

ROCKY FLATS STEWARDSHIP COUNCIL
Monday, September 14, 2015, 8:30 AM – 11:30 AM
Rocky Mountain Metropolitan Airport, Terminal Building, Mount Evans Room
11755 Airport Way, Broomfield, Colorado

Board members in attendance: Mark McGoff (Director, Arvada), Sandra McDonald (Alternate, Arvada), Lisa Morzel (Director, City of Boulder), Tim Plass (Alternate, City of Boulder), Deb Gardner (Director, Boulder County), Megan Davis (Alternate, Boulder County), Mike Shelton (Director, Broomfield), David Allen (Alternate, Broomfield), Libby Szabo (Director, Jefferson County), Joyce Downing (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Chris Hanson (Alternate, Superior), Emily Hunt (Alternate, Thornton), Bob Briggs (Director, Westminster), Jeannette Hillery (Director, League of Women Voters), Sue Vaughan (Alternate, League of Women Voters), Roman Kohler (Rocky Flats Homesteaders), Arthur Widdowfield (Director, Rocky Flats Institute & Museum), Nancy Newell (citizen).

Stewardship Council staff members and consultants in attendance: David Abelson (Executive Director), Barb Vander Wall (Seter & Vander Wall, P.C), Rik Getty (Technical Program Manager), Erin Rogers (consultant).

Attendees: Scott Surovchak (DOE-LM), Erika Valencia (DOE), Karen Reed (DOE), Padraic Benson (DOE), Bob Darr (SN3), Heather Brown (SN3), Judy Miller (SN3), Bob Nininger (Stoller), Kurt Franzen (SN3), Linda Kaiser (SN3), David Ward (SN3), Carl Spreng (CDPHE), Barbara Boyle (USFWS), Cathy Shugarts (City of Westminster), Judith Mohling (RMPJC), LeRoy Moore (RMPJC), Jonathan Socha (RMPJC), Mickey Harlow (citizen), Erik Sween (citizen), W. Gale Biggs (citizen), Anne Fenerty (citizen), Jon Lipsky (citizen), Mike DiPardo (citizen), Marc Roberson (citizen), Alesya Casse (citizen), Mike Fenerty (citizen), Frank Blaha (citizen), Lynn Siegel (citizen), Ted Ziegler (citizen), Cynthia Winslow (PCM), Evan Singleton (citizen), Patty Calhoun (Westword), Bob Fiehweg (environmental consultant), Quentin Young (journalist), Ron Heard (Rocky Flats Cold War Museum).

Convene/Agenda Review

Chair Joyce Downing convened the meeting at 8:30 a.m. The first order of business was introductions of Board members and the audience. David Abelson noted that the Executive Committee had reviewed the agenda for this meeting.

Consent Agenda

Bob Briggs moved to approve the June 2015 Board minutes and the checks. The motion was seconded by Tim Plass. The motion to accept the minutes and checks passed 13-0.

Executive Director's Report

David Abelson began his update by mentioning that the Board had purchased a sound system in order to provide better sound for the audience. He then noted that the 'community' members of the Board have expiring 2-years terms. The Board has opened the application process for the next term. In terms of notice, an announcement was sent to the Board's email list of approximately 120 people;

an ad was placed in the Denver Post; a notice was posted on the Board's website; and there was also a short article in the Boulder Daily Camera. Interviews will take place at the October 26th Board meeting, and the votes will be in open session.

David moved on to an update regarding the Board's development of a policy related to the Colorado Open Records Act. Barb Vander Wall (Board attorney) and David had been working on a draft policy, which they would be sending out the following day for the Board to review. The basic process will involve submitting a request via a form on the website. The policy will allow for the Board to charge for copy costs, but the goal will be to provide requested documents without charge. David noted that the only real challenge will be staff availability in terms of meeting requests, since the staff works remotely and only part time.

David next updated the Board on interactions with the US Fish & Wildlife Service (USFWS). The USFWS regional office scheduled a meeting with Joyce Downing and Lisa Morzel. Barbara Boyle from the regional office also called David with an interest in expanding USFWS engagement with the Stewardship Council and local governments. David also noted that USFWS had decided that there would be no prescribed fire within the Rocky Flats Refuge in 2016. Instead, they will evaluate mowing and spot spraying. In related news, the Refuge was in the process of undergoing a 'soft' opening. This meant that, while officially open, access would still be restricted. The opening was mentioned in the Daily Camera, with comments by David and Lisa Morzel. David noted that several years ago, when plans for the Refuge were being made, most assumed that the Refuge would be fully open by this point in time. He said that while some are surprised by the 'soft' opening, many who have been involved in Rocky Flats for years were surprised it took so much longer than anticipated. Lisa Morzel referenced an editorial by former Refuge Manager Dean Rundle, and pointed out that during the original discussions, Boulder, Boulder County and Superior had voted not to open the Refuge to the public. Instead, they had recommended that USFWS wait 15 years in order to review monitoring performance and other data. David explained that the cause of the delayed opening was simply budget constraints. He also pointed out that it had been 15 years since the Refuge Act was passed, and approximately eight since the Comprehensive Conservation Plan (CCP) was prepared.

