

**STATEMENT BY  
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**BEFORE THE  
SUBCOMMITTEE ON THE DISTRICT OF COLUMBIA  
COMMITTEE ON GOVERNMENT REFORM  
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**PROGRESS ON SPRING VALLEY CLEANUP PROJECT**

**NOT FOR PUBLICATION UNTIL  
RELEASED BY THE GOVERNMENT REFORM COMMITTEE**

## **Introduction**

Thank you for your invitation to testify regarding the Corps of Engineers' ongoing activities at the Spring Valley Formerly Used Defense Site (SV FUDS) in Washington, D.C. On July 27, 2001, I provided this committee oral and written testimony on the Corps' actions to identify and remove contamination at the SV FUDS since February 1993 when it initiated operations at the site. Today, I would like to update you on our progress in identifying and removing contamination at this and the other FUDS in the District of Columbia over the last year. Additionally, I would like to describe the role, authority and responsibility of the Corps at this site.

The Spring Valley site consists of approximately 661 acres in the Northwest section of Washington, D.C. During the World War I era, the Chemical Warfare Service, originally under the Bureau of Mines and later under the War Department, used the major portion of the area, known as American University Experiment Station (AUES), as a research and development facility for chemical agents, equipment, and munitions. The Army used the remaining part of the area, known as Camp Leach, for a camp to house and train engineer troops.

Historical and archival information indicates that onsite development and testing of ordnance and chemical warfare material occurred on the AUES portion of the site between 1917 and 1920. The majority of the real property was returned to private ownership by October 1920. The current owners of the Spring Valley site include American University (70 acres) and numerous residential homeowners (591 acres), including at least 14 embassy residences.

## **Agency Roles, Authority, and Responsibilities**

The Defense Environmental Restoration Program (DERP), established by the Superfund Amendments and Reauthorization Act of 1986 (SARA), gives the Department of Defense (DoD) the authority to identify, investigate, and clean up hazardous substances at Formerly Used Defense Sites (FUDS) in accordance with the

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The DERP-FUDS Charter, as reviewed and approved by DoD in 1990, designates the Secretary of the Army as the Executive Agent for DoD for the purpose of conducting environmental restoration activities at FUDS regardless of which DoD component previously owned the property. The Secretary of the Army further delegated FUDS execution responsibilities to the Chief of Engineers.

The objective of DERP-FUDS is to reduce the risk to human health and the environment resulting from past DoD activities in a timely and cost-effective manner. The program requires the development of an execution strategy that will ensure continued protection of health and the environment, comply with legally enforceable agreements and orders, and incorporate the principle of reducing risk over time.

The Corps' responsibilities include determining the eligibility of properties for inclusion in the FUDS program, identifying the requirements for funding the FUDS program, conducting environmental restoration activities at eligible properties, and reporting on the cleanup progress. Environmental restoration activities include the following: management and execution of all studies and cleanup projects, ensuring that program activities are in compliance with applicable legal requirements and consistent with DoD and Army environmental restoration policies; utilization and oversight of experts to conduct specialized activities such as demonstration of innovative technologies, risk assessment, removal of ordnance and explosives, and chemical or biological warfare materiel. Since Spring Valley site has been determined to be a FUDS site, the Corps is authorized to carry out the cleanup activity under CERCLA.

The DERP provides that responses at FUDS be carried out in accordance with CERCLA. Therefore, in managing the SV FUDS, the Corps is responsible for consulting with the U.S. Environmental Protection Agency Region 3, and with state and local authorities, including the District of Columbia Department of Health (the District of Columbia). Additionally, the Corps' strives to accommodate standards, requirements, or criteria requested by EPA-3 and the District of Columbia where they are consistent with

CERCLA in an effort to ensure that decisions regarding remedial investigation and environmental restoration activities reflect a broad spectrum of advice, expertise, and stakeholder concerns.

