

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, BA4					R-1 ITEM NOMENCLATURE Environmental Protection / PE0603721N					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total PE Cost		70.404	82.999	62.194	45.181	44.315	44.439	44.670	Cont	Cont
Shipboard Waste Mgmt / S0401		43.073	55.273	48.557	29.607	27.981	27.789	27.546	Cont	Cont
Env Compliance / W2210		4.278	4.497	4.820	5.096	5.373	5.494	5.671	Cont	Cont
Aviation Depot Maint Tech / W2623*		1.936	1.989						0.0	3.925
Pollution Abatement / Y0817		8.588	9.306	8.817	10.478	10.961	11.156	11.453	Cont	Cont
Asbestos Removal / Y2402*		3.855	3.978						0.0	9.720
Resource Recovery Tech Center / Y2403*		6.747	7.956						0.0	18.477
Molten Salt Oxidation / Y2622*		1.927							0.0	1.927

A. (U) Mission Description and Budget Item Justification: This program develops processes, prototype hardware, systems, and operational procedures that will allow the Navy to operate in the U.S., foreign and international waters, air, space, and land areas while complying with U.S. statutes and international agreements. The program also includes efforts to improve the Navy's response to salvage-related pollution incidents. Projects support the Navy's requirement to meet environmental standards outlined by Environmental Protection Agency Executive Order 12088 of October 1978, Act to Prevent Pollution from Ships, Endangered Species Act, Marine Mammal Protection Act, Endangered Species Act, Clean Air Act, Clean Water Act, DoD Directive 6050.4 of 16 March 1982, DoD Directive 4210.15 of 27 July 1989, DoD Directive 6050.15 of 14 June 1985, DoD Directive 6050.9 of 13 February 1989, and OPNAVINST 5090.1B CH-1 of 2 February 1998. Project S0401 supports RDT&E efforts that allow the Navy to be in compliance with existing and anticipated laws with regard to four major areas: 1) ozone depleting substances, 2) solid wastes, 3) liquid wastes, and 4) hazardous and other ship wastes. Project W2210 supports development of environmental systems for naval aviation operations to enable compliance with environmental laws and regulations and minimize the cost associated with environmental compliance. Project Y0817 supports and validates development of technologies to enable facilities to comply with environmental laws and regulations in a cost effective manner.

* Projects W2623, Y2402, Y2403, and Y2622 are Congressional adds.

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Exhibit R-2, RDT&E Budget Item Justification
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, BA4	R-1 ITEM NOMENCLATURE Environmental Protection / PE 0603721		
B. (U) Program Change Summary:			
	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
FY 2000 President's Budget:	71.170	70.793	64.373
Appropriated Value:	71.170	82.793	
Adjustment to FY 1999/2000 Appropriated Value/ FY 2000 President's Budget:	-0.766	12.206	-2.179
FY 2001 DON Budget Submit:	70.404	82.999	62.194
 (U) Funding:			
 <u>FY 1999</u> Reduction of \$0.766M reflects general Undistributed Reductions (-\$0.647M), SBIR Transfer (-1.119M), and ASN(RD&A) restoration of funds for Uniform National Discharge Standards (UNDS) development (+\$1.000M).			
 <u>FY 2000</u> Increase of \$12.206M reflects N86 sponsor reprogramming for Project S0401 for Advanced Undersea Warfare Concept (-\$1.333M); FY00 Congressional add for Resource Recovery Technology Center - Y2403 (+8.0M); FY00 Congressional add to Asbestos Removal - Y2402 (+\$4.0M); Program Budget Decision for Aviation Depot Maintenance - W2623 (+\$2.0M); undistributed reductions (-\$0.461M); and minor pricing adjustments.			
 <u>FY 2001</u> Reduction of \$2.179M.			
 (U) Schedule: Not applicable. (U) Technical: Not applicable.			

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N				PROJECT NAME AND NUMBER Shipboard Waste Management / S0401					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Shipboard Waste Management / S0401		43.073	55.273	48.557	29.607	27.981	27.789	27.546	Cont	Cont
RDT&E Articles Qty										
Oily Waste Polishing System - Engineering Development Models		1-\$1M	1-\$1M	1-\$0.4M						
Non-Oily Waste Polishing System - Engineering Development Models		1-\$1M	1-\$1M	1-\$1M		1-\$0.6M				
Non-CFC Refrigerant Replacement Kits - Engineering Development Models		1-\$0.5M								
Liquid Waste Thermal Destruction - Engineering Development Models			2-\$3M		1-\$2M		1-\$0.9M			
Shipboard Pollution Prevention - Test Articles		27-\$0.5M						2-\$0.8M		
Solid Waste - Engineering Development Models		1-\$0.7M	1-\$2M	1-\$2M						
Underwater Hull Cleaning - Engineering Development Models				1-\$0.7M		1-\$0.9M				
<p>A. (U) Mission Description and Budget Item Justification</p> <p>1. (U) FY 1999 ACCOMPLISHMENTS:</p> <p>(U) (\$13.812M) Ozone Depleting Substances - Completed evaluation of first submarine refrigeration plants converted to HFC-134a. Continued development of backfit modification kits for surface ship 125-ton & 150-ton CFC-114 air-conditioning plant designs. Continued development of backfit modification kits for surface ship 300-ton and 363-ton CFC-114 air-conditioning plant designs. Continued development and initiated qualification of backfit modifications for remaining surface ship 250-ton CFC-114 air-conditioning plant designs. Continued one-year at-sea ship test and evaluation of HFC-236fa backfit modifications in 200-ton CFC-114 air-conditioning plants. Completed laboratory evaluations of future fleet non-chlorofluorocarbon 200-ton centrifugal air-conditioning plant and 1.5-ton refrigeration plant prototypes to qualify systems. Completed development of alternative solvents and processes for oxygen systems cleaning applications. Completed development of Alternative Firefighting Agent Delivery System (AFFADS) for new ship construction and initiated evaluation of non-ODS fire protection concepts and systems for future surface combatants.</p> <p>(U) (\$20.280M) Integrated Liquid Wastes - Continued support of rulemaking process with Environmental Protection Agency (EPA) in development of Uniform National Discharge Standards (UNDS) for liquid waste discharges from Navy vessels: completed Phase I, determination of incidental discharges requiring Marine Pollution Control Devices (MPCDs); and initiated Phase II, setting of MPCD performance standards. Continued development of integrated liquid waste treatment system: continued development of 10-gal/min unit Oily Waste Polishing System (OWPS) (OWS-10 Polisher) and continued development of 50-gal/min OWPS (OWS-50 Polisher); continued development of Engineering Development Model (EDM) non-oily wastewater treatment system; continued development of advanced Oil Content Monitor (OCM); and continued test and evaluation of upgraded shipboard vortex sewage incinerator. Continued development of design fixes for compensated fuel ballast systems. Completed development of High-Capacity Oil/Water Separator (HCOWS). Completed testing of Non-Seeping Grease Seal on submarine dive and steering gear.</p> <p>(U) (\$3.635M) Solid Wastes - Continued development of management processes and systems for plastics for submarine application: performed Temporary Alterations (TEMPALTs) of prototype equipment aboard two SSN-688 Class submarines and conducted at-sea test & evaluation; investigated onboard storage techniques and locations for SSBN-726 Class submarines.</p> <p>(U) (\$5.346M) Hazardous and Other Major Ship Wastes - Continued shipboard hazardous materials substitution and elimination task and continued Test and Evaluation (T&E) of pollution prevention equipment aboard ship. Issued final report for Non-Asbestos Substitutes (NAS). Continued quality assurance testing on reformulated commercial paints. Continued development of oil spill response capabilities: completed development of computer-based contingency planning system; completed development of in-situ oil burning system; continued development of Recovered Oil Logistics System; continued development of oil outflow and salvage response analysis program; and continued development of oil and skimmer tracking system. Initiated development of marine mammals ship database tracking system.</p>										