Public Comment

Joyce Downing noted that there would be a three minute limit per comment.

Gale Biggs spoke first and provided a handout to the Board. He noted that it was a copy of letter he sent to EPA, as well as an attachment that went with letter. Gale noted that his primary concern was related to findings by Dr. Iggy Litaor that plutonium can migrate up to the surface through soil. He said he was worried about people breathing in particles of plutonium. Gale said that Dr. Litaor's data was confiscated and that he was terminated at Rocky Flats. He added that because there was no longer any air monitoring onsite, any problems would not be detected. He said that EPA's response to his letter explained their position that surface water monitoring was sufficient to confirm that conditions were safe.

LeRoy Moore spoke next and noted that he had sent a paper to the Stewardship Council. (It can be found at: http://www.rockyflatssc.org/public_comment.html) It was an analysis of public comments pertaining to the Environmental Impact Study (EIS) for the Refuge, prepared by USFWS. LeRoy said that 80% of the total commenters opposed opening the Refuge to the public. He said he published an op-ed in the Daily Camera last week about this topic. He provided copies, and asked

that it be posted on the Board's website. After the op-ed, a response was printed from Dean Rundle, previous Refuge Manager, who said that LeRoy's numbers were wrong in terms of public comments. Rundle had disputed some comments that came through the website, which he believed were not local citizens. He said that if these were removed, support for and opposition to opening the Refuge were about equal. LeRoy said he did look only at comments delivered in person, and there were still 67% opposed to opening the Refuge.

Mickey Harlow commented that she did not like that the citizen presentation was put at the end of the meeting, because people may leave before this time. She said this did not mesh with the Stewardship Council's role to be a conduit for public comments. Chair Joyce Downing said that they were not inclined to change agenda because this presentation was added on to the existing agenda. She thanked Mickey for her comment.

Host DOE Quarterly Meeting

DOE was on hand to brief the Board regarding site activities for first quarter 2015. DOE has posted the full report on its website. Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.). DOE was also asked to include an overview of the recent events at the Original Landfill (OLF).

Surface Water – Linda Kaiser

Linda began with a quick review of the map of locations and monitoring sites. She then reviewed performance monitoring at the Original Landfill (OLF) and Present Landfill (PLF). At the OLF on Woman Creek, all sampling results met water quality standards during the calendar year. At the PLF, routine quarterly sampling showed that vinyl chloride and concentrations were above the applicable RFLMA standards, triggering increased sampling frequency (monthly) per RFLMA evaluation protocols. Three consecutive monthly sampling results were above the standard. This prompted sampling at the former PLF Pond outfall to No Name Gulch (location NNG01). Vinyl chloride was not detected at NNG01, and the sampling frequency reverted to quarterly, per RFLMA protocols. Lisa Morzel asked what the source of vinyl chloride was. Linda said it was simply from the landfill, but did not have any more specific information. David Allen said it did not make sense how they were able to monitor downstream for vinyl chloride and use those results to discontinue increased sampling protocols in the area it was originally found. Linda said that was how the RFLMA protocols were designed.

Linda reported that all RFLMA Point of Evaluation (POE) analyte concentrations were non-reportable throughout the quarter. At the Points of Compliance (POC's), reportable 12-month rolling average uranium concentrations were initially observed at WALPOC on October 31, 2014. Uranium was no longer reportable at WALPOC as of January 31, 2015. All other RFLMA POC analyte concentrations remained below reporting levels throughout the quarter.

Shelley Stanley asked about the monitoring location at SW027. Linda noted that a sample bottle was currently being filled to check for a plutonium/americium exceedance. Shelley asked if it was expected to fill up during upcoming rains. Linda said she did not know, and added that the current amount was about half of what they need to do the analysis. Shelley noted that it would be a shame to lose that sample. Mickey Harlow asked how much water they needed for a sample. Linda said it was six liters. David Allen said that at SW027, part of the challenge was dealing with the variability in flows, which he sees as a flaw in the design of the procedures. He suggested that if a reportable

condition was found, they should keep it reportable until enough data became available to prove it was not. Linda said that was how she believed it was done.

Groundwater – Linda Kaiser

Linda noted that the primary objective of groundwater monitoring was the protection of surface water. She explained that the first quarter was a light sampling quarter. Ten Resource Conservation and Recovery Act (RCRA) wells were sampled and a statistical evaluation of the results will be presented in the annual report.

Non-RFLMA monitoring was conducted at the treatment systems. At the East Trenches Plume Treatment System (ETPTS), samples were taken to support the reconfiguration project (air stripper). Microcell and lagoon testing continued at the Solar Ponds Plume Treatment System (SPPTS).

