MINUTES

INSTALLATION RESTORATION PROGRAM

RESTORATION ADVISORY BOARD MEETING

ABERDEEN PROVING GROUND, MARYLAND

THURSDAY, 28 AUGUST 2003

7:00 p.m. – 9:30 p.m.

EDGEWOOD SENIOR CENTER

RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING:

Ms. Mandi Elliott-Bird
Mr. Gary Browning (Alternate for Mr. Kevin Barnaba)
Ms. Glenda Bowling
Mr. Arlen Crabb
Mr. Roy Dietz
Ms. Christine Grochowski (Community Co-Chair)
Mr. Ted Henry
Mr. Karl Kalbacher (Maryland Department of the Environment)
Mr. Thomas McWilliams, Jr.
Mr. Dan Pazdersky
Mr. Ken Stachiw (Army Co-Chair)
Mr. Frank Vavra (U.S. Environmental Protection Agency)

RESTORATION ADVISORY BOARD MEMBERS NOT PRESENT AT THIS MEETING:

Ms. Nasrin Begum
Mr. Greg Kappler
Mr. Doug Richmond (Harford County Emergency Operations Center)
Ms. Loretta McCullah
Mr. Dennis Warwick
Ms. Ruth Ann Young

ENCLOSURES TO THESE MINUTES:

1: Roster of Meeting Attendees
2: Agenda
3: September 2003 Calendar of Events
4: Aberdeen Chemical Agent Disposal Facility Presentation Materials
6: Westwood Study Area Update Presentation Materials

I. EXECUTIVE SUMMARY

Administrative Comments

Mr. Ken Stachiw (Chief, Directorate of Safety, Health and Environment (DSHE) Environmental Conservation and Restoration Division (ECRD)) informed the RAB Members that a task-group meeting for OPSEC issues will be held during September 2003. Ms. Katrina Harris (General Physics Corporation) will e-mail Task Group members with a date, time, and location for the meeting. A site tour for the Aberdeen Area 5-Year review is scheduled for 18 September 2003. Anyone interested in attending should contact Ms. Harris. Interested RAB Members, who cannot attend the scheduled tour date, should contact Ms. Harris with available dates to have another tour arranged. The annual RAB budget meeting will be held in October 2003. The IRP budget for Fiscal Year (FY) 2004 will be $19 million, less than the anticipated $24 million budget.

Perchlorate Detections Update

Mr. Stachiw provided an update on the perchlorate detections in the Aberdeen Area of APG. The 19 August 2003 sampling of the City of Aberdeen production (CAP) wells detected perchlorate at 1.8 and 1.9 parts per billion (ppb) in CAP wells 3 and 9, respectively. The remaining CAP wells had detections ranging from 0.89J to 0.91J ppb. Perchlorate was detected in the finished water at a concentration of 0.34J ppb on 19 August 2003, and 0.5J ppb on 26 August 2003.

Aberdeen Chemical Agent Disposal Facility Update

Mr. Bob Hessian (Process and Facilities Design Lead, Aberdeen Chemical Agent Disposal Facility (ABCDF)) provided an update on the ABCDF. Mustard agent neutralization began on 23 April 2003. To date, 90 bulk containers of agent have been drained and more than 51 tons of agent have been neutralized. Shipment of hydrolysate to DuPont Secure Environment Treatment began on 17 June 2003. To date, 94 hydrolysate shipments have been made, totaling more than 435,600 gallons of hydrolysate being transported to DuPont for biotreatment.

Decontamination of the containers has been found to be more difficult than expected. A seminar was held with decontamination experts from Edgewood, paint experts from DuPont, and representatives from other chemical demilitarization sites. A plan has been established to reduce time required for container decontamination. Drain stations are being modified to isolate the container monitoring area from the draining area. Originally, the hydrolysate was expected to have a pH of 12.5 or less, but one storage tank contained hydrolysate with a higher pH. The higher pH did not pose a problem for DuPont as they could safely transport and biotreat the hydrolysate. The issue was discussed during public meetings held in July, and a Record of Environmental Consideration was prepared and approved. The higher pH hydrolysate was shipped without incident to DuPont for final treatment. Steps are being taken to reduce pH for future batches of hydrolysate.

On 12 May 2003, a low level of mustard agent vapor was detected near a drained ton container due to an error in reading the agent monitor. Additional training was implemented and procedures were adjusted to prevent a recurrence. On 28 May 2003, a power outage resulted in a brief rise in agent levels in the neutralization building. Backup generators restored the cascade ventilation system within moments. Workers were evacuated temporarily, and the cause of the outage was established and corrected. Events at the ABCDF resulting in alarms occurred on 22, 25, and 28 June 2003. Improved procedures and additional training were established to prevent further alarm events. On 16 August 2003, a carbon filter drum venting the rinse water storage tank inside the neutralization bay overheated and began emitting

smoke, triggering smoke alarms. The ongoing investigation will result in corrective actions to prevent a recurrence.

A ton container cleanout facility is under construction. The drained containers will be cut in half and cleaned using robotic equipment. The containers will then be shipped to an Army facility for later recycling. A schedule for future ABCDF operations was presented as follows: the ton container cleanout facility pre-operations will be complete and operations are expected to start in October 2003, agent operations are expected to be completed in April 2004, container cleaning completed by December 2004, and facility closure complete by August 2005.

Westwood Study Area Presentation

Ms. Cindy Powels (DSHE ECRD Project Officer) provided an update on the Westwood Study Area (WSA). Topics included Risk Assessment, Remedial Investigation/Feasibility Study (RI/FS), summary of completed actions, and planned actions/schedule.

Risk Assessment

The ecological risk assessment draft data evaluation and risk characterization report was published in October 2002. A project meeting was held on 6 March 2003 to discuss report conclusions. A response to comments was prepared and a draft final report will be distributed for review and comments in September 2003. Additional groundwater, surface water, sediment, and soil radiological data were collected in January and February 2003 in support of the radiological risk assessment. The technical approach for the Westwood radiological risk assessment was presented to the regulators and the Aberdeen Proving Ground Superfund Citizens' Coalition (APGSCC) Technical Assistance Grant (TAG) representative on 6 March 2003 and was approved in May 2003. Data validation is ongoing, and a draft Radiological Risk Assessment is scheduled for completion in November 2003.

The human health screening portion of the radiological risk assessment will evaluate risk for all detected radionuclides, either directly or indirectly as daughter products of parent radionuclides. The risk assessment will evaluate industrial and residential land use scenarios. The ecological risk screening will follow the procedures of the "Graded Approach" developed by the Department of Energy. Initial screening of the soil and sediment data indicates that further evaluation is necessary due to the detected levels of Cs-137.

Remedial Investigation/Feasibility Study (RI/FS)

Perchlorate Sampling

Resampling of selected groundwater and surface water locations for total perchlorates was conducted in January and February 2003. Groundwater samples were collected at 37 surficial aquifer wells, and surface water samples were collected at eight existing RI locations. Low level concentrations of perchlorate were detected in six wells, with the highest detection of 0.64 ppb found in well WW-15. All eight surface water samples reported non-detect for total perchlorates.

Draft Phase II Work Plan

The Phase II FS Work Plan was presented to the regulators and APGSCC TAG representative during the 6 March 2003 project meeting. A revised Phase II FS Work Plan was published in August 2003. A portion of the Phase II field activities were initiated during June 2003 at Operable Units (OU) B and C. The proposed field activities objectives include acquiring data to support estimates of metals contaminated soil and waste volumes, and calculating FS remedial alternative costs for OUA, OUB, and OUC. The field activities will also acquire data to characterize 13 potential source areas within the WSA.

The Phase II FS field activities are planned for completion during September 2003. The development and screening of alternatives is scheduled for November and December 2003.

Proposed Plan for No Active Remediation Sites

No active remediation is proposed for six WSA sites: Linear Features Site, Impoundment Site, Wetland Site, Stokes Road West Site, San Domingo Ordnance Burial Pit; and Building E5664 Landfill. The RI report and Baseline Risk Assessment concluded that these sites pose no threats to future industrial workers, military personnel, recreational visitors, or the environment. Unexploded ordnance in the WSA will be addressed under the Overall WSA Proposed Plan and Record of Decision. Implementation of institutional controls will still be required for the no active remediation sites. A working draft proposed plan will be available for internal Army review and comments in September 2003.

