

**DRAFT Options for Establishing Dioxin Suitability Guidelines for  
Open-Water Disposal at Non-Dispersive Sites  
AS OF 9/30/08**

***The DMMP Agency group is planning to evaluate the following options as methods for establishing suitability guidelines for open-water disposal of dredged material containing dioxin.***

***See information posted at the Seattle District Corps of Engineers DMMO Webpage for additional information about the evaluation and decision process.***

1. No Detectable Levels of Dioxins: Agencies would allow material to be disposed at open water sites if there are no detectable levels of dioxin/furan compounds.
2. Background Approach Based on Comparison to Reference Area Concentrations: Agencies would allow material to be disposed at open water sites if the levels of dioxin/furan compounds are less than or equal to existing concentrations in rural reference bays. This is similar to the “non-anthropogenic” background concept in the SMS rule. Statistical measures to be determined for comparison of dredged material to background concentrations.
3. Background Approach Based on Comparison to Puget Sound Main Basin Concentrations: Agencies would allow material to be disposed at open water sites if the levels of dioxin/furan compounds are less than or equal to existing concentrations in the Puget Sound Main Basin (not including urban bays). This is similar to the “natural background” concept in the MTCA rule.<sup>1</sup> Statistical measures to be determined for comparison of dredged material to background concentrations.
4. Background Approach Based on Comparison to Concentrations in the Puget Sound Main Basin and Urban Bays Away from Point Sources: Agencies would allow material to be disposed at open water sites if the levels of dioxin/furan compounds are less than or equal to existing concentrations in the Puget Sound Main Basin and urban bay locations away from known point sources<sup>2</sup>. Depending on the locations of urban bay data, the approach would fall somewhere between the “natural background” and the “area background” concepts defined in the MTCA rule. Statistical measures to be determined for comparison of dredged material to background concentrations.
5. Background Approach Based on Comparisons to Concentrations in Areas in the Vicinity of the Disposal Site (Current Interim Framework): Agencies would allow material to be disposed at open water sites if the levels of dioxin/furan compounds are less than or equal to existing concentrations in the vicinity near, but not influenced by, existing disposal sites. This is similar to the “area background” concepts defined in the MTCA rule, and this option would result in different suitability criteria for the different disposal sites. Statistical measures to be determined for comparison of dredged material to background concentrations.

---

<sup>1</sup> Suitability criteria would be calculated using information from the 2008 Puget Sound sediment investigation performed by the DMMP Agencies, and a subset of DMMP site monitoring data.

<sup>2</sup> Acceptable urban bay data would be limited to locations away from known point sources, and could include existing DMMP disposal site monitoring data, PSI urban bay characterizations, and previous calculations of “area background” from cleanup sites.

6. Incremental Risk Approach: Agencies would allow material to be disposed at open water sites if the levels of dioxin/furan compounds do not pose an incremental risk greater than  $1 \times 10^{-5}$  (or  $1 \times 10^{-6}$ ) above background concentrations calculated using “Puget Sound Main Basin” data. There are two main differences between this approach and the risk-based approach in the current MTCA rule:
- Suitability guidelines would be established using a two-step approach that includes (1) using exposure models to back-calculate sediment concentration associated with a particular incremental risk and (2) adding that value to Puget Sound Main Basin concentrations.
  - Risk calculations would use modified disposal site exposure assumptions regarding foraging range and consumption rates.