



Testimony

Before the Subcommittee on Military  
Construction, Veterans Affairs, and Related  
Agencies, Committee on Appropriations,  
House of Representatives

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**ENVIRONMENTAL  
CONTAMINATION**

**Information on the  
Funding and Cleanup  
Status of Defense Sites**

Statement of Anu Mittal, Director  
Natural Resources and Environment



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March 17, 2010



Highlights of GAO-10-547T, testimony before the Subcommittee on Military Construction, Veterans Affairs, and Related Agencies, Committee on Appropriations, House of Representatives

## Why GAO Did This Study

Under the Defense Environmental Restoration Program (DERP), the Department of Defense (DOD) is responsible for cleaning up about 5,400 sites on military bases that have been closed under the Base Realignment and Closure (BRAC) process, as well as 21,500 sites on active bases and over 4,700 formerly used defense sites (FUDS), properties that DOD owned or controlled and transferred to other parties prior to October 1986. The cleanup of contaminants, such as hazardous chemicals or unexploded ordnance, at BRAC bases has been an impediment to the timely transfer of these properties to parties who can put them to new uses. The goals of DERP include (1) reducing risk to human health and the environment (2) preparing BRAC properties to be environmentally suitable for transfer (3) having final remedies in place and completing response actions and (4) fulfilling other established milestones to demonstrate progress toward meeting program performance goals.

This testimony is based on prior work and discusses information on (1) how DOD allocates cleanup funding at all sites with defense waste and (2) BRAC cleanup status. It also summarizes other key issues that GAO has identified in the past that can impact DOD's environmental cleanup efforts.

View GAO-10-547T or key components. For more information, contact Anu Mittal at (202) 512-3841 or [mittala@gao.gov](mailto:mittala@gao.gov), or John B. Stephenson at (202) 512-3841 or [stephensonj@gao.gov](mailto:stephensonj@gao.gov).

## ENVIRONMENTAL CONTAMINATION

### Information on the Funding and Cleanup Status of Defense Sites

#### What GAO Found

DOD uses the same method to propose funding for cleanup at FUDS, active sites, and BRAC sites; cleanup funding is based on DERP goals and is generally proportional to the number of sites in each of these categories. Officials in the Military Departments, Defense Agencies, and FUDS program, who are responsible for executing the environmental restoration activities at their respective sites, formulate cleanup budget proposals using the instructions in DOD's financial management regulation and DERP environmental restoration performance goals.

DERP's goals include target dates for reaching the remedy-in-place or response complete (RIP/RC) milestone. For example, for sites included under the first four BRAC rounds, the goal is to reach the RIP/RC milestone at sites with hazardous substances released before October 1986 by 2015 and for sites in the 2005 BRAC round by 2014. DOD's military components plan cleanup actions that are required to meet DERP goals at the installation or site level. DOD requires the components to assess their inventory of BRAC and other sites by relative risk to help make informed decisions about which sites to clean up first. Using these relative risk categories, as well as other factors, the components set more specific restoration targets each fiscal year to demonstrate progress and prepare a budget to achieve those goals and targets.

DOD data show that, in applying the goals, and targets, cleanup funding has generally been proportional to the number of sites in the FUDS, active, and BRAC site categories. For example, the total number of BRAC sites requiring cleanup is about 17 percent of the total number of defense sites requiring cleanup, while the \$440.2 million obligated to address BRAC sites in fiscal year 2008 is equivalent to about 25 percent of the total funds obligated for this purpose for all defense waste sites.

GAO's past work has also shown that DOD's preliminary cost estimates for cleanup generally tend to rise significantly as more information becomes known about the level of contamination at a specific site. In addition, three factors can lead to delays in cleanup. They are (1) technological constraints that limit DOD's ability to detect and cleanup certain kinds of hazards, (2) prolonged negotiations with environmental regulators on the extent to which DOD's actions are in compliance with regulations and laws, and (3) the discovery of previously unknown hazards that can require additional cleanup, increase costs, and delay transfer of the property.

