 899 | J | 643 | | 944 | | 201 | | 131 | J |
| Biphenyl | 5 6 | J | 17 3 | | 32 1 | J | 38 3 | J | 18 2 | | 17.9 | |
| chrysene/triphenylene | 203 | J | 631 | | 951 | J | 491 | J | 277 | | 296 | |
| Dibenzo(a,h)Anthracene | 76.1 | J | 273 | J | 204 | | 248 | | 57 4 | | 50 3 | J |
| Fluoranthene | 528 | J | 1880 | | 3020 | | 1350 | | 542 | | 882 | |
| Fluorene | 30 9 | J | 74 8 | J | 302 | J | 100 | J | 51 3 | | 92.6 | J |
| Indeno(1,2,3-cd)pyrene | 237 | | 785 | | 619 | | 821 | | 195 | | 150 | |
| Naphthalene | 25 | | 68 1 | | 157 | | 158 | | 53 3 | | 40 1 | |
| Perylene | 80.5 | | 276 | | 864 | | 295 | | 85 6 | | 63 4 | |
| Phenanthrene | 271 | | 918 | | 1930 | | 528 | | 294 | | 828 | |
| Pyrene | 544 | J | 1810 | | 2520 | | 1500 | | 523 | | 751 | |
| Sum PAHs (6 High Molecular Weight) | 1930 | | 6290 | | 9110 | | 5310 | | 2040 | | 2560 | |
| Sum PAHs (7 Low Molecular Weight) | 533 | | 1670 | | 3570 | | 1999 9 | | 619 | | 1310 | |
| Sum PAHs (NOAA Status &Trends) | 4050 | | 13400 | | 18200 | | 12700 | | 4110 | | 5150 | |
| **PCB Cong./Organochlorine Pesticides (UG/KG)** | | | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 9 | | 0 6 | U |
| 2,4'-DDE | 0.8 | U | 0 8 | U | 0 8 | U | 0 8 | U | 0 8 | U | 0 8 | U |
| 2,4'-DDT | 0 7 | J | 1 8 | | 1 | U | 0 7 | J | 1 | U | 1 | U |
| 4,4'-DDD | 12 9 | J | 15 8 | J | 0 9 | U | 46 2 | J | 1 1 | | 1 1 | J |
| 4,4'-DDE | 2 3 | U | 10 5 | | 0 9 | U | 9 5 | | 1 2 | | 1.1 | U |
| 4,4'-DDT | 4 1 | | 9 5 | | 1 1 | J | 17 3 | J | 1.8 | | 1 7 | |
| Aldrin | 0 7 | U | 0.7 | U | 0.7 | U | 0 7 | U | 0 2 | J | 0 7 | U |
| alpha-Chlordane | 0.8 | U | 1 1 | | 0.8 | U | 0 7 | J | 0.8 | | 0 8 | U |
| Heptachlor | 0 5 | U | 0.5 | U | 0 5 | U | 0 5 | U | 0.5 | U | 0 45995 | U |
| Heptachlor Epoxide | 0 5 | U | 1 | J | 0 5 | U | 0 8 | | 0 5 | U | 0 5 | U |
| Hexachlorobenzene | 0 4 | U | 0 4 | U | 0.4 | U | 0.4 | U | 0 9 | | 0 4 | U |

U - Not detected; UJ - DL approximate, J - Quantitation approximate,
* - From dilution analysis, R - Rejected; B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-17-SD-0015 | | OFF-18-SD-0015 | | OFF-18-SD-105110 | | OFF-18-SD-5055 | | OFF-19-SD-0015 | | OFF-20-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-17 | | OFF-18 | | OFF-18 | | OFF-18 | | OFF-19 | | OFF-20 | |
| Date Sampled | 4/3/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Mirex | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U |
| PCB 101/90 | 2 1 | U | 4 5 | | 0 6 | U | 3 5 | | 1 8 | | 1 9 | U |
