Order Code RS22065
Updated November 15, 2005

Military Base Closures: Role and Costs of Environmental Cleanup

David M. Bearden
Analyst in Environmental Policy
Resources, Science, and Industry Division

Summary

On September 15, 2005, President Bush submitted a list of military installations recommended for a 2005 round of closures and realignments. Congress did not pass a joint resolution of disapproval to halt the 2005 round within the statutory 45-day time frame allotted for legislative review, permitting the Department of Defense (DOD) to implement the 2005 round. The planned closure of additional bases has stimulated interest among potentially affected communities in how these properties might be redeveloped to replace lost jobs. Environmental contamination can present a challenge to economic redevelopment, if funding or technological constraints would limit the degree of cleanup needed to make the land safe for its intended use. Most land on bases closed under past rounds has been cleaned up and transferred for redevelopment. However, some bases have yet to be cleaned up to an extent that would be adequate for the planned land use, presenting an obstacle to replacing lost jobs. Bases closed under the 2005 round could face similar delays in redevelopment, if a community's preferred land use would necessitate a costly and time-consuming degree of cleanup. This report provides an overview of cleanup requirements for the transfer and reuse of base closure properties, discusses the status of property transfer on bases closed under prior rounds, examines costs to clean up bases closed under these prior rounds, and discusses cleanup costs and issues for the 2005 round. It will be updated as events warrant.

Introduction

Following the collapse of the former Soviet Union, Congress authorized four rounds of military base closings and realignments in 1988, 1991, 1993, and 1995. Although closure of installations under all four rounds is complete, environmental cleanup and economic redevelopment of some of these properties continues. The pace and cost of cleaning up environmental contamination on closed bases has been an ongoing issue, because of concern about human health and environmental risks and the public's desire to redevelop these properties for civilian uses. The completion of cleanup is often a key factor in economic redevelopment, because the land cannot be used for its intended purpose until it is cleaned up to a degree that would be safe for reuse.

A new round of base closures and realignments in 2005 has raised concern among communities as to whether the cleanup of environmental contamination may pose obstacles to redeveloping surplus military property for civilian use. The Base Realignment and Closure (BRAC) Commission submitted its report to President Bush on September 8, 2005. The report lists the military installations that the Commission approved for closure or realignment and its reasons for altering DOD's recommendations. The Commission rejected 13 of DOD's recommendations, significantly modified the recommendations for 13 other installations, and approved 22 major closures. The President notified Congress of his approval of the Commission's recommendations on September 15, 2005. Congress did not pass a joint resolution of disapproval to halt the 2005 round within the statutory 45-day time frame allotted for legislative review, permitting DOD to implement the 2005 round. Under federal statute, DOD must complete the implementation of the 2005 round within six years. However, this time frame applies only to the closure or realignment of bases. The cleanup of contaminated surplus property to make it suitable for civilian reuse could take significantly longer.

Cleanup Requirements for Property Transfer and Reuse

Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly referred to as Superfund) generally requires the United States (in this case, DOD) to clean up closed bases prior to transfer out of federal ownership.[1] Property on a closed base is typically transferred to a local redevelopment authority (LRA) responsible for implementing a plan for civilian reuse. To speed redevelopment, CERCLA authorizes early transfer under certain conditions.[2] Early transfer can be advantageous in terms of redevelopment, if the intended land use would not present the potential for human exposure to contamination, and therefore not require cleanup. Conversely, redevelopment still could be delayed despite early transfer, if cleanup would be necessary to make the intended land use safe.

Whether a property is transferred after cleanup, or transferred early, the degree of cleanup can vary from site to site, depending on the cleanup standard used and the remedy selected to attain it. CERCLA does not specify cleanup standards for particular substances. Rather, it requires that cleanup comply with legally applicable, relevant and appropriate requirements (ARARs) to protect human health and the environment, which include a host of federal and state standards for various hazardous substances.[3] Although CERCLA does not explicitly require the consideration of land use in determining the degree of cleanup, in practice, land use is a key factor in selecting a cleanup standard and remedy to attain it. Cleanup standards generally are stricter for land uses that would result in greater risk of human exposure to contamination. For example, cleanup is typically more stringent and more costly for land uses such as residential development, which could pose a higher risk of exposure to sensitive populations including children and the elderly. Cleanup is typically the least stringent and the least costly for industrial land uses, such as manufacturing, which could pose less risk of exposure.

