Communities and Chemical Warfare Materiel Disposal

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EXECUTIVE SUMMARY

ES.1 The Center for Public Environmental Oversight (CPEO), a project of the Pacific Studies Center, conducted field work to evaluate community attitudes toward the various technologies and approaches to Chemical Warfare Materiel (CWM) response. CPEO Executive Director Lenny Siegel visited five communities where Formerly Used Defense Sites (FUDS) have known CWM issues and interviewed stakeholders, including local, state, and tribal officials. The five FUDS were the American University Experimental Station, Spring Valley, Washington, DC; Amaknak Island, Unalaska/Dutch Harbor, Aleutian Islands, Alaska; Former Lowry Bombing and Gunnery Range (also known as Buckley Field), Aurora, Colorado; Black Hills Ordnance Depot, Igloo, South Dakota; and Former Camp Sibert, Steele, Alabama. The stakeholders who took part in this study were remarkably frank, and they offered valuable, though varied opinions about the technologies with which they were familiar.

ES.2 CWM at Formerly Used Defense Sites includes actual chemical munitions, such as mortar rounds, artillery shells, and possibly aerial bombs; Chemical Agent Identification Sets (CAIS); bulk storage containers; and CWM laboratory debris. The U.S. Army Corps of Engineers has counted 100 or more FUDS known or suspected to contain CWM, and the number is updated periodically.

ES.3 At FUDS, the U.S. Army Corps of Engineers is responsible for conducting the site investigations and subsequent excavations that lead to the recovery of buried chemical munitions. When suspect CWM is found, the U.S. Army Corps of Engineers may call in Technical Escort Units from the 22nd Chemical Battalion. The Non-Stockpile Chemical Materiel Project (NSCMP), a branch of the Chemical Materials Agency, may be brought in to destroy the materiel.

ES.4 There are numerous technological options, some of which have been proven in the field, for addressing recovered chemical munitions, including Open Detonation, the Explosive Destruction System, Controlled Detonation Chambers, Stockpile Demilitarization incinerators, commercial hazardous waste incinerators, and the Large Item Transportable Access and Neutralization System. Chemical Agent Identification Sets may be destroyed in the Single CAIS Access and Neutralization System, the Rapid Response System, or commercial hazardous waste incinerators, and community education is a key response action at any location where the Sets may be been buried or otherwise discarded.

ES.5 At sites governed by the Comprehensive Environmental Response, Compensation, and Liability Act, Community Acceptance is a criterion in the remedy-selection process. However, the public at the studied FUDS are generally unaware of the range of technologies designed to treat recovered CWM. Many of the respondents, familiar with the CERCLA remedy-selection process, explained that they would expect to evaluate treatment technologies, at the sites within their communities, *after* hearing their respective advantages and disadvantages from officials of the U.S. Army Corps of Engineers and environmental regulatory agencies.

ES.6 Those of the respondents in this study who expressed opinions generally opposed "incineration," the number one controversy at CWM Stockpile demilitarization sites because of concerns over atmospheric emissions. However, a number of people suggested that incinerators that prevent harmful emissions might be acceptable.

ES.7 Most of the study participants believe that it is better to transport the treatment technology to the recovery site than to ship the CWM to a treatment facility. The Explosive Destruction System is highly regarded by those stakeholders who are familiar with it. Some of the respondents volunteered that it does not make sense to store chemical munitions on the surface. Most believed that education is an appropriate response to potential CAIS discoveries. Some felt that monitoring for emissions was a key part of any treatment system.

ES.8 Experience at Stockpile demilitarization sites over the years illustrates how the storage and disposal of chemical warfare materiel and its demilitarization byproducts can generate intense emotional reactions from host communities. The Non-Stockpile Project has avoided such challenges by institutionalizing a give-and-take relationship with community activists, regulators, and others through the Core Group.

ES.9 The key lesson of this study was that stakeholders' acceptance of CWM treatment technologies is primarily a function of the level of *trust* that they exhibit toward the U.S. Army Corps of Engineers and other government officials at their sites.

ES.10 To promote the development and/or acceptance of chemical warfare materiel disposal technologies and strategies at Formerly Used Defense Sites, the U.S. Army Corps of Engineers should work to include public stakeholders from FUDS in the Core Group or a similar national dialogue on buried CWM response.

