

18 February 1997

SUBJECT: DETERMINATION ON THE SUITABILITY OF MAINTENANCE DREDGED MATERIAL FROM THE WILLAPA HARBOR, TEST CHANNEL DREDGING AT THE WILLAPA BAR (MIDDLE CHANNEL) (CENPS-OP-TS-NS-1), EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT (CWA) AND SECTION 103 OF THE MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT (MPRSA) FOR OPEN-WATER SIDE CAST DISPOSAL IMMEDIATELY NORTH OF AND ADJACENT TO THE PROPOSED CHANNEL

1. This memorandum reflects the consensus determination of the 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 an estimated 60,000 to 250,000 cubic yards of maintenance material from the bar near the middle channel to be side cast adjacent to the proposed test channel. The Corps proposes to dredge the test channel in part to evaluate the efficacy of hopper dredging with side cast disposal to construct a channel. The COLREGS demarcation line depicted on Figure 1 denotes the regulatory boundary separating Section 404 CWA jurisdiction from Section 103 MPRSA jurisdiction for the purposes of this project. All material to be disposed of west of the line is evaluated under MPRSA, whereas all material to be disposed east of the line is evaluated under CWA.
2. The composition of the proposed maintenance material is as follows. A single sample was collected from within the MPRSA jurisdictional area ( sample 001) and is considered representative of the material to be dredged. The material is composed predominately of sand (99.1%), with relatively little fine grained material (0.9%) (enclosure 1a). Additional samples collected in 1993 north of the proposed channel and west of the COLREGS demarcation line (figure 1) were almost exclusively sand (e.g., 97.4, 99.4, 97.0, and 88.8% respectively)(enclosure 1b). Therefore, the qualitative and quantitative description of the proposed maintenance material indicates that it is predominately sand with very little fines. This is due to the hydrodynamics and high tidal current energy at the entrance bar.
3. The material meets exclusionary criteria under both MPRSA: 40 CFR 227.13 (subparagraphs (b)(1), (b)(3i), and (b)(3ii))(enclosure 2a) and CWA: 40 CFR 230.60 (subparagraphs a, b, and c) (enclosure 2b). The exclusionary criteria state that material meets the criteria and can be excluded from further testing if it is: (1) predominantly sand from a high current/wave energy area; and (2) dredging area is sufficiently removed from contaminant sources; and (3) where the disposal site is adjacent to the dredging site. The dredging/disposal area is in a highly dynamic current/tidal area, and is free from any known sources of contamination. Based on the above information, the agencies with regulatory jurisdiction agree that the material does not require further testing under Section 103 of the MPRSA and Section 404 of the CWA.

4. This memorandum documents the suitability of proposed dredged sediments under both CWA and MPRSA for unconfined open-water disposal adjacent to the test channel. It does not constitute final agency approval of the project. A public notice will be issued for this 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 both Section 103 of the Marine Protection, Research and Sanctuaries Act and Section 404 (b)(1) of the Clean Water Act.

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Concur:

Feb 26, 1997 \_\_\_\_\_  
Date David R. Kendall, Ph.D  
Seattle District Corps of Engineers

Feb 28, 1997 \_\_\_\_\_  
Date Pat Cagney  
Seattle District Corps of Engineers

February 26, 1997 \_\_\_\_\_  
Date Justine Barton  
Environmental Protection Agency  
Region 10

FEB. 26, 1997 \_\_\_\_\_  
Date for Rick Vining  
Washington Department of Ecology