| PCB 105 | 1 | U | 2 4 | J | 0 6 | U | 1 | U | 0.6 | U | 0 6 | U |
| PCB 118 | 1 7 | | 5 5 | | 0 7 | U | 2 | | 1 4 | | 1 8 | |
| PCB 126 | 1 3 | J | 1 8 | J | 0 5 | U | 1 4 | J | 0 7 | U | 1 1 | J |
| PCB 128 | 0 9 | | 2 4 | | 0 9 | | 2 5 | | 0.5 | U | 0 7 | |
| PCB 138/163/164 | 3 2 | | 12 2 | | 4 3 | | 5 1 | | 3 | | 4 1 | |
| PCB 153 | 2 8 | | 7 5 | | 0 4 | UJ | 3 7 | J | 2 4 | | 3 6 | |
| PCB 170 | 1 3 | U | 2 9 | | 0 5 | U | 1.1 | | 0 9 | U | 1 5 | |
| PCB 18 | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 1.3 | J | 0 7 | U |
| PCB 180 | 1 3 | | 5 2 | | 0 5 | U | 3 1 | | 1 8 | | 1 9 | |
| PCB 187/182/159 | 1 3 | | 3 8 | | 5 9 | J | 2 9 | | 1 1 | | 1 4 | |
| PCB 188 | 0 6 | U | 1 5 | | 0 6 | U | 0 8 | | 0 5 | J | 0 6 | |
| PCB 195 | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U |
| PCB 200 | 0 3 | J | 1 2 | | 0 5 | U | 0 5 | | 0 6 | | 0 4 | J |
| PCB 206 | 1 5 | U | 2 3 | U | 1 4 | U | 4 8 | | 0 8 | | 1 | U |
| PCB 209 | 1 4 | | 2 6 | | 0 9 | U | 9 3 | | 0 9 | | 1 | U |
| PCB 28/50 | 0 7 | U | 0 7 | | 0 2 | J | 0 6 | J | 0.4 | J | 0 7 | U |
| PCB 29 | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U |
| PCB 44 | 0 5 | J | 1 2 | J | 0 7 | | 0 7 | | 1 1 | J | 0 4 | J |
| PCB 50 | 0 5 | U | 0 5 | U | 0 6 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| PCB 52 | 0 7 | U | 1 2 | J | 0 7 | U | 1 4 | | 0 9 | UJ | 0 7 | U |
| PCB 66/95 | 1 3 | | 3 9 | | 0 5 | U | 2.2 | | 2 3 | | 1 4 | |
| PCB 8 | 0 3 | U | 0 8 | | 0 3 | U | 0.4 | U | 8 5 | | 0 3 | U |
| PCB 87 | 0 6 | J | 1 6 | J | 0 6 | U | 1.2 | J | 0 5 | J | 0 6 | UJ |
| Sum of PCB Congeners | 16 6 | | 62 9 | | 12 | | 46 8 | | 28 4 | | 18 9 | |
| Sum of PCB Congeners X 2 | 33 2 | | 125 8 | | 24 | | 93 6 | | 56 8 | | 37 8 | |
| trans-Nonachlor | 0 8 | U | 1 | J | 0 8 | U | 0 8 | U | 0.7 | J | 0 8 | U |
| **Metals (MG/KG)** | | | | | | | | | | | | |
| Aluminum | 32010 6 | J | 40749.6 | J | 41021 5 | J | 47170 2 | J | 37769 6 | J | 33977 | J |
| Arsenic | 4 7 | J | 6 3 | J | 6 4 | J | 5 6 | J | 5 8 | J | 4 2 | J |
| Cadmium | 0 38 | | 0 69 | | 0 5 | | 1 12 | | 0 21 | | 0 25 | |
| Chromium | 44 1 | | 73 6 | | 76 4 | | 79 7 | | 55 6 | | 52 5 | |
| Copper | 26 4 | | 83.5 | | 66 2 | | 84 9 | | 30 3 | | 19 | |
| Iron | 24563 5 | J | 31884 5 | J | 32905 4 | J | 33905 8 | J | 29787.1 | J | 28354 6 | J |
| Lead | 71 4 | | 190 4 | | 202 | | 249.5 | | 56 | | 40 6 | |
| Manganese | 312 4 | | 332 9 | | 279 7 | | 305 1 | | 362 9 | | 368 4 | |