The Corps, EPA-3, and the District of Columbia have formed an active and formal partnership in order to reach agreement on important investigation and remediation decisions. In general, the Corps leads the effort to identify hazards and propose plans, but in many cases it follows the recommendations of the District of Columbia and EPA-3. For example, both regulatory agencies have significantly contributed to how and where the Corps tests for potential ordnance and chemicals contamination at the site. Additionally, both are now providing management input regarding the prioritization of properties for both investigation and cleanup.

The Corps also coordinates with EPA-3 and the District of Columbia on health-related issues. The partners recently agreed to a site-wide cleanup level for arsenic in soil in the absence of a promulgated standard. The Corps previously developed property-specific soil cleanup levels at the SV FUDS using property-specific risk assessments. However, the partners agreed that a site-wide cleanup standard was needed and the EPA proposed a level that the District of Columbia and Corps reviewed and accepted. As with the resolution of issues related to site characterization, remediation, and the assessment of health risks, the three project partners worked closely with technical experts from the public and private sectors in determining an appropriate cleanup level for arsenic. This standard protects public health and the environment while minimizing disturbance to the lives and property of affected residents.

Additionally, in the past fifteen months, advisory entities have been created to further facilitate stakeholder participation in the process. The DC Mayor's Spring Valley Scientific Advisory Panel (SAP) and the Restoration Advisory Board (RAB) are two active advisory entities with which the partners exchange information and collaborate on site characterization, remedial decisions and potential health risks. Important decisions,

such as the arsenic cleanup levels for soil at the SV FUDS and the plan to prioritize properties for cleanup, are now routinely discussed among these entities. The District of Columbia created the SAP in March 2001 to advise the District of Columbia and other partners on health risks associated with the hazards at the SV FUDS. The SAP has evaluated site sampling data and relevant health literature and has recently recommended to the District of Columbia Mayor that the District adopt the proposed 20 parts per million (ppm) cleanup level for arsenic in soil at the SV FUDS. The RAB, created by the Corps in May 2001 at the request of the community, consists of residents of Spring Valley as well as representatives from EPA-3, the District of Columbia, and American University, and other local stakeholders. The Corps will continue to foster open communication and collaboration with these advisory groups, believing the project will continue to benefit from their input.

## **Status of Efforts to Identify and Remove Contamination at the Spring Valley FUDS**

### *Comprehensive Soil Sampling Program*

The site-wide comprehensive sampling program began on May 31, 2001, and continues to the present. The purpose of this sampling was to characterize the entire SV FUDS with regard to arsenic contamination and numerous other potential contaminants that may have resulted from the development and testing of munitions and chemical warfare materiel at the American University Experimental Station during World War I. The Corps developed this sampling plan in the spring of 2001 in collaboration with the EPA-3 and the District of Columbia and presented it to the community at a public meeting in late March 2001. After receiving public and additional comments from project partners, the Corps formalized the written plan, which is available to the public at both the local information repository at the Palisades Library in Northwest DC, and at the following link from the Corps' project website:  
<http://gis.parsons.com/springvalley/>

To date, the Corps has nearly completed the soil screening of all properties within the project boundary. Approximately 95% of the 1,158 residential properties and 74% of 325 non-residential lots have been sampled. The initial sampling results for almost 12% (146) of the properties and lots indicate arsenic levels potentially above the normal background level. Nearly all (145) of these 146 properties/lots have since undergone more extensive sampling to establish the magnitude and extent of potential arsenic contamination. Termed "grid sampling", this process established 20-foot by 20-foot grids on each of the 145 properties. One surface soil sample (top six inches) was taken from each grid. The upper six inches of soil represents the region in which human exposure is most likely to occur. Grids that contain arsenic at levels greater than the recently adopted site-wide cleanup standard of 20 ppm are designated for removal.

The results of grid sampling the 145 properties have identified 139 properties thus far with soil arsenic above 20 ppm. The Corps expects to identify a total of approximately 150 such properties/lots by the completion of all sampling. Having previously identified 11 similar properties in a sampling event completed in early 2001, the Corps anticipates finding approximately 161 properties with arsenic in surface soil at levels above 20 ppm.