ES.11 To ensure that trust is already established when site-specific decisions about CWM disposal need to be made, FUDS project managers must be prepared to work cooperatively with communities and reminded of the importance of developing such relationships.

ES.12 If the U.S. Army Corps of Engineers anticipates, understands, and addresses up front the concerns of FUDS communities where CWM is found, it can accomplish its mission with a minimum of delay, expense, and controversy.

1.0 INTRODUCTION

1.1 The U.S. Army Corps of Engineers has identified nearly 100 Formerly Used Defense Sites (FUDS) believed to contain chemical warfare materiel (CWM) that present explosive or chemical agent hazards. The objective of this study is to review existing technological approaches for destroying such CWM and determine community acceptance of, or concerns with, these technologies.

1.2 One of the greatest unknowns in the Department of Defense's program for environmental response at FUDS is the magnitude of the challenge of recovering and destroying buried CWM. This uncertainty is a function of three factors:

1.2.1 • The quantity of buried CWM—indeed the number of properties where it will be found—is not known.

1.2.2 • The regulatory requirements and community acceptance, modifying criteria under the National Contingency Plan, for both recovery and destruction may vary significantly from location to location.

1.2.3 • It may be necessary to develop and/or qualify new technologies to address emerging response scenarios.

1.3 To help resolve these issues, the U.S. Army Engineering Support Center, Huntsville, tasked the Center for Public Environmental Oversight (CPEO), a project of the Pacific Studies Center, to conduct field work to evaluate community attitudes toward the various technologies and approaches to CWM response. CPEO Executive Director Lenny Siegel visited five communities where FUDS have known CWM issues and interviewed stakeholders, including local, state, and tribal officials. The five FUDS were:

1.3.1 1. American University Experimental Station, Spring Valley, Washington, DC

1.3.2 2. Amaknak Island, Unalaska/Dutch Harbor, Aleutian Islands, Alaska

1.3.3 3. Former Lowry Bombing and Gunnery Range (also known as Buckley Field), Aurora, Colorado

1.3.4 4. Black Hills Ordnance Depot, Igloo, South Dakota

1.3.5 5. Former Camp Sibert, Steele, Alabama

1.4 While the interviewees' perspectives were influenced by conditions at their local FUDS, the purpose of the visits was to determine public attitudes toward *generic* approaches to CWM response. Participating stakeholders exhibited a wide variety of sometimes conflicting attitudes toward the U.S. Army Corps of Engineers and its FUDS response in their communities and toward other government organizations involved in CWM response.

1.5 The stakeholders who took part in this study were remarkably frank, and they offered valuable, though varied opinions about the technologies with which they were familiar. The key lesson, however, was that stakeholders' acceptance of CWM response technologies is primarily a function of the level of *trust* that they exhibit toward the U.S. Army Corps of Engineers and other government officials at their sites.

World War II Battlement on Amaknak (AK)

2.0 BACKGROUND

2.1 CWM at Formerly Used Defense Sites includes actual chemical munitions, such as mortar rounds, artillery shells, and possibly aerial bombs, many of which contain explosive "burster" charges. It also includes Chemical Agent Identification Sets (CAIS). More than 100,000 sets were produced. At least 80,000 sets were expended in training, However, an unknown number were "disposed of" by burial, at the time one of the approved, standard procedures. There may also be some bulk storage containers, such as drums in which chemical agent was stored, and at one site, at least—Spring Valley, DC—CWM laboratory debris is found in significant quantities. Frequently, CWM is found with hazardous chemical wastes, conventional ordnance, or even demolition debris.

2.2 The U.S. Army Corps of Engineers has counted 100 or more FUDS known or suspected to contain CWM, and the number is updated periodically. In 2005, a contractor counted 91 such sites, adding, "the list of suspect CWM sites continues to increase as new information becomes available."[1] Sites range from training areas where a small number of CAIS may have been discarded to depots where tens of thousands of live

[1] Joe Cudney, "Nationwide Non-Stockpile Chemical Warfare Materiel Scoping and Security Study," Parsons, March 4, 2005, p. 1

chemical rounds were treated in open burn pits. The contractor evaluated each of the 91 FUDS, recommending 57 for further action, 34 for project closeout.

2.3 FUDS chemical warfare materiel makes up a fraction of all domestic CWM for which the U.S. military is responsible. It does not include the *Stockpile*: large quantities of unused chemical munitions, stored and slated for disposal at eight domestic chemical depots. The United States has agreed, as a signatory to the Chemical Weapons Convention treaty, to destroy these weapons. Destruction is underway at most of these facilities, but the program has been delayed both by technical challenges and community opposition, at several sites, to the Army's preferred disposal technology: incineration.

