## ROCKY FLATS STEWARDSHIP COUNCIL Monday, October 31, 2016, 8:30 A.M. – 12:00 P.M. Rocky Mountain Metropolitan Airport, Terminal Building, Mount Evans Room 11755 Airport Way, Broomfield, Colorado

**Board Members in attendance:** Mark McGoff (Director, Arvada), Sandra MacDonald (Alternate, Arvada), Deb Gardner (Director, Boulder County), Megan Davis (Alternate, Boulder County), Lisa Morzel (Director, Boulder), Martha Derda (Alternate, Broomfield), David Allen (Alternate, Broomfield), Laura Weinberg (Director, Golden), Libby Szabo (Director, Jefferson County), Pat O'Connell (Alternate, Jefferson County), Joyce Downing (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Joe Cirelli (Director, Superior), Emily Hunt (Alternate, Thornton), Bruce Baker (Director, Westminster), Shannon Bird (Alternate, Westminster), Mary Fabisiak (Alternate, Westminster), Jeannette Hillery (Director, League of Woman Voters), Arthur Widdowfield (Director, Rocky Flats Cold War Museum), Ron Heard (Alternate, Rocky Flats Cold War Museum), Roman Kohler (Director, Rocky Flats Homesteaders).

**Stewardship Council staff members and consultants in attendance:** David Abelson (Executive Director), Barbara Vander Wall (Seter & Vander Wall, P.C.), Chelsie Gonzalez (Seter & Vander Wall, P.C.), Rik Getty (Technical Program Manager)

Attendees: Shirley Garcia (Broomfield), Karen Edson (DOE), Davina Castilla (DOE), Janice Roberts (citizen), Bruce Roberts (citizen), Ann Parker (Boulder), LeRoy Moore (RMPJC), Gwen Hooten (DOE), Lindsay Masters (CDPHE), Carl Spreng (CDPHE), Jeremy Rodriguez (Rep. Ed Perlmutter), Susan Griffin (EPA), Bonnie Graham-Reed (citizen), Marian Whitney (citizen), S. Shank (citizen), Scott Surovchak (DOE), Patty Gallo (Navarro), Christine Hawley (Hydros/WCRA), Martha Hyder (WREC), Diane Vigil (citizen), Sandy Pennington (Superior), Rita Dozal (Superior), Jody Reeds (Navarro), Linda Keiser (Navarro), David Wall (Navarro), Bob Darr (Navarro), John Boylan (Navarro), Vera Moritz (EPA), Kim Griffiths (citizen), Ian Paton (Wright Water Engineers), Ed Lanyon (Thornton/WCRA), Bob Fiehweg (FEC).

## **Convene / Agenda Review**

Chair Lisa Morzel convened the meeting at 8:36 a.m. The first order of business was introductions of Board members and the audience.

# **Consent Agenda**

Roman Kohler motioned to approve the consent agenda. The motion was seconded by Mark McGoff. The motion to accept the minutes and checks passed 12-0.

## **Executive Director's Report**

David Abelson noted that Joe Cirelli (Superior Town Trustee) is term limited and is attending his final Stewardship Council meeting as a Board member. Joe spoke about how much he enjoyed serving on the Stewardship Council.

David then discussed the two CORA requests that have been submitted since September, both by the same person. The first was submitted before the September 12<sup>th</sup> Board meeting. That request sought information related to the executive session proposed to be held at that meeting and the negotiation of the personnel contracts. The request was denied because the records are not open for public inspection. The second CORA request was submitted following the September 12<sup>th</sup> meeting. It sought a copy of the minutes and audio recording of the executive session held by the Stewardship Council at its September 12<sup>th</sup> meeting. The request was denied because such records are not open for public inspection. David explained that when he gets a CORA request he confers with legal counsel on how to respond with the request and then proceeds accordingly. This process increases the Stewardship Council's legal costs, and David wanted the Board to be aware of the reason behind the increased costs.