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss GAO's recent work relating to the Department of Defense's (DOD) environmental remediation efforts at former defense sites. These sites can pose hazards such as unsafe buildings, a variety of toxic and radioactive wastes, and ordnance and explosive compounds. As you know, DOD is obligated to ensure that former and active defense sites are cleaned up to a level that is protective of human health and the environment. To that end, DOD has established the Defense Environmental Restoration Program (DERP) and identified over 31,600 sites that are eligible for cleanup, including about 4,700 formerly used defense sites (FUDS),<sup>1</sup> which were closed before October 2006; 21,500 sites on active installations; and 5,400 sites identified by several Base Realignment and Closure (BRAC) commissions.<sup>2</sup> However, the need to clean up environmental contaminants at bases closed under the BRAC process has historically been a key impediment to the expeditious transfer of unneeded property to other federal and nonfederal parties who can put the property to new uses.

My testimony today is primarily based on our October 2009 report on DOD's efforts to clean up FUDS, which included a discussion on how DOD allocates cleanup funding at all sites, including BRAC sites with defense waste.<sup>3</sup> I will describe DOD's process for proposing funding for cleanup at FUDS and other sites in the defense cleanup program, including BRAC sites, and provide some information on the cleanup and funding status of these sites as of the end of fiscal year 2008. In addition, my testimony will cover some

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<sup>1</sup>FUDS are located on properties that were under the jurisdiction of the DOD and owned or controlled by, leased to, or otherwise possessed by the United States prior to October 17, 1986, but have since been transferred to states, local governments, federal entities, and private parties.

<sup>2</sup>To enable DOD to close unneeded bases and realign others, Congress enacted legislation that instituted five separate BRAC rounds in 1988, 1991, 1993, 1995, and 2005. Independent commissions established for each BRAC round made specific recommendations to the Senate and House Committees on Armed Services for the 1988 round and, thereafter, to the President, who in turn, sent the commissions' recommendations and his approval to Congress.

<sup>3</sup>GAO, *Formerly Used Defense Sites: The U.S. Army Corps of Engineers Needs to Improve Its Process for Reviewing Completed Cleanup Remedies to Ensure Continued Protection*, GAO-10-46 (Washington, D.C.: Oct. 29, 2009).

of the prior challenges that we have identified facing DOD's environmental restoration program overall and specifically with cleanup at BRAC sites.<sup>4</sup>

Our prior work was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## **Background**

Under DERP, DOD is required to conduct environmental restoration activities at sites located on former and active defense properties that were contaminated while under its jurisdiction. Program goals include the identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants, and contaminants; the correction of other environmental damage (such as detection and disposal of unexploded ordnance) that creates an imminent and substantial endangerment to public health or welfare or the environment; and the demolition and removal of unsafe buildings and structures. Types of environmental contaminants found at military installations include solvents and corrosives; fuels; paint strippers and thinners; metals, such as lead, cadmium, and chromium; and unique military substances, such as nerve agents and unexploded ordnance.

DOD has undergone five BRAC rounds, with the most recent occurring in 2005. Under the first four rounds, in 1988, 1991, 1993, and 1995, DOD closed 97 major bases, had 55 major base realignments,<sup>5</sup> and addressed hundreds of minor closures and realignments. DOD reported that the first four BRAC rounds reduced the size of its domestic

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<sup>4</sup>GAO, *Military Base Closures: Opportunities Exist to Improve Environmental Cleanup Cost Reporting and to Expedite Transfer of Unneeded Property*, GAO-07-166 (Washington, D.C. : Jan. 30, 2007).

<sup>5</sup>DOD defines a "major base closure" as one where plant replacement value exceeds \$100 million. DOD defines "plant replacement value" as the cost to replace an existing facility with a facility of the same size at the same location, using today's building standards. DOD defines a "major base realignment" as one with a net loss of 400 or more military and civilian personnel.

infrastructure by about 20 percent and generated about \$6.6 billion in net annual recurring savings beginning in fiscal year 2001.

As a result of the 2005 BRAC decisions, DOD was slated to close an additional 25 major bases, complete 32 major realignments, and complete 755 minor base closures and realignments. When the BRAC decisions were made final in November 2005, the BRAC Commission had projected that the implementation of these decisions would generate over \$4 billion in annual recurring net savings beginning in 2011. In accordance with BRAC statutory authority, DOD must complete closure and realignment actions by September 15, 2011—6 years following the date the President transmitted his report on the BRAC recommendations to Congress.<sup>6</sup> Environmental cleanup and property transfer actions associated with BRAC sites can exceed the 6-year time limit, having no deadline for completion. As we have reported in the past,<sup>7</sup> addressing the cleanup of contaminated properties has been a key factor related to delays in transferring unneeded BRAC property to other parties for reuse. DOD officials have told us that they expect environmental cleanup to be less of an impediment for the 2005 BRAC sites since the department now has a more mature cleanup program in place to address environmental contamination on its bases.

