

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							Date: (MONTH/YEAR) June 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RDT&E, Defense-wide/ Budget Activity 4					Environmental Security Technology Certification Program (ESTCP) PE 0603851D8Z					
Cost (In Millions)	FY 2000	FY 2001	FY2002						Cost to Complete	Total Cost
Total PE 0603851D Cost	22.806	28.987	25.314						Continuing	Continuing
ESTCP/P514 Cost	22.806	28.987	25.314						Continuing	Continuing

A. Mission Description and Budget Item Justification

This program demonstrates and validates the most promising innovative environmental technologies that target DoD's most urgent environmental needs and are projected to pay back the investment within five years through cost savings and improved efficiencies. It responds to: (1) congressional concern over the slow pace of remediation of environmentally polluted sites on military installations, (2) congressional direction to conduct demonstrations specifically focused on emerging new technologies, (3) Executive Order 13148 which requires Federal agencies to place a high priority on obtaining funding and resources needed for the development of innovative pollution prevention programs and technologies for installations and in acquisitions, and (4) the need to improve defense readiness by reducing the drain on the Department's operation and maintenance dollars caused by real world commitments such as environmental restoration and waste management. Preference for demonstrations are given to technologies that respond to Environmental Security objectives, have successfully completed all necessary research and development objectives, and address the highest priority DoD environmental requirements. Project funding supports the following categories for each year.

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FY 2000 Accomplishments:

- Reviewed and selected 35 technologies for demonstration.
 - Reviewed and selected sites for demonstration of technologies.
 - Prepared site-specific implementation plans.
 - Prepared sites and secure regulatory permitting.
- Continued to demonstrate and evaluate 22 selected technologies.
- Completed evaluation of 15 technologies.

By Pillar:

- Remediation: Successfully demonstrated and validated technologies in multiple high priority areas related to the Cleanup of contaminated DoD sites. For example, ESTCP Researchers have developed a standardized protocol that describes a simple and cost effective treatability test to determine the potential for employing reductive anaerobic biological in-situ treatment technologies to remediate chloroethenes. Successfully developed and demonstrated an enhanced treatment system that uses surface active agents (surfactants) to remediate Dense Non-Aqueous Phase Liquid (DNAPL) contamination in soil. To improve risk management decisions at contaminated sediment sites based on direct quantification of contaminant mobility, researchers have designed, developed, demonstrated, and certified a Benthic Flux Sampling Device (BFSD) technology to establish the capability for direct measurement of metals and organic contaminant remobilization in sediments. (\$7.337 Million)
- Unexploded Ordnance (UXO): ESTCP validated UXO technologies are having a significant impact on the DoD UXO remediation efforts. To address the challenge associated with locating UXO buried in highly vegetative and variable terrain, researchers have developed a portable detection system that will allow the collection and analysis of high-quality data at all DoD ranges regardless of terrain or tree cover equivalent to the most advanced vehicular systems. To reduce false-positive rates for UXO detection methods, ESTCP researchers have demonstrated advanced algorithms using data from both Magnetometer and EMI sensors to improve ordnance characterization and the rejection of false targets. (\$4.252 Million)
- Pollution Prevention: ESTCP continues to validate and transition environmentally clean technologies which directly support the military mission. Examples include, an enhanced, "drop-in", fully environmentally-compliant, Low VOC Chemical Agent Resistant Coating was successfully demonstrated at Marines Barstow Logistics Facility, CA, under production conditions. Successful demonstration of a high velocity oxygen-fuel thermal spray technology as an environmentally friendly alternative for hard chrome plating for main landing gear components was flight tested. A zero Volatile Organic Compound (VOC) polyurethane topcoat technology was successfully demonstrated on multiple aircraft. Shock-absorbing concrete (SACON) was demonstrated to be an effective means of capturing and containing lead on small-arms ranges, while inhibiting the leaching of lead corrosion products. (\$6.598 Million)

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- Compliance: Significant progress has been made in the development of waste treatment and environmental monitoring technologies required by DoD. These include: successful testing of a catalyzed, self-regenerating ceramic filter for engines to reduce fine particulate matter; optimization of operational parameters for technology to remove, separate and recover heavy metals from industrial wastestreams at DoD facilities; demonstration of a real-time monitoring, airborne lead analyzer at indoor firing ranges; and successful validation of the Low Range Differential Pressure (LRDP) leak detection system for underground bulk fuel tanks. (\$4.412 Million)

FY 2001 Plans:

The FY2001 funds are invested in projects that address priority DoD environmental requirements.