ETPTS Reconfiguration Project work included:

- Completion of electrical work
- Completion of air-stripper enclosure
- Activation of air stripper January 16, 2015
 - Collected samples to confirm treatment effectiveness
 - Initial samples: Trichloroethene concentrations slightly above RFLMA target
 - Blower motor output increased
 - Subsequent samples met all applicable RFLMA standards
- Manufacturer cites this unit as the only fully off-grid, solar/battery air stripper known

Tim Plass noted that sampling results seemed to be leveling out at the ETPTS, and asked if this was expected to continue. Linda said they did expect it to continue, as these levels had been flat since January when the new system was turned on.

Site Operations -- Kurt Franzen

During quarterly sign inspections, all were found to be in good condition. Signs are a physical control under RFLMA.

At the OLF, three monthly inspections were performed, plus one special inspection due to more than 10 inches of snowmelt. Eight settlement monuments and seven inclinometers were also monitored. DOE also completed the project to reconfigure the East Perimeter Channel in mid-January. Cracking and slumping were observed in several locations on the east side of the OLF in March. Cracks were filled as feasible, based on soil conditions. CDPHE and EPA inspected the landfill on March 17, and the geotechnical engineer inspected the landfill on March 19.

Kurt noted that at the Present Landfill (PLF), one quarterly inspection was performed, as well as one special inspection due to snowmelt of more than 10 inches.

Shelley Stanley asked what was observed on the inclinometers at the OLF. Kurt said some were not functioning, so were no longer being monitored. He said that only one was truly functional. The evaluation moving forward will determine whether to continue to use inclinometers or something else to measure movement. Shelley asked if they were they being removed. Kurt said they were not. Jeannette Hillery asked if they were looking at other methods of measurement. Linda Kaiser noted that the inclinometers were operating correctly until the latest movement when the tubes broke.

These inclinometers will not be replaced. Linda said they were looking to evaluate a longer term path forward for the OLF and part of this will be to look at monitoring methods. Linda said that Rocky Flats had sent a statement of work to the engineering firm, which includes having them go back to 2005 and look at past work and everything that had occurred at the landfill since then. This will inform a range of potential options. David Allen asked which of the inclinometers did not fail. Linda said that she did not know, but guessed it was probably one in the middle of the landfill area.

Lisa Morzel asked what criteria were used to determine whether fences were in good condition. Kurt noted that, per RFLMA, the signs are the physical control that must be in place, not the fences. He said staff walks the entire perimeter to make sure signs are clear. They look at the fence incidentally, and repair it when needed. Lisa then asked why it took so long to submit the statement of work for the OLF, since slumping was first noted in April/May. Linda said that there were two efforts ongoing. First, they had developed a plan for restoring the functionality of the cap. That project is an interim project. Subsequently, the statement of work is intended to develop a longer term evaluation after interim repairs are complete. Lisa asked if plans were in place for fall rains and winter/spring precipitation, and asked when they would stabilize and better monitor the area. Linda said they would continue to monitor via inspections, and that they will not know what a contingency plan would look like until they see a specific need. Linda explained that the interim plans are intended to bring the OLF back to as stable as it can be without large scale interventions. They believe they brought it into the best condition possible for now. Lisa asked how they were currently monitoring the OLF. Linda said they were doing weekly visual inspections. No instrumentation was being used. Lisa pointed to the successful use of a berm in the landfill area, and asked if there were any plans to extend the berm. Linda said they were looking at that as a potential longer term plan, but not in the interim. Mickey Harlow asked if inclinometers were expensive to replace and if that was why they were not being repaired. Linda said they were not particularly expensive, but the more important factor was that they were used to measure very small movements, but they are currently seeing larger movements. Mickey said she would like to see a cost-benefit analysis of everything they have done since closure. Linda said that the upcoming evaluation will look at best option moving forward. She said they have always used the best options available at the time. Sue Vaughan asked if they would be addressing what was going on between berms 4 and 5. Kurt said that the interim solution was to reestablish a surface that would promote drainage.

Original Landfill Additional Information – Linda Kaiser

Linda next presented a supplement to her June 1 OLF update to the Board. Contact Record 2015-03 was an immediate response to precipitation effects at the OLF. Fieldwork began on August 18 for the interim project. All required actions have been documented. As part of this response, the site installed a drainage pipe by berm 1 to allow surface water to drain, and an additional berm above to catch and lead down to the West Perimeter Channel. All areas were being seeded and covered with coconut mat. The entire project was about 5 acres.