| Mercury | 0 225 | | 0 562 | | 1 901 | | 0 97 | | 0 299 | | 0 171 | |
| Nickel | 18 7 | | 28.4 | | 25.7 | | 28 3 | | 24 | | 21 | |

U - Not detected, UJ - DL approximate; J - Quantitation approximate,
* - From dilution analysis, R - Rejected; B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-17-SD-0015 | | OFF-18-SD-0015 | | OFF-18-SD-105110 | | OFF-18-SD-5055 | | OFF-19-SD-0015 | | OFF-20-SD-0015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-17 | | OFF-18 | | OFF-18 | | OFF-18 | | OFF-19 | | OFF-20 | |
| Date Sampled | 4/3/98 | | 4/3/98 | | 4/7/98 | | 4/7/98 | | 4/7/98 | | 4/3/98 | |
| QC Type | None | | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Silver | 0 4 | J | 1.08 | J | 0 28 | J | 1 17 | J | 0 18 | J | 0 19 | J |
| Zinc | 125 7 | | 248 3 | | 250 3 | | 305 9 | | 166 3 | | 108.5 | |
| **AVS/SEM (µMOLE/GRAM DRY WT)** | | | | | | | | | | | | |
| Acid Volatile Sulfide | 14 13 | | 39 | | | NA | | NA | 17 26 | | 29 52 | |
| Cadmium | 0 005 | | 0 011 | | | NA | | NA | 0 001 | | 0 004 | |
| Copper | 0 111 | U | 0 22 | | | NA | | NA | 0 232 | | 0 285 | |
| Lead | 0 192 | | 0 476 | | | NA | | NA | 0 173 | | 0 13 | |
| Nickel | 0 06 | U | 0 056 | U | | NA | | NA | 0 046 | U | 0 072 | U |
| SEM-AVS | -12 651 | J | -36 114 | J | | NA | | NA | -15 824 | J | -27 863 | J |
| SEM/AVS | 0 105 | J | 0.074 | J | | NA | | NA | 0 083 | J | 0 056 | J |
| Zinc | 1 11 | | 2 123 | | | NA | | NA | 0 984 | | 1 166 | |
| **Total Organic Carbon (PERCENT)** | | | | | | | | | | | | |
| % Water | 47 4 | | 59.7 | | 54 | | 46 5 | | 46 7 | | 48 9 | |
| Loss on Ignition | 6 | | 9.3 | | 11.7 | | 8 3 | | 6 6 | | 5 2 | |
| Total Organic Carbon | 2 6 | | 4 | | 5.1 | | 3 6 | | 2 9 | | 2 3 | |
| **Grain Size (PERCENT)** | | | | | | | | | | | | |
| CLAY | 2 3 | | 2 7 | | 3 6 | | 2 7 | | 2.5 | | 2.4 | |
| SAND | 46 2 | | 6 9 | | 6 1 | | 6 4 | | 49.4 | | 59.3 | |
| SILT | 51 6 | | 90 4 | | 90 3 | | 90 9 | | 48 1 | | 38 3 | |

U - Not detected, UJ - DL approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected, B - Below CRDL; NA - Not Analyzed

**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-21-SD-0015 | | OFF-22-SD-0015 | | OFF-23-SD-0015 | | OFF-5E-SD-2025 | | OFF-5E-SD-5560 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-21 | | OFF-22 | | OFF-23 | | OFF-5E | | OFF-5E | |
| Date Sampled | 4/3/98 | | 3/27/98 | | 4/3/98 | | 4/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| **Polyaromatic Hydrocarbons (PAH) (UG/KG)** | | | | | | | | | | |