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Shipboard Waste Management / S0401

2. (U) FY 2000 PLAN:

(U) (\$11.167M) Ozone Depleting Substances - Complete development of backfit modification kits for surface ship 125-ton & 150-ton CFC-114 air-conditioning plant designs. Complete development of backfit modification kits for surface ship 300-ton and 363-ton CFC-114 air-conditioning plant designs. Complete one-year at-sea ship test and evaluation of HFC-236fa backfit modifications in 200-ton CFC-114 air-conditioning plants. Continue development and qualification of backfit modifications for remaining surface ship 250-ton CFC-114 air-conditioning plant designs. Continue evaluation of non-ODS fire protection concepts and systems for future surface combatants.

(U) (\$27.906M) Integrated Liquid Wastes - Continue support of rulemaking process with EPA in development of UNDS for liquid waste discharges from Navy vessels: continue Phase II, setting of MPCD performance standards. Continue development of integrated liquid waste treatment system: continue development of 10 gal/min OWPS (OWS-10 Polisher), continue development of 50-gal/min OWPS (OWS-50 Polisher), and initiate development of 5-gal/min combined OWPS (OWS-5 Polisher) for new-construction ships; continue development of EDM non-oily wastewater treatment system; continue development of advanced OCM; complete test and evaluation of upgraded shipboard vortex sewage incinerator; and initiate development of advanced thermal destruction system for concentrated ship liquid wastes. Continue development of design fixes for compensated fuel ballast systems.

(U) (\$7.200M) Solid Wastes - Continue development of management processes and systems for plastics for submarine application: convert SSN-688 Class submarine TEMPALT to a Ship Alteration (SHIPALT) and upgrade test submarines; perform TEMPALTs of prototype equipment aboard two SSBN-726 Class submarines and conduct at-sea test and evaluation; investigate onboard storage techniques and locations for SSN-21 Class submarines; and initiate investigation of onboard storage techniques and locations for SSN-774 Class submarines. Initiate development of advanced thermal destruction system for processing shipboard solid wastes.

(U) (\$9.000M) Hazardous and Other Major Ship Wastes - Continue shipboard hazardous materials substitution and elimination task and continue T&E of pollution prevention equipment aboard ship. Complete quality assurance testing on reformulated commercial paints. Continue development of oil spill response capabilities: complete development of oil outflow and salvage response analysis program; complete development of oil and skimmer tracking system; continue development of Recovered Oil Logistics System; and initiate development of oil and skimmer efficiency improvements. Continue development of marine mammals ship database tracking system. Initiate development and testing of new low-copper underwater hull antifouling coatings. Initiate development of underwater hull cleaning system.

3. (U) FY 2001 PLAN:

(U) (\$5.998M) Ozone Depleting Substances - Complete development and qualification of backfit modifications for remaining surface ship 250-ton CFC-114 air-conditioning plant designs. Continue evaluation of non-ODS fire protection concepts and systems for future surface combatants.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Shipboard Waste Management / S0401
<p>(U) (\$27.759M) Integrated Liquid Wastes - Continue support of rulemaking process with EPA in development of UNDS for liquid waste discharges from Navy vessels: continue Phase II, setting of MPCD performance standards. Continue development of integrated liquid waste treatment system: continue development of OWS-10 Polisher, continue development of OWS-50 Polisher, and continue development of OWS-5 Polisher; complete development of advanced OCM; continue development of EDM non-oily wastewater treatment system; and continue development of advanced thermal destruction system for concentrated ship liquid wastes. Continue development of design fixes for compensated fuel ballast systems.</p> <p>(U) (\$5.400M) Solid Wastes - Continue development of management processes and systems for plastics for submarine application: convert SSBN-726 Class submarine TEMPALT to SHIPALT and upgrade test submarines; perform TEMPALT of prototype equipment aboard SSN-21 Class submarine and initiate at-sea test and evaluation; and continue investigation of onboard storage techniques and locations for SSN-774 Class submarines. Continue development of advanced thermal destruction system for processing shipboard solid wastes.</p> <p>(U) (\$9.400M) Hazardous and Other Major Ship Wastes - Continue shipboard hazardous materials substitution and elimination process and continue T&E of pollution-prevention equipment aboard ship. Continue development of oil spill response capabilities: complete development of Recovered Oil Logistics System; continue development of oil and skimmer efficiency improvements; and initiate development of light-oil recovery modifications. Continue development of marine mammals ship database tracking system: initiate demonstration. Continue development and testing of new low-copper underwater hull antifouling coatings. Continue development of underwater hull cleaning system.</p> <p>B. (U) Other Program Funding Summary: Demonstrated and validated technologies are transitioned to various SCN, OPN, and O&MN budget accounts for implementation as part of a Fleet modernization program or new ship construction.</p> <p>(U) Related RDT&E: (U) Defense Research Sciences/Shipboard Processes (PE 61153N/R3162) (U) Readiness, Training, and Environmental Quality/Logistics and Environmental Quality (PE 62233N) (U) Environmental Quality and Logistics Advanced Technology/Environmental Requirements Advanced Technology (PE 63712N/R2206)</p> <p>C. (U) Acquisition Strategy: (U) RDT&E Contracts are Competitive Procurements.</p>		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Shipboard Waste Management / S0401																				
<p>D. (U) Schedule Profile:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 33%; text-align: center;"><u>FY99</u></th> <th style="width: 33%; text-align: center;"><u>FY00</u></th> <th style="width: 33%; text-align: center;"><u>FY01</u></th> </tr> </thead> <tbody> <tr> <td>Ozone Depleting Substances</td> <td>Completed Evaluation First Submarine Refrigeration Plant Modifications Completed Evaluation Future 200T A/C & 1.5T Refrigeration Prototypes Completed Development Alternative Solvents for O2 Systems Completed Development AFFADS for New Ships</td> <td>Complete Development 125T & 150T CFC-114 A/C Modification Kits Complete Ship Test 200T CFC-114 A/C Modification Complete Development 300T & 363T CFC-114 A/C Modification Kits</td> <td>Complete Development Remaining 250T A/C Modification Kits</td> </tr> <tr> <td>Integrated Liquid Wastes</td> <td>Completed UNDS Phase I (Discharges Requiring MPCD) Initiated UNDS Phase II (MPCD Performance Standards) Completed Development High-Capacity Oil/Water Separator Completed Test Sub Non-Seeping Grease Seal</td> <td>Complete UNDS Phase II (MPCD Performance Standards) Initiate UNDS Phase III (MPCD Guidelines) Complete Development OWS-10 Polisher Initiate Development Future OWS-3 Polisher</td> <td>Complete UNDS Phase III (MPCD Guidelines) Complete Development OWS-50 Polisher Complete Development Future OWS-3 Polisher Complete Development Advanced OCM</td> </tr> <tr> <td>Shipboard Solid Wastes</td> <td>SSN-688 Plastics TEMPALT & Initiate T&E Investigated SSBN-726 Plastics Storage Techniques</td> <td>SSBN-726 Plastics TEMPALT & Initiate T&E Investigate SSN-21 Plastics Storage Techniques Initiate Development Advanced Thermal Destruction System</td> <td>Complete SSN-688 Plastics T&E Aboard Ship SSN-21 Plastics TEMPALT & Initiate T&E</td> </tr> <tr> <td>Hazardous & Other Major Ship Wastes</td> <td>Issued Final Report Non-Asbestos Substitutes Initiated Development Marine Mammal Database</td> <td>Complete Test Reformulated Paints Complete Development Oil Contingency Planning System Complete Development Oil Outflow/Salvage Program Complete Development In-Situ Oil Burning System Initiate Development Oil & Skimmer Improvements & OWS Initiate Development New Underwater Hull Coatings Initiate Development Underwater Hull Cleaning System</td> <td>Complete Hazardous Materials Elimination/Substitution Complete Pollution Prevention Afloat Initiate Light-Oil Recovery System Modifications Initiate Marine Mammal Database Demonstration</td> </tr> </tbody> </table>				<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	Ozone Depleting Substances	Completed Evaluation First Submarine Refrigeration Plant Modifications Completed Evaluation Future 200T A/C & 1.5T Refrigeration Prototypes Completed Development Alternative Solvents for O2 Systems Completed Development AFFADS for New Ships	Complete Development 125T & 150T CFC-114 A/C Modification Kits Complete Ship Test 200T CFC-114 A/C Modification Complete Development 300T & 363T CFC-114 A/C Modification Kits	Complete Development Remaining 250T A/C Modification Kits	Integrated Liquid Wastes	Completed UNDS Phase I (Discharges Requiring MPCD) Initiated UNDS Phase II (MPCD Performance Standards) Completed Development High-Capacity Oil/Water Separator Completed Test Sub Non-Seeping Grease Seal	Complete UNDS Phase II (MPCD Performance Standards) Initiate UNDS Phase III (MPCD Guidelines) Complete Development OWS-10 Polisher Initiate Development Future OWS-3 Polisher	Complete UNDS Phase III (MPCD Guidelines) Complete Development OWS-50 Polisher Complete Development Future OWS-3 Polisher Complete Development Advanced OCM	Shipboard Solid Wastes	SSN-688 Plastics TEMPALT & Initiate T&E Investigated SSBN-726 Plastics Storage Techniques	SSBN-726 Plastics TEMPALT & Initiate T&E Investigate SSN-21 Plastics Storage Techniques Initiate Development Advanced Thermal Destruction System	Complete SSN-688 Plastics T&E Aboard Ship SSN-21 Plastics TEMPALT & Initiate T&E	Hazardous & Other Major Ship Wastes	Issued Final Report Non-Asbestos Substitutes Initiated Development Marine Mammal Database	Complete Test Reformulated Paints Complete Development Oil Contingency Planning System Complete Development Oil Outflow/Salvage Program Complete Development In-Situ Oil Burning System Initiate Development Oil & Skimmer Improvements & OWS Initiate Development New Underwater Hull Coatings Initiate Development Underwater Hull Cleaning System	Complete Hazardous Materials Elimination/Substitution Complete Pollution Prevention Afloat Initiate Light-Oil Recovery System Modifications Initiate Marine Mammal Database Demonstration
	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>																			
Ozone Depleting Substances	Completed Evaluation First Submarine Refrigeration Plant Modifications Completed Evaluation Future 200T A/C & 1.5T Refrigeration Prototypes Completed Development Alternative Solvents for O2 Systems Completed Development AFFADS for New Ships	Complete Development 125T & 150T CFC-114 A/C Modification Kits Complete Ship Test 200T CFC-114 A/C Modification Complete Development 300T & 363T CFC-114 A/C Modification Kits	Complete Development Remaining 250T A/C Modification Kits																			
Integrated Liquid Wastes	Completed UNDS Phase I (Discharges Requiring MPCD) Initiated UNDS Phase II (MPCD Performance Standards) Completed Development High-Capacity Oil/Water Separator Completed Test Sub Non-Seeping Grease Seal	Complete UNDS Phase II (MPCD Performance Standards) Initiate UNDS Phase III (MPCD Guidelines) Complete Development OWS-10 Polisher Initiate Development Future OWS-3 Polisher	Complete UNDS Phase III (MPCD Guidelines) Complete Development OWS-50 Polisher Complete Development Future OWS-3 Polisher Complete Development Advanced OCM																			
Shipboard Solid Wastes	SSN-688 Plastics TEMPALT & Initiate T&E Investigated SSBN-726 Plastics Storage Techniques	SSBN-726 Plastics TEMPALT & Initiate T&E Investigate SSN-21 Plastics Storage Techniques Initiate Development Advanced Thermal Destruction System	Complete SSN-688 Plastics T&E Aboard Ship SSN-21 Plastics TEMPALT & Initiate T&E																			
Hazardous & Other Major Ship Wastes	Issued Final Report Non-Asbestos Substitutes Initiated Development Marine Mammal Database	Complete Test Reformulated Paints Complete Development Oil Contingency Planning System Complete Development Oil Outflow/Salvage Program Complete Development In-Situ Oil Burning System Initiate Development Oil & Skimmer Improvements & OWS Initiate Development New Underwater Hull Coatings Initiate Development Underwater Hull Cleaning System	Complete Hazardous Materials Elimination/Substitution Complete Pollution Prevention Afloat Initiate Light-Oil Recovery System Modifications Initiate Marine Mammal Database Demonstration																			