---

[1] 42 U.S.C. 9620(h)

[2] 42 U.S.C. 9620(h)(3)(C)

[3] 42 U.S.C. 9621(d)

The Environmental Protection Agency (EPA), or the state in which an installation is located, is responsible for determining whether the selected remedy would attain the cleanup standard for a specific site.[4] EPA has issued non-binding guidance for considering the "reasonably anticipated land use" in selecting cleanup remedies.[5] DOD and the community, usually through the LRA, are responsible for determining how the land will be reused, in negotiating the terms of the property transfer. However, the community's ability to attain its preferred use is constrained, as the Defense Base Closure and Realignment Act does not require DOD to dispose of property on a closed base for a particular land use, nor within a certain time frame. Impediments to conveying the land for redevelopment may surface if DOD is resistant to transferring it for a purpose that the community desires, because of cost considerations or technological limitations affecting cleanup of the contamination. EPA's guidance acknowledges that some land uses may not be practical due to such challenges, and indicates that the cleanup objective may need to be revised, which may result in "different, more reasonable land use(s)."[6]

In addition to land use, numerous other factors can determine the degree and cost of cleanup, raising further issues. For example, cleanup does not necessarily require the removal of contamination, if a safe method of containing it is available to prevent exposure. Although containment is typically less costly than removal, some of the savings of containment can be offset by the costs of maintaining the containment method over the long term to ensure that it remains effective in preventing exposure. Tensions may arise between DOD and the community, if there is disagreement over the method selected to prevent exposure. Communities frequently prefer removal rather than containment, because of concerns about lingering risks and continuing costs if the method of containment were to fail over time. However, DOD may prefer containment to save costs, due to limited funding for the cleanup of many closed bases across the country.

Once DOD and the community agree on a land use, and a cleanup remedy is selected to make that land use safe, DOD generally administers and pays for the cleanup, regardless of whether cleanup is completed prior to transfer, or subsequently under an early transfer. In the case of an early transfer, the property recipient may choose to administer the cleanup as a means to speed the reuse of the land, but DOD typically still pays the costs. DOD remains obligated after cleanup is complete, if more contamination is found later that requires remediation. However, DOD is obligated for further cleanup only to the extent that the degree of contamination found later would exceed applicable standards for the land use originally agreed upon for the transfer. If a community decides to use the land for another purpose that would require further cleanup, DOD would not be responsible for paying for it. In such cases, the additional costs of cleanup to make the land safe for a different purpose would be the responsibility of the property recipient.

---

[4] Both EPA and states play a role in the oversight of cleanup on federal facilities, including military installations. EPA typically is the lead agency at sites listed on the National Priorities List (NPL) of the nation's most hazardous waste sites, and states usually take the lead on those that are not listed on the NPL.

[5] EPA. Office of Solid Waste and Emergency Response. *Land Use in the CERCLA Remedy Selection Process*. OSWER Directive No. 9355.7-04. May 25, 1995.

[6] Ibid., p. 7.

Status of Property Transfer on Closed Bases[7]

The Government Accountability Office (GAO) reports that, as of the end of FY2003, 364,000 acres (72%) of the 504,000 acres of land on bases closed during the previous four rounds had been transferred for reuse. Approximately 95% of the transferred acreage had been transferred after cleanup was completed. Although early transfer has the potential to speed redevelopment, it has been used relatively infrequently for several reasons, such as the reluctance of a community to accept property before cleanup is finished and the lack of consensus within a community on reuse. DOD also may be hesitant to agree to early transfer if it would be required to expend more cleanup funds earlier than would be necessary otherwise, to make the land safe for reuse more quickly.

