MINUTES

INSTALLATION RESTORATION PROGRAM

RESTORATION ADVISORY BOARD MEETING

ABERDEEN PROVING GROUND, MARYLAND

THURSDAY, 29 JULY 2004

7:00 p.m. – 9:30 p.m.

EDGEWOOD SENIOR CENTER

RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING:

Mr. Kevin Barnaba
Ms. Glenda Bowling
Mr. Arlen Crabb
Mr. Roy Dietz
Mr. Butch Dye (Maryland Department of the Environment)
Ms. Mandi Elliott-Bird)
Mr. Ted Henry
Mr. Thomas G. McWilliams
Mr. Doug Richmond (Harford County Emergency Operations Center)
Mr. Ken Stachiw (Army Co-Chair)
Mr. Frank Vavra (U.S. Environmental Protection Agency)
Ms. Ruth Ann Young

RESTORATION ADVISORY BOARD MEMBERS NOT PRESENT AT THIS MEETING:

Ms. Christine Grochowski (Community Co-Chair)
Mr. Dan Pazdersky
Mr. Dennis Warwick

ENCLOSURES TO THESE MINUTES:

1: Roster of Meeting Attendees
2: Agenda
3: August 2004 Calendar of Events
4: City of Aberdeen Perchlorate Detections Map
5: Westwood Study Area 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 RAB Members that Mr. Greg Kappler (RAB Member) has resigned as a RAB Member. Mr. Kappler is involved in numerous commitments, and will be greatly missed by the RAB. The Installation Restoration Program will be represented at the Harford County Farm Fair, held in Bel Air, Maryland from 29 July 2004 until 1 August 2004. RAB Members are encouraged to attend. Efforts are still ongoing to finalize a date for the Edgewood Area Shoreline Tour. A Performance Based Contract (PBC) Sub-Committee Meeting is scheduled for mid-August, and Members will be polled to determine attendance.

Mr. Stachiw introduced Colonel John T. Wright, who has replaced Colonel Mardi U. Mark as Commander at APG. Colonel Wright greeted meeting attendees, and expressed appreciation for the warm welcome.

Remarks and Presentation of Letters by General Doesburg

General John C. Doesburg stated that the Lauderick Creek Chemical Warfare Materiel (CWM) Removal Action Project, begun in 1995, was a difficult project, but was eased by the efforts and contributions of six people. RAB Members who participated in the project played key roles in the process, and facilitated communication from the Army to members of the affected public.

General Doesburg presented Two Star Letters to Mr. Ted Henry (RAB Member), Mr. Ed Newell (Joseph Associates; former DSHE Project Officer), and Mr. Bruce Ware (U.S. Army Corps of Engineers) for their outstanding contributions to the Project. Ms. Christine Grochowski (RAB Co-Chair), Ms. Helen Richick (former RAB Co-Chair), and Mr. Charles Jones (former APG Fire Chief) were not present to receive their Letters of Appreciation.

General John C. Doesburg praised the APG RAB for all their efforts and ongoing work and interest with regard to APG. The APG RAB far exceeds other RABs, and acts as a trendsetter for the Nation. This RAB takes an active stance in their efforts, as opposed to passive roles seen in other RABs, and should be commended.

Perchlorate Detections Update

Mr. Stachiw displayed a slide depicting results from the latest round of perchlorate sampling. The perchlorate detections reported from the 6 July 2004 sampling event ranged from less than 0.2 parts per billion (ppb) to 4.2 ppb in the City of Aberdeen Production (CAP) Wells. A result of 1 ppb was reported for the finished water. Concentrations then decreased following a heavy rainfall event in early July. Mr. Stachiw reported that Wells 3 and 10 were shut down following the July 6 sampling event, and will remain off until further notice.

Mr. Stachiw reported that a decision has not been reached with regard to Strategic Environmental Research and Development Program (SERDP) funding for soil cleanup. A decision is expected by the end of August 2004.

Westwood Study Area Update

Ms. Cindy Powels (DSHE ECRD Project Officer) provided an update on Westwood Study Area (WSA) Risk Assessments (RAs), completed actions, and planned actions.

