CENWS-OD-TS-DMMO

MEMORANDUM FOR: RECORD **October 18, 2005**

SUBJECT: DETERMINATION ON THE SUITABILITY OF PROPOSED DREDGED MATERIAL FROM THE DRIFTWOOD KEY COMMUNITY NAVIGATION CHANNEL, COON BAY, KITSAP COUNTY (PN #200500828) FOR OPEN-WATER DISPOSAL.

1. **Introduction**. The following summary reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington Departments of Ecology and Natural Resources, and the Environmental Protection Agency) on the suitability of up to 29,000 cubic yards (cy) of dredged material from the Driftwood Key Community Club navigation channel for disposal at a DMMP approved open water disposal site. Material will most likely be disposed either at the Port Townsend dispersive open water site, or at the Port Gardner non-dispersive open water site.

2. **Background**. This project was characterized with two sampling and testing events. Initially, the project proponent had proposed disposal at an entirely upland location. The scope of characterization at that point was done for dredging water quality purposes, and not for in water disposal concerns. Subsequently, the proponent proposed open water disposal, and additional sampling and testing was required to fully characterize the material for open water disposal.

Table 1. Regulatory Tracking Dates

	1st characterization	2nd characterization
SAP received	July 2, 2004	August 3, 2005
SAP approved	Sept. 13, 2004	August 10, 2005
Sampling dates	Oct. 25, 2004	August 18, 2005
Data report submitted	January 14, 2005	September 19, 2005
DAIS Tracking numbers	DKC05-1-A-P-219	DKC06-1-A-P-220
Recency Determination (low-moderate rank)	April 2009-2011	

Table 2. Project Synopsis

Time of proposed dredging	December 2005 – January 2006
Proposed disposal sites	Pt. Townsend dispersive open water disposal site, or Port Gardner non-dispersive open water disposal site
Sediment ranking	low-moderate
Project last dredged	1993

3. **Project Summary.** This project is ranked "low-moderate" by the DMMP program based on the distance from known sources of contamination, but without enough data to verify a "low" rank. As upland disposal was initially proposed, sampling was for water quality concerns only, and a reduced list of analytes was approved by the Department of Ecology. After the project scope was

changed to include open water disposal, testing for all DMMP analytes not included in the initial characterization was requested for one reach (East Bay channel) of the project area. The outer portion of the dredging area (Entrance Channel) was found during the first sampling to consist primarily of coarse sands (Table 3). Section 404 of the Clean Water Act (CWA) includes provisions for exclusion from testing if the dredged material is "composed primarily of sand, gravel and/or inert materials." With 97% sand and gravel, the DMMP concluded that the Entrance Reach had very low potential for contamination and no further testing was required for the 13,500 cy in this reach.

4. **Sampling.** Initial sampling for this project took place on October 25, 2004. Two cores were taken (denoted as DK-01 and DK-02) with a hand-held core sampler that took samples according to the approved SAP.

   The second sampling event took place on August 18, 2005. Three cores were taken in the East Bay Channel area and composited for one analysis (denoted as DKC). Samples were obtained with a hand-held van Veen sampler according to the approved SAP addendum.

5. **Chemical Analysis**. The Agencies' approved sampling and analysis plan was followed and quality assurance/quality control guidelines specified by the PSEP and DMMP programs were generally complied with. These data were considered sufficient and acceptable for regulatory decision-making under the DMMP program.

   Conventional results (Table 3) and chemical results (Table 4) show that there were no detected exceedances of DMMP screening levels. One metal, selenium, was undetected but at a level higher than the DMMP BT. The laboratory reporting limit for selenium (8 mg/kg) in sample DKC/East Channel exceeded the DMMP bioaccumulation trigger of 3 mg/kg.

   The lab's (ARI) standard operating practice is to not report detections between the laboratory reporting limit and the MDL. The laboratory reporting limit is defined as the lowest concentration at which the laboratory has 100% confidence that a detected analyte can be distinguished from noise and is delineated by the lowest standard concentration in the instrument calibration. The MDL is a statistically-derived value that defines the lowest concentration at which the laboratory has 99% confidence that a detected analyte can be distinguished from noise. Selenium was not detected in sample DKC/East Channel above the MDL (2 mg/kg), which does not exceed the DMMP bioaccumulation trigger (3 mg/kg). The DMMP concurs with ARI that selenium was not detected in sample DKC/East Channel above the laboratory method detection limit (MDL) of 2 mg/kg, and thus does not exceed the Bioaccumulation Trigger for this metal.