2.4 It does not include several categories of Non-Stockpile Chemical Warfare Materiel, including the components of binary chemical munitions, former production facilities, or stockpiled storage drums. These items, as well as munitions that have been recovered from disposal sites and some captured during past wars, are also subject to the treaty. Unlike the Stockpile, most will be destroyed by the initial 2007 treaty deadline.

2.5 There are also three categories of CWM, which are similar to that found on FUDS, in that they may require similar treatment or disposal.

2.5.1 1. Buried CWM on active installations and ranges, as well as those closed since 1986—the cut-off date defining FUDS. There is currently no definitive requirement to excavate all these items.

2.5.2 2. CWM found off Department of Defense installations, such as the handful of munitions found among crushed clamshells in Delaware driveways.

2.5.3 3. Chemical munitions which the U.S. military deliberately dumped offshore. In 2006 Congress required the Department of Defense to evaluate the offshore sites, but there is currently no legal requirement for recovery.

2.6 At FUDS, the U.S. Army Corps of Engineers is responsible for conducting the site investigations and subsequent excavations that lead to the recovery of buried chemical munitions. (In some cases, the other armed services conduct such work on their own facilities.)

2.7 When suspect CWM is found, the U.S. Army Corps of Engineers may call in Technical Escort Units from the 22nd Chemical Battalion. The Non-Stockpile Chemical Materiel Project (NSCMP), a branch of the Chemical Materials Agency, may be brought in to destroy the materiel. The NSCMP regularly seeks advice from a committee of the National Research Council, the research arm of the National Academies of Sciences, and it consults regularly with the Core Group, which includes representatives of environmental regulatory agencies and public stakeholders, including the Chemical Weapons Working Group, a national activist coalition.

2.8 Now that the NSCMP is approaching completion of its Chemical Weapons Convention-driven activities, the Army and Department of Defense are considering new ways to organize the remaining Non-Stockpile missions, primarily the recovery and destruction of buried CWM.

2.9 Though as early as 1993 Congress directed the Army and the Department of Defense to develop a plan and cost estimates for the disposal of buried CWM, that task is not yet complete.[2] Thus, the U.S. Army Corps of Engineers and the Non-Stockpile Materiel Project are faced with the challenge of developing disposal technologies for a mission that has not yet been fully circumscribed.

Lot 18 at American University Experimental Station (DC)

3.0 THE TECHNOLOGIES

3.0.1 Fortunately, there are numerous technological options, some of which have been proven in the field, for addressing recovered CWM. In general, they are designed to demilitarize chemical munitions, to destroy chemical agent, and to treat the remaining environmental hazards. Though the most pressing goal is to prevent recovered CWM from being used as weapons, destruction must comply with stringent federal and state safety and environmental standards.

[2] "The Chemical Demilitarization Program: Increased Costs for Stockpile and Non-Stockpile Chemical Materiel Disposal Programs," (D-2003-128), Office of the Inspector General, Department of Defense, September 4, 2003, p. 18.

3.1 Munitions

3.1.1 Open Detonation—This includes "blow in place" for munitions that Explosive Ordnance Disposal technicians deem too hazardous to move as well as the moving of items to a remote area for destruction. Typically, CWM is overpacked with a quantity of high explosive designed to destroy the chemical agent.

3.1.2 Explosive Destruction System (EDS)—This trailer-mounted system, currently available in two sizes, uses shaped high explosive charges to split open chemical munitions within a heavy steel chamber. Then chemicals are added to the chamber to neutralize the chemical agent.

3.1.3 Controlled Detonation Chamber (CDC)—This trailer-mounted system uses high explosives to blow open and combust chemical agent within the chamber. Residual agent and other emissions are scrubbed before exhaust is released. Though the CDC is widely used to destroy conventional high-explosive munitions, it has not yet been approved for CWM in the United States. Japan has a conceptually similar system, the DAVINCH (Detonation of Ammunition in Vacuum Integrated Chambers), and the Swedish Dynasafe technology is a static kiln that relies upon heat, not explosives, for contained combustion.