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-3, Cost Analysis (page 1)							DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, BA4			Environmental Protection / PE0603721N			Shipboard Waste Management / S0401						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	Westinghouse Machinery Tech Div, Pitts, PA	14.580	0.000	N/A	0.000	N/A	0.000	N/A	N/A	14.580	14.580
Primary Hardware Development	C/CPFF	Geo-Centers, Inc., Boston, MA	7.450	6.300	01/99	4.000	12/99	6.500	12/00	Cont	Cont	N/A
Primary Hardware Development	SS/CPFF	York International Corp York, PA	2.700	0.000	N/A	0.000	N/A	0.000	N/A	N/A	2.700	2.700
Primary Hardware Development	SS/CPFF	York International Corp York, PA	4.800	3.550	04/99	3.000	02/00	2.500	02/01	11.150	25.000	25.000
Primary Hardware Development	SS/CPFF	Northern Research & Engineering Corp, Waburn, MA	1.200	0.000	N/A	0.000	N/A	0.000	N/A	N/A	1.200	1.200
Primary Hardware Development	C/CPFF	M. Rosenblatt & Son New York, NY	7.163	2.200	01/99	6.000	01/00	3.450	01/01	Cont	Cont	N/A
Ancillary Hardware Development	Various	Misc. Contracts	15.110	0.000	N/A	1.000	N/A	1.274	N/A	N/A	N/A	N/A
Systems Engineering	C/CPFF	John J. McMullen &	2.087	1.500	01/99	2.000	12/99	3.050	12/00	Cont	Cont	N/A
Subtotal Product Development			55.090	13.550		16.000		16.774		Cont	Cont	N/A
Remarks: (1) Hardware Development and Systems Engineering Tasks use CPFF Delivery Order Contracts for Continuing Development of Pollution Abatement Hardware and Ship Systems Engineering Analysis												
Software Development	Various	Misc. Contracts	0.070	0.000	01/00	0.000				0.000	0.070	0.070
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.070	0.000		0.000		0.000		0.000	0.070	
Remarks: Not Applicable.												

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Exhibit R-3, Project Cost Analysis
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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			Environmental Protection / PE0603721N			Shipboard Waste Management / S0401						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC Carderock Div, Bethesda, MD	63.824	22.500	N/A	24.967	N/A	22.400	N/A	Cont	Cont	N/A
Developmental Test & Evaluation	WR	Naval Research Lab Wash, DC	15.082	4.000	N/A	3.350	N/A	3.045	N/A	Cont	Cont	N/A
Developmental Test & Evaluation	WR	NCCOSC San Diego, CA	2.710	0.600	N/A	0.250	N/A	0.250	N/A	Cont	Cont	N/A
Developmental Test & Evaluation	WR	NNSY Norfolk, VA	4.158	0.635	N/A	1.000	N/A	1.000	N/A	Cont	Cont	N/A
Developmental Test & Evaluation	WR	Misc. Govt Labs	15.825	0.714	N/A	0.150	N/A	0.450	N/A	Cont	Cont	N/A
Developmental Test & Evaluation	C/CPFF	Geo-Centers, Inc. Boston, MA	8.651	0.500	01/99	4.000	12/99	1.500	12/00	Cont	Cont	N/A
Developmental Test & Evaluation	C/CPFF	York International Corp, York, PA	12.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	12.000	12.000
Developmental Test & Evaluation	C/CPFF	Misc. Contracts	6.866	0.574	Var	5.556	Var	3.138	Var	Cont	Cont	N/A
Subtotal T&E			129.116	29.523		39.273		31.783		0.000	Cont	N/A
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks: Not applicable.												
Total Cost			184.276	43.073		55.273		48.557		Cont	Cont	Cont
Remarks:												

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Exhibit R-3, Project Cost Analysis
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APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N				PROJECT NAME AND NUMBER Environmental Compliance / W2210					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Environmental Compliance / W2210		4.278	4.497	4.820	5.096	5.373	5.494	5.671	Cont	Cont
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification: This project supports development and implementation of technologies which will lead to environmentally safe naval aviation operations and support; compliance with international, federal, state, and local regulations and policies; reduction of increasing compliance costs and personal liability; and enhancement of naval aviation mission effectiveness. Naval aviation pollution prevention efforts were previously supported by Project Y0817, Pollution Abatement Ashore. This project will support that part of project Y0817 that addressed aviation pollution prevention technologies as well as additional operational and shipboard aviation requirements previously unsupported. Specific regulatory requirements include Executive Orders 12856 (Pollution Prevention) and 12873 (Recycling & Waste Prevention), the Clean Air Act (CAA) and associated National Emission Standards for Hazardous Air Pollutants (NESHAPs) and National Ambient Air Quality Standards (NAAQS), the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), as well as Occupational, Safety and Health Administration (OSHA) standards.

1. (U) FY 1999 ACCOMPLISHMENTS:

(U) (\$2.454M) Continued to research, develop and test: Alternatives for cadmium, chromium, and cyanide plating nonchromate aluminum pre-treatments, and sealants; non-hazardous chemical paint stripping processes; alternative non-hazardous solvents and cleaners; low/non-VOC coatings; and non-hazardous corrosion control materials and processes.

(U) (\$0.850M) Continued to evaluate alternative aircraft systems to eliminate or reduce the emission of hazardous materials.

(U) (\$0.889M) Continued to demonstrate performance of water-borne topcoats. Developed and tested hazardous operational chemical and material alternatives. Developed and demonstrated technologies for control of ordnance and composite material emissions.

(U) (\$0.085M) A Below Theshold Reprogram (BTR) reducing funding for higher Navy priorities was received.

2. (U) FY 2000 PLAN:

(U) (\$2.625M) Continue to research, develop, and test alternatives to aircraft finishing, repair and maintenance processes that use toxic heavy metals, hazardous air pollutants (HAPs), and volatile organic compounds (VOCs). Formulate and certify newly developed aircraft coatings. Continue technology research development, demonstrations/validations of alternatives to chromium and cadmium electroplating processes. Develop and validate source reduction in aircraft wash and de-icing. Develop and demonstrate alternative propulsion system technologies that minimize the use and generation of hazardous materials in manufacturing and repair processes. Complete development and demonstration of the following technologies: waterborne topcoats, electrocoat/powder coat, flashjet, non-HAPs paint purge solvents, non-HAPs chemical strippers, zinc/nickel plating as a cadmium replacement, tin-zinc plating as a cadmium replacement, CO2 retrofit of portable chloro-flouro carbon (CFC) fire extinguishers, reduction of halon 1301 release during maintenance and glass bead media recycling.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Environmental Compliance / W2210
<p>(U) (\$0.290M) Continue to provide scientific and technical expertise for continued aviation pollution prevention technology development, demonstration, and validation.</p> <p>(U) (\$0.535M) Continue to develop and demonstrate low VOCs, non-chromated adhesive bonding primers, and aluminum-manganese electroplating as a cadmium replacement.</p> <p>(U) (\$0.440M) Continue to develop and demonstrate conversion coatings alternatives.</p> <p>(U) (\$0.280M) Initiate development and demonstration of alternative ordnance materials and processes, innovative industrial wastewater source reduction technology that minimizes hazardous waste generation and toxic emissions to the atmosphere.</p> <p>(U) (\$0.327M) Initiate development and demonstration of environmentally compatible Aircraft Launch and Recovery Equipment (ALRE) lubricants and certify processes that reduce their emission to the sea.</p> <p>3. (U) FY 2001 PLAN:</p> <p>(U) (\$2.858M) Continue to research, develop, and test alternatives to aircraft manufacturing, finishing, repair and maintenance processes that use toxic heavy metals, hazardous air pollutants (HAPs), and volatile organic compounds (VOCs). Continue to formulate and certify newly developed aircraft coatings. Continue technology research development, demonstrations/validations of alternatives to chromium and cadmium electroplating processes. Continue to develop and validate source reduction in aircraft wash and de-icing. Continue to develop and demonstrate alternative propulsion system technologies that minimize the use and generation of hazardous materials in operations, manufacturing and repair processes. Initiate development of Low Emissions Technology. Complete development of conversion coatings alternative, non-chromated paint primers, non-HAP sealants, mobile paint stripping technology, non-HAPs pre-paint cleaner, composite materials alternatives.</p> <p>(U) (\$0.290M) Continue to provide scientific and technical expertise for continued aviation pollution prevention technology development, demonstration, and validation.</p> <p>(U) (\$0.535M) Continue to develop and demonstrate low volatile organic compound (VOC), non-chromated adhesive bonding primers, waterborne topcoats, non-HAP chemical strippers, non-HAP paint purge solvents, electroplating and aluminum-manganese as a cadmium (CD) replacement.</p> <p>(U) (\$0.445M) Complete development and demonstration of conversion coatings alternatives.</p> <p>(U) (\$0.280M) Continue development and demonstrate alternative ordnance materials and processes, innovative industrial wastewater source reduction technology that minimizes hazardous waste generation and toxic emissions to the atmosphere.</p> <p>(U) (\$0.412M) Continue development and demonstrate environmentally compatible Aircraft Launch and Recovery Equipment (ALRE) lubricants and certify processes that reduce their emission to the sea.</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Environmental Compliance / W2210

B. (U) Other Program Funding Summary: Not applicable.

- (U) RELATED RDT&E: (U) PE 0602233N (Readiness/Training/Environmental Quality)
- (U) PE 0603716D (Strategic Environmental R&D Program)
- (U) PE 0603851D (Environmental Security Technology Certification Program)
- (U) PE 0603721N (Environmental Quality & Logistics Advanced Technology)
- (U) PE 605864N (NAVAIR Environmental Compliance)

C. (U) Acquisition Strategy: Technologies developed under this project are demonstrated and validated primarily through Competitive Procurements. Validated technology is transitioned to users through new or revised Performance Specifications, Technical Manuals or Competitive Procurements of subsystems, materials or processes.

D. (U) Schedule Profile:

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>
Engineering Milestones	<ul style="list-style-type: none"> Cont Eval Waterborne Topcoats Cont Eval Electrocoat & Powder Coat Cont Dev Zn-Ni Plating as Cd Replacement Cont Dev Sn-Zn Plating as Cd Replacement Cont Dev Flashjet Cont Dev Non-HAPs Chemical Strippers Cont Dev Paint Purge Solvents Cont Eval Glass Bead Media Recycling Cont Eval CO2 Retrofit of Halon Extinguishers Cont Eval Halon Releases During Bottle Maint 	<ul style="list-style-type: none"> Comp Eval Waterborne Topcoats Comp Eval Electrocoat & Powder Coat Comp Dev Zn-Ni Plating as Cd Replacement Comp Dev Sn-Zn Plating as Cd Replacement Comp Dev Flashjet Comp Dev Non-HAPs Chemical Strippers Comp Dev Paint Purge Solvents Comp Eval Glass Bead Media Recycling Init Dev Env Compatible ALRE Lubricants Init Dev Alternative Ordnance Materials & Processes Comp Eval CO2 Retrofit of Halon Extinguishers Comp Eval Halon Releases During Bottle Maint Init Eval Wastewater Source Reduction 	<ul style="list-style-type: none"> Comp Dev Conv Coating Alternatives Comp Dev Non-Chromated Primers Comp Dev Non-HAP Sealants Comp Dev Mobile Paint Stripping Technology Comp Eval Non-HAPs Prepaint Cleaner Comp Eval Composite Materials Alternatives Init Dev Low Emissions Technology

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EXHIBIT R-3, Cost Analysis (page 1)							DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, BA4			Environmental Protection / PE0603721N			Environmental Compliance /W2210						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	WX	Various		1.739		1.872		1.962		Cont	Cont	Cont
	WX	NAWC-Pax		2.444		2.613		2.843		Cont	Cont	Cont
		BTR for Higher Navy Priorities		0.085								
Subtotal Product Development			0.000	4.268		4.485		4.805		Cont	Cont	Cont
Remarks:												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks: Not Applicable.												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-3, Cost Analysis (page 2)							DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			Environmental Protection / PE0603721N			Environmental Compliance /W2210						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation										Cont	Cont	N/A
Operational Test & Evaluation										Cont	Cont	N/A
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	Cont	N/A
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support				0.010		0.012		0.015		Cont	Cont	Cont
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.010		0.012		0.015		0.000	Cont	
Remarks: Not applicable.												
Total Cost				4.278		4.497		4.820		Cont	Cont	Cont
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, BA4	Environmental Protection / PE0603721N				Pollution Abatement / Y0817					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Pollution Abatement / Y0817		8.588	9.306	8.817	10.478	10.961	11.156	11.453	Cont	Cont
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification: This project develops and validates new technologies needed to address pervasive Navy shoreside environmental requirements imposed on Naval shore activities by the need to comply with environmental laws, regulations, orders, and policies. The goal of the program is to minimize personnel liabilities, operational costs, and regulatory oversight while preserving or enhancing the ability of Naval shore activities to accomplish their required missions and functions. Each project task addresses one or more of the requirements from the Navy Environmental Quality RDT&E Strategic Plan of October 1994. The plan is being updated and upon Chief of Naval Operations approval it will govern future task selections. Project investment is made in five thrust areas:</p> <p>(U) SHIP MAINTENANCE/REPAIR/DEACTIVATION</p> <p>(U) Thus far, tasks in this thrust area have addressed environmental requirements originating at Naval shipyards. As the Navy pursues a strategy to reduce ship maintenance costs by shifting work to Ship Intermediate Maintenance Activities (SIMAs), new requirements are emerging as these processes and resulting hazardous waste streams become more decentralized. SIMAs will require technologies that are cost-effective when operated less frequently and with lower throughput. Future SIMA tasks will be selected based on compliance and pollution prevention studies being conducted on the Naval Station Mayport SIMA as part of the Navy Environmental Leadership Program (NELP) during FY 1999.</p> <p>(U) ORDNANCE TESTING/MANUFACTURE/DISPOSAL</p> <p>(U) Current tasks in this thrust address specific compliance-driven environmental requirements of Navy ordnance activities. With respect to disposal, the thrust addresses requirements for disposal of quantities typical of testing and manufacturing operations, not of the much larger quantities associated with demilitarization. Future tasks will shift much of the investment in this area to pollution prevention requirements, particularly where they also reduce compliance impacts and costs. These tasks will be identified as part of an ordnance environmental requirements study being conducted in partnership with the Navy's Ordnance Environmental Specialty Office (OESO) during FY 1999.</p> <p>(U) OTHER INDUSTRIAL OPERATIONS</p> <p>(U) Tasks in this thrust address compliance and pollution prevention environmental requirements originating from the industrial operations of Navy Public Works Centers and Naval Stations. As part of an overall Navy strategy, future tasks will shift more of the investment from compliance technologies to pollution prevention technologies that are cost-effective solutions to compliance requirements. It is also expected that there will be new requirements driven by the trend towards stricter federal, state, and local air emission regulations.</p>										

