CENPS-OP-TS

MEMORANDUM FOR RECORD July 3, 1996

SUBJECT: DETERMINATION OF THE SUITABILITY OF DREDGED MATERIAL FOR THE PORT OF EVERETT STAGE I MARINE TERMINAL IMPROVEMENTS PROJECT FOR DISPOSAL AT THE PSDDA PORT GARDNER OPEN-WATER NONDISPERSIVE SITE.

1. Stage I of the Port of Everett Marine Terminal Improvements Project includes dredging of 422,000 cubic yards of sediment. Of this volume, 183,000 cubic yards were covered by a suitability determination dated September 9, 1994 (Attachment A) and 121,000 cubic yards have already been dredged and disposed at the Port Gardner site. The following summary reflects the PSDDA agencies' (Corps, Department of Ecology, Department of Natural Resources and the Environmental Protection Agency) suitability determination for the 239,000 cubic yards of material not explicitly addressed by the previous determination.

2. Stage I dredging consists of completing a deep-draft berth, creating a medium-draft berth, removing sediments unsuitable as foundation material for construction of a nearshore dike, and increasing the fill capacity for contaminated sediments behind the dike. The contaminated sediments to be contained within the nearshore fill will be dredged from a cleanup project between Piers 1 and 3. However, this suitability determination addresses only the open-water disposal of sediment dredged from the south side of Pier 1 and does not address the suitability of contaminated sediments from between Piers 1 and 3 for disposal in the nearshore fill.

3. Attachment B was provided by Pentec Environmental in support of this suitability determination. Figure 1 shows the dredging project as characterized in 1993 (183,000 cubic yards). Figure 2 shows the current project plan (422,000 cubic yards, of which 121,000 cubic yards have already been dredged). Figure 3 shows typical sections through the project area. Figure 4 is a plan view showing the current project footprint juxtaposed with the dredged material management units (DMMUs) delineated in the September 9, 1994 suitability determination. Table 1 includes volumes for various components of the project.

4. The additional volume proposed for dredging under the current plan can be broken into three fractions for purposes of this suitability determination. First, there is additional native material that was not explicitly addressed in the previous determination. Second, as can be seen from Figure 4 of Attachment B, a portion of the nearshore fill footprint falls outside the DMMUs addressed in the previous determination. Finally, a pocket of wood debris underlying the footprint of the dike and medium-draft berth (Figures 2 and 3) has been identified. These three fractions will be addressed under bullets 5, 6 and 7 respectively.

5. A partial characterization (PC) was conducted in 1992 for sediments south of Pier 1. As a result of the PC it was determined that the native (pre-industrial) sediment was suitable for open-water disposal with no additional testing required. Therefore, in the September 9, 1994 suitability determination, all native sediment within the original project footprint was determined to be suitable for open-water disposal. This determination logically extends to the increased volume of native sediment within the original footprint resulting from an increase in the proposed dredging depth for the medium-draft berth.

6. The sediments falling outside the original project footprint were addressed separately from the native sediments underlying the original DMMUs. There are three pieces of evidence that provide sufficient weight for the PSDDA agencies to find these sediments suitable for open-water disposal:

a) The two DMMUs (DMMU 2 and DMMU 8) from the full characterization (FC) survey that are adjacent to the new surface material were chemically the cleanest of any of the DMMUs. Neither DMMU 2 nor DMMU 8 had any detected exceedances of screening levels (SLs). Both had a single detection limit exceedance of the SL for benzyl alcohol (25 ppb) with detection limits reported as 38 and 36 ppb, respectively. Both DMMUs passed biological testing.

b) Two samples from the PC fall within the footprint of the excavated area for the nearshore fill. Sampling location 10-92 falls just within the boundary of DMMU 8, while sampling location 9-92 falls nears the center of the proposed excavated area and just outside the boundary of DMMU 8. The surface sediment (0-3.5 feet) analyzed from 10-92 had a single detected SL exceedance (pyrene = 560; SL = 430). Surface sediment (0-2.5 feet) from 9-

92 had no detected exceedances of SL and a single undetected exceedance (benzyl alcohol = 25.1, SL = 25). There were no SL exceedances in subsurface sediment (2.5-6.0 feet) from 9-92.

c) Groundwater from monitoring wells located just east (and upgradient) from the proposed excavated area had no detected levels of organic chemicals of concern and only background levels for metals. This indicates there is no contaminated groundwater moving into the project area from the uplands.

7. Geotechnical sampling of the dike foundation material, conducted subsequent to PSDDA testing, revealed the presence of the pocket of wood debris underlying the footprint of the dike and medium-draft berth. Additional sampling was performed to determine the extent of this pocket. The volume of wood debris was estimated to be approximately 20,000 cubic yards. Testing indicated that this material was chemically similar to surrounding sediments. However, because this material is predominantly wood waste, the PSDDA agencies have determined that it is unsuitable for open-water disposal.

8. Based on the "low-moderate" to "moderate" ranking for this project and the lack of major ongoing sources of contamination, under PSDDA recency guidelines the data collected for the characterization of project sediments are valid for 5-7 years after the sampling date. All data supporting this determination are from samples collected no earlier than April 1992. Therefore, these data are valid under the PSDDA recency guidelines.

