United States
Environmental Protection
Agency

Office of Water
Regulations and Standards
Washington DC 20460

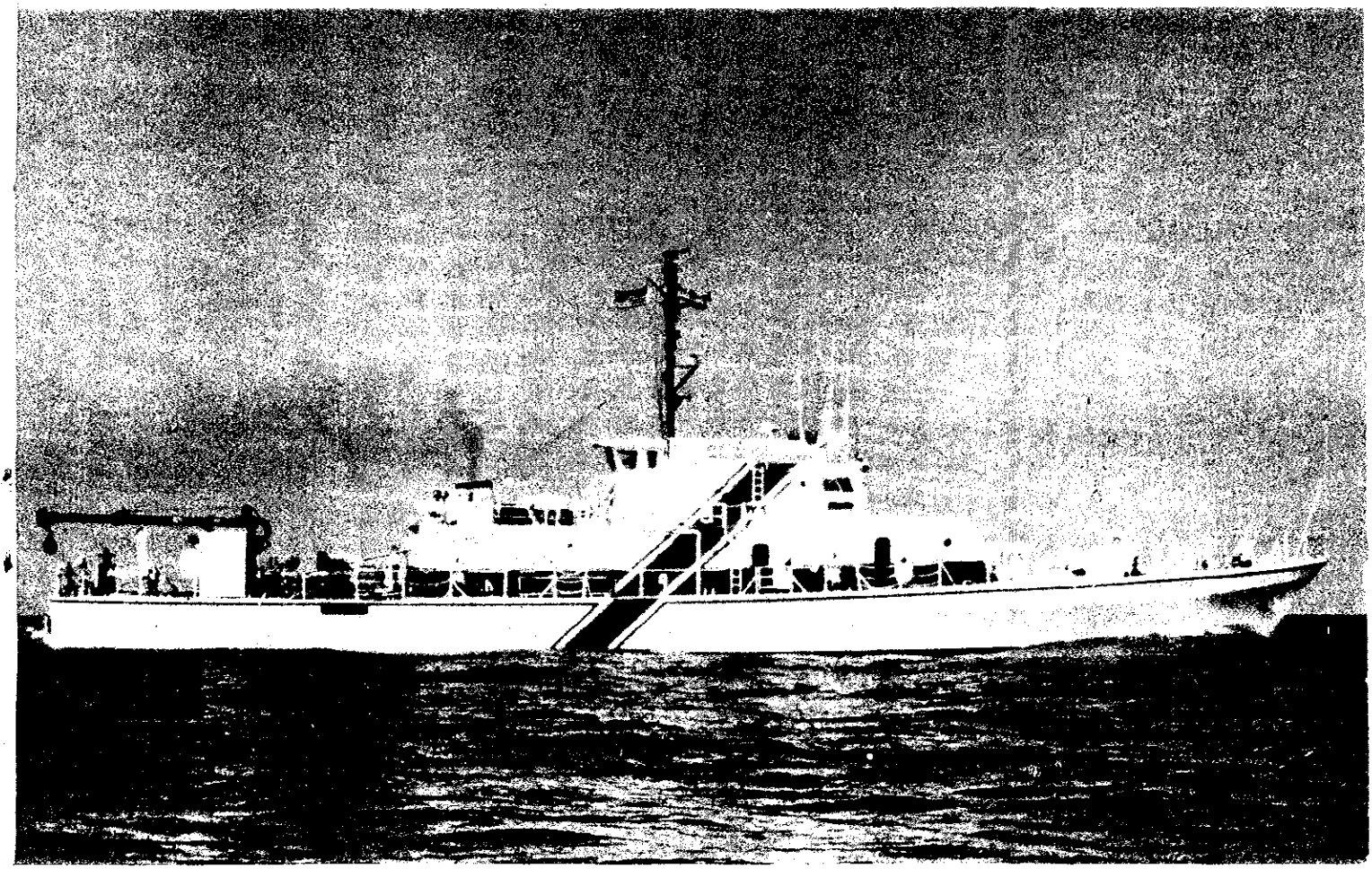
January 1981 – December 1983

Water

EPA

Report to Congress January 1981 - December 1983

On Administration of the Marine Protection, Research, and Sanctuaries Act of 1972, as Amended (P.L. 92-532) and Implementing the International London Dumping Convention



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 12 1984

THE ADMINISTRATOR

Honorable Thomas P. O'Neill, Jr.
Speaker of the House
of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

Section 112 of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, requires the Administrator of the Environmental Protection Agency (EPA) to submit an annual report on the administration of the ocean dumping permit program authorized under Title I of the Act. The tenth report for this program is transmitted with this letter.

The ocean dumping permit program became effective on April 23, 1973, and final regulations and criteria were published on October 15, 1973. Revisions to those regulations and criteria were published on January 11, 1977. This report covers the activities carried out under the Act and those necessary to implement the London Dumping Convention during calendar years 1981 - 1983.

The dumping into ocean waters of all material, except dredged material, is regulated by EPA permits. The U.S. Army Corps of Engineers (COE) issues permits for dredged materials. This report does not contain a discussion of COE activities except as they affect EPA's responsibilities. We hope that the information provided in this report will be useful to the House of Representatives in assessing the status and direction of the program.

Sincerely,

William D. Ruckelshaus

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 12 1984

THE ADMINISTRATOR

Honorable George Bush
President of the Senate
Washington, D.C. 20510

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William D. Ruckelshaus

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INTRODUCTION

The U.S. Environmental Protection Agency (EPA) presents its tenth report to the Congress on the administration of Title I of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended. The report covers the Agency's authority and its responsibility under the Act in implementing the ocean dumping permit program activities conducted within EPA Headquarters and the Regions during calendar years 1981, 1982, and 1983.

The U.S. Army Corps of Engineers (COE), the U.S. Coast Guard (USCG), and the National Oceanic and Atmospheric Administration (NOAA) also have responsiblities under the Act. The COE and NOAA submit separate reports on their activities in implementing the Act. Consequently, this report does not include a discussion of their activities, except as they affect the responsibility of EPA.

MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT
OF 1972, AS AMENDED (P.L. 92-532)

PURPOSE

The purpose of Title I of the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA), is to regulate the transportation for ocean dumping, and to prevent the dumping of any material in ocean waters which would unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities. To implement this purpose and to control dumping in ocean waters, Title I of the Act establishes a permit system and assigns its adminstration to the EPA and COE.

Also under Title I, the USCG is given the responsibility to conduct surveillance and other appropriate enforcement activities to prevent unlawful ocean dumping, ensuring that the dumping occurs under a valid permit, at the designated location, and in the manner specified within the permit.

Title II requires NOAA to conduct a comprehensive program of research and monitoring regarding the effects of the dumping of material into ocean waters. Title III gives NOAA the authority to establish marine sanctuaries.

The MPRSA is also the domestic legislation for implementing the provisions of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention), a global agreement for regulating ocean dumping, which is described later in this report.

Transportation from the United States of any radiological, chemical, or biological warfare agent or high-level radioactive wastes for the purpose of dumping in ocean waters, the territorial seas, or the contiguous zone is prohibited. Transportation of other materials (except dredged materials) for the purpose of dumping is prohibited except when authorized under a permit issued by the Administrator of EPA.

Based upon considerations outlined in Section 102 of the Act, the Administrator is required to establish and apply criteria for reviewing and evaluating permit applications. To the extent that he may do so without relaxing the requirements of Section 102, the Administrator shall apply the standards and criteria binding upon the U.S. under the Convention. Permits may be issued after determining that the dumping involved will not unreasonably degrade or endanger human health or the marine environment. Before a permit is issued, EPA must also give notice and opportunity for a public hearing. Dumping of dredged material is regulated under permits issued by the COE in accordance with the EPA criteria.

The Administrator is also authorized to designate areas where ocean dumping may be permitted and any critical areas where dumping may be prohibited. EPA has authority to revoke or modify permits or to assess civil penalties for violation of permit conditions. The Attorney General may initiate criminal action against persons who knowingly violate the Act.

During 1980, the Agency began considering the desirability of making the ocean dumping regulations more flexible based on new scientific knowledge and experience. As a result of Judge Sofaer's decision in the City of New York vs. EPA, 543 F. Supp. 1084 (1981), EPA is obliged to revise its ocean dumping regulations to remove the conclusive presumption that materials which do not pass the Agency's environmental criteria (40 CFR 227(B)) will "unreasonably degrade" the marine environment. The court ruled that EPA must consider all relevant statutory factors listed in Sec. 102(a) of the MPRSA, including the need to ocean dump and the availability of acceptable alternatives, before reaching a determination on whether a permit should be issued.

On January 6, 1983, the President signed PL 97-424 (Surface Transportation Assistance Act of 1982) containing an amendment to the MPRSA, which states that during the two-year period from date of enactment no permit may be issued under Title I that authorizes the dumping of any low-level radioactive waste unless EPA determines that:

1) the proposed dumping is necessary to conduct research;

2) the scale of proposed dumping is limited to the smallest amount of material and the shortest duration of time necessary to fulfill the purposes of the research;

3) the potential benefits of such research will outweigh any adverse impact; and

4) the proposed dumping will be preceded by appropriate baseline monitoring studies of the proposed dumpsite and its surrounding environment.

THE PERMIT PROGRAM

The Ocean Dumping Regulations and Criteria (40 CFR Parts 220-229) published January 11, 1977, authorize the issuance of general permits for dumping small quantities of material having a minimal adverse environmental impact when dumped under prescribed conditions. Examples are burial at sea of human remains or ashes, U.S. Navy transport of target vessels intended for sinking during ordnance testing, and transport and disposal of derelict vessels that pose a threat to navigational operations.

Special permits are issued for dumping materials which satisfy the criteria, but only for a maximum duration of three years for each permit. Thirteen special permits were in effect during 1981, 12 during 1982, and 7 during 1983, including permits for at-sea burning of wood pilings, driftwood, derelict vessels, etc., resulting from the clean-up of port facilities in the New York Harbor.

Until the regulatory termination date of December 31, 1981, interim permits had been issued for those materials that did not comply with the ocean dumping criteria but for which there were no feasible land-based disposal alternatives at the time. Fifteen interim permits were in effect during 1981. Twelve of the fifteen interim permit holders were dumping under court or administrative orders in 1982, and 9 continued dumping under these conditions in 1983.

Emergency permits may be issued for the disposal of materials that pose adverse effects to human health and for which no immediate alternate disposal method is available. No emergency permits were issued during 1981. One permit was issued in 1982 for dumping of corroded chlorine gas cylinders off the coast of Puerto Rico. In 1983, one permit was issued for the emergency disposal of spoiled galley waste off the coast of Puerto Rico.