Next, David discussed an email he received from a Board member asking about the Executive Committee appointment process. David explained the Executive Committee terms start at the February 6, 2017 Board meeting. There are three positions—Chair, Vice Chair and Secretary/Treasurer. The first order of business at the February 6<sup>th</sup> meeting will be the appointment of the Executive Committee positions. All Committee members must be Directors. David will email the Board in December outlining in further detail the process and responsibilities, and seeking interest in serving on the Executive Committee.

# Public Comment

Leroy Moore began by quoting the monthly status report presented by DOE at the Stewardship Council's September 12<sup>th</sup> meeting. He noted "the 12-month rolling average for SW027 continues to exceed the standard." Leroy asked what DOE is doing to rectify the exceedance. He specifically wants to know what steps are being taken to dilute the surface water before it reaches the monitors at the point of exceedance, and what is the likely result if the terminal ponds are breached. Lisa said the Board would forward his questions on to DOE. (Moore's comments and DOE's response can be found at <u>http://www.rockyflatssc.org/public\_comment.html</u>)

Marian Whitney spoke next. Her community group, Rocky Flats Right to Know, has had 4 meetings since the Stewardship Council's September meeting. Recordings of their meetings are available online. Marian said her main concern was protecting the children who visit the Rocky Flats wildlife refuge. She said former state Rep. Wes McKinley told her group that the Stewardship Council was going to post signs about the cleanup and asked about the status of those signs. She has guided people on trails outside of Rocky Flats in the past, and has always trusted park rangers and officials to present accurate information about potential hazards, but she cannot trust what is being told about the safety of Rocky Flats. David Abelson responded that the Stewardship Council was not charged with developing or posting signs on the Refuge—that's the domain of the USFWS—and that McKinley's assertion that the Stewardship Council would post its own signs was not accurate. (Whitney's comment can be found at http://www.rockyflatssc.org/public\_comment.html)

# **Board Approval of 2017 Work Plan**

The 2017 work plan was reviewed at the September 12, 2016, Board meeting. The draft being presented at this meeting include the Board's requested changes. <u>Roman Kohler motioned to</u>

accept the proposed 2017 work plan. Joe Cirelli seconded the motion. The motion was approved 13-0.

# **Board Approval of 2017 Budget**

The 2017 budget was reviewed at the September 12, 2016, Board meeting. No changes were offered at that meeting. The only change that was made was to account under 2017 anticipated expenditures the contract amendment. Barb Vander Wall explained the budget review process. Prior to finalizing the budget, the Board must hold a budget hearing and allow time for public comment. Following the public hearing, the Board must approve the budget resolution. Approval must occur before the end of each year. She also noted that after the budget is approved, it is filed with the Division of Local Government by the end of January.

Barb reminded those in attendance that notice of the 2017 budget hearing was published in advance of this meeting, and that an official public hearing must be held before approval.

Lisa officially opened the hearing for the 2017 budget. She asked for any public comments. There being no public comments, the budget hearing was closed. Jeannette Hillery motioned to accept the 2017 budget. The motion was seconded by Joyce Downing. The motion to approve the 2017 budget, appropriate the funds and adopt the budget resolution was approved 13-0.

## **Board Meeting Protocols**

The Board's intention in developing the protocols is to provide guidance on public participation and related matters. David Abelson began by discussing the proposed changes he received from Board members prior to the meeting. The first suggestion stated that interruptions are not allowed from either Board members or members of the public. The second suggestion was to include a clear definition of a "personal attack." The third suggestion was a penalty for not adhering to the first two protocols.

David discussed that he did not include a definition of a "personal attack" in the protocols since he was not sure how to tackle that question. He also recommended that there should not be a penalty for disruptive behavior. Lisa agreed, adding that everyone just needs to focus on the issues of Rocky Flats and not personal feelings about Rocky Flats. David Allen suggested that there should be some kind of clarification that the public comment portion of the meetings are meant for public comment and should not be treated as a Q&A session.