9. In summary, the data gathered for the partial and full characterization were deemed sufficient and acceptable for regulatory decision-making under the PSDDA program for the additional dredged material not explicitly addressed in earlier suitability determinations. Based on the results of previous physical, chemical and biological testing, all 239,000 cubic yards not explicitly covered under the September 9, 1994 suitability determination are suitable for disposal at the Port Gardner open-water nondispersive site, with the exception of the wood debris (estimated at 20,000 cubic yards). In conjunction with the previous suitability determination, a total of 422,000 cubic yards of sediment proposed for dredging from the Port of Everett Marine Terminal Improvements Project are suitable for open-water disposal, with the exception of the wood debris. Of this total, 121,000 cubic yards have already been dredged and disposed at the Port Gardner site.

10. The dredging and disposal plan must include an acceptable process for identifying and separating the wood debris from the material found eligible for PSDDA disposal.

11. This memorandum documents the suitability of proposed dredged sediments for disposal at a PSDDA open-water disposal site. This suitability determination does not constitute final agency approval of the project.

Concur:

19 July 1996
Date

David Fox, PE
Seattle District Corps of Engineers

16 July 1996
Date

Justine Barton
Environmental Protection Agency, Region X

July 11, 1996
Date

Vernice Santee
Washington Department of Ecology

11 JULY '96
Date

Ted Benson
Washington Department of Natural Resources

Copies Furnished:

Justine Barton/Ted Benson/Dennis Gregoire/Jack Gossett/Teresa Michelsen/Vernice Santee/Cliff Whitmus/Terry Williams

CENPS-OP-DMMO

MEMORANDUM FOR RECORD 9 September 1994

SUBJECT: DETERMINATION OF THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER PSDDA GUIDELINES FOR THE PORT OF EVERETT SOUTH TERMINAL BARGE BERTH DREDGING PROJECT FOR DISPOSAL AT THE PSDDA PORT GARDNER OPEN-WATER NONDISPERSIVE SITE.

1. The Port of Everett proposes to dredge 183,000 cubic yards of sediments to develop its South Terminal Barge Berth facility. The following summary reflects the PSDDA agencies' (Corps, Department of Ecology, Department of Natural Resources and the Environmental Protection Agency) suitability determination for disposal of this material at the PSDDA Port Gardner open-water nondispersive site.

2. The PSDDA agencies ranked the project area "high", based on the guidance provided in the PSDDA Management Plan Report, Phase II (page A-10) for the East Waterway in Everett.
3. A partial characterization (PC) was conducted in 1992 for sediments in the vicinity of the proposed South Terminal barge berth. Attachment 1 provides details of the ranking determination resulting from the PC. The outcome of the PC can be summarized as follows:

a) a large volume (100,000+ CY) of contaminated sawdust was identified. The sawdust was found unsuitable for open-water disposal.

b) the native sediment underlying post-industrial sediment was found to be suitable for open-water disposal with no additional testing required.

c) post-industrial sediments in the vicinity of South Terminal, aside from the sawdust, were ranked according to the PC results. The wood/silt fraction was ranked "moderate", while the sand/wood fraction was ranked "low-moderate".

4. A sampling and analysis plan, based on the rankings from the PC, was developed for full characterization and approved by the PSDDA agencies 29 October 1993.

5. Eight dredged material management units (DMMUs) were characterized. Sediments from 17 sampling locations were composited into eight (C1 through C8) lab samples. The PSDDA agencies allowed vertical compositing for this project because the PC showed similar patterns of chemical distribution throughout the post-industrial sediments, regardless of depth.

6. The chemistry data indicated that six of the DMMUs (C1, C3, C4, C5, C6 and C7) had at least one detected exceedance of the PSDDA screening levels (SL). DMMUs C2 and C8 each had a single undetected SL exceedance. DMMU C1 had a detection limit exceedance of the maximum level (ML) for benzoic acid. There were no other ML exceedances, and no bioaccumulation trigger (BT) exceedances. See Attachment 2 for a tabulated summary of physical/chemical testing data.

Attachment A

7. The detected and undetected SL exceedances would have triggered the requirement for biological testing of all eight DMMUs under the tiered testing approach. In this case, concurrent chemical and biological testing were conducted for all DMMUs. The amphipod 10-day acute toxicity test, echinoderm sediment larval combined mortality and abnormality test, the *Neanthes* 20-day biomass 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.

8. Because of the presence of woody material mixed with the sediment, and potential non-treatment effects for *Rhepoxynius abronius*, the Port of Everett elected to conduct side-by-side testing of *Rhepoxynius abronius* and *Ampelisca abdita* for the amphipod test.

9. The control sediment for the *Rhepoxynius* and *Neanthes* bioassays was collected at West Beach, the control sediment for *Ampelisca* from Narragansett RI, while the seawater control for the sediment larval test came from the National Marine Fisheries Service facility at Mukilteo. Five reference sediments were used during the first round of testing, four from Carr Inlet and one from West Beach. Three additional reference sediments from Carr Inlet were used during subsequent retests. See Attachment 3 for test and reference grainsize matchups.

10. Attachment 2 includes the results of biological testing, while Attachment 3 tallies "hits" in the bioassays. As anticipated in the amphipod bioassay, *Rhepoxynius abronius* was affected by the unusual nature of the South Terminal sediments which contained fine woody debris mixed with silt and sand. *Ampelisca abdita*, on the other hand, experienced no difficulties and no hits were exhibited. The PSDDA agencies agreed to use the *Ampelisca* results for the amphipod test in lieu of the *Rhepoxynius* results.

11. Two batches of the *Neanthes* 20-day biomass test were run. In batch 1, only C5 and C8 exhibited mean individual biomasses less than 80% of the control, thereby necessitating a comparison to reference. Both C5 and C8 matched up well with two reference sediments: C5 was well-matched with Ref 1 and Ref 7, while C8 was well-matched with Ref 4 and Ref 5. The PSDDA agencies agreed to pool the results for these two pairs of references for comparison with their respective test sediment. This approach resulted in a hit under the two-hit rule for C5 and no hit for C8.