Above the East Perimeter Channel, a 12-14 foot vertical face (scarp) was regraded to promote drainage and surface runoff. Chris Hanson asked if any soil samples were taken. Linda said there were not. Shelley Stanley asked if they maintained the two-foot soil cover on the landfill. Linda said they did not, and that this was addressed through the contact record. They did not want to add additional weight to the landfill cover during the interim action. Lisa Morzel asked what the long term plan for restoring the cap was. Linda said that was what the geotechnical evaluation/statement of work was for. Shelley asked if they encountered any landfill material during the project. Linda said she was not sure; they did encounter some debris, however, most was found outside the waste

footprint area. The debris included small pieces of concrete and pipe. Lisa asked where the debris came from. Linda said it was hard to say, and added that all of the items were scanned by radiation control. Lisa asked if this was something they did regularly. Linda said they did, as part of the annual site inspection. Lisa said she would like to see a baseline from the annual inspection, compared to what they found at the OLF.

Tim Plass said he was concerned that the inclinometers were not on the correct scale of magnitude and wondered what that said about what has been happening in the area. Scott Surovchak noted that the inclinometers were installed long after the remedy was implemented. Bob Briggs asked where they got the fill for the project. Kurt said that only existing soil was used because of not wanting to add weight. Sue Vaughan said she was concerned about soil being reused and also the timing for the long term plan. She asked when this was expected. Linda said the plan would be available in late November for site review. Sue asked when they would make decisions about how to move forward. Linda said it would probably be within months. Mickey Harlow asked if the debris they found needed to be cleaned why it was in this sanitary landfill. Kurt clarified that all debris was deemed clear and clean. Gale asked what equipment was used to characterize the debris. Kurt said they used wipes and a radiological scanner.

903 Hillside – Linda Kaiser

Linda also discussed the 903 Hillside erosion control installation project, which led to contact record CR 2015-05. This project was discussed in an August DOE technical meeting with cities and the AMP meeting. Fieldwork was done in August. DOE installed wood straw where there was low vegetative cover, in high erosion areas and in the South Interceptor Ditch (SID). Wood straw consists of one-quarter to one-half inch pieces of wood that is applied using a straw blower to give better cover. It is less susceptible to wind, and prevents impacts of rain and hail. They also installed georidges, which are wattles stacked down the hill.

2016 Work Plan – Initial Review

David Abelson introduced two related agenda items that the Board would be reviewing at this meeting and adopting at the October 26th meeting – the 2016 work plan and 2016 budget. David referred to his memo in the Board packet, which outlined a plan to ‘stay the course’ in terms of Board activities, as well as delving into a few additional issues. He noted that the three most important additions were (1) details about the contaminated groundwater plume systems, (2) ongoing investigations into elevated actinide levels, and (3) work at the Original Landfill. He explained that the Board was already being regularly briefed on these issues, and they would continue to be a focus in the coming year.

David asked the Board to reflect on its activities from the past year and discuss whether the draft work plan made sense for the coming year. Lisa Morzel referenced the ‘soft opening’ of the Refuge. She asked if there was an opportunity to look at what was planned for a Refuge trail system under the CCP. David said the Board could look at this if it wanted to and reminded the Board that those activities are non-LSO activities. Lisa asked if these discussions were accommodated under the work plan. David said they were not directly in there and would add an item to the plan.

David posed the question of whether the newer members felt like they had enough background information on the range of issues being discussed, or if anything was missing. He noted that continued education of new members was being maintained in the work plan, as there will be some

new members next year as well. He said he would send a memo to the Board about key questions they had, and would use this to plan for coming year. Deb Gardner agreed that this type of education was needed. She said she did not understand the history of what was agreed upon for the Refuge. David said he would put together a memo explaining some of thinking at the time, including the interests of the different governments. Deb suggested that the Board also talk about Rocky Mountain Greenway as part of the trails discussion.

Jeannette Hillery said it was good for the Board to keep in mind which issues were defined as Local Stakeholder Organization (LSO) activities and which were non-LSO. David Abelson said there would be no DOE quarterly report at the April meeting, so that might be a good time to focus on Refuge issues and have a meeting comprised completely of non-LSO topics. Deb added that she would like to understand the Board's relationship with CDPHE and EPA, and its ability to gather additional information. David said he would address this in his next Executive Director's report. A member of the audience asked someone to clarify what LSO stood for. David concluded by noting that the draft work plan for the next meeting would not change, except for the addition of Refuge trail system and CCP topics.

2016 Budget – Initial Review

David Abelson explained that, as a unit of local government under the Colorado Constitution, the Stewardship Council must review the budget at one meeting and then hold budget hearings at a second meeting prior to adopting a final budget. The budget hearings will be held at the October 26th meeting, at which time the Board will adopt the budget. David explained that the budget was very similar compared to previous years, with some increased costs for the management contract. He said that annual expenses usually come in about \$25,000-30,000 under budget. He noted that the Board itself (not staff) is in charge of major expenditures. No changes were suggested to the draft.