In addition to sampling of surface soils, the Corps has taken over 525 soil borings throughout the SV FUDS to test for arsenic contamination below the ground surface level. These borings are generally 6-10 feet in depth with samples collected at one-foot intervals from the boring, resulting in over 3,250 discrete subsurface soil samples. Borings were concentrated in areas where historic records indicated testing of chemicals or ordnance. In addition, many other properties also received a subsurface boring. Whenever possible, the Corps took the borings from locations on the identified properties/lots where the EPA-3's analysis of historical aerial photographs identified potential soil disturbance or indicators of environmental stress. Only eight of the 3,250 subsurface soil samples had arsenic levels above 20 ppm and only one of the eight was

taken at a depth below twelve inches. Thus the sampling evidence does not indicate appreciable arsenic contamination of subsurface soils.

While arsenic has been the primary focus of the ongoing sampling event, the Corps has also gathered over 250 specialty parameter samples. These subsurface samples were taken from areas identified by the project partners based on historical records. Only four samples have indicated detectable chemicals. All four of these samples indicated cyanide at 0.2 ppm. The risk based concentration, or screening level, for cyanide in soil is 160 ppm. The Corps has sent explanatory letters covering over 1,250 properties to date informing owners of sampling results related to their property.

#### *Soil Removal Actions*

**a. Time Critical Removal Action - American University Child Development Center.** From August 2001 to October 2001, the Corps conducted a Time-Critical Removal Action at the Child Development Center (CDC) on the American University campus. Grid sampling results from January 2001 indicated arsenic concentrations at the CDC ranging from 3.43 to 498 ppm. Arsenic-affected soils were excavated and shipped off-site for burial at an approved and licensed disposal facility permitted to receive soils of this type. After removing the top two feet of contaminated soil, the Corps took confirmation samples from the sides and bottom of the excavation. During this effort, the Corps removed approximately 1,958 tons (or 1,064 yards) of arsenic-contaminated soil from the CDC playground area and replaced it with clean soil and grass.

**b. Time Critical Removal Action – American University Athletic Fields and Lots.** Grid sampling conducted in March 2001 identified arsenic concentrations on portions of the American University property adjacent to the CDC that were well above the background level. Given the potential that removal activities in these areas could impact the children at the CDC, the Corps expanded the original TCRA conducted on

the CDC grounds in 2001 to include the surrounding areas of arsenic contamination, including the AU Athletic Fields. The intent is to complete this removal before the temporarily relocated children return to the CDC. This removal action is expected to run from June through September 2002 and remove an estimated 4,518 cubic yards of contaminated soil located in 145 grids. Dust control and air monitoring measures will be employed to ensure that site workers and university personnel are not subjected to dust above prescribed action levels. Similar precautions were taken during last year's removal at the CDC itself. The Corps will restore excavated areas to original grade and compensate the university for the loss of landscape features (trees, shrubs, etc.) after work activities are completed and the extent of impact is known.

The removal activities at the American University grounds adjacent to the CDC will also include the investigation of approximately fifteen (15) subsurface anomalies that were identified during a geophysical investigation conducted in April 2002.

**c. Time Critical Removal Action – Seven (7) Private Residences.** Based on the arsenic sampling results gathered during the comprehensive sampling program, seven (7) residential properties have been designated for time-critical removal activities. During the earlier part of fiscal year 2002, the Corps proceeded to develop a scope of work for this action and secured an experienced contractor to carry out the removal activities. Fieldwork began in June 2002 and will continue through September 2002. Approximately 135 surface grids (20'x20'x2') and 15 subsurface grids (20'x20'x1') totaling approximately 4,222 cubic yards of arsenic contaminated soil are to be excavated. The Corps has made provisions to relocate the impacted residents and has recommended that these residents relocate during the construction activities. The sites will be restored to original grade by backfilling with clean fill material and covering with six inches of topsoil. Sod will be placed on top of all disturbed soil surfaces to establish grass. Residential property owners will be compensated for the loss of landscape features (trees, shrubs, etc.) suffered during the removal activities. In conjunction with this soil removal activity, the Corps will also sample for additional chemicals at several

of the properties with the highest arsenic levels. The Corps is conducting this additional sampling at the District of Columbia's request made during a partnering meeting.