3.1.4 Stockpile Demilitarization incinerators—The Chemical Materials Agency operates fixed, thermal destruction facilities at the Deseret Chemical Depot (Utah), Anniston Chemical Activity (Alabama), Pine Bluff Arsenal (Arkansas), and Umatilla Chemical Depot (Oregon). There are currently no plans to destroy intact recovered chemical munitions at these facilities, but they may be used to process other CWM such as chemical samples.

3.1.5 Commercial hazardous waste incinerators—There are currently no proposals to destroy CWM in commercial hazardous waste treatment facilities, but in theory they could be used to destroy CWM utilizing industrial chemicals—that is, munitions in which the agent is not unique to military use. They may also be used to treat secondary wastes, such as neutralent or carbon filters, generated by munitions disposal systems, and CAIS (see below).

3.1.6 Large Item Transportable Access and Neutralization System (LITANS)—This system is designed to access, remove, and neutralize chemical agent from recovered CWM, such as aerial bombs, too large to be destroyed by other technologies. Technicians working through glove boxes drill holes in the munitions and drain the agent for neutralization. Reportedly, the British have developed a similar system that relies upon remote control rather than gloveboxes.

3.2 Chemical Agent Identification Sets (CAIS)

3.2.2 CAIS were vials or other containers of small quantities of a variety of dilute chemical agents. They were used train Soldiers and Sailors to recognize chemical agents

by smell. The standard disposal strategy for used or remaining CAIS was burial in training areas.

3.2.2 Single CAIS Access and Neutralization System (SCANS)—Single CAIS units are placed inside these small, disposable cylinders, punched through, and neutralized.

3.2.3 Rapid Response System (RRS)—This trailer-mounted system allows operators to dismantle, identify, crush, and neutralize CAIS in a series of linked glove boxes.

3.2.4 Education—While not actually a technology, public education is the first line of defense against exposure to chemical agent from CAIS. Since this form of CWM shows up unexpectedly, people who might encounter the vials or their packages need to know how to recognize the CAIS and what to do if they find them. Therefore, at a number of FUDS, the U.S. Army Corps of Engineers has created a suite of educational materials designed to warn the public in advance of any CAIS discoveries. The Non-Stockpile Program has developed CAIS fact sheets, as well.

3.3 Vapor Containment Systems

3.3.1 Vapor containment systems are temporary or mobile structures designed to contain accidental emissions during CWM recovery and treatment. They are a standard part of the LITANS, but they may be used with any field treatment systems or even during excavation. Some vapor containment systems are also designed to partially control the blast from accidental detonations.

Vapor Containment System at Former Camp Sibert (AL)

4.0 COMMUNITY PERSPECTIVES

4.0.1 Community attitudes toward remedial technologies are an important part of the remedy-selection process at sites governed by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and similar federal and state statutes. Community Acceptance is one of the nine criteria for remedy selection under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the implementing regulation of CERCLA. Specifically, it is a modifying criterion, which means that the lead agency responsible for cleanup must consider and respond to community concerns, but that it is not required to do what members of the affected community—even if unanimous—want it to do.

4.0.2 In many cases, community members go beyond the formal NCP process to influence the remedy-selection process, taking their perspectives to members of Congress and Senators, who are sometimes able to influence decisions through their legislative, oversight, and appropriations authority over all federal cleanup programs.

4.0.3 In our field research, we found that the public at the selected FUDS are uniformly unaware of the range of technologies designed to treat recovered CWM. At sites where the EDS has been employed, some of the stakeholders are somewhat familiar with its basic mode of operation. A few had heard of the Controlled Detonation Chamber's use with conventional munitions. Furthermore, many of the respondents, familiar with the CERCLA remedy selection process, explained that they would expect to evaluate, at the sites within their communities, treatment as well as recovery technologies *after* hearing their respective advantages and disadvantages from officials of the U.S. Army Corps of Engineers and environmental regulatory agencies.

4.0.4 Thus, participants in this study were generally unable to offer their views on specific CWM technologies. Instead, CPEO framed a series of questions designed to learn community views on:

- Incineration
- Transportability
- The Explosive Destruction System
- Storage
- CAIS educational programs
- Vapor containment systems
- Monitoring
- The role of trust in the decision-making process

4.1 Incineration

4.1.1 The suitability of incineration is the number one issue for the U.S. chemical warfare materiel disposal program as a whole. Activist groups within communities hosting Army chemical weapon stockpiles have opposed the incineration of Stockpile weapons, bulk agent, and secondary wastes since the early 1990s. Working with sympathetic members of Congress, they have forced the Army to adopt alternate

technologies at four of the eight domestic stockpile sites, and they have delayed incineration campaigns at the others through political and legal action.