Due to a shortage of organisms during the first batch, C2 was tested along with five reference sediments in a second batch. One of the five C2 beakers was not inoculated with organisms; the mean individual biomass in the remaining four beakers was greater than 80% of the control. Therefore, C2 was scored a non-hit.

12. The larval test, using *Strongylocentrotus purpuratus*, experienced quality control problems, with poor results for all test and reference sediments. A retest was conducted using *Dendraster excentricus*. There was a single hit for C1 under the two-hit rule.

13. In the Microtox test, QA/QC problems forced two separate retests of some of the test sediments. In the original test, C8 exhibited a hit under the two-hit rule. An evaluation of the five replicates at the highest concentration resulted in no other hits for any of the other DMMUs. However, further evaluation revealed a discrepancy between the results of the dilution series for three of the DMMUs and the five replicates at the highest concentration for these test sediments. Two retests were necessary to resolve the discrepancy, and in the end, none of the three DMMUs exhibited hits.

14. In summary, the PSDDA-approved sampling and testing plan was 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 following consensus decision was made by the PSDDA agencies:

All 183,000 cubic yards proposed for dredging from the Port of Everett Barge Berth Development project are suitable for disposal at the Port Gardner open-water nondispersive site. This includes 94,300 cubic yards characterized during the FC and 88,700 cubic yards of underlying native material.

15. Based on the "low-moderate" to "moderate" ranking for this project and the lack of major ongoing sources of contamination, under PSDDA recency guidelines the data collected for the full characterization of project sediments are valid for 5-7 years after the sampling date. If a "changed condition" (eg. after a spill event) occurs between the date of this suitability determination and the time of dredging, the PSDDA agencies will determine whether additional sampling and testing are required prior to dredging.

16. This memorandum documents the suitability of proposed dredged sediments for disposal at a PSDDA open-water disposal site. This suitability determination does not constitute final agency approval of the project.

Concur:

10/3/94
Date

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

9/9/94
Date

David F. Fox
David Fox, P.E.
Seattle District Corps of Engineers

10/12/94
Date

Justine Barton
Justine Barton
Environmental Protection Agency, Region X

9/22/94
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Sandra Manning
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9/21/94
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ATTACHMENT 2

PORT OF EVERETT
SOUTH TERMINAL BARGE BERTH
91-2-00014
CHEMICALS EXCEEDING
PSDDA GUIDELINE VALUES,
BIOASSAY DATA
AND INTERPRETATION

Guideline Values

METALS (ppm dry wgt):	SL	BT	ML	C1	C2	C3	C4	C5	C6	C7	C8
Cadmium	0.96	---	9.6				1.65	1.64	1.16	1.53	
Copper	81	---	810					90.6		90.2	
Lead	66	---	660				67				
Zinc	160	---	1600			227					

ORGANICS (ppb dry wgt):											
2-Methylnaphthalene	67	---	670	83 U			130 U		190	140	
Acenphthene	63	---	630	100			130 U	89	340	290	
Acenaphthylene	64	---	640	83 U			130 U		130	92 U	
Fluorene	64	---	640	140			130 U	73	380	340	
Naphthalene	210	---	2100	350					1300	660	
Phenanthrene	320	---	3200	390					1000	770	
Anthracene	130	---	1300	160					310	320	
Total LPAH	610	---	6700	1140				782	3650	2520	
Fluoranthene	630	4600	6300	690					1100	1100	
Pyrene	430	---	7300	610 L					960 L	1000 L	
Dibenzo(a,h)anthracene	120	---	1200				130 U				
Indeno(1,2,3-c,d)pyrene	69	---	5200	90 L			160 L	74	190	130 L	
Total HPAH	1800	---	51000	2600			2140	1893	3670	4150	
1,2,4-Trichlorobenzene	6.4	---	64				14 U	16 UG			
Hexachlorobenzene	23	168	230	41 U			130 U	58 U	33 U	46 U	
Diethyl phthalate	97	---	---				130 U		100 U		
2-Methylphenol	20	---	72	41 U			44 U	58 U	33 U	46 U	
2,4-Dimethylphenol	29	---	50	41 U			44 U		33 U	46 U	
4-Methylphenol	120	---	1200	410			130 U		300	670	
Pentachlorophenol	100	504	---	410 U			220 U	290 U	500 U	460 U	
Phenol	120	876	1200				130 U				
Benzoic acid	216	---	690	***830 U****			440 U	580 U		460 U	
Benzyl alcohol	10	---	73	41 U	38 UG	38 UG	44 U	58 U	33 U	46 U	36 UG
Dibenzofuran	54	---	540	110			130 U	63	310	260	
Hexachlorobutadiene	29	212	290	83 U			130 U	58 U	100 U	92 U	
N-Nitrosodiphenylamine	28	161	220	83 U			130 U	58 U	100 U	92 U	
Total DDT	6.9	50	69				7.2 UG				
Total PCBs	130	---	2500				150 UG				

* = Exceeds ML

ATTACHMENT 2

PORT OF EVERETT
SOUTH TERMINAL BARGE BERTH
91-2-00014
CHEMICALS EXCEEDING
PSDDA GUIDELINE VALUES,
BIOASSAY DATA
AND INTERPRETATION