#### *Future Soil Work*

The Corps plans to complete the comprehensive sampling effort to the fullest extent possible as authorized by Rights of Entry (ROEs). This will be followed by an Engineering Evaluation/Cost Analysis (EE/CA) that studies the requirements and suitability for removal activities at properties and lots with elevated arsenic levels. The Corps expects to conduct removal actions as needed to reduce arsenic levels to acceptable levels on a non-time critical basis.

The Corps has demonstrated flexibility during the SV FUDS and will continue to investigate new areas for the presence of arsenic or other contaminants that may pose a risk to human health or the environment as determined necessary based on new information or regulator requests.

#### *Ordnance and Chemical Warfare Materiel*

Prior to May 2001, the Corps had identified ordnance items only in certain areas near American University, the static test fire area and the 52<sup>nd</sup> Court trench area. Chemical warfare materiel had been identified only at the 52<sup>nd</sup> Court trench and on one Glenbrook Road property adjacent to American University. However, in May 2001, the Baltimore District discovered a third burial pit on a Glenbrook Road property.

This third burial pit is located on the boundary line between property owned by the Republic of South Korea and a residential property adjoining it. Initially, the Corps anticipated that the work in this pit would be completed last fall. However, items recovered late last summer and in early fall necessitated further investigation. To date, this investigation has yielded over 370 ordnance related items, 15 of which have been confirmed or are suspected of containing chemical warfare agent; fragments of another

eight pieces of ordnance; 60 glass bottles, 24 of which contained chemical warfare agents or acids; three empty metal cylinders; and five empty metal drums.

Investigations of the portions of the pit on the South Korean property have been completed and the pit was backfilled during May 2002. The Corps will complete the site restoration at the Korean property by October 2002. Work on the adjoining property was halted in March because the Corps' right of entry to perform the work there had expired. The Corps expects to resume intrusive investigations of that portion of the pit in early FY03.

In the fall of 2001, the Corps tested several updated geophysical surveying instruments for potential use at the SV FUDS. After reporting on the results in February 2002, the project partners agreed on the equipment they believed would be most effective in additional survey efforts. Concurrent with the equipment selection, the project partners developed an overall, yet preliminary prioritization of sites requiring future geophysical investigations. The project partners reached a consensus on the top 50 sites requiring additional geophysical investigations. As a result, geophysical investigations on American University and several residential properties were completed in April 2002 and a number of anomalies were identified that required intrusive investigations. The anomalies identified on AU will be addressed in conjunction with the upcoming arsenic-contaminated soil removal. The Corps will also address two anomalies in the Sedgwick Trench area and anomalies on one residential property in August 2002. Investigations will be completed in September 2002 assuming no large burial pits similar to those found on the Glenbrook Road properties are found.

To expedite future ordnance investigations, the Corps has coordinated the development of a site-wide safety submission with appropriate agencies in the Federal and local governments. Simultaneously, the Corps has coordinated intrusive investigation plans for the Sedgwick Trench area, American University, and one residential property in advance of receiving final approval of the site-wide safety submission. The intent is to expedite intrusive investigations while minimizing inconvenience to property owners,

### *Future Ordnance and Chemical Warfare Materiel Work*

In August 2002, the Corps and project partners will identify additional sites requiring geophysical investigations. Approximately 30-40 properties will be identified initially. It is difficult to speculate how many of these new sites will require intrusive investigations as a result of the geophysical data obtained. However, it is expected that at least several new anomalies requiring excavation will be identified during FY03. The Corps and project partners will jointly prioritize this new work based on the results of the geophysical investigations, and on-going historical research.

### *Public Involvement*

The Corps recognizes the need for a comprehensive and complete public involvement program. We have maintained a vigorous, multifaceted public involvement program to keep the community informed and to be accessible to community members and civic leaders and include community concerns in the remedial process. The following list contains a summary of the public involvement activities during the last calendar year:

- *Restoration Advisory Board.* This board is comprised of 14 community members, a community co-chair, a government co-chair and officials representing the other agencies involved in the project. The community members were selected by fellow community members to serve on the board. The board meets once a month and meetings are open to the public.
- *Community meetings.* These meetings are held as needed and are open to community members as well as the general public. The meetings provide a forum for the Corps and community to exchange information about the site and activities associated with the investigation.

