



PUBLIC NOTICE

US Army Corps
of Engineers
New York District
Jacob K. Javits Federal Building
New York, N.Y. 10278-0090
ATTN: Regulatory Branch

In replying refer to:
Public Notice Number: NAN-2006-3045-WSC
Issue Date: August 23, 2007
Expiration Date: September 24, 2007

To Whom It May Concern:

The New York District, of the U.S. Army Corps of Engineers has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), Section 404 of the Clean Water Act (33 USC 1344), and Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (33 USC 1413).

APPLICANT: Hess Corporation
One Hess Plaza
Woodbridge, New Jersey 07095

ACTIVITY: Dredge to deepen an existing ship berth, with subsequent placement of the dredged material at the Historic Area Remediation Site (HARS), for the purpose of remediation, and placement at a State approved upland placement site. Barge overflow at the dredging site is proposed for HARS-suitable dredged material.

WATERWAY: Kill Van Kull

LOCATION: City of Bayonne, Hudson County, New Jersey

A detailed description and plans of the applicant's activity are enclosed to assist in your review.

The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general the needs and welfare of the people. The decision of whether to issue a Department of the Army Permit for placement of the dredged material at the Historic Area Remediation Site (HARS) will also be based on whether the material meets the requirements of applicable implementing regulations. This activity is also being evaluated to determine that the proposed placement of dredged material will not unreasonably degrade or endanger human health, welfare or amenities, the marine environment, ecological systems or economic potentialities.

On September 26, 2000, the U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE) signed a joint Memorandum of Agreement (MOA) outlining the steps to be taken to ensure that remediation of the HARS continues in a manner appropriately protective of human health and the aquatic environment. In making the determination evaluating placement of dredged material, the criteria established by the USEPA will be applied, including the interim change to one matrix value for polychlorinated biphenyls (PCB's) as described in the joint MOA. In addition, based upon an evaluation of the potential effect which the failure to utilize this ocean site will have on navigation, economic, and industrial development, and foreign and domestic commerce of the United States, an independent

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determination will be made of the need to place the dredged material in ocean waters, other possible methods of disposal, and other appropriate locations.

The U.S. Army Corps of Engineers neither favors nor opposes permit issuance for the applicant's proposed activity. The purpose of this public notice is to solicit comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

ALL COMMENTS REGARDING THE PERMIT APPLICATION MUST BE PREPARED IN WRITING AND MAILED TO REACH THIS OFFICE BEFORE THE EXPIRATION DATE OF THIS NOTICE. otherwise, it will be presumed that there are no objections to the activity.

Any person may request, in writing, before this public notice expires, that a public hearing be held to collect information necessary to consider this application. Requests for public hearings shall state, with particularity, the reasons why a public hearing should be held. It should be noted that information submitted by mail is considered just as carefully in the permit decision process and bears the same weight as that furnished at a public hearing.

The proposed project was reviewed based upon the "Biological Assessment for the Closure of the Mud Dump Site and Designation of the Historic Area Remediation Site (HARS) in the New York Bight and Apex," (USEPA, 1997). Based upon this review, and a review of the latest public listing of threatened and endangered species, it has been preliminarily determined that the proposed dredging and placement activities for which authorization is sought herein, are not likely to affect the following federally threatened or endangered species (humpback whales, finback whales, right whales, loggerhead turtles, leatherback turtles, green turtles, Kemp's Ridley turtles, and Shortnose sturgeon) or their critical habitat pursuant to Section 7 of the Endangered Species Act (ESA; 16 USC 1531). The District Engineer is conducting informal consultations with the National Marine Fisheries Service in accordance with Section 7 of the Endangered Species Act. This consultation will be completed before a final permit decision will be made.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). Consultation with the National Marine Fisheries Service regarding EFH impacts and conservation recommendations is being conducted and will be concluded prior to the final decision.

Based upon a review of the latest published version of the National Register of Historic Places, the only known wrecks on or eligible for inclusion on the National Register at the HARS are located in Primary Remediation Area Number 1. As noted in the designation of the HARS, Remediation Material would not be allowed to be placed within 0.27 nautical miles of the identified wrecks or other wrecks that might be found. Otherwise, there are no known sites eligible for, or included in, the National Register within the proposed permit area.

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Reviews of the activity pursuant to Section 404 of the Clean Water Act will include application of the guidelines announced by the Administrator, US Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. The applicant will obtain a water quality certificate or waiver from the appropriate state agency in accordance with Section 401 of the Clean Water Act prior to any final permit decision.

Pursuant to Section 307 (c) of the Coastal Zone Management Act of 1972 as amended [16 U.S.C. 1456 (c)], for activities under consideration that are located within the coastal zone of a state which has a federally approved coastal zone management program, the applicant has certified in the permit application that the activity complies with, and will be conducted in a manner that is consistent with, the approved state coastal zone management program. By this public notice, we are requesting the state's concurrence with, objection to, or waiver of the applicant's certification. No permit decision will be made until one of these actions occur. For activities within the coastal zone of New Jersey the applicant's certification and accompanying information is available from the New Jersey Department of Environmental Protection, Bureau of Coastal Regulation, CN 401, 501 East State Street, Second Floor, Trenton, New Jersey 08625-0401, Telephone Number (609) 633-2289. Comments regarding the applicant's certification should be so addressed.

In addition to any required water quality certificate and coastal zone management program concurrence, the applicant has obtained or requested the following governmental authorization for the activity under consideration:

Waterfront Development Permit from the New Jersey Department of Environmental Protection

The proposed work is being coordinated with the following federal, state, and local agencies:

US Environmental Protection Agency;
US Department of the Interior, Fish and Wildlife Service;
US Department of Commerce, National Marine Fisheries Service;
US Coast Guard;
New Jersey Department of Environmental Protection.