Risk Assessment Status Updates

Ms. Powels reported that a project meeting was held in January 2004 to discuss comments on report conclusions. The Final Data Evaluation and Risk Characterization Report was published in March 2004. The WSA Ecological RA is complete. The Human Health RA was previously completed.

Ms. Powels reported that the Draft Radiological RA was completed in December 2003, and minimal comments were received on the report. A response to comments is currently being prepared, and a final report is scheduled to be completed in August 2004.

Groundwater data results yielded the detection of only four radionuclides at a low frequency, with no detections in groundwater at the Westwood Radioactive Material Disposal Facility (WRMDF). Surface water samples yielded no radionuclide detections. A small number of soil and sediment samples collected from the former Cluster 6 WRMDF contained cesium (Cs)-137 at levels higher than the anthropogenic background, and are indicative of residual material from historical waste management operations. All other WSA soil and sediment samples had Cs-137 activity at levels less than 5 pico Curies per gram (pCi/g). A removal action was conducted at the WRMDF in 1998 for the removal of soil with concentrations of Cs-137 exceeding 15 pCi/g, underground pipes, and structures.

In the Human Health Assessment portion of the Radiological RA, the Dose Assessment and Cancer Risk Assessment approaches were used to evaluate the adverse health effects of exposure to radiation. The Human Health Assessment was performed using the Department of Energy (DOE) Residual Radioactivity (RESRAD) Model. Cs-137 was identified as the only final human health constituent of concern (COC) in soil at the WRMDF portion of the WSA.

The Ecological RA portion of the Radiological RA followed the procedures of the 'Graded Approach' developed by the DOE. Initial screening results indicated that it is unlikely that radionuclides are adversely affecting WSA aquatic receptor populations. Site-specific screening results indicate that it is unlikely that radionuclides are adversely affecting WSA terrestrial receptor populations. No radionuclide ecological constituents of potential concern were identified for the WSA.

Completed Actions Update

Ms. Powels reported that Phase II Remedial Investigation (RI) field activities were conducted from January to May 2004. The Draft Final RI Report was issued in May 2004. The Final Technical Report for Well and Underground Tank Evaluation and Abandonment, and a Working Copy of the Feasibility Study (FS) Report for Operable Units A, B, and C were issued in June 2004.

Planned Actions Update

Ms. Powels reported that the Draft Overall FS Report is expected for late July 2004. The Final Radiological RA and Final Overall RI/FS Report are expected in August 2004. The Draft Overall Proposed Plan and Public Comment Period are expected in late August or September 2004. The Draft Overall Record of Decision (ROD) is expected in November 2004, with the Final Overall ROD planned for December 2004.

II. OPENING REMARKS AND ADMINISTRATIVE COMMENTS

The May 2004 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, 29 July 2004. 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 August 2004 (Enclosure 3), a copy of the City of Aberdeen Perchlorate Detections map (Enclosure 4), and a copy of the Westwood Study Area (WSA) presentation (Enclosure 5).

Mr. Stachiw informed RAB Members that Mr. Greg Kappler (RAB Member) has submitted his resignation as a RAB Member. He is involved with numerous commitments that occupy a large amount of his time. Mr. Kappler served on the RAB for approximately 12 years, will be greatly missed, and is wished the best.

Mr. Stachiw stated that the IRP would be represented at the Harford County Farm Fair, held in Bel Air, Maryland from 29 July 2004 until 1 August 2004. RAB Members are encouraged to attend.

Mr. Stachiw questioned if a date had been established for the Edgewood Area shoreline tour. Ms. Katrina Harris (General Physics Corporation) stated that 4 August 2004 has been selected as a potential date, and RAB Members will be polled to determine attendance.

Mr. Stachiw stated that a Performance Based Contract (PBC) Subcommittee Meeting is scheduled for mid-August 2004. Members will be polled to determine attendance.

Mr. Stachiw stated that information regarding the Military Munitions Response (MMR) Program would be evaluated and distributed to RAB Members pending approval at the August 2004 RAB Meeting. The MMR is related to the methods with which APG deals with unexploded ordnance (UXO), closed ranges, and funding issues. The process is very similar to a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) approach.