26 FEB 97 \_\_\_\_\_  
Date Ted Benson  
Washington Department of Natural Resources

Enclosures

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Ted Benson, DNR

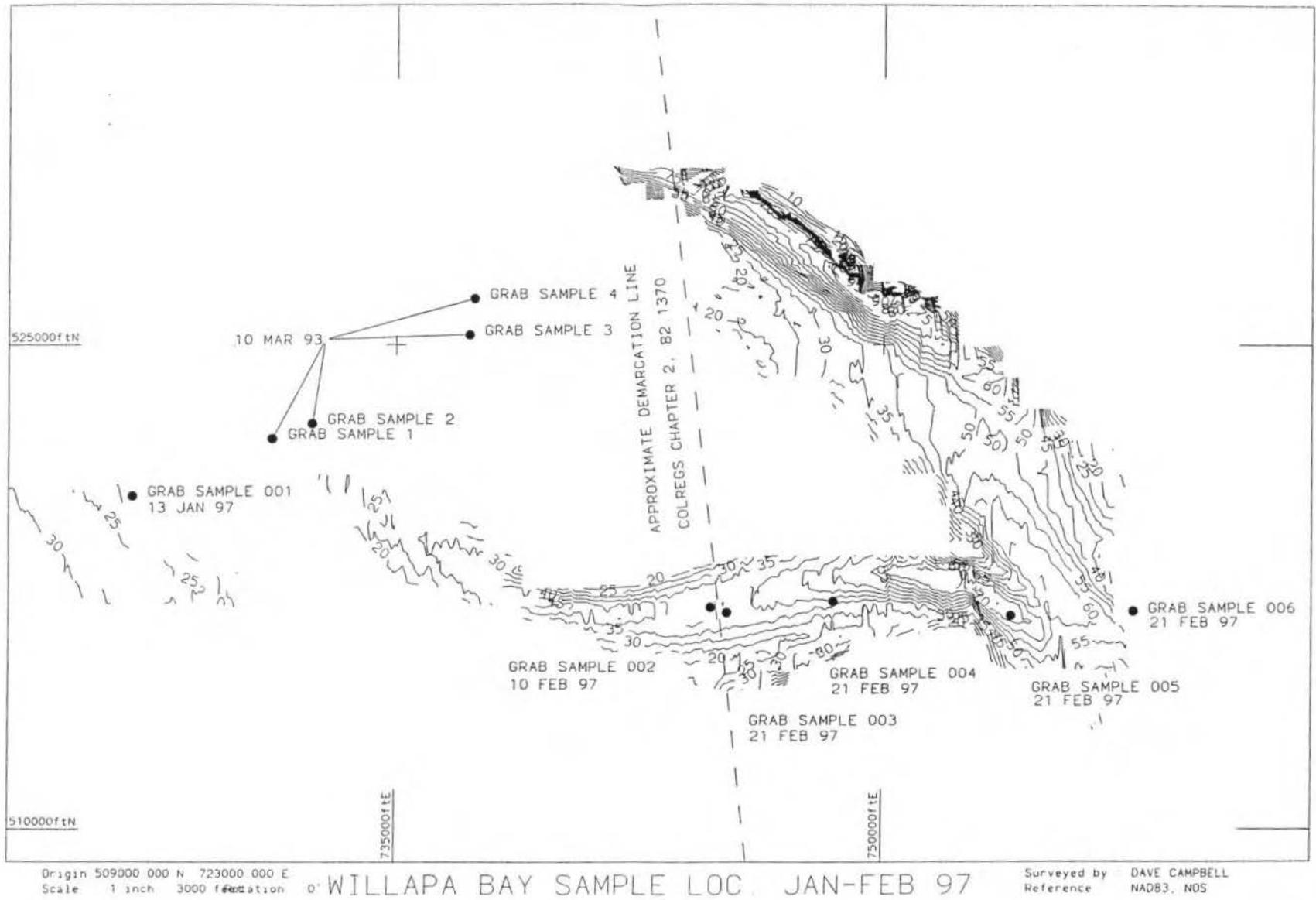


Figure 1

WILLAPA BAR CHANNEL 97-0130

Boring: Sample: 001 Depth: --- Lab No.: 13001

----- Sieve Analysis -----

Sieve	Cumulative Grams Retained	Percent Passing
5 In.	0.00	100.0
2.5 In.	0.00	100.0
1.25 In.	0.00	100.0
5/8 In.	0.00	100.0
5/16 In.	0.00	100.0
No. 5	0.00	100.0
No. 10	0.32	100.0
Pan	992.39	0.0
No. 18	0.12	99.9
No. 35	0.47	99.6
No. 60	6.23	95.0
No. 120	121.72	3.1
No. 230	125.49	0.1
Pan	125.63	0.0

No hydrometer analysis.

