

**Rocky Flats Citizens Advisory Board  
Meeting Minutes  
April 4, 2002  
6 to 9:30 p.m.**

**Jefferson County Airport Terminal Building, 11755 Airport Way, Broomfield**

**FACILITATOR:** Reed Hodgins

Victor Holm, the Board's vice-chair, called the meeting to order at 6:10 p.m.

**BOARD / EX-OFFICIO MEMBERS PRESENT:** Maureen Eldredge, Tom Gallegos, Shirley Garcia, Victor Holm, Jim Kinsinger, Bill Kossack, Tom Marshall, LeRoy Moore / Steve Gunderson, Joe Legare, Tim Rehder, Dean Rundle

**BOARD / EX-OFFICIO MEMBERS ABSENT:** Suzanne Allen, Joe Downey, Jeff Eggleston, Noelle Stenger Green, Mary Mattson, Nancy Peters, Earl Sorrels / Jeremy Karpatkin

**PUBLIC / OBSERVERS PRESENT:** Louise Janson (resident); Mark Sattelberg (USFWS); Melissa Anderson (RFCLoG); Bill Crossen (citizen); Jill Hollingsworth (citizen); Rick DiSalvo (DOE); John Corsi (KH); Alan Trenary (citizen); Lee Norland (KH); Kathleen Rutherford (CDPHE); Emily and Jay Clark (citizens); Elizabeth Pottorff (CDPHE); Anna Martinez (DOE-RFFO); Jerry Henderson (RFCAB staff); Ken Korkia (RFCAB staff); Deb Thompson (RFCAB staff)

**PUBLIC COMMENT PERIOD:** No comments were received.

**REGULATOR UPDATE – COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE):** Steve Gunderson presented his quarterly update on Rocky Flats issues:

- Plutonium building D&D. D&D progress in the plutonium buildings continues at a steady pace. Building 771 is 43% complete; 776/777 is 23% complete; 707 is 17% complete; and 371 is 5% complete.
- 123 Pad removal/soil remediation. This project is essentially complete. The pad was removed, and two areas on the pad that had been identified as having surface radionuclide contamination were disposed as low-level waste. Very little soil contamination was found under the pad; that contamination has been removed.
- Building 886 demolition. A former highly enriched uranium research building, 886 is almost completely demolished. Demolition involved significant asbestos abatement. There was also some uranium contamination and limited plutonium contamination. Remediation of contaminated soil under the building will occur when demolition is completed. However, under building contamination appears to be limited.
- 889 slab removal/soil remediation. Removal of the slab and any soil contamination under it will begin soon. The building was demolished a few years ago.
- Transuranic waste shipping. Recently the site's shipping rate to WIPP has increased to as much as 15 shipments per week, the site's goal. Additional WIPP trailers will be made available to Rocky

Flats because of a suspension of TRU waste shipments from INEEL. During this period, the site may be able to achieve shipping rates to WIPP in excess of 20 per week.

- Site personnel move. About 350 DOE and Kaiser-Hill employees have moved offsite to a building near Jefferson County Airport. Building 460, which housed DOE offices, will be turned over to Kaiser-Hill for low-level waste storage in the high bay area, and for Kaiser-Hill materials stewardship personnel in the office areas. An additional move of up to 400 employees offsite could occur next year.

**PRESENTATION AND DISCUSSION ON PLUTONIUM SHIPPING ISSUES AT ROCKY FLATS:** Dave Hicks with DOE-RFFO gave this presentation. He started out by giving a brief overview of the amount of special nuclear material at the site. There are around 2,350 Category I and II items that must be removed offsite. All of these items are considered surplus and will be sent offsite as part of the excess plutonium disposition program. The Rocky Flats Baseline assumed that all non-pit plutonium would go to the Savannah River Site and either be dispositioned by immobilization (through vitrification), or as Mixed Oxide (MOX) fuel. However, within the last six months, based on a new study, DOE decided it would not be cost effective to do both vitrification and conversion to MOX fuel. So, only the MOX fuel option was chosen. MOX fuel is created by mixing plutonium and uranium together to create fuel that is then burned in nuclear generators. Some of the special nuclear material is ready for shipment right now, based on requirements for MOX disposition. Other types of material will require changes to NEPA decisions in order to be disposed of and processed as MOX. The site will need to wait for an amended Record of Decision before processing and shipment of that material can begin. About 690 items have enough impurities that they will not be disposed of through the MOX program, and thus there is no disposition pathway for those items.

There are both cost and schedule issues that affect what will happen. A cost impact already exists since the Protected Area was supposed to have been closed by January 2003; that can't happen now. To stay in line with 2006 closure goal, the Protected Area must be closed by January 2004. In order for that to happen, the special nuclear material must be removed no later than October 2003. Under a compressed schedule it will take 13 months to accomplish removal of the material, so a decision must be made soon. Some of the special nuclear material will go to Lawrence Livermore National Laboratory: about 78 plutonium composites, some considered to be exempt from shipping regulations for national security reasons, and other special items (primarily former weapons components, which are classified material). The site would like to ship all these materials at once; however, Livermore can only deal with small amounts of material at any given time. Thus, the removal of materials to Livermore will be achieved by using between 4 to 10 shipments.