Summary of Completed Actions

Completed actions for the WSA include: Draft Ecological Risk Assessment Data Evaluation and Risk Characterization Report (October 2002); Final Field Sampling Plan for Radiologicals and Perchlorates (December 2002); Resampling of media locations for radiologicals and total perchlorates (January/February 2003); Draft Phase II FS Work Plan (February 2003); Final Technical Approach Document for Radiological Risk Assessment (May 2003); Draft Final Phase II FS Work Plan (August 2003); and Draft Final Ecological Risk Assessment Data Evaluation and Risk Characterization Report (August 2003).

Planned Actions/Schedule

Planned actions for the WSA include: Continuation of Phase II FS Field Activities (September 2003); Draft Proposed Plan for No Active Remediation Sites (September 2003); Draft Radiological Risk Assessment (November 2003); Draft Final Remedial Investigation Report (December 2003); and Final Proposed Plan for No Active Remediation Sites and Public Comment Period (December 2003/January 2004).

II. OPENING REMARKS AND ADMINISTRATIVE COMMENTS

The August 2003 U.S. Army Garrison Aberdeen Proving Ground (APG) Installation Restoration Program (IRP) Restoration Advisory Board (RAB) meeting was called to order by Mr. Kenneth Stachiw (Chief, Directorate of Safety, Health and Environment (DSHE) Environmental Conservation and Restoration Division (ECRD); Army Co-Chair) at 7:00 p.m. on Thursday, 28 August 2003. The meeting took place at the Edgewood Senior Center located at 1000 Gateway Road in Edgewood, Maryland.

Enclosure 1 to these minutes is a meeting attendance list. RAB Members in attendance received an agenda (Enclosure 2), a RAB calendar of events for September 2003 (Enclosure 3), Unexploded Ordnance (UXO) Incident Reports (Enclosure 4), a copy of the Aberdeen Chemical Agent Disposal Facility presentation (Enclosure 5), and a copy of the Westwood Study Area presentation (Enclosure 6).

Mr. Stachiw reported that the Non-Stockpile Chemical Materiel Program held a Mobile Systems Demonstration during August 2003. Mr. Thomas McWilliams (RAB Member) thanked Mr. Stachiw for the opportunity to tour the facilities and stated that the demonstration was very informative.

Mr. Stachiw reported that a Task Group meeting to address Operations Security (OPSEC) issues will be scheduled during September 2003. Ms. Katrina Harris (General Physics Corporation) stated that, based on communications with Task Group members, the most suitable date for the meeting seemed to be

during the week of 8 September 2003. Mr. Stachiw requested that Ms. Harris confirm a date, time, and location for the meeting and notify the Task Group members.

Mr. Stachiw reported that Mr. Naren Desai (DSHE ECRD Project Officer) will be publishing a request for comment for the Aberdeen Area 5-Year Review. A tour of the Other Aberdeen Area sites is scheduled for 18 September 2003. Anyone interested in attending should contact Ms. Harris. Interested RAB Members, who cannot attend the scheduled tour date, should contact Ms. Harris with available dates to have another tour arranged. The purpose of the tour is to observe operations and remediations that have taken place and to ensure that they are functioning properly. Mr. Frank Vavra (U.S. Environmental Protection Agency (EPA)) added that the site tour will focus mainly on the Michaelsville Landfill Cap and the Perryman Plant. During the site tour, the Maryland Department of the Environment (MDE) and EPA will complete a joint inspection of the locations to ensure the remedies are properly working.

Mr. Arlen Crabb (RAB Member) stated that the site tour is scheduled on a Thursday, and he is only available on Friday or Saturday, but he is interested in attending the tour. Mr. Stachiw requested that Mr. Crabb contact Ms. Harris to schedule another tour date.

Mr. Ted Henry (RAB Member) questioned if the Aberdeen Area 5-Year Review is a Draft or a Final document. Mr. Vavra explained that the Review is currently in draft form. Mr. Henry asked if the document would be sent out for public comment. Mr. Vavra explained that the 5-Year Review will not enter into a formal public comment period, but the notice for public comment allows for the public to be involved in the process. Mr. Vavra stated that, at the July 2003 RAB Meeting, Mr. Stachiw reported that any interested person can be involved in the interview process as part of the 5-Year Review. A record of interviews with the public will be included as part of the 5-Year Review. Mr. Henry asked if the interview process was required as part of the 5-Year Review process. Mr. Vavra explained that the interview process is not mandated by a Statute, but is included in the guidance for the 5-Year Review process.

Mr. Stachiw reported that the annual RAB budget meeting is planned for October 2003. Ms. Harris will poll the RAB Members to establish an agreeable date and time. The guidance received from the Army Environmental Center established a budget of $19 million, less than the anticipated budget of $24 million. The RAB budget meeting will involve a discussion of the impacts of the budget cut on the IRP programs. Mr. Karl Kalbacher (MDE) asked for confirmation that the budget cuts are affecting the Fiscal Year (FY) 2004 budget. Mr. Stachiw confirmed that the budget for FY04 is $19 million.

Mr. Henry asked for the budget used when planning IRP projects. Mr. Stachiw explained that an Installation Action Plan (IAP) meeting was held with the State, EPA, and the Army Environmental Center (AEC), to plan investigations, studies, and remedial actions (as applicable) at all sites within every study area at APG. The budget used during the IAP meeting was $24 million. Mr. Henry requested that, during the budget meeting, the RAB Members be informed of the specific projects that were affected as a result of the budget cuts. Mr. Stachiw stated that the budget meeting would also provide an opportunity for the RAB Members to express concern over which projects are most important, and should receive priority funding.

Mr. Vavra reported that the EPIC boundary survey for the Aberdeen Area of APG is underway. Mr. Vavra suggested that the RAB and the Aberdeen Proving Ground Superfund Citizens Coalition (APGSCC) provide feedback as to the importance of the EPIC survey in relation to other IRP projects.

Mr. Stachiw reported that, as part of the community relations project, APG IRP sponsors a booth at county fairs to provide information to the public. The program was represented at the Harford County

Farm Fair. Due to inclement weather, APG was not represented, as was planned, at the Kent County Fair. Mr. Stachiw suggested, in the future, having RAB Members or Regulators volunteer at the IRP booth to provide a different perspective of the program to the public. Mr. McWilliams suggested that a booth be set up at the Cecil County Fair during the summer 2004, and he volunteered to assist at the Fair.

After confirming the RAB Members had no further comments, Mr. Stachiw provided an update on the perchlorate detections.

III. PERCHLORATE DETECTIONS UPDATE

Mr. Stachiw displayed a map and provided an update on the perchlorate detections in the Aberdeen Area of APG. The 19 August 2003 sampling of the City of Aberdeen production (CAP) wells detected perchlorate at 1.8 and 1.9 parts per billion (ppb) in CAP wells 3 and 9, respectively. The remaining CAP wells had detections ranging from 0.89J to 0.91J ppb. Perchlorate was detected in the finished water at a concentration of 0.34J ppb on 19 August 2003, and 0.5J ppb on 26 August 2003.

Mr. Crabb asked if all of the CAP wells were currently in operation. Mr. Stachiw confirmed that all the wells are currently in operation. Mr. Henry asked if the City of Aberdeen is manipulating the pumping rates of the wells. Mr. Stachiw speculated that the City is adjusting pumping rates to maintain the lowest possible perchlorate concentration in the finished water. Mr. Stachiw stated that the City of Aberdeen must notify the public if the perchlorate concentration detected in the finished water exceeds 1 ppb. Mr. Henry questioned if the 1 ppb notification level is the only requirement enforced by the State. Mr. Kalbacher explained that, currently, no regulation exists governing perchlorate, but the MDE does require the City to notify the public for any perchlorate concentration detected in finished water in exceedance of 1 ppb.

