CENWS-OD-TS-DM

MEMORANDUM FOR RECORD

20 ~~November~~ December 1998

SUBJECT: DETERMINATION ON THE SUITABILITY OF PROPOSED FEDERAL OPERATIONS AND MAINTENANCE DREDGED MATERIAL FROM THE DUWAMISH RIVER, PUGET SOUND (CENPS-OP-NP-92, 7 July 1995) EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT (CWA) FOR OPEN-WATER DISPOSAL AT THE ELLIOTT BAY NONDISPERSIVE DISPOSAL SITES.

1. The following summary reflects the consensus determination of the Dredged Material Management Program (DMMP) Agencies' (U.S. Army Corps of Engineers, Department of Ecology, Department of Natural Resources, and the Environmental Protection Agency) with jurisdiction on dredging and disposal on the suitability of the estimated 83,000 cy of federal maintenance material (15 feet + 1 ft of over depth) from the Duwamish River Navigation Channel, Seattle, Washington for unconfined open-water disposal at the Elliott Bay open-water disposal.

2. The area proposed for maintenance dredging was last characterized and dredged in 1996. Portions of this project area are ranked low and high for characterization purposes by the DMMP agencies. The low ranked area consisted of characterizing 54,641 cubic yards of maintenance dredged material from the turning basin and a portion of the adjacent navigation channel (Channels Station 254 - 275). This material consisted of 35,602 cubic yards of surface material and 19,039 cubic yards of subsurface material. Characterization of the low ranked material consisted of collecting Vibracore samples at 5 stations, which were composited into two surface and one subsurface dredged material management units (figure 1). Approximately 27,840 cubic yards of proposed maintenance material was characterized from the high ranked area (Channel Stations 205 - 254), and characterization of this material consisted of collecting Vibracore samples from seven uncomposited surface DMMUs (figure 1).

3. Sampling within each ranked subarea was initiated between October 5-6, 1998 as described above. The Agencies' approved sampling and analysis plan for testing maintenance material in Duwamish Waterway was followed, and quality assurance/quality control guidelines specified by the PSDDA Users Manual were generally complied with. The data gathered were deemed sufficient and acceptable for decision making by the DMMP Agencies based on best professional judgment.

4. Table 2 summarizes the sediment conventional parameters for the seven uncomposited and three composited DMMUs. Chemical analysis of the 7 uncomposited samples and two of the three composited samples indicated that all but composited sample C2 had no detected or undetected exceedances of screening levels for all 58 chemicals of concern, including tributyltin. Composited sample C2 had two minor exceedances of SL for Phenanthrene (2.3 X SL; SL = 1500 ppb) and Fluoranthene (1.1 X SL; SL = 1700 ppb).

5. Relevant dates for regulatory tracking purposes are included in Table 1.

Table 1. Regulatory Tracking Dates

SAP Approval date:		September 17, 1998
Sampling date(s):		October 5-6, 1998
Data report submittal date:		December 1, 1998
Recency Determination Date:	High Concern (2 years)	October 2000
	Low Concern (5-7 years)	October 2003 - 2005

6. Biological testing was conducted on all samples, including DMMU C2 with exceedances of chemical screening levels. Results of the ten analyses are summarized in Table 3. All three bioassays met their respective performance guidelines for negative controls, reference sediments and positive controls. The results indicated that all ten DMMU passed the nondispersive site disposal guidelines. There were no hits for either the amphipod bioassay and the Neanthes growth bioassay. Nine of the ten DMMUs had no hits for the bivalve larval bioassay. However, DMMU C3 had a minor (2-hit) response, which was not corroborated by the other two bioassays. Therefore, all ten DMMUs including DMMU C3 passed the DMMP nondispersive interpretation guidelines.

7. The agencies concluded that all 10 DMMU tested passed PSDDA nondispersive site guidelines for open-water disposal. The 83,000 cy of material is suitable for placement at the Elliott Bay open-water disposal site.

8. The chemical analytical data were also compared to the State Sediment Management Standards. Of the ten DMMU tested, nine had no SQS exceedances. Composited sample C2 had a slight exceedance of SQS (1.2 X SQS; SQS = 100 μg/kg/organic carbon normalized) for Phenanthrene. The DMMU with the chemical exceedance passed bioassay interpretation guidelines for SMS. Based on this information, the DMMP agencies determined that the sediments represented by all ten DMMUs are chemically suitable for use in beneficial uses projects. Comparative sediment conventional data is included in Table 2.

9. This memorandum documents the suitability of proposed dredged sediments from Duwamish maintenance material for disposal at the Elliott Bay nondispersive open-water disposal site. However, this suitability determination does not constitute final agency approval of the project. A dredging plan for this project must be completed as part of the final project approval process. A final decision will be made after full consideration of agency input, and after an alternative analysis is done under Section 404(b)(1) of the Clean Water Act.

Concur:

1/18/99
Date

Lauren Cole-Warner, Seattle District Corps of Engineers

1/7/99
Date

David Kendall, Ph.D., Seattle District Corps of Engineers

12/28/98
Date

Erika Hoffman, Environmental Protection Agency

12/15/98
Date

Rick Vining, Washington Department of Ecology

12/22/98
Date

Ted Benson, Washington Department of Natural Resources

Copies Furnished:
Lauren Cole-Warner, Corps
Rick Vining, Ecology
Erika Hoffman, EPA
Ted Benson, DNR
DMMO file

Table 2. Sediment Conventional Results.

Parameter	S1	S2	S3	S4	S5	S6	S7	C1	C2	C3 subsurface	Reference C22	Reference C24
Volume, cubic yards	4,021	3,959	4,072	3,996	3,914	4,275	3,603	16,249	19,353	19,039	--	--
Grain Size:												
% Gravel	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	2.7	3.4	0.0	0.1
% Sand	51.6	20.8	26.7	28.3	43.6	25.9	55.2	34.8	93.9	83.0	87.7	31.7
% Silt	39.4	63.7	59.9	58.8	44.9	59.6	35.1	52.5	2.2	10.3	10.1	61.9
% Clay	8.7	15.5	13.3	12.8	11.5	14.5	9.6	12.5	1.3	3.4	1.7	6.4
% Fines (clay+silt)	48.1	79.2	73.2	71.6	56.4	74.1	44.7	65.0	3.5	13.7	11.8	68.2
Total Solids, %	58.3	49.9	51.6	53.6	55.2	51.1	58.7	47.7	72.7	70.6	75.6	63.5
Volatile Solids, %	5.8	7.8	7.3	7.2	6.4	7.9	5.8	8.9	3.1	4.8	9.3	2.3
Total Organic Carbon, %	1.9	2.1	2.2	2.0	1.7	2.2	1.8	2.5	2.5	2.6	0.22	0.41
Total Sulfides, mg/kg	1,700	1,400	2,400	2,100	1,800	1,700	1,900	2,200	0.92u	1,200	1.2u	3.3
Total Ammonia, mg/kg	34	49	41	44	64	78	110	86	14	56	9.9	5.7