

ROCKY FLATS STEWARDSHIP COUNCIL

P.O. Box 17670

(303) 412-1200

Boulder, CO 80308-0670

www.rockyflatssc.org

Jefferson County ~ Boulder County ~ City and County of Broomfield ~ City of Arvada ~ City of Boulder
City of Golden ~ City of Northglenn ~ City of Thornton ~ City of Westminster ~ Town of Superior
League of Women Voters ~ Rocky Flats Cold War Museum ~ Rocky Flats Homesteaders
Kim Griffiths

Board of Directors Meeting – Agenda

Monday, April 3, 2023

8:30 – 10:45 AM

VIA ZOOM (details on next page)

- 8:30 AM Convene/Introductions/Agenda Review/Meeting Protocols
- 8:40 AM Public Comment: Comments are limited to three minutes
- 8:50 AM Business Items (briefing memo attached)
1. Consent Agenda: Approve meeting minutes and checks
 2. Executive Director’s Report
- 9:00 AM CDPHE briefing on PFAS (briefing memo attached)
- CDPHE will brief on PFAS at Rocky Flats
- 9:45 AM USFWS briefing (briefing memo attached)
- USFWS will discuss the joint DOE-USFWS multi-purpose facility and recent testing for radionuclides and PFAS
- 10:15 AM Board Roundtable Discussion on Air Quality Monitoring to Evaluate Wildfire Impacts
- In Fall 2022, Arvada, Broomfield and Boulder sent letters to DOE requesting the agency re-initiate air quality testing to establish baseline conditions to evaluate off-site air quality impacts in the event of a wildfire at Rocky Flats.
 - DOE subsequently invited those parties and other interested governments to a meeting to discuss this request.
 - This meeting will provide an overview of that meeting with DOE and explore next steps.
 - The letters are included in the meeting packet.
- 10:40 AM Board Roundtable – Big Picture/Additional Questions/Issue Identification
Adjourn

Upcoming Meetings

June 5, September 18, October 30

Join Zoom Meeting

<https://zoom.us/j/93949096644?pwd=Y0UwR0Y1YTVqRy8xOEZDRVZtc1R4UT09>

Webinar ID: 939 4909 6644

Passcode: 941257

Phone #: (719) 359-4580

Business Items

- February 6, 2023, draft board meeting minutes
- List of Stewardship Council checks

ROCKY FLATS STEWARDSHIP COUNCIL

Monday, February 6, 2023

8:30 – 10:05 AM

Virtual Meeting via Zoom

Board members in attendance: Randy Moorman (Director, Arvada), Tara Winer (Director, City of Boulder), Taylor Reimann (Alternate, City of Boulder), Marni Ratzel (Second Alternate, City of Boulder), Taylor Reimann (Alternate, City of Boulder), Deven Shaff (Director, City and County of Bromfield), Ann Beierle (Alternate, Golden), Andy Kerr (Director, Jefferson County), Pat O’Connell (Alternate, Jefferson County), Ashley Witkovich (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Laura Farzim (Alternate, Northglenn), Bob McCool (Director, Superior), Jan Kulmann (Director, Thornton), Caleb Owen (Alternate, Thornton), Rich Seymour (Director, Westminster), Jeannette Hillery (Director, League of Women Voters), Linda Porter (League of Women Voters), Roman Kohler (Director, Rocky Flats Homesteaders), Murph Widdowfield (Director, RFCWM), Kim Griffiths

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

Attendees: Andy Keim (DOE-LM), Padraic Benson (DOE-LM), Dana Santi (RSI Entech), John Boylan (RSI Entech), George Squibb (RSI Entech), Karin McShea (RSI Entech), Ryan Wisniewski (RSI Entech), Lindsey Murl (CDPHE), Lindsay Archibald (CDPHE), Rick Mruz (CDPHE), David Connolly (EPA), Nick Robles (Boulder County), Laura Hubbard (Broomfield), Rich Kondo (Northglenn), Cathy Shugarts (Westminster), Shirley Garcia, Lynn Segal, Travis Culley, Joan Seeman, Nancy Ford, Chris Allred, Rachael Lehman

Convene/Agenda Review: Jan Kulmann convened the meeting at 8:33 am.