Mr. Stachiw reported that no developments have been made by the Department of Defense (DoD) as to policies to allow for expending funds to treat the perchlorate contamination. No State enforceable guideline has been established. Mr. Stachiw stated that the State of California is close to establishing an enforceable guideline. Once a guideline is established, DoD will allow for funding to be allocated for cleanup of perchlorate. Mr. Kalbacher clarified that a guideline for California would only address cleanup for sites with perchlorate contamination within the State of California.

Mr. Stachiw informed the RAB Members that Mr. Desai is planning additional investigative work in the Aberdeen Areas. New investigative parameters were established to provide further definition of the perchlorate contamination. An update on the new investigative work will be presented during the September 2003 RAB Meeting.

Mr. Crabb requested information regarding the status of a area bordering Maryland Boulevard in the Aberdeen Area in the vicinity of the UXO warning signs. Mr. Stachiw stated that landmines may have been present in the past, but he would investigate the status of the area and forward the information to Mr. Crabb.

Ms. Glenda Bowling (RAB Member, APGSCC) asked if a ¼-mile boundary survey would encompass the area identified by Mr. Crabb. Mr. Stachiw explained that the boundary survey would only identify anomaly areas. No digging for subsurface anomalies would be completed. The only debris that would be removed would be any visible surface debris. Ms. Christine Grochowski (RAB Member, Community Co-Chair) asked Mr. Stachiw to illustrate the area that would be included in a ¼-mile boundary survey. Mr. Stachiw pointed out the approximate boundary survey line, noting that the area identified by Mr. Crabb would be outside of the ¼-mile boundary survey.

Mr. Henry asked for an explanation for the dotted line border around the off-post CAP wells. Mr. Stachiw stated that he was unsure, but would investigate the explanation and forward the information to Mr. Henry.

After confirming the RAB Members had no further comments, Mr. Stachiw introduced Mr. Bob Hessian (Process and Facilities Design Lead (Aberdeen Chemical Agent Disposal Facility [ABCDF])) to provide an update on the ABCDF.

IV. ABERDEEN CHEMICAL AGENT DISPOSAL FACILITY UPDATE

Mr. Hessian introduced himself and informed the RAB Members that he is the Process and Facilities Design Lead for the ABCDF. He has been involved with the ABCDF project since 1996.

Mr. Hessian reported that the mustard agent neutralization began on 23 April 2003. As of 27 August 2003, 90 bulk containers of agent have been drained and more than 51 tons of agent have been neutralized. Shipment of hydrolysate to DuPont Secure Environment Treatment began on 17 June 2003. As of 25 August 2003, 94 hydrolysate shipments have been made, totaling more than 435,600 gallons of hydrolysate being transported to DuPont for biotreatment.

Mr. Hessian reminded the RAB Members that the ABCDF is a pilot facility, and problems may occur and adjustments to the system need to made as necessary as the project moves forward. Throughout the process, the procedures used to load and drain the containers have worked well. Decontamination of the containers has been more difficult than expected. A seminar was held with decontamination experts from Edgewood, paint experts from DuPont, and representatives from other chemical demilitarization sites to establish the best procedure to decontaminate the containers. A plan has been established to reduce the time required for container decontamination. The plan involves scraping paint from containers before moving them to the facility; cleaning the drain plug and valve threads with bleach; applying sealant when installing container plugs; and washing the front face with bleach and hot water. The drain stations are being modified to isolate the container monitoring area from the draining area.

Mr. Crabb asked for the amount of time required to decontaminate a container. Mr. Hessian explained that the process has taken from 6 hours to 200 hours. Mr. Hessian stated that the design called for decontamination of 12 containers per day with six containers being completed per 12-hour shift. The design schedule allowed for six containers to be processed together, allowing 12 hours to load, drain, and decontaminate each container. Mr. Crabb asked how many containers remained for processing. Mr. Hessian explained that a total of 1,815 containers were scheduled to be processed, and 90 containers have been processed, leaving 1,725 containers to be processed.

Mr. Henry asked what type of solution was being used to wash the containers, before the process was switched to involve a bleach and hot water wash. Mr. Hessian stated that the original solution was a caustic solution, consisting of 25% sodium hydroxide.

Mr. John Nunn (Maryland Citizens' Advisory Committee) asked for an explanation of the term "decon containers". Mr. Hessian explained that when a container is opened to remove the agent, a potential exists for contamination of the surfaces while extracting the agent. A measurement is made to determine the amount of contamination that exists on the surface. The Army requirement mandates that all of the agent be removed to a concentration of 0.003 milligrams per cubic meter (mg/m^3). The container is continually cleaned to reach that concentration, resulting in additional time being required for decontamination. Mr. Nunn asked for an explanation as to why the design of the glove box has been

changed. Mr. Hessian explained that it is essential to have a totally isolated box to ensure complete isolation for ventilation from the decontamination area. The isolation allows for the container to acquiesce and to allow for monitoring the area. Mr. Hessian stated that a bladder exists that seals the container in the workstation. When the container is pulled out, it is important to make sure no cross contamination occurs on or across the bladder. The best way to prevent cross contamination is to pull the container into another area.

Mr. Hessian reported that the original mixture used in the production of the hydrolysate was comprised of fresh process water and the rinsate that resulted from the cleaning of the ton container. Originally, the hydrolysate was expected to have a pH of 12.5 or less, but one storage tank contained hydrolysate with a higher pH. The higher pH can be attributed to excess rinsate and using the caustic solution for cleaning. The higher pH did not pose a problem for DuPont as they could safely transport and biotreat the hydrolysate. The issue was discussed during public meetings held in July, and a Record of Environmental Consideration was prepared and approved. The higher pH hydrolysate was shipped without incident to DuPont for final treatment. Steps are being taken to reduce pH for future batches of hydrolysate.

Mr. Hessian displayed a graphic depicting the make-up of a hydrolysate shipment. Approximately 4,700 gallons of hydrolysate are shipped in each truckload. The hydrolysate is comprised of 92% water, 7% thiodiglycol, and 1% salts, metals, and organic compounds. Thiodiglycol is the main byproduct of reaction in the neutralization process. The hydrolysate is transported to the DuPont Secure Environmental Treatment at Chambers Works in Deepwater, New Jersey. The facility is the largest biotreatment facility in the United States. A dedicated fleet of specialized trucks and drivers are responsible for the shipment of hydrolysate. The goal is to have seven to 12 trucks leave with shipments each day, and shipments occur five days per week. To date, the average number of shipments is six trucks per day.

Ms. Grochowski asked for clarification of how many trips are being made by each truck on a daily basis. Mr. Hessian stated that currently three trucks are involved, each making two trips daily. Ms. Grochowski asked at what time of day the trucks are traveling and if any stops are made between the ABCDF facility and the DuPont facility. Mr. Hessian explained that the trucks are traveling during the day and the trucks travel directly to the DuPont facility with no stops.

Mr. Henry questioned if the hydrolysate had ever been analyzed for metals and organic compounds. Mr. Hessian explained that each batch of hydrolysate is analyzed to ensure that no agent remains in the mixture. The hydrolysate storage tanks on site hold approximately 200,000 gallons. The sample is taken prior to each time a batch is placed into the hydrolysate storage tank, and is placed into a mixing tank. When the hydrolysate tank is full it is sealed off and a composite sample is drawn from the mixing tank. The composite sample is analyzed to ensure that the mixture meets regulatory requirements and to ensure the mixture will meet DuPont's permitting conditions. Mr. Henry asked if the composite sample is subjected to a full spectrum analysis. Mr. Hessian confirmed that all analyses required by Resource Conservation and Recovery Act (RCRA) are performed.

Mr. McWilliams asked what metals have typically been detected in the hydrolysate mixture. Mr. Pat Timm (ABCDF, Environmental Coordinator) explained that only trace metals have been detected at extremely low levels. Mr. Stachiw asked for Mr. Timm to provide the RAB Members with information on the metals concentrations. Mr. Timm stated that he would provide information on the analyses being performed and any concentrations that have been detected.