Research permits may be issued for dumping material into the ocean when the determination is made that scientific merit outweighs the potential environmental damage that may result from dumping. One research permit was issued during 1981 for the dumping of drilling muds in the Gulf of Mexico and one was issued in 1983 for the dumping of brine off of Johnston Atoll in the Pacific Ocean.

Under the existing ocean dumping regulations, incineration of liquid chemical wastes at sea is generally authorized under a research permit. However, a special permit can be issued in specific circumstances where studies on the waste, the incineration method, the vessel, and ocean site have already been conducted and the site has been designated for incineration at sea. One research permit was issued in 1981 for incinerating PCBs at the Gulf of Mexico Incineration Site. No permits to incinerate industrial wastes at sea were issued in 1982. In 1983, the Assistant Administrator of the Office of Water made a tentative determination to issue two special and one research permit for incineration at sea; the final Agency action is pending.

Table I lists permittees on implementation plans to phase out ocean dumping during 1981, 1982, and 1983. Table II and Figure I list and illustrate, respectively, by EPA permitting authority (Region or Headquarters) the permits issued or in effect from January 1, 1981 to December 31, 1983, and the materials and amounts dumped. Table III summarizes, by coastal and ocean areas, the total amount of dumping during the subject three years and presents a comparison to the amounts dumped under EPA permit in preceding years. This Table is illustrated in Figure II. Table IV shows a summary of ocean dumping permittees/applicants denied or phased out during the past ten years, and Table V lists the ocean dumping permits phased out from January 1981 to December 1983.

TABLE I

WASTE GENERATORS ON
IMPLEMENTATION PLANS TO PHASE OUT OCEAN DUMPING
(Status as of December 1983)

MUNICIPAL	SITE	PHASE OUT DATE
Bergen Co. Util. Authority	SS	Dec. 31, 1983*
Joint Mtg.-Essex & Union Co.	SS	Dec. 31, 1981*
Linden-Roselle Sewerage Authority	SS	Dec. 31, 1981*
Rahway Valley Sewerage Authority	SS	Dec. 31, 1981*
Middlesex Co. Util. Authority	SS	Dec. 31, 1981*
Passaic Valley Sewerage Comm.	SS	Dec. 31, 1981*
Nassau Co. Dept. Public Works Bay Park STP — Long Beach STP Bel Grave STP — Roslyn STP Cedar Creek STP — W. Long Beach Inwood STP	SS	Dec. 31, 1981*
Westchester Co. Dept. Envir. Facility	SS	Apr. 30, 1984*
New York City Dept. Envir. Prot. Bowery Bay STP — Owls Head STP Coney Island STP — Port Richmond STP Hunts Point STP — Tallman Island STP Jamaica STP — 26th Ward STP Newtown Creek STP — Ward's Island STP Oakwood Beach STP — Rockaway STP	SS	Dec. 31, 1981*
INDUSTRIAL		
Dupont-Edge Moor	106	Dec. 31, 1983
NL Industries	AC	Dec. 31, 1983

SS - Sewage Sludge Site
106 - Industrial Wastes Site
AC - Acid Waste Site

* Continued under Court or administrative consent agreement

TABLE II

PERMITS ISSUED AND
QUANTITIES OF WASTE MATERIALS DUMPED
CY 1981, 1982, 1983

		Thousand Wet Tons 1981	1982	1983
Region II				
Sewage Sludge Site:*				
Bergen Co. Utility Auth.		271	289	221
Glen Cove City		23	22	10
Joint Mtg. Essex & Union Co.		467	421	351
Linden Roselle/Rahway Valley		278	269	426
Middlesex Co.		931	820	940
Middletown Twp.		21	9	—
Nassau Co. DWP		503	413	571
NJ small municipalities		53	56	35
New York City DEP		3320	3206	3114
Passaic Valley		589	1694	2163
Westchester Co.		226	433	481
		6682	7632	8312
Acid Waste Site:				
Allied Chemical Co.		36	30	38
NL Industries, Inc.		1720	803	—
		1756	833	38
106 Indust. Wastes Site:				
American Cyanamid		25	—	—
Digestor Cleanout sludge		20	38	7
DuPont-Edge Moor		22	0	102
DuPont-Grasselli		200	192	136
		267	230	245
Cellar Dirt Site:				
Moran Towing Corp.	const. debris(1)	0	0	0
Wood Incineration Site:(1)				
Corps of Engineers		9.7	12.0	13.0
New York City		0.4	0.6	11.0
Ocean Burning		0.3	1.5	1.0
Weeks		5.7	0.0	6.2
		16.1	14.1	31.2
PCI International, PR	indust. wastes	248	—	—
Lamont Doherty	research: explosives	.003	—	—
U.S. Navy PR	emergency: corroded cyl.	—	.001	.001
Crowly T & T Co.	emergency: galley waste	—	—	.100
derelict vessel	general permit	—	.425	—
Region IV				
Mobil Oil**	research drilling muds	0	0	0
Region VI				
Chem. Waste Mgmt**	research: incin. PCBs	700	800	0
	PCBs (2)			
Region IX				
Shell Oil; Texaco; Exxon	drilling muds	0	0	0
Van Camp;Starkist (American Samoa)	fish wastes	—	18.8	21.5

(1) Quantities in thousand dry tons
(2) Quantities in thousand gallons (prior to incineration)
* Sewage sludge volume increased due to construction grants and improved treatment methods.
** Permit issued by EPA Headquarters

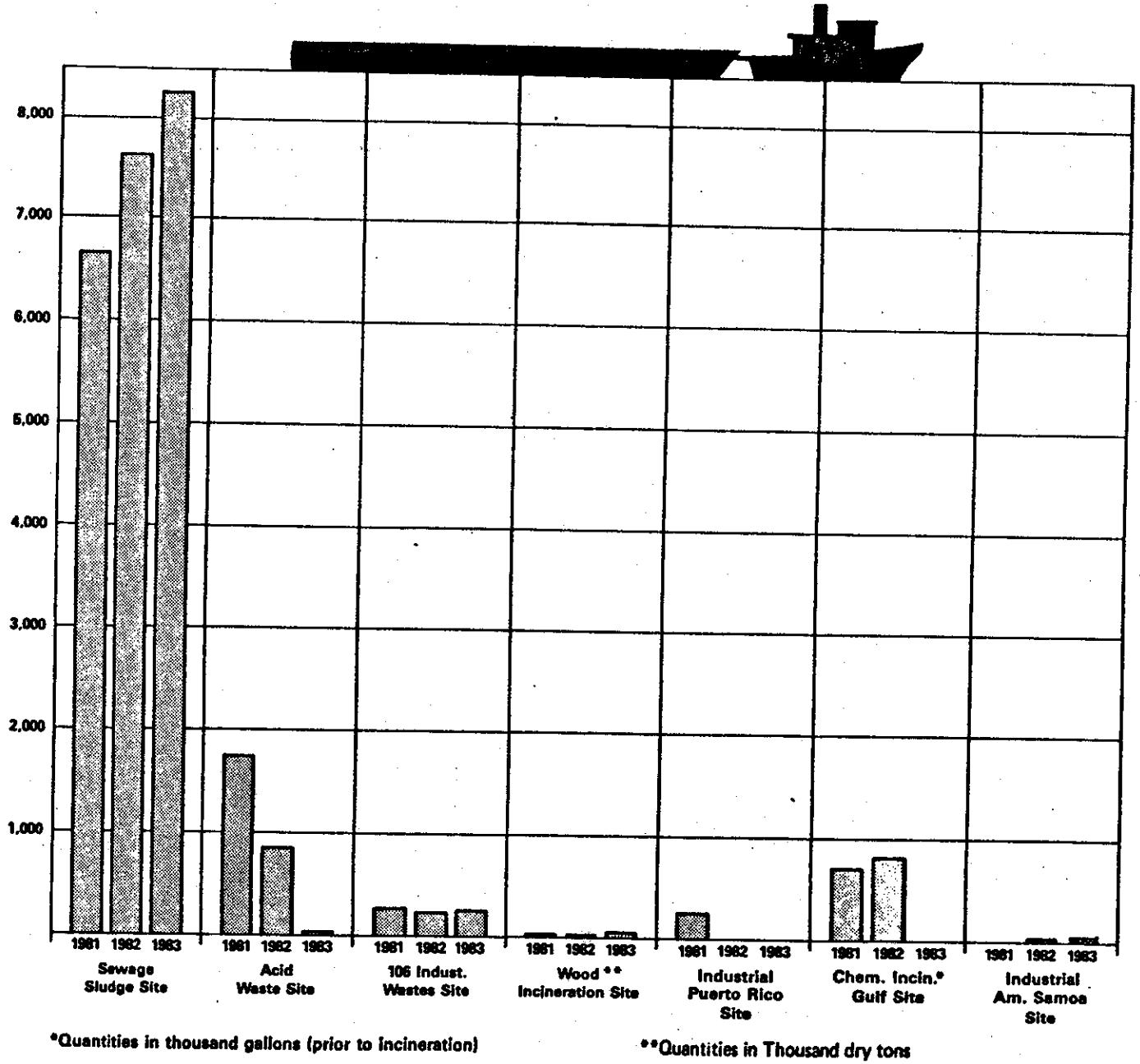


Figure I. Quantities of Waste Materials Dumped During CY 1981-1983 (Quantities in Thousand Wet Tons)

TABLE III

TYPES AND AMOUNTS OF OCEAN DISPOSAL BY GEOGRAPHIC/COASTAL AREA
(In Approx. Thousand Tons)
1973 - 1983

ATLANTIC (A)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Industrial Waste	3643	3642	3322	2633	1784	2548	2577	2928	2271	1063	283
Sewage Sludge	4898	5010	5040	5271	5134	5535	6442	7309	6703	7670	8312
Const. Debris	974	770	396	315	379	241	107	89	0	0	0
Solid Waste	0	0	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	.0003	0	0
Wood Incin.	11	16	6	9	15	18	45	11	15	13	31
Incin. Chemical	0	0	0	0	0	0	0	0	0	0	0

GULF OF MEXICO (B)

Industrial Waste	1408	938	120	100	60	0.17	0	0	0	0	0
Sewage Sludge	0	0	0	0	0	0	0	0	0	0	0
Const. Debris	0	0	0	0	0	0	0	0	0	0	0
Solid Waste	0	0	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	0	0	0
Wood Incin.	0	0	0	0	0	0	0	0	0	0	0
Incin. Chemicals	0	12.3	4.1	0	17.6	0	0	0	700*	800*	0