CONVENTIONALS:	C1	C2	C3	C4	C5	C6	C7	C8	Carr Inlet Ref 1	West Beach Ref 4	Carr Inlet Ref 5	Carr Inlet Ref 6	Carr Inlet Ref 7	Carr Inlet A37	Carr Inlet C24	Carr Inlet D34
Percent Fines	16	13	14	36	56	55	35	6	31	4	11	36	38	41	38	27
Bulk Ammonia (mg/kg)	36.9	0.9	1.3	34.9	49.4	39.9	62.0	2.1	5.4	3.5	2.8	3.6	2.5	17.0	17.0	15.0
Bulk Sulfides (mg/kg)	7.2	26.7	678.0	1020.0	180.0	14.8	136.0	11.1	45.0	7.6	14.0	36.0	17.0	29.0	15.0	30.0
TOC (%)	6.7	10.3	14.2	7.7	14.5	4.8	4.6	3.2	0.4	0.2	0.3	0.7	0.7	0.5	0.5	0.5

BIOASSAYS:																
Amphipod test using Ampelisca abdita (% mortality)	11	20	13	24	29	18	17	18	10	10	15	8	11	NT	NT	NT
Sediment Larval retest using Dendraster excentricus (%	26.8	11.5	16.8	13	7.4	7.8	12.8	7.4	NT	0	NT	NT	NT	0.7	5.1	12.4
Neanthes (ind biomass in mg) - Batch 1	7.26	NT	7.71	10.1	6.35	9.45	12.1	6.89	10.41	8.65	10.09	NT	7.74	NT	NT	NT
Neanthes (ind biomass in mg) - Batch 2	NT	7.33	NT	NT	NT	NT	NT	NT	9.11	8.42	QA	9.99	12.74	NT	NT	NT
Microtox (% light diminution) - original test	LE	QA	QA	LE	QA	LE	LE	72.0	LE	LE	LE	LE	LE	NT	NT	NT
Microtox (% light diminution) - retest	NT	19.2	26.5	NT	7.4	NT	NT	NT	NT	LE	NT	NT	NT	NT	NT	8.5

LE = light enhancement (non-toxic)
QA = quality assurance problem, data discarded
NT = not tested

INTERPRETATION:								
Volume (cubic yards):	12100	12300	12200	11900	12100	12700	13000	8000
Pass/Fail:	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

ATTACHMENT 3
PORT OF EVERETT SOUTH TERMINAL BARGE BERTH
91-2-00014
BIOASSAY INTERPRETATION

Sample ID	Chemical Hits	Reference Sediment Match	Amphipod[1] 10-Day Mortality	Neanthes 20-Day Biomass	Microtox	Sediment[2] Larval	Total Hits	Pass/Fail
C1	---	Ref 5/D34	---[3]	---[4]	---[5]	X	X	Pass
C2	---	Ref 5	---[3]	---[4]	---[3]	---[3]	---	Pass
C3	---	Ref 5/D34	---[3]	---[4]	X	---[3]	X	Pass
C4	---	Ref 1/6/7	---[3]	---[4]	---[5]	---[3]	---	Pass
C5	---	Ref 1/6/7	---[3]	X	---[3]	---[3]	X	Pass
C6	---	Ref 1/6/7	---[3]	---[4]	---[5]	---[3]	---	Pass
C7	---	Ref 1/6/7	---[3]	---[4]	---[5]	---[3]	---	Pass
C8	---	Ref 4/5	---[3]	---	X	---[3]	X	Pass

[1]*Ampelisca abdita*
[2]*Dendraster excentricus*
[3]Test sediment was not greater than 20% over control; no reference comparison required
[4]Test sediment was not less than 80% of control; no reference comparison required
[5]Light enhancement; considered non-toxic; no reference comparison required

Pentec
ENVIRONMENTAL

July 2, 1996

Mr. David Fox, P.E.
Dredged Material Management Office
Seattle District, Corps of Engineers
PO Box 3755
Seattle, Washington 98124-2255

Determination of the Suitability of Dredged Material Tested Under PSDDA Guidelines for the Port of Everett South Terminal Barge Berth Dredging Project for Disposal at the PSDDA Port Gardner Open-Water Nondispersive Site

Dear Dave:

As we have discussed, during recent geotechnical investigations conducted for engineering design of the Stage I Marine Terminal Improvements Project, a deposit of wood debris was encountered within the area to be dredged for the project. This letter supersedes the letter submitted to you previously (dated May 16, 1996) and describes the current dredging and disposal project.

The Port of Everett's Stage I Marine Terminal Improvements Project (formerly called the Barge Berth Dredging Project) will require dredging of a volume of sediment in excess to that characterized under PSDDA for the Barge Berth Project. Presented below is a discussion of the current project dredge sediment volumes in relation to the characterized volumes.

Figure 1 shows the project for which the characterization was conducted and on which the Suitability Decision was based. The project included dredging of the Pier 1 South Berth to -45 ft MLLW, dredging in front of the Barge Berth to -25 ft MLLW, and dredging the log handling area to -10 ft MLLW. As detailed in the DMMO's Memorandum of Record (September 9, 1994) for the above-referenced project, all 183,000 cy of sediment to be dredged as part of the project was considered suitable for disposal at the Port Gardner open-water nondispersive site. The 183,000 cy of sediment was comprised of 94,300 cy of wood/silt material and 88,700 cy of underlying native sediment. The wood/silt material was characterized during the PSDDA FC conducted during late 1993. The PC conducted in 1992 determined the native sediment underlying the wood/silt material was suitable for open-water disposal; no testing of the native sediment was required during the FC.