Table 3. Conventional results for Driftwood Key Maintenance Dredge Project.

		DK-01 (DY 2005)	DK-02 (DY 2005)	DKC (DY 2006)
	Location	**Entrance Channel**	**East Bay Channel**	**East Bay Channel**
	Volume (cubic yards)	18,400	7,200	7,200
GRAIN SIZE	% Gravel	0.1	0.0	0.0
	% Sand	97.0	5.0	27.6
	% Silt	1.6	79.3	63.0
	% Clay	1.4	15.7	9.4
	(clay+silt) % Fines	**3.0**	**95.0**	**72.4**
	Total Solids, %	76.9	57.7	63.70
	Volatile Solids, %	1.10	3.95	
	Total Organic Carbon, %	0.23	1.28	0.717
	Total Sulfides, mg/kg	120.0	25.0	
	Total Ammonia, mg N/kg	3.48	14.3	

6. **Suitability.** This memo documents the suitability of proposed sediments from maintenance dredging of the Driftwood Key Club for open water disposal. The data gathered were deemed sufficient and acceptable for regulatory decision-making under the DMMP program. Based on the results of the previously described testing, the DMMP agencies concluded that **all 29,000 cubic yards are suitable** for open water disposal at any DMMP dispersive or non-dispersive site.

   This suitability determination does not constitute final agency approval of the project. A final decision on project approval 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.

7. **References.**

Shapiro and Associates, Inc. 2005. Driftwood Key Community Club Maintenance Dredge Project – Sediment Assessment Report. Data report to Seattle District Corps of Engineers, January 10, 2005

URS Corporation 2005. Sampling and Analysis Plan Addendum – Sampling results for the Driftwood Key Club maintenance dredging project. Prepared for Driftwood Key Club, September 2005.

Table 4. Chemical results compared to DMMP regulatory levels. Shaded chemicals were analyzed for in the second round of testing.

CHEMICAL	SL	BT	ML	DK-01 (DY 2005)		DK-02 (DY 2005)		DKC (DY 2006)	
METALS (mg/kg)									
Antimony	150	---	200	0.2	U	0.3	U		
Arsenic	57	507.1	700	6	U	8	U		
Cadmium	5.1	11.3	14	0.2	U	1.0			
Chromium	---	267	---	20.7		42.4			
Copper	390	1027	1,300	8.1		26.2			
Lead	450	975	1,200	2	U	3			
Mercury	0.41	1.5	2.3	0.05	U	0.08	U		
Nickel	140	370	370	25		37			
Selenium	---	3	---	---		---		**8**	**U**
Silver	6.1	6.1	8.4	0.4	U	0.5	U		
Zinc	410	2783	3,800	25.7		54			
ORGANOMETALLIC COMPOUNDS (ug/L)									
Tributyltin (interstitial water)	0.15	0.15	---	---		---		0.008	U
ORGANICS (ug/kg)									
Total LPAH	**5,200**	**---**	**29,000**	**19**	**U**	**20**	**U**		
Naphthalene	2,100	---	2,400	19	U	20	U		
Acenaphthylene	560	---	1,300	19	U	20	U		
Acenaphthene	500	---	2,000	19	U	20	U		
Fluorene	540	---	3,600	19	U	20	U		
Phenanthrene	1,500	---	21,000	19	U	20	U		
Anthracene	960	---	13,000	19	U	20	U		
2-Methylnaphthalene	670	---	1,900	19	U	20	U		
Total HPAH	**12,000**	**---**	**69,000**	**52**		**201**			
Fluoranthene	1,700	4,600	30,000	27		44			
Pyrene	2,600	11,980	16,000	25		81			
Benz(a)anthracene	1,300	---	5,100	19	U	20	U		
Chrysene	1,400	---	21,000	19	U	36			
Benzofluoranthenes (b+k)	3,200	---	9,900	19	U	40			
Benzo(a)pyrene	1,600	---	3,600	19	U	20	U		
Indeno(1,2,3-c,d)pyrene	600	---	4,400	19	U	20	U		
Dibenz(a,h)anthracene	230	---	1,900	19	U	20	U		
Benzo(g,h,i)perylene	670	---	3,200	---		---		19	U
CHLORINATED HYDROCARBONS (ug/kg)									
1,3-Dichlorobenzene	170	---	---	19	U	20	U		
1,4-Dichlorobenzene	110	---	120	19	U	20	U		