Public Comment: Lynn Segal raised concern about Cemex bringing materials from Rocky Flats to Lyons. She is concerned about the impacts of extraction occurring on Rocky Flats.

Travis Culley said the minutes from the October 2022 meeting did not reflect the science on the flammability of sludge. Travis also said he misspoke about the RFCWM timeline and apologized to Murph Widdowfield for his comments attacking Murph.

Joan Seeman said Rocky Flats is still a Superfund site. She said the GAO made a statement that DOE personnel were not considering climate change at Rocky Flats. Joan wants her comments to be posted on the website. She also mentioned the letters from local governments about air monitoring and that the air monitoring conversations need to be ongoing.

David Connolly introduced himself as a new hire with EPA Region 8. He gave a summary of his history in environmental work. His email address is: connolly.david@epa.gov.

Business Items:

1. Elect Stewardship Council Officers for 2023

The following people expressed interest in serving:

- Jan Kulmann (Thornton) – Chair
- Deven Shaff (Broomfield) – Vice Chair
- Jeannette Hillery (League of Women Voters) – Secretary/Treasurer

Kim Griffiths moved to elect the officers above. The motion was seconded by Ashley Witkovich. The motion to accept the minutes and checks passed 13-0.

2. Adopt 2023 Meeting Schedule and Notice Provisions Resolution

David laid out the proposed dates for 2023 are:

- February 6 (first Monday of the month) – virtual
- April 3 (first Monday of the month) – virtual
- June 5 (first Monday of the month) – in person only
- September 18 (third Monday of the month) – virtual
- October 30 (last Monday of the month) – virtual

Roman Kohler moved to elect the officers above. The motion was seconded by Jeannette Hillery. The motion to accept the minutes and checks passed 13-0.

Consent Agenda: The consent agenda included the draft October 2022 meeting minutes and checks written since that meeting. David said he corrected two typos on the minutes. Jeannette Hillery moved to approve the checks and edited minutes. The motion was seconded by Roman Kohler. The motion to accept the minutes and checks passed 13-0.

Executive Director's Report: David spoke about the ongoing interest in hybrid meetings. He said the executive committee found that hybrid meetings for a group this size do not work well. He said capturing a meeting of a big group with an OWL camera does not work well. Also, the Stewardship Council staff cannot manage the meeting and be present for Board members, even with help from an outside contractor. He also spoke about the many technical problems resulting from hybrid meetings. David explained that due to their experiences and the issues David raised, the executive committee decided to host virtual meetings for 4 out of 5 meetings. The committee was reluctant to make this change. He also said that if people who spoke in favor of hybrid are interested in returning to in-person, David asked that they let us know.

David then talked about the Stewardship Council's website, saying it is old and needs to be updated. He wants to have it redesigned and is hoping to avoid going out for an RFP.

David then discussed that the USFWS is planning to test some of the elk herd for radionuclides and PFAS. David said that that USFWS has done soil testing during trail alignment, and initial results show no issues. David said USFWS would discuss both issues at the April meeting. He reminded the Board that PFAS are not limited to Rocky Flats but are a bigger issue.

Randy Moorman had a follow-up question on the decision to not host hybrid meetings. He said there was discussion about talking with DOE about providing funding to hire an outside contractor to manage hybrid meetings. David said the problem was not money, it was managing a meeting with numerous disruptions that have become common place for these meetings, stopping meetings to address anticipated technical issues, and asking staff to both manage the meeting and help the contractor address technical issues. There is also a challenge with setting up an OWL camera in a room with so many people. Randy expressed frustration with that answer. Jan Kulmann agreed with David, saying that hybrid meetings for this type of organization are not feasible.

Host DOE Quarterly Meeting:

John Boylan gave an overview of Third Quarter 2022 monitoring.