- *One-on-one meetings.* Throughout this project, the Corps has maintained an open-door policy. We regularly meet with officials and community members to discuss questions or issues related to the investigation.
- *Community newsletters.* The community newsletter, *The Corps'pondent*, is prepared by the Corps of Engineers, Baltimore District, and specifically geared toward keeping the community apprised on activities related to this project. Published 6 to 12 times a year, it is mailed to every resident within the SV FUDS and posted on the project's Internet web page.
- *Email newsletter.* This electronic newsletter is prepared by the Corps of Engineers, Baltimore District, and sent to the seven property owners requiring soil remediation under a Time Critical Removal Action plus their neighbors. This newsletter is intended to keep property owners and adjacent neighbors apprised of the site-specific activities involved with this expedited cleanup action.
- *Letters.* Letters are sent to residents and property owners to inform them of developments specifically concerning them or their property, and to solicit their input or obtain permission for additional investigation on their property.
- *Telephone information line.* This telephone message board is updated regularly and checked twice a day for messages. The appropriate project person promptly follows up on messages left on this 1-800 line. You can reach this number by calling 1-800-434-0988. This phone number is included in briefing, letters, newsletters, and other correspondence sent to the community.
- *Internet web page.* This Internet web page provides current project information and includes maps, photos, news releases, minutes of meetings and community newsletters and many other pieces of project information. Updated weekly, and sometimes daily, this web page contains a link to an interactive web site

(gis.parsons.com/springvalley/) that allows users to obtain detailed information on specific locations within the study area. The address is

<http://www.nab.usace.army.mil/projects/WashingtonDC/springvalley.htm>.

- *Informational fact sheets.* The Corps prepared a series of informational fact sheets to provide information on various topics of interest to the community. These topics include soil sampling for arsenic, contractor safety, and public involvement.
- *Public document repository.* An information repository has been established at the District of Columbia Palisades Public Library, 49th and V Streets, N.W., Washington, D.C. Information on past project activities at the SV FUDS, as well as current information on the project, is available at the repository.
- *Partnering with other government agencies.* The Corps has been participating in monthly partnering meetings with officials from both EPA-3 and the District of Columbia to ensure resolution of all concerns about the site. Since the fall of 2001, these meetings have been open to all RAB members to provide them with information on the roles and activities performed by the participating organizations.
- *Media coverage.* News releases and advisories are regularly sent to media outlets with an ongoing interest in the project. Corps officials routinely make themselves available for interviews. The result is numerous articles and considerable broadcast coverage of the project, which helps keep the community informed.

### *Spring Valley Funding Status*

The SV FUDS site characterization and remediation has presented a unique challenge to the Corps, EPA-3, District of Columbia and the scientists involved in the project. This is due in part to the nature and extent of the contamination and the resulting enormous impact on project scope and funding requirements when munitions or new contamination is discovered. Furthermore, the costly safety considerations

required to remediate ordnance in a densely populated area place an additional strain on the annual budget.

Project costs for SV FUDS are estimated by expert scientists and analysts based on known conditions and assumptions about the most probable site conditions. Many of the assumptions are derived from extensive discussions among the Corps, EPA-3, the District of Columbia and community members. As additional information relating to the nature and extent of the contamination becomes available, the estimates and work scopes are refined and become more accurate.

Initially, the FY 2002 project work was scoped for \$11.8 million. The discovery of a previously unknown munitions burial pit on the South Korean property and the adjoining property, combined with arsenic soil contamination elsewhere in the SV FUDS, caused the FY2002 budget requirements to increase by \$6.1 million in unforeseen remedial action. Through reprogramming, the Army authorized an additional \$5.2 million necessary to complete the work in the FY 2002 scope. The revised cost for FY 2002 is \$17.9 million, which includes the \$5.2 million increase from the Department of the Army.