Mr. Hessian reported that, on 12 May 2003, a low level of mustard agent vapor was detected near a drained ton container due to an error in reading the agent monitor. Additional training was implemented and procedures were adjusted to prevent a recurrence. On 28 May 2003, a power outage resulted in a brief rise in agent levels in the neutralization building. Backup generators restored the cascade ventilation system within moments. Workers were temporarily evacuated, and the cause of the outage was established and corrected. Mr. Crabb inquired as to the cause of the power outage. Mr. Hessian explained that an under-voltage relay related to the breaker caused the power outage.

Mr. Hessian informed the RAB Members that, on 22 June 2003, an alarm sounded in the airlock where workers were processing a hazardous waste drum. The workers were masked and evacuated. The workers were given additional training to ensure that they adhere to the policies and procedures in handling wastes. On 25 June 2003, an alarm sounded in the drain station resulting in workers being masked and evacuated. Three employees were medically evaluated as a precaution, and returned to work after clearance. The workers had opened the bag in/bag out port used for passing tools into the drain station. A bag was on the tool when the alarm sounded. When the workers used the port prior to the alarm, a second bag was not added to the port. It is necessary to add both bags to the port before the cap is closed to prevent contamination. The employees were retrained on the procedure to prevent future alarms. On 28 June 2003, an alarm sounded in the drain station room when a container was ready for monitoring. The backup monitoring alarm sounded. No workers were in the room at the time of the alarm, therefore, no evacuation was necessary. The workers then reentered the room to continue decontaminating the container.

Mr. Hessian reported that, on 16 August 2003, the carbon filter drum venting the rinse water storage tank inside the neutralization bay overheated and began emitting smoke, triggering smoke alarms. Workers masked and evacuated the building. The fire safety system automatically shut down ventilation. The monitors indicated that the agent vapor remained confined to the neutralization bay and adjacent rooms. The drum was then cooled by remotely feeding it with nitrogen and was subsequently removed. The ongoing investigation will result in corrective actions to prevent a recurrence.

Mr. Crabb asked if the fire department responded to the event. Mr. Hessian explained that, when the smoke alarms at the ABCDF sound, the fire department is also alerted. Mr. Crabb also asked if the fire department entered the ABCDF building. Mr. Timm explained that the fire department was onsite within five minutes of the alarm sounding, and a decision was made not to enter the neutralization bay. The neutralization bay is a Level A personal protective equipment (PPE) entry area and all activities in the neutralization bay could be observed via camera. The decision was made to leave the drum intact and observe all activities within the neutralization bay.

Ms. Grochowski asked what may have caused the smoke and subsequent alarm. Mr. Hessian explained that, when dealing with volatile organic compounds (VOCs) and carbon filtration the potential exists for reactions to occur with the carbon as it heats up. A sample of the carbon will be collected for analysis to determine what reaction occurred. Ms. Grochowski asked for an explanation for the use of nitrogen to cool the drum. Mr. Hessian explained that as the reactors are filled and drained, the pressure is controlled in the headspace. As the reactors are drained down, the ability exists to insert nitrogen into the reactors to prevent a vacuum from being created and damaging the equipment. Mr. Timm added that an investigation is being completed to determine the cause of the alarm. A carbon drum expert will visit the ABCDF to review the investigation. It has been determined that dithiane crystals are forming during the neutralization process. The crystals may have clogged some parts of the condenser or other equipment contributing to the problem.

Ms. Bowling asked if the problem that caused the alarm is the result of a design flaw in the building. Mr. Timm stated that the problem was not a result of the design of the building and that the building is still safe. The problem may have resulted from formation of dithiane crystals within the neutralization process. It is known that, within the rinse water tank, higher levels of agent than normally observed were present due to a large amount of "heal" present in four ton containers that were cleaned prior to the alarm event. Ms. Bowling expressed concern about problems occurring with equipment within the facility. Mr. Hessian reiterated that there is no problem with design of the building and systems such as the ventilation are properly working. The ABCDF is a pilot plant and is the first of its kind. A number of tests were done on the building and the equipment prior to the start of operations to determine any potential problems with the system. The facility contains a myriad of systems interacting with each other. An investigation is ongoing to determine where the dithiane crystals are coming from and to identify all contributing factors. No containers have been processed since the 16 August 2003 alarm event. The facility will not operate again until the investigation is complete and any necessary adjustments are made to the system.

Mr. Nunn asked if the carbon filter drum is a pre-treatment system and he questioned where the air goes after leaving the carbon drum. Mr. Hessian explained that a vent tube goes into the filter drum and then releases into the neutralization bay. The air is then swept out of the neutralization bay into the main filters for the ABCDF plant. Mr. Nunn asked if any problems have been associated with the ventilation system for the entire facility. Mr. Hessian confirmed that no problems have been experienced with regard to the ventilation system. The carbon filter drum is a small drum, smaller than a 55-gallon drum. Mr. Nunn asked if an evaluation was being completed to determine if the drum is properly sized for the amount of airflow coming from the reactors. Mr. Hessian stated that all possibilities are being examined. The purpose of the carbon filter drum is to prevent an overload of the main filters with VOCs.

Mr. Henry asked what type of event must occur for a press release to be issued, and who makes the decision to issue a press release. Ms. Karen Drewen (ABCDF Public Affairs Office) explained that the decision to issue a press release is made by Lieutenant Colonel Gladney with the advice from the staff and public affairs personnel. Generally, a press release is issued whenever an event occurs when facility workers are required to mask and evacuate the facility. Press releases are also issued for any event that is deemed to be a public concern or of public interest. To date, no events have occurred at the ABCDF that have resulted in a release of agent outside of the facility.

Mr. Henry asked if an after action report would be prepared to discuss the findings of the investigation into the 16 August 2003 alarm event. Mr. Hessian stated that, after the investigation is complete, a meeting will be held with the Colonel and public outreach personnel to determine the best means to distribute the information. Mr. Henry asked if a summary exists of the results of the investigations of incidents that have occurred at the facility. Ms. Drewen explained that progress updates are prepared and distributed on a monthly or bimonthly basis. The progress updates generally include a summary of all press releases and an update on how many containers have been processed.

Mr. Timm reiterated that the ABCDF staff is working very closely with the regulatory agencies (EPA and MDE) with regard to all alarm incidents. If any facility changes are warranted as a result of the investigation, the changes will be made in concert with all permit conditions. If necessary, a public notification will be distributed.

Mr. Hessian displayed a poster board with a graphic depicting the neutralization bay and drain stations within the ABCDF. The containers are brought into the neutralization bay and loaded into one of three drain stations. Each drain station can accommodate two bulk containers at a time. The containers are then sealed into the drain station, vented, drained, and rinsed three times. The first two rinse cycles are

completed with 100 gallons of water, and the third rinse cycle is completed with 100 gallons of caustic solution. The agent is then placed in an agent drain tank and the rinsate is placed in a rinsate collection tank. As the containers are drained into the agent drain tank and rinsate collection tank, the neutralization process begins in four reactors. It is possible to make a selection to have one to four reactors operating in sequence. The reactors are filled with hot process water and some of the rinsate water. When operational parameters are achieved, the agent is injected for destruction. Once the agent destruction is complete, the batch is moved to one of two batch collection tanks. The facility is equipped with two batch collection tanks to allow for one tank to be filled, mixed, and held for a specified period of time. A sample is then collected for analysis. During the holding process of the first tank, neutralization operations can continue with another batch mixture being placed in the second collection tank. Mr. Hessian reported that, to date, no problems have occurred with respect to the equipment used for the neutralization. The only issue to date has been associated with the contamination of the paint on the containers and removing the contamination after the containers are drained.

Mr. Hessian displayed a graphic showing the layout of the three drain stations within the ABCDF. The stations are separated to prevent cross contamination and increase worker safety in the event a problem occurs at one of the drain stations. The red lines on the graphic depict the separate, dedicated drain lines for the agent and rinsate. Each station has redundant pumps to be used in the event of a problem to allow for the system to be crossed-over and drained so that the operations can be completed to the fullest extent possible. The drain station is maintained under negative pressure with sufficient airflow to maintain capture velocity and pressure differential during all operating stages.