Of the 28% of land that had not been transferred, 18% (91,000 acres) had been leased for reuse prior to the completion of cleanup. However, pending cleanup had delayed the permanent transfer of these properties, with reuse limited to purposes that would be safe considering the degree of contamination still present on these lands and the potential risk of human exposure. The remaining 10% (49,000 acres) had not been leased or transferred for reuse primarily because of environmental cleanup challenges. GAO found that some cleanup was necessary before transfer could occur on 98% of Air Force, 82% of Army, and 65% of Navy lands still awaiting transfer at that time.

Cleanup Costs of Past Base Closure Rounds

DOD estimates that the closure of bases under the previous four rounds has resulted in an annual savings of $7 billion in operational expenses. The costs of environmental cleanup have run into billions of dollars, discussed below, and have offset some of these savings gained from a reduced military infrastructure. However, a portion of the cleanup costs would have been incurred regardless, as DOD is required to clean up its operational installations at least to a degree that would be safe for military uses, somewhat reducing this offset. The incremental cost and time to clean up a closed base depends primarily on how extensive the cleanup must be to make the land safe for uses that would be less restrictive than military purposes, and pose a higher risk of human exposure. DOD reports that it had incurred approximately $7 billion in cleanup costs through FY2004 at bases closed under the previous four rounds.[8] This amount reflects the *actual* costs of the cleanup process.[9] About 44% of the $7 billion was spent on cleanup in California, where DOD has identified more contaminated sites on closed bases than any other state.

Although the majority of the acreage on bases closed under the previous four rounds has been cleaned up and transferred, estimates of future costs to complete cleanup on

---

[7] Government Accountability Office, *Military Base Closures: Updated Status of Prior Base Realignments and Closures*, GAO-05-138, January 2005. See pp. 10-19.

[8] Department of Defense, *Defense Environmental Programs Annual Report to Congress for FY2004*, April 2005, Appendix K and Appendix L, various pages.

[9] In January 2005, GAO reported $8.3 billion in cleanup expenses at closed bases through the end of FY2003. This included funding *obligated* for cleanup, which would be paid at a later date upon completion of specific actions, in addition to actual costs incurred through this period. GAO's reported amount also included other costs, such as program management and support.

lands awaiting transfer, and on those transferred early, remain substantial. DOD estimates that over $3 billion would be necessary to complete cleanup of known contamination on these lands,[10] with 59% of these costs attributed to cleanup in California. However, future costs could be higher than estimated, if new, or more stringent, regulations are issued that require a greater degree of cleanup than anticipated. Future costs also could be more than expected if unknown environmental threats, such as unexploded ordnance or additional hazardous substances, are discovered. On the other hand, costs at some sites may prove lower if more cost-effective cleanup technologies become available.

Cleanup Costs and Issues for the 2005 Round

The amount of money and time required to clean up additional bases to be closed in the 2005 round will depend on the type and extent of contamination present on those properties, and the actions that will be necessary to make the land safe for reuse. Cleanup can take many years, as the continuing remediation of certain bases closed between 1988 and 1995 demonstrates. As in prior rounds, availability of funding and capabilities of remediation technologies could limit the degree of cleanup of installations closed in the 2005 round, making certain land uses infeasible and posing challenges to economic redevelopment. As indicated in the table below, DOD's most recent estimates, submitted to Congress in April 2005, indicate that approximately $500 million will be needed to complete cleanup at the 22 "major" installations slated for closure in the 2005 round. Significant cleanup also may be necessary at minor installations that are closed and on installations that are realigned if the change in mission will result in the disposal of contaminated land that is no longer needed for military purposes.

