

10 January 1996

MEMORANDUM OF RECORD

SUBJECT: ADJUSTMENT OF VOLUME FOR SEDIMENTS TESTED UNDER PSDDA EVALUATION FOR LONESTAR NORTHWEST/JAMES HARDIE GYPSUM (95-2-00837) FOR DISPOSAL AT THE ELLIOTT BAY OPEN WATER DISPOSAL SITE

1. Lone Star Northwest and James Hardie Gypsum propose to dredge approximately 9,000 cubic yards of sediment as part of its development project on the Duwamish River. A sampling and analysis plan was approved by the PSDDA agencies in May 1995. Sampling was completed on 23 June 1995.
2. Five DMMUs were characterized for this project. DMMUs C-1, C-2 and C-3 were determined to be not suitable for open water disposal. DMMU C-4 (surface) and DMMU C-5 (subsurface) were determined suitable for open water disposal.
3. The original suitability determination listed the suitable volume as 8,625 cubic yards, based on estimates in the sampling and analysis plan. The applicant estimates the volume to be 9,000 cubic yards. Sampling and testing was adequate for up to 4,000 cubic yards of surface sediments and up to 8,000 cubic yards of subsurface sediments. Therefore, the 9,000 cubic yards is considered for open-water disposal at the PSDDA disposal sites.



Stephanie Stirling
Biologist

cc:
Cindy Barger/OP-RG
Justine Barton/EPA
Tom Gries/Ecology
Ted Benson?DNR

10 October 1995

MEMORANDUM FOR RECORD

SUBJECT: DETERMINATION OF THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER PSDDA EVALUATION PROCEDURES FOR LONE STAR NORTHWEST/JAMES HARDIE GYPSUM DOCK UPGRADE (95-2-00837) FOR DISPOSAL AT THE PSDDA ELLIOTT BAY OPEN WATER DISPOSAL SITE.

1. Lone Star Northwest and James Hardie Gypsum propose to dredge approximately 18,000 cubic yards of sediment as part of its pier development project. The following summary reflects the PSDDA agencies' (Corps of Engineers, Department of Ecology, Department of Natural Resources and the Environmental Protection Agency) consensus decision on the acceptability of the sampling plan and all relevant test data to make a determination of suitability for the disposal of the material at the PSDDA Elliott Bay open-water disposal site.
2. The ranking for the project area is "high" based on guidance in the PSDDA Management Plan Report, Phase II (page A-10) for Elliott Bay and the lower Duwamish River.
3. A sampling and analysis plan was completed for this project and approved by the PSDDA agencies on 10 May 1995. Sampling for this project was initiated on 23 June 1995. Recency for this project will expire in June 1997.
4. Five dredged material management units (DMMUs) were characterized. Samples were taken from four locations for the surface sediment characterizations (C-1, C-2, C-3, and C-4). One subsurface analysis was completed (C-5) with sediment taken from one sample location.
5. For sample C-1, the chemistry data indicated detected exceedances of the Dredging Year 1996 PSDDA screening levels (SL) for copper, lead, and zinc, and a detection limit above screening level for total DDT. For sample C-2, exceedances of SL were detected for lead, zinc and total HPAH, and a detection limit exceedance of screening limit for total DDT. Sample C-3 had SL exceedances for antimony, copper, lead, zinc and total HPAH. There were no exceedances of PSDDA screening levels for samples C-4 and C-5.
6. Concurrent biological testing was completed for samples C-1, C-2, C-3, and C-4. (If tiered testing had been done, biological tests would not have been required for C-4.) The amphipod 10-day acute toxicity test, echinoderm sediment larval combined mortality and abnormality (effective mortality) test, the *Neanthes* 20-day growth test, and the Microtox bacterial luminescence test were conducted. PSDDA interpretation guidelines specified in the Phase II Management Plan Report (Sept. 1989), modified by changes made at the second, fourth and sixth annual review meetings, were used to evaluate the bioassay data.

$$\begin{array}{l} \text{suit} \\ \text{det} \\ \hline \text{C1} = \text{S1} \\ \text{C2} = \text{S2} \\ \text{C3} = \text{S3} \\ \text{C4} = \text{S4} \\ \text{C5} = \text{S5} \end{array}$$

James Hardie Gypsum
95-2-00837

7. Reference sediment for use in the bioassays was collected from Carr Inlet. Control sediment was collected from West Beach. Native sediment of *Ampelisca abdita* was provided by East Coast Amphipods Inc.