Mr. Stachiw introduced the new Garrison Commander, Colonel John T. Wright. Colonel Wright is replacing Colonel Mardi U. Mark, who provided a large amount of support for the RAB. Colonel Wright greeted RAB Members, and expressed appreciation for the warm welcome and opportunity to work together.

Mr. Stachiw informed RAB Members that the Lauderick Creek Chemical Warfare Materiel (CWM) Removal Action Project was brought to completion during the Fall 2003, and Two-Star Letters would be presented to individuals who largely contributed to the project. Mr. Stachiw introduced General John C. Doesburg to present the awards.

III. REMARKS AND PRESENTATION OF LETTERS BY GENERAL DOESBURG

General Doesburg greeted RAB Members. He has served at APG for six years, and has changed organizations several times. He also spends a great deal of time traveling, with short stops at APG.

General Doesburg stated that the purpose of the presentation is to recognize six individuals for their outstanding contributions to the difficult project at Lauderick Creek. The Lauderick Creek site is located

close to neighborhoods and wetlands, and dates back to World War I. The site presented a challenge to cleanup efforts due to it's location, age, unknown contents, and uncertain cleanup approach. Site remediation, therefore, had to be conducted in a safe and secure manner.

General Doesburg noted that only three of the six individuals to be recognized were present at the meeting. Three individuals were employees of the government, and provided major operational oversight for the entire project. RAB Members who participated in the project were key to the process, and very important. Often when working in and around a location for a long period of time, the obvious and most important details are forgotten. RAB Members who participated constantly maintained vigilance to those details, and facilitated communication between the Army and members of the affected public. Army perception by the public is critical, and without obtaining public views, the public cannot be serviced.

General Doesburg provided an example of public service following the attack on the World Trade Center, and an evaluation of the protection of chemical munition stockpiles across the United States. It was obvious that the level of protection would have to be increased based on the terrorist threat at the particular time. A large briefing to the Chiefs of Staff and Secretary of the Army indicated that 1,900 soldiers would be required to protect those sites. The large number of soldiers was required not just to maintain the safety and security of military installations, but also took into account the safety of the public around the installations, who would be most affected by terrorist incidents. For approximately three years 1,900 soldiers provided protection around those sites, with the a portion of that number decreased approximately eight months ago.

General Doesburg stated that if not for groups such as the RAB at APG, public concerns would be unknown, and improperly addressed. Communication must be evaluated, and potential emergency situations should be understood. Special needs in the public, such as those hard of hearing or requiring special transportation, need to be identified, and everyone should be informed of ongoing activities. RAB Members helped to facilitate that exchange of information, and provided the Army with the opportunity to reach the public.

General Doesburg noted that communication is not always easy. Some people find it easy to talk with a General, while others, such as young soldiers, are intimidated. They are reminded that all ranks get dressed the same way, and live basically the same lives, with different responsibilities. If younger soldiers are unable to relay concerns important to them, then it will not be possible to obtain public concerns. Without knowing public concerns, it is not possible to carry out the main responsibility of addressing them.

General Doesburg stated that the presentations would begin with the three individuals present at the meeting, followed by name recognition of the individuals not present. Mr. Ted Henry (RAB Member) was called forward as the first person to be recognized, and General Doesburg read the letter aloud. The letter read: "Lauderick Creek CWM UXO Boundary Cleanup is officially complete. It marks the successful conclusion of perhaps the most complicated cleanup action for APG. You've played a key role throughout the project. Your skillful articulation of citizens' concerns about UXOs was highly instrumental in conceiving this project. Your exceptional efforts communicating risk to citizens and sensing their specific needs were an invaluable asset in making the project successful. Finally, your keen technical oversight as a RAB Member ensured the high quality of project execution, and ultimately the high confidence in site cleanup. On behalf of APG and the Department of the Army, I wish to thank you for your efforts and congratulate you on a job well done." Mr. Henry thanked General Doesburg for the recognition.