It is requested that you communicate the foregoing information concerning this activity to any persons known by you to be interested and who did not receive a copy of this notice.

If you have any questions concerning this application, you may contact this office at (917) 790-8417 and ask for Mr. Steven Schumach. Comments or questions may be FAXED to (212) 264-4260, ATTN: Mr. Schumach. Questions about the HARS can be addressed to Mr. Douglas Pabst, Team Leader, Dredged Material Management Team, US Environmental Protection Agency, Region 2 at (212) 637-3797. For more information on the New York District Corps of Engineers programs, visit our website at <http://www.nan.usace.army.mil>

For

Richard L. Tomer
Chief, Regulatory Branch

Enclosures

DESCRIPTION OF PROPOSED WORK

The applicant, the Hess Corporation, has requested Department of the Army authorization to deepen its existing ship berth located in the Kill Van Kull, in the City of Bayonne, Hudson County, New Jersey. The purpose of this dredging is to deepen an existing ship berth from the currently maintained depth of 40 feet below the plane of mean low water to 45 feet below the plane of mean low water, which is consistent with the adjacent Kill Van Kull channel depth. This deepening would allow the facility to berth and unload deeper draft vessels.

Approximately 15,000 cubic yards of dredged material would be removed by a clamshell bucket dredge or dredge excavator from an area of approximately 150 feet by 1,200 feet to a maximum depth of 45 feet below the plane of Mean Low Water plus two feet of allowable overdepth. Barge overflow at the dredging site is proposed. The dredging is estimated to occur over a two week to one month timeframe. The resulting 15,000 cubic yards of HARS acceptable dredged material would be used for remediation purposes at the HARS by placing it over degraded sediments within the site, which is located in the Atlantic Ocean off of Sandy Hook, New Jersey. The proposed dredged material would be transported by bottom-opening barges to the placement site.

It is noted that the applicant previously performed maintenance dredging of the site in April, 2006 to a depth of 40 feet below the plane of mean low water under an existing Department of the Army Permit, Permit Number 2005-00102 with upland placement of that dredged material at a State-approved upland placement site. The proposed dredging and deepening of the facility to 45 feet below the plane of mean low water will be performed in accordance with a Dredged Materials Separation Plan to ensure that only HARS-suitable dredged material will be placed at the HARS, while non-HARS dredged material will be placed at a State-approved upland placement site.

Should approval of the requested permit be issued, consideration is being given to issuance of a three-year permit. Since the proposed deepening involves the removal of glacial till, a permit, if issued, would only allow the dredging and placement of the dredged material at the HARS as a one time event. Future maintenance dredging activities with placement at the HARS would require the applicant to submit a new application with new testing of the sediments present at that time, unless an upland placement or remediation site becomes available.

INTRODUCTION TO THE HISTORIC AREA REMEDIATION SITE (HARS):

In 1972, the Congress of the United States enacted the Marine Protection, Research and Sanctuaries Act (MPRSA) to address and control the dumping of materials into ocean waters. Title I of the Act authorized the US Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE) to regulate dumping in ocean waters. The USEPA and the USACE share responsibility for MPRSA permitting and ocean disposal site management. Regulations implementing MPRSA can be found at 40 CFR Sections 220 through 229. With few exceptions, MPRSA prohibits the transportation of material from the United States for the purpose of ocean dumping except as may be authorized by a permit issued under the MPRSA. The MPRSA divides permitting responsibility between the USEPA and USACE. Under Section 102 of the MPRSA, USEPA has responsibility for issuing permits for all materials other than dredged material. Under Section 103 of MPRSA, the Secretary of the Army has the responsibility for issuing permits for dredged material. Determinations to issue MPRSA permits for dredged material are subject to USEPA concurrence.

In the fall of 1997, the USEPA de-designated and terminated the use of the New York Bight Dredged Material Disposal Site (commonly known as the Mud Dump Site or MDS). The MDS had been designated in 1984 for the disposal of up to 100 million cubic yards of dredged material from navigation channels and other port facilities within the Port of New York and New Jersey. Simultaneous with the closure of the MDS, the site and surrounding areas that had been used historically as disposal sites for dredged materials were redesignated as the HARS under authority of Section 102(c) of MPRSA at 40 CFR Sections 228.15(d)(6) (See 62 Fed. Reg. 46142 (August 29, 1997); 62 Fed. Reg. 26267 (May 13, 1997)). The HARS will be managed to reduce impacts of historic disposal activities at the site to acceptable levels in accordance with 40 CFR Section 228.11(c). The need to remediate the HARS is supported by the presence of toxic effects, dioxin bioaccumulation exceeding Category 1 levels in worm tissue (a definition of which appears in a memorandum reviewing the results of the applicant's testing), as well as TCDD/PCB contamination in area lobster

stocks. Individual elements of those data do not establish that sediments within the Study Area are imminent hazards to the New York Bight Apex ecosystem, living resources, or human health. However, the collective evidence presents cause for concern, and justifies the need for remediation. Further information on the conditions in the Study Area and the surveys performed may be found in the Supplemental Environmental Impact Statement (USEPA, 1997).

The designation of the HARS identifies an area in and around the former Mud Dump Site (MDS) that has exhibited the potential for adverse ecological impacts. The HARS will be remediated with dredged material that meets current Category 1 standards and will not cause significant undesirable effects including through bioaccumulation or unacceptable toxicity, in accordance with 40 CFR 227.6. This dredged material is referred to as "Material for Historic Area Remediation Site (HARS)" or "HARS Material."

As of the end of July 2007, dredged materials from fifty-three different completed and ongoing private and federal dredging projects in the Port of New York and New Jersey have been dredged and placed as Remediation Material in the ocean at the HARS since the closure of the Mud Dump Site and designation of the HARS in 1997. This represents approximately 31,409,000 cubic yards of Remediation Material.