- Review and award 25 technologies for demonstration.
- Continue and complete 57 technology demonstrations.
 - Review and select sites for demonstration of technologies.
 - Prepare site-specific implementation plans.
 - Prepare sites and secure regulatory permitting.

By Pillar:

- Remediation: Demonstrate and validate innovative technologies to restore DoD facilities contaminated with toxic or hazardous waste. (\$8.900 Million)
- Unexploded Ordnance: Demonstrate and validate innovative technologies to detect UXO and remediate land contaminated with UXO. (\$8.110 Million)
- Pollution Prevention : Demonstrate validate innovative technologies to reduce the use of hazardous materials, and curb emissions of pollutants in military operations as well as weapons systems manufacturing, operations, and maintenance. (\$8.032 Million)
- Compliance: Demonstrate and validate innovative technologies to ensure DoD complies with our federal, state, and local environmental laws. (\$3.945 Million)

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FY 2002 Plans:

- Review and select technologies for demonstration.
 - Review and select sites for demonstration of technologies.
 - Prepare site-specific implementation plans
 - Prepare sites and secure regulatory permitting
- Award demonstration testing and evaluation for selected technologies.

By Pillar:

- Remediation: (\$7.904 Million)
- UXO: (\$ 4.970Million)
- Pollution Prevention: (\$8.300 Million)
- Compliance: (\$ 4.140Million)

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Justification for Budget Activity Assignment: To conform to the defined DoD acquisition milestones sequence, this program element is categorized under Budget Activity 4, Demonstration and Validation (Dem/Val).

Acquisition Strategy: When demonstration and validation of a particular technology is completed, and if the technology is found to be effective and affordable by users, regulators and other stakeholders, a user data package will be developed and distributed, e.g., specification, procurement package, etc., providing details to users on the technologies validated cost and performance and on how to acquire and implement the technology. When this step is completed, the demonstration will be considered successful.

B. Program Change Summary (\$ in millions)

	<u>FY 2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>Total Cost</u>
Previous President's Budget	23.260	24.906	25.314	Continuing
Appropriated Value	23.260	29.256		
Adjustments to Appropriated Value				
a. Undistributed reduction	(.372)	-0.269		
b. SBIR	(.082)			
Current President's Budget	22.806	28.987	25.314	Continuing

Change Summary Explanation: FY 2000 changes are due to undistributed reductions. FY2001 changes reflect Congressional actions.

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C. Other Program Funding Summary Not applicable.

D. Acquisition Strategy ESTCP projects are individually managed by the designated Service leads. Contracting is performed by the Service organization with responsibility for leading the validation effort for the technology being demonstrated.

E. Schedule Profile (Fiscal Year actual and planned events by quarter)

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones												
- Select technology				X								
- Select site					X							
Engineering Milestones												
- Complete site prep and regulatory permitting							X					
T&E Milestones												
- Complete T&E											X	
Contract Milestones												
Other Program Events												
- Obtain user, regulator and other stakeholder approvals												
- Develop and distribute user data packages												

The above milestones reflect the average life cycle of a typical, successful remediation demonstration utilizing FY 2001 funding. A similar pattern is expected for FY 2002.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE : (MONTH/YEAR)
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	FY 2000	FY 2001	FY 2002	
Project Cost Categories				
Cost Categories:				
a. Demonstration & Validation	21.499	27.701	24.064	
b. Program Management Support	1.307	1.286	1.250	
TOTAL	22.806	28.987	25.314	25.908

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B. Budget Acquisition History and Planning Information

Performing Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	Total Program
DoD	C	-	-	-	120.340	22.806	28.987	25.314	Continuing	Continuing

Actual or Budget Value (\$ in millions)

Government Furnished Property

Item Description	Contract Method/Type or Funding Vehicle	Award or obligation Date	Delivery Date	Total Prior to FY2000	Budget 2000	Budget 2001	Budget 2002	Budget to Complete	Total Program
Product Development Property (list each item separately)				N/A					
Support and Management Property (list each item separately)				N/A					
Test and Evaluation Property (list each item separately)				N/A					
Subtotal Product and Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									