The dredging for the proposed project is shown on Figure 2 (Corps Permit Sheet 3). This project includes dredging of the Pier 1 South Berth to -45 ft MLLW and dredging in front of

Pentec Environmental, Inc. • 120 Third Avenue South, Suite 110 • Edmonds, WA 98020 • Phone: (206) 775-4682 • Fax: (206) 778-9417

Attachment 3

the Medium-Draft Facility to -35 ft MLLW. The project will require the dredging of approximately 422,000 cy of sediment. The 422,000 cy of sediment includes the volume of sediment previously dredged from the Pier 1 South Berth in 1995. Table 1 details the volumes by soil unit (wood/silt and native) and dredge area and where the material will be disposed. Figure 2 shows the location of the dredge areas identified in Table 1.

The proposed project requires removing approximately 20,000 cy of newly identified wood debris, 86,000 cy of wood/silt material, and 316,000 cy of native sediment. These volumes are inclusive of the volume already dredged from the Pier 1 South Berth. It should be noted in Table 1 that some of the sediment dredged (87,000 cy) as part of this project may be used as capping material for the fill; however, this will not be determined until just prior to dredging.

Figure 3 (Sheet 4) shows two typical sections perpendicular to the face of the dike (Figure 2). The deposit of wood debris shown on Figure 2 is not being considered for open-water disposal; all wood debris will be disposed of at an approved upland site or recycled.

All dredging for the project will be conducted within the footprint of the area previously characterized under PSDDA with the exception of a portion of the area to be excavated behind the dike (Figure 4). The excavation behind the dike will add additional contaminated sediment storage capacity to the fill. This area was characterized as native material with surficial wood debris in the *Site Characterization Report, South Terminal Expansion, Port of Everett Washington* (Dalton, Olmsted, and Fuglevand, Inc., and Pentec Environmental, Inc. 1992).

Three core samples were collected (8-92, 9-92, and 10-92; Figure 4) in the area behind the dike during the PC conducted in 1992. One PC sample (10-92) had one detected and one undetected exceedence of PSDDA SLs (the concentration of pyrene was detected at 560 μg/kg). There was also one undetected exceedence of SLs at Station 8-92 and three undetected exceedences of SLs at Station 9-92. The composite sample collected from DMMU 8 (Stations 801 and 802) from the FC conducted in 1993 had only one undetected exceedence of PSDDA SLs.

A monitoring well was installed, in 1995, upgradient of the area to be excavated behind the dike. This well was used for collection of groundwater used in contaminant mobility testing for material to be placed in the Medium-Draft Nearshore Confined Disposal Facility (see Aura

Nova Consultants, Inc., and Pentec Environmental, Inc. 1996 for a description of the testing). There were no detected organic COCs in the groundwater used in the leach tests.

Based on the FC Suitability Determination, the volume of wood/silt material (material above the native contact) that was determined to be suitable for open-water disposal was 94,300 cy. The volume of wood/silt material to be dredged for this project is approximately 77,000 cy (including the volume for wood/silt material dredged in 1995).

Nearly all of the volume of sediment in excess of the volume of sediment characterized during the FC is below the native contact layer. Based on the results of the PC, the PSDDA agencies classified the native material within the DMMU boundaries as suitable for open-water disposal with no additional testing required for the FC that was subsequently conducted. Some of the material to be excavated behind the dike was not fully characterized during the FC; however, given that the material is almost entirely native material and that analysis of core and groundwater samples within and adjacent to the area indicate no significant contamination, the material should be considered suitable for open-water disposal.

In closing, I request that the Determination of Suitability be modified to include 402,000 cy of material as suitable for open-water disposal. As stated above this request does not include any of the newly identified wood debris. If you have any questions, please do not hesitate to call me at (206) 775-4682.

Sincerely,
Pentec Environmental, Inc.

Clifford J. Whitmus
Senior Fisheries Biologist/Principal

CJW/ds
Enclosures
cc: Ms. Justine Barton, US Environmental Protection Agency
Mr. Ted Benson, Washington Department of Natural Resources
Ms. Vernice Santee, Washington Department of Ecology
Mr. Dennis Gregoire, Port of Everett
Mr. Ron Wills, Hartman Associates, Inc.

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Table 1 Volume of soil units to be dredged for the Port of Everett's Medium-Draft Facility development.

Location	Volume of soil unit to be dredged (cy)				Disposition			
							Volume of soil unit for open-water disposal (cy)	
	Wood/Silt	Wood Debris	Native	Total	Upland or Recycling [1]	Cap/Surcharge (Native)	Wood/Silt	Native
Dredge wood debris [1]		20,000		20,000	20,000			
Initial dredging for Pier 1 South Berth [2]	30,000		91,000	121,000			30,000	91,000
Dredge for dike foundation	11,000		0	11,000			11,000	0
Dredge behind dike for additional contaminated fill capacity	0		76,000	76,000			0	76,000
Dredge Pier 1 South Berth (-45 + 2 ft)	4,000		13,000	17,000			4,000	13,000
Dredge for NCD Berth (-35 + 2 ft)	41,000		136,000	177,000		87,000	41,000	49,000
Total for entire project	**86,000**	**20,000**	**316,000**	**422,000**	**20,000**	**87,000**	**86,000**	**229,000**

[1] Dredge for dike foundation and NCD Berth; to be disposed of in appropriate upland and/or recycling sites(s).
[2] Pier 1 South dredging conducted in 1995.