Lisa stated that there is an opportunity for public comment at the beginning and ending of each meeting. Mark McGoff commented that the public interjects even when the Board is not engaged in the public comments portion of the meeting. He wanted clarification on whether the public is able to do that during presentations and discussions between the Board members. Mark mentioned that the public does not interject out-of-turn at other board meetings he attends outside of the Stewardship Council. Joe Cirelli mentioned that their Town of Superior meetings have time allotted for public comment for non-agenda items, and time allotted for agenda items. He suggested that this may be something that could be implemented for the Stewardship Council meetings. Deb Gardner stated that she finds the publics' questions during DOE presentations helpful. She suggested the Board open up a Q&A session right after the presentations to help

clarify things for both the public and the Board. Lisa mentioned that in the spirit of being the LSO for Rocky Flats, the Board's main objective is to serve as a conduit for the public to easily engage with the designated officials tasked with management of Rocky Flats. Part of what the Board is trying to do with the protocols is to curb the personal attacks.

Laura Weinberg wanted clarification as to how exactly the Board is supposed to engage with the public, and whether the Board wants to set an expectation of a response to the public. Lisa explained that sometimes the answers the public is seeking from the Board will be delayed. Laura asked if the public is expecting a response from the Board for any given question. David Abelson responded that it depends on the comment given by the public. He said the public is not always looking for a response, but rather just making a statement, and often the Board does not have the answer at hand. He also noted that most often the appropriate entity to respond is DOE, and upon request, David forwards those comments to DOE for a formal response.

Lisa asked if anything needed to be changed in the public comment protocol. Laura did not think so. Jeannette Hillery commented that the Board is always open with the public in regards to its ability to answer a question or not. She also liked the suggestion of a public Q&A and/or comments immediately following the DOE presentations. David said the meeting protocols will need to be edited to clarify that the public comment is not a Q&A session between the public and the Board. The meeting protocols will be approved at the February 2017 meeting.

# DOE Quarterly Report for 2nd Quarter 2016

Bob Darr began by noting this report is in accordance with the Rocky Flats Legacy Management Agreement (RFLMA). The purpose is to inform the regulatory agencies and stakeholders of the remedy-related surveillance, monitoring, and maintenance activities conducted at Rocky Flats during the second quarter 2016 (April 1 through June 30).

The quarterly reports document the CERCLA remedy. The primary goal is surface-water protection. The regulatory response actions are to maintain 2 landfill covers and 4 groundwater treatment systems, monitor surface water and groundwater, and maintain physical controls. DOE is also required to enforce institutional controls.

## Surface Water Monitoring – George Squibb

George began by discussing the surface water monitoring stations. At the Original Landfill, when routine surface-water sampling was performed in Woman Creek, downstream of the OLF (GS59), the mean concentrations for all analytes were below the applicable surface-water standards. At the Present Landfill, routine second-quarter sampling showed vinyl chloride above the applicable RFLMA standard. The vinyl chloride concentration was  $0.27 \mu g/L$ , exceeding the limit of  $0.2 \mu g/L$ . The result required DOE to increase the sampling frequency from quarterly to monthly. For the following monthly sample, vinyl chloride was not detected, so sampling frequency returned to quarterly.

At surface water monitoring station SW027, the 12-month rolling averages for plutonium (Pu) and americium (Am) were reportable as of April 30, 2015, and June 30, 2015. As of the end of the quarter, 12-month rolling averages were: Pu 0.18 pCi/L and Am 0.20 pCi/L. The site-specific standard for both is 0.15 pCi/L. There was very little flow during the quarter.

Mitigating actions included enhancing upstream erosion controls. RFLMA Contact Record 2015-05 discusses these issues. Concentrations at WOMPOC (located downstream) are not reportable.

No other RFLMA point of evaluation analyte concentrations were reportable during the quarter, and all point of compliance concentrations remained below reportable levels.