PACIFIC (C)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Industrial Waste	0	0	0	0	0	0	0	.26	23.3	18.8	21.5
Sewage Sludge	0	0	0	0	0	0	0	0	0	0	0
Const. Debris	0	0	0	0	0	0	0	0	0	0	0
Solid Waste	240	200	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	0	0	0
Wood Incin.	0	0	0	0	12.1	0	0	0	0	0	0
Incin. Chemicals	0	0	0	0	0	0	0	0	0	0	0

TOTALS OF (A), (B), (C)

Industrial Waste	5051	4580	3452	2733	1844	2548.17	2577	2928.26	2294.3	1081.8	304.5
Sewage Sludge	4890	5010	5040	5271	5134	5535	6442	7309	6703	7670	8312
Const. Debris	974	770	396	315	379	241	107	89	0	0	0
Solid Waste	240	200	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	.0003	0	0
Wood Incin.	11	16	6	9	15	18	45	11	15	13	31
Incin. Chemicals	0	12.3	4.1	0	17.6	0	0	0	700*	800*	0

* thousand gallons (prior to incineration)

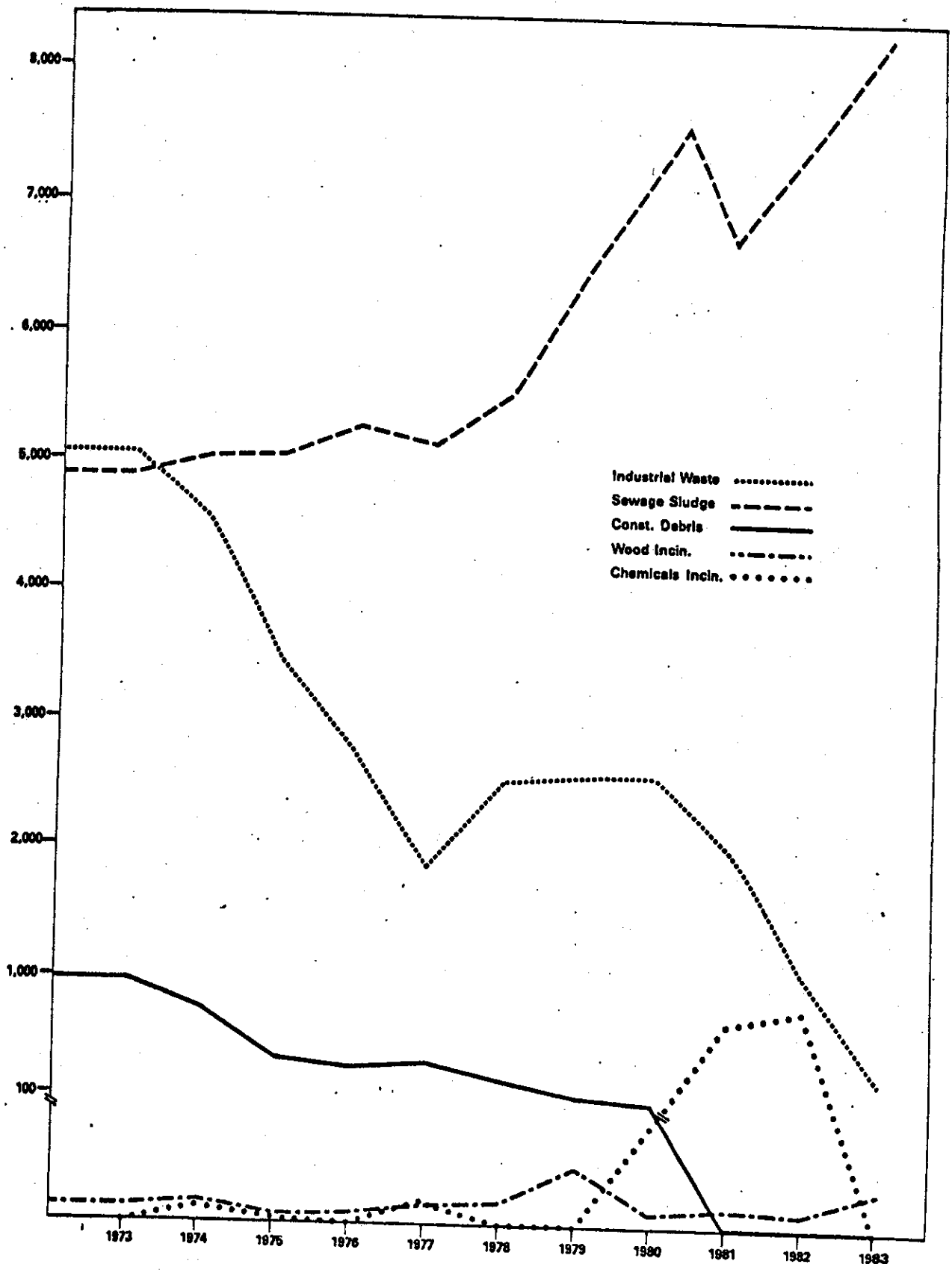


Figure II. Types and Amounts of Ocean Disposal Nationwide
(In Approximate Thousand Tons) 1973-1983

TABLE IV
SUMMARY OF OCEAN DUMPING PERMITTEES/APPLICANTS
DENIED OR PHASED OUT FROM 1973 TO 1983

	REGION							
	I	II	III	IV	VI	IX	X	Totals
Action prior to April 1973	—	44	—	—	—	—	—	44
During the remainder of 1973								
withdrew	—	4	—	—	—	—	—	4
phased out	—	1	—	—	1	—	—	2
denied	—	—	—	—	1	—	—	1
During 1974								
withdrew	—	2	—	—	—	1	—	3
phased out	—	21	—	—	1	—	—	22
denied	—	1	1	—	1	1		4
During 1975								
withdrew	—	6	—	—	—	—	—	6
phased out	1	10	1	—	2	—	—	14
denied	—	—	—	—	—	—	—	—
During 1976								
withdrew	—	2	—	—	—	—	—	2
phased out	—	17	—	—	—	—	—	17
denied	—	130	—	—	1	—	—	131
During 1977								
withdrew	—	2	—	—	—	—	—	2
phased out	1	16	—	—	1	—	—	18
denied	—	—	—	—	—	—	—	—
During 1978								
withdrew	—	1	—	—	—	—	—	1
phased out	—	31	—	—	1	—	—	32
denied	—	1	—	—	—	—	—	1
During 1979								
withdrew	—	4	—	—	—	—	—	4
phased out	—	8	—	—	—	—	—	8
denied	—	1	—	—	—	1	—	2
During 1980								
withdrew	—	—	—	—	—	—	—	—
phased out	1	8	1	—	—	1	—	11
denied	—	2	—	—	—	1	—	3
During 1981								
withdrew	—	1	—	—	—	—	—	1
phased out	—	9	—	—	—	—	—	9
denied	—	7	—	—	—	—	—	7
During 1982								
withdrew	—	3	—	—	—	—	—	3
phased out	—	1	—	—	—	—	—	1
denied	—	0	—	—	—	—	—	0
During 1983								
withdrew	—	0	—	—	—	—	—	0
phased out	—	3	—	—	—	—	—	3
denied	—	1	—	—	—	—	—	1
TOTALS	3	337	3	—	9	5	—	357

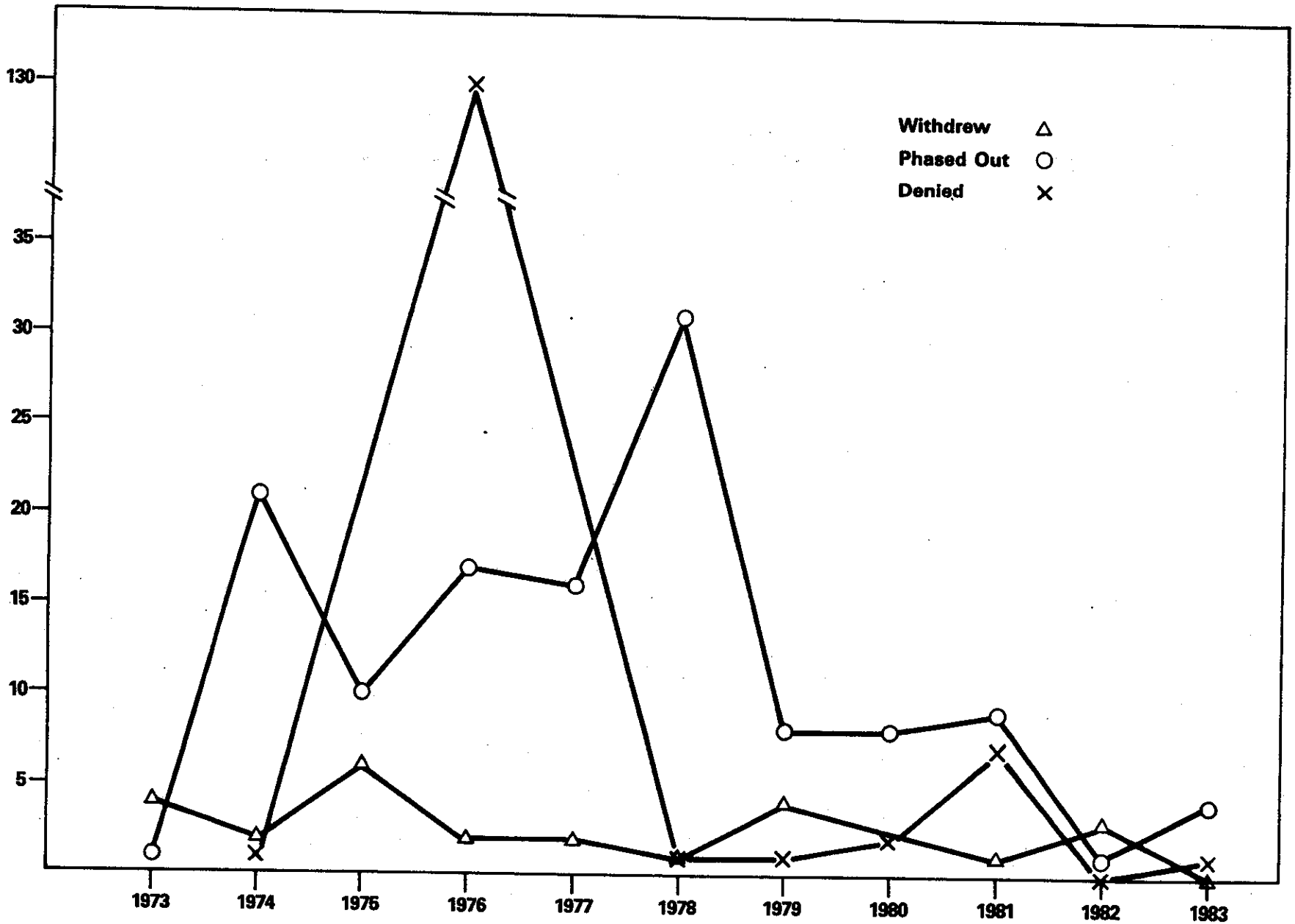


Figure III. Summary of Region II Ocean Dumping Permittees/Applicants Denied or Phased Out in Region II 1973-1983