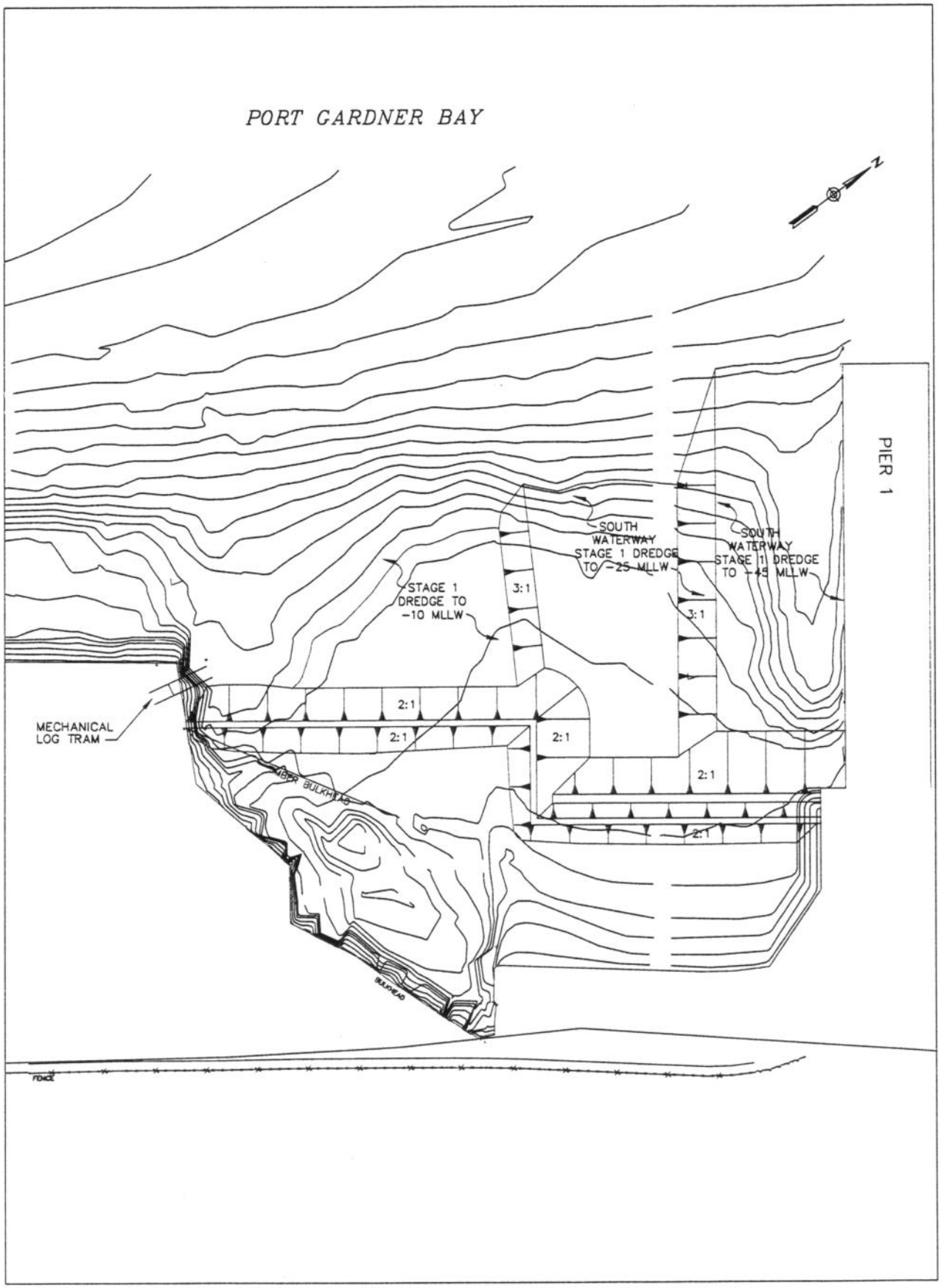
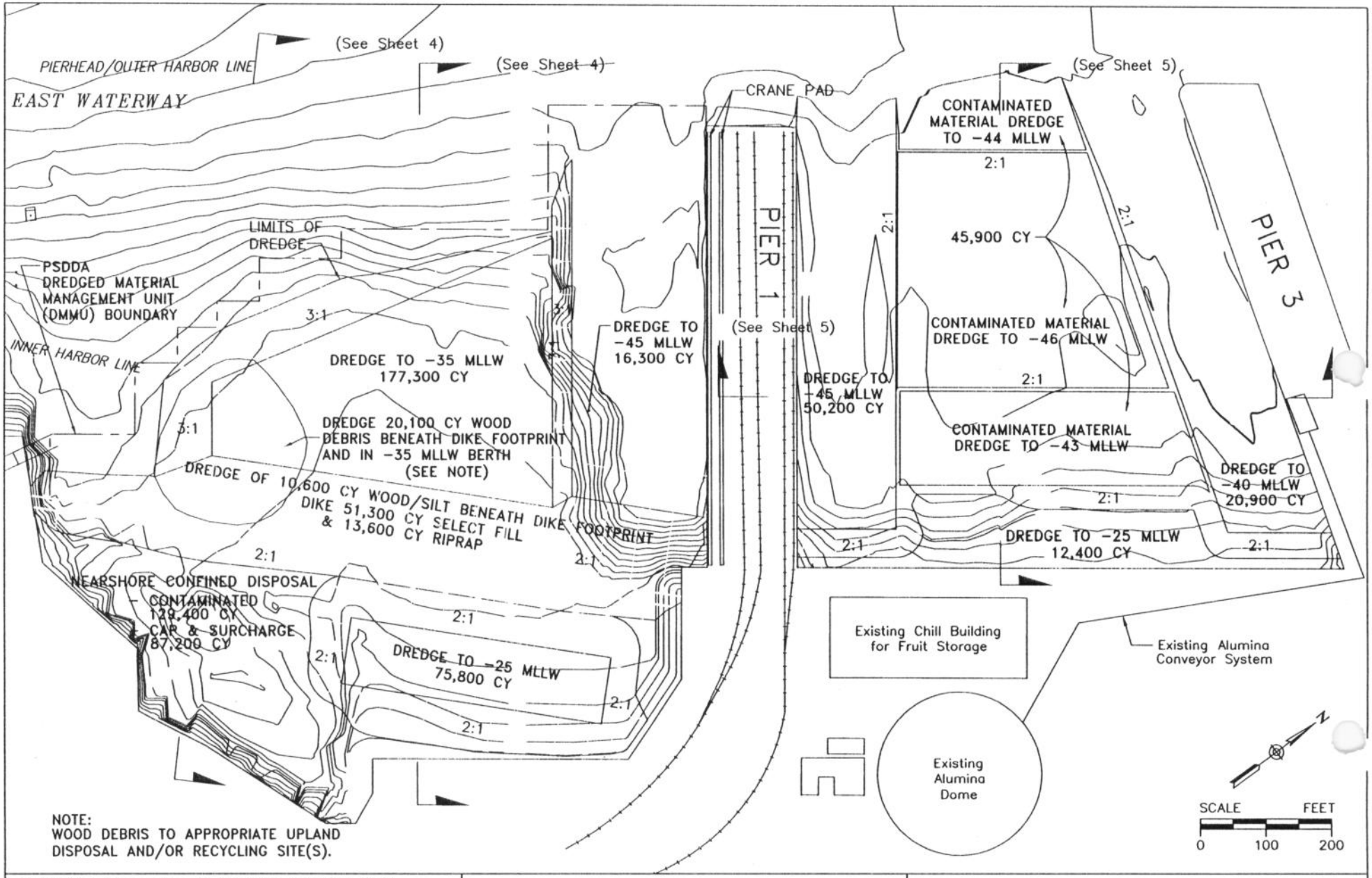