-----  
 D85: 0.23    D60: 0.19    D50: 0.18    D30: 0.15    D15: 0.14    D10: 0.13 mm  
 Cu: 1.46                      Cc: 0.93

Liquid Limit: NP    Plasticity Index: NP  
 Fines Type Used for Classification: ML, SILT

Gravel: 0.0%                      Sand: 99.1%                      Fines: 0.9%

----- ASTM D 2487 Classification -----

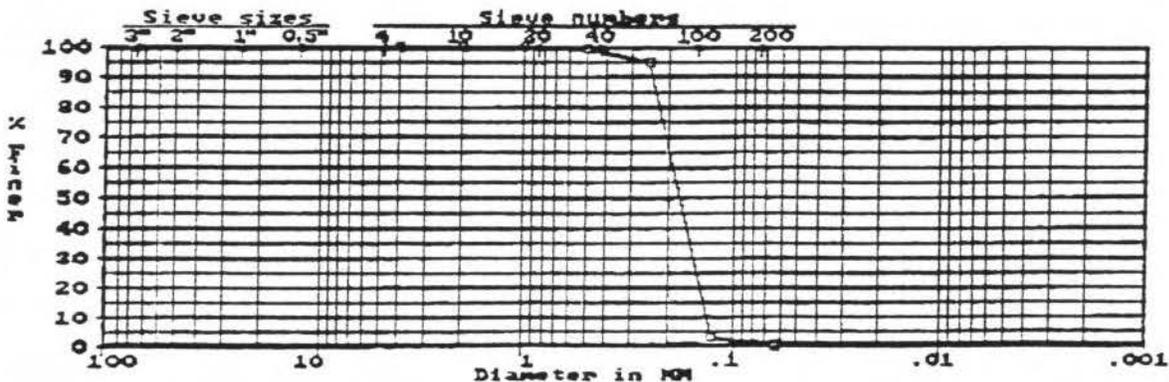
SP Poorly graded SAND

----- TM 5-813-2 Frost Classification -----

Frost Classification: NFS

----- Comments -----

- Outside sample, Willapa Bay.
- Date: 13 December 1997



enclosure 1a

CENPP-PE-L (97-0130)

Willapa Bar Channel  
Willapa Harbor, WA

Results of Dredge Test Analysis

<u>CENPD Sample No.</u>	<u>Resuspended Density, gm/L</u>	<u>Void Ratio</u>	<u>Volatile Solids, %</u>	<u>Specific Gravity</u>	<u>Soil Classification ASTM D2487</u>	<u>Particle Roundness Grading</u>
001	1977	0.765	0.6	2.724	SP	Subangular-subrounded

CENPD Laboratory number 5671. Samples received 22 Jan 97.

CENPD-PE-GT-L (93-C-548)

WILLAPA HARBOR, WASHINGTON

RESULTS OF DREDGE TEST ANALYSIS

TABLE I

<u>CENPD Sample No.</u>	<u>Resuspended Density Gm/L</u>	<u>Void Ratio</u>	<u>Volatile Solids %</u>	<u>Specific Gravity</u>	<u>Particle Roundness Grading</u>
1	2015	0.733	0.5	2.759	subangular-subrounded
2	1936	0.792	0.6	2.678	subangular-subrounded
3	2166	0.765	0.3	3.058	subangular-subrounded
4	2115	0.549	0.7	2.728	subangular-subrounded
<del>5</del>	<del>1991</del>	<del>0.989</del>	<del>0.3</del>	<del>2.692</del>	<del>subangular-subrounded</del>
<del>6</del>	<del>1745</del>	<del>1.489</del>	<del>0.3</del>	<del>2.681</del>	<del>subangular-subrounded</del>

~~Received 26 Mar 93~~  
Received 26 Mar 93  
CENPD No. 4629

Enclosure 1b

enclosure 1b

\* \* \* Corps of Engineers - North Pacific Division Materials Laboratory \* \* \*  
 WILLAPA HARBOR (93-C-548)

Boring: -- Sample: 1 Depth: -14 FEET Lab No.: 54802

----- Sieve Analysis -----  
 Cumulative

No hydrometer analysis.