TABLE V

OCEAN DUMPING PERMITS PHASED OUT
Jan.1981-Dec.1983

Permittee	Location	Date
West New York	New Jersey	March 1981
American Cyanimid	New Jersey	April 1981
Bristol Alpha	Puerto Rico	Sept. 1981
CAPRI	Puerto Rico	Sept. 1981
Merck, Sharpe & Dohme	Puerto Rico	Sept. 1981
Pfizer Pharmaceuticals	Puerto Rico	Sept. 1981
Shering	Puerto Rico	Sept. 1981
Upjohn Mfg.	Puerto Rico	Sept. 1981
Poll. Control Ind.	Puerto Rico	Sept. 1981
Middletown Twp.	New Jersey	Dec. 1982
Glen Cove City	New Jersey	Sept. 1983
Northeast Monmouth	New Jersey	Dec. 1983
NL Industries	New Jersey	Dec. 1983

LONDON DUMPING CONVENTION

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention) is an international agreement requiring the Contracting Parties (member nations) to establish national systems to control all substances leaving their shores for the purpose of being dumped at sea. The Convention was negotiated in London in November 1972 and came into force on August 30, 1975, following receipt of the required fifteen ratifications or accessions. Table VI lists the countries which are Contracting Parties to date.

As the U.S. authority for implementing international requirements for the control of ocean dumping, the MPRSA was amended in 1974 and also in 1980 to bring the Act into conformance with the Convention.

Technical aspects of the Convention regarding types of materials and other factors are contained in three annexes. Annex I establishes a "black list" of substances whose dumping is prohibited unless they are present only as "trace contaminants" or would be "rapidly rendered harmless." The substances on this list are mercury and cadmium and their compounds, organohalogen compounds such as DDT and PCB's, persistent plastics, and oil. Dumping of high-level radioactive wastes, and chemical and biological warfare agents is completely prohibited. Annex II contains a category of substances requiring "special permits" as well as special care in each dumping. These substances include heavy metals, cyanides and fluorides, waste containers which could present a serious obstacle to fishing or navigation, and medium and low-level radioactive wastes. Dumping substances not listed in Annexes I and II requires a "general permit". Annex III sets forth factors to be considered regarding characteristics and composition of the material, method of disposal, and characteristics of the dumping site before a permit may be issued.

The Convention provides that each Contracting Party will take appropriate steps to ensure that the terms of the Convention apply to its flagships and aircraft and to any vessel or aircraft loading in its ports for the purpose of dumping. Full continuous use is to be made of the best available technical knowledge in its implementation which, together with periodic meetings and planned participation by appropriate international technical bodies, is designed to keep the contents of the Annexes up to date and realistic in meeting the needs for controlling ocean pollution stemming from ocean dumping.

Consultative Meetings of the Contracting Parties have generally convened on an annual basis since 1976. Ad hoc advisory groups are established to work on particular subjects when necessary, the most significant being the ad hoc Scientific Group on Dumping, the ad hoc Working Group on Incineration at Sea, and the ad hoc Group of Legal Experts. The Scientific Group (AHSG) met intersessionally on an annual basis since 1977 as the Scientific technical advisory body of the Consultative Meetings. In 1983, the Seventh Consultative Meeting established the AHSG as the permanent Scientific Group on Dumping. The working process used by Consultative Meetings, namely to establish ad

hoc working groups of experts and, after noting their advice, to proceed with a view to reaching consensus on critical questions, has proved to be effective.

The work of the Consultative Meetings has been very effective in developing and adopting amendments, regulations, consultation-, test-, and notification procedures, and recommendations in the form of technical guidelines. Of particular significance are the procedures for settlement of disputes; regulations and recommended technical guidelines for control of incineration at sea; IAEA provisional definition and recommendation for dumping radioactive wastes at sea; interim guidelines for implementation of paragraphs 8 and 9 of Annex 1.

During the Seventh Consultative Meeting the Contracting Parties considered proposed amendments to Annexes I and II regarding a prohibition on ocean dumping of all radioactive waste materials. The Meeting reached consensus agreement that a two-year scientific review of relevant studies on ocean dumping of radioactive wastes will be conducted by a group of experts from the Contracting Parties and knowledgeable international organizations. Their final report will be presented to the Ninth Consultative Meeting. By voice vote, the Parties adopted a Resolution calling for the suspension of all radioactive waste dumping at sea pending presentation of the final report on the two-year study. This subject is further discussed in the section entitled Radioactive Waste.

Attention was also drawn to the research activities being conducted by the Nuclear Energy Agency in the field of seabed disposal of high-level radioactive wastes. Questions were raised over whether "seabed disposal" should come under the definition of "dumping" within Article III of the Convention. By Resolution of the Parties, an ad hoc Group of Legal Experts was established to convene intersessionally for the purpose of clarifying the interpretation of Article III in relation to disposal of high-level radioactive wastes into the seabed. The group met in December 1983 and will present their report to the Eighth Consultative Meeting for further action.

The Eighth Meeting will also consider the Report of the Task Team 2000 on a Long-Range Strategy for the Convention. This initiative was begun by the Sixth Consultative Meeting in order to review the Convention's accomplishments to date and, for the purposes for long-term strategies and objectives, to consider and offer recommendations on the following: 1) whether the ultimate goal of the Convention is for the best possible control of the disposal of wastes and other matter at sea or for the elimination of this activity; 2) what will be the future role of the LDC in the broader problems relating to all sources of marine pollution; 3) what will be the role of the LDC in the context of any developing strategy for total waste management; 4) what will be the relationship between the LDC and other regional and global agreements dealing with marine pollution in general and disposal of wastes at sea in particular; 5) are there any foreseeable changes to be contemplated in the structure or operation of the LDC as it now exists; and 6) are there any other matters that will impinge directly or indirectly on the continuing evaluation of the Convention.

TABLE VI

CONTRACTING PARTIES TO THE LONDON DUMPING CONVENTION
as of DECEMBER 31, 1983

Afghanistan
Argentina
Brazil
Byelorussian SSR
Canada
Cape Verde
Chile
Cuba
Denmark
Dominican Republic
Finland
France
Gabon
German Democratic Republic
German Federal Republic
Greece
Guatemala
Haiti
Honduras
Hungary
Iceland
Ireland
Japan
Jordan
Kenya
Kiribati
Libyan Arab Jamahiriya
Mexico
Monaco
Morocco
Nauru
Netherlands
New Zealand
Nigeria
Norway
Panama
Papua New Guinea
Philippines
Poland
Portugal
South Africa
Spain
Surinam
Sweden
Switzerland
Tunisia
Ukranian SSR
United Arab Emirates
United Kingdom
United States
USSR
Yugoslavia
Zaire

OCEAN DUMPING SITE DESIGNATIONS

Section 102(c) of the Act authorizes the Administrator to designate areas where ocean dumping may be permitted and any critical areas where dumping may be prohibited. This authority includes designating sites for ocean dumping of dredged material as well as sewage sludge, industrial wastes, and other matter.

If EPA designates an ocean site for dumping, such a site designation does not constitute or imply EPA's approval of actual disposal of materials at sea. Before ocean dumping of any material at any site may commence, a permit application must be evaluated according to the established ocean dumping criteria (40 CFR Part 227). EPA has the right to deny issuance of a permit for dumping of sewage sludge, industrial wastes and other matter, and, in the case of dredged material, EPA has the right to disapprove the dumping to be conducted under a COE issued permit or under Federal authorization if it is determined that environmental concerns under the Act have not been met.

A large number of ocean dump sites existed at the time of passage of the Act. Based on their historical use, EPA designated 13 non-dredged material dump sites (N-DMDS) and 127 dredged material dump sites (DMDS) on an interim basis. In 1977, a three year program was initiated for permanently designating or dedesignating the sites pending completion of environmental assessments or site designation studies.

In February 1980, the National Wildlife Federation (NWF) filed suit against the Agency challenging the interim designations. The court upheld the interim designations until settlement was reached. The suit resulted in a Consent Agreement wherein EPA agreed to prepare and issue 22 environmental impact statements (EIS) on 46 sites. Three of the EISs were for N-DMDS and 19 for DMDS. Therefore, the permanent designation of a number of sites, primarily high priority ones (Consent Agreement Sites), has been addressed through the preparation of EISs. A large number of sites, principally low priority ones (Non-Consent Agreement Sites), remain to be addressed. New ocean disposal sites will be addressed on a case by case basis.

The following two Tables VII and VIII show the EIS and rulemaking activities that have taken place in the designation process of Consent Agreement and Non-Consent Agreement Sites. Figures IV, V, and VI show the general distribution of existing designated sites in U.S. waters.