Mr. Hessian displayed several graphics depicting the agent holding tanks, rinsate holding tanks, reactors, and batch tanks. Mustard agent and rinse water are fed into the neutralization reactors, and slowly mixed with hot water. An irreversible chemical reaction breaks down the agent into a hydrolysate of thiodiglycol and hydrochloric acid. Caustic is added to the system to achieve a pH greater than 7.

Mr. Hessian displayed a graphic depicting the Ton Container Cleanout (TCC) facility. The purpose of the TCC facility is to flush and decontaminate the empty containers after they have undergone the complete process at the ABCDF. The TCC facility construction was completed in June 2003, and operations are expected to begin in October 2003. Containers will begin to be treated as soon as the facility becomes operational.

Mr. Hessian informed the RAB Members that the TCC is a multi-step process. It was designed to allow a full container to be loaded at the front end of Station 1 and be discharged at the back end after being drained, cleaned, cut, and fully decontaminated. The first station is a staging conveyer where the container is loaded and inspected to ensure that it will continue through the process without binding any of the equipment. The second station is the in-feed airlock. Mr. Hessian pointed out on the graphic the area of the ton container process center from the in-feed airlock to the monitoring airlock. The process center is a fully controlled area under cascade ventilation to ensure that all residual vapors are contained in the area. The in-feed airlock and the monitoring airlock are designed to provide high airflow velocity and air exchange to prevent release of contamination to the outside. The doors on the airlocks are interlocked and designed so that both doors cannot be opened at the same time. The dampers are also interlocked to maintain the high velocity of airflow through the area when the doors are open or through the dampers when the doors are closed.

Mr. Hessian informed the RAB Members that the first station that the container enters into once it is inside the process center is Station 3, or the bulk drain station. The bulk drain station contains a 6-inch diameter, hydraulically-driven punch that drives through the wall of the container, approximately 20 inches from each end of the container. The original design called for the container to be punched and

drained at this station. The containers will have already been drained at the ABCDF, and therefore will only be punched at Station 3. Station 4 is the rinse and drain station. With only two holes punched in the top of the container, a spray and drain lance with cap can be inserted over the holes. The container is used to hold the water from the operations and contain the spray and vapors within the container. Three 80-gallon rinses are completed to remove any residual "heal" that may remain in the containers.

Mr. Hessian reported that Station 5 is the small parts removal station. Each container has two valves and six plugs (three plugs on each end). The purpose of Station 5 is to remove all the valves and plugs and allow for them to be set up to be broken down into the subcomponent level to ensure full decontamination. One side of the Station has a robot manipulator that removes parts remotely, and the other side has a glove panel that may be used for manual manipulation in the event problems occur with the manipulator or parts coming off the container. Station 5 also contains a kick-out conveyor to collect any parts that have residual debris that cannot be removed. The items on the kick-out conveyor remain in Station 5 until a decision is made as to the best way to enter the area to manually clean the part.

Mr. Roy Dietz (RAB Member) asked if the valves were broken down manually or if they are automatically broken down and taken apart by the machine. Mr. Hessian explained that the valves are partially taken apart when they are removed. The valve assembly consists of a body area and a bonnet area. The socket tool used by the robot manipulator removes the nut on the bonnet assembly, and pulls off the bonnet and places it into a basket. The current plan involves an operator going in periodically and using the maintenance glove box to further disassemble the valve for decontamination.

Mr. Hessian stated that Station 6 is the cutter station. For disposal purposes and to observe that the containers are cleaned inside and out, each container is cut in half along its length. After cutting, the container is in two pieces, measuring approximately 40 inches in length. Station 7 stands the container up so that the open end of the container is pointing down. Station 8 is the wash and drain station to ensure that the container is fully decontaminated. The inside and outside of the containers are washed and drained to remove any cross-contamination that may have occurred during the handling and removal of the valves. Station 9 is the steam and air-dry station. The steam is introduced to blow off any residual water; all water must be removed from the surface of the container to maximize the efficiency and effectiveness during monitoring. The steam is also used to heat the surface of the container to 70 degrees or above to meet the temperature criteria for monitoring. Station 10 is the monitoring airlock. The container enters the monitoring airlock and the ventilation is cut off. After latent period to allow the container to acquiesce, samples are taken. If the sampling indicates the container is clean, it is removed from the facility and shipped to an Army facility for later recycling. If the sampling indicates any residual agent, the container is placed on the kick-out conveyer and is re-entered into the system for additional processing.

Mr. Nunn asked if the containers are monitored one at a time. Mr. Hessian explained that the container is cut into two halves and monitored, but only one container is monitored at a time. Mr. Nunn inquired if the same monitoring system is being used at the TCC as is used at the ABCDF in the glove boxes, and if any problems had been encountered. Mr. Hessian explained that the monitoring system is the same at both facilities and has been working very well at the ABCDF. The difference between the TCC and the neutralization process is that the TCC is fully remote and automatic. When the water is injected in the TCC it is introduced at 194 degrees at 2,500 pounds of pressure. When water is injected in the neutralization process at the ABCDF, the operators are introducing the water. To ensure worker safety and the integrity of the glove boxes, the water cannot be as hot or forceful.

Mr. Nunn inquired if any studies had been completed as to the effectiveness of the high-powered wash and if the system will work. Mr. Hessian stated that he completed testing in 1996. The original design

used 2,500-pound spray with 194-degree water. The basis of the concept of the design for the TCC was based on the 1996 testing. Mr. Hessian expressed his confidence that the system will properly work. When the schedule for agent destruction was accelerated, the design was changed to a manual effort. Changing to operator interaction resulted in a greater challenge than originally anticipated.

Mr. Nunn asked if the design for the glove box was adapted from a similar system developed by Tim Blades for the Edgewood Chemical Transfer Facility. Mr. Hessian stated that the glove box design for the ABCDF was adapted from a design that already existed. The original design had one bladder; a second bladder was added to the design for the ABCDF glove box. The difference between Mr. Blades' operation and the ABCDF is that the ABCDF is designed to handle 12 containers each day.

Mr. Timm added that testing will be conducted on all variables that may impact the ability of the facility to fully decontaminate the containers. Variables to be evaluated include decontamination materials, airflow, and cross-contamination from the drain stations. The testing is scheduled to start very soon and will provide a great deal of useful information.

Mr. Nunn asked for confirmation no problems removing plugs from the containers have been encountered, and that the only problems have been with the decontamination of the outside of the containers. Mr. Hessian confirmed that the plugs are being removed without problems; the draining systems and vent connections have been properly working. The only issue has been the ability to get contamination off of the paint on the outside of the containers. All stages of decontamination are being evaluated and test plans have been developed.

Mr. Nunn inquired as to the morale of the ABCDF workers. Mr. Hessian stated that the workers have a right to speak to the shift safety representative and all management personnel to express concerns. Mr. Timm added that the workers have expressed frustration because the process is proceeding at a slower pace than anticipated. Morale is good and the time while the ABCDF is shut down for investigation is being utilized to discuss problems and address any employee issues.

Mr. Hessian presented the schedule for future ABCDF operations as follows: the TCC facility pre-operations will be complete and operations are expected to start in October 2003; agent operations are expected to be completed in April 2004; container cleaning completed by December 2004; and facility closure complete by August 2005. Mr. Hessian stated that the schedule will be shortened if possible, but the ABCDF will not put the workers or neighboring communities at risk to meet a production schedule.

Mr. Crabb asked if it would be possible to schedule a tour of the TCC. Ms. Drewen stated that she would investigate the possibility of a tour. Mr. Crabb also asked for copies of photographs or video that display the glove box area of the ABCDF neutralization bay. Ms. Drewen stated that she would gather some photographs that would be acceptable to release for the RAB Members.

V. INTERMISSION

At 8:30 p.m., upon the conclusion of the ABCDF update, Mr. Stachiw announced a brief intermission. At 8:40 p.m., the meeting resumed. Mr. Stachiw introduced Ms. Cindy Powels (DSHE ECRD Project Officer) to provide an update on the Westwood Study Area.