CHEMICAL	SL	BT	ML	DK-01 (DY 2005)		DK-02 (DY 2005)		DKC (DY 2006)	
1,2-Dichlorobenzene	35	---	110	19	U	20	U		
1,2,4-Trichlorobenzene	31	---	64	19	U	20	U		
Hexachlorobenzene (HCB)	22	168	230	19	U	20	U		
PHTHALATES (ug/kg)									
Dimethyl phthalate	1,400	---	---	19	U	20	U		
Diethyl phthalate	1,200	---	---	33		31			
Di-n-butyl phthalate	5,100	---	---	19	U	20	U		
Butyl benzyl phthalate	970	---	---	19	U	20	U		
Bis(2-ethylhexyl) phthalate	8,300	---	---	19	U	20	U		
Di-n-octyl phthalate	6,200	---	---	19	U	20	U		
PHENOLS (ug/kg)									
Phenol	420	---	1,200	19	U	20	U		
2-Methylphenol	63	---	77	19	U	20	U		
4-Methylphenol	670	---	3,600	19	U	20	U		
2,4-Dimethylphenol	29	---	210	19	U	20	U		
Pentachlorophenol	400	504	690	95	U	98	U		
MISC. EXTRACTABLES (ug/kg)									
Benzyl alcohol	57	---	870	19	U	20	U		
Benzoic acid	650	---	760	190	U	200	U		
Dibenzofuran	540	---	1,700	19	U	20	U		
Hexachloroethane	1,400	---	14,000	19	U	20	U		
Hexachlorobutadiene	29	---	270	19	U	20	U		
N-Nitrosodiphenylamine	28	---	130	19	U	20	U		
VOLATILE ORGANICS (ug/kg)									
Trichloroethene	160	---	1,600	---		---		1.5	U
Tetrachloroethene	57	---	210	---		---		1.5	U
Ethylbenzene	10	---	50	---		---		1.5	U
Total Xylene (sum of o-, m-, p-)	40	---	160	---		---		1.5	U
PESTICIDES and PCBs (ug/kg)									
Total DDT	6.9	50	69	---		---		2.0	U
Aldrin	10	---	---	---		---		0.99	U
Chlordane	10	37	---	---		---		0.99	U
Dieldrin	10	---	---	---		---		2.0	U
Heptachlor	10	---	---	---		---		0.99	U
Alpha-BHC	---	10 (1)	---	---		---		0.99	U
Gamma-BHC (Lindane)	10	---	---	---		---		0.99	U
Total PCBs	130	38 (1)	3,100	---		---		20	U

(1) These values are expressed in mg/kg TOC.

Concur:

11/3/05
Date

Lauran Cole Warner, Seattle District Corps of Engineers

11/3/05
Date

Erika Hoffman, Environmental Protection Agency

11/3/05
Date

Cinde Donoghue, Washington Department of Ecology

11/3/2005
Date

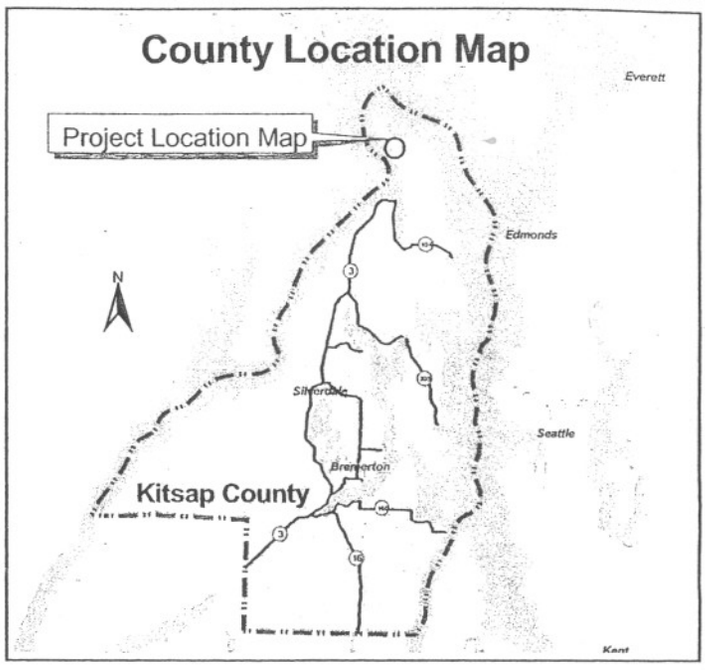
Peter Leon, Washington Department of Natural Resources