4.1.2 The Non-Stockpile Project has avoided the incineration controversy by working with activists—primarily through the Core Group—to develop and utilize neutralization technologies. Consequently, Non-Stockpile campaigns have not been delayed by public opposition.

4.1.3 Surprisingly, many of the respondents in this study had no clear perspective on incineration. Those who expressed opinions generally opposed "incineration" because of concerns over atmospheric emissions. However, a number of people suggested that incinerators that prevent harmful emissions might be acceptable.

4.1.4 Study participants, unfamiliar with Controlled Detonation Chambers, were not sure whether to consider those devices to be "incinerators." When pressed, some expressed a preference for an approach that the Chemical Weapons Working Group, a participant in the Core Group, calls "Hold, Test, Release."[3] Under this approach, emissions are contained and tested. If they contain agent or other unacceptable hazardous substances, they are returned to the treatment system for additional processing.

4.1.5 Stakeholders have widely supported the Controlled Detonation Chamber over the open detonation of conventional ordnance, but it appears that support for its use with CWM may depend upon how it handles emissions.

4.1.6 Some of the critics of incineration based their concerns on other incinerator projects. For example, Unalaska leaders remembered an incinerator there that treated petroleum wastes from other Aleutian Island communities as well as Unalaska.

4.1.7 One respondent suggested a technology, "Liquid Metal," that is designed to combust contaminants in a vessel of molten metal. Another, a retired petroleum engineer, said, "Incineration works if it's hot enough."

4.2 Transportability

4.2.1 Most of the study participants believe that it is better to transport the treatment technology to the recovery site than to ship the CWM to a treatment facility. Major concerns were the risks associated with transportation and the danger of becoming the "dumping ground" for wastes from elsewhere. One member of a Restoration Advisory Board also asked, "Whose house are they going to drive by?"

4.2.2 One respondent favors portable systems because he believes they make people more comfortable, "in part because it brings in trained personnel."

[3] See Elizabeth Crowe and Michael Schade, "Learning Not to Burn: A Primer for Citizens on Alternatives to Burning Hazardous Waste," Chemical Weapons Working Group and Citizens Environmental Coalition, June, 2002.

4.2.3 There was a significant exception: Some of the Unalaska interviewees said: "Put it on a barge." Indeed, that's what happened to CAIS sets found there several years ago. They were shipping to Fort Richardson, on the Alaskan mainland. [Note that the situation in the Aleutians is different from the other areas CPEO visited: It's much more difficult to ship a trailer-mounted treatment system to Unalaska.]

4.3 The Explosive Destruction System

4.3.1 The one CWM treatment system that several of the interviewees were familiar with is the Non-Stockpile Project's EDS. The EDS has been deployed in Spring Valley, and community members there attended the open house displaying and explaining how it works. Some of the Denver-area participants remembered the EDS campaign at the Rocky Mountain Arsenal. Ironically, a property owner at Camp Sibert knew that the EDS had been used there, but she did not know what the destruction process was.

4.3.2 The EDS is highly regarded by those stakeholders who are familiar with it. One called it "the most clever thing." Its ability to contain contamination and suppress noise in a bulky steel containment chamber is obvious. It neutralizes the chemical agent. And it is portable. Stakeholders did not express concern over secondary waste generation, but one respondent felt that the EDS is too slow for addressing large quantities of munitions. Another respondent, however, said that the throughput could be increased simply by bringing in more units.

4.4 Storage

4.4.1 Though the interviews focused on treatment, a couple of respondents volunteered that it does not make sense to recover and store chemical munitions on the surface. A Camp Sibert stakeholder said, "They should get rid of them as they find them."

4.5 CAIS Educational Programs

4.5.1 Respondents in general believed that education is an appropriate response to potential CAIS discoveries, even where kits have not been found, and that it should be recurring. Though CAIS had been recovered at the Lowry Range and Unalaska, stakeholders were not familiar with the U.S. Army Corps of Engineers' and Non-Stockpile Project's educational materials on recognizing and reporting CAIS. Some Unalaska interviewees suggested that the Army provide special training for first responders, while others felt that the U.S. Army Corps of Engineers should make use of local media, such as Channel 8. One respondent expressed concern that too much warning would "terrorize" the public.