### Groundwater – John Boylan

The second quarter is the heaviest sampling quarter. Sampling includes 10 Resource Conservation and Recovery Act (RCRA) wells, 9 Area of Concern (AOC) wells, 1 Surface-Water Support location, twenty-seven Sentinel wells, forty-two Evaluation wells, and 9 treatment system locations.

RCRA wells results are consistent with previous data. The data will be evaluated as part of the 2016 annual report. AOC well 1034 reported trichloroethene (TCE). The RFLMA standard is 2.5  $\mu$ g/L; the sample was 49  $\mu$ g/L. This well has been reportable since fourth quarter 2015. (See Contract Record CR 2015-10 for more information.) TCE is not detected in surface water. TCE is also found at the East Trenches (3.1  $\mu$ g/L vs. 2.5  $\mu$ g/L). The system has been adjusted, and sampling conducted during the third quarter showed compliance at the East Trenches.

John next discussed changes to the groundwater treatment systems. The Solar Ponds Plume Treatment System (SPPTS) was taken offline on April 11, 2016. The "Big Box" and Phase II uranium treatment cell were emptied, and converted to full-scale, interim test lagoon for nitrate treatment. A new "sidecar" vault was installed to support uranium treatment testing. Following additional changes, the project was completed and flow through the Big Box lagoon established on July 28<sup>th</sup>.

At the Mound Site Plume Treatment System (MSPTS), the system was redesigned to route water to the East Trenches Plume Treatment System for treatment.

## Site Operations – John Boylan

DOE conducted the annual inspection on April 13<sup>th</sup>. There was no evidence of violations of institutional or physical controls. All signs are in good condition.

At the Original Landfill, DOE performed monthly inspections on April 20, May 18, and June 21. As has been discussed with the Board, the OLF showed signs of movement at the same locations as those repaired in 2015.

After significant precipitation event in April, additional subsidence was noted in former building 881 area. The area filled was where subsidence had been previously filled. The hole was approximately 4 feet in diameter, 3-to-4 feet deep; the area was backfilled with soil

## **Rocky Flats Overview: Actinide Migration Evaluation in the Rocky Flats Environment**

Scott Surovchak, Carl Spreng, Ian Patton, and Martha Hyder presented the Actinide Migration Evaluation and associated issues. The presentation, which covered 68 slides, included:

- Background
- Contaminant Characterization
- Regulatory Process and Controls
- Site Cleanup
- Long-Term Site Management
- Summary

The presentation can be found at: <u>http://www.lm.doe.gov/Rocky\_Flats/Sites.aspx?view=5</u> (click on "Rocky Flats General Overview Briefing, RFSC, Oct. 2016."

# Background

Scott Surovchak opened the presentation with any overview of site operations and cleanup. The site operated from 1951-1989. Most of the contamination was found inside the buildings, but some was found in the environment. Cleanup included building decommissioning decontamination, and demolition. It also included environmental restoration. To remediate Rocky Flats, waste and special nuclear materials were shipped off-site to more than 10 locations.

There are two main drainages at Rocky Flats—Walnut Creek is to the north, and Woman Creek to the south. Shallow groundwater is a potential transport pathway. The deep groundwater, which lies 200-300 meters below the surface, is isolated from the shallow groundwater and is not a transport pathway.

Historic contaminants include plutonium, americium, uranium, metals, nitrate and organic compounds.

# **Contaminant Characterization**

The Historical Release Report (HRR) was originally compiled in 1992 to capture existing information on historical incidents and site practices involving hazardous substances. It was updated periodically over the next 12 years, and identified areas for additional characterization and potential remediation (individual hazardous substance sites, potential areas of concern, potential incidents of concern, and under building contamination)

# Surface soils - off-site

Surface soils off-site of Rocky Flats are contaminated. The highest level recorded is 6.5 picocuries/gram (pCi/g). The final regulatory decision for Operable Unit 3 (offsite areas) was that no cleanup was necessary to protect human health or the environment because contaminant levels were so low.