General Doesburg called forward Mr. Ed Newell (Joseph Associates, former DSHE ECRD Project Officer) to be recognized, and read the letter aloud, as each letter is different. The letter read: "Lauderick

Creek CWM UXO Boundary Cleanup is officially complete. It marks the successful conclusion of perhaps the most complicated cleanup action for APG. Your vision in adapting and establishing new technologies to meet the unique requirements of this project were most notable. Other major controversial Army cleanup actions have already benefited from cleanup technology developed during this project. Your stellar performance in helping to communicate the risks to citizens and sensing out their specific needs were invaluable assets in making this aspect of the project relatively trouble free. Although you retired before project completion, you left behind a well-organized operation facilitating a seamless transition. On behalf of APG and the Department of the Army, I wish to thank you for your efforts and congratulate you on a job well done."

General Doesburg called forward Mr. Bruce Ware (U.S. Army Corps of Engineers) to be recognized, and read the Letter aloud. The Letter read: "Lauderick Creek CWM UXO Cleanup is officially complete. It marks the successful conclusion of perhaps the most complicated cleanup action for APG. You played a major role in the project's overall success. Your involvement in solving technical difficulties ensured the project progressed without long delay. On behalf of APG and the Department of the Army, I wish to thank you for your efforts and a job well done." Mr. Ware thanked General Doesburg for the recognition.

General Doesburg stated that Ms. Christine Grochowski (RAB Co-Chair), Ms. Helen Richick (former RAB Co-Chair), and Mr. Charles Jones (former APG Fire Chief) were also granted Letters, but were not present at the meeting to receive them.

General Doesburg informed RAB Members that he was unable to stay for the entire meeting, but wished to take this last opportunity to address the RAB before his retirement. General Doesburg has experience with several RABs across the United States. Previously, he has worked with the chemical weapons stockpile, and managed a site at Johnston Island. Johnston Island was afflicted by a tremendous amount of ecological damage. The RAB and advisory group established for that site did not care about the damage, or find it important. The APG RAB is far ahead of any other that he has experience with, and tends to act as a trendsetter for the Nation, as it takes an interest in activities. The APG RAB is concerned about activities not only at APG, but also for citizens and the surrounding area. This RAB takes an active stance in their efforts, as opposed to passive roles seen in other RABs, and should be commended. General Doesburg thanked the RAB for all of their efforts.

Mr. Stachiw stated that General Doesburg has been extremely supportive of the IRP at APG, and shows tremendous interest in projects. The concern he holds for his people is greatly appreciated.

IV. INTERMISSION

At 7:25 p.m., Mr. Stachiw requested a 25-minute break to allow meeting attendees to meet and converse with Colonel Wright and General Doesburg. At 7:50 p.m. the meeting resumed.

V. PERCHLORATE DETECTIONS UPDATE

Mr. Stachiw displayed a map of perchlorate detections at the City of Aberdeen Production (CAP) Wells from the 6 July 2004 sampling event. Detections ranged from less than .2 parts per billion (ppb) to 4.2 ppb. High concentrations were detected in CAP Well 10 (4.1 ppb) and Well 3 (4.2 ppb). Perchlorate detections in CAP Well 9 were 2.8 ppb prior to passing through the ion exchange filter, and less than 0.2 ppb after passing through the filter. A result of 1 ppb was reported for finished water, prior to heavy rainfall events that occurred in early July. Following the rainfall events, perchlorate concentrations in the wells decreased. CAP Wells 3 and 10 were shut down following the July 6 sampling event, and may have resulted in the decrease of finished water perchlorate detections to non-detect (ND) by 13 July 2004.

Ms. Glenda Bowling (RAB Member) asked for the highest sampling result that has been reported from the perchlorate plume. Mr. Stachiw stated that it is uncertain if the groundwater plume itself is currently being sampled by direct push technology (DPT) (i.e. geoprobe). The majority of original samples used to define the plume were collected by one-time DPTs. Previous perchlorate detections of 10 to 15 ppb were detected in DPT groundwater samples in the main plume.

Mr. Stachiw stated that samples collected by geoprobes usually exhibit higher detected concentrations than samples collected from a well. Well samples cover a larger sampling area of the aquifer, while geoprobes collect samples from a one-time limited collection area. Some wells experience a diluting effect, such as Well 10, when clean water from surrounding areas and plume water are drawn to and extracted from the well. Currently, the wells surrounding the plume are monitored, and finished water has not been detected over 1 ppb. Mr. Rich Isaac (U.S. Army Environmental Center (AEC)) stated that the highest perchlorate concentration detected in a well was 21 ppb.