Sieve	Grams Retained	Percent Passing
5 In.	0.00	100.0
2.5 In.	0.00	100.0
1.25 In.	0.00	100.0
5/8 In.	0.00	100.0
5/16 In.	0.00	100.0
No. 5	0.00	100.0
No. 10	0.20	100.0
Pan	955.50	0.0
No. 18	0.05	99.9
No. 35	0.60	99.5
No. 60	27.01	79.6
No. 120	102.53	22.6
No. 230	132.37	0.1
Pan	132.56	0.0

-----  
 D85: 0.28    D60: 0.20    D50: 0.17    D30: 0.14    D15: 0.11    D10: .096 mm  
 Cu: 2.05                      Cc: 0.99

Liquid Limit: NP    Plasticity Index: NP  
 Fines Type Used for Classification: ML, SILT

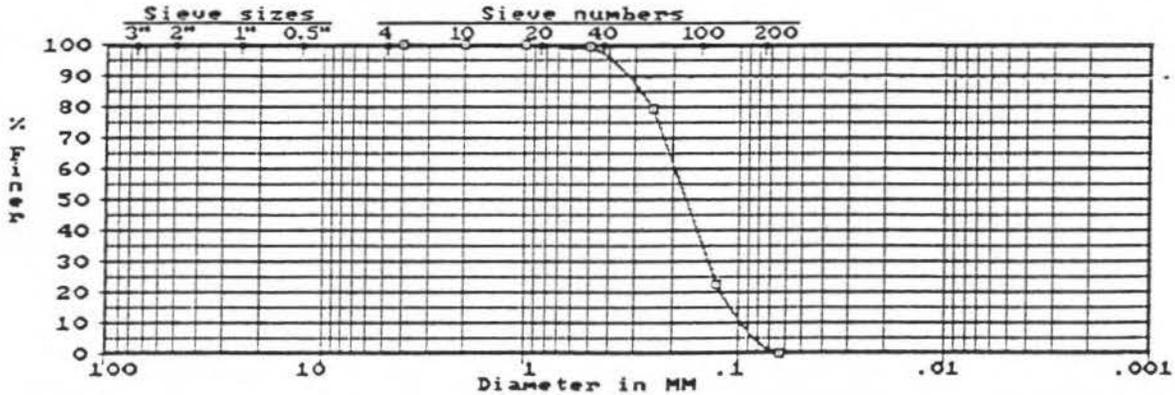
Gravel: 0.0%                      Sand: 97.4%                      Fines: 2.6%

----- ASTM D 2487 Classification -----

SP Poorly graded SAND

----- Comments -----

- VOLATILE SOLIDS = 0.5%



Boring: -- Sample: 2 Depth: -17 FEET Lab No.: 54803

----- Sieve Analysis -----  
 Cumulative

Sieve	Grams Retained	Percent Passing
5 In.	0.00	100.0
2.5 In.	0.00	100.0
1.25 In.	0.00	100.0
5/8 In.	0.00	100.0
5/16 In.	0.00	100.0
No. 5	0.00	100.0
No. 10	0.00	100.0
Pan	1145.30	0.0
No. 18	0.00	100.0
No. 35	0.66	99.5
No. 60	26.21	79.6
No. 120	127.01	1.0
No. 230	127.80	0.4
Pan	128.26	0.0

No hydrometer analysis.

-----  
 D85: 0.28 D60: 0.21 D50: 0.19 D30: 0.16 D15: 0.14 D10: 0.14 mm  
 Cu: 1.56 Cc: 0.92

Liquid Limit: NP Plasticity Index: NP  
 Fines Type Used for Classification: ML, SILT

