

ROCKY FLATS STEWARDSHIP COUNCIL

Monday, February 1, 2021

8:30 – 10:15 AM

Virtual Meeting via WebEx

Board members in attendance: Nancy Ford (Arvada), Sandra McDonald (Alternate, Arvada), Summer Laws (Alternate, Boulder County), Sam Weaver (Director, City of Boulder), Deven Shaff (Director, Broomfield), Heidi Henkel (Alternate, Broomfield), David Allen (Alternate, Broomfield), Jim Dale (Director, Golden), Andy Kerr (Director, Jefferson County), Pat O'Connell (Alternate, Jefferson County), Joyce Downing (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Sophie Porcelli (Alternate, Northglenn), Mark Lacis (Director, Superior), Jan Kulmann (Director, Thornton), James Boswell (Alternate, Thornton), Kathryn Skulley (Director, Westminster), Rich Seymour (Alternate, Westminster), Trea Nance (Alternate, Westminster), Jeannette Hillery (Director, League of Women Voters), Linda Porter (Alternate, League of Women Voters), Roman Kohler (Rocky Flats Homesteaders), Murph Widdowfield (Rocky Flats Cold War Museum), Kim Griffiths (Director/Citizen)

Stewardship Council staff members and consultants in attendance: David Abelson (Executive Director), Melissa Weakley (Technical Program Manager), Barb Vander Wall (Setzer & Vander Wall, P.C)

Attendees: Andy Keim (DOE-LM), Gwen Hooten (DOE-LM), Nicole Lachance (Navarro), Dana Santi (Navarro), John Homer (Navarro), John Boylan (Navarro), George Squibb (Navarro), Jody Nelson (Navarro), Padraic Benson (Navarro), Harry Bolton (Navarro), Ryan Wisniewski (Navarro), Chris Stewart (Navarro), Faith Anderson (Navarro), Lindsey Archibald (CDPHE), Lindsey Masters (CDPHE), Laura Hubbard (Broomfield), Rick Green (RSI Entech), Lesley Cusik (RSI Entech), Shirley Garcia, Lynn Segal, Giselle Herzfeld

Convene/Agenda Review

Joyce Downing convened the meeting at 8:30 am. She noted that the Executive Committee met to discuss today's agenda.

Public Comment: None

Elect Stewardship Council Officers for 2021: The current Board Officers—Joyce Downing as Chair, Jan Kulmann as Vice Chair, and Jeannette Hillery as Secretary Treasurer—all expressed interest in continuing in their positions. David Abelson asked if anyone else was interested in serving in one of these positions. No one responded, so the Board moved to a vote.

Mark Lacis moved to approve Joyce, Jan and Jeannette as Officers. The motion was seconded by Jim Dale. The motion passed 13-0.

2021 Meeting Schedule and Notice Provisions: Each year, the Board adopts a resolution establishing the meeting dates for the year. David noted that the proposed 2021 meeting dates are February 1, May 3, June 7, September 13, and November 1. The Board will continue to meet virtually through at least the June meeting, and will make decisions about future in-person meetings prior to the September meeting.

Nancy Ford moved to approve the 2021 Meeting Schedule and Notice Provisions. The motion was seconded by Deven Shaff. The motion passed 13-0.

Consent Agenda: The consent agenda included approval of the minutes from the October 26, 2020, meeting and the checks written since that meeting.

Roman Kohler moved to approve consent agenda. The motion was seconded by Jeannette Hillery. The motion to accept the minutes and checks passed 13-0.

Executive Director's Report: David Abelson reported on new Board members from member governments -- Andy Kerr (Jefferson County Commissioner), Claire Levy (Boulder County Commissioner), Bill Fisher (City of Golden Councilor), and Trea Nance (City of Westminster staff).

Next, David updated the Board on the status of the Triennial Review. Every three years, the local governments represented on the Board must pass resolutions reaffirming their interest in continuing to serve on the RFSC for another three-year period. All local governments passed resolutions.

DOE Legacy Management has awarded a new five-year support contract for Rocky Flats to RSI Entech. This is the third Legacy Management lead support contractor since the office was created in 2005. David noted that one of the most important factors for the Stewardship Council pertaining to this new support contract will be whether the key personnel at the site will continue in their roles. He will keep the Board updated as more is known about these decisions.

David spoke a bit about how a change the White House administration may affect the situation at Rocky Flats. He said that the good news was that Carmelo Melendez will be continuing as the Director of the Legacy Management office.