Mr. Henry questioned if the City of Aberdeen is required to issue an advisory when perchlorate levels in finished water are detected at or above the state advisory number of 1 ppb. Mr. Stachiw stated that there is some confusion whether an advisory must be issued when perchlorate levels either reach or exceed 1 ppb. Advisory requirements can be provided.

Mr. Roy Dietz (RAB Member) questioned if samples were collected after CAP Wells 3 and 10 were shut down. Mr. Stachiw reiterated that CAP Wells 3 and 10 were shut down following the 6 July 2004 sampling event. It is uncertain if the shutdown of those wells affected perchlorate levels, as sampling analysis results are not available until approximately two weeks after the event. The exact time of well shut down is uncertain.

Ms. Ruth Ann Young (RAB Member) informed RAB Members that the City of Aberdeen plans to install ion exchange systems on CAP Wells 3 and 8. An ion exchange system has already been installed on CAP Well 9. Mr. Frank Vavra (U.S. Environmental Protection Agency (EPA)) stated that he had previously met with the City of Aberdeen to discuss groundwater modeling, and the City has updated their model to account for capture. The current installed ion exchange system is still being tested to evaluate the length of time until breakthrough occurs. The installation of exchange systems on other wells will be determined by how effectively the current system performs.

Ms. Young informed RAB Members that the City of Aberdeen also plans to install three additional wells at a depth of 70 feet. The City of Aberdeen has applied to withdraw more water from Deer Creek for city use, requiring a separate permit. CAP Wells 2, 3, and 4 will then be utilized as backup wells. Ms. Young expressed disappointment in the location where the City of Aberdeen is pursuing the installation of the three wells.

Mr. Henry questioned what procedures must be carried out by the City of Aberdeen and the Maryland Department of the Environment (MDE) when perchlorate is detected higher that 1 ppb in finished water. Mr. Stachiw stated that the requested information could be provided.

Mr. Dietz questioned if contamination would migrate to another well when a high level well is shut down. Mr. Stachiw stated that contamination and water would be pulled in a different direction when a high level well is shut down. Groundwater could be pulled toward another well, or may flow in the general direction of plume movement. The effects of well shut down may not be apparent for a period of time, and it is difficult to characterize movement based on a limited number of samples.

Mr. Henry questioned if a decision or timeframe has been established for obtaining Strategic Environmental Research and Development Program (SERDP) funding, which may help with the remediation of perchlorate-contaminated soil located near the CAP wells. Mr. Stachiw stated that site information has been provided to SERDP, and a decision is expected by late-August 2004.

Ms. Laura Rodman (U.S. Regional Environmental Coordinator) stated that AEC has been in contact with SERDP. There are two potential projects that could work with the site, though the project investigators still need to evaluate if the site matches with their research goals. The end of August 2004 has been established as a decision deadline.

Mr. Henry questioned if the decision made by SERDP would be through a contractor or private company. Mr. Stachiw stated that interest could stem from a contractor, university, or any group with a research angle.

Mr. Tom McWilliams (RAB Member) asked for the typical production rate of the CAP Wells. Mr. Isaac stated that the wells all have different production rates that can vary. Mr. Stachiw stated that the wells vary in size, operate at different rates, and can be shut on and off.

Mr. Henry questioned if the researchers have already received funding, and are currently trying to decide if the site matches their research goals. Ms. Rodman stated that there are no current fiscal year 2004 (FY04) funded projects. Potential projects will be funded for FY05, with a project decision deadline of late-August 2004.

Mr. Henry requested that he be kept informed of the SERDP funding status. Should there be project interest and funding requested for the site, Mr. Henry volunteered to write a letter to support the funding request. Mr. Stachiw stated that SERDP updates could be provided.

Ms. Young informed RAB Members that the Well Head Protection Ordinance has been introduced, with one hearing already held on it. It is not certain if action will be taken on the ordinance at the next hearing.