The HARS, which includes the 2.2 square nautical mile area of the MDS, is an approximately 15.7 square nautical mile area located approximately 3.5 nautical miles east of Highlands, New Jersey and 7.7 nautical miles south of Rockaway, New York. The MDS is located approximately 5.3 nautical miles east of Highlands, New Jersey and 9.6 nautical miles south of Rockaway, New York. When determined by bathymetry (a map depicting the relative depths of water in a particular area) that capping is complete, the USEPA will take any necessary rulemaking to de-designate the HARS. The HARS includes the following three areas:

Priority Remediation Area (PRA): A 9.0 square nautical mile area to be remediated with at least 1 meter of Remediation Material. The PRA encompasses the area of degraded sediments as described in greater detail in the SEIS.

Buffer Zone: An approximately 5.7 square nautical mile area (0.27 nautical mile wide band around the PRA) in which no placement of the Material for Remediation will be allowed, but may receive Material for Remediation that incidentally spreads out of the PRA.

No Discharge Zone: An approximately 1.0 square nautical mile area in which no placement or incidental spread of Material for Remediation is allowed.

To improve management and monitoring of placement activities at the HARS, electronic monitoring equipment will be on-board any barges carrying Remediation Material to the HARS. This equipment records vessel positions and scow drafts throughout the duration of each trip to the HARS and during remediation operations. To improve communication reliability between tugs and scows, a prescribed formal communication procedure has been put in place (copies of this procedure are available upon request).

Additional information concerning the HARS can be obtained from Mr. Douglas Pabst of the USEPA, Dredged Material Management Team Leader, at (212) 637-3797.

HARS SUITABILITY TESTING FOR GLACIAL TILL:

In accordance with geological testing and assessment set forth in the July 17, 2004 joint US Environmental Protection Agency-Region 2 and the US Army Corps of Engineers, New York District standard operating procedures, it has been determined that the 15,000 cubic yards of dredged material are glacial till because the material lacks detectible fossils or shells, has low organic carbon content, has a primarily reddish or red-brown color, is comprised of a poorly sorted layer of clay particles, silts, sands, gravels and boulders, and has a stratigraphic setting consistent with other Pleistocene age deposits in the vicinity of this Kill van Kull dredging area. A copy of the glacial till determination for this project may be requested from Steven Schumach, regulatory project manager for this permit

application review process, at 917-790-8417.

Pleistocene age glacial till in the vicinity of this project in the Kill van Kull was previously tested to determine suitability for use as Remediation Material at the Historic Area Remediation Site (HARS). This testing of glacial till was conducted in accordance with test protocols for ocean placement established by the US Environmental Protection Agency-Region 2 and US Army Corps of Engineers, New York District. Public notice of previous Pleistocene age glacial till chemical analysis, toxicity, and 28-day bioaccumulation test results for a determination of suitability for HARS remediation purposes was provided in US Army Corps of Engineers, New York District Supplemental Public Notice FP63-345678CC issued on 14 July 2000 for the Kill Van Kull/Newark Bay Federal Channels, Federal Navigation Project, New Construction Dredging, Areas #3 and #8. Those chemical analyses, toxicity and 28-day bioaccumulation test results are included in this public notice (attached Tables 2b, 3b and 4b) for informational purposes only.

ALTERNATIVES TO HARS PLACEMENT:

Regarding ocean placement of dredged material, the Ocean Dumping Regulations [Title 40 CFR Sections 227.16(b)] states that ". . . alternative methods of disposal are practicable when they are available at reasonable incremental cost and energy expenditures which need not be competitive with the costs of ocean dumping, taking into account the environmental impacts associated with the use of alternatives to ocean dumping . . ." USACE, New York District has evaluated the regional practicability of potential disposal alternatives in the September, 1999 Draft "Implementation Report for the Dredged Material Management Plan for the Port of New York and New Jersey." The Recommended Plan within the report addresses both the long and short term dredged material placement options in two specific timeframes, heretofore referred to as the 2010 Plan and the 2040 Plan, respectively.

The 2010 Plan relies heavily on the creation, remediation, and restoration of a variety of existing degraded or impacted habitats in the region with material that would be considered unsuitable for HARS restoration. The remaining material is treated and stabilized, as needed, and then applied to remediate degraded and potentially polluting areas such as brownfields, landfills, and abandoned strip mines. Nearly all of the options considered in the 2010 Plan have a placement cost of \$29/cubic yard or higher.

Similar to the 2010 Plan, the 2040 Plan relies heavily upon the use of land remediation and decontamination methods for the management of HARS unsuitable material. As in the 2010 Plan, maximum use of all practicable alternatives to the HARS is envisioned.

Many of the dredged material management options presented in the 2010 Plan however, are not presently permitted and/or are presently under construction at this time and therefore considered unavailable for the purposes of this application. Other options are not available at reasonable incremental costs, thus leaving HARS placement as the preferred alternative. For more information on the New York District Corps of Engineers programs, visit our website at <http://www.nan.usace.army.mil>

CONCLUSIONS:

The U.S. Army Corps of Engineers New York District and the U.S. Environmental Protection Agency Region 2 have determined that this glacial till material proposed for dredging and ocean placement from the Hess Corporation facility is Category I under USEPA Region 2/CENAN guidance, and is suitable for placement at the HARS under Section 228.15(d)(6) as Remediation Material, without need for further site-specific testing, in accordance with the 26 August 2003 US Environmental Protection Agency-Region 2 and US Army Corps of Engineers-New York District joint Memorandum for the Record, titled Joint Federal Position on Testing Glacial Till Dredged Materials from Selected Areas of New York Harbor.