Figure 1 Dredging project characterized in 1993.



PURPOSE: Modernize & Upgrade Existing Port Facilities & Construct New Berth Facility

DATUM: MLLW = 0.0' N.O.S.

ADJACENT PROPERTY OWNERS:

1. City of Everett (South)
2. Scott Paper Co. (North)
3. Burlington Northern RR (East)
4. State DNR (West)

DREDGING PLAN

REF: 96-2-00815

STAGE 1 MARINE TERMINAL IMPROVEMENTS

IN: Port Gardner AT: Everett

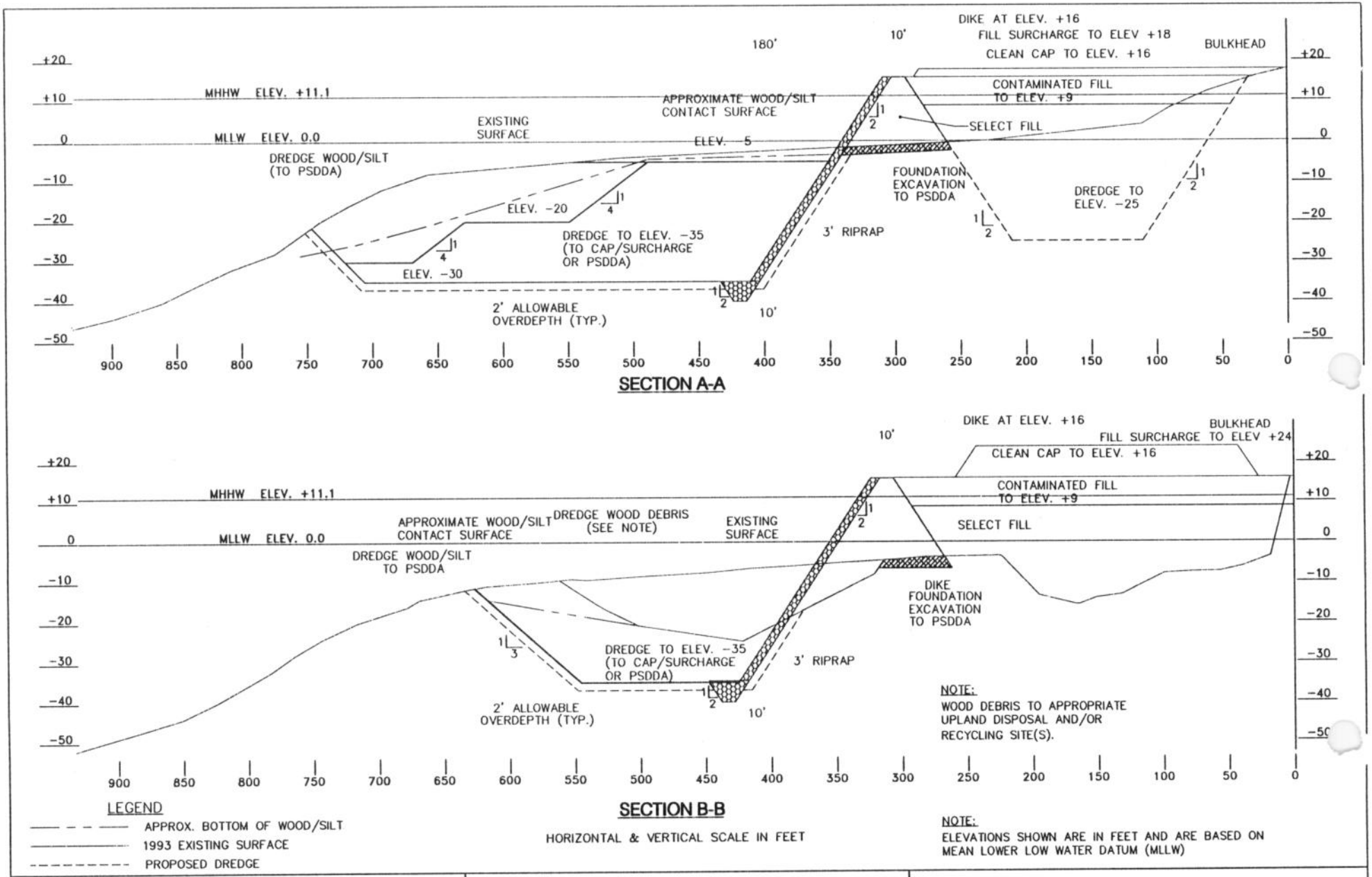
COUNTY OF: Snohomish STATE: WA

APPLICATION BY: Port of Everett

SHEET: 3 of 8 DATE: 7/1/96

