L. THE SELECTED REMEDY

1. Summary of the Rationale for the Selected Remedy

The selected remedy is a comprehensive remedy which utilizes a combination of technologies to address the only unacceptable risk (consumption of mercury-contaminated fish) in Operable Unit 4. The major components of the remedy are as follows:

- Enhanced Natural Recovery (ENR) in a portion of Reach 3 (i.e., Framingham Reservoir 2).
- Monitored Natural Recovery (MNR) in Reaches 2, 4, 6, 9, and 10.
- Limited Action for Reach 8. This includes monitoring of contamination levels in fish, to determine the impact of the selected remedy and of ongoing atmospheric deposition on fish tissue. However, fish tissue contamination levels in Reach 8 are not expected to decline to levels that would permit consumption in quantities assumed for a recreational angler.
- "Institutional Controls" throughout the river – i.e., community outreach as well as posting and maintenance of signs advising against the consumption of fish where they are unsafe for regular consumption.
- No Action for Reaches 5 and 7 since there are no unacceptable risks to either a child or an adult recreational angler in these reaches.
- Periodic Five-year Reviews.

2. Description of Remedial Components

The selected remedy is consistent with EPA's preferred alternative outlined in the June 2010 Proposed Plan, and is consistent with Alternative 3B as described in the June 2010 Public Comment Draft Feasibility Study. Following is a detailed description of each of the components of the selected Remedial Alternative.

Enhanced Natural Recovery (ENR)

Enhanced Natural Recovery consists of the placement of a thin layer of sand (or any similar material determined to be more effective at sequestering mercury and/or re-colonization of benthic habitat) over existing contaminated river bottom sediment that uniformly exceeds a mercury concentration of 10 mg/kg (or ppm) in surface sediment. This area is an approximately 84-acre section of Reservoir 2, located in Reach 3 between Fountain Street and the Reservoir No. 2 Dam (referred to previously and included as Figure J-2). This is the only part of the river, other than Reach 8, where natural processes alone are not expected to be adequate over a reasonable period of time (i.e., less than 30 years) to eliminate unacceptable risks from the consumption of mercury-contaminated fish.

The 10 ppm sediment concentration indicates areas that are targeted for the thin sand layer but it is not a "cleanup level"; the cleanup levels for the selected remedy are based solely on fish tissue concentrations of mercury (see below). The placement of sand in this quantity is anticipated to

longer present an unacceptable risk to recreational anglers who consume fish from the river. In Reach 8 fish are likely to remain contaminated at unacceptable levels; however institutional controls will be used to reduce/prevent consumption of contaminated fish in this section of the river so that the selected remedy is protective. EPA believes that it will take approximately ten years to reach the cleanup goal of 0.48 ppm mercury in fish tissue in Reaches 3, 4 and 6. Reaches 2, 9 and 10 were not modeled but are expected to recover within a similar amount of time. Fish in Reach 8 are not expected to reach the cleanup level anytime in the foreseeable future (as discussed above, the cleanup level does not actually apply to fish from Reach 8). Table L-1 shows the fish tissue concentrations at 5 and 30 years predicted by EPA's computer model.[16]

a. Cleanup Levels

The consumption of fish from the river presents a threat to human health. As previously discussed in Section G, fish from the river are contaminated by methylmercury. There is no unacceptable ecological risk, but the fish contamination is at levels that result in a hazard quotient above 1 for both children and adults who consume fish in quantities associated with recreational angling. The cleanup goal for the river is to reduce fish tissue concentrations to 0.48 ppm in each reach of the river, except for Reach 8. This 0.48 ppm value is to be calculated as the average fish tissue concentration of total mercury in large-mouth bass, yellow perch, and bullhead from each reach. This cleanup level applies to Reaches 2, 3, 4, 6, 9, and 10. As noted elsewhere, Reaches 5 and 7 are currently below this level. It also does not apply in Reach 8, where Limited Action has been selected as the remedy.

The National Recommended Water Quality Criteria (NRWQC) for mercury is typically also a requirement that is "relevant and appropriate" to cleaning up a river, and one would expect to see it listed as a chemical-specific ARAR. However, in this case, the NRWQC for mercury is lower than the local background concentration of mercury. Specifically, the NRWQC (which is expressed as concentration of mercury in fish tissue) is 0.3 milligram of mercury per kilogram of fish tissue, whereas the background concentration of mercury in fish, as determined by measuring concentrations in fish from reference water bodies including upstream portions of the Sudbury River, is 0.4 ppm. This means that even if all Nyanza-related mercury were removed from the river (which is the only contamination EPA has jurisdiction under CERCLA to clean up), then mercury concentrations would still be above the NRWQC, presumably due to ongoing atmospheric deposition. The NRWQC is also below the concentration of mercury in fish found to present no unacceptable risk under the Site-specific risk analysis performed by EPA. Under these circumstances, and consistent with EPA guidance that advises against cleaning up to levels below background concentrations, EPA has determined that the NRWQC is not relevant and appropriate. However, EPA may in the future re-evaluate the relevance of the NRWQC to the

[16] Although Table L-1 shows that the cleanup level will be achieved in most of the river in five years under the selected remedy, EPA has said in this ROD that it expects to achieve the cleanup level in most of the river in "approximately 10 years" after construction of the thin sand layer. This was done to be cautious and to try to account for uncertainties in the modeling that produced the table.

EPA NEW ENGLAND
REGION 1

RECORD OF DECISION

NYANZA CHEMICAL WASTE DUMP SUPERFUND SITE, OPERABLE UNIT 4 (SUDBURY RIVER)

ASHLAND, FRAMINGHAM, SUDBURY, WAYLAND, LINCOLN AND CONCORD, MASSACHUSETTS

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