After confirming RAB Members had no further comments, Mr. Stachiw introduced Ms. Cindy Powels (DSHE ECRD Project Officer) to provide the update on the WSA.

VI. WESTWOOD STUDY AREA UPDATE

Ms. Powels displayed slides depicting the size and location of the WSA near the installation boundary at the Edgewood Area of APG. The WSA covers approximately 850 acres of land, and is located near residential housing, the Magnolia Elementary School, and Magnolia Middle School.

Ms. Powels reminded RAB Members that a Proposed Plan for six sites that required no active remediation was briefed at the August 2003 RAB Meeting. A decision was made in January 2004 to cancel the Draft Proposed Plan and carry those sites forward as no active remediation sites in the overall WSA Record of Decision (ROD). A ROD for the entire WSA could be completed before the ROD for the six sites would be finished.

Risk Assessment Status Updates

Ms. Powels displayed a slide detailing the Ecological Risk Assessment status. A project meeting was held on 16 January 2004 to discuss comments received on report conclusions. The Final Data Evaluation

and Risk Characterization Report was published in March 2004. The WSA Ecological RA is now complete. The WSA Human Health RA was completed a few years ago.

Ms. Powels displayed a slide detailing the Radiological RA status. Additional samples were collected, and results will be presented. The Draft Radiological RA was completed in December 2003, and minimal comments on the draft were received. Responses to comments are being prepared, with a final report scheduled to be completed in August 2004. Copies of the Final Radiological RA will be available to those who are interested. Mr. Henry, Mr. McWilliams, and Ms. Young expressed interest in obtaining copies.

Ms. Powels displayed a slide detailing Radiological RA groundwater data results. Only four radionuclides were detected in the groundwater; radium-226 (Ra-226), radium-228 (Ra-228), uranium-234 (U-234), and uranium-235 (U-235). No radionuclides were detected in the groundwater at the Westwood Radioactive Material Disposal Facility (WRMDF), where a previous removal action was conducted. The frequency of detection for all radionuclides detected in WSA groundwater was low.

Ms. Powels stated that Ra-226 and Ra-228 levels detected in WSA groundwater are essentially the same as in the regional Maryland coastal plain groundwater. The regional Maryland coastal plain groundwater arithmetic mean for Ra-226 is .58, and the WSA mean is .50. The regional Maryland coastal plain groundwater arithmetic mean for Ra-228 is 1.29, and the WSA mean is 1.38.

Ms. Powels displayed a map depicting the location of groundwater radiological sampling results east of Reardon Inlet. Samples were collected from 33 surficial aquifer wells, and analyzed for gross alpha, gross beta, gamma spectroscopy, isotopic uranium, total uranium, Ra-226, Ra-228, strontium-90, tritium, potassium, and total dissolved solids. Well locations selected for sampling were focused on sites associated with past radiological use and RAB recommendations. The highest concentration of Ra-228 was detected at 6.09 picoCuries per liter (pCi/L) at well WW-105B. The majority of results presented on the map were 'J' qualified values, indicating that the analyte was present at concentrations below the machine's analytical accuracy capabilities.

Mr. Henry questioned if the range used for the regional Maryland coastal plain groundwater arithmetic mean could be obtained. Mr. Gary Nemeth (General Physics Corporation) stated that the values were obtained from a report several years old, which is summarized in the Final Radiological RA.

Mr. Stachiw noted that several of the 'J' values contained three significant digits, which indicates a level of accuracy that could not be obtained below a machine's analytical accuracy capabilities. Mr. Stachiw questioned the meaning of a 'J' value, and the number of significant digits that are needed or required when reporting a 'J' value detection. Ms. Powels stated that the information could be provided.

Ms. Powels displayed a slide depicting the location of groundwater radiological sampling results west of Reardon Inlet. All results presented on the map were 'J' qualified. Well locations selected for sampling were focused on sites with past use of radiologicals.

Mr. McWilliams questioned the analytical results presented. Ms. Powels explained that U-235, Ra-228, and Ra-226 represent uranium-235, radium-228, and radium-226 respectively. The 'J' qualifier indicates that the analyte is present, but the reported value may not be accurate or precise.