The accuracy of DOD's cleanup cost estimates has been the topic of much debate. DOD asserts that its estimates are reasonably sound and that they reflect current knowledge of the extent of contamination and the actions that likely will be needed to address it. However, these estimates are based on a degree of cleanup that would be safe for the current military use of the land. If a property were to be used for less restrictive purposes that would result in a higher risk of human exposure to contamination, a greater degree of cleanup likely would be required to make the land safe for that use. In such circumstances, more funding and additional time may be needed to complete cleanup than DOD has planned. Some Members of Congress and the BRAC Commission have expressed concern that DOD did not consider the greater degree of cleanup that may be necessary to redevelop these properties when calculating its estimates. Some state environmental agencies also have argued that DOD's estimates do not fully reflect cleanup needs at certain sites. Due to these reasons, communities have expressed concern that significantly more funding may be required than DOD has estimated to clean up these properties to make them safe for civilian reuse. The BRAC Commission also commented that possibly higher cleanup costs may offset a portion of the savings in military operational costs that DOD hopes to realize from the 2005 round.

The cost estimates in the table below are from DOD's *Defense Environmental Programs Annual Report to Congress for FY2004*, submitted to Congress in April 2005. There are substantial discrepancies for certain installations between the estimates in

---

[10] Department of Defense, *Defense Environmental Programs Annual Report to Congress for FY2004*, April 2005, Appendix K and Appendix L, various pages.

DOD's FY2004 report and those indicated by the BRAC Commission in Appendix P of its report to the President. The Commission based its estimates on FY2003 cost data that DOD used to assess the environmental impacts of the 2005 round, rather than on more recent cost data submitted by DOD to Congress in the Department's FY2004 report.

Major Military Installations to be Closed in the 2005 Round: Past Cleanup Costs and Estimates of Future Cleanup Costs

Installation	State	Actual Costs Through FY2004	Estimated Costs from FY2005 to Completion
Kulis Air Guard Station	Alaska	**a**	**a**
Onizuka Air Force Station **b**	California	$139,000	$0
Riverbank Army Ammunition Plant	California	$53,664,000	$5,091,000
Atlanta Naval Air Station	Georgia	$1,473,000	$2,596,000
Fort Gillem	Georgia	$21,790,000	$14,800,000
Fort McPherson	Georgia	$7,924,000	$7,301,000
Newport Chemical Depot	Indiana	$19,366,000	$4,874,000
Kansas Army Ammunition Plant	Kansas	$32,165,000	$25,271,000
Selfridge Army Activity	Michigan	$17,000	$13,202,000
Brunswick Naval Air Station	Maine	$60,417,000	$13,638,000
Mississippi Army Ammunition Plant	Mississippi	$0	$8,413,000
Pascagoula Naval Station	Mississippi	**a**	**a**
Fort Monmouth	New Jersey	$24,490,000	$3,642,000
Cannon Air Force Base **b**	New Mexico	$11,111,000	$0
Umatilla Chemical Depot	Oregon	$53,560,000	$10,390,000
Willow Grove Naval Air Station	Pennsylvania	$6,867,000	$6,235,000
Brooks City Base	Texas	$7,044,000	$3,415,000
Ingleside Naval Station	Texas	**a**	**a**
Lone Star Army Ammunition Plant	Texas	$25,557,000	$1,156,000
Deseret Chemical Depot	Utah	$21,096,000	$180,498,000
Fort Monroe	Virginia	$1,830,000	$201,165,000
General Mitchell Air Reserve Station	Wisconsin	**c**	**c**
All Installations		**$348,510,000**	**$501,687,000**

Source: Prepared by the Congressional Research Service using information from the Department of Defense, *Defense Environmental Programs Annual Report to Congress for FY2004*, April 2005, Appendix K and Appendix L, various pages. The above amounts indicate costs for actions directly related to cleanup and do not include indirect costs such as program management and support. They include costs for cleanup of munitions on closed ranges but exclude costs to clean up operational ranges on installations to be closed in the 2005 round, as DOD's FY2004 environmental report does not include such estimates. Estimates of these costs will be included in future year DOD environmental reports. The BRAC Commission's report indicates cleanup cost estimates for operational ranges, but they are wide ranges rather than specific costs.

a. DOD did not indicate sites where cleanup was or is required as of the end of FY2004.
b. DOD indicated that all planned cleanup actions were complete as of the end of FY2004.
c. DOD reported that cleanup was complete at General Mitchell Air Force Base, but did not indicate cleanup at the Air Reserve Station.