This decision was based on a 3-volume RCRA Facility Investigation/Remedial Investigation report that provided data on surface water, groundwater, surface soil, subsurface soil, sediments, and air. See Volume I: <u>http://www.lm.doe.gov/cercla/documents/rockyflats\_docs/OU03/OU03-A-000465.pdf</u>

#### Surface soils -- on-site

Surface soils on-site at Rocky Flats are also contaminated. More than 7200 locations were sampled since 1991, and more than 220,000 results were used to evaluate the nature and extent of surface-soil contamination.

# Air

With air, the concern is particles. Most radionuclides were released and dispersed as particles. Their behavior in air depends on shape and density. Plutonium in the environment exists as PuO2 particles attached to the soil matrix, not as individual plutonium particles. Because very small particles condense or stick together to form larger aerosols, most plutonium is found with particles >3 microns ( $\mu$ m) diameter. Radioactive particles can damage lung tissue when they are inhaled and deposited in the lungs. Larger particles (>10  $\mu$ m) are screened out in the nose and upper airway and are not retained by the body. With respect to plutonium and the inhalation pathway, air monitoring must be able to effectively capture particles. Additionally, filters collect particles via the same mechanisms as the human respiratory tract. Filters used in air monitors at Rocky Flats were tested and shown to be >99 percent efficient in capturing inhalable particles.

The two types of air monitoring were effluent and ambient. Effluent monitoring was for exhaust emissions from building stacks and vents. This monitoring was conducted from 1953 until the flow in ducts was disrupted by building decommissioning. Regarding ambient monitoring, contaminant concentrations were measured in the outside air. That monitoring occurred onsite, at the site boundary, and in the neighboring communities. That monitoring was conducted from 1952 until 2008.

Monitoring equipment was upgraded periodically as regulations changed and science and technology advanced. Air quality results were a small fraction of the allowable levels under federal regulatory laws.

#### Surface Water and Sediment

More than 400 surface-water locations were sampled since June 1991. Samples consisted of both grabs and automated flow-paced composites. More than 38,000 results were used to evaluate the nature and extent of surface-water contamination. More than 360 sediment locations were sampled since June 1991. More than 44,000 results were used to evaluate the nature and extent of sediment contamination.

#### Groundwater

More than 1,000 wells were sampled since June 1991, with more than 500,000 results. That data was used to evaluate the nature and extent of groundwater contamination. Groundwater was sampled at various depths using standard sampling techniques.

#### Uranium, Plutonium and Americium

*Uranium* -- Both natural and man-made forms are present at Rocky Flats. Man-made uranium was used in weapons production.

Plutonium – Plutonium is man-made. It was used in weapons production.

Americium – Americium is caused by radioactive decay of plutonium.

Aboveground nuclear testing—more than 500 tests from 1945 to early 1960s—resulted in world-wide distribution of plutonium and americium.

### **Actinide Migration Evaluation at Rocky Flats**

The Actinide Migration Evaluation was undertaken to understand how actinides move in the environment at Rocky Flats. The transport mechanisms/pathways are air, biological, surface water and groundwater. Oxidation affects movement in the environment. In short, plutonium is virtually insoluble at Rocky Flats. The dominant pathway is soil erosion, which is triggered by air and surface water movement. Uranium can move as both a particle and soluble. That means uranium is mobilized by the four pathways.

### **Regulatory Process**

The presenters discussed the process for determining cleanup levels at Rocky Flats. Input parameters included: Soil ingestion rate, inhalation rate and mass loading, average annual wind speed, exposure duration, depth of soil mixing layer, and cancer slope factors. The calculation was based on input from various working groups, citizen organizations, and computer models. The final values adopted for plutonium surface soils represent a  $1 \times 10^{-5}$  lifetime excess cancer risk.