**SUMMARY OF SUBSURFACE CONTAMINATION AT ROCKY FLATS:** This presentation was given by Lane Butler with Kaiser-Hill. First, he discussed some of what is known about potential areas of subsurface contamination. The original process waste lines transferred liquid radioactive process waste to treatment facilities. There are over six miles of these lines under the site; some of the lines have leaked into the ground. The East Trenches area was used for disposition of sewage sludge, which has been contaminated with low levels of plutonium and uranium. In the 903 Pad area, many of the drums used for storage corroded and leaked their contents. No radiological contamination has been detected in the area of the original landfill. However, there is some radioactive material present in the area of

the present landfill. In the 700 area, the main plutonium components production facilities, there is likely to be significant contamination found, in addition to contamination that exists as a result of past major fires. Contamination is expected to be found in the 300 area (plutonium storage and recovery, and low-level liquid waste treatment), the 400 area (machining operations for beryllium and uranium parts), the 800 area (uranium recovery and machining), as well as the Ash Pits.

Early investigations in the buffer zone included major remedial investigations in the early 1990s in the areas of Woman Creek and Walnut Creek drainages, the original and present landfill, the Ash Pits, the A, B, and C-series ponds, the 903 Pad, Mound area, East Trenches, and the east and west spray fields. A 1994 buffer zone study showed more than 90% of plutonium and americium activity is found in the upper five inches of soil. More recent investigations in the buffer zone have identified additional locations that are potential areas of concern. Generally the subsurface is sampled if surface sampling suggests there is a need to do so.

Investigations in the industrial area done since 1986 included interviews with all current and retired staff that might have relevant information. These investigations covered substantially all of the industrial area, and large volumes of data were collected and evaluated. This historical information plus data from major investigations formed the 1996 RFCA potential-contaminants-of-concern list, which is reviewed annually.

Subsurface data exists from 916 boreholes, nearly 8,000 samples taken in both the industrial area and buffer zone for metals, radionuclides, and organics:

- Metals. Above background detections totaled 1,277, of which 62 were above Tier 2 (all of which were either arsenic or beryllium), and 3 were greater than Tier 1 (beryllium).
- Radionuclides. A total of 11,542 detections were found to be above background, 46 of which were above Tier 2, and 12 of which were above Tier 1 (all consisted of either plutonium, americium, or uranium).
- Organics. 3,149 detections above background showed 350 above Tier 2 and 25 above Tier 1 (including carbon tetrachloride, methylene chloride, and trichloroethylene).

The site recognizes there are many uncertainties. There is an incomplete knowledge of potential subsurface soil contamination associated with certain structures such as the process waste lines, under building contamination, sanitary sewer lines, and storm drains. All these areas will be sampled according to the Industrial Area and Buffer Zone Sampling and Analysis Plans.

**SUMMARY OF GROUNDWATER CONTAMINATION AT ROCKY FLATS:** Next on the agenda, Scott Surovchak with DOE discussed groundwater contamination. First, he noted it is important to remember that because of the site's geography, Rocky Flats groundwater reaches surface water before it leaves the site, and there is limited available groundwater beneath the site's areas of concern. Extensive historical data indicates low transport of metals, plutonium, or americium. There is no hydraulic connection between shallow groundwater and the deeper regional aquifer. Groundwater treatment at the site is done via passive barriers. Extensive groundwater characterization has been conducted over the past 16 years,

close to 11,000 samples; 1,600 samples are collected annually. Groundwater characterization is performed to evaluate the potential for contaminant movement to surface water, and to evaluate groundwater conditions related to any contaminant movement. It also helps to provide a design basis for groundwater monitoring and plume remediation systems. The site's groundwater system has two components: 1) the surficial aquifer made up of claystone and sandy, cobbly clay; and 2) underlying sediments composed primarily of claystones and siltstones. These sediments protect the regional aquifer located beneath the site. Primary groundwater contaminants are volatile organic compounds or VOCs, metals, inorganics, and radionuclides. The VOCs such as tetrachloroethene, carbon tetrachloride, trichloroethene, and dichloroethene have the highest rate of chemical mobility in groundwater. Higher rates of mobility can also be found in some contaminants such as sulfate and nitrate, as well as uranium.

Groundwater actions at the site include collection and treatment systems for both the Mound Site Plume and the East Trenches Plume, the soil removal action scheduled to be performed at the 903 Pad plume, and chemical treatment at the PU&D yard. At the solar ponds, a collection and treatment system was installed in 1999. Contaminants located here are primarily nitrate and uranium, and characterization of the uranium has been difficult. In the industrial area, future investigations are planned to determine the extent of contamination. The site is considering an additional collection and treatment system for this area. Additional collection and treatment is always possible and may include more passive treatment systems.