8. Bioassay results are listed in Attachment 1. DMMU C-1 exhibited a hit under the one-hit rule for both the amphipod and sediment larval test. DMMU C-2 also had one-hit failures for the sediment larval and amphipod tests. DMMU C-3 had a hit under the one-hit rule for the sediment larval test and a hit under the two-hit rule for the amphipod test. DMMU C-4 passed all bioassays.

9. In summary, PSDDA approved protocols and procedures were followed, and quality assurance, quality control guidelines specified by PSDDA were generally complied with. The data gathered were deemed sufficient and acceptable for regulatory decision-making under the PSDDA program. Based on the results of the chemical and biological testing, the PSDDA agencies concluded that the material from DMMUs C-1, C-2 and C-3, totalling 9,375 cubic yards, is not suitable for open-water disposal. The material from DMMUs C-4 and C-5, totalling 8,625 cubic yards of proposed dredged material is suitable for unconfined open-water disposal at a PSDDA non-dispersive site.

10. This memorandum documents the suitability of proposed dredged sediments for disposal at a PSDDA open-water disposal site. This determination of suitability does not preclude the consideration of this material for an appropriate beneficial use. It does not constitute final agency approval of the project. During the public comment period which follows a public notice, the resource agencies will provide input on the overall project. A final decision will be made after full consideration of agency input, and after an alternatives analysis is done under section 404 (b)1 of the Clean Water Act. If a Section 404 permit is issued for this project, a dredging plan must be developed and submitted prior to dredging to the Enforcement Section of the Regulatory Branch of the Corps of Engineers. This plan must include technology and methodology which is technically adequate to separate suitable from unsuitable material.

Attachment 1. Bioassay Results

	Amphipod Mortality (%)	Sediment Larval (%)	Juvenile Polychaete Growth Rate (mg/ind/day)	Microtox
Carr Inlet 80%	7.0	32.4	0.54	-2.2
C-1	44.0**	59.1**	0.59	-20.0
C-2	44.0**	56.5**	0.47	-13.7
C-3	36.0*	69.4**	0.54	-20.3
C-4	17.0	33.5	0.54	-19.8
Carr Inlet 35%	4.0	34	0.48	-11.7
Positive Control	CdCl ₂ (mg/L)	CdCl ₂ (mg/L)	CdCl ₂ (mg/L)	
(EC50/LC50)	0.27	1.95	28.2	

** denotes one-hit failure

*denotes two-hit failure

A negative Microtox value indicates light enhancement which the PSDDA agencies have determined is not a toxic response

Table 1. Summary of DMMU and Sediment Conventional Parameters

Conventional Parameters	C-1	C-2	C-3	C-4	C-5
DMMU volume (cubic yards)	3125	3125	3125	3125	5500
Grain Size (%)					
Gravel	0.5	0.2	1.5	0.2	0.2
Sand	8.9	17	21.1	63.5	52.5
Silt	73.6	76.6	70.1	39.6	42.6
Clay	17.3	6.4	7.5	5.8	5
Total Solids (%)	51.1	55.1	54.1	72.3	79.2
Total Volatile Solids (%)	7.5	6.6	7.1	2.7	1.5
Total Organic Carbon (%)	1.8	1.8	2.2	.7	0.23
Bulk Ammonia (mg/kg)	84	74	67	8.7	14
Total Sulfides (mg/kg)	1100	1200	1300	180	48

James Hardie Gypsum
95-2-00837

Concur:

10/27/95
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James Hardie Gypsum
95-2-00837

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Concur:

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Seattle District Corps of Engineers

Date

Stephanie Stirling
Seattle District Corps of Engineers

Date

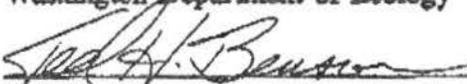
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Date