| 1-Methylnaphthalene | 7 7 | J | 2 | J | 27.8 | | 40.8 | | 7 1 | U |
| 1-Methylphenanthrene | 19 3 | | 2 6 | J | 49 9 | | 274 | | 6.2 | U |
| 2,3,5-Trimethylnaphthalene | 2 4 | J | 0 3 | J | 8 2 | | 22 6 | | 4 8 | U |
| 2,6-Dimethylnaphthalene | 13.7 | J | 5 8 | J | 38 6 | | 39 9 | | 8 6 | U |
| 2-Methylnaphthalene | 13 1 | J | 3 1 | J | 43 4 | | 18 7 | | 3 6 | U |
| Acenaphthene | 9 4 | | 1 8 | J | 89 5 | | 267 | J | 8 2 | U |
| Acenaphthylene | 18.3 | | 4 4 | J | 77 5 | | 11 | | 0 2 | J |
| Anthracene | 47 9 | J | 9 5 | J | 348 | | 390 | | 8 4 | U |
| Benzo(a)anthracene | 151 | | 35 6 | | 616 | | 829 | | 8 | U |
| Benzo(a)pyrene | 176 | | 38 8 | | 758 | | 648 | | 3 | U |
| benzo(b,j,k)fluoranthene | 375 | | 78 6 | | 1540 | | 1130 | | 9 | U |
| benzo(e)pyrene | 158 | J | 49 3 | J | 688 | | 404 | | 6 | U |
| Benzo(g,h,i)Perylene | 133 | J | 60 4 | J | 700 | | 293 | | 1.9 | J |
| Biphenyl | 5 9 | J | 0 8 | J | 12 8 | | 6 5 | J | 6 4 | UJ |
| chrysene/triphenylene | 151 | | 26 7 | | 540 | | 710 | J | 10 | U |
| Dibenzo(a,h)Anthracene | 40.4 | J | 12 2 | J | 179 | | 115 | | 1 | J |
| Fluoranthene | 291 | | 65 9 | | 1560 | | 2050 | | 9 | U |
| Fluorene | 11.3 | J | 2 4 | J | 106 | | 205 | J | 7 | UJ |
| Indeno(1,2,3-cd)pyrene | 126 | | 33 9 | | 511 | | 302 | | 1.5 | J |
| Naphthalene | 8 7 | | 3 2 | J | 41 6 | | 8 8 | | 3 6 | U |
| Perylene | 43 3 | | 12 9 | | 205 | | 175 | | 6 9 | |
| Phenanthrene | 126 | | 23.5 | | 770 | | 1950 | | 10 | U |
| Pyrene | 334 | | 69 2 | | 1420 | | 1910 | | 8 | U |
| Sum PAHs (6 High Molecular Weight) | 1140 | | 248 | | 5080 | | 6260 | | 7 | |
| Sum PAHs (7 Low Molecular Weight) | 234 | | 48 | | 1480 | | 2850 | | 1 | |
| Sum PAHs (NOAA Status &Trends) | 2250 | | 543 | | 10300 | | 11800 | | 22 | |
| **PCB Cong./Organochlorine Pesticides (UG/KG)** | | | | | | | | | | |
| 1a,2a,3b,4a,5a,6b-hexachlorocyclohexane | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U | 0 6 | U |
| 2,4'-DDE | 0 8 | U | 0 8 | U | 0 8 | U | 0.8 | U | 0 8 | U |
| 2,4'-DDT | 1 | U | 1 | U | 0 8 | | 1 | U | 1 | U |
| 4,4'-DDD | 2 4 | J | 0 8 | U | 7 3 | | 0 9 | U | 0.9 | U |
| 4,4'-DDE | 1 8 | U | 0 9 | U | 3 2 | | 0 9 | U | 0 9 | U |
| 4,4'-DDT | 2 1 | | 0 6 | J | 4 1 | | 0 8 | J | 0 6 | U |
| Aldrin | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U | 0 7 | U |
| alpha-Chlordane | 0 8 | U | 0 8 | U | 0 8 | J | 0 8 | U | 0 8 | U |