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Pollution Abatement /Y0817
<p>(U) NON-INDUSTRIAL OPERATIONS</p> <p>(U) Tasks in this thrust address requirements to reduce air and water emissions (CAA, CWA), hazardous waste (RCRA) generation, and cost of environmental compliance for non-industrial operations occurring at Naval activities. In addition, tasks evaluate alternative restoration technologies for the over 1000 Navy sites requiring cleanup and restoration under CERCLA. The alternative restoration tasks are selected and linked to the urgent requirements of specific restoration projects in partnership with the Navy's Alternative Restoration Technology Team (ARTT). It is expected that one area requiring new investment is technologies to reduce the long-term operation and monitoring costs of installation restoration projects.</p> <p>(U) HAZARDOUS WASTE MINIMIZATION/RECYCLING/DISPOSAL</p> <p>(U) Prior tasks have shown that the Navy neither has the funding required to acquire a new government-owned hazardous waste treatment system nor a large enough hazardous waste stream to make a new contractor-owned treatment systems profitable. Tasks now primarily address requirements to upgrade capabilities of Navy-owned industrial waste treatment plants (IWTPs) and/or to pre-treat Navy-generated wastes prior to being discharged to publicly-owned wastewater treatment systems (POWTS).</p> <p>1. (U) FY 1999 ACCOMPLISHMENTS:</p> <p>(U) (\$2.385M) Ship Maintenance/Repair/Deactivation – Completed development of Bilge Derusting and Pacification Chemicals: validation of system to recycle citric acid used for the derusting and pacification of ship bilges. Completed development of Recycling of Shipyard Hazardous Waste Using Catalytic Extraction Process: feasibility of recycling hazardous wastes generated by the deactivation of submarines and ships using a contractor owned and operated facility based on molten metal technology. Completed development (evaluation) of alternatives for reduction of Hexavalent Chromium Emission Reduction from Shipyard Welding Operations. Continued development of Automated Paint Application with Overspray Capture and Treatment. Continued development of Air Emission Reduction from Shipyard Cutting and Arc-Gouging Operations.</p> <p>(U) (\$2.560M) Ordnance Testing/Manufacture/Disposal - Completed development of Marine Sediment Toxicity Data for Ordnance Compounds. Continued development of Exhaust Scrubber for Static Testing of Small Rocket Motors: design phase 2 prototype. Continued development of Confined Burn Facility to Replace Open Burning of Ordnance and Energetics: test 10-pound capacity prototype. Completed evaluation of Electrochemical Oxidation for Destruction of Waste Energetic Materials.</p> <p>(U) (\$1.527M) Other Industrial Operations - Completed development (validation) of Leak Detection System for Large Underground Bulk Fuel Storage Tanks. Continued Jet Engine Test Cell Emissions Reduction. Initiated development of In-Line Monitoring and Diversion for Problem Contaminants in Discharges: sensor and valve components needed for systems to automatically detect and divert occasional wastewater discharges with treatment-resistant contaminants.</p>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Pollution Abatement /Y0817
<p>(U) (\$1.267M) Non-Industrial Operations - Completed development (validation) of Controlling Non-Point Source Discharges Using Constructed Wetlands. Completed development of Sub-Lethal Biochemical Toxicity Analysis Using DNA Integrity. Completed development of In-Situ Remediation of Contaminants Using Fenton's Reagent. Continued development of Sound Propagation Over Water Model Corrections for Navy-Unique Scenarios. Continued development of QwikSet Marine Sediment Bioassays Using Bioluminescent Dinoflagellates. Continued development of Subsurface Contaminant Transport and DNAPL Sensor System. Continued development of Integrated Field Screening for Rapid Sediment Contaminant Characterization. Continued development of Pier-Side Oil Spill Detection System. Continued development of Environmentally Sound Fire Fighting Training Facilities. Continued development of Reduced False Positive From Marine Sediment Bioassays. Initiated development of Methods to Assess Subsurface Contaminant Migration From Coastal Landfills.</p> <p>(U) (\$0.849M) Hazardous Waste Minimization/Recycling/Disposal - Completed development (validation) of Plasma Arc Waste Treatment Technology. Completed development of Contaminated Sediment Volume Minimization Using Particle Separation. Completed Evaluation of Waste Paint Disposal and Recycling Alternatives. Continued development of Options for Recycling Rags Contaminated With RCRA Wastes. Continued Transition of Cyanide Wastewater Treatment Technologies from Navy Exploratory Development (6.2) Program. Initiated development of Shoreside Collection and Treatment System for Compensated Fuel Tank Ballast Water. Initiated development of Total Toxic Organic Reduction for Navy Industrial Waste Treatment Plants.</p> <p>2. (U) FY 2000 PLAN:</p> <p>(U) (\$2.429M) Ship Maintenance/Repair/Deactivation - Complete development of Automated Paint Application with Overspray Capture and Treatment. Complete development of Air Emission Reduction from Shipyard Cutting and Arc-Gouging Operations. Initiated tasks addressing Ship Intermediate Maintenance Activity (SIMA) requirements identified during compliance and pollution prevention studies conducted on Naval Station Mayport SIMA as part of Navy Environmental Leadership Program (NELP) during FY99.</p> <p>(U) (\$1.929M) Ordnance Testing/Manufacture/Disposal - Continue development of Exhaust Scrubber for Static Testing of Small Rocket Motors: initiate fabrication of phase 2 prototype. Continue development of Confined Burn Facility to Replace Open Burning of Ordnance and Energetics: initiated tasks to address requirements identified as part of ordnance environmental requirements study conducted in partnership with Navy's Ordnance Environmental Specialty Office (OESO) during FY99.</p> <p>(U) (\$2.140M) Other Industrial Operations - Complete development of Jet Engine Test Cell Emissions Reduction: complete validation of approaches to reduce nitrous oxide, particle, and noise emissions. Continue development of In-Line Monitoring and Diversion of Problem Contaminants in Discharges to automatically detect and divert occasional wastewater discharges with treatment-resistant contaminants. Initiate tasks to address requirements identified as part of update of Navy Environmental Quality RDT&E Strategic Plan completed during FY99; it is expected that there will be new requirements driven by stricter federal, state, and local air emission regulations.</p>		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Pollution Abatement /Y0817
<p>(U) (\$1.935M) Non-Industrial Operations - Complete development of Sound Propagation Over Water Model Corrections for Navy-Unique Scenarios. Complete development of QwikSet Marine Sediment Bioassays Using Bioluminescent Dinoflagellates. Complete development of Subsurface Contaminant Transport and DNAPL Sensor System. Complete development of Integrated Field Screening for Rapid Sediment Contaminant Characterization. Complete development of Pier-Side Oil Spill Detection System. Continue development of Environmentally Sound Fire Fighting Training Facilities. Continue development of Reduced False Positive From Marine Sediment Bioassays. Continue development of Methods to Assess Subsurface Contaminant Migration from Coastal Landfills. Initiate tasks to address requirements identified as part of update of Navy Environmental Quality RDT&E Strategic Plan completed during FY99; it is expected that one area requiring new investment is technologies to reduce the long-term operation and monitoring costs of installation restoration projects.</p> <p>(U) (\$0.873M) Hazardous Waste Minimization/Recycling/Disposal - Complete development of Options for Recycling Rags Contaminated with RCRA Wastes. Complete Transition of Cyanide Wastewater Treatment Technologies from Navy Exploratory Development (6.2) Program. Continue development of Shoreside Collection and Treatment System for Compensated Fuel Tank Ballast Water. Continue development of Total Toxic Organic Reduction for Navy Industrial Waste Treatment Plants. Initiate additional tasks for Volume and Contaminants Reduction in Wastewater Discharged to Navy-Owned Industrial Waste Treatment Plants (IWTPs) and Publicly-Owned Wastewater Treatment Systems (POWTS).</p> <p>3. (U) FY2001 PLAN:</p> <p>(U) (\$2.157M) Ship Maintenance/Repair/Deactivation - Continue tasks addressing Ship Intermediate Maintenance Activity (SIMA) requirements identified during compliance and pollution prevention studies conducted on Naval Station Mayport SIMA as part of Navy Environmental Leadership Program (NELP) during FY99.