CDPHE briefing on cleanup levels at Rocky Flats

Carl Spreng was asked to speak to the Board about residual contamination at Rocky Flats. He was provided with three primary questions to address:

1. What are the primary contaminants of concern (COC) and their remaining contaminant levels at Rocky Flats?
2. How do we know what the contaminant levels are?
3. What risks do these contaminants pose?

Carl began by displaying a 3-inch binder, which he explained was just one of 23 volumes of the Rocky Flats Remedial Investigation/Feasibility Study (RI/FS) report. He said the RI/FS looked at nearly 7 million records for all environmental media at the site, including 1,300,000 soil samples from 7,200 locations onsite. He said that a Comprehensive Risk Assessment made up the bulk of the RI/FS. This analysis looked at harm that could be done to humans and the environment due to contamination at the site.

The major components of the RI/FS included:

- Site Background
- Physical Characteristics of the Study Area
- Nature and Extent of Contamination:

- Soil
- Groundwater
- Surface Water and Sediments
- Air
- Summary/Conclusions of Comprehensive Risk Assessment
- Contaminant Fate and Transport
- Summary/Conclusions of the Remedial Investigations
- Remedial Action Objectives
- Detailed Analysis of Alternatives

The RI/FS included a detailed evaluation of the contaminants that were found onsite, which was narrowed down to identify the primary ‘contaminants of concern’ for the various media.

Carl moved into a discussion of how risk was defined at the site. He explained some key components of radiation risks:

- Ionizing radiation
 - alpha particles
 - beta particles
 - gamma rays
- Risk of harm is dependent on both the dose and the dose rate
- Acute (high level) exposure
- Chronic (low level) exposure

Carl explained that the use of risk concepts in the standards allowed for adding up risks from different sources, as well as comparing and contrasting them. He also spent some time discussing radiation doses from various sources. He showed that Colorado residents receive a typical dose that is almost twice the national average, due to natural sources of radiation in the environment. He also explained how doses (expressed in REM) correspond to various actions (mammograms, CT scans, smoking, etc). His charts also showed how these doses corresponded to increased cancer risk. Carl explained how CERCLA (the federal law designed to clean up sites contaminated with hazardous substances) was based on risk levels corresponding to the calculated increased risk of contracting cancers. The ‘target’ risk range for these cleanups was between 1 in 10,000 excess risk of contracting cancer to 1 in 1,000,000.

When determining cleanup levels for Rocky Flats, input was used from many sources, including:

- Actinide Migration Evaluation (AME) advisory group
- Stakeholder Focus Group
- RSALs Oversight Panel
- RSALs Working Group
 - Regulatory analysis
 - Computer modeling
 - RSAL calculations
 - New scientific information
 - Determining cleanup levels at other sites

Carl said that, after all of this study, they ended up using both dose and risk concepts to determine cleanup levels. The number that was agreed upon under this model was 116 picocuries per gram (pCi/g) for plutonium. After that number was decided on, a Citizen Oversight Panel recommended 35 pCi/g after employing a more conservative scenario, which involved calculating the risks/dose based on someone living on site, eating food grown onsite and other similar activities. This community-led group also used different computer models. While under no legal requirement to do so, DOE and the regulators made the decision to lower the cleanup standard to 50 pCi/g. LeRoy Moore, a member of the Citizen Oversight Panel, endorsed the number but noted that the Rocky Mountain Peace and Justice Center thought the allowable dose should be lower, and that to achieve a lower dose, the plutonium cleanup level should be 10 pCi/g down to zero.

Carl then reviewed how the cleanup was performed, including excavation at the 903 Pad. He showed graphs depicting how confirmation samples were used in order to determine whether the standard was reached. Once cleanup was complete, the average residual plutonium contamination in surface soil in the Refuge area was 1.1 pCi/g; and in the DOE-controlled area it was 2.3 pCi/g. In terms of individual surface soil concentration samples after cleanup, the highest found in the refuge was 19 pCi/g; and in the DOE-controlled area, it was 49 pCi/g. At the five foot deep level, the highest sample was 183 pCi/g. As part of the cleanup, some of the subsurface infrastructure was left in place after the remaining contamination was 'fixed' to the surfaces. Carl said that while most of the process waste lines were removed, some were flushed, grouted and left in place. In terms of offsite areas, the highest sample found was 6 pCi/g. Carl noted for comparison that the State construction standard was 1 pCi/g.

He explained that the final decision for the Refuge portion was based on an abundance of data and risk assessments demonstrating that risks to future refuge visitors and workers were extremely low.