TABLE VII

CONSENT AGREEMENT
OCEAN DISPOSAL SITES

	EIS Status			Site Designation Status			
	No. of Interim Sites	Draft Issued	Final Issued	Interim Designation Extended to	Proposed	Final	No. Sites Desig-nated
Dredged Material Sites							
Hawaii	3	10/20/79	9/30/80		11/14/80	6/16/81	5
San Francisco Channel Bar	1	2/26/82	9/10/82	1/31/84			
New York Mud Dump	1	2/19/82	9/03/83	1/31/84	8/03/83		
Jacksonville, FL	1	5/14/82	1/14/83	1/31/84			
Galveston	1	1/30/82	11/26/82	1/31/84	10/07/83		
San Juan, P.R.	1	8/13/82	2/04/83	7/31/84			
Sabine-Neches	4	8/20/82	4/01/83	7/31/84			
Wilmington/Charleston/ Savannah**	3	10/08/82	10/28/83	7/31/84			
Columbia River	5	10/15/82	4/29/83	7/31/84			
Portland, ME.	1	10/15/82	3/25/83	7/31/84			
Pensacola/Mobile Gulfport	4	1/21/82	(11/83)	1/31/85			
Tampa, FL	2	10/29/82	9/09/83		11/08/82	11/02/83	
New Jersey/Long Island Inlets	8	11/18/83	(3/84)	1/31/85			
Coos Bay*	2	(05/84)	(8/84)	1/31/85			
Long Beach*	1	(06/84)	(9/84)	1/31/85			
San Diego*	2	(05/84)	(8/84)	1/31/85			
Humboldt Bay*	1	(08/84)	(11/84)	1/31/85			
San Francisco 100 Fathom	Dedesignation Proposed						
Other Sites							
106-Mile	1	6/25/79	2/27/80		12/20/82		
Acid Waste	1	11/27/79	12/01/80		5/29/80	6/16/83	1
Cellar Dirt	1	3/26/82	9/24/82		9/20/82	4/06/83	1

*Being prepared by COE
**Originally 2 EISs in Consent Agreement
()= Project Date

TABLE VIII

NON-CONSENT AGREEMENT
OCEAN DISPOSAL SITES

	EIS Status			Site Designation Status			
	No. of Interim Sites	Draft Issued	Final Issued	Interim Designation Extended to	Proposed	Final	No. Sites Designated
Dredged Material Sites							
Nome	2	11/25/83	(05/84)				
Atchafalaya		11/25/83	(04/84)				
Barataria, Houma, Empire and Bayou LaFourche, LA	4	(04/84)	(08/84)				
Calcasieu Bar, LA	7	(04/84)	(08/84)				
Moorehead City, NC*	1	(04/84)	(07/84)	1/31/85			
Georgetown Harbor, SC*	1	(06/84)	(09/84)	1/31/85			
Pascagoula, MS*	1	(07/84)	(10/84)	1/31/85			
Yabucoa, P.R.	1	(08/84)	(02/85)				
Port St. Joe and Panama City, FL	3	(10/84)	(02/85)				
Southwest Pass, Gulf Outlet, South Pass and Tiger Pass	4	(12/84)	(06/85)				
Cape Arundel, ME	1	(06/84)	(01/86)				
Fresh Water Bayou and Mermentau River, LA	2	(06/85)	(12/85)				
Other Sites							
Gulf Incineration	1	4/28/76	7/14/76		10/16/81	4/26/82	
North Atlantic Incineration	1	12/29/80	12/18/81		11/17/82	11/24/80	
Starkist (Samoa)	1	(10/83)	2/84)		8/25/80		

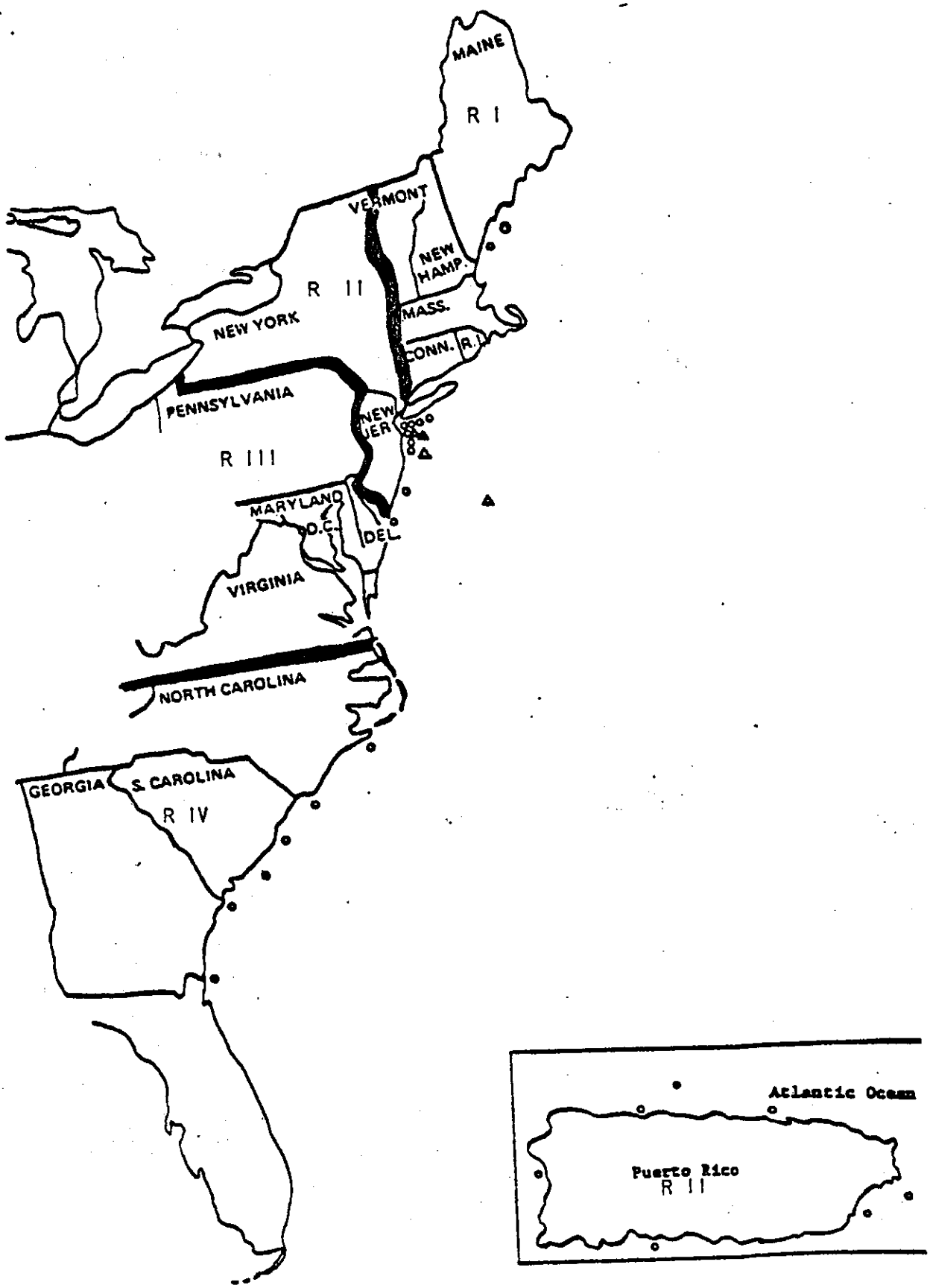
Con't TABLE VIII

	EIS Status			Site Designation Status			
	No. of Interim Sites	Draft Issued	Final Issued	Interim Designation Extended to	Proposed	Final	No. Sites Desig-nated
Other Sites							
Starkist (Long Beach)	1	(10/83)	(2/84)				
Tanner Banks	1				3/03/78	12/02/80	
Thums Long Beach	1	12/16/83	(2/84)		12/08/83		
Platform Jacket	1				8/05/83		
12/60 Sewage Sludge	2	3/12/76	10/16/78		11/30/78	5/18/79	2