Barb Vander Wall noted that her office would be distributing Oaths of Office to the Board members electronically.

Host DOE Quarterly Meeting: DOE was on hand to brief the Board regarding site activities for the third quarter of 2020 (July – September). The full report was posted on https://www.lm.doe.gov/Rocky_Flats/Documents.aspx Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.).

Surface Water Monitoring – George Squibb

Quarterly reports are required under the Rocky Flats Legacy Management Agreement (RFLMA). The Rocky Flats Site remedy components include:

- Maintain two landfill covers
- Maintain three groundwater treatment systems
- Monitor surface water and groundwater
- Maintain physical controls
 - Signage
 - Access restriction
- Institutional controls

- No occupied building construction
- Excavation and soil-disturbance restrictions
- No surface water consumption or agricultural use
- No groundwater wells, except for monitoring
- Protection of landfill covers and engineered remedy components

George reviewed the surface water monitoring locations at the site.

At the Original Landfill (OLF), routine surface water sampling in Woman Creek, downstream of the OLF (GS59), during the third quarter showed mean concentrations for all analytes below applicable RFLMA water quality standards.

At the Present Landfill Treatment System (PLFTS), the system effluent arsenic concentration was 22 micrograms/liter ($\mu\text{g/L}$), exceeding the standard of 10 $\mu\text{g/L}$. According to RFLMA protocols, sampling frequency was increased to monthly. Arsenic was measured at 4.4 $\mu\text{g/L}$ in the subsequent monthly sample (below the standard of 10 $\mu\text{g/L}$) and the increased sampling frequency was discontinued. Quarterly concentrations for all other analytes were below applicable RFLMA standards.

No Point of Evaluation (POE) or Point of Compliance (POC) analyte concentrations were reportable during the third quarter.

Shelley Stanley asked about the flows at GS59 and possible drought conditions. George noted that flows are down across the site. GS59 was dry for a couple of months over the summer, which is not the norm. The only location that flowed throughout the year was SW093, but this was at a very low rate.

David Abelson asked Board Members to offer the reasons behind the questions they ask as a way to help inform the Board as a whole.

Deven Shaff followed up on Shelley's concerns about drought. He asked what was expected in terms of water quality once more water returns to the site. George said they generally do not see impacts on concentrations due to drought. Uranium mobility might be affected temporarily but would not necessarily result in reportable conditions.

Nancy Ford asked what conditions led to increased arsenic levels at the PLFTS. George said this was groundwater seepage coming out of the Present Landfill. The treatment system was not designed to treat metals. Arsenic is naturally occurring, and levels are variable and predictable within an expected range. Nancy also asked whether drought conditions affect seepage from the landfill. George said groundwater effects of drought take longer to appear, and they have not seen anything yet.

Groundwater Monitoring – John Boylan

John first reviewed the RFLMA monitoring network, which includes:

- 10 Resource Conservation and Recovery Act (RCRA) wells (sampled quarterly to evaluate potential impacts from OLF and PLF)
- 9 Area of Concern (AOC) wells and one Surface Water Support location (sampled semiannually). These are located in drainages downstream of contaminant plumes and are evaluated for plumes discharging to surface water

- 27 Sentinel wells (sampled semiannually). These are downgradient of treatment systems, edges of plumes, and in drainages, and are used to look for plumes migrating to surface water and treatment system problems
- 42 evaluation wells (sampled biennially). These are located within plumes, near source areas, and interior of Central Operable Unit (COU) and are used to evaluate whether monitoring of an area or plume can cease
- 9 treatment system locations (seven are sampled semiannually, and two are quarterly)

To meet RFLMA sampling requirements, 10 RCRA wells were sampled during the quarter. Analytical results were generally consistent with previous data. Data will be evaluated and discussed as part of the 2020 annual report. Extra samples were collected to address specific needs. One confirmatory sample was collected from Evaluation well 33502 to check anomalous results from a second quarter sample. Those results, showing unusually low concentrations, were confirmed.