Mr. McWilliams questioned if a 'J' value indicates that a detected result may not be present. Mr. Henry stated that a detected 'J' qualified result is present, and 'J' qualified values are usable in RAs. The 'J' qualifier stems from laboratory quality control/quality assurance (QA/QC) procedures. Ms. Powels stated

that laboratories must report their results within determined reporting limits. Results that out lie those reporting limits are then qualified.

Ms. Powels displayed a slide indicating that radionuclides were not detected in surface water samples collected within the WSA. Samples were collected from 20 existing RI surface water locations, and analyzed for gross alpha, gross beta, gamma spectroscopy, isotopic uranium, total potassium, and total dissolved solids. Surface water sampling locations are presented on the map depicting soil and sediment sampling locations.

Ms. Powels displayed a slide detailing radiological soil and sediment results. Cesium-137 (Cs-137) is present in WSA soil and sediment as a result of worldwide historical weapons testing and fallout, which occurred mostly during the 1950s. Anthropogenic background levels vary with location, and in Maryland are typically less than 1.5 pCi/g, with average levels less than 0.5 pCi/g. Cs-137 adsorbs strongly to clay materials in soil, with little leaching to subsurface soils, which contain substantially lower levels. Cs-137 was not detected in WSA groundwater.

Ms. Powels stated that the removal action area within the WRMDF was resampled due to the remediation of RI samples during the 1998 removal action. Surface and subsurface soils were collected at different depth intervals within areas excavated during the removal action, and from existing RI locations.

Ms. Powels stated that a small number of samples from the former WRMDF contained Cs-137 at levels higher than the anthropogenic background. The location of the highest Cs-137 detection (72 pCi/g) at the WRMDF also has a detectable, but very low, cobalt-60 (Co-60) activity. All other WSA soil and sediment samples have Cs-137 activity detected at levels less than 5 pCi/g. Other radionuclides detected in WSA soil and sediment samples include naturally occurring potassium-40 (K-40) and members of the uranium, thorium, and actinium decay series. These detections were not statistically higher than reference background levels.

Ms. Powels displayed a map depicting the location of Cluster 6 soil and sediment radiological sampling results. The areas of remediation during the removal action location were indicated. Materials removed included soil with concentrations of Cs-137 exceeding 15 pCi/g, underground wastewater and sanitary sewer lines, a septic tank, and a headwall. The highest level of Cs-137 was detected in sediment sample C06-SSD-18 near the former headwall. Surface soil sample C06-SS-14 was collected near the end of the sanitary sewer line, and C06-SS-20 was collected near the backfill area.

Mr. Henry questioned if the sample with the highest detection was collected from a previously excavated area, and if the surrounding marsh area is occasionally submerged under water. Ms. Powels stated that the sample was collected from a previously excavated area. Ms. Jennifer Schaefer (General Physics Corporation) stated that the marsh area is always submerged.

Mr. Henry questioned if it is assumed that sediment is redeposited in that area. Ms. Powels stated that the site could be resampled, and high levels of Cs-137 may or may not be detected. Resampling would be a risk management decision.

Mr. Henry asked for Cs-137 anthropogenic background levels projected for the Cluster 6 area. Ms. Powels reiterated that the Cs-137 anthropogenic background level for Maryland is approximately 1.5 pCi/g. Soils with Cs-137 levels exceeding 15 pCi/g were removed during the removal action. Sampling results show Cs-137 levels are below 15 pCi/g for the majority of the site, with the exception of the elevated detection near the former headwall area. A decision will be made as to whether resampling will be conducted.

Mr. Henry questioned if it is expected that the risk managers will decide to collect additional samples to ensure that the elevated level of Cs-137 detected was just a one sample hit. Ms. Powels stated that it could be possible to collect a large enough sample to remove the elevated Cs-137 concentration. The contaminated area is not expected to be large. It is uncertain if resampling would be conducted before the ROD is issued. Sampling could be conducted post-ROD, if it is decided upon pre-ROD.