As of the end of FY 2001, the Corps has expended \$53.4 million at Spring Valley and is scheduled to conduct an additional \$71.7 million in characterization and remediation activities, including the FY 2002 budget. The project total cost is estimated to be \$125 million through FY 2007. This estimate includes costs for soil removal and landscape restoration at an estimated 160 properties; intrusive investigation of two Sedgwick Trench anomalies; geophysical surveys, intrusive investigation and restoration at an estimated 200 properties; DC Police support, paramedic support, and in-house Corps costs. Maintaining the proposed budget and schedule will depend upon many factors including the possible discovery of additional contamination or buried munitions and the FUDS budget. The U.S. Army may have to reprogram funds from possible use at other sites nationwide in each of the remaining years of the cleanup to

meet current project requirements. As the Corps better defines the nature and extent of the contamination at the SV FUDS, it will further refine the costs to complete the project.

### **FUDS within the District of Columbia**

The Corps has identified 59 FUDS in the District of Columbia. As defined by the DERP-FUDS program, the DoD owned, occupied, or controlled these locations prior to 1986. FUDS properties undergo a research and evaluation process to identify any remaining environmental hazards resulting from past DoD activities at a site. Each of the 59 FUDS in the District of Columbia has undergone this process. The Corps is currently conducting response activities at three of these sites: Spring Valley, Camp Simms, and Catholic University. Forty-five of the FUDS in the District of Columbia have received a classification of “No DoD Action Indicated” (NDAI). Of the 45 NDAI properties, 24 were classified as NDAI based on recommendations in the Inventory Project Report (INPR) and 21 were classified NDAI based upon the conclusions of a more detailed Archival Search Report (ASR). The Corps has determined that these sites are free of significant hazards and risks associated with past DoD activity at the site. The remaining 11 sites are ineligible for cleanup under the FUDS program.

Under the DERP-FUDS, the NDAI determination is not necessarily a permanent classification. New information such as archival records, testimony, or contamination found at a site may reactivate a site for further consideration. This consideration may include such activities as archival records search, risk analysis, site investigation, and remediation. The Corps will return to all eligible sites and clean up DoD contamination whenever new information warrants action. This has been previously demonstrated at Spring Valley, Camp Simms, and Catholic University. One of the sites currently classified as NDAI, Diamond Ordnance Fuze Laboratory, will be reevaluated by the Corps during FY 2003 in response to information provided in an EPA site assessment.

Of the 11 ineligible sites, two are active U.S. Navy installations, six are duplicates of other eligible sites, and no relevant information was found for three sites during the

ASR effort. The two active installations are not included in the FUDS program but will be addressed by the Navy under their Installation Restoration Program.

## **Conclusion**

The Spring Valley site characterization and remediation has presented a unique challenge to the Corps, EPA, District of Columbia and the scientists involved in the project. This is due in part to the nature and extent of the contamination and the enormous impact on the project scope and funding requirements by the discovery of munitions or new contamination. The Corps is systematically addressing the uncertainties associated with the nature and extent of contamination at the SV FUDS through the remedial investigation. Furthermore, the Corps is constantly seeking to improve the working relationship with the partners, EPA-3 and the District of Columbia.

The Corps values the contributions of our partners and community members alike. As a result, there is now a better understanding of the nature and extent of the activities that occurred on the site over 80 years ago. Despite this, we continue to find new information affecting the project. We are initiating a removal action this month for contamination in areas that the project partners doubted contained arsenic contamination only a year ago. In the last several months residents and partners may have found additional historical information on the testing conducted at AUES. In its latest round of geophysical surveys, the Corps employed technology that didn't exist eight years ago. The point is clear; we can and should expect the information available to the project decision-makers to continue to change. To succeed in such an environment, the Corps will continue to partner with the EPA and the District of Columbia, leveraging the expertise of the three organizations. And it will do so in open consultation with the community. While the conditions may change, the Corps remains committed to adequately address risks associated with former Department of Defense activities at this site.