- Surface water

- RFLMA Point of Compliance and Point of Evaluation analyte concentrations remained below reportable condition levels in the third quarter of CY 2022 with one exception: although no recent validated sample results have been received for POE GS10 (results are available through June 6, 2022), routine data evaluation in August 2022 indicated that the 12-month rolling average for uranium resulted in a reportable condition for August 31, 2022. It was a dry quarter, thus there was reduced runoff (and increased concentration of uranium).
- Results from quarterly performance monitoring for the PLFTS effluent were acceptable.
- Quarterly performance monitoring for the OLF showed acceptable results for all analytes except arsenic.
 - The mean concentration of arsenic during the third quarter was 12.5 mg/L, above the 10mg/L standard.
 - Monthly sampling was triggered for the fourth quarter.
- Groundwater and groundwater treatment systems
 - Sampled 10 RCRA wells monitoring the Present Landfill and Original Landfill; results generally consistent with previous data, will be evaluated in 2022 annual report.
 - Treatment systems
 - Routine maintenance at all systems
 - SPPTS solar/battery power facility replaced –all new solar panels and batteries
 - Conex-based design is similar to that at the ETPTS
- Operations and Maintenance
 - RFLMA inspections completed including weather-related inspections of the COU and OLF on August 18 (no new issues identified), routine maintenance performed
 - OLF: Monthly inspections, no slumping observed
 - PLF: Quarterly inspections, no issues noted
 - Landfill Settlement Monument surveys: Vertical settling within design limits
 - Site erosion controls monitored and maintained
 - NWCS survey: Continued monthly monitoring of survey points
- Ecology
 - Wildlife monitoring: prairie dog surveys (no active towns in COU)
 - Vegetation monitoring: weed mapping, forb nursery data collection, revegetation monitoring, wetland monitoring, Preble’s mouse habitat monitoring, photopoint data collection, shrub and tree survival counts
 - Vegetation management: weed control, interseeding

Randy asked about the movement of earth (slumping). John said DOE monitors the NWCS and that slumps are common across the Front Range. If a slump does not impact a remedy, DOE does not address it. Randy asked about human-caused mechanical earth movement. John answered that any soil disturbance will be documented in a Contact Record and the quarterly reports. Randy requested that DOE’s reports to the Board include information about soil disturbances. David Abelson asked if there is an incursion of prairie dogs into COU. John said no.

Board Roundtable:

Randy asked for a follow-up conversation regarding air quality monitoring. David said we could discuss the issue and next steps at the next Board meeting. David summarized past Board discussions regarding air quality. Jeannette said the air quality meeting with DOE was frustrating, and she is interested in follow-up conversations and more discussion. Randy wants to have a Board-level conversation about air

quality monitoring. He said we need to understand the impacts better. If DOE is not going to implement monitoring, we need to have a conversation about how else we get monitoring done.

Barb Vander Wall then said she usually distributes oaths of office in person. She will send via email instead, because of the online meeting format.

Big Picture/Additional Questions/Issue Identification: David went through the Big Picture. The next meetings are scheduled for April 3 and June 5, 2023. Discussion topics are below.

April 3, 2023

- CDPHE update on PFAS
- USFWS update
- Wildfire/air quality discussion

June 5, 2023

- DOE Update
- Receive 2022 audit

Deven asked about the status in-person tour of Site. David said Melissa is working on organizing the tour. The tour is not a not a Stewardship Council meeting or event but is instead at the invite of DOE.

The Board meeting adjourned at 9:26 am.

Roundtable Discussion of DOE's FY22 Q3 Report

The Board and community entered into a workshop session to further the quarterly report discussion.

The meeting was adjourned at 10:02 am.

Rocky Flats Stewardship Council
Check Detail 2023
 January 20 through March 11, 2023