Treatment System Activities included the following:

- Mound Site Plume Collection System (MSPCS), East Trenches Plume Treatment System (ETPTS), Solar Ponds Plume Treatment System (SPPTS), and PLFTS
 - Routine maintenance at all systems
 - Completed annual inspection of power components at MSPCS and SPPTS
- Continued planning MSPCS transfer line repair project
- Completed solar/battery project at ETPTS
 - Replaced 96 lead-acid batteries with 8 lithium-iron-phosphate batteries
 - Retained 6 lead-acid batteries to power heaters for new batteries
 - Replaced broken glass panes on solar panels
 - Reconfigured wiring and replaced other power components to streamline power facility
- SPPTS
 - Design for passive drain in the earthen-floored “SPIN Vault” nearing completion. Fieldwork scheduled for fourth quarter of 2020.
 - Replaced 2 lead-acid batteries with 2 newer ones removed from ETPTS
- Evaluating groundwater conditions west of the existing SPPTS groundwater collection trench
 - Installed 9 piezometers
 - Data collection began in December 2020

David Allen asked whether there was a risk of the slump damaging the SPPTS. John said that was the main reason that they regraded this area in 2017 and are currently investigating the slump via piezometers, inclinometers and other methods. A geotechnical engineering firm is evaluating the data and reviewing options. David asked if the slump movement was shallower or deeper than the drain. John said that the depth of the slump varies from ground surface to deeper than the drain, but he could get back to David with additional information. Shelley Stanley said she was trying to fully understand the purpose of the new piezometers at the SPPTS. John said when the treatment system was installed, there were infrastructure components that blocked further construction of the collection trench to the west. There is a wetland area off the western end of the trench, so they are looking at whether groundwater in this area should be collected and added to the treatment system. She also asked whether they were sampling for water quality from the piezometers. John said they were sending some samples out for testing. They have found there is elevated nitrate and uranium which are lower than the

treatment system influent but higher than the RFMLA standard. Shelley asked whether the report regarding the slump would be available for public review. John said that because it contains cost and design information, it may not be available.

Site Operations – Jody Nelson

Quarterly sign inspections are a physical control under the RFLMA agreement. Signs were inspected on July 10 and all were found to be in good condition and legible.

Monthly inspections are required at the Original Landfill. These took place July 20, August 18, and September 15. A 2- to 3-inch diameter animal burrow was found on the upgradient side of western Berm 7. The depth could not be determined, but there was no evidence of recent inhabitation and no reappearance in subsequent inspections after filling in the opening.

Settlement monuments were surveyed on August 31. Vertical settling was within design limits. Monument E was removed in the second quarter and reinstalled slightly uphill in the third quarter. A new baseline was established during the third quarter survey. Monument F shifted 0.2 feet as a result of the earthwork and compaction activities in the immediate area. Vertical settling was still within design limits. A new baseline was established for this settlement monument.

Other work at the Original Landfill included the following as part of the stabilization project:

- All 267 anchors installed, tested, locked off
- Anchor, perimeter, and East and West Interceptor trench drains complete
- Temporary dewatering wells no longer required, abandoned
- Berm construction, perimeter channel regrading, and cover placement complete
- Placement of turf reinforcement matting and erosion control blankets complete
- Project was completed, with all equipment and support infrastructure demobilized by September 1
- East Subsurface Drain continues to function as designed

A series of photos of work on the landfill hillside were included in the presentation.

At the Present Landfill, the quarterly inspection was performed on August 11. The Present Landfill is in good condition.

Next discussed were the Former Building Areas 371, 771, 881, and 991. The quarterly inspection of these areas was complete on September 24. The depression located near the southeast corner of former building area 881 (December 2019) increased in depth by approximately 3 inches. The diameter was unchanged (~3.3 ft depth; ~3 ft diameter).

Jody next updated the group on the North Walnut Creek Slump. Data collection from piezometers continued where possible. Slump monitoring points are periodically surveyed. No substantial change was seen in August. Maximum movement was approximately 3.5 feet vertically. The main scarp crack remains open.

Jody reviewed the status of the North Walnut Creek Slump and West SPPTS Investigation – September 2020:

- Additional drilling occurred as part of furthering the geotechnical investigation and stabilization efforts to evaluate the slump on the North Walnut Creek Hillside
 - A total of 3 inclinometers and 1 piezometer were installed on the hillside to provide supplemental data and monitoring of slope movement
 - Inclinometers are located to potentially allow extended monitoring of the hillside
- In conjunction with the slump effort, a series of piezometers were installed west of the SPPTS Collection Trench for assessment of groundwater condition outside of the existing treatment system
 - A total of 8 piezometers were installed to a depth of 30 feet below grade surface

David Allen asked what the cost was to regrade the hillside and install anchors as part of the OLF stabilization project. Jody said he did not know but they would follow up with him. Deven Shaff asked, in terms of the North Walnut Creek slump, whether they were more concerned about the collection trench or the other side of the slump. Jody said most of the concern was about possible damage to the trench. Shelley Stanley asked whether there was any weed management completed during the third quarter. Jody said only a very limited amount.