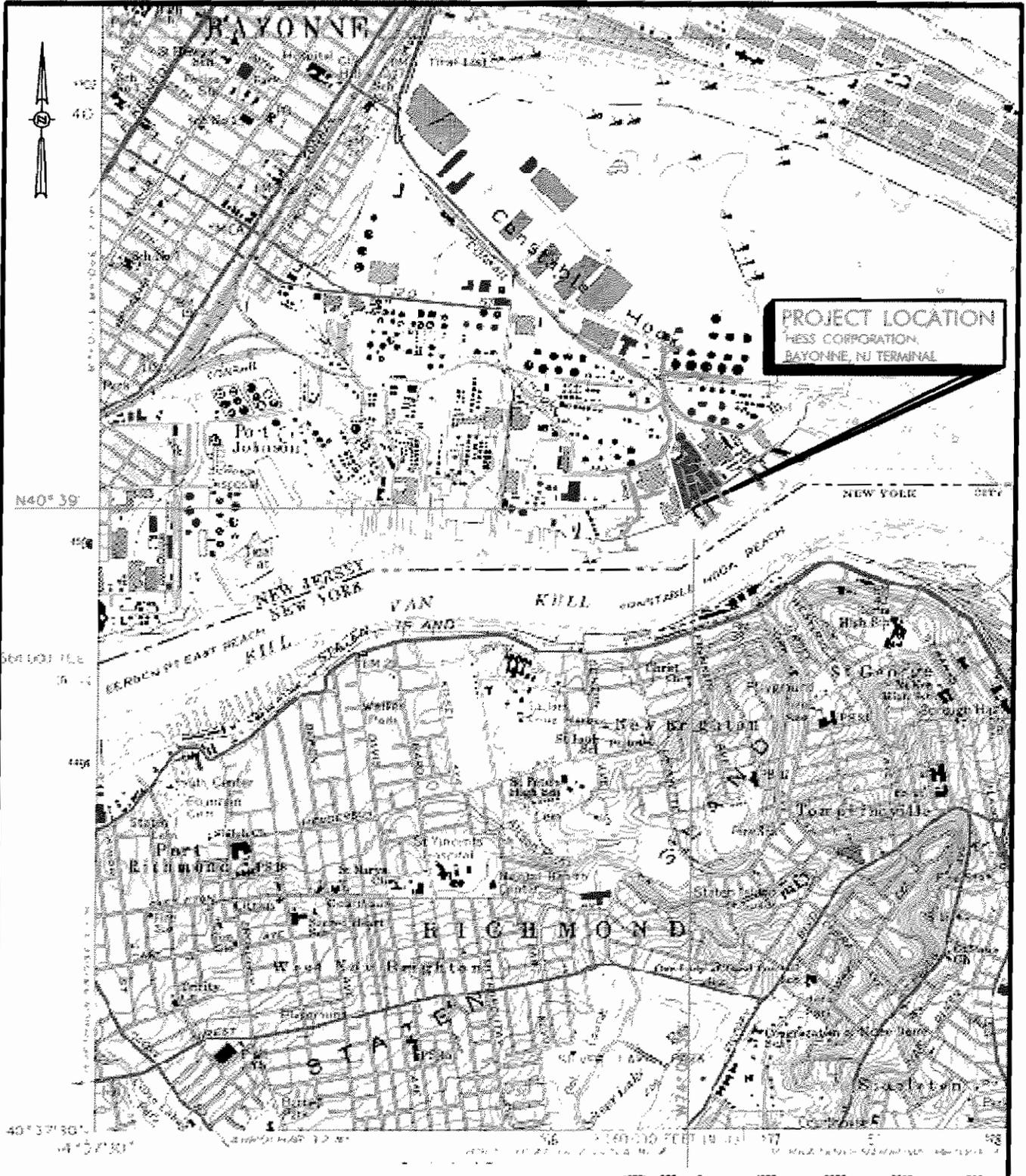
Placement of this material at the HARS will serve to reduce impacts at the HARS to acceptable levels and improve benthic conditions. Unremediated sediments in the HARS have been found to adversely impact benthic marine

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organisms. Placement of project material over existing, unremediated HARS sediments would serve to remediate those areas. In addition, by covering the existing sediments at the HARS with this project material, surface dwelling organisms will be exposed to sediments exhibiting Category 1 qualities, which will ameliorate the existing sediment conditions.

COMMUNICATIONS:

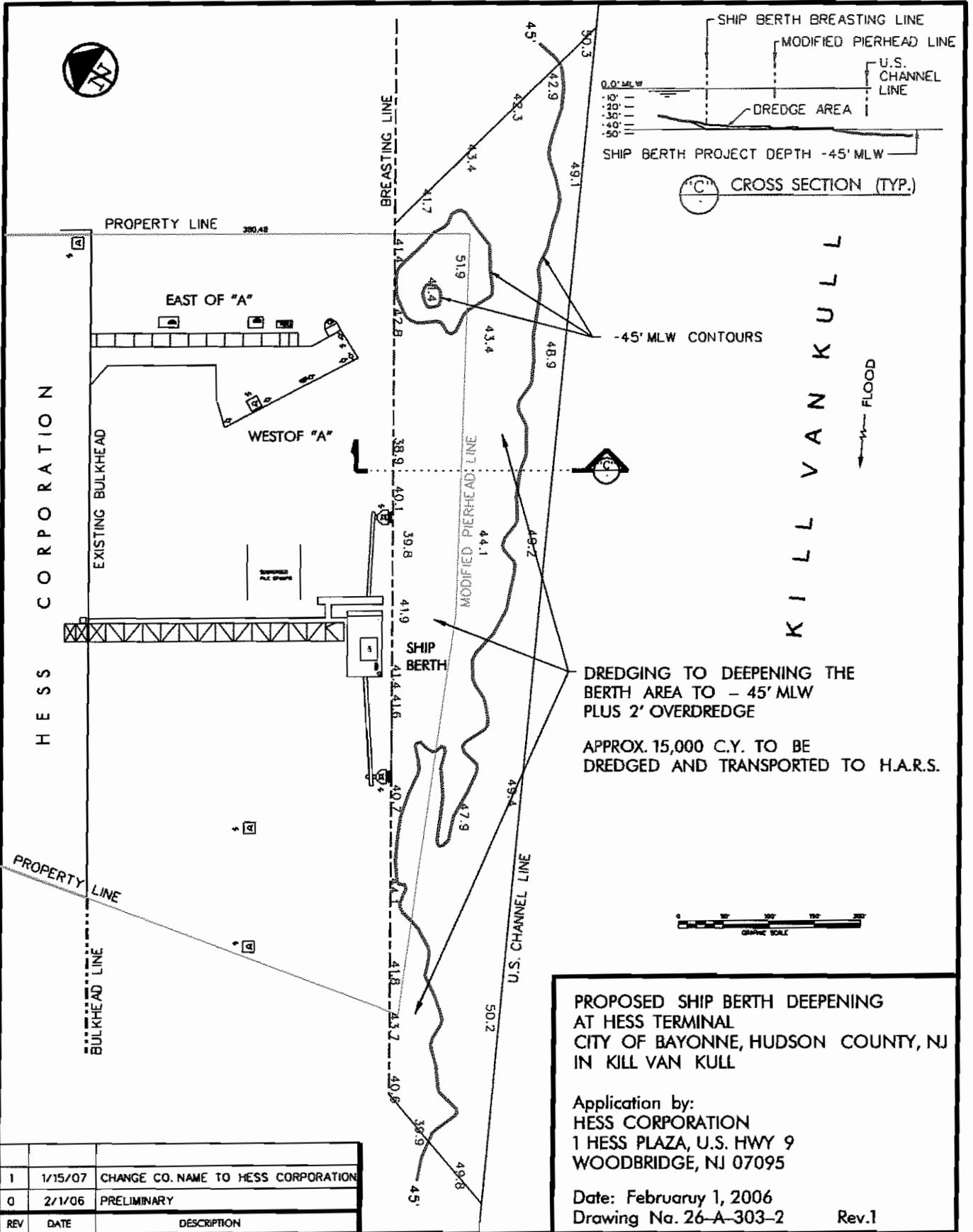
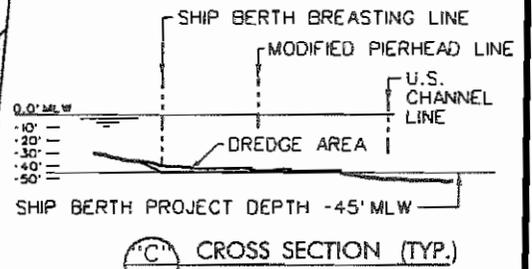
*For additional information regarding this project or the HARS contact Mr. Steven Schumach, Regulatory Project Manager, USACE, New York District at (917) 790-8417 or Mr. Douglas Pabst, Team Leader, Dredged Material Management Team, USEPA, Region 2 at (212) 637-3797. If the determination is made to issue a permit, the permittee will contact the US Coast Guard with the details of the authorized work.



BASE MAP FROM USGS JERSEY CITY NJ - NY QUADRANGLE



HESS CORPORATION 1 HESS PLAZA, WOODBRIDGE, NJ	PROJECT NO. BAYO/260303-1.DGN		A.F.E. NO.
	SCALE GRAPHIC	DRAWN BY A.STRANIERO	DATE 2/1/06
PROPOSED SHIP BERTH DEEPENING AT HESS CORPORATION TERMINAL CITY OF BAYONNE, HUDSON COUNTY, NJ IN KILL VAN KULL LOCATION PLAN	LOCATION BAYONNE, NJ		
	DRAWING NO. 26-A-303-1		REV. 1



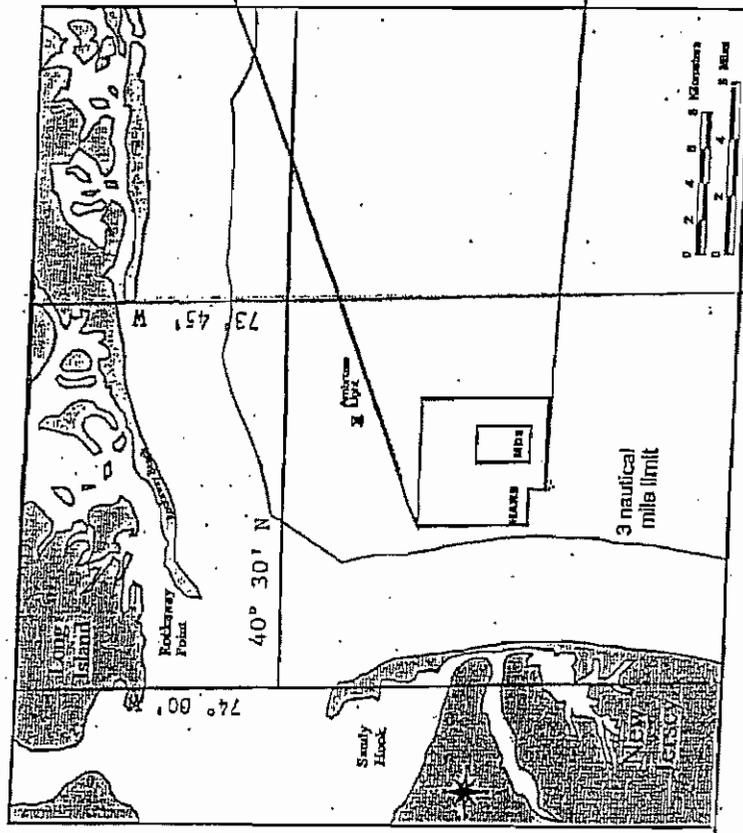
**PROPOSED SHIP BERTH DEEPENING
AT HESS TERMINAL
CITY OF BAYONNE, HUDSON COUNTY, NJ
IN KILL VAN KULL**