#### Cleanup

Surface soils contaminated with plutonium at concentrations greater than the 50 picocuries per gram (pCi/g) were excavated. Individual Hazardous Substance Sites (IHSSs) were investigated and characterized using EPA-approved methods in accordance with RFCA. Contaminated soil was excavated, packaged and removed. Remedial actions were completed and documented, then reviewed by regulatory agencies. Approved actions were compiled in the historic release report.

The presentation next focused on remediation of the 903 Pad and Lip Area.

## **Long-Term Site Management**

DOE next provided an overview of the ongoing site management. The historic Rocky Flats site is divided into the Central Operable Unit (the DOE-retained lands) and the Peripheral Operable Unit (the Rocky Flats National Wildlife Refuge).

<u>Central Operable Unit (COU)</u> -- Response actions: Institutional controls, physical controls, and continued monitoring (because of residual contamination and to protect the remedy from human intrusion). The COU is closed to recreational visitors. Continued monitoring is accomplished through extensive sampling of surface water and groundwater.

<u>Peripheral Operable Unit (POU)</u> – The POU was released for unlimited use and unrestricted exposure. That means there are no use restrictions related to Rocky Flats as a nuclear weapons

facility, including low levels of radiation on the POU. All use restrictions are driven by the Rocky Flats refuge act and USFWS refuge regulations, not contaminant concerns.

Water monitoring is governed by the Rocky Flats Legacy Management Agreement (RFLMA). There are eight automated gaging stations, 11 surface-water grab-sampling locations, eight treatment-system locations, and 88 monitoring wells. Calendar year 2016 samples (to date) include 90 composites (5,000+ aliquots) and 200 grab samples. During 2016 (to date) Non-regulatory water monitoring (governed by the Adaptive Management Plan) includes samples (to date) 50 composites (1,800+ aliquots) and 130 grab samples.

Surface-water monitoring provides a direct measurement of soil contamination being transported in water. Measured changes in concentrations of contaminants in surface water are an indicator of changes in the environment.

# **Board/Public Comments and Questions**

Deb Gardner began the Board questions by asking why the actinides decreased between the point of evaluation (POE) and the point of compliance (POC). George Squibb (Navarro) explained that more water comes in downstream naturally, and particles tend to schlep off onto the ground and other surrounding matter. Bruce Baker asked how testing for plutonium is conducted. George explained that, in general, they have a machine that counts how much alpha radiation particles are present, but since he does not know the details of the testing, he will forward Bruce's question on to his colleagues.

David Allen stated that he thinks the process is a bit flawed. As he sees it, if the water stops flowing, the monitors are essentially starting over. That leads David to question the accuracy of using a rolling average at the points of compliance is when there is no water present. George mentioned they monitor a rolling 12-month average as well as a 30-day average, and that the 30-day cycle only kicks in when water is present. David stated that with the extend dry periods, the 12-month rolling average is not an accurate calculation. George Squibb explained that if there is no water flowing, it does not affect the calculations because nothing is there. David just wanted his concerns stated for the record. He fears that if elevated levels of actinides are detected in the future, they will not be taken seriously because of the 12-month rolling average. Bruce asked why Woman Creek started flowing the week before the Board meeting. George said natural groundwater and flow from Rocky Flats go into Woman Creek. George said it is very normal to see water flow this time of year at Woman Creek.

Mary Fabisiak asked if there is an alarm system and overflow capacity at the lift station. John Boylan said yes, that if the water gets too high it starts to flow into the treatment facility. Shelley Stanley asked if there is a risk of freezing. John said yes, but the risk is very low as the lift station is insulated.

Mary asked what why certain actinides move further into the ground than others. He said there are a variety of factors that can move contaminants in different ways, but if a contaminant moves that does not necessarily mean it is soluble. Mary also asked if there was ever remediation done in OU2 (the former Rocky Flats buffer zone) or OU3 (off-site lands). John said no.