In assessing potential contamination and determining the degree of cleanup required (on both active and closed bases), DOD must comply with cleanup standards and processes under all applicable environmental laws, regulations, and executive orders. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)<sup>8</sup> authorizes the President to conduct or cause to be conducted cleanup actions at sites where there is a release or threatened release of hazardous substances, pollutants or contaminants which may present a threat to public health and the environment. The Superfund Amendments and Reauthorization Act of 1986 (SARA) amending CERCLA clarified that federal agencies with such sites shall be subject to and

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<sup>6</sup>Pub. L. No. 101-510, § 2904 (1990).

<sup>7</sup>GAO, *Military Base Closures: Progress in Completing Actions from Prior Realignment and Closures*, GAO-02-433 (Washington, D.C.: Apr. 5, 2002).

<sup>8</sup>CERCLA, Pub. L. 96-510 (1980), codified as amended at 42 U.S.C. § 9601–9630 (2010).

comply with CERCLA in the same manner as a private party,<sup>9</sup> and DOD was subsequently delegated response authority for its properties.<sup>10</sup> To respond to potentially contaminated sites on both active and closed bases, DOD generally uses the CERCLA process, which includes the following phases and activities, among others: preliminary assessment, site investigation, remedial investigation and feasibility study, remedial design and remedial action, and long-term monitoring.

SARA also required the Secretary of Defense to carry out the Defense Environmental Restoration Program (DERP)<sup>11</sup> Following SARA's enactment, DOD established DERP, which consists of two key subprograms focused on environmental contamination: (1) the Installation Restoration Program (IRP), which addresses the cleanup of hazardous substances where they were released into the environment prior to October 17, 1986; and (2) the Military Munitions Response Program (MMRP), which addresses the cleanup of munitions, including unexploded ordnance and the contaminants and metals related to munitions, where they were released into the environment prior to September 30, 2002.<sup>12</sup> While DOD is authorized to conduct cleanups of hazardous substances released after 1986 and munitions released after 2002, these activities are not eligible for DERP funds but are instead considered "compliance" cleanups and are typically funded by base operations and maintenance accounts. Once a property is identified for transfer by a BRAC round, DOD's cleanups are funded by the applicable BRAC account.

While SARA had originally required the government to warrant that all necessary cleanup actions had been taken before transferring property to nonfederal ownership, the act was amended in 1996 to allow expedited transfers of contaminated property.<sup>13</sup> Now such property, under some circumstances, can be transferred to nonfederal users before all remedial action has been taken. However, certain conditions must exist before DOD can exercise this early transfer authority; for example, the property must be suitable for the

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<sup>9</sup>Superfund Amendments and Reauthorization Act (SARA), Pub. L. No. 99-499 § 120(a) (1986).

<sup>10</sup>Exec. Order 12,580 § 2 (1987). See also 10 U.S.C. § 2701 (2010).

<sup>11</sup>Pub. L. No. 99-499, § 211.

<sup>12</sup>DERP also includes the Building Demolition and Debris Removal program, which involves the demolition and removal of unsafe buildings and structures from defense sites.

<sup>13</sup>The National Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201 § 334 (1996).

intended reuse and the governor of the state must concur with the transfer. Finally, DOD remains responsible for completing all necessary response action, after which it must warrant that such work has been completed.

### **Funding Levels and Cleanup Status for Active and BRAC Sites and FUDS**

DOD uses the same method to propose funding for cleanup at active and BRAC sites and FUDS; and cleanup funding is based on DERP goals and is generally proportional to the number of sites in each of these categories. Specifically, officials in the Military Departments, Defense Agencies, and FUDS program who are responsible for environmental restoration at the sites under their jurisdiction formulate cleanup budget proposals based on instructions in DOD's financial management regulation and DERP environmental restoration performance goals.<sup>14</sup> DOD's DERP goals include

- reducing risk to human health and the environment,
- preparing BRAC properties to be environmentally suitable for transfer,
- having final remedies in place and completing response actions, and
- fulfilling other established milestones to demonstrate progress toward meeting program performance goals.