Application by:
HESS CORPORATION
 1 HESS PLAZA, U.S. HWY 9
 WOODBRIDGE, NJ 07095

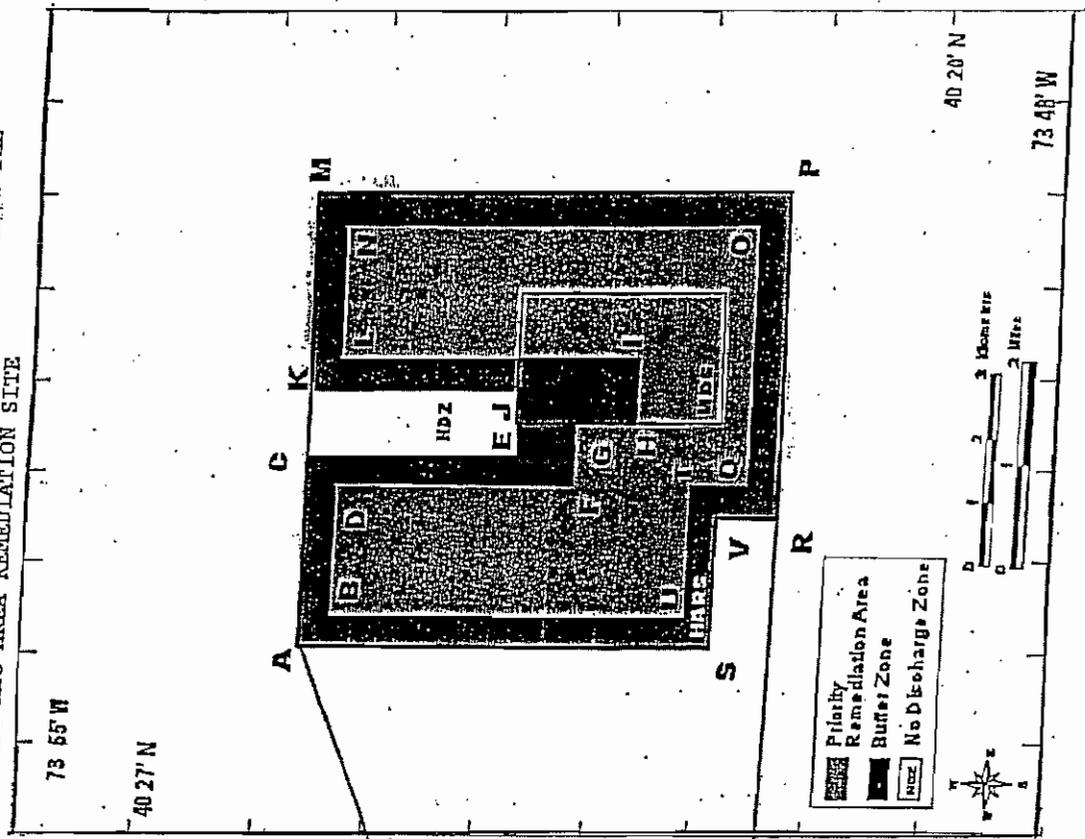
Date: February 1, 2006
 Drawing No. 26-A-303-2 Rev.1

REV	DATE	DESCRIPTION
1	1/15/07	CHANGE CO. NAME TO HESS CORPORATION
0	2/1/06	PRELIMINARY

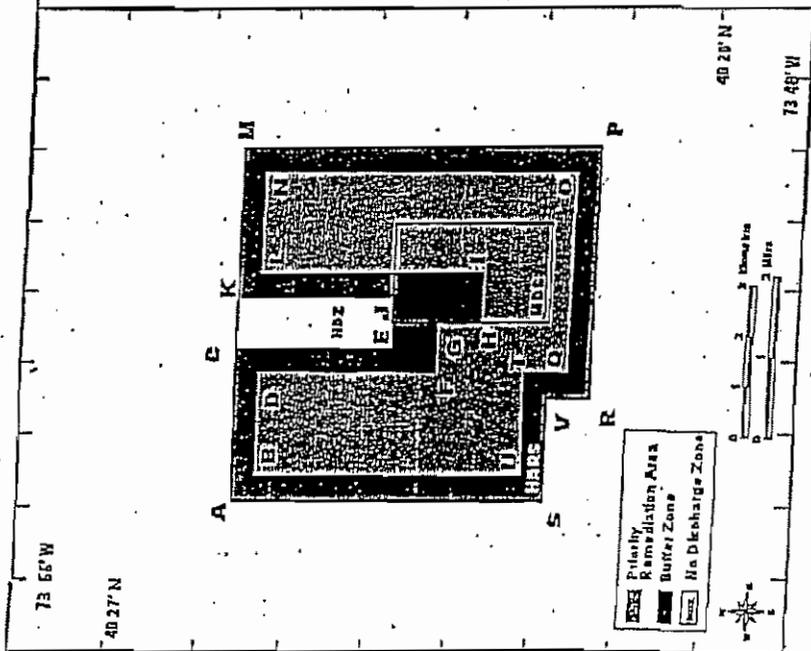
HISTORIC AREA REMEDIATION SITE LOCATION MAP



LOCATION OF PRIMARY REMEDIATION AREA WITHIN THE HISTORIC AREA REMEDIATION SITE



00900 ATT. A-2



Priority Remediation Area (PRA): 9.0 square nautical mile area to be remediated with at least one meter of Remediation Material, bounded by the following coordinates:

Point	Latitude DMS *	Longitude DMS	Latitude DDM **	Longitude DDM
B	40° 25' 23" N	73° 53' 34" W	40° 25.38' N	73° 53.57' W
D	40° 25' 22" N	73° 52' 08" W	40° 25.37' N	73° 52.13' W
F	40° 23' 13" N	73° 52' 09" W	40° 23.22' N	73° 52.15' W
G	40° 23' 13" N	73° 51' 28" W	40° 23.22' N	73° 51.47' W
H	40° 22' 41" N	73° 51' 28" W	40° 22.68' N	73° 51.47' W
I	40° 22' 41" N	73° 50' 43" W	40° 22.68' N	73° 50.72' W
L	40° 25' 22" N	73° 50' 44" W	40° 25.37' N	73° 50.73' W
N	40° 25' 22" N	73° 49' 19" W	40° 25.37' N	73° 49.32' W

*-- DMS = Degrees, Minutes, Seconds

** -- DDM = Degrees, Minutes, Decimal Minutes

TABLE 2b: Results of Chemical Analysis Of Site Water and Elutriate

CONSTITUENTS	SITE WATER		ELUTRIATE	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
Metals	ppb (ug/L)	ppb (ug/L)	ppb (ug/L)	ppb (ug/L)
Ag		0.0515		0.0384
Cd		NA		1.78
Cr		1.34		1.48
Cu		2.04		7.77
Hg		0.00802		0.00949
Ni		1.12		16.9
Pb		0.879		0.546
Zn		5.98		12.6
Pesticides	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)
Aldrin	4.71	ND	0.74	ND
a-Chlordane	2.14	ND	0.35	ND
trans Nonachlor		0.32	0.41	ND
Dieldrin		1.52	0.54	ND
4,4'-DDT	2.01	ND	0.63	ND
2,4'-DDT	1.96	ND	2.29	ND
4,4'-DDD	1.48	ND	0.18	ND
2,4'-DDD		0.32	0.53	ND
4,4'-DDE		0.31	0.68	ND
2,4'-DDE	1.32	ND	1.37	ND
Total DDT		7.41		5.70
Endosulfan I	2.86	ND	0.48	ND
Endosulfan II	2.66	ND	1.07	ND
Endosulfan sulfate		0.81	0.44	ND
Heptachlor		1.58	0.36	ND
Heptachlor epoxide	2.07	ND	0.33	ND
Industrial Chemicals	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)
PCB 8	3.24	ND	0.93	ND
PCB 18	4.13	ND	3.15	ND
PCB 28		1.28	1.43	ND
PCB 44		0.23	0.14	ND
PCB 49	3.52	ND	0.17	ND
PCB 52	6.06	ND	0.55	ND
PCB 66	4.12	ND	1.17	ND
PCB 77	3.89	ND	2.53	ND
PCB 87		0.71	1.61	ND
PCB 101		0.30	0.77	ND
PCB 105	3.54	ND	3.86	ND
PCB 118	3.06	ND	1.08	ND
PCB 128	2.94	ND	1.01	ND
PCB 138	3.46	ND	1.12	ND
PCB 153		0.30	2.40	ND
PCB 170		0.08	1.48	ND
PCB 180		0.28	1.40	ND
PCB 183	7.88	ND	0.88	ND
PCB 184		0.45	0.99	ND
PCB 187	3.10	ND	0.58	ND
PCB 195	3.19	ND	1.00	ND
PCB 206		0.04	1.62	ND
PCB 209		0.07	2.09	ND
Total PCBs		104	58.8	ND

Concentrations shown are the mean of three replicate analyses.

ND Not detected.

Total PCBs = 2(x), where x = sum of all PCB congeners detected.

Total DDT = sum of 2,4'- and 4,4'-DDD, DDE, and DDT

Means, total PCBs, and total DDT where determined using conservative estimates of concentrations of constituents below the detection limit.

TABLE 3b: Toxicity Test Results

Suspended Particulate Phase

Test Species	Test Duration	LC50/EC50	LPC (a)
<i>Menidia beryllina</i>	96 hours	(b) > 100%	1,000
<i>Mysidopsis bahia</i>	96 hours	(b) > 100%	1,000
<i>Mytilus galloprovincialis</i> (larval survival)	70 hours	(b) > 100%	1,000
<i>Mytilus galloprovincialis</i> (larval normal development)	70 hours	(c) > 100%	1,000

(a) Limiting Permissible Concentration (LPC) is the LC50 or EC50 times 0.01.

(b) Median Lethal Concentration (LC50) resulting in 50% mortality at test termination.

(c) Median Effective Concentration (EC50) based on normal development to the D-cell, prodissoconch 1 stage.

Whole Sediment (10 days)

Test Species	% Survival in Reference	% Survival in Test	% Difference Reference - Test	Is difference statistically significant? ($\alpha=0.05$)
<i>Ampelisca abdita</i>	94%	89%	5%	NO
<i>Mysidopsis bahia</i>	98%	98%	0%	NO

TABLE 4b

PROJECT KVK-3 CONTRACT AREA 3, REACH 2
28-DAY BIOACCUMULATION TEST RESULTS: CHEMICAL ANALYSIS OF TISSUE (In wet weight concentrations)

