ISSUE PAPER

INCREASING THE VOLUME TRIGGER FOR ENVIRONMENTAL MONITORING OF NON-DISPERSIVE OPEN WATER DISPOSAL SITES.

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INTRODUCTION

When the PSDDA program was developed, it was recognized that the new approach to dredged material management would require close scrutiny in the initial stages of implementation. Environmental monitoring of the disposal sites would be conducted "to ensure compliance with the Section 404(b)(1) Guidelines and to field verify the PSDDA predictions of site conditions following disposal" (PSDDA, 1988). It was further recognized that as evidence of successful management of the sites mounted, through environmental monitoring results and verification of predictions, it would be possible to reduce the frequency of environmental monitoring efforts:

> "The most intensive monitoring will occur during the first few years of site use. This will allow for early response should unexpected adverse impacts occur. Future monitoring effort may be lessened if monitoring indicates no significant effects have occurred, (i.e. PSDDA evaluation procedures are producing the expected results)" (PSDDA, 1988).

It was initially intended that full monitoring studies would be considered after 45,000 cubic yards (cy) of dredged material had been disposed at a given site, and that two full monitoring events would be necessary within the first five years of site use (PSDDA, 1988). Circa 1990, the PSDDA agencies agreed on an increase in the soft-trigger to 150,000 cy. The most recent increase in the trigger-volume occurred in 1996, when it was raised from 150,000 cy to 300,000 cy (PSDDA, 1996).

Environmental monitoring data collection must occur during the same time period each year in order to make the data meaningful and comparable between years. Therefore, sampling is limited to the period of May – June of any year. While it was believed that two full monitoring events might be conducted in a given year, the reality of scheduling field and laboratory time for the analyses has limited monitoring events to one per year since 1990, when a full event was conducted at the Port Gardner disposal site and a partial event was conducted at the Elliott Bay site.

PROBLEM IDENTIFICATION

The current soft-trigger for a monitoring event is 300,000 cy. The qualifier "soft" indicates that the potential need for a monitoring event is investigated when the volume of dredged material disposed at a non-dispersive site reaches the established volume. The source(s) and character of the materials deposited is analyzed, as is the

frequency of site use. That information is used to determine if a need exists for immediate monitoring. In many cases, monitoring has been postponed until a greater volume of material has been deposited, either because another site has been scheduled during the current monitoring window or because the materials deposited since the previous monitoring event were from areas with little contamination present. The existence of any previous deviation from management predictions is also taken into account.

Fourteen years have elapsed since the implementation of the PSDDA program, which has subsequently been renamed the Dredged Material Management Program (DMMP) due to an increase in the geographic scope of the area managed. The program has been highly successful, and has been used as the model for other dredged material management programs, both within the U.S. and internationally. Program performance suggests that the need for monitoring the non-dispersive disposal sites has been reduced, except at the Commencement Bay disposal site, where predictions of material deposition during disposal operations were exceeded. The DMMP agencies have determined that a need exists for annual monitoring of the Commencement Bay disposal site for the next several years. When the modified predictions for material behavior at Commencement Bay have been verified, the volume trigger will be adjusted as described below.

PROPOSED ACTION/MODIFICATION

It is proposed that the DMMP initiate monitoring of the central Puget Sound non-dispersive sites when cumulative volumes approach or exceed 500,000 cubic yards since the most recent monitoring event. This volume trigger will not apply to the remaining two non-dispersive sites (i.e., Bellingham Bay and Anderson/Ketron Island). Therefore, the DMMP agencies will consider conducting periodic monitoring at both of these relatively low use sites in the future, based on a temporal trigger. That trigger will be approximately 15 years, and is established with the goal of updating baseline data and verifying that baseline conditions have not changed since the implementation of the program in 1988. This strategy will be modified as site-specific conditions require.

REFERENCES

PSDDA, 1988. Puget Sound Dredged Disposal Analysis Reports, Management Plan Report – Unconfined Open-Water Disposal of Dredged Material, Phase I (Central Puget Sound). U.S. Army Corps of Engineers – Seattle District, U.S. Environmental Protection Agency – Region X, Washington Department of Ecology, and Washington Department of Natural Resources.

PSDDA, 1996. Issue Paper - Adjustments to Site Monitoring. Sediment Management Annual Review Meeting, conducted by: U.S. Army Corps of Engineers – Seattle District, U.S. Environmental Protection Agency – Region X, Washington Department of Ecology, and Washington Department of Natural Resources.