4.5.2 At some ranges where the presence of CAIS is uncertain, public information focuses on the risk of encounters with conventional ordnance. Because CAIS were

widely used, and their disposition was not necessarily documented, it may make sense to include some level of CAIS information in more general warnings or briefings.

4.6 Vapor Containment Systems

4.6.1 Only a handful of respondents seemed familiar with Vapor Containment Systems. They supported use of such structures, but they were not sufficiently confident in their ability to protect in emergencies to consider them a complete substitute for evacuation. Indeed, one respondent complained about the inconvenience of evacuation—and this was at a site that routinely uses a vapor structure. On the other hand, there was appreciation at that site for funding that had supported the evacuation of cattle.

4.6.2 Similar, but larger tent structures have been used in Spring Valley, to cover areas where excavation was taking place. When I asked one respondent whether the EDS was noisy, she said that the noise from the vapor containment structure ventilation system was a much bigger problem.

4.7 Monitoring

4.7.1 A few respondents felt that monitoring for emissions was a key part of any treatment system. One activist questioned whether the Army was testing for the right compounds at Spring Valley. But another Spring Valley stakeholder said that the warning sirens reassured the residents that monitoring was ongoing.

Black Hills Ordnance Depot (SD)

4.8 Trust

4.8.1 Participants in this study did not have the knowledge to compare fully the existing and potential technologies for treating recovered CWM. They expect, however, to be able to review proposed technologies presented by the Army at their sites. The most important factor, in advance, in determining the acceptability of the technologies was to what degree they can trust the people recommending the technologies. CPEO heard this consistently, from individuals who had both favorable and unfavorable experiences with the U.S. Army Corps of Engineers.

4.8.2 Some people said they trusted state regulators, EPA, and even the Air Force more than the Army. A few felt that remedy selection should be reviewed by independent scientific panels. But most of study participants based their level of trust on the project managers and other Army personnel with whom they have already interacted. Here some examples of their varied experiences:

4.8.2.1 • The U.S. Army Corps of Engineers project manager "doesn't hide anything."

4.8.2.2 • "I'm not convinced the Army can do a proper job. The RAB wasted time for 10 years. It never answered our questions."

4.8.2.3 • "Even my grumpy old father-in-law" now gets along with the U.S. Army Corps of Engineers personnel. "If they say things are safe, I believe them."

4.8.2.4 • "It's hard to accept treatment approaches when one can't trust the [U.S.] Army Corps [of Engineers] to do things right."

4.8.2.5 • "Formerly there was a huge level of distrust because the area was not cleaned up. Now the project is more transparent. Trust is the key issue."

4.8.2.6 • "Like flying, you have to trust the pilot."

4.8.2.7 • Tribal and Native Corporation leaders in Unalaska don't trust the U.S. Army Corps of Engineers because the Army will not clean PCBs that were reportedly released through an act of war. They are also concerned that the U.S. Army Corps of Engineers won't remove military debris from Native Corporation lands.

4.8.2.8 • The U.S. Army Corps of Engineers' willingness to try innovative technologies to identify and verify conventional ordnance at his local FUDS convinced one Restoration Advisory Board member to trust the U.S. Army Corps of Engineers to recommend suitable CWM disposal technologies.

4.8.2.9 • Despite another stakeholder's assurance that the U.S. Army Corps of Engineers site manager "is the anti-Christ," one woman was "greatly impressed" by the project manager.

4.8.3.10 • One property-owner trusts the U.S. Army Corps of Engineers, but he's unhappy that it doesn't subcontract locally.

CWM Response Training at Camp Sibert

5.0 LESSONS

5.1 Experience at Stockpile demilitarization sites over the years illustrates how the storage and disposal of chemical warfare materiel can generate intense emotional reactions from host communities. Furthermore, the current controversy over the disposal of neutralent from Indiana's Newport Chemical Depot demilitarization activities demonstrates how the rejection of an activity or technology at one site sometimes triggers opposition at the location to which it is being moved. In that case, Dayton-area, Ohio residents blocked the secondary treatment of neutralized chemical agent in their community. When the Army and its contractor proposed instead to conduct treatment in New Jersey, at a Dupont plant on the Delaware River, many residents and political leaders objected, in the belief that the Dayton rejection demonstrated serious problems with the proposed treatment.[4]