Copies furnished:

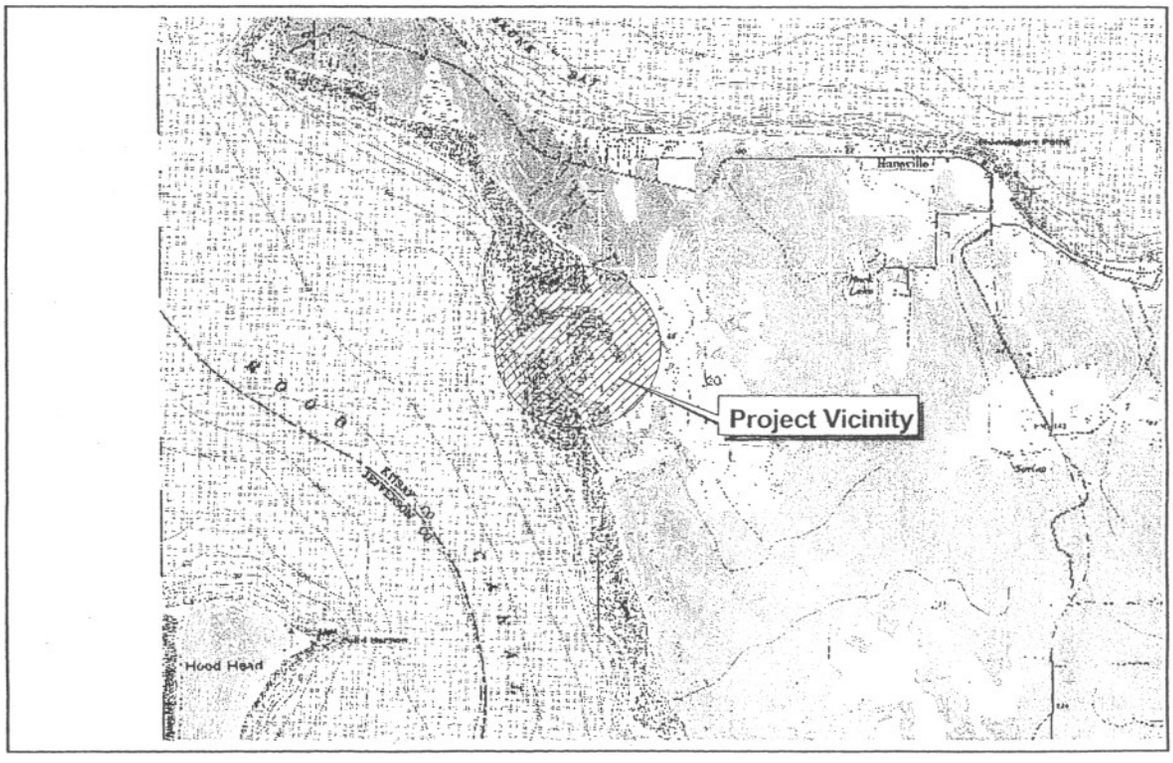
DMMP signatories
Jim Green, Regulatory
Don Benson, URS
DMMO file