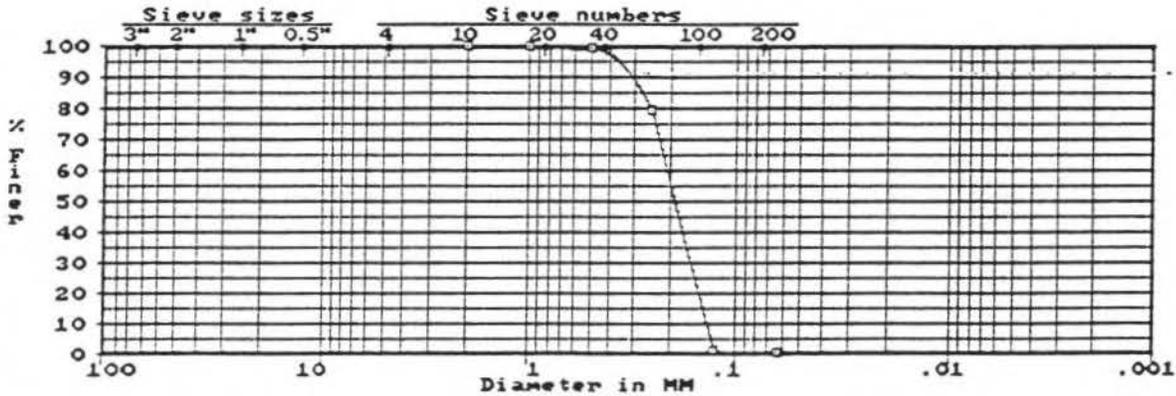
Gravel: 0.0% Sand: 99.4% Fines: 0.6%

----- ASTM D 2487 Classification -----

SP Poorly graded SAND

----- Comments -----

- VOLATILE SOLIDS = 0.6%



Boring: -- Sample: 3 Depth: -16 FEET Lab No.: 54804

----- Sieve Analysis -----

Sieve	Cumulative Grams Retained	Percent Passing
5 In.	0.00	100.0
2.5 In.	0.00	100.0
1.25 In.	0.00	100.0
5/8 In.	0.00	100.0
5/16 In.	0.00	100.0
No. 5	0.00	100.0
No. 10	0.00	100.0
Pan	491.00	0.0
No. 18	0.00	100.0
No. 35	0.05	100.0
No. 60	3.81	96.6
No. 120	100.62	11.1
No. 230	112.97	0.2
Pan	113.20	0.0

No hydrometer analysis.

-----  
 D85: 0.23 D60: 0.19 D50: 0.17 D30: 0.15 D15: 0.13 D10: 0.12 mm  
 Cu: 1.59 Cc: 0.98

Liquid Limit: NP Plasticity Index: NP  
 Fines Type Used for Classification: ML, SILT

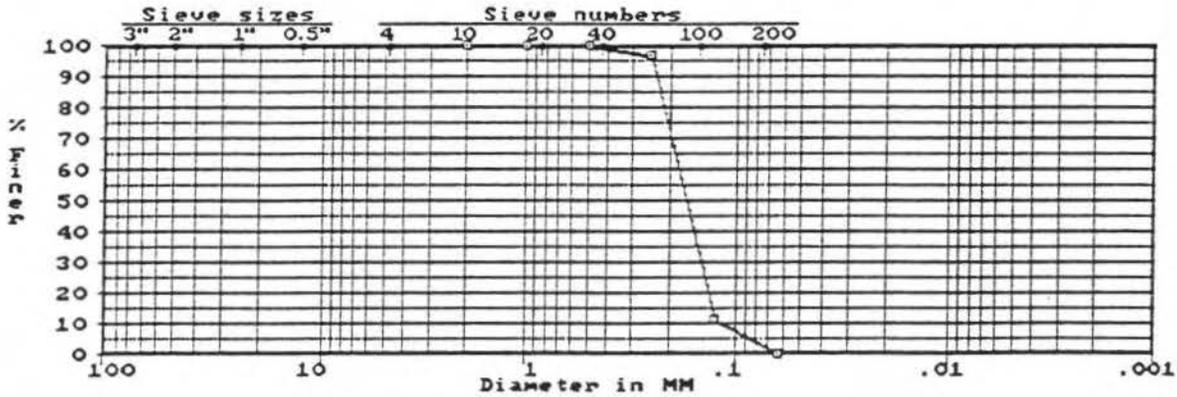
Gravel: 0.0% Sand: 97.0% Fines: 3.0%

----- ASTM D 2487 Classification -----

SP Poorly graded SAND

----- Comments -----

- VOLATILE SOLIDS = 0.3%



WILLAPA HARBOR (93-C-548)