Nancy Newell asked Carl to define 'surface soil'. Carl said it was the top six inches of soil. He added that during remediation, they applied the surface soil standard all the way down to three feet. Nancy asked if beryllium was monitored. Carl said it drove some of the remediation, but was mostly contained in buildings as opposed to being found in the environment. Lisa Morzel talked about the concept of bioturbation, and how freeze-thaw cycles could result in deeper soil making its way to the surface. She asked if there were any plans to look at this over time. Linda said that the site inspections do look for this sort of occurrence. Lisa asked if they were thorough enough to notice fine details, and added that she hoped there was discussion on regular basis about this. Carl said that most physical drivers actually drive plutonium down, not up. He added that this was a good question to bring up during the five-year review process. David Abelson noted that he and Rik Getty asked DOE and CDPHE this question a few years ago. He noted that bioturbation/churning of soil was taken into account as one of the evaluation criteria for cleanup levels. Carl noted that data from Iggy Litaor's soil profiles showed that 95% of the contamination at Rocky Flats was concentrated in the first few inches of soil, with a little blip about six inches down. Deb Gardner asked which studies showed that plutonium was primarily driven down into the soil. Carl said he could provide the information, but it included studies by Iggy Litaor, CSU and others. Sue Vaughan suggested that the Stewardship Council add a white paper to the website to address questions such as this that are very common. David Abelson agreed.

Tim Plass commented that while the remedy focuses on surface water, there was still significant community concern about airborne contamination. A common concern he heard was that there may have been a discrepancy in the particle sizes that were looked at and monitored for at the site. Carl

said he was not an expert regarding airborne particle size; however, after decades of air monitoring at site, CDPHE and DOE stopped air monitoring after closure because of lack of detection of any airborne contamination. He said numbers were recorded using instruments, filters and methodologies used nationwide. National experts were consulted as well, and the results were always significantly below standards. He added that the vast majority of source material had been removed from the site.

Judith Mohling said she believed that one of main problems at Rocky Flats was alpha particles being carried by dust. She said that the RMPJC had hired a person to analyze air and dust samples, and that it had been easy to find plutonium on plants. Carl re-iterated that the air was monitored for decades, and also noted that finding plutonium along Indiana Street was not a surprise because it was well-documented and below standards. Gale Biggs said that the standard high volume air monitoring samplers used at the site had missed a range of particles that had been released. He said that he had talked to the Colorado Air Pollution Control Division, and they told him that they did not have the capability or the budget to develop appropriate monitors for different size particles. Carl again noted that he was not an expert in this field, and that the vast majority of the source was removed. Another member of the audience said her father worked in the air pollution control field, and that she recalled him saying the same things as Gale Biggs was.

Briefing by Anne Fenerty and Jon Lipsky

Note: This presentation and accompanying information can be found at http://rockyflatscc.org/public_comment/20150914%20RFSC%20-%20Fenerty%20Lipsky%20Rebuttal%20Cover%20Letter.pdf

Anne Fenerty and Jon Lipsky were on hand to speak to the Stewardship Council. The Board agreed at the June meeting to Anne and Jon's request to brief the Board on concerns they had with Scott Surovchak's April 2015 overview presentation to the Stewardship Council. Anne began by thanking the Board and Executive Committee for allowing them to make this presentation.

She started with a summary of Rocky Flats' history. She explained that it began operations in 1952 to produce plutonium-239 and beryllium components for the thermo-nuclear bomb. She said that Plutonium-239 is considered the most toxic substance known, with a half-life of over 24,000 years. She noted that respirable particles of airborne plutonium were released into the environment at Rocky Flats. She referred to correspondence in 1986 by a DOE attorney documenting 'Patently Illegal Activities' at Rocky Flats. Anne then spoke about the criminal investigation, initiated by the FBI and EPA in 1989, which began with a raid at Rocky Flats for U.S. environmental law violations. Rocky Flats then became a Superfund site, which she said was a designation for the worst contaminated places that pose major dangers to the surrounding population. She noted that the site contractor, Rockwell International, agreed to plead guilty to four felonies and six misdemeanors in 1992. Anne claimed that a proper CERCLA investigation with 'meaningful community involvement' was inhibited or denied because of destroyed and hidden documents.

Anne went on to say that upon closure, the Superfund law (CERCLA) mandated that the cleanup follow environmental laws. She noted that in 2004 independent scientists were critical of the planned cleanup, and that in spite of their recommendations, DOE's plan was to do cleanup in the cheapest and fastest manner. She criticized the use of 'Accelerated Action' decisions, as well as the concept of 'Adaptive Management'. She said many of these practices were not usually used at nuclear sites and not at places where the worst contamination was found.

Jon Lipsky spoke next and introduced himself by saying that he previously worked for the FBI and had served the search warrant at Rocky Flats in 1989. He said he had also been involved in court cases as an expert witness, and was working with former workers. He said he would be highlighting issues related to plutonium-239 and beryllium. Several of his slides showed historical documents from the site. One document from 1982 was an internal assessment of the Building 771 exhaust plenum, noting it was inadequate and had the potential to cause ‘widespread contamination’. Problems that were noted included ‘numerous leaks at both stage filter frames; deteriorated cement in floors and ceiling; ceiling and floors leaked; ground fault system inoperative’. He also showed a photo from a Rocky Flats Christmas party in Building 444, in which beryllium was used. He pointed out several safety concerns, including having no respirators, no booties, wearing personal clothes, facial hair, and no supervisory control. He noted that OSHA has recognized a correlation between beryllium and lung disease.