Ecology – Jody Nelson

Jody reviewed third quarter ecology work at the site. This work included:

- Revegetation monitoring
- Preble’s mouse mitigation monitoring
- Wetland monitoring
- Forb nursery monitoring
- Habitat enhancement planting survival counts
- Photopoint monitoring
- Herbicide applications
- Wetland/vegetation/weed mapping
- Prairie dog town surveys/counts – all towns near COU are abandoned

Nancy Ford asked whether Jody knew for sure that a plague had affected the prairie dog towns on the site. Jody said, based on information from the US Fish and Wildlife Service, that appears to be the case. There was a confirmed plague that occurred in 2009, which also travelled through the Westminster open space.

Kim Griffiths asked what the elk herd count was and whether collaring and tracking has occurred. Jody said that USFWS had done the collaring and tracking. Jody said he had not seen the data. He said he had heard from USFWS that the herd generally stays onsite. Jody said he had counted roughly 250-260 elk at one time.

David Abelson read a question from the chat. Someone asked how they knew that the prairie dog deaths were not related to radiation. Jody said that the lifespan of the prairie dogs was only a few years,

and any effects of radiation would likely take much longer to develop. Giselle from the audience added a follow up on her question that David just read. She wanted to know if there had been any extensive studies on human exposure to radiation at Rocky Flats. David Abelson asked her to email her question and he would forward it to DOE. He added that there have been extensive studies done on high dose exposure on humans, but there was less information on low dose exposures. Standards at Rocky Flats were based on the linear no threshold methodology to account for lower dose effects. David said more recent studies on nuclear bomb survivors in Japan who received lower doses showed them to have longer lifespans than the general population. David said the theory explaining this ('hormesis') is that humans have adapted to low levels of radiation.

Nancy Ford asked whether the studies David mentioned had looked at other variables than the level of exposure which could explain the longer lifespans, and whether the population near Chernobyl had been looked at. She said she would be skeptical of using one study as a reference. David said that's why the site continues to use the more conservative model.

Shelley Stanley asked whether the elk herd was approaching the site's carrying capacity. Jody said he did not know, but that the USFWS was looking at this question.

Board Roundtable: Deven Shaff requested that the Stewardship Council continue to try to get briefings from USFWS. He also requested information be presented from DOE regarding how they are planning for climate change related to their efforts at Rocky Flats. David Abelson clarified that the reason USFWS has not been involved in Stewardship Council meetings is due to a lawsuit from the Town of Superior against USFWS. The Justice Department has prohibited the USFWS from briefing if representatives from Superior will be in attendance. David said he would check in and see whether anything has changed with the new administration.

Nancy Ford said she had been waiting since the end of September to get answers from CDPHE regarding studies from June 2020. She said this was troubling. She also posed the question of whether it would be better to use goats to remove debris from the site rather than controlled burns. She wondered whether this had been considered and whether the Board could look into this. David noted that this had in fact been discussed. He said the use of prescribed fire was one of the most controversial issues at the site, though a few members of the public also question the use of goats, saying they spread contamination and that plutonium uptake is harmful for the goats. He recommended that if the Board wanted to discuss this topic, it must be handled very carefully, with opportunities for community members to appeal directly to their governments prior to any discussion at the Stewardship Council.

Nancy referred to an article addressing some of the future long-term funding challenges within DOE due to cleanup obligations at so many nuclear sites. David asked Nancy to pass along that article. He noted that there are no significant short-term concerns regarding the Rocky Flats budget. However, he went on to address long-term concerns regarding management of hazardous sites in general. He said keeping Rocky Flats open to the public keeps the memory of its history alive. It is very important to maintain focus on sites like this in order to ensure that the government continues to provide necessary funding into the future.

Big Picture/Additional Questions/Issue Identification

May 3, 2021

Potential Briefing Items

- Climate Impacts, Adaptation and Resilience

June 7, 2021

Potential Business Items

- Accept 2020 Financial Audit

Potential Briefing Items

- DOE Quarterly Update

Issues to watch:

- Changes at SPPTS
- North Walnut Creek slump
- Status of OLF
- Uranium exceedances in surface water
- Trichloroethylene (TCE) exceedances in groundwater

The meeting was adjourned at 10:15 am.

Respectfully submitted by Erin Rogers.