CONSTITUENTS	<i>Macoma nasuta</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
Metals	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)
Ag		0.04		0.04		0.03		0.02
As		2.73		3.12		2.36		2.50
Cd		0.04		0.05		0.05		0.04
Cr		0.27		0.43		0.10		0.12
Cu		2.06		2.02		0.87		1.32
Hg		0.02		0.02		0.02		0.02
Ni		0.40		0.62		0.08		0.17
Pb		0.20		0.42		0.10		0.11
Zn		13.2		14.7		7.03		7.62
Pesticides	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
ALDRIN	0.36	ND	0.11	ND	0.57	ND	0.11	ND
ALPHA CHLORDANE		0.08		0.41		0.12		0.24
TRANS-NONACHLOR		0.05		0.21		0.49		0.45
DIELDRIN		0.16		0.27		0.26		0.38
OP-DDD		0.04		0.44		0.27		0.42
OP-DDE	0.09	ND		0.23	0.90	ND		0.16
OP-DDT	0.32	ND		0.06		0.26		0.08
PP-DDD		0.09		1.05		0.36		0.72
PP-DDE		0.43		1.24		0.06		0.11
PP-DDT		0.04		0.14		0.03		0.07
TOTAL DDT		0.80		3.16		0.98		1.57
ENDOSULFAN I	0.10	ND		0.05	0.52	ND		0.07
ENDOSULFAN II	0.13	ND	0.11	ND	0.19	ND	0.14	ND
ENDOSULFAN SULFATE	0.09	ND	0.11	ND		0.11		0.10
HEPTACHLOR		0.05	0.21	ND	0.50	ND		0.04
HEPTACHLOR EPOXIDE	0.06	ND	0.17	ND	0.65	ND	0.11	ND
Industrial Chemicals	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
CL2_8		0.06	0.06	ND		0.60	0.32	ND
CL3_18		0.05	0.16	ND		0.06		0.07
CL3_28		0.05		0.18		0.05		0.12
CL4_44		0.02		0.10		0.10		0.20
CL4_49		0.09		0.36		0.30		0.34
CL4_52		0.29		0.66		1.11		1.34
CL4_65		0.03		0.32		0.08		0.17
CL4_77	0.13	ND	0.11	ND	0.74	ND		0.12
CL5_101		0.13		0.65		0.95		0.99
CL5_105		0.03		0.18		0.44		0.30
CL5_118		0.08		0.47		0.54		0.55
CL5_87		0.08		0.29		0.13		0.20
CL6_128		0.02		0.09		0.20		0.20
CL6_138		0.12		0.61		1.33		1.34
CL6_153		0.11		0.64		1.73		1.74
CL7_170		0.03		0.21		0.34		0.24
CL7_180		0.05		0.21		0.82		0.73
CL7_183	0.15	ND		0.05		0.24		0.47
CL7_184	0.12	ND	0.09	ND	0.31	ND	0.12	ND
CL7_187		0.09		0.17		0.80		0.66
CL8_195	0.08	ND		0.03		0.14		0.13
CL9_206	0.06	ND		0.04		0.21		0.24
CL10_209	0.09	ND		0.03		0.17		0.21
TOTAL PCBs		3.19		11.3		20.9		21.0
1,4-DICHLOROBENZENE		0.19		0.25		0.09		0.28

TABLE 4b(2)

PROJECT KVK-J CONTRACT AREA 3, REACH 2
 28-DAY BIOACCUMULATION TEST RESULTS: CHEMICAL ANALYSIS OF TISSUE (in wet weight concentrations)

CONSTITUENTS	<i>Macoma nasuta</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
Dioxins and Furans	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)
2378-TCDD	0.42	ND	0.40	ND	0.50	ND	0.46	ND
12378-PeCDD	0.46	ND	0.41	ND	0.75	ND	0.44	ND
123478-HxCDD	0.25	ND	0.28	ND	0.36	ND	0.27	ND
123678-HxCDD	0.28	ND	0.31	ND	0.39	ND	0.30	ND
123789-HxCDD	0.21	ND	0.24	ND	0.49	ND	0.31	ND
1234678-HpCDD	0.48	ND		0.37		1.11		0.77
OCDD		1.02		* 2.47		3.85		3.42
2378-TCDF	0.42	ND		* 0.40		0.88		1.01
12378-PeCDF	0.34	ND	0.31	ND	0.10	ND	0.17	ND
23478-PeCDF	0.17	ND	0.13	ND	0.37	ND	0.24	ND
123478-HxCDF	0.26	ND	0.21	ND		0.14		0.20
123678-HxCDF	0.25	ND	0.21	ND	0.21	ND	0.32	ND
123789-HxCDF	0.44	ND	0.43	ND	0.44	ND	0.39	ND
234678-HxCDF	0.35	ND	0.40	ND	0.44	ND	0.25	ND
1234678-HpCDF	0.35	ND		0.24		0.32		0.33
1234789-HpCDF	0.55	ND	0.46	ND	0.46	ND	0.39	ND
OCDF	0.93	ND	0.86	ND	1.26	ND	0.87	ND
PAHs	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
NAPHTHALENE		2.08		1.87		4.07		5.17
ACENAPHTHYLENE	0.38	ND		0.30	4.06	ND		1.41
ACENAPHTHENE		0.17		* 0.63		1.14		0.68
FLUORENE		0.17		0.33	3.37	ND	1.74	ND
PHENANTHRENE		0.43		* 1.24		0.33		0.25
ANTHRACENE		0.35		* 0.78	2.47	ND		0.57
FLUORANTHENE		1.81		* 6.90		0.47		1.45
PYRENE		1.15		* 10.8		0.74		2.50
BENZO(A)ANTHRACENE		0.18		* 4.72	1.26	ND	0.56	ND
CHRYSENE		0.84		* 10.8		0.81		1.57
BENZO(B)FLUORANTHENE		0.35		* 6.57	2.03	ND		0.34
BENZO(K)FLUORANTHENE		0.27		* 4.91	1.75	ND		0.33
BENZO(A)PYRENE		0.17		* 6.59	0.95	ND		0.36
INDENO(1,2,3-C,D)PYRENE		0.87		* 1.43	1.31	ND	2.04	ND
DIBENZ(A,H)ANTHRACENE	1.07	ND		* 0.77	2.60	ND	2.18	ND
BENZO(G,H,I)PERYLENE		0.77		* 2.50	1.91	ND		0.59

Concentrations shown are the mean of 5 replicate analyses.
 * Statistically higher than reference at 95% confidence.
 ND = Not detected.
 Total PCB = sum of congeners reported * 2.
 Total DDT = sum of OP- and PP-DDD, DDE, and DDT.
 Means and statistical comparisons were determined using conservative estimates of concentrations of replicates that were below the detection limits.