CORP_3.DWG

Figure 2 Plan view of dredging areas.



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DREDGING SECTION VIEWS

REF: 96-2-00815

STAGE 1 MARINE TERMINAL IMPROVEMENTS

IN: Port Gardner AT: Everett

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APPLICATION BY: Port of Everett

SHEET: 4 of 8 DATE: 7/1/96

CORP_4.DWG

Figure 3 Typical sections through barge berth dike.

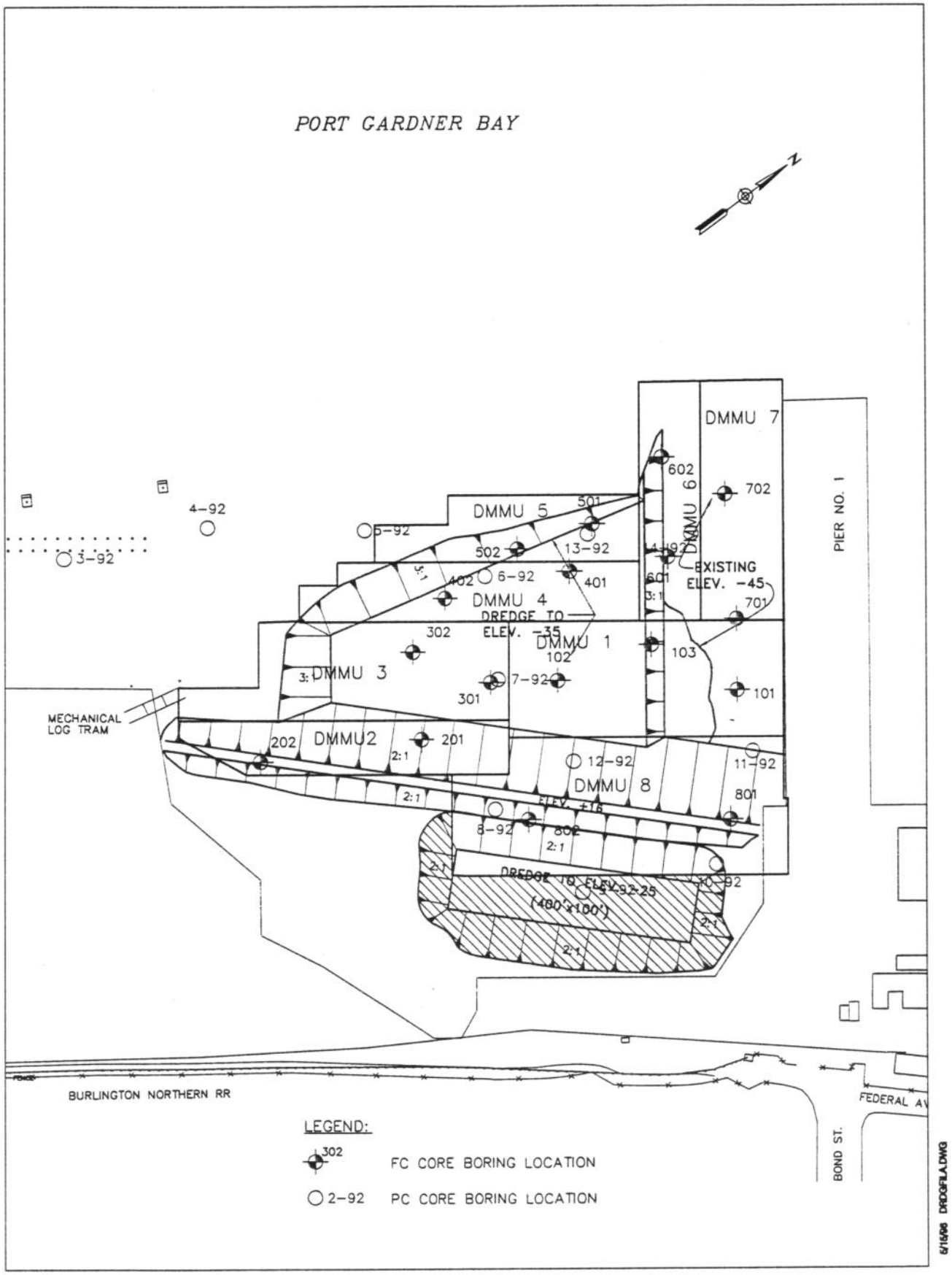

Figure 4 Stage 1 - Marine Terminal Improvements South Waterway Area Dredging Plan View.