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25 OCT 95

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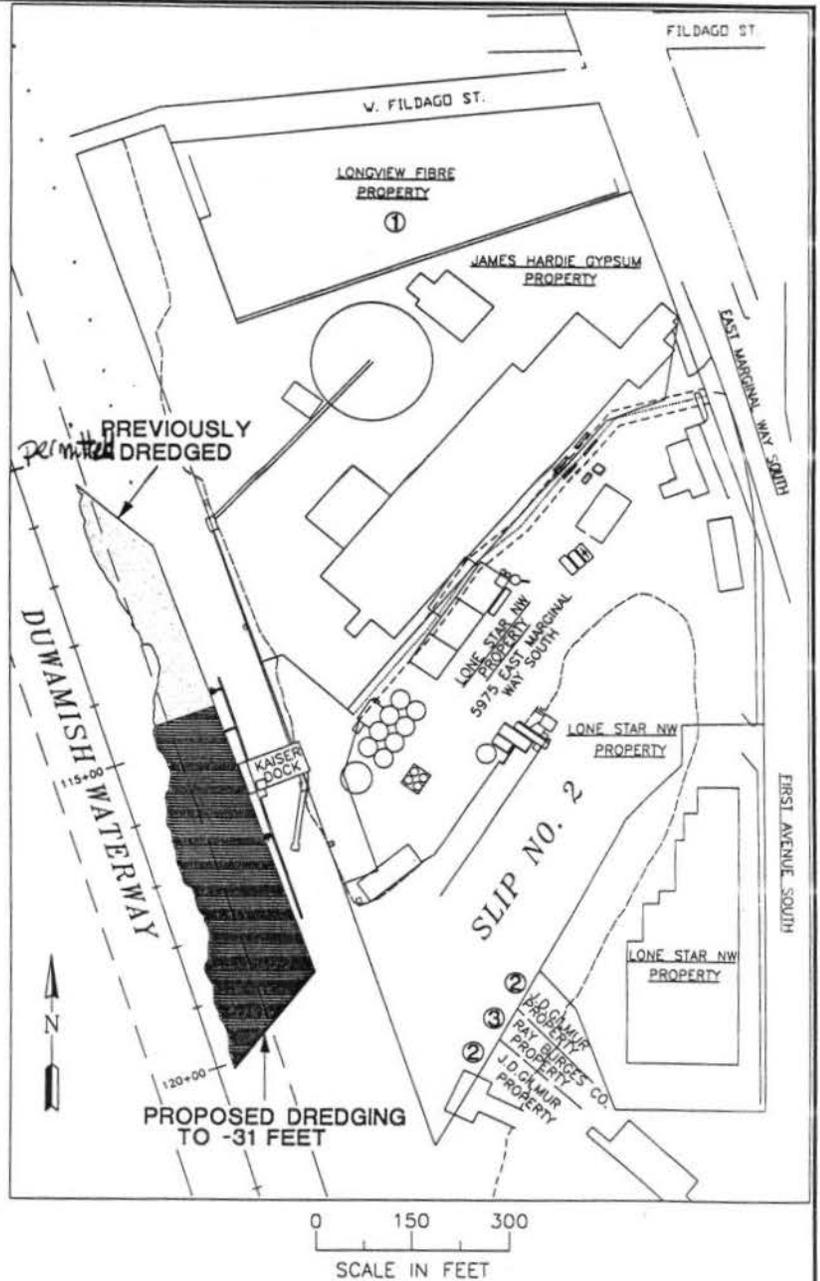
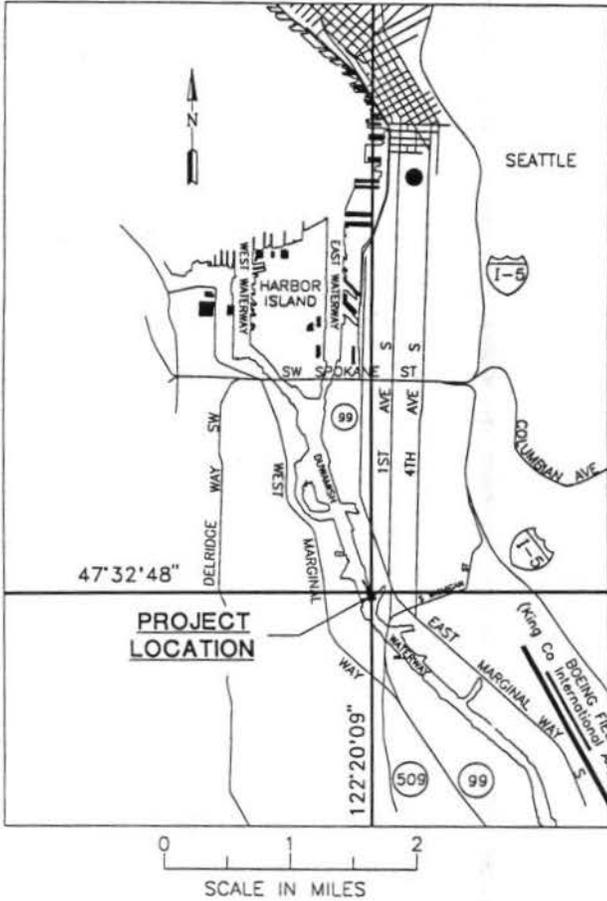
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VICINITY MAP