State of Washington Key

County Location Map



Project Location Map



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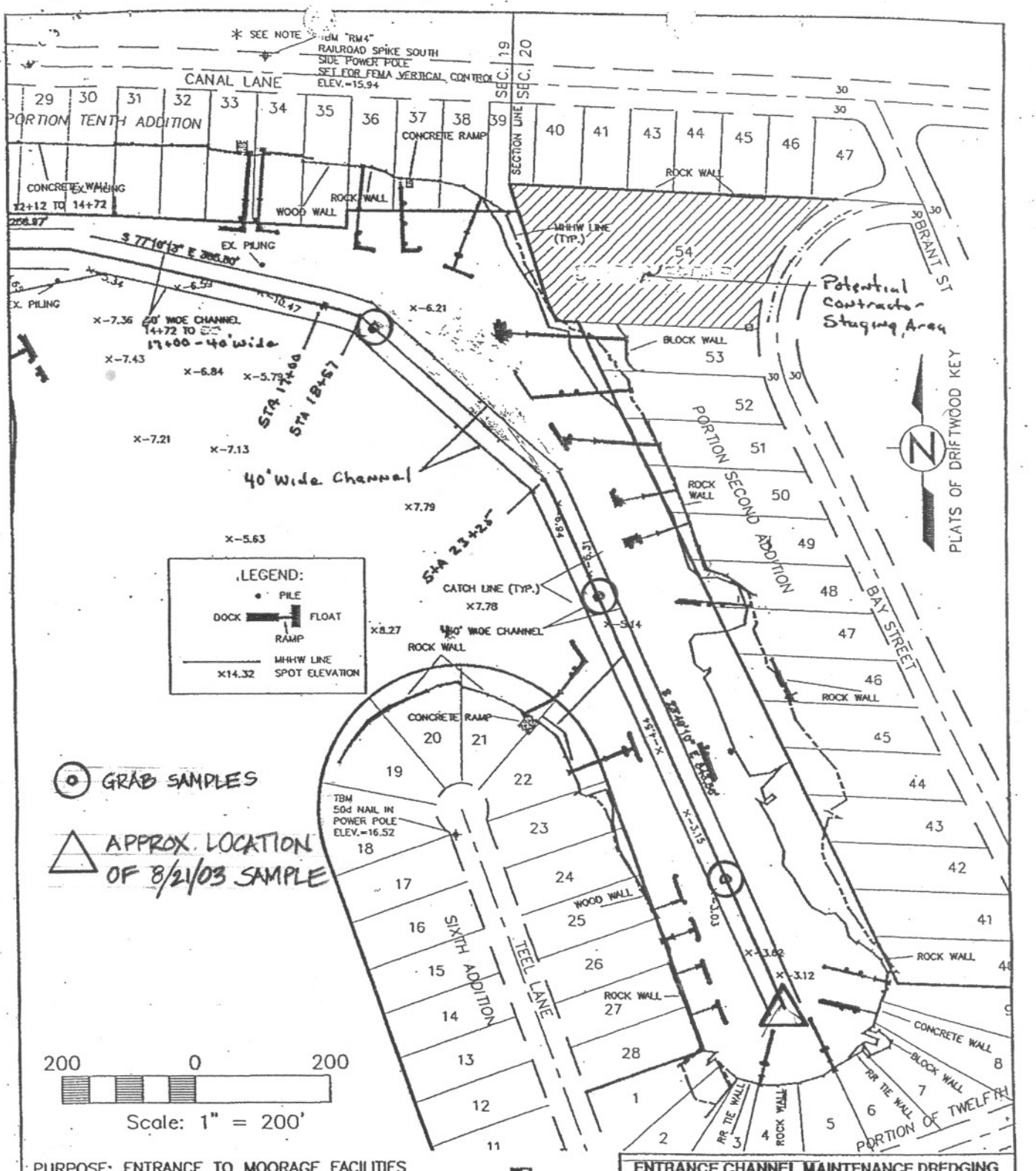
Source: USGS; ESRI, Inc. Edits: 21146\vicinity.apr kh

FIGURE 1
VICINITY MAP
DRIFTWOOD KEY PROJECT
KITSAP COUNTY, WA



PURPOSE: ENTRANCE TO MOORAGE FACILITIES

EAST CHANNEL GRAB SAMPLE LOCATIONS

ENTRANCE CHANNEL MAINTENANCE DREDGING

IN: SHELTERED BAY (COON BAY)
AT: DRIFTWOOD KEY, NEAR HANSVILLE
COUNTY OF KITSAP, STATE OF WASHINGTON
APPLICATION BY DRIFTWOOD KEY COMMUNITY CLUB, 4984 NE CEDAR LANE, HANSVILLE, WA 98340
LAT.: 47° 54' 31"
LONG.: 122° 35' 06"

JULY 2005 | SHEET 2 OF 3 | 02-E4108