Jon moved on to a discussion of problems he found with slides presented by Scott Surovchak to the Stewardship Council in June. He said he contested 22 of the 60 slides that Scott had presented. The first statement Jon disputed was that the buffer zone was ‘essentially uncontaminated’.¹ Jon provided several pieces of information which he said would demonstrate that this statement was not true. He said there were both accidental and intentional historical releases of plutonium-239, which led to contamination in the air, soil and water. He argued that EPA and CDPHE disregarded or made unavailable evidence in favor of the DOE and not the public. He said that DOE-sponsored document destruction contravened its responsibility and nuclear worker/public right-to-know. He contended that the three current plume treatment systems (Solar evaporation ponds, East Trenches and Mound) were replacing legally required remedial action plans at an additional cost to the taxpayer. He argued that present controls do not protect human health and the environment, and in fact threaten human health on the Refuge. He said that the Rocky Flats Superfund site and National Wildlife Refuge required independent verification and study of contamination, and that public access should not be allowed.

Jon reviewed the work of a number of scientists related to Rocky Flats. He said that Dr. Edward Martell exposed offsite contamination from the 1969 fire. He also presented a ‘kriging map’ developed by Krey and Hardy, which depicted varying levels of contamination east of Rocky Flats. Jon commented that Krey-Hardy’s calculations suggested a concentration of 49,950 pCi/g on the east side of Rocky Flats.² Jon also mentioned Dr. Carl Johnson, who demonstrated elevated cancer risks

¹ RFSC note: Scott Surovchak’s (DOE) April 2015 presentation to the Stewardship Council stated in part “Peripheral Operable Unit (POU)...essentially uncontaminated former buffer area.” (Slide 53) The POU is the Rocky Flats refuge. In addressing Scott’s comment, Jon refers to the former “buffer zone.” There is overlap between the “buffer zone” and the POU, but the boundaries are not the same. A number of sites that Jon and Anne discussed—the Solar Evaporation Ponds, pondcrete storage area, Mound site, East Trenches, Original Landfill, and 881 hillside, among others—are part of the Central Operable Unit (the DOE-managed lands), not the POU.

² RFSC note: Following the meeting, Anne Fenerty confirmed that the figure 49,950 pCi/g (picocuries/gram) is inaccurate. She told Stewardship Council staff that the correct value should have read 49,950 pCi/square meter. Krey-Hardy presented the value of 1,850 bequerels/square meter. As CDPHE discussed with the Stewardship Council at a prior meeting, 1,850 bequerels/square meter equates to approximately 5 pCi/g. At Rocky Flats, plutonium values in soil are regulated based on pCi/g, not pCi/square meter.

due to plutonium exposure. Another scientist mentioned was Dr. Harvey Nichols, who raised public awareness of Plutonium-239 particle size and the lethal amount emitted.

Next, Jon moved on to a discussion of several examples of how contamination ended up in the environment at the site. He spoke about the solar evaporation ponds, which leaked into the groundwater. He said the ponds continued to be used after their RCRA closure. The contaminants in this area were enriched and depleted uranium, VOCs, and nitrates, with a pathway to Walnut Creek. Jon next highlighted a court case (McKay/Ackard) in which \$10 million was awarded based on plutonium contamination on 2,000 acres contaminated by spray irrigation. Jon criticized DOE's handling of the closure of the solar ponds, saying that closure was incomplete and that DOE decided on a treatment system over removal of the contamination. He noted that part of the criminal charges against Rockwell in 1992 included improper use of the Solar Ponds. Jon also described what he called the 'pondcrete debacle'. The site attempted to remove sludge from the solar ponds and mix with concrete to form solid blocks of waste. The blocks did not solidify and led to continued leakage of these materials. Rockwell also pled guilty to storing the blocks without proper permits. Jon presented various documents related to the nature and effects of contamination related to this issue.

The next topic covered was the practice of 'spray irrigation' at the site. Jon said that Pond B-3 (on South Walnut Creek) was a discharge point for effluent from the Sewage Treatment Plant, and that this effluent was also spray irrigated in the buffer zone and 'next to radioactive/hazardous waste burial sites'. He said that the runoff from this irrigation affected Walnut and Woman Creeks, groundwater and what is now the Refuge. He said these practices were part of the 1992 misdemeanor pleas by Rockwell International.

Another area Jon discussed was the 881 Hillside and East Trenches. He said radionuclides and VOCs were contaminants in this area, which was a pathway to Walnut and Woman Creeks. He said DOE's solution again was ongoing treatment (East Trenches Plume Treatment System), and not removal of the contamination.