Mr. Henry stated that it has been assumed that the previous sampling event that evaluated the area involved the collection of enough samples to ensure that high Cs-137 concentrations were no longer present within a ten-foot diameter of sampling sites. Currently, there is no proof that all high Cs-137 concentrations have been removed. Ms. Powels indicated the area where a subsurface pipe had been located, and was eventually extended further out beyond the headwall area. The entire section of pipe and surrounding sediment were removed from the area. Triangles on the map represent small samples that were collected, not the actual area of sediment and soil removed. The extent of removal areas will be presented in the Final Radiological RA.

Ms. Powels displayed a slide summarizing the Human Health Radiological RA. Two approaches were used to evaluate the adverse health effects of radiation exposure. In the dose assessment approach, the radiation dose is calculated by multiplying a dose conversion factor for a given radionuclide by the total intake/exposure to that radionuclide. Exposure routes include external radiation, ingestion, absorption, or inhalation. The cancer risk assessment approach evaluates a slope factor similar to that conducted in the Human Health RA. The Human Health Radiological RA was performed using the Department of Energy (DOE) Residual Radioactivity (RESRAD) model. The approach used for the RA was evaluated and approved by regulators before the RA was performed.

Ms. Powels displayed a slide summarizing the ecological risk portion of the Radiological RA. The ecological RA followed the procedures of the "Graded Approach" developed by the DOE. The tiered approach begins with an initial screening against conservative Bio-Concentration Guides (BCGs). BCGs utilize levels similar to those specified by the Biological Technical Assistance Group (BTAG). Further evaluation is conducted using site-specific factors if detected radionuclides fail the initial screening.

Ms. Powels displayed a slide detailing conclusions from the Human Health Radiological RA. Only Cs-137, detected in soil and sediment at the WSA, was found to be statistically higher than reference backgrounds, and was the only final human health constituent of concern. The nature and extent of Cs-137 at the WRMDF is indicative of residual material from historical waste management operations.

Ms. Powels displayed a slide detailing conclusions from the ecological risk portion of the Radiological RA. Initial screening results indicate that it is unlikely that radionuclides are adversely affecting WSA aquatic receptor populations. Site-specific screening results indicate that it is unlikely that radionuclides are adversely affecting WSA terrestrial receptor populations. No radionuclide ecological constituents of potential concern were identified for the WSA.

Completed Actions Update

Ms. Powels displayed a slide providing a summary of completed actions for the WSA. The Draft Radiological RA was completed in December 2003. The Final Ecological Risk Assessment Data Evaluation and Risk Characterization Report was issued in March 2004. Phase II FS field activities were conducted from January to May 2004. The Draft Final RI Report was completed in May 2004. The Final Technical Report for the Well and Underground Tank Evaluation and Abandonment, conducted a few

years ago, was finalized in June 2004. A Working Copy FS Report, for OUs A, B, and C, was prepared in June 2004. Copies of final reports can be provided to those interested.

Planned Actions Update

Ms. Powels displayed a slide providing a summary of planned actions for the WSA. The Draft Overall FS Report will be available at the end of July 2004. The Final Radiological RA and Final Overall RI/FS Report will be completed in August 2004. The RAB will be briefed on all FS results once the Draft Overall Proposed Plan and public comment period has been completed in late-August to early-September 2004. The Draft Overall ROD is planned for November 2004, with the Final Overall ROD expected in December 2004. WSA topics to be presented at the 26 August 2004 RAB Meeting include RI/FS details, Phase II FS field activities, and the FS Report.

Mr. McWilliams questioned the potential source for levels of U-235 detected. Mr. Nemeth stated that detected levels of U-235 are naturally occurring.

VII. INTERMISSION

At 8:30 p.m., after confirming that no one present had further questions, Mr. Stachiw requested a 15-minute break. At 8:45 p.m. the meeting resumed.

VIII. INSTALLATION ACTION PLAN DISCUSSION

A discussion of the Installation Action Plan for the Westwood Study Area was held. Meeting attendees included RAB Members, Mr. Stachiw, and Ms. Powels. Anyone wishing to obtain information regarding the details of the discussion should contact Mr. Stachiw.

VIII. CLOSING REMARKS

At 9:15 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, 26 August 2004 at 7:00 pm in the Edgewood Senior Center. The topic of discussion will be the Westwood Study Area.