*Being Prepared by COE
() = Project Date

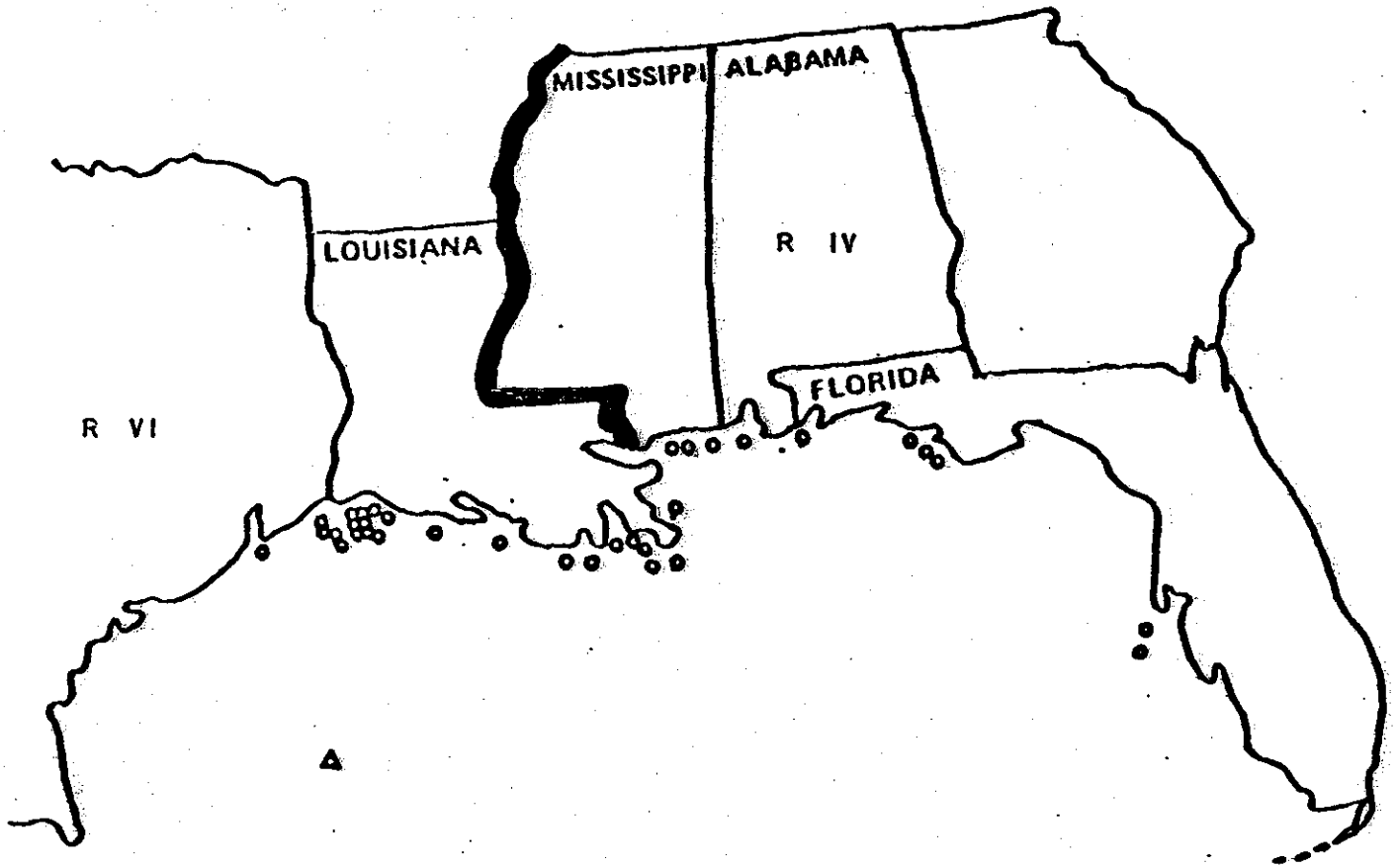
FIGURE IV

U.S. ATLANTIC OCEAN DISPOSAL SITES



• - Dredge Material Sites

▲ - Other Sites



U.S. GULF OF MEXICO DISPOSAL SITES

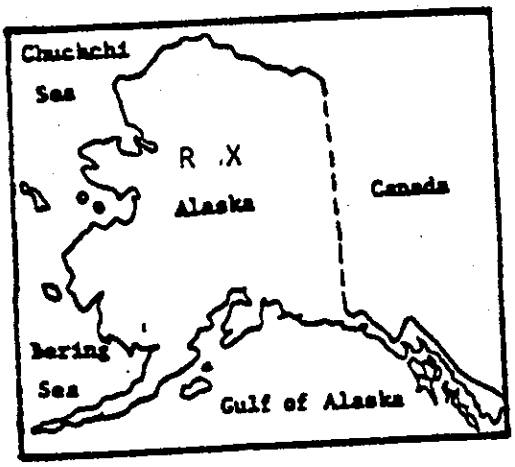
FIGURE V

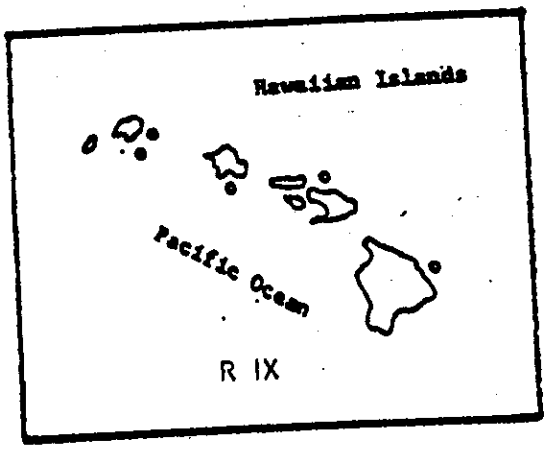
• – Dredge Material Sites

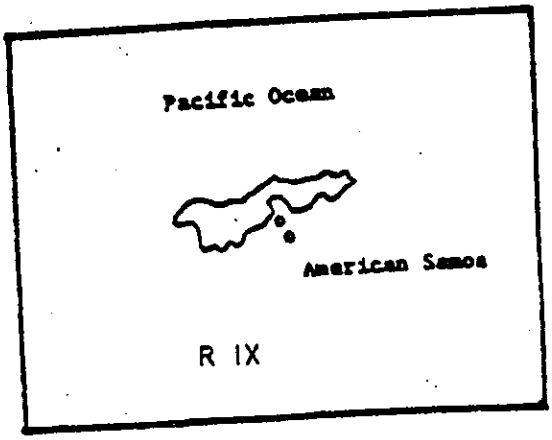
▲ – Other Sites

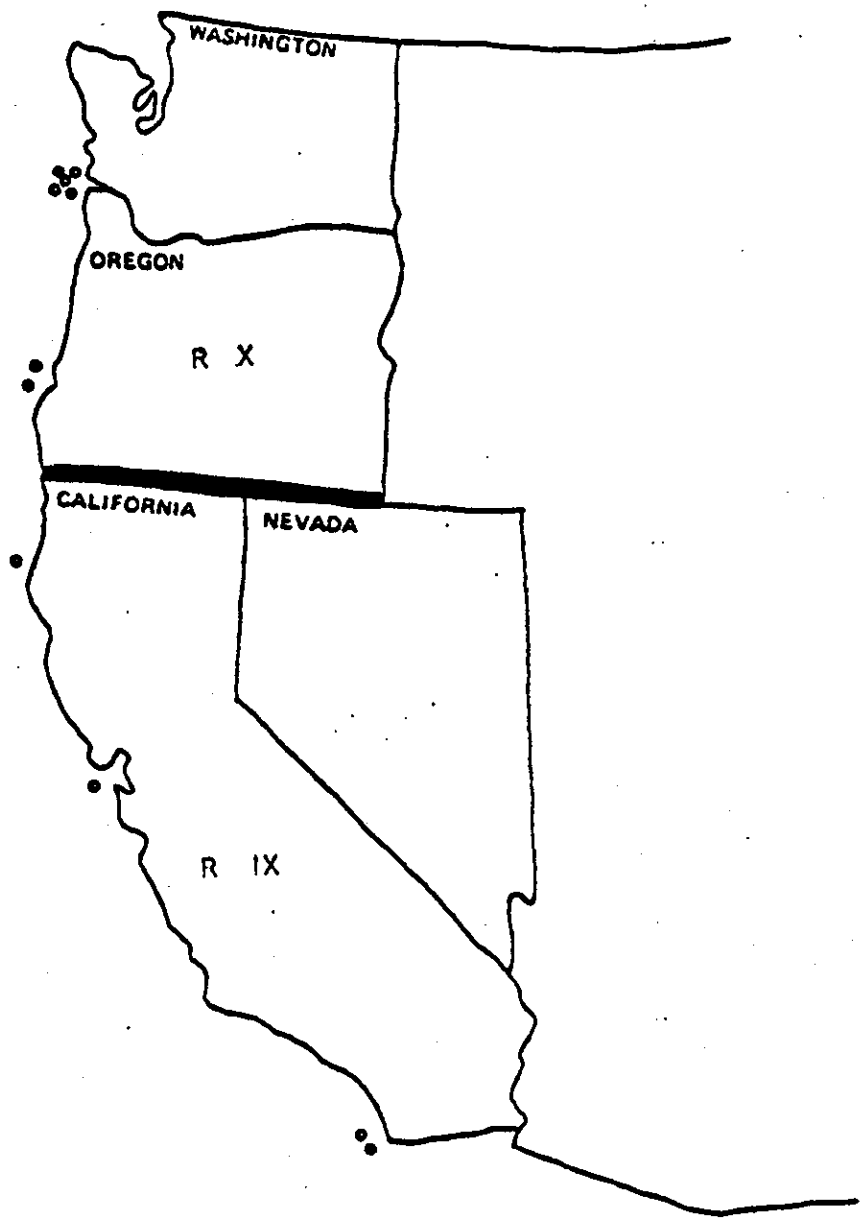
FIGURE VI

U.S. PACIFIC OCEAN DISPOSAL SITES









• - Dredge Material Sites

OSV ANTELOPE

The OSV Antelope is EPA's survey vessel for ocean monitoring and site designation field studies. Fully equipped with three laboratories, a wet lab for initial sample processing, a chemistry laboratory, and a microbiology laboratory, the ship also has a computerized survey center, from which survey operations are conducted. Onboard survey equipment includes over-the-side sampling gear, laboratory analytical equipment, an underwater television system with taping capabilities, and a sidescan sonar unit.

In 1981, six dredged material dumpsites (DMDS) were surveyed off the coast of Louisiana to collect data to be used in the development of EIS's on these sites. Later that year, EPA divers and scientists performed a reconnaissance survey of three alternate DMDS off Tampa, Florida. EPA conducted this survey as part of its site designation program mentioned in greater detail in another section of this report.

In 1982, EPA conducted additional surveys of sites off the coast of Tampa. Detailed surveys were done on two existing and three potential alternative DMDS.

During this same year, monitoring operations were conducted at the former Philadelphia sewage sludge dumpsite to assess recovery of the old dumpsite and in the New York Bight Apex to obtain current data for comparison with past results on the levels of contaminants in this region. A survey of the historically used Massachusetts Bay radioactive waste dumpsite was also done during 1982. Later that year, baseline surveys of the Gulf Incineration Site were conducted prior to the August 1982 research burn at sea of PCB wastes. In this survey, EPA conducted monitoring operations of ambient conditions in and out of the plume area during incineration. No detectable short term impact was found as a result of the burn at sea.

In 1983, 15 separate surveys were conducted off the coast of the U.S. as far north as Portland, ME and as far south as Brownsville, TX in the Gulf of Mexico.

The sites surveyed during CY 1983 are given below:

Tampa Harbor DMDS - two surveys
Boston Foul Grounds DMDS
Cape Cod Bay DMDS
Portland, ME DMDS
Philadelphia Sewage Sludge Dumpsite (currently not in use)
Norfolk, VA DMDS
North Atlantic Incineration Site (NAIS)
New York Bight (from Cape May, NJ to Sandy Hook,NJ to Montauk Light,L.I.)
Gulf Incineration Site (GIS)
Brownsville, TX DMDS
Corpus Christi, TX DMDS
Matagorda, TX DMDS
Pensacola, FL DMDS
Panama City, FL DMDS
Port St. Joe, FL DMDS

During the two 1983 Tampa surveys, the Agency surveyed the new proposed Site 4, and alternative sites X,Y and Z. The survey team collected supplemental seasonal baseline data for Site 4 and conducted a continuing investigation of the three alternative sites.

The two incineration sites surveyed, NAIS and GIS, included baseline and trend assessment monitoring of the air as well as the upper water column and water column biota. At the NAIS summer survey, baseline conditions were studied between Chesapeake Bay and Delaware Bay and the site approximately 100 miles offshore. The GIS fall survey encompassed the whole of the western part of the Gulf of Mexico between Mobile Bay, AL and Brownsville, TX. The Gulf survey sampled the same kinds of parameters as had been done earlier at the NAIS. Both these monitoring surveys, completed when no active use was being made of the site, are similar to the environmental monitoring the Agency will undertake when burns are actually taking place at the sites. These environmental surveys will be a supplement to stack gas monitoring and permittee monitoring on the incinerator vessel itself.

The Cape Cod, Norfolk, and Brownsville sites are all new sites at which disposal has not occurred. These surveys of baseline conditions will enable the Agency to make site management decisions in the future when permits are issued for new dredging projects.

The remainder of DMDS surveyed are those sites at which disposal has taken place in the past and is continuing. These surveys were trend assessment monitoring surveys, planned to assess the impacts of past disposal operations and to define the current environmental state of the site.

TAMPA HARBOR PROJECT

The site designation for ocean disposal of material dredged from the Corps of Engineers' (COE) Tampa Harbor deepening project has been of considerable interest to communities in the Tampa area as well as to EPA. Extensive studies have been made regarding the designation of these sites. EPA had entered into a contract with Interstate Electronics Corporation (IEC) in 1977 for the evaluation of interim designated sites and the preparation of EISs.

On January 11, 1977, EPA designated two interim sites, A and B, in the Tampa Bay area for the disposal of dredged material. Site A is located approximately 13 miles west of Egmont Key at the mouth of Tampa Bay; Site B is located approximately 9 miles from Egmont Key as seen in Figure VII. Dredged material was disposed of at Site B from 1969-1973; no dredged material has been disposed there since 1973. The COE disposed of dredged material from a construction dredging project at Site A from June 1980, until December 24, 1982.

The sites were designated for a three-year period, or until final site designation studies could be completed. On December 9, 1980, the interim designations were renewed until February 1983, pending completion of final site designation studies.