Type	Num	Date	Name	Account	Paid Amount	Original Amount
Check		01/26/2023		CASH-Wells Fargo-Operating		-3.50
				Admin Services-Misc Services	-3.50	3.50
TOTAL					-3.50	3.50
Check	2182	02/06/2023	Century Link	CASH-Wells Fargo-Operating		-30.54
				Telecommunications	-30.54	30.54
TOTAL					-30.54	30.54
Bill Pmt -Check	2183	02/06/2023	Crescent Strategies, LLC	CASH-Wells Fargo-Operating		-9,037.81
Bill	1/31/...	01/31/2023		Personnel - Contract	-8,525.00	8,525.00
				TRAVEL-Local	-20.00	20.00
				Postage	-17.99	17.99
				Telecommunications	-96.62	96.62
				TRAVEL-Out of State	-378.20	378.20
TOTAL					-9,037.81	9,037.81
Bill Pmt -Check	2184	02/06/2023	Jennifer A. Bohn	CASH-Wells Fargo-Operating		-470.50
Bill	23-06	01/31/2023		Accounting Fees	-470.50	470.50
TOTAL					-470.50	470.50
Check	2185	03/06/2023	Century Link	CASH-Wells Fargo-Operating		-30.16
				Telecommunications	-30.16	30.16
TOTAL					-30.16	30.16
Bill Pmt -Check	2186	03/06/2023	Crescent Strategies, LLC	CASH-Wells Fargo-Operating		-10,269.46
Bill	2/28/...	02/28/2023		Personnel - Contract	-8,525.00	8,525.00
				TRAVEL-Local	-74.67	74.67
				Postage	-17.99	17.99
				Telecommunications	-96.62	96.62
				TRAVEL-Out of State	-903.78	903.78
				Meeting Expense	-651.40	651.40
TOTAL					-10,269.46	10,269.46
Bill Pmt -Check	2187	03/06/2023	Jennifer A. Bohn	CASH-Wells Fargo-Operating		-388.50
Bill	23-13	02/28/2023		Accounting Fees	-388.50	388.50
TOTAL					-388.50	388.50
Bill Pmt -Check	2188	03/06/2023	Seter & Vander Wall, P.C.	CASH-Wells Fargo-Operating		-970.50
Bill	85276	01/31/2023		Attorney Fees	-970.50	970.50
TOTAL					-970.50	970.50

CDPHE PFAS Briefing

- Cover Memo

USFWS Briefing

- Cover Memo
- Schematic of Multi-Purpose Building

Wildfire & Air Quality Briefing

- Letters to DOE
- Responses from DOE

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MEMORANDUM

TO: Board of Directors
FROM: Melissa Weakley
SUBJECT: PFAS briefing
DATE: March 20, 2023

Lindsay Murl, environmental protection specialist at CDPHE, will report to the Board on monitoring of per- and polyfluoroalkyl substances (PFAS) at Rocky Flats.

PFAS are a class of man-made chemicals that have been manufactured and used in a variety of industries since the 1940s. PFAS are often found in commercial products such as stain-resistant carpeting, water-resistant clothing, nonstick cookware, and firefighting foams. During the operational history of Rocky Flats, PFAS were likely present in firefighting foam, or possibly in materials used during plating operations.

PFAS are called “forever chemicals” because they are persistent in the environment and tend to bioaccumulate in food chains. Because PFAS have been widely used for decades and do not readily break down, PFAS can be found in surface water, groundwater, and soil, in remote areas as well as urban centers.

In 2018, CDPHE requested, under the Colorado Hazardous Waste Act, that the DOE Office of Legacy Management (LM) submit a proposal to monitor two PFAS—PFOA and PFOS—at the Central Operable Unit (COU). In 2019, DOE began sampling groundwater, surface water, and landfill seepage, collected from eight locations around the COU, for PFOA and PFOS. Rocky Flats groundwater does not represent a current or potential source of drinking water, nor is surface water leaving Rocky Flats a source of drinking water. However, DOE and CDPHE agreed that the health advisory limit of 70 nanograms per liter (ng/L) for combined PFOA plus PFOS would be used as a basis for analyzing sampling results. Early sampling results indicated PFOA and PFOS were present above the 70 ng/L safety threshold in a well near the former Rocky Flats Fire Department and in Present Landfill seepage.

LM started an expanded PFAS sampling program at Rocky Flats in 2021; LM agreed to sample groundwater, surface water, and landfill seepage from 12 locations for 28 PFAS. Samples would be collected on a quarterly basis for at least two years. Shortly after, EPA deferred a protectiveness determination on the 2021 Five-Year Review, pending the results of the PFAS sampling (though the remedy was determined to be functioning as designed for radiological materials). EPA noted that the

deferral doesn't necessarily mean PFAS is a risk at Rocky Flats, just that it must be studied. The Rocky Flats protectiveness determination has been deferred until 2026.

On March 14, 2023, EPA proposed a first-ever national drinking water standard for six PFAS: PFOA, PFOS, PFNA, HFPO-DA, PFHxS, and PFBS. As proposed, EPA would establish a concentration limit of 4 ng/L for PFOA and PFOS. Limits for the other four compounds would be a health-based limit rather than a concentration. The application to Rocky Flats, if any, is unclear.