NOTES:

1. HORIZONTAL DATUM - WA SP NAD27
2. VERTICAL DATUM - MLLW=0.0'
3. PROPERTY SURVEY INFORMATION FROM LEGAL DESCRIPTION PROVIDED BY LONE STAR NORTHWEST
4. CHANNEL LINES DIGITIZED FROM U.S ARMY ENGINEER DISTRICT SEATTLE, WASH. CONDITION SURVEY OF THE DUWAMISH WATERWAY FOR THE DATES 19, 27, 28 MAY 1993 - FILE NO. E-12-2.1-1111
5. PROPOSED DOLPHINS AND DOCK EXTENSION DATA PROVIDED BY HARRIS GROUP INC., DEC. 1995, DRAWING NUMBER C-6, PROJECT NUMBER 94-1636.

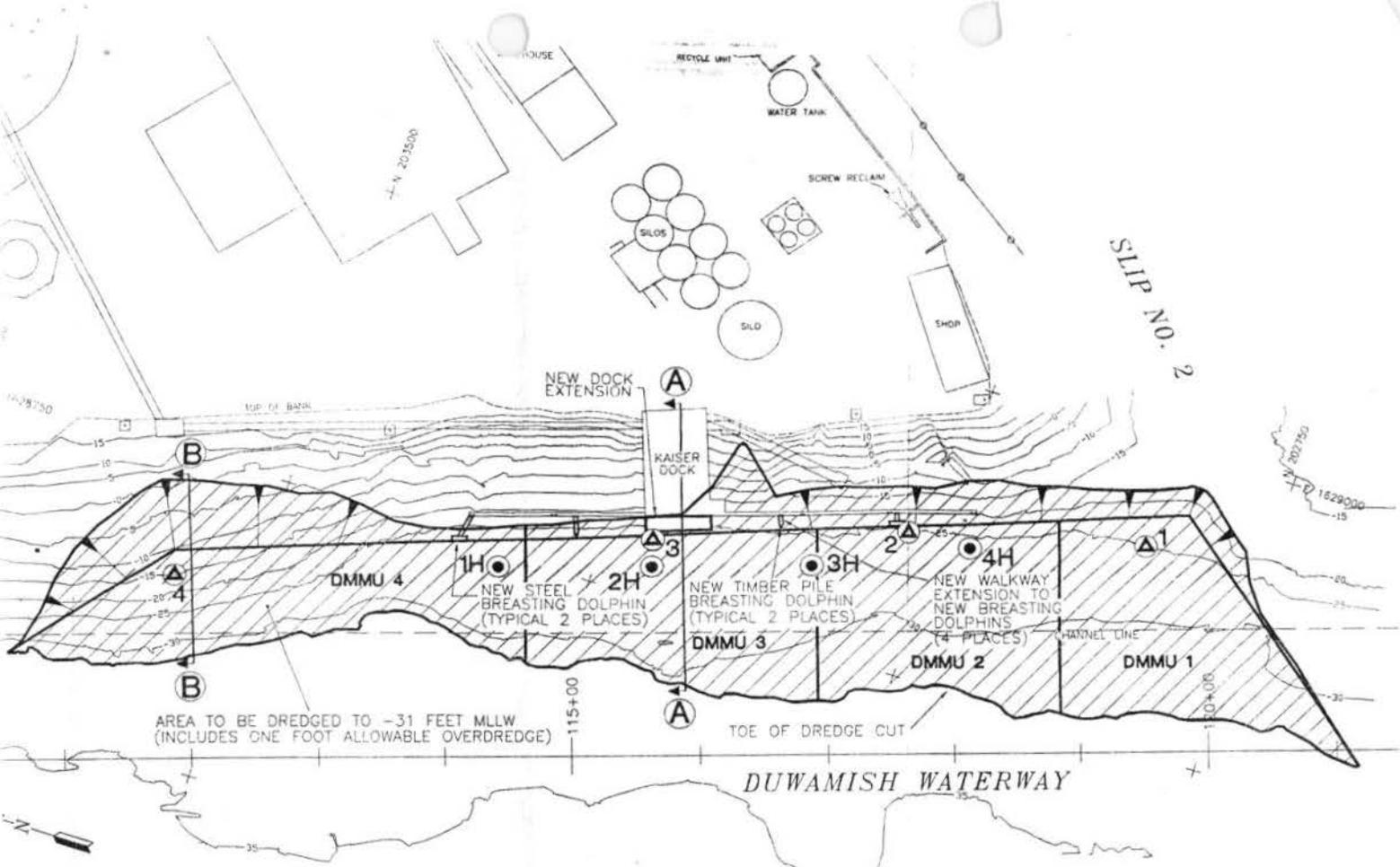
PURPOSE: Provide adequate depth for moorage and movement of ships and barges