VI. WESTWOOD STUDY AREA UPDATE

Ms. Powels displayed a map of the APG study areas and a close-up map of the Westwood Study Area (WSA). The WSA is approximately 850 acres and is located in the Edgewood Area of APG. Topics for update included Risk Assessment, Remedial Investigation/Feasibility Study (RI/FS), summary of completed actions, and planned actions/schedule.

Risk Assessment

Ms. Powels reported that the ecological risk assessment draft data evaluation and risk characterization report was published in October 2002. A project meeting was held on 6 March 2003 at EPA offices in Philadelphia to discuss report conclusions. A response to comments was prepared and a draft final report will be distributed for review and comments in September 2003. Additional toxicity testing may be required to assist in the development of risk-based preliminary remedial goals.

Ms. Powels stated that additional groundwater, surface water, sediment, and soil radiological data was collected in January and February 2003 in support of the radiological risk assessment. The technical approach for the Westwood radiological risk assessment was presented to the regulators and the Aberdeen Proving Ground Superfund Citizens' Coalition (APGSCC) Technical Assistance Grant (TAG) on 6 March 2003 and was approved in May 2003. Data validation is ongoing, and a draft Radiological Risk Assessment is scheduled for completion in November 2003.

Ms. Powels explained that original plans for the Radiological Risk Assessment called for the use of background data from on post monitoring wells in uncontaminated areas. The approach was discarded after data review indicated that no other sites except the Bush River Area Rad Yard had appropriate data with analysis for specific radionuclides. Regional background data with Maximum Contaminant Levels (MCLs) will be used in the risk management process in lieu of site-specific background levels.

Ms. Powels displayed maps depicting groundwater sampling locations east of Reardon inlet. A total of 13 groundwater samples were collected for radiological analysis east of Reardon Inlet. The locations selected for sampling focused on sites associated with past radiological uses such as historic testing, training, and waste processing and storage. Former radiological sites located east of Reardon Inlet include the Magnolia Road Radiological Test Site, Building E5695 Area, and Building E5951 area.

Ms. Powels displayed maps depicting groundwater sampling locations west of Reardon inlet. A total of 20 groundwater samples were collected for radiological analysis west of Reardon Inlet. The locations selected for sampling focused on sites associated with past radiological uses such as historic testing, training, and waste processing and storage. The former radiological sites located west of Reardon Inlet include the Radiological Test Site, the Nuclear Defense Laboratory's nuclear defense training areas, and the Westwood Radioactive Material Disposal Facility (WRMDF).

Ms. Powels informed the RAB Members that, in support of the Radiological Risk Assessment, surface water samples were collected at 20 existing Remedial Investigation (RI) locations associated with former radiological uses. The analysis would be accomplished only if it was determined necessary after a review of the sediment data was complete. The assessment of ecological risk requires either the use of surface water data or estimation of surface water levels based on partition coefficients. The use of estimated surface water levels would not have been effective for the WSA Radiological Risk Assessment. The surface water samples were analyzed, and the data is currently being validated and reviewed.

Ms. Powels reported that a total of 20 sediment samples were collected at 20 existing RI locations associated with former radiological uses. Soil samples were collected at 24 existing RI locations and 18

new locations within Cluster 6. A small number of samples from the former WRMDF located in Cluster 6 were found to contain cesium-137 (Cs-137) at levels higher than anthropogenic background concentrations. The location of the highest Cs-137 detection also hadvery low cobalt-60 activity. Other radionuclides identified include naturally occurring potassium-40 and members of the uranium, thorium, and actinium decay series.

Ms. Powels explained that the radiological risk assessment detected Cs-137 in soil and sediment as a result of historical aboveground nuclear weapons testing, which occurred mostly during the 1950s. Activity levels vary with location, and in Maryland are typically less than 1.5 picocuries per gram (pCi/g), with average levels less than 0.5 pCi/g in surface soil. Cs-137 absorbs strongly to clay in soil, with little leaching to subsurface soils, which have substantially lower levels of the compound. The maximum detected activity level in soil and sediment in the WSA was 72 pCi/g, with all other samples detecting less than 5 pCi/g.

Ms. Powels displayed a map showing the surface water, sediment, and soil sampling locations for radiologicals. A map was also displayed showing the soil and sediment sampling locations within Cluster 6, and the associated detections of Cs-137 and cobalt-60. The WRMDF is a two-acre area with historic operations involving the processing, packaging, and temporary storage of radioactive waste prior to disposal. The WRMDF building was removed during the 1970s. A removal action was conducted in 1998 to remove Cs-137 contaminated soil and underground piping and structures.

Mr. Vavra questioned if the WRMDF staged a similar type of processing as was historically done at the Rad Yard in the Bush River Study Area. Ms. Powels explained that the WRMDF operated until the early 1960s, when the processing was moved to the Bush River Rad Yard. The WRMDF area was used for demilitarization operations prior to being used for radiological waste handling.

Ms. Powels reported that the 1998 removal action removed soil with concentrations of Cs-137 exceeding Nuclear Regulatory Commission (NRC) limit of 15 pCi/g. The highest concentration of Cs-137 (72.16 pCi/g) was detected at sample location C06-SS-18. The sampling location was located within the excavated headwall area. The headwall area was excavated down to 7 to 8 feet during the removal action. Low levels of cobalt-60 (0.09 pCi/g) were also detected at sample location C06-SS-18. Other Cs-137 detections were found at sample locations C06-SS-14 (4.09 pCi/g) and C06-SS-20 (4.87 pCi/g).

Mr. Henry asked if the data reported was collected during or after the removal action. Ms. Powels replied that the data was collected after the removal action. Mr. Henry asked if confirmation sampling was completed after the Removal Action. Ms. Powels stated that post closure sampling was completed to ensure that all soil was removed with a Cs-137 concentration exceeding 15 pCi/g. Mr. Henry asked for the locations of the post closure samples. Ms. Jennifer Schaefer (General Physics Corporation) stated that the sample locations selections were statistically driven, and samples were taken from the base of the excavations.

Mr. Stachiw asked if the soil samples were taken from replacement soil, or if the site was left at below grade after the removal action. Ms. Powels stated that the area was backfilled with a mixture of soil with Cs-137 concentration less than 15 pCi/g and clean fill from off-site.

Mr. Kalbacher asked if the NRC limit of 15 pCi/g was the driver for the Radiological Risk Assessment. Ms. Powels explained that the NRC limit was the driver for the cleanup removal action, but the risk assessment is necessary to ensure that no ecological or human health risk is present in the area.

Mr. Henry asked for an explanation for how the sample locations were chosen to support the Radiological Risk Assessment. Ms. Powels stated that samples have been collected all around the WRMDF site during the RI. The recent sampling for radiologicals was completed in support of the Feasibility Study (FS). As a result the removal action, site conditions have changed, and additional data must be collected to determine if risk exists for the area.

Ms. Powels reported that most naturally occurring radionuclides are present in soil at levels that result in excess lifetime cancer risk levels exceeding 10^{-6}. The human health screening portion of the radiological risk assessment will evaluate risk for all detected radionuclides, either directly or indirectly as daughter products of parent radionuclides. The risk assessment will evaluate industrial and residential land use scenarios.

Mr. Kalbacher asked what the risk criteria number will be based on the fact that the majority of the Cs-137 concentrations are below the removal action level of 15 pCi/g. Mr. Gary Nemeth (General Physics Corporation) explained that, when finished with the site, it is important to be sure that the risk does not fall out of the EPA's target risk range of 10^{-6} to 10^{-4}. The EPA 10^{-4} concentration for Cs-137 is approximately 5 to 10 pCi/g. It is important to evaluate the average concentration of Cs-137 for the area to make sure that the average does not exceed the target risk range. Mr. Nemeth cautioned that just because a concentration of 72 pCi/g was detected, doesn't necessarily indicate a risk is present. The overall area and concentrations have to be evaluated. The evaluation is ongoing, and no target concentration has been established. Ms. Powels added that the risk assessment will evaluate all radiological compounds, not just Cs-137. Mr. Vavra added that it is important to evaluate all carcinogens as well.