Boring: -- Sample: 4 Depth: -12 FEET Lab No.: 54805

----- Sieve Analysis -----

Sieve	Cumulative Grams Retained	Percent Passing
5 In.	0.00	100.0
2.5 In.	0.00	100.0
1.25 In.	0.00	100.0
5/8 In.	0.00	100.0
5/16 In.	0.00	100.0
No. 5	0.00	100.0
No. 10	0.00	100.0
Pan	1226.20	0.0
No. 18	0.00	100.0
No. 35	0.19	99.9
No. 60	7.21	94.7
No. 120	74.98	44.7
No. 230	135.16	0.4
Pan	135.65	0.0

No hydrometer analysis.

-----  
 D85: 0.21 D60: 0.15 D50: 0.13 D30: 0.10 D15: .080 D10: .074 mm  
 Cu: 2.04 Cc: 0.91

Liquid Limit: NP Plasticity Index: NP  
 Fines Type Used for Classification: ML, SILT

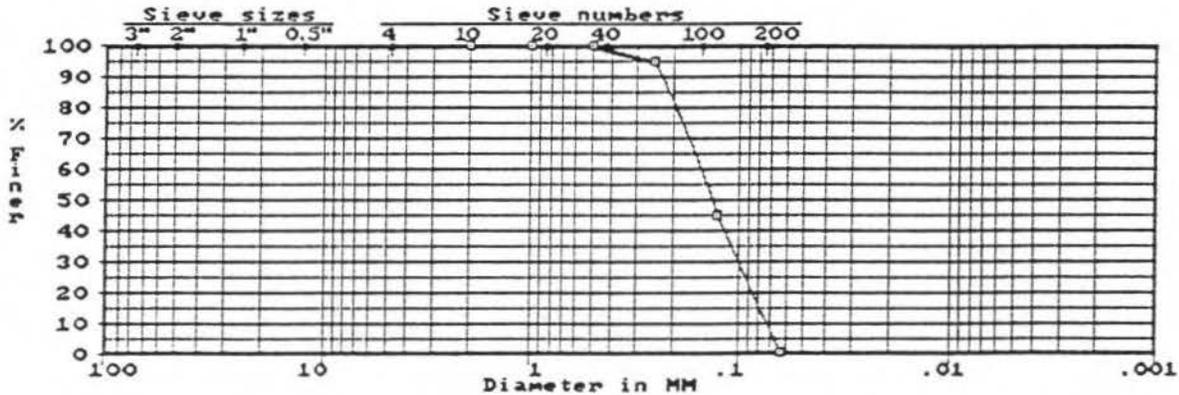
Gravel: 0.0% Sand: 88.8% Fines: 11.2%

----- ASTM D 2487 Classification -----

SP-SM Poorly graded SAND with silt

----- Comments -----

- VOLATILE SOLIDS = 0.7%



*u) Ocean Dumping (Section 404)*

# MPRSA EXCLUSIONS (40 CFR 227.13)

- (b)(1) - PREDOMINANTLY SAND, GRAVEL, OR ROCK
  - PARTICLE SIZE LARGER THAN SILT
  - HIGH ENERGY ENVIRONMENT
- (b)(2) - BEACH NOURISHMENT OR RESTORATION
  - SAND, GRAVEL, OR SHELL
  - PARTICLE SIZE COMPATIBLE WITH RECEIVING BEACHES
- (b)(3)(i) - DREDGED MATERIAL SAME AS DISPOSAL SITE
- (b)(3)(ii) - DREDGING SITE FAR REMOVED FROM POLLUTION SOURCES

Enclosure 2

WRI-002

b) Inland Testing (Section 404)

*B) Inland Testing (Section 404)*

## **CWA Exclusions** **40 CFR 230.60(a), (c), and (d)**

- (a) - Sand, gravel, other inert material
  - High current and/or wave energy
- (b) - Sufficiently removed from contaminant sources
- (c) - Dredging and discharge adjacent to navigable waters
  - Subject to same contaminant management plan
  - Dissolved/suspended materials
- (d) - Contaminant management plan
  - No transport beyond site

WRI-002

*enclosure 2*