### **CURRENT BASELINE REMEDIATION STRATEGIES FOR ALL CONTAMINATED MEDIA AT ROCKY**

**FLATS:** Lane Butler returned to give this final presentation, a summary of the assumptions found in the current Rocky Flats Baseline. The Rocky Flats Baseline was developed along with the revised Kaiser-Hill contract. At the time of the baseline, there were 370 contaminated release sites on record. Among the assumptions: 68 would require some type of source removal including the B-series pond sediments; 73 would require no further action; 124 would require characterization; one additional groundwater treatment system would be required for the industrial area (using a barrier); only 17% of the original process waste lines would be removed; that there was a total of 31 areas of under building contamination, only one of which would not require remedial action; and three covers/caps would be needed for the two landfills and the solar ponds.

For the site's environmental remediation project, it was assumed that remediation would be performed to Tier 1 only, and that the site would utilize alternative methods for caps, such as evapotranspiration covers. ER project schedules are linked to D&D activities when appropriate, and projects and activities are identified for earlier implementation if funding becomes available. Soil action levels are based on RFCA's 1999 revision, and remediation will be to Tier 1 levels. Soils with radioactivity less than Tier 1 levels will be returned to the remediation site. The designated land use assumed at the time of the baseline was that the industrial area would be limited industrial use and open space, and the buffer zone would be solely open space. The final site configuration, as stated in the baseline, will protect human health and surface water consistent with future land use plans. Road materials and uncontaminated foundation slabs will be used as fill for deep basements. All roads and parking lots in the industrial area will be removed, leaving only the east and west access roads and the north perimeter road. Foundations will be removed to a depth of three feet below grade or covered by three feet of fill. Surface water onsite will meet health-based standards for open space use, and water leaving the site will meet water quality standards. In the baseline, waste line remediation was expected to generate 19,500 cubic yards of waste.

There are many uncertainties associated with these assumptions. For instance, the evapotranspiration

covers have not yet been approved, the original landfill is located on an unstable hillside, ER projects may be delayed by D&D schedule impacts, and both under building contamination and the process waste lines are not well characterized.

### **BOARD DISCUSSION AND QUESTIONS AND ANSWERS RELATED TO PREVIOUS**

**PRESENTATIONS:** The goal for this meeting was for Board members to become educated on issues related to subsurface soil and groundwater contamination. For the remainder of the evening, Board members discussed in detail with the presenters their specific questions and concerns about the issues talked about at the meeting. Some of their comments and concerns are highlighted below:

- Concern about the site's ability to meet state surface water standards onsite based on baseline assumptions
- Many of the assumptions are just too risky
- There seems to also be an assumption that the ecological risk assessment, which has not yet been done, will have no impact on cleanup decisions
- An ecological risk assessment cannot be accomplished quickly enough to include in decisions about action levels
- q Site representatives noted they are working on issues parallel to the action levels, such as non-radiological cleanup levels and the evaluation of ecological risks
- Important to keep a great deal of flexibility in budget line items so that savings in one area can be utilized to perform more work in another area
- Concern about the use of caps, that they be used only in specific identified areas such as the solar ponds, and not add more material underneath the caps than is planned
- A cap in the area of the solar ponds may not be successful because of the potential affect on groundwater and water flow in the area
- The extent of characterization done on the process waste lines is inadequate
- q Site representatives stated they are still working to determine the best and most appropriate way to characterize the lines; they agree there are inadequacies, but not sure yet what will work best
- Regarding the caps: concern about what will be left for the Fish and Wildlife Service; areas with a great deal of contamination remaining should be kept separated from the refuge
- If ALARA rules do apply, then returning remediated soil to the ground that has contamination less than Tier 1 does not seem to be a useful strategy

- Important to make sure the public remains involved with pertinent discussions so that decisions are not just made outside of public view and then simply presented to the public

**PERSONNEL COMMITTEE RECOMMENDATION:** Based on a recommendation from the Personnel Committee, the Board approved hiring a staff person to replace a vacancy left by the resignation of Michelle Kump, Program Coordinator. The new person hired is Patricia Rice, a resident of Lafayette. Patricia has a background in writing, including reporting on environmental issues, copy editing, and research of public records and state/federal regulations. She has a BS and an MS in Physics, and attended the Graduate School of Journalism at the University of California/Berkeley. Patricia was hired at a starting salary of \$34,000 per year, effective April 8.

**NEXT MEETING:**

Date: May 2, 2002, 6 to 9:30 p.m.  
Location: Jefferson County Airport Terminal Building, Mount Evans Room, 11755 Airport Way, Broomfield  
Agenda: Update by USFWS on status of wildlife refuge plans; presentation and discussion on DOE's risk-based strategy for end-state cleanup

**MEETING ADJOURNED AT 9:35 p.m. \***

(\* Taped transcript of full meeting is available in the RFCAB office.)

RESPECTFULLY SUBMITTED:

Shirley Garcia, Secretary  
Rocky Flats Citizens Advisory Board

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The Rocky Flats Citizens Advisory Board is a community advisory group that reviews and provides recommendations on cleanup plans for Rocky Flats, a former nuclear weapons plant outside of Denver, Colorado.

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