Jon brought up the potential USFWS plans for a prescribed burn in the Refuge area. He said that CDPHE issued a smoke permit in 2015, even though USFWS did not have specific plans in place.

Jon next spoke about issues related to 65 boxes of documents related to Rocky Flats that were sealed by the Justice Department. While the U.S Attorney for Colorado had assured Congressman Udall in 2004 that there was nothing in those files that was not already known by the agencies involved in the cleanup, Jon was suspicious of why those documents remain sealed and unavailable. Along these lines, Jon showed copies of other documents related to contamination at the site that led him to question safety.

Anne resumed her part of the presentation by focusing on her concerns related to the original landfill (OLF). She noted that she was on an independent committee that looked at plans for closure of the landfill. She described the OLF as an unlined dump used until 1968 that was located in a landslide and floodplain area, uphill from Woman Creek. She said the area was four stories deep and over 15 football fields in size. She quoted Dr. Dwyer of DOE's Sandia lab as saying, "Groundwater passes through the subsurface waste while surface water passes over it toward Westminster and Broomfield. Contaminants included VOCs, organic compounds, metals and radionuclides." He recommended that a 7-layer RCRA 'C' cap be used as part of closure. She said that, instead, DOE called it a municipal dump and covered it with two feet of soil. She noted that the result of this 'unsatisfactory closure' has

been a long series of Contact Records between DOE and CDPHE as attempts are being made to fix leaking, slumping and contamination of Woman Creek.

Anne said she was also involved in a groundwater plan evaluation performed by GEI Consultants. She said this analysis determined that it was 'questionable if [the current] remedies provide sufficient risk reduction to protect human residents of the surrounding cities'. She brought up a number of concerns related to the effectiveness of groundwater treatment and monitoring at the site.

She next spoke about her concerns related to the soil sampling methodologies used at the site to verify cleanup levels. She pointed to two studies that both questioned why the MARSSIM radiological soil survey was not used at Rocky Flats. She said this was the method accepted by NRC, DOE, DOD and EPA. Anne suggested that this discrepancy might explain why DOE and the regulators are so confident that their numbers prove that the site is safe for the public and environment.

Anne went on to highlight several problems she saw with the 'closure' of Rocky Flats. These included her belief that accelerated actions and adaptive management were in violation of CERCLA; that the remaining contamination, including on the Refuge, consists of respirable particles that can cause cancer; and that the true extent of contamination was not known due to problems with DOE ducts and filter systems.

Lisa Morzel thanked the presenters and requested that they share their slides with the Board. Mickey Harlow thanked the Stewardship Council for allowing this rebuttal and also thanked Jon and Anne for their presentation.

Anne encouraged attendees to communicate with their lawmakers about Rocky Flats issues. Her last slides presented suggestions of issues to discuss, including preventing prescribed burns in the Refuge; restricting public access to the Refuge; encouraging third party independent verification of Rocky Flats contaminant standards; and requesting additional remediation. She concluded by encouraging the Stewardship Council to seek independent opinions on these issues.

Public Comment

Ted Ziegler said he was a former worker at Rocky Flats, and served as a safety representative for 13 years. He said he wanted to back up some of the comments made by Jon Lipsky. He said he experienced quite a few years of brush-off on safety issues, and that EPA and CDPHE had overlooked many violations on the site. He said he had accumulated thousands of documents that back up everything that had been presented, and that he would share these with anyone who was interested. He also handed out a document to be posted on the website (http://rockyflatssc.org/public_comment/20150914%20Ted%20Ziegler%20-%20RFSC%20Public%20Comment.pdf)

Big Picture Review

October 26, 2015

Potential Business Items

- Approve 2016 Budget
- Approve 2016 Work Plan
- Conduct Community Member interviews

Potential Briefing Items

- DOE Quarterly update

February 1, 2015

Potential Business Items

- Elect 2016 Officers
- Adopt Resolution re: 2016 meeting dates

Potential Briefing Items

- DOE Quarterly Update
- TBD

Member Updates

Murph Widdowfield said that the Rocky Flats Museum had given DOE the opportunity to use part of their collection for the future visitor's center. He said DOE only took about 25% of the collection. He said that the Museum Board was continuing to operate, and that they do a lot of classes and good for community.

David Allen said that Broomfield had to replace a culvert at Walnut Creek along Indiana. Jon Lipsky asked if the soil was sampled. David said it was not.

Jeannette Hillery said that local Leagues of Women Voters would be hosting candidate forums in advance of upcoming elections. Sue Vaughan said that the Jefferson County LWV had formed a panel that was working on making more effective school board members.

Bob Briggs announced that Westminster was hosting four candidate forums.

Issues to watch:

- Original landfill
- Uranium exceedances
- AMP sampling

The meeting was adjourned at 12:04 p.m.

Respectfully submitted by Erin Rogers.