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MEMORANDUM

TO: Board of Directors
FROM: David Abelson
SUBJECT: USFWS briefing
DATE: March 15, 2023

David Lucas, the US Fish and Wildlife Service (USFWS) Rocky Flats National Wildlife Refuge manager, will brief on three items:

1. Joint DOE-USFWS multi-purpose building

DOE and USFWS are designing a joint multi-purpose building, to be located on the northern portion of the Rocky Flats National Wildlife Refuge. As David explained at the April 2022 board meeting, the facility will in part “provide information and interpretation of the history of this site going back to Indigenous people, through homesteading, the Cold War and cleanup.”

Information about the facility can be found at: <https://www.fws.gov/media/rocky-flats-nwr-multi-purpose-building-25-percent-design>. This information is also attached.

2. Ongoing soil testing

As part of developing new trails, USFWS has continued to test soils for radionuclides and other contaminants. To date, all testing has shown that residual contamination levels continue to be within established risk ranges. Importantly, from a residual contamination standpoint, all Refuge lands are deemed available for unlimited use without restriction. All USFWS use restrictions are independent of residual contamination (e.g., restrictions on hunting), in the same way off-site lands in neighboring communities are not limited by residual contamination (e.g., housing codes).

3. Radionuclide and PFAS uptake in elk

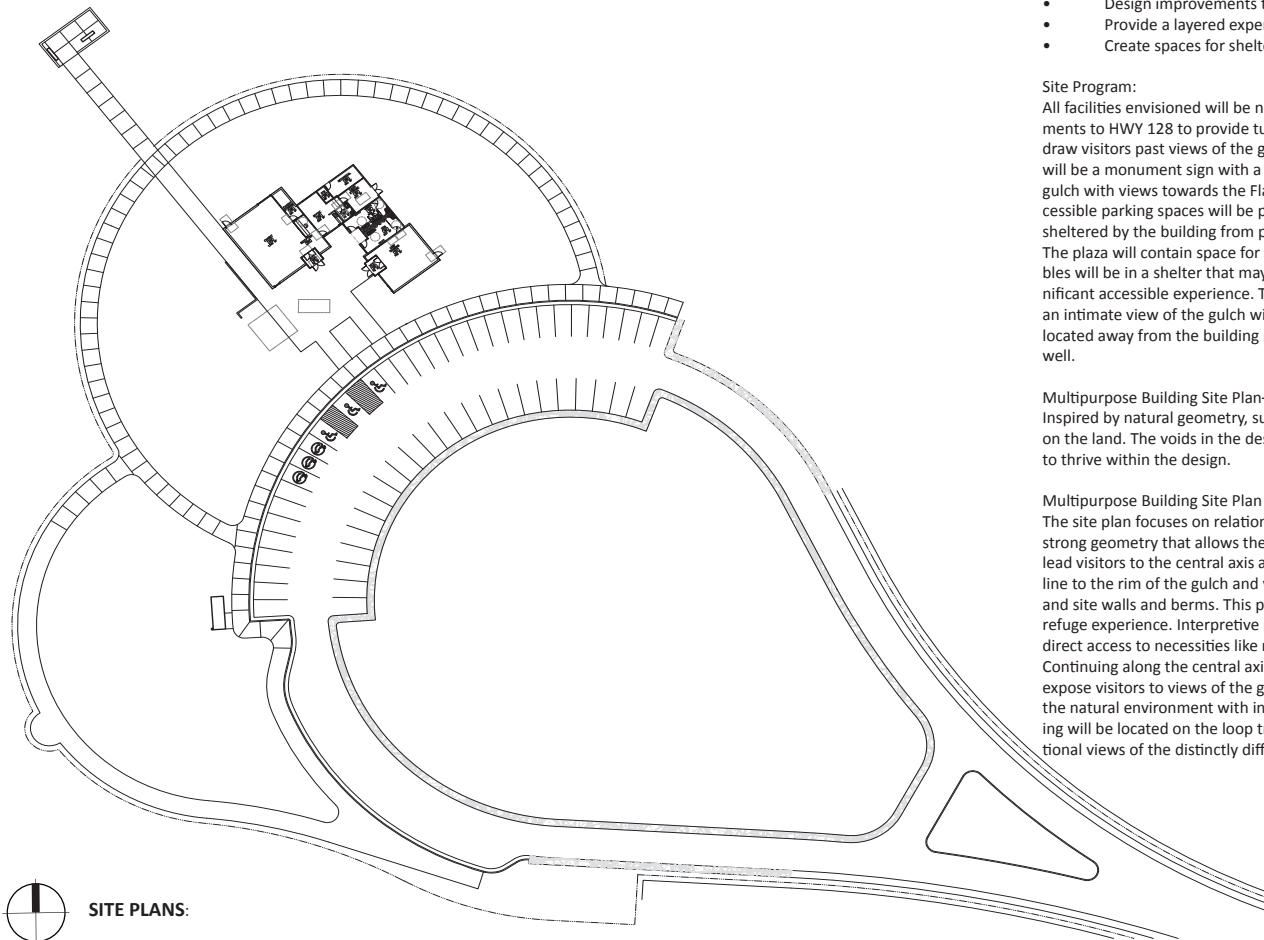
In 2005/2006, USFWS culled some Rocky Flats elk to evaluate radionuclide uptake. The results, in short, showed any radionuclide that the elk might have consumed passed through their system and was excreted. To assuage public concern, USFWS will once again test elk for radionuclide uptake and add to the test PFAS uptake.