In April 1981, a study to evaluate the effects of offshore disposal of sediments in Site A was conducted. The study concluded that partially buried hard bottom habitats were present at the boundaries of the disposal site. Living hard bottom communities, including hard corals, soft corals, and sponges were observed beyond the limit of the disposal site.

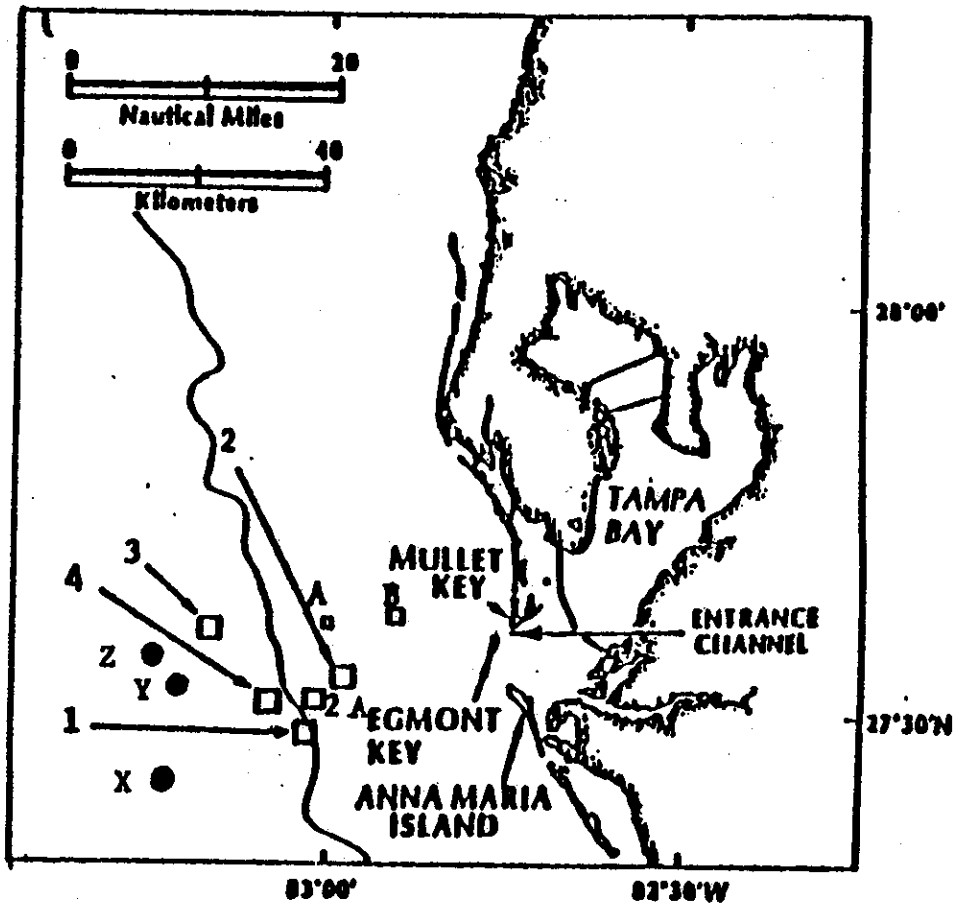
In search of an acceptable disposal site, EPA performed reconnaissance surveys of potential alternative sites in Tampa Bay area in October 1981 and again in April 1982. Using side-scan sonar and fathometer tracings providing by IEC during the 1981 survey, EPA divers observed and photographed the bottom at Alternative Shallow-Water Sites 1, 2, and 3. Sites 1 and 2 were regarded as unacceptable due to the presence of hard bottom outcrops and numerous animal and plant communities and only Site 3 appeared initially to be sandy bottomed.

Spurred by the Manatee County suit filed against EPA and COE for the continued use of Site A, the Agency conducted a more in-depth survey of the Tampa Alternative Sites 2A, 3, and 4 in April 1982. Examination of survey videotapes filmed from the sites' bottom areas revealed hard bottom outcrops in all but Alternative Site 4. This site was the only one considered, because it lacked existing hard bottom areas or coralline growth.

Due in part to the public comments received in response to the Tampa Bay draft EIS, EPA planned and implemented surveys to occur in February, March, and April 1983. These surveys examined in detail Alternative Site 4 and its Control Site approximately five miles southeast, and examined in lesser detail Sites A and B and State Sites X, Y, and Z.

The final EIS for Tampa Harbor was published in September 1983. This FEIS analyzes all pertinent information gathered by EPA from all of its surveys as well as other pertinent information relating to these sites. Based on the information available to the Agency, Site 4 was found to be an acceptable site from an environmental viewpoint because of its paucity of significant hard bottom areas. On November 1, 1983, Site 4 was designated as the disposal site for dredged material from the Tampa Harbor Project for a period of three years. The Agency fully intends to monitor carefully the effects of disposal operations at Site 4 to assure that no significant adverse effects of dumping occur beyond the boundaries of the site. Should the Agency, through its monitoring operations at Site 4, find adverse effects of dumping, it will rapidly move to halt disposal operations until methods can be used to assure that the material remains within the site.

The Agency initiated further survey operations during Fall 1983 to locate another ocean dredged material disposal site approximately 30 miles west of Egmont Key. It is the Agency's intention that complete site-specific studies, the EIS, and completion of rulemaking on a final site designation for this alternative 30-mile site be completed prior to the end of the three-year designation period for Site 4.



Tampa Harbor ODMDS and Alternate Disposal Sites

FIGURE VII

INCINERATION AT SEA

During 1981, PCB wastes were incinerated at sea at the Gulf of Mexico Incineration Site under a research permit issued to Chemical Waste Management, Inc. The permit allowed destruction of up to 3.5 million gallons of PCB wastes--equivalent to approximately four shiploads. Test results from each shipload were required to be evaluated and approved by EPA before permitting the next load to be incinerated.

The first burn began in December 1981 and was completed on January 4, 1982; final test results indicated the combustion efficiency (CE) was 99.8 percent and the destruction efficiency (DE) was greater than 99.9 percent. The second burn was conducted August 15-31, 1982; final results indicate the CE was in excess of 99.95 percent and the DE was greater than 99.99 percent. Environmental measurements in the vicinity of the ship and on shore showed no environmental impact.

During 1982, EPA received applications from Chemical Waste Management, Inc. for incineration of additional PCBs, for DDT, and for mixed organohalogen wastes. These applications are currently under review.

In December 1981, EPA issued the "Final Environmental Impact Statement (EIS) for North Atlantic Incineration Site Designation." The preferred site, located 140 nautical miles east of Delaware Bay, was proposed for designation by Federal Register notice on November 17, 1982. Final rulemaking on the proposed site is pending.

Several companies have announced plans to build new U.S. flag incinerator vessels. These ships must meet the International Maritime Organization (IMO) requirements for transport of dangerous cargo and the incinerator system must be certified as meeting the operational regulations for incineration at sea under the London Dumping Convention.

All incinerator vessels operating out of U.S. ports must also be certified by the U.S. Coast Guard for transport of hazardous materials and by EPA for incinerator performance. Certification of the incinerator system is done in accordance with the Convention regulations. Test burns are required for all wastes of unproven incinerability, and extensive monitoring of the stack emissions is required to determine CE and DE. The Convention regulations require that CE of at least 99.95$\pm$.05 percent be maintained at all times.

On October 21, 1983, the Assistant Administrator for Water made a tentative determination to issue two special and one research permit to Chemical Waste Management and Ocean Combustion Service for incineration of chemical wastes onboard the Vulcanus I and Vulcanus II at the Gulf of Mexico incineration site. Public hearings were scheduled for

Brownsville, Texas, on November 21, 1983, and Mobile, Alabama, November 22-23, 1983. The States of Texas and Louisiana along with several environmental and citizens groups sued to enjoin EPA from holding the hearings. On November 18, 1983, the suit was dismissed by the U.S. District Court on the grounds that it was premature.

EPA conducted public hearings on the tentative determinations originally scheduled. Over 6,000 people, including Governor Mark White and Attorney General Jim Mattox, attended the hearing in Brownsville. Over 500 people attended the hearing in Mobile. During these hearings, the Assistant Administrator for Water extended the public comment period on the tentative determination to January 31, 1984.

On December 7, 1983, the House of Representatives Committee on Merchant Marine and Fisheries conducted an Oversight Hearing on incineration of hazardous wastes at sea. Committee members pressed the Assistant Administrator for Water on the need for EPA to issue specific regulations for incineration of chemical wastes at sea before EPA would issue special (operating) permits. The AA for Water committed to issuing regulations by December 1984, but took no position on the timing of special permit issuance while these regulations were being developed.

At the Brownsville public hearing, the AA for Water agreed to sponsor a scientific forum in Brownsville on January 10, 1984. Scientific experts from groups opposed to the tentative determination and EPA experts would focus discussions on the scientific issues in dispute. An edited TV tape of the forum will be prepared and made available to the general public.

RADIOACTIVE WASTES

During 1981, with assistance from the National Oceanic and Atmospheric Administration (NOAA), EPA initiated a survey of the former radioactive waste disposal site in Massachusetts Bay. This site received about 4000 containers with a total of about 2400 curies of radioactive waste between 1946 and 1958, which is about 2 percent of all U.S. disposal at sea of radioactive waste during this period. To determine possible public health significance of Massachusetts Bay disposals, EPA pursued three sources of data: 1) review of disposal records and interviews with people involved with the disposals, 2) side-scan sonar surveys to locate objects on the ocean bottom in the dumpsite, and 3) a radiological monitoring survey to collect samples of marine biota, sediments, and water for radioactivity measurements. The records and interviews indicated most disposals occurred in the area designated as a foul site, although two adjacent areas were authorized and may have received some disposals. During 1981, NOAA surveyed all three areas with side-scan sonar to provide data on locations of groups of bottom objects to indicate where samples should be collected in the subsequent radiological survey. NOAA also collected a large number of sediment and fish samples which were sent for analysis to EPA's Eastern Environmental Radiation Facility in Montgomery, Alabama.

EPA returned to Massachusetts Bay in September 1982 with the EPA ocean survey vessel Antelope to collect radiological samples, to measure radioactivity directly on the ocean bottom, and to observe containers with underwater television. The crew on this survey included scientists from several Federal and State agencies as well as private research laboratories and contractors. Preliminary radioactivity measurements show no significant levels and EPA concludes that previous disposals in the Bay are not resulting in harm to either human health or the marine environment. EPA will publish a comprehensive report on the overall survey of Massachusetts Bay.