Ms. Powels informed the RAB Members that the ecological risk screening will follow the procedures of the "Graded Approach" developed by the Department of Energy. The DoE procedures call for a tiered approach beginning with initial screening against conservative Bio-Concentration Guides (BCGs) and further evaluation using site-specific factors if detected radionuclides fall in the initial screening. Initial screening of the soil and sediment data indicates that further evaluation is necessary due to the detected levels of Cs-137.

Mr. Henry asked for an explanation of the development of risk based comparison numbers. Ms. Powels explained that, in context with the entire risk assessment process, a number of sites exist that have metals contamination. An evaluation is being completed of data from any comparable sites to look at toxicity tests and the results based on the concentrations. If the WSA cleanup is based on extremely conservative cleanup goals that are not site specific, it might be better to complete additional toxicity testing, even though it might delay the schedule, to develop more site-specific information.

Remedial Investigation/Feasibility Study

Ms. Powels reported that the resampling of selected groundwater and surface water locations for total perchlorates was conducted in January and February 2003. The Draft Phase II FS Work Plan was published in February 2003. A second phase of FS field activities was initiated in June 2003. The preparation of the Proposed Plan for No Active Remediation Sites is underway.

Perchlorate Sampling

Ms. Powels informed the RAB Members that groundwater samples were collected at 37 surficial aquifer wells, and surface water samples were collected at eight existing RI locations for total perchlorate analysis. Low level concentrations of perchlorate were detected in six wells, with the highest detection of 0.64 ppb found in well WW-15. All eight surface water samples reported non-detect for total perchlorates. The quantitation limit and method detection limit (MDL) for the perchlorate sampling were 1 ppb and 0.2 ppb, respectively.

Ms. Powels displayed maps showing the groundwater and surface water total perchlorate sampling locations and results east and west of Reardon Inlet. The sampling locations were based on historical land uses such as munitions training areas, munitions assembly, and demilitarization operations. Perchlorate detections in groundwater ranged from 0.28 to 0.64 ppb.

Draft Phase II Work Plan

Ms. Powels stated that the Phase II FS Work Plan was presented to the regulators and APGSCC TAG during the 6 March 2003 project meeting. A revised Phase II FS Work Plan was published in August 2003. A portion of the Phase II field activities were initiated during June 2003 at Operable Units (OU) B and C.

Ms. Powels displayed map showing the Phase II FS investigation areas east and west of Reardon Inlet. Investigation areas located west of Reardon Inlet include: Cluster 2 Silver Detection, WW-90 Drum Dump, Mound A, WW-90 Fill Area, WRMDF, Unknown Tank and HC Grenade Disposal Pit, Paint Can Dump #2, Mound B, Operable Unit A – Hog Point Site, and Roads End Disposal Site. Investigation areas located east of Reardon Inlet include: OUB – World War I (WWI) Chlorine Plant/Gas Mask Factory Stokes Road East Site, Site E5803 UST Area, OUC – WWI Chlorine Plant Dump, and Cluster 14 Unknown Tank.

Ms. Powels reported that the proposed field activity objectives for the Phase II FS Work Plan include acquiring data to support estimates of metals contaminated soil and waste volumes, and calculating FS remedial alternative costs for OUA, OUB, and OUC. The field activities will also acquire data to characterize 13 potential source areas within the WSA.

Ms. Powels stated that the proposed fieldwork for OUA includes a total of 10 groundwater and 40 soil profile samples being collected at 10 locations to characterize the vertical profile of arsenic in soil and to determine the potential correlation with arsenic in groundwater. Nine surface soil samples will be collected to characterize the extent of metals contamination within the identified "hot spot" areas. A total of 18 vertical soil profile samples at 6 test dig locations will be collected to determine the extent of potential leaching of metals to subsurface soils. All samples will be analyzed for Target Analyte List (TAL) metals, total organic carbon, and sieve analysis.

Ms. Powels displayed a map showing the proposed media sampling locations for OUA. No source area has been identified within OUA; the contamination is most likely due to spills and training activities conducted at the site. The RI and Baseline Risk Assessment (BRA) concluded that chemicals of concern (COCs) for human health were arsenic and cadmium in surface soil and arsenic in groundwater. Copper, lead, and zinc were identified in surface soil as ecological COCs.

Ms. Powels informed the RAB Members that proposed field activities for OUB include topographic mapping of site features to assist in estimating volumes of contaminated soil and waste. Eight surface soil samples will be collected to further characterize the extent of metals identified at four of the waste disposal areas. A total of 14 test digs will be conducted at eight of the waste disposal areas to guide volume estimates of contaminated soil and waste. One subsurface soil sample will be collected at each

test dig location to determine the extent of potential leaching of metals to subsurface soils, and to provide a guideline for soil and waste volume estimates. Seven sediment samples will be collected to address the potential migration of metals from the waste disposal areas to the marsh sediments of the West Branch of Canal Creek. All samples will be analyzed for TAL metals, Target Compound List (TCL) semivolatile compounds, total organic carbon, and sieve analysis.

Mr. Stachiw asked for the approximate size of the OUB area. Ms. Schaefer stated that the area is approximately 10.5 acres in size including a wetland area. Ms. Powels added that OUB contains at least 11 waste disposal areas (mounds) based on the X-Ray Fluorescence (XRF) Survey. Mr. Stachiw inquired as to the size of the mounds. Ms. Schaefer explained that the mounds range in size from approximately 3 feet by 3 feet to 20 feet by 30 feet.

Ms. Powels displayed a map showing the proposed media sampling locations for OUB. The RI and BRA identified antimony as a human health COC in surface soil. Copper, lead, and zinc were identified in surface soil as ecological COCs. Field inspections concluded that gas masks were historically dumped and burned in the OUB area. The whetlerite from the gas masks contain activated charcoal that is impregnated with chromium, copper, and silver.

Ms. Powels informed the RAB Members that the proposed field activities within OUC include collection of 10 surface soil samples to further define the extent of metals contamination. A total of 10 test digs will be conducted within the fill area and the brine sludge disposal area to provide volume estimates of waste. One subsurface soil sample will be collected at each test dig location to determine the extent of potential leaching of metals to subsurface soils, and to provide a guideline for soil and waste volume estimates. Four sediment samples will be collected to address the potential migration of metals from the fill area and brine sludge disposal area to the marsh sediments of the West Branch of Canal Creek. All samples will be analyzed for TAL metals, total organic carbon, and sieve analysis.

Ms. Powels displayed a map showing the proposed media sampling locations for OUC. The RI and BRA identified arsenic and chromium as human health COCs in surface soil. Copper, lead, and zinc were identified in surface soil as ecological COCs.

Ms. Powels stated that during the RI sampling, silver was detected in C02-SS-01, exceeding the Biological Technical Assistance Group (BTAG) ecological screening value and maximum background reference value. At the Cluster 2 Silver Detection site, a total of six surface soil samples will be collected to confirm the presence and extent of silver in surface soil.

Ms. Powels reported that, during a geophysical survey, an unknown tank was identified in Cluster 2. The structure measures 2.7 feet in diameter and 8.4 feet in depth. One wastewater sample was taken at the site to characterize the contents of the tank and assess potential risks. The preliminary site evaluations have identified the structure as being some type of well. The final results of the evaluation will determine the contents of the well. Full scale laboratory analysis will be completed for the sample.

Ms. Powels informed the RAB Members that a HC Grenade Disposal Pit was identified in the vicinity of the Cluster 2 Unknown Tank. The area measures approximately 3 feet by 3 feet located along the north bank of a drainage swale leading to Reardon Inlet. One test dig will be completed to provide anomaly verification and identify any observed metallic waste. One soil sample will also be collected to determine the presence of potential soil contamination. Based on the size of the anomaly, the test dig will most likely remove the metallic anomaly. A full scale laboratory analysis will be completed for the samples.

Ms. Powels stated that the WW-90 Fill Area measures approximately 1.3 acres. Four test digs will be completed to provide anomaly verification and identify the nature and vertical extent of the observed waste. One subsurface soil sample will be collected at each test dig location to confirm the nature of potential vertical contamination. Three surface soil samples will be collected to determine the nature and extent of potential surface soil contamination, and three sediment samples will be collected to evaluate possible leachate migration from the fill area. A full scale laboratory analysis will be completed for the samples.