</p> <p>(U) (\$1.690M) Ordnance Testing/Manufacture/Disposal - Continue development of Exhaust Scrubber for Static Testing of Small Rocket Motors: complete fabrication of phase 2 prototype. Continue development of Confined Burn Facility to Replace Open Burning of Ordnance and Energetics: continue tasks to address requirements identified as part of ordnance environmental requirements study conducted in partnership with Navy's Ordnance Environmental Specialty Office (OESO) during FY99.</p> <p>(U) (\$2.090M) Other Industrial Operations - Complete development (validation) of In-Line Monitoring and Diversion of Problem Contaminants in Discharges to automatically detect and divert occasional wastewater discharges with treatment-resistant contaminants. Continue tasks to address air emissions reductions requirements identified as part of update of Navy Environmental Quality RDT&E Strategic Plan completed during FY99.</p> <p>(U) (\$1.990M) Non-Industrial Operations - Complete development of Environmentally Sound Fire Fighting Training Facilities. Complete development of Reduced False Positive From Marine Sediment Bioassays. Complete development of Methods to Assess Subsurface Contaminant Migration from Coastal Landfills. Continue tasks to reduce long-term operation and monitoring costs of installation restoration projects as identified by updated Navy Environmental Quality RDT&E Strategic Plan completed during FY99.</p> <p>(U) (\$0.890M) Hazardous Waste Minimization/Recycling/Disposal - Complete development (validation) of Shoreside Collection and Treatment System for Compensated Fuel Tank Ballast Water. Complete development of Total Toxic Organic Reduction for Navy Industrial Waste Treatment Plants. Continue Volume and Contaminants Reduction in Wastewater Discharged to Navy-Owned Industrial Waste Treatment Plants (IWTPs) and Publicly-Owned Wastewater Treatment Systems (POWTS).</p>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Pollution Abatement /Y0817
<p>B. (U) Other Program Funding Summary: This project transitions technologies from PE0603712N, Environmental Quality, Logistics Advanced Technology Demonstrations Program, and PE0603716D, the Strategic Environmental Research and Development Program (SERDP). Whenever possible, funding is leveraged by transitioning technologies to PE 0603851D, the Environmental Security Technology Certification Program (ESTCP), for certification and by providing funding for Navy participation in ESTCP projects that could address Navy requirements. Within this program element, the project looks for fund leveraging opportunities with Project S0401 and W2210. Execution of this project is coordinated with related Army and Air Force programs by the Tri-Service Environmental Quality R&D Strategic Plan developed under the leadership of the Joint Engineers Management Panel (JEMP). Additional coordination occurs between the Army, Navy, and Air Force centers for environmental excellence.</p> <p>(U) RELATED RDT&E: This project transitions shoreside pollution abatement technologies from two Navy Science and Technology programs and the Strategic Environmental Research and Development Program (SERDP). Project funding is leveraged by transitioning technologies to the Environmental Security Technology Certification Program (ESTCP) for final certification and by providing funding for Navy participation in ESTCP projects. Execution of this project is coordinated with related Army and Air Force programs by the Tri-Service Environmental Quality R&D Strategic Plan developed under the leadership of the Joint Engineers Management Panel (JEMP).</p> <p>(U) PE 0602233N, Readiness, Training, and Environmental Quality Technology Development (U) PE 0603712N, Environmental Quality, Logistics Advanced Technology Demonstrations (U) PE 0603716D, Strategic Environmental Research & Development Program (SERDP) (U) PE 0603851D, Environmental Security Technology Certification Program (ESTCP)</p> <p>C. (U) Acquisition Strategy: This project is categorized as Non-ACAT (Non Acquisition). The project delivers a broad spectrum of products that require a variety of acquisition processes to implement. Equipment products for Naval stations and other mission funded activities costing over 100K are often procured centrally through the Navy Pollution Prevention Equipment Program (PPEP) where as equipment products for Shipyards and other Navy Working Capital Fund (NWCF) activities costing over 100K are procured through their Capital Purchases Program (CPP). For both types of activities, equipment products costing less than 100K, and process changes not requiring the purchase of new equipment such as consumable material or product substitutions, are funded through the activity's operating budgets. Occasionally there is a technology that must be implemented as a specialized facility. These are acquired through the Military Construction (MCON) Program. All these acquisition processes are pursued using a common strategy that satisfies the needs of all the critical stakeholders: 1) Navy end user; 2) Funding sponsor for the Navy end user; 3) Cognizant environmental federal, state, and local regulators; 4) Other stakeholders with cognizance over the Navy process or operation being changed, and 5) The private or government organization that will produce the product.</p>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA4	PROGRAM ELEMENT NAME AND NUMBER Environmental Protection / PE0603721N	PROJECT NAME AND NUMBER Pollution Abatement /Y0817			
<p>D. (U) Schedule Profile:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <p><u>FY99</u></p> <p>Ship Maintenance/Repair/Deactivation Comp Recyc of Bilge Derusting & Pacification Chemicals Comp Recyc of Shpyd HW using Catalytic Extraction Process Comp Hexavalent Cr Emission Reduction from Shpyd Welding Operations Cont Automated Paint Application w/ Overspray Capture & Treatment Cont Air Emission Reduction from Shpyd Cutting & Arc-Gouging Operations</p> <p>Ordnance Testing/Manufacture/Disposal Cont Exhaust Scrubber for Static Testing of Small Rocket Motors Cont Confined Burn Facil to Replace Open Burning of Ordn & Energetics Comp Dev of Marine Sediment Toxicity Data for Ordn Compounds Comp Eval of Electrochem Oxid Options for Destr of Waste Energetic Mat'ls</p> <p>Other Industrial Operations Comp Leak Detection Sys for Large Underground Bulk Fuel Storage Tanks Cont Jet Engine Test Cell Emissions Reduction Init In-Line Monitoring & Diversion of Problem Contam in Discharges</p> <p>Non-Industrial Operations Comp Controlling Non-Paint Source Discharges using Constructed Wetlands Comp Sub-Lethal Biochemical Toxicity Analysis using DNA Integrity Comp In-Situ Remediation of Contam using Fenton's Reagent Cont Sound Prop Over Water Mod Corrections for Navy-Unique Scenarios Cont QwikSet Marine Sedmnt Bioassays using Bioluminescent Dinoflagellates Cont Subsurface Contam Transport & DNAPL Sensor Sys Cont Integ Field Screening for Rapid Sediment Contam Characterization Cont Pier-Side Oil Spill Detection Sys Cont Environmentally Sound Fire Fighting Training Facil Cont Reduced False Positive from Marine Sediment Bioassays Init Methods to Assess Subsurface Contam Migration from Coastal Landfills</p> <p>Hazardous Waste Minimization/Recycling/Disposal Comp Eval of Waste Paint Disposal & Recyc Alternatives Cont Options for Recyc Rags Contam w/ RCRA Wastes Cont Trans Cyanide Wastewater Treatment Tech from Navy Expl Dev Prog Comp Plasma Arc Waste Treatment Tech Comp Contam Sediment Vol Minimization using Particle Separation Comp Eval of Waste Paint Disposal & Recyc Alternatives Init Shoreside Collection & Treatment Sys for Comp Fuel Tank Ballast Water Init Total Toxic Organic Reduction for Navy Indust Waste Treatment Plants</p> </td> <td style="width: 33%; vertical-align: top;"> <p><u>FY00</u></p> <p>Comp Automated Painting Appl w/ Overspray Capture & Treatment Comp Air Emission Reduction from Shpyd Cutting & Arc-Gouging Operations Init Ship Intermediate Maint Activity (SIMA) Rqmts under NELP</p> <p>Cont Exhaust Scrubber for Static Testing of Small Rocket Motors Cont Confined Burn Facil to Replace Open Burning of Ordn & Energetics</p> <p>Comp Jet Engine Test Cell Emissions Reduction Cont In-Line Monitoring & Diversion of Problem Contam in Discharges Init New Rqmts from Navy EQ RDT&E Strat Plan Update</p> <p>Comp Sound Propagation Over Water Mod Corrections for Navy-Unique Scenarios Comp QwikSet Marine Sediment Bioassays 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Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