In 1981 EPA initiated a program to monitor marketplace seafoods as a means of determining possible public health effects from the major U.S. ocean dumpsites where radioactive wastes were dumped in the past. Since seafoods are the only significant pathway by which radioactive materials could move from an ocean dumpsite back to man, EPA in conjunction with the Food & Drug Administration (FDA) is periodically analyzing commerical seafoods from cities nearest these major dumpsites. These include San Francisco, CA (Farallon Islands dumpsite), Newark, NJ (Atlantic 2800 meter and 3800 meter dumpsites), and Boston, MA (Massachusetts Bay dumpsite). These dumpsites received more than 97 percent of all radioactive wastes disposed in the ocean by the U.S. from 1946 until ocean disposal of radioactive waste ceased in 1970 because of the availability of acceptable land disposal techniques.

The FDA collects six different samples of seafoods every six months in each of the cities. The samples are obtained directly from fishermen who have fished in the area of the dumpsites and are taking their catch to market. The samples are split for radionuclide analyses both by the FDA and by EPA's Eastern Environmental Radiation Facility. Measurements on all samples collected in 1981 and 1982 indicate only normal background levels of radioactivity. The results of these analyses will be summarized in a report in 1984.

The Department of Navy has notified EPA that the ocean is being evaluated as an option for disposal of decommissioned, defueled, submarine reactor plants. The Navy published a draft Environmental Impact Statement in December 1982 which presents data on three options for disposal of these nuclear reactor plants. The options include long-term floating storage, sinking of the entire submarine in the deep ocean, or removal of the reactor compartment for burial on land. If the Navy determines that sea disposal is the best option, they will have to request an ocean dumping permit from EPA according to requirements of the Ocean Dumping Act of 1972 and the Amendments of 1983, as described below.

In May 1981, under the terms of the Organization for Economic Cooperation and Development (OECD) Multilateral Consultation and Surveillance Mechanism for Sea Dumping of Radioactive Waste, the international Nuclear Energy Agency (NEA) adopted a coordinated research and environmental surveillance program plan for gathering comprehensive scientific data related to radioactive waste disposal in the Northeast Atlantic Dumpsite, which is located north of the Azores. All radioactive waste sea dumping operations undertaken by OECD participating countries have been carried out at this site since 1974. This program is run under the direction of an Executive Group made up of representatives from 13 countries who are pooling resources and expertise to implement the plan. EPA is providing the U.S. representative to the Executive Group, and extensive radiochemical laboratory facilities. The U.S. is also providing technical experts to each of the five Task Groups which are performing research studies under the plan in physical oceanography, geochemistry, biology, modelling, and radiological surveillance. The results of these studies will be used in 1984 to determine the suitability of the Northeast Atlantic Dumpsite for continued use for radioactive waste disposal.

The future use of the oceans for disposal of radioactive wastes was a major issue addressed by two resolutions at the February 1983 meeting of Contracting Parties to the London Dumping Convention. A resolution was adopted by concensus which calls for a review of the scientific and technical merits of proposals to amend the Annexes of the Convention in order to ban the ocean disposal of radioactive materials. This review was initiated at a meeting of several international organizations in September 1983, that convened to assemble a bibliography of relevant scientific literature. This literature will be provided to a meeting of experts in 1984 for scientific review and preparation of a report to the Consultative Meeting in February 1985. A second resolution was adopted by vote that calls for a suspension of any further ocean disposal of radioactive materials pending presentation of the experts' report to the Contracting Parties.

In January 1983, the President signed P.L. 97-424, "The Surface Transportation Assistance Act of 1982." This Act contained amendments to the Ocean Dumping Act of 1972 that specifically addressed the ocean disposal of radioactive materials. In particular, the amendments remove

EPA's authority to issue ocean dumping permits for such materials for a period of two years, except for research purposes. After two years, a permit applicant must prepare a site specific radioactive material disposal impact assessment that includes 11 requirements specified by the amendments. If EPA determines a permit is warranted, then EPA must request authority from Congress to issue the permit. This request must then be approved by a joint resolution of Congress acting within 90 days of receipt of EPA's recommendation.

Congressional concerns for ocean disposal of radioactive materials were also addressed in a hearing on November 2, 1983, by the Subcommittee on Oceanography of the Committee on Merchant Marine and Fisheries of the House of Representatives. EPA's testimony at this hearing reviewed the steps taken in our domestic and international programs to assure careful scientific evaluation of all matters related to protection of the marine environment and public health. Although EPA has not received any permit requests for ocean disposal of radioactive materials, we are continuing to develop a scientific basis for evaluating any such requests. In particular, EPA is supporting studies at several national laboratories and universities to evaluate biological monitoring techniques, criteria for packaging radioactive materials, and the behavior of such materials when released to ocean waters. In addition, EPA is actively involved in research and criteria development programs of the International Atomic Energy Agency (IAEA) and the NEA.

ENFORCEMENT

The U.S. Coast Guard has responsibility for surveillance activities to prevent unlawful dumping or unlawful transportation of materials for dumping and to assure authorized ocean dumping is performed in compliance with permit conditions.

Vessels and aircraft patrols, shipriders on board dumping vessels, in-port boardings and inspections, and Vessel Traffic Services (VTS) radar are several methods used by the Coast Guard for surveillance of ocean dumping operations. The scheduling of surveillance resources is aided by a permit condition which requires permittees to give authorities advance notification prior to commencing any dumping operations.

Pursuant to Section 107(c) of the MPRSA and the regulations thereunder (40 CFR 223) information concerning violations of the Act and of ocean dumping permit conditions is forwarded to EPA Regional Administrators for appropriate action when civil actions are indicated or to the Attorney General for criminal cases. Suspected violations are documented by the Coast Guard to the maximum extent practicable and referred to EPA for investigation and determination of possible enforcement actions. Evidentiary material may include witness statements, photos, samples, message traffic, and log excerpts.

In 1981, 3956 notifications of dumping were reported to the Coast Guard. A total of 245 surveillance missions were conducted: 10 by use of radar, 140 performed by shiprider, 2 by vessels and 93 by observations from aircraft during routine flying missions.

The Coast Guard received 3379 notifications in 1982. A total of 50 missions were conducted, 7 by use of radar and 43 performed by shiprider

In 1983, 4143 notifications of dumping were reported to the Coast Guard. A total of 189 surveillance missions were conducted, 129 by use of radar, 28 by shiprider, 28 by boarding inspector, and 4 by vessels. Surveillance was also conducted by radio/telephone.

The surveillance missions resulted in one case being referred to the EPA in 1981 for alleged violations. None was referred in 1982 and 1983. No cases were referred to the Attorney General by the Coast Guard or EPA in 1981, 1982, or 1983.

Four enforcement actions were taken by EPA during 1981, one in 1982, and two during 1983 (Table IX). Six actions were for lack of compliance with permit schedules, and one was for burning outside the wood incineration site.

TABLE IX
ENFORCEMENT ACTION

RESPONDENT'S NAME	REFERRAL FROM	TYPE OF VIOLATION	COMPLAINT ISSUED	DISPOSITION	DISPOSAL SITE
Weeks Stevedoring	USCG	Burning outside of wood incineration site	2/27/81	Final order - 3/29/82 establish wetdown site	Wood Incin.
Glen Cove	EPA	Permit condition, Compliance schedule	Waived	Final Order - 1/12/82 revision of schedule; cease dumping by Mar. 1983	Sewage Sludge
Middletown TWP.	EPA	Permit condition, Compliance schedule	Waived	Final Order - 1/7/82 revision of schedule; cease dumping by Sept 1982	Sewage Sludge
NL Industries	EPA	Permit condition, Compliance schedule	Waived	Final Order - 2/1/82 $82,000 penalty assessed; revision of schedule	Acid Wastes
Middletown TWP	EPA	Consent agreement, Compliance schedule	Waived	Final Order - 11/18/82 revision of schedule; cease dumping by Dec. 1982	Sewage Sludge
Northeast Monmouth County Regional Sewerage Authority	EPA	Permit condition	6/6/83	Final Order - 8/24/83 phased out 12/31/83	Sewage Sludge
City of Glen Cove	EPA	Permit condition, Compliance schedule	Waived	Amended Final Order 6/23/83 cease dumping 9/1/83	Sewage Sludge
NL Industries	EPA	Permit condition, Compliance schedule	2/1/82	Final Order - 8/17/83 $30,000 penalty payment; cease dumping of gangue solids by 4/1/82	Acid Wastes

TABLE III

TYPES AND AMOUNTS OF OCEAN DISPOSAL BY GEOGRAPHIC/COASTAL AREA
(In Approx. Thousand Tons)
1973 - 1983

ATLANTIC (A)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Industrial Waste	3643	3642	3322	2633	1784	2548	2577	2928	2271	1063	283
Sewage Sludge	4898	5010	5040	5271	5134	5535	6442	7309	6703	7670	8312
Const. Debris	974	770	396	315	379	241	107	89	0	0	0
Solid Waste	0	0	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	.0003	0	0
Wood Incin.	11	16	6	9	15	18	45	11	15	13	31
Incin. Chemical	0	0	0	0	0	0	0	0	0	0	0

GULF OF MEXICO (B)

Industrial Waste	1408	938	120	100	60	0.17	0	0	0	0	0
Sewage Sludge	0	0	0	0	0	0	0	0	0	0	0
Const. Debris	0	0	0	0	0	0	0	0	0	0	0
Solid waste	0	0	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	0	0	0
Wood Incin.	0	0	0	0	0	0	0	0	0	0	0
Incin. Chemicals	0	12.3	4.1	0	17.6	0	0	0	700*	800*	0

PACIFIC (C)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Industrial Waste	0	0	0	0	0	0	0	.26	23.3	18.8	21.5
Sewage Sludge	0	0	0	0	0	0	0	0	0	0	0
Const. Debris	0	0	0	0	0	0	0	0	0	0	0
Solid Waste	240	200	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	0	0	0
Wood Incin.	0	0	0	0	12.1	0	0	0	0	0	0
Incin. Chemicals	0	0	0	0	0	0	0	0	0	0	0

TOTALS OF (A), (B), (C)

Industrial Waste	5051	4580	3452	2733	1844	2548.17	2577	2928.26	2294.3	1081.8	304.5
Sewage Sludge	4890	5010	5040	5271	5134	5535	6442	7309	6703	7670	8312
Const. Debris	974	770	396	315	379	241	107	89	0	0	0
Solid Waste	240	200	0	0	0	0	0	0	0	0	0
Explosives	0	0	0	0	0	0	0	0	.0003	0	0
Wood Incin.	11	16	6	9	15	18	45	11	15	13	31
Incin. Chemicals	0	12.3	4.1	0	17.6	0	0	0	700*	800*	0

* thousand gallons (prior to incineration)