Mr. Crabb stated that the grenade pit was located in close proximity to the 0.64 ppb perchlorate detection, and he asked if the grenade pit could be the source of the perchlorate contamination. Ms. Powels speculated that the range area is the likely source of the perchlorate detection, not solely the grenade pit.

Ms. Powels reported that the WW-90 Drum Dump is located in close proximity to the WW-90 Fill Area and measures approximately 0.5 acres. One test dig will be completed to provide anomaly verification and identify any observed metallic waste. Two surface soil samples will be completed to determine the presence of potential contaminants in soil and two sediment samples will be collected to evaluate the potential for contaminant migration from the site. Based on the size of the anomaly, the test dig will most likely remove the contaminated material. A full scale laboratory analysis will be completed for the samples.

Ms. Powels informed the RAB Members that field activities for the Cluster 2 Paint Can Dump #2 include one test dig to provide anomaly verification and identify any observed metallic waste. One surface soil sample will also be collected to determine the presence of potential contaminants in soil. Based on the size of the anomaly, the test dig will most likely remove the metallic waste. Surface material at the site has previously been removed during the geophysical survey. A full scale laboratory analysis will be completed for the samples.

Ms. Powels reported that the WRMDF proposed field activities include 11 test digs to provide anomaly verification and to identify the nature and vertical extent of any observed waste. One subsurface soil sample will be collected from each test dig location to define the vertical extent and nature of potential contamination. Two surface soil and one surface water/sediment sample will be collected within the western disposal area to define the nature and extent of potential soil contamination and to evaluate possible leachate migration. A full scale laboratory analysis will be completed for the samples.

Ms. Powels stated that proposed field activities at the Roads End Disposal Site include seven test digs to provide anomaly verification and to identify any observed waste. One subsurface soil sample will be collected from each test dig location to define the vertical extent and nature of potential contamination. Based on the size of several of the anomalies, the test digs will most likely remove the contaminated material. A full scale laboratory analysis will be completed for the samples.

Ms. Powels informed the RAB Members that geophysical surveys in the Western WSA show anomalies indicative of buried metallic wastes at 36 potential waste disposal sites. Proposed field activities include 36 test digs within the 36 potential waste disposal sites to provide anomaly verification and to identify any observed waste. One subsurface soil sample will be collected from each test dig location to define the vertical extent and nature of potential contamination. A full scale laboratory analysis will be completed for the samples.

Ms. Powels reported that an unknown tank was identified within Cluster 14. One wastewater and sludge sample has been collected to characterize the contents of the tank. One surface water and sediment sample were collected downgradient of the tank to address potential migration of contaminants from the structure. The preliminary site evaluations indicate that the tank may be a cistern used to capture water.

Ms. Powels stated that a 1,000-gallon underground storage tank (UST) and 35 cubic yards of oil-contaminated soil were removed from the Building E5803 Area in January 2001. Visual observations and verification soil sample results indicated that contaminated soil still remains at the 0.3-acre site near the tank excavation. The proposed field activities for the Building E5803 Area will include two vertical soil profile samples at four boring locations to define the vertical extent of petroleum, oil lubricant (POL) contamination in soil. Three groundwater and subsurface soil samples will be taken from three locations to define whether contaminants are contributing to shallow groundwater. Two surface water and sediment samples will be collected to evaluate leachate migration from the site. A full scale laboratory analysis, total petroleum hydrocarbons analysis, and diesel and gasoline range organic analysis will be completed for the samples.

Ms. Powels displayed several maps showing locations of the proposed media sampling locations. Maps included: Potential Source Areas West of Piney Point Road (Cluster 2 Silver Detection and Cluster 2 Paint Can Dump #2); Potential Source Areas East of Piney Point Road (Cluster 2 Unknown Tank and HC Grenade Disposal Pit); WW-90 Drum Dump and Fill Area; WRMDF; Roads End Disposal Site; and the Cluster 14 Unknown Tank and Site E5803 Underground Storage Tank Area.

Ms. Powels reported that the Phase II FS field activities are planned for completion during September 2003. The development and screening of alternatives is scheduled for November and December 2003. The schedule is dependant upon the decision to conduct additional toxicity tests for OUA, OUB, and OUC to develop preliminary remedial goals.

Proposed Plan for No Active Remediation Sites

Ms. Powels informed the RAB Members that a proposed plan is being developed for no active remediation for six WSA sites: Linear Features Site, Impoundment Site, Wetland Site, Stokes Road West Site, San Domingo Ordnance Burial Pit; and Building E5664 Landfill. The RI report and BRA concluded there are no threats to future industrial workers, military personnel, recreational visitors, or the environment associated with these sites.

Mr. Kalbacher asked if a Proposed Plan is required for the sites. Ms. Powels explained that completing a Proposed Plan and Record of Decision (ROD) for the sites shows progress and will close out the sites.

Ms. Powels stated that UXO in the WSA will be addressed under the Overall WSA Proposed Plan and Record of Decision. Implementation of institutional controls will still be required for the no active remediation sites. A working draft proposed plan will be available for internal Army review and comments in September 2003. Ms. Powels displayed a map of the proposed no active remediation site locations.

Summary of Completed Actions

Ms. Powels informed the RAB Members that completed actions for the WSA include: Draft Ecological Risk Assessment Data Evaluation and Risk Characterization Report (October 2002); Final Field Sampling Plan for Radiologicals and Perchlorates (December 2002); Resampling of media locations for radiologicals and total perchlorates (January/February 2003); Draft Phase II FS Work Plan (February 2003); Final Technical Approach Document for Radiological Risk Assessment (May 2003); Draft Final Phase II FS Work Plan (August 2003); and Draft Final Ecological Risk Assessment Data Evaluation and Risk Characterization Report (August 2003).

Planned Actions/Schedule

Ms. Powels summarized the planned actions for the WSA: Continuation of Phase II FS Field Activities (September 2003); Draft Proposed Plan for No Active Remediation Sites (September 2003); Draft Radiological Risk Assessment (November 2003); Draft Final Remedial Investigation Report (December 2003); and Final Proposed Plan for No Active Remediation Sites and Public Comment Period (December 2003/January 2004).

Mr. Henry asked for clarification of UXO being addressed under the Proposed Plan and ROD. Ms. Powels explained that, based on the site, RI, and chemical data no active remediation is recommended for the six sites. It is recognized that, in general UXO is still a concern at these sites even though no chemical risk is identified at the sites. The sites will not be cleared to a 2-foot depth to confirm there is no UXO present, but institutional controls will be implemented.

Mr. Henry asked if the approach to UXO is a result of the Munitions Response Plan and the appropriations from several years ago. Mr. Henry expressed concern regarding UXO being included in Proposed Plans for no active remediation sites. Ms. Powels explained that the Proposed Plan does not specifically address UXOs. The UXO issue will be addressed at a later date under the Overall WSA Proposed Plan. Mr. Stachiw added that a future Proposed Plan would address UXOs by implementing some type of remediation or institutional controls. APG is proposing to declare Westwood and Canal Creek as closed ranges, assisting in addressing the UXO issue. Mr. Stachiw added that the Lauderick Creek ¼-mile boundary cannot be proposed as a closed range due to ongoing training by the National Guard.

VII. CLOSING REMARKS

Mr. Henry requested asked for copies of the original budget spread ($24 million) for the APG sites and a copy of the adjusted ($19 million) budget spread to be discussed at the October 2003 RAB budget meeting. Mr. Henry also requested bar graphs depicting the changes in total amount of funding allocated to the IRP over the past 10 years. Mr. Henry requested information regarding the roll of AEC in the IRP clean up programs and their role in dictating funding. Mr. Stachiw stated that the information would be prepared and provided to the RAB Members at the October budget meeting.

At 9:35 p.m., after confirming that no one present had further questions, Mr. Stachiw adjourned the meeting. The next APG IRP RAB Meeting will be held on Thursday, 25 September 2003 at 7:00 pm in the Edgewood Senior Center. The tentative topics for discussion are the Aberdeen Area Study Areas.