EXHIBIT R-3, Cost Analysis (page 1)

DATE:

February 2000

APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, BA4			Environmental Protection / PE0603721N			Pollution Abatement / Y0817						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ship Maintenance/Repair/Deact	WR/PO	NSWC/CD	4.745	1.815	varies	1.955	varies	1.850	varies	Cont	Cont	N/A
Ship Maintenance/Repair/Deact	WR/PO	NFESC	3.428	0.452	varies	0.480	varies	0.450	varies	Cont	Cont	N/A
Ordnance Testing/Manufact/Disp	WR/PO	NSWC/IH	8.299	2.393	varies	1.930	varies	1.840	varies	Cont	Cont	N/A
Other Industrial Operations	WR/PO	NFESC	10.429	1.170	varies	1.500	varies	1.400	varies	Cont	Cont	N/A
Other Industrial Operations	WR/PO	SSC/SD	5.824	0.487	varies	0.640	varies	0.625	varies	Cont	Cont	N/A
Non-Industrial Operations	WR/PO	SSC/SD	10.168	0.807	varies	1.165	varies	1.130	varies	Cont	Cont	N/A
Non-Industrial Operations	WR/PO	NFESC	5.203	0.537	varies	0.770	varies	0.715	varies	Cont	Cont	N/A
Haz Waste Min/Recycle/Disp	WR/PO	NFESC	5.817	0.748	varies	0.690	varies	0.625	varies	Cont	Cont	N/A
Haz Waste Min/Recycle/Disp	WR/PO	NRL	1.789	0.179	varies	0.176	varies	0.182	varies	Cont	Cont	N/A
Subtotal Product Development			55.702	8.588		9.306		8.817				

Performing Activities: Naval Surface Warfare Center, Carderock Division (NSWC/CD), Naval Facilities Engineering Service Center (NFESC), Naval Surface Warfare Center, Indian Head Division (NSWC/IH), Space and Warfare Systems Center, San Diego (SSC/SC), Naval Research Laboratory (NRL).

Total Prior Years Cost: Summation starts with FY80. Subtotal does not include performing activities from prior years that are no longer performing activities.

Award Dates: About 55% of the project is executed via contracts awarded by the performing activities.

Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks: Included in Product Development costs.

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 20 of 21)

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CLASSIFICATION:

EXHIBIT R-3, Cost Analysis (page 2)							DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			Environmental Protection / PE0603721N			Pollution Abatement / Y0817						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		
Remarks: Included in Product Development costs.												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks: Not applicable.												
Total Cost			55.702	8.588		9.306		8.817		Cont	Cont	Cont
Remarks:												

R-1 - Item No. 62-21 of 62-21

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 21 of 21)

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