



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

N00102.AR.000248
NSY PORTSMOUTH
5090.3a

August 5, 1994

Captain Lance Horne, USN
Shipyard Commander
Portsmouth Naval Shipyard
Portsmouth, NH 03803-5000

Re: Soil and Groundwater Media Protection Standards for
Portsmouth Naval Shipyard.

Dear Captain Horne:

The purpose of this letter is to establish the onshore soil and groundwater Media Protection Standards for Portsmouth Naval Shipyard. The 45 day public comment period on the proposed standards ended July 28, 1994 with no comments received. EPA is establishing the soil and groundwater MPSs presented in the attached tables 1-3.

EPA notes with appreciation that the Navy has already submitted the onshore Corrective Measures Study proposal which is the next step in the corrective action process. EPA encourages the Navy to continue to take measures such as these to accelerate the progress of the corrective action as much as possible.

EPA has established the MPS for each hazardous constituent detected at Portsmouth at the level corresponding to the lowest of the 10^{-6} risk for carcinogenic effects (representing 1 additional case of cancer in a population of 1 million people), a hazard index of 1 for non-carcinogenic (hazard index = 1 equals the effects threshold above which we would expect to see noncarcinogenic effects from exposure to the hazardous constituent), or relevant regulatory levels (such as Safe Drinking Water Act Maximum Contaminant Levels or Maine Maximum Exposure Guidelines). Where local background levels of a hazardous constituent (for example arsenic) are higher than the above criteria the MPS is set at the local background level as established by the Navy's background sampling program. In setting MPSs EPA has assumed that undeveloped areas outside the Controlled Industrial Area have the potential for future residential use with the accompanying use of fresh ground water for drinking water while it is assumed industrially developed portions of the island will only have industrial use in the future with no residential use of groundwater.

As EPA has previously noted the role of MPSs in the Corrective Action process is as a statement about the concentrations of hazardous constituents in the environment at a facility that



TABLE I
SOIL MEDIA PROTECTION STANDARDS - FUTURE RESIDENTIAL LAND USE

| Constituent | MPS (mg/kg) | Basis |
|----------------------------|----------------|----------------------|
| Antimony | 31.3 | noncarcinogenic risk |
| Arsenic | 48.9 | background |
| Beryllium | 1.57 | background |
| Cadmium | 4.95 | background |
| Copper | 2610 | carcinogenic risk |
| Lead | 500 | guideline criteria |
| Mercury | 5.50 | noncarcinogenic risk |
| Nickel | 1560 | noncarcinogenic risk |
| Zinc | 1068 | background |
| Aldrin | .0367 | carcinogenic risk |
| Dieldrin | .0389 | carcinogenic risk |
| 4,4-DDD | 2.01 | carcinogenic risk |
| 4,4-DDE | 4.30 | background |
| 4,4-DDT | 3.09 | background |
| Arochlor 1254 | .0625 | carcinogenic risk |
| Benzo(a)anthracene | .0627 | background |
| Benzo(a)pyrene | .919 | background |
| Benzo(b)flouranthene | 1.33 | background |
| Benzo(k)flouranthene | .967 | background |
| Bis(2-ethylhexyl)phthalate | 44.5 | carcinogenic risk |
| Chrysene | 1.29 | background |
| Dibenzo(a,h)anthracene | .224 | background |
| Indeno(1,2,3-cd)pyrene | .488 | background |

TABLE II
SOIL MEDIA PROTECTION STANDARDS - FUTURE INDUSTRIAL LAND USE

| Constituent | Standard (mg/kg) | Basis |
|----------------------|---------------------|--------------------|
| Benzo(a)anthracene | 9.85 | carcinogenic risk |
| Benzo(a)pyrene | 9.86 | carcinogenic risk |
| Benzo(b)fluoranthene | 9.84 | carcinogenic risk |
| Benzo(k)fluoranthene | 9.85 | carcinogenic risk |
| Lead | 1000 | guideline criteria |

TABLE III
GROUND WATER MEDIA PROTECTION STANDARDS - FUTURE RESIDENTIAL USE

| Constituent | Standard (mg/L) | Basis |
|----------------------------|--------------------|----------------------|
| Aluminum | 1.43 | regulatory criteria |
| Antimony | .006 | regulatory criteria |
| Arsenic | .05 | regulatory criteria |
| Beryllium | .004 | regulatory criteria |
| Cadmium | .005 | regulatory criteria |
| Chromium | .100 | regulatory criteria |
| Copper | .130 | regulatory criteria |
| Lead | .015 | regulatory criteria |
| Manganese | .200 | regulatory criteria |
| Nickel | .100 | regulatory criteria |
| Vanadium | .256 | noncarcinogenic risk |
| Zinc | 7.29 | noncarcinogenic risk |
| Benzene | .005 | regulatory criteria |
| Methylene chloride | .005 | regulatory criteria |
| 4,4-DDD | .000036 | carcinogenic risk |
| 4,4-DDE | .000025 | carcinogenic risk |
| Arochlor 1242 | .00005 | regulatory criteria |
| Arochlor 1254 | .00005 | regulatory criteria |
| 1,4-Dichlorobenzene | .027 | regulatory criteria |
| Benzo(a)anthracene | .00003 | regulatory criteria |
| Benzo(a)pyrene | .00003 | regulatory criteria |
| Benzo(b)fluoranthene | .00003 | regulatory criteria |
| Bis(2-ethylhexyl)phthalate | .008 | carcinogenic risk |
| Chrysene | .00003 | regulatory criteria |