DERP goals included target dates representing when the current inventory of active and BRAC sites and FUDS are expected to complete the preliminary assessment and site inspection phases, or achieve the remedy in place or response complete (RIP/RC) milestone. In addition, Congress has required the Secretary of Defense to establish specific performance goals for MMRP sites.<sup>15</sup> Table 1 provides a summary of these goals for the IRP and MMRP.

**Table 1: Summary of DERP Goals for IRP and MMRP**

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<sup>14</sup>DOD Financial Management Regulation 7000.14-R, October 2008.

<sup>15</sup>The most recent set of such goals was established by the John Warner National Defense Authorization Act for Fiscal Year 2007, Pub. L. No. 109-364 § 313, 120 Stat. 2083, 2138 (2006).

Target year for completing cleanup phase or milestone for all sites						
Cleanup phase or milestone	IRP			MMRP		
	Active	BRAC	FUDS	Active	BRAC	FUDS
Preliminary assessment	No goal <sup>a</sup>	No goal <sup>a</sup>	No goal <sup>a</sup>	2007 <sup>b</sup>	No goal	2007 <sup>b, f</sup>
Site inspections	No goal <sup>a</sup>	No goal <sup>a</sup>	No goal <sup>a</sup>	2010 <sup>b</sup>	No goal	2010 <sup>b</sup>
Remedy in place or response complete <sup>c</sup>	2014	2014 (BRAC 2005) <sup>d</sup>  2015 (Legacy BRAC) <sup>d</sup>	2020	2020	2009 (Legacy BRAC) <sup>b, d</sup>  2017 (BRAC 2005) <sup>b, d</sup>	No goal <sup>e</sup>

Source: DOD-provided data, DOD Financial Management Regulation, 7000.14-R, Vol. 2B, Ch. 13, October 2008.

<sup>a</sup>Because IRP is more mature than MMRP, DOD's goals for IRP are focused on achieving RIP/RC.

<sup>b</sup>Goals for MMRP sites contained in P.L. No. 109-364 § 313, 120 Stat. 2083, 2138; DOD Financial Management Regulation 7000.14-R, Vol. 2B, Ch. 13, October 2008; and DOD Defense Environmental Programs Annual Report to Congress, FY 2008, Appendix K. The statute requires the Secretary of Defense to set a RIP/RC date for active, BRAC 2005, and FUDS.

<sup>c</sup>RIP/RC targets apply to all IRP and MMRP sites, with the exception of MMRP sites at FUDS, which do not have a RIP/RC goal yet.

<sup>d</sup>Congress enacted legislation that instituted five separate BRAC rounds in 1988, 1991, 1993, 1995, and 2005. "Legacy BRAC" refers to the base closure rounds in 1988, 1991, 1993, and 1995. The most current closures are being conducted under the "2005 BRAC" round.

<sup>e</sup>DOD has not yet set a RIP/RC date for FUDS MMRP sites. In fiscal year 2009, the Army Corps of Engineers (Corps) began to develop a long-term strategy for MMRP sites at FUDS.

<sup>f</sup>The Corps completed preliminary assessments at 99 percent of FUDS MMRP sites by the end of fiscal year 2008.

As the table indicates, BRAC sites have no established goals for preliminary assessments or site inspections. For sites included under the first four BRAC rounds, the goal is to reach the RIP/RC milestone at IRP sites by 2015 and at MMRP sites by 2009. For sites included under the 2005 BRAC round, the goal is to reach the RIP/RC milestone at IRP sites by 2014 and at MMRP sites by 2017.

DOD's military components plan cleanup actions that are required to meet these goals at the installation or site level. DOD requires the components to assess their inventory of BRAC and other sites by relative risk to help make informed decisions about which sites to clean up first. Using these relative risk categories, as well as other factors such as stakeholder interest and mission needs, the components set more specific cleanup

targets each fiscal year to demonstrate progress and prepare a budget to achieve those goals and targets.

The proposed budgets and obligations among site categories are also influenced by the need to fund long-term management activities. While DOD uses the number of sites achieving RIP/RC status as a primary performance metric, sites that have reached this goal may still require long-term management and, therefore, additional funding for a number of years. Table 2 shows the completion status for active and BRAC sites and FUDS, as of the end of fiscal year 2008.