| Heptachlor | 0.5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 6 | U |
| Heptachlor Epoxide | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U | 0 5 | U |
| Hexachlorobenzene | 0 4 | U | 0 4 | U | 0 5 | | 0 4 | U | 0 4 | U |

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**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-21-SD-0015 | | OFF-22-SD-0015 | | OFF-23-SD-0015 | | OFF-5E-SD-2025 | | OFF-5E-SD-5560 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-21 | | OFF-22 | | OFF-23 | | OFF-5E | | OFF-5E | |
| Date Sampled | 4/3/98 | | 3/27/98 | | 4/3/98 | | 4/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Mirex | 0 6 | U | 0 6 | U | 1 1 | J | 0 6 | U | 0 6 | U |
| PCB 101/90 | 2.2 | U | 0 7 | U | 2 9 | | 0 6 | U | 0 6 | U |
| PCB 105 | 0 9 | U | 0 2 | U | 1 7 | J | 0 6 | U | 0 6 | U |
| PCB 118 | 2 | | 0 7 | U | 2 7 | | 0 7 | U | 0.7 | U |
| PCB 126 | 0 7 | J | 0 5 | U | 2 | | 0 6 | J | 0 5 | U |
| PCB 128 | 0 9 | | 0 5 | U | 2 3 | | 1 5 | | 0 4 | U |
| PCB 138/163/164 | 2.9 | | 0 9 | | 7 6 | | 0 6 | U | 0 6 | U |
| PCB 153 | 2 7 | | 0 7 | | 4 2 | | 0 4 | UJ | 0 4 | UJ |
| PCB 170 | 1 1 | U | 0 5 | U | 2 1 | | 0 5 | U | 1 | U |
| PCB 18 | 0 7 | U | 0 7 | U | 0 7 | U | 1 | U | 0 7 | U |
| PCB 180 | 1 3 | | 0 3 | J | 3 4 | | 0 5 | U | 0.5 | U |
| PCB 187/182/159 | 1 5 | J | 0 5 | | 3 1 | | 0.5 | U | 0 5 | U |
| PCB 188 | 0 6 | | 0 6 | U | 1 | | 0 6 | U | 0 6 | U |
| PCB 195 | 0 6 | U | 0 6 | U | 1 5 | UJ | 0 6 | U | 0 6 | U |
| PCB 200 | 0 3 | J | 0 2 | J | 1.1 | | 0 5 | U | 0 5 | J |
| PCB 206 | 1.1 | U | 1 | U | 1 2 | | 0 5 | U | 1 | U |
| PCB 209 | 0.7 | U | 0 5 | U | 1 5 | | 0 7 | U | 0 5 | U |
| PCB 28/50 | 0 7 | U | 0 7 | U | 1 5 | | 0 8 | | 0 7 | U |
| PCB 29 | 0 7 | U | 0.7 | U | 0.7 | U | 0 7 | U | 0 7 | U |
| PCB 44 | 0 5 | J | 0 2 | J | 1 1 | | 0 7 | | 0 5 | U |
| PCB 50 | 0 5 | U | 0 5 | U | 0.5 | U | 0 5 | U | 0 5 | U |
| PCB 52 | 0 9 | U | 0 7 | U | 1.4 | | 0 7 | U | 0 7 | U |
| PCB 66/95 | 1 6 | | 1 | U | 2.7 | | 0 5 | U | 0 5 | U |
| PCB 8 | 0 3 | U | 0.3 | U | 0 6 | U | 0 7 | J | 0 3 | U |
| PCB 87 | 0 6 | J | 0.6 | UJ | 1 1 | | 0 6 | U | 0 6 | U |
| Sum of PCB Congeners | 15.6 | | 2.8 | | 44 6 | | 4 3 | | 0 5 | |
| Sum of PCB Congeners X 2 | 31.2 | | 5 6 | | 89 2 | | 8 6 | | 1 | |
| trans-Nonachlor | 0 8 | U | 0.8 | U | 1.2 | | 0 8 | U | 0 8 | U |
| **Metals (MG/KG)** | | | | | | | | | | |
| Aluminum | 37829 4 | J | 36057 5 | J | 92357 6 | J | 15734 | J | 26601 5 | J |