Each of these items intersect with DOE’s management responsibilities or otherwise concern historic contamination of Rocky Flats. Accordingly, the briefing falls under the Stewardship Council’s role as the Local Stakeholder Organization (LSO) for Rocky Flats.



ROCKY FLATS MULTI-PURPOSE BUILDING | *SCHEMATIC DESIGN*

Executive Summary | November 23, 2016



SITE PLANS:

SITE NARRATIVE

Site Planning – Design Goals:

- Expose visitors to the deep draws and expansive plateau of Rocky Flats
- Design improvements that rest lightly on the landscape
- Provide a layered experience that allows people to enjoy as many of the stories and resources at Rocky Flats as they wish
- Create spaces for shelter from the elements, and provide interpretation opportunities

Site Program:

All facilities envisioned will be new and specifically designed for this project. Beginning at the site entry, there will be road improvements to HWY 128 to provide turning motions in and out of the refuge. An asphalt park entry road will connect to HWY 128 and draw visitors past views of the gulch and across the plateau to the multipurpose building. Near the beginning of the entry road there will be a monument sign with a vehicle pull off. This road will end at a one-way loop at the Multipurpose Building near the rim of a gulch with views towards the Flatirons and El Dorado Canyon. The one-way loop provides parking for 54 cars and 3 busses. Four accessible parking spaces will be provided. This parking will be connected to the multipurpose building with concrete walks and a plaza sheltered by the building from prevailing winds.

The plaza will contain space for interpretation and seating in the form of benches or seat walls as well as picnic tables. The picnic tables will be in a shelter that may also cast shade into the plaza. Other concrete walks will loop through the landscape to provide significant accessible experience. These loops also connect to hiking trails that will cover much of the refuge. A small overlook providing an intimate view of the gulch will be located near the rim along these loops. Other site elements in the program are a vault toilet, located away from the building near the southern end of the parking. A trash/recycling enclosure and bike racks will be provided as well.

Multipurpose Building Site Plan– Concept:

Inspired by natural geometry, such as a spider web, the site plan seeks clear structure and strength of purpose while resting lightly on the land. The voids in the design become as important as the structure because they allow opportunities for the natural systems to thrive within the design.

Multipurpose Building Site Plan – Design:

The site plan focuses on relationships between desired experiences and practical necessities while utilizing the concept of light but strong geometry that allows the native landscape to grow throughout this new facility. Walkways along the edge of the parking lot lead visitors to the central axis and plaza. This axis ties many important elements together and physically expresses a natural desire line to the rim of the gulch and views to the mountains. Along this axis, we have a plaza sheltered from the wind by the building and site walls and berms. This plaza is the functional heart of the Refuge. Groups will gather here at the beginning and end of their refuge experience. Interpretive programming will begin in this space, and continue in the building and on the walks. The plaza has direct access to necessities like restrooms, useful features like the shaded picnic area, and learning experiences like the exhibit hall. Continuing along the central axis toward the