**Table 2: Completion Status of Sites, Fiscal Year 2008**

Status of sites	Active	BRAC	FUDS
Sites that have reached response complete status	16,810	3,953	2,682
Sites that have not reached response complete status	4,703	1,492	2,023
Sites that have reached response complete status but still require long-term management	760	440	55

Source: GAO analysis of DOD-provided data.

Table 3 shows the completion status of BRAC sites and those that require long term management under the IRP, MMRP, and the Building Demolition/Debris Removal Program by military component, for fiscal years 2004 through 2008.

**Table 3: BRAC Sites Cleanup Completion Status for Fiscal Years 2004 through 2008**

Program category	Fiscal years	Sites by military component				Total
		Army	Navy	Air Force	Defense Logistics Agency	
IRP sites that have achieved response complete status <sup>a</sup>	2004	1,710	899	1,073	153	<b>3,835</b>
	2005	1,744	920	1,127	157	<b>3,948</b>
	2006	1,781	914	1,179	157	<b>4,031</b>
	2007	1,767	422	1,226	157	<b>3,572</b>
	2008	1,778	558	1,260	157	<b>3,753</b>
IRP sites that have not achieved response	2004	181	164	641	11	<b>997</b>
	2005	149	174	587	7	<b>917</b>

complete status	2006	186	210	576	7	<b>979</b>
	2007	209	707	583	7	<b>1,506</b>
	2008	221	572	549	7	<b>1,349</b>
IRP sites that have achieved response complete status but remain under long-term management	2004	51	48	84	0	<b>183</b>
	2005	56	46	82	0	<b>184</b>
	2006	69	40	272	0	<b>381</b>
	2007	80	16	289	0	<b>385</b>
	2008	84	14	308	17	<b>423</b>
MMRP sites that have achieved response complete status	2004	120	3	0	0	<b>123</b>
	2005	109	5	0	0	<b>114</b>
	2006	118	4	0	0	<b>122</b>
	2007	87	1	92	0	<b>180</b>
	2008	93	5	102	0	<b>200</b>
MMRP sites that have not achieved response complete status	2004	53	16	126	0	<b>195</b>
	2005	64	14	126	0	<b>204</b>
	2006	99	26	126	0	<b>251</b>
	2007	91	31	35	0	<b>157</b>
	2008	91	27	25	0	<b>143</b>
MMRP sites that have achieved response complete status but remain under long term-management	2004	2	0	0	0	<b>2</b>
	2005	6	0	0	0	<b>6</b>
	2006	11	0	0	0	<b>11</b>
	2007	9	0	8	0	<b>17</b>
	2008	10	0	7	0	<b>17</b>

Source: GAO analysis of DOD data.

<sup>a</sup>Building Demolition and Debris Removal sites are included.

DOD data show that, in applying the broad restoration goals, performance goals, and targets, cleanup funding is generally proportional to the number of sites in the active, BRAC, and FUDS site categories. Table 4 shows the total DERP inventory of sites, obligations, and proportions at the end of fiscal year 2008.

**Table 4: Inventory of Sites, Obligations, and Proportions, Fiscal Year 2008**

Dollars in millions

	Active		BRAC		FUDS		Totals	
	Number/amount	Percentage of total						
Total number of sites	21,513	68	5,445	17	4,705	15	31,663	100
Amount obligated <sup>a</sup>	\$1,056.1	61	\$440.2	25	\$245.4	14	\$1,741.7	100

Source: GAO analysis of DOD-provided data.

<sup>a</sup>The amounts obligated are for cleanup activities for each category under the IRP, MMRP, and Building Demolition/Debris Removal programs.

As the table indicates, the total number of BRAC sites requiring cleanup is about 17 percent of the total number of defense sites, while the \$440.2 million obligated to address BRAC sites in fiscal year 2008 is equivalent to about 25 percent of the total funds obligated for cleaning up all defense waste sites.<sup>16</sup>

Since DERP was established, approximately \$18.4 billion has been obligated for environmental cleanup at individual sites on active military bases, \$7.7 billion for cleanup at sites located on installations designated for closure under BRAC, and about \$3.7 billion to clean up FUDS sites. During fiscal years 2004 through 2008, about \$4.8 billion was spent on cleaning up sites on active bases, \$1.8 billion for BRAC sites, and \$1.1 billion for FUDS sites.<sup>17</sup>

Table 5 provides DOD's funding obligations for cleanup at BRAC sites by military component and program category for fiscal years 2004 through 2008.