[4] See, for example, Heather Dewar, "Moving Nerve Gas Waste Is Criticized," *Baltimore Sun*, February 2, 2004

5.2 The Non-Stockpile Project has avoided such challenges by institutionalizing a give-and-take relationship with community activists, regulators, and others through the Core Group. Managed by the Keystone Center, a non-profit neutral facilitation organization, the Core Group meets two to four times a year to provide the Army with the opportunity to brief stakeholders on existing and emerging technologies and activities. The stakeholders provide feedback, and the Army takes those views into account. Thus, when new sites are uncovered, there is a body of experience that can help new stakeholder groups understand the technological options.

> 5.3 The Non-Stockpile Chemical Materiel Project (NSCMP) established the Core Group to gain perspective from a diverse group of citizens, regulators and Army personnel concerned with non-stockpile issues. Core Group objectives include:
> 1. Supporting the development of safe, environmentally sound, cost-effective and publicly acceptable NSCMP disposal technologies, policies and practices;
> 2. Promoting cooperative working relationships among citizens, regulators, NSCMP and related U.S. Department of Defense offices; and
> 3. Exchanging information and opinions about areas of high concern to NSCMP and other stakeholders within the scope of NSCMP responsibilities.
> The Core Group does not have the authority to make decisions for NSCMP. Rather, the Core Group provides input, exchanges information and views, and undertakes initiatives to promote cooperative working relationships among stakeholders.[5]

5.4 CPEO is unaware, however, of any participation in the Core group of public stakeholders from Formerly Used Defense Sites.

5.5 Secondly, the best way for the FUDS program to implement technologies that have won the acceptance of national stakeholder groups, such as the Core Group, is for project managers to have established, from their first encounters with host communities, a positive, or trusting relationship with a broad cross-section of the impacted community. The U.S. Army Corps of Engineers may utilize various tools, such as site-specific web sites, Restoration Advisory Boards, availability sessions, etc. The key factor, however, in establishing that trust is that the community believes—before a hot-button issue, such as the discovery of previously unknown chemical munitions, emerges—that U.S. Army Corps of Engineers leadership is honest and is always willing to hear community concerns.

6.0 RECOMMENDATIONS

6.1 CPEO recommends:

6.1.1 1. To promote the development and/or acceptance of chemical warfare materiel disposal technologies and strategies at Formerly Used Defense Sites, the U.S. Army

[5] "Core Group," U.S. Army Chemical Materials Agency, October 19, 2006, http://www.cma.army.mil/coregroup.aspx

Corps of Engineers should work to include public stakeholders from FUDS in the Core Group or a similar national dialogue on buried CWM response.

6.1.2 2. To ensure that trust is already established when site-specific decisions about CWM disposal need to be made, FUDS project managers must be prepared to work cooperatively with communities and reminded of the importance of developing such relationships. The U.S. Army Corps of Engineers has many such successful project managers that can serve as models for this approach, and of course, positive relations with communities can help resolve many other problems in addition to the disposition of recovered chemical warfare materiel. The Corps' local public affairs office should also be involved with public outreach.

6.2 If the U.S. Army Corps of Engineers anticipates, understands, and addresses up front the concerns of FUDS communities where CWM is found, it can accomplish its mission with a minimum of delay, expense, and controversy.

7.0 LENNY SIEGEL'S BACKGROUND

As Executive Director of the Center for Public Environmental Oversight since 1994, Lenny Siegel is one of the nation's leading experts on public participation in the oversight of environmental activities at current and former federal facilities. In the early 1990s, as a member of the Federal Facilities Environmental Restoration Dialogue Committee, he was one of the architects of the network of more than 300 Restoration Advisory Boards at Defense facilities. He has served on the National Research Council's Committees on Naval Remediation and Non-Stockpile Chemical Weapons, for his expertise on community involvement. He is currently a stakeholder representative on the Perchlorate and Vapor Intrusion workteams of the Interstate Technology & Regulatory Council, and for more than 17 years he has served on the Moffett Field Restoration Advisory Board (originally the Technical Review Committee). Among the many other government committees on which Siegel served were the National Dialogue on Military Munitions, the Range Rule Risk Methodology Partnering Team, the Federal Facilities Working Group of the National Environmental Justice Advisory Council, and U.S. EPA's Negotiated Rulemaking Committee on All Appropriate Inquiries.