

## **SECTION 1 INTRODUCTION**

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The Step 1 and 2 Screening Risk Assessment (SRA) evaluates potential for risk for concentrations of Chemicals of Potential Concern (COPCs) measured in sediments and a variety of wild-caught aquatic organisms (i.e., composite benthic macroinfauna, epibenthic crabs, tilapia, and bandtail goatfish) collected from Pearl Harbor. The SRA is intended to comply with the U.S. Environmental Protection Agency (USEPA) guidance for Steps 1 and 2 of the 8-Step Ecological Risk Assessment Guidance for Superfund (USEPA 1997) and Tier 1 of the U.S. Navy (USN) Policy for Conducting Ecological Risk Assessment (USN 1999). Figure 1-1 illustrates the overall ecological risk assessment process described in the two documents. Figure 1-2 provides greater detail for activities in Steps 1 and 2 of the Tier 1 SRA for the Pearl Harbor Sediment Remediation Investigation/Feasibility Study (RI/FS). The SRA report includes the following sections.

- Section 2 – Problem Formulation
- Section 3 – Effects Evaluation
- Section 4 – Exposure Evaluation for Bioaccumulation
- Section 5 – Potential Risk Calculation for Bioaccumulation
- Section 6 – Adequacy of Data for Achieving Objectives of the SRA
- Section 7 – Potential Risk Characterization for the SRA
- Section 8 – Scientific Management Decision Point (SMDP): Step 2 of USEPA 8-Step Guidance and USN Policy Exit Criteria
- Section 9 – References

### **1.1 OBJECTIVES**

The objectives of the SRA are the following.

- Complete Steps 1 and 2 of the USEPA Guidance (USEPA 1997) and Tier 1 of the USN Policy (USN 1999).

- Reach and address SMDP(a) at the end of Step 2. SMDP(a) allows for the following possible decisions.
  1. Determination is made that ecological risks are sufficiently low to conclude that the site does not pose an unacceptable risk and, therefore, there is no necessity for remediation on the basis of ecological risk (i.e., the site passes the SRA).
  2. Information is inadequate to make a final decision for potential ecological risks at the screening assessment level, and the risk assessment continues to Step 3a of a Tier 2 Baseline Ecological Risk Assessment (BERA) (USN 1999) (i.e., information is insufficient to determine whether the site passes or fails the SRA).
  3. Information is adequate to conclude a potential for adverse ecological effects, and a more thorough or detailed assessment is warranted. The site can either proceed to an interim cleanup or proceed to Step 3 (USEPA 1997) and Step 3a (USN 1999) of a Tier 2 BERA (i.e., the site fails the SRA).

## **1.2 APPROACH**

The USEPA 8-Step Guidance (page 1-2, USEPA 1997) notes the following regarding a SRA.

At the screening level, it is important to minimize the chances of concluding that there is no risk when in fact a risk exists. Thus, for exposure and toxicity parameters for which site-specific information is lacking, assumed values should consistently be biased in the direction of overestimating risk. This ensures that sites that might pose an ecological risk are studied further. Without this bias, a screening evaluation could not provide a defensible conclusion that negligible

ecological risk exists or that certain contaminants and exposure pathways can be eliminated from consideration.

In compliance with this guidance, the SRA for the Pearl Harbor Sediment RI/FS uses highly conservative values for assessing potential risk to ecological receptors for the screening evaluation.