Deb Gardner asked how the air measurements translate to picocuries like soil and water samples. Martha Hyder said it is a physics conversion to get those numbers, but she does not know the details. The source of the sampling determines the unit of measure. Martha stated the air is measure in picocuries in the air, which is the volume of particles. Deb wanted clarifications as to how the air monitoring was done. DOE stated the air was sampled monthly and that the average was based on a calendar year.

Bruce asked how they can determine what a healthy dose of exposure is for a full grown human. Scott answered that they take into account background radiation. Bruce said he was just trying to make the point that we get our expose to actinides through gamma rays and once it is breathed into the body, it creates the alpha particles that can then create cancerous cells. Bruce thinks there is a heightened threat at Rocky Flats because of the contaminants in the soil that can than get into the air that has not been monitored. Scott explained that DOE took those concerns into account during their risk calculations. Bruce stated there was no air sampling after closure, even though there has been residual contamination from the 903 Pad. The new trails are going to go through the hot spot of Rocky Flats. Scott explained that the elevated levels of contaminants in the air are still well below the standard for exposure.

Mary Harlow asked why one of the slides showed that they test for contaminants three feet below surface level, but George said during the presentation that they go six feet below surface level. George answered that the current team has created internal standards for themselves and that going deeper was one standard DOE set.

Marianne Whitney asked how much of the living part of the wildlife refuge was being considered for monitoring. She is concerned about what the kids will be exposed to at Rocky Flats. Scott responded DOE took into account the visitor risk as well as the Rocky Flats employee risk when looking at exposure on site. They looked at contamination in someone who would be exposed to Rocky Flats for 250 hours a year. They specifically looked at exposure to children ages 1-6. Exposure to the public was considered when developing guidelines for opening the wildlife refuge. They also monitored fish in the area, and did a deer tracking study with tracking collars to see what the deer would carry offsite. That was the most extensive tracking of living biological contamination.

Leroy Moore asked about plutonium movement. He cited an article discussing the rapid migration of plutonium. Leroy quoted from the article "we need to get away from the idea that plutonium doesn't move, because it does." Ian Patton responded that in wet conditions, macrospore and physical pathways created by creatures underground such as worms create ways for plutonium to move. They also noted that there will almost certainly be plutonium movement when in water. The initial cleanup called for the drilling of wells around 903 Pad to do ultrafiltration studies to detect what kind of contamination may be at those depths. They found very low concentrations deep in the soil. Ongoing monitoring of groundwater is important for this reason.

Lisa Morzel closed the comments on the presentation due to time constraints and thanked DOE and the others for the briefing.

### **Public Comment**

Marianne Whitney said she studied biology and that plants uptake contaminants. Carl Spreng said plants only uptake contaminants if the contaminants are soluble.

Sandy Pennington stated future presentations should be more up to date and integrate the AME findings with the current data. Rita Dozul that the Rocky Flats wildlife refuge opened without current testing since the last testing on the flood plan was in 2013. Bonnie Graham-Reed stated she was concerned there are 20 times more particles in the air during a windy event. She asked why there is no air monitoring when these events occur. She is also concerned about erosion and how it is being monitored. She feels the wildlife refuge should be used strictly as wildlife sanctuary and not be used for human recreation.

### **Big Picture Review**

### February 6, 2017

#### Potential Business Items

- Elect 2017 officers
- Adopt resolution re: 2017 meeting dates

### Potential Briefing Items

- DOE quarterly update
- Original Landfill path forward
- CERCLA Five-Year Review

## April 3, 2017

Potential Business Items

• TBD Potential Briefing Items

- CERCLA Five Year Review
- TBD

#### Issues to watch:

- Uranium exceedances
- Plutonium levels at SW027
- Pu/Am levels at SW093
- Groundwater treatment systems
- Plutonium movement in soil column

Barb Vander Wall reminded the Board members that they will soon receive their notices regarding the designation of directors and alternates to the Board.

Lisa Morzel adjourned the meeting at 12:29 p.m.

Respectfully submitted by Chelsie Gonzalez.