DATUM: MLLW = 0.0'
ADJACENT PROPERTY OWNERS:
 1) Longview Fiber
 2) J.D. Gilmur
 3) Ray Burges Co.

VICINITY and PROJECT LOCATION MAP

95-2-00837

**PROPOSED DREDGING
 KAISER DOCK UPGRADE**
IN: (Kaiser Dock) Duwamish River,
 Elliott Bay, Puget Sound
AT: Seattle
COUNTY OF: King **STATE:** WA
APPLICATION BY: Lone Star NW and
 James Hardie Gypsum
SHEET 1 of 3 **DATE:** 6/17/96



3 ▲ PROPOSED SAMPLE LOCATIONS
 2H ● HISTORIC SAMPLE LOCATIONS

- NOTES:
1. HORIZONTAL DATUM - WASHINGTON STATE PLANE SOUTH, NAD27
 2. VERTICAL DATUM - MLLW
 3. CHANNEL LINES DIGITIZED FROM U.S. ARMY ENGINEER DISTRICT SEATTLE, WASH. REPORT TO DISTRICT OF THE DUWAMISH WATERWAY FOR THE DATES 19, 27, 28 MAY 1993 - FILE NO. E-12-421-1111
 4. BATHYMETRIC CONTOURS CREATED BY HARTMAN ASSOCIATES, INC. FROM BATHYMETRIC SURVEY BY ENSR CONSULTING AND ENGINEERING DATED 10/25/94 AND 1/5/95
 5. EXISTING SAMPLE LOCATIONS TAKEN FROM REPORT DATED NOVEMBER 23, 1983, BY LAUCKS TESTING LABORATORY FOR KAISER CEMENT CORPORATION



PROPOSED/EXISTING SAMPLE LOCATIONS

IAN ASSOCIATES, INC.		REVISED		DATE	FIGURE 1 LONE STAR NW & JAMES HARDIE GYPSUM KAISER DOCK UPGRADE VICINITY MAP AND PROPOSED/EXISTING SAMPLE LOCATIONS
Suite 408 96104	Phone: (206) 382-0388 Fax: (206) 382-0388	DESCRIPTION	DRAWN BY	4/7/95	
			CHECKED BY	PROJECT	
			APPROVED BY	94-141	