| Arsenic | 4 9 | J | 3 8 | J | 4 8 | J | 7 3 | J | 4 6 | J |
| Cadmium | 0 39 | | 0 19 | | 0 43 | | 0.11 | | 0 1 | |
| Chromium | 52 9 | | 47 8 | | 53 2 | | 19 7 | | 23 2 | |
| Copper | 22 7 | | 18.3 | | 44.7 | | 6 | | 2 5 | |
| Iron | 25992 7 | J | 28735.9 | J | 51702.9 | J | 11871 7 | J | 13658.9 | J |
| Lead | 46 2 | | 21.7 | | 74 2 | | 13 2 | | 14.6 | |
| Manganese | 377.9 | | 318 5 | | 669 7 | | 179 9 | | 262.6 | |
| Mercury | 0 112 | | 0 111 | | 0.387 | | 0 062 | | 0 05 | U |
| Nickel | 26 9 | | 21.2 | | 42 7 | | 16 6 | | 15 7 | |

U - Not detected, UJ - DL approximate, J - Quantitation approximate,
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**ANALYTICAL RESULTS**
**OLD FIREFIGHTER SITE**
**NAVAL EDUCATION AND TRAINING CENTER**
**NEWPORT, RHODE ISLAND**

| Sample Number | OFF-21-SD-0015 | | OFF-22-SD-0015 | | OFF-23-SD-0015 | | OFF-5E-SD-2025 | | OFF-5E-SD-5560 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | OFF-21 | | OFF-22 | | OFF-23 | | OFF-5E | | OFF-5E | |
| Date Sampled | 4/3/98 | | 3/27/98 | | 4/3/98 | | 4/27/98 | | 4/27/98 | |
| QC Type | None | | None | | None | | None | | None | |
| Filtering | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | | SEDIMENT | |
| Silver | 0 16 | J | 0 13 | UJ | 0.27 | J | 0 13 | UJ | 0 13 | UJ |
| Zinc | 143.9 | | 78 3 | U | 306 2 | | 35 5 | U | 29 5 | U |
| **AVS/SEM (µMOLE/GRAM DRY WT)** | | | | | | | | | | |
| Acid Volatile Sulfide | 12 93 | | 2 74 | | 32 95 | | | NA | | NA |
| Cadmium | 0 004 | | 0 001 | | 0 006 | | | NA | | NA |
| Copper | 0 175 | U | 0 234 | | 0 165 | U | | NA | | NA |
| Lead | 0 148 | | 0 039 | | 0.236 | | | NA | | NA |
| Nickel | 0 091 | U | 0 043 | U | 0.075 | U | | NA | | NA |
| SEM-AVS | -11 47 | J | -1 408 | J | -30 715 | J | | NA | | NA |
| SEM/AVS | 0 113 | J | 0 486 | J | 0 068 | J | | NA | | NA |
| Zinc | 1 042 | | 1 015 | | 1.753 | | | NA | | NA |
| **Total Organic Carbon (PERCENT)** | | | | | | | | | | |
| % Water | 49 3 | | 33 3 | | 49 8 | | 39 9 | | 16.9 | |
| Loss on Ignition | 5 4 | | 3 1 | | 6 1 | | 6 8 | | 1.7 | |
| Total Organic Carbon | 2.3 | | 1 3 | | 2 7 | | 2 9 | | 0.7 | |
| **Grain Size (PERCENT)** | | | | | | | | | | |
| CLAY | 2 | | 0.6 | | 1.3 | | 0.5 | | 0 9 | |
| SAND | 50.9 | | 91.5 | | 54.6 | | 82 3 | | 81 | |
| SILT | 47.2 | | 8 | | 44 1 | | 17.1 | | 18.1 | |

U - Not detected; UJ - DL approximate; J - Quantitation approximate;
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