**Table 5: DOD's Obligations for Cleanup at BRAC Sites under the IRP and MMRP, Fiscal Years 2004 through 2008**

Dollars in millions

Program category	Fiscal years	Military component				Total <sup>a</sup>
		Army	Navy	Air Force	Defense Logistics Agency	
IRP	2004	\$18.3	\$120.1	\$146.0	\$7.3	\$291.7
	2005	56.5	72.5	100.3	8.3	237.6
	2006	43.2	219.5	81.0	4.3	348.0
	2007	55.2	163.4	85.4	5.0	308.9
	2008	42.0	256.2	91.1	1.6	390.8

<sup>16</sup>As noted previously, the active, BRAC, and FUDS cleanup activities are funded from distinct appropriations.

<sup>17</sup>All dollar amounts in this section reflect installation project funding allocated to individual sites for cleanup under the IRP, MMRP and building demolition and debris removal, and do not include program management and other support costs.

MMRP	2004	22.2	0.6	0.2	0.0	<b>23.0</b>
	2005	17.5	4.6	0.0	0.0	<b>22.1</b>
	2006	46.1	6.8	0.0	0.0	<b>52.8</b>
	2007	54.0	7.6	0.2	0.0	<b>61.8</b>
	2008	22.4	25.2	1.8	0.0	<b>49.4</b>
Program management and support <sup>b</sup>	2004					
	2005	16.1	25.5	41.7	0.0	<b>83.3</b>
	2006	12.1	30.2	40.5	0.2	<b>83.0</b>
	2007	13.5	23.8	29.4	1.0	<b>67.7</b>
	2008	14.2	27.5	36.2	2.1	<b>80.0</b>
Total obligations	2004	40.6	\$120.7	146.2	7.3	<b>314.7</b>
	2005	90.1	\$102.5	142.1	8.3	<b>342.9</b>
	2006	101.4	\$256.4	121.5	4.5	<b>483.9</b>
	2007	122.7	\$194.8	114.9	6.0	<b>438.3</b>
	2008	78.6	\$308.8	129.0	3.7	<b>520.2</b>

Source: GAO's analysis of DOD data.

<sup>a</sup>Due to rounding, subtotals may not equal total obligations.

<sup>b</sup>Program management and support includes administrative and overhead expenses. These obligations were not reported in DOD's DERP information system until fiscal year 2005.

Table 6 shows DOD's estimated cost to complete environmental cleanup for sites located at active installations, BRAC installations, and FUDS under the IRP, MMRP, and the Building Demolition and Debris Removal Program for fiscal years 2004 through 2008.

**Table 6: DOD's Estimated Costs to Complete Environmental Cleanup for Active, BRAC, and FUDS sites by Program Category, Fiscal Years 2004 through 2008**

Dollars in billions

	Fiscal year	Program category		Total
		IRP	MMRP	
Active sites <sup>a</sup>	2004	\$9.0	\$7.3	<b>\$16.3</b>
	2005	8.2	6.0	<b>14.2</b>
	2006	7.5	5.1	<b>12.6</b>
	2007	6.9	5.3	<b>12.2</b>
	2008	6.3	4.9	<b>11.3</b>
BRAC sites	2004	2.7	0.5	<b>3.2</b>
	2005	2.6	1.2	<b>3.8</b>
	2006	3.0	0.9	<b>3.9</b>
	2007	2.9	0.9	<b>3.9</b>
	2008	2.8	1.0	<b>3.7</b>
FUDS <sup>a</sup>	2004	3.6	12.2	<b>15.8</b>
	2005	3.5	12.9	<b>16.4</b>
	2006	3.4	12.6	<b>16.1</b>

	2007	3.2	13.0	<b>16.3</b>
	2008	2.8	13.5	<b>16.2</b>

Source: GAO's analysis of DOD data.

Note: Does not include program management and support costs. Totals may not add due to rounding.

<sup>a</sup>Building Demolition and Debris Removal costs estimates are included in the IRP category.

Finally, table 7 shows the total inventory of BRAC sites and the number ranked as high risk in the IRP and MMRP, by military component, for fiscal years 2004 through 2008.

**Table 7: Inventory for BRAC Sites, Fiscal Years 2004 through 2008**

Number of sites						
Program category	Fiscal year	Military component				Total
		Army	Navy	Air Force	Defense Logistics Agency	
IRP <sup>a</sup>	2004	1,891	1,063	1,714	164	<b>4,832</b>
	2005	1,893	1,094	1,714	164	<b>4,865</b>
	2006	1,967	1,124	1,755	164	<b>5,010</b>
	2007	1,976	1,129	1,809	164	<b>5,078</b>
	2008	1,999	1,130	1,809	164	<b>5,102</b>
MMRP	2004	173	19	126	0	<b>318</b>
	2005	173	19	126	0	<b>318</b>
	2006	217	30	126	0	<b>373</b>
	2007	178	32	127	0	<b>337</b>
	2008	184	32	127	0	<b>343</b>
Total sites	2004	2,064	1,082	1,840	164	<b>5,150</b>
	2005	2,066	1,113	1,840	164	<b>5,183</b>
	2006	2,184	1,154	1,881	164	<b>5,383</b>
	2007	2,154	1,161	1,936	164	<b>5,415</b>
	2008	2,183	1,162	1,936	164	<b>5,445</b>
IRP high risk <sup>b</sup>	2004	75	71	125	4	<b>275</b>
	2005	59	62	115	3	<b>239</b>
	2006	71	67	111	2	<b>251</b>
	2007	65	69	116	2	<b>252</b>
	2008	67	62	103	2	<b>234</b>
MMRP high risk <sup>b,c</sup>	2004	34	0	0	0	<b>34</b>
	2005	33	0	0	0	<b>33</b>
	2006	50	0	0	0	<b>50</b>
	2007					
	2008					
Total high-risk sites <sup>c</sup>	2004	109	71	125	4	<b>309</b>
	2005	92	62	115	3	<b>272</b>
	2006	121	67	111	2	<b>301</b>

	2007					
	2008					

Source: GAO's analysis of DOD data.

<sup>a</sup>IRP numbers include Building Demolition and Debris Removal Program sites.

<sup>b</sup>We defined risk categories as follows: IRP high risk sites are those with a relative risk site evaluation risk level of "high" and MMRP high risk sites are those with a risk assessment code of 1 or 2.

<sup>c</sup>The actual number of high-risk MMRP sites are incomplete after fiscal year 2006 because DOD is transitioning to a new scoring system.

## Challenges to DOD's Environmental Cleanup Efforts

Our past work has also identified a number of challenges to DOD's efforts in undertaking environmental cleanup activities at defense sites, including BRAC sites. For example, we have reported the following:

- DOD's preliminary cost estimates for environmental cleanup at specific sites may not reflect the full cost of cleanup. That is, costs are generally expected to increase as more information becomes known about the extent of the cleanup needed at a site to make it safe enough to be reused by others. We reported in 2007 that our experience with prior BRAC rounds had shown that cost estimates tend to increase significantly once more detailed studies and investigations are completed.<sup>18</sup>
- Environmental cleanup issues are unique to each site. However, we have reported that three key factors can lead to delays in the cleanup and transfer of sites. These factors are (1) technological constraints that limit DOD's ability to accurately identify, detect, and clean up unexploded ordnance from a particular site, (2) prolonged negotiations between environmental regulators and DOD about the extent to which DOD's actions are in compliance with environmental regulations and laws, and (3) the discovery of previously undetected environmental contamination that can result in the need for further cleanup, cost increases, and delays in property transfer.

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<sup>18</sup>GAO, *Military Base Closures: Opportunities Exist to Improve Environmental Cleanup Cost Reporting and to Expedite Transfer of Unneeded Property*, GAO-07-166 (Washington, D.C. : Jan. 30, 2007)

In conclusion, Mr. Chairman, while the data indicate that DOD has made progress in cleaning up its contaminated sites, they also show that a significant amount of work remains to be done. Given the large number of sites that DOD must clean up, we recognize that it faces a significant challenge. Addressing this challenge, however, is critical because environmental cleanup has historically been a key impediment to the expeditious transfer of unneeded property to other federal and nonfederal parties who can put the property to new uses.

Mr. Chairman, this concludes my prepared statement. I would be happy to respond to any questions that you or Members of the Subcommittee may have.

#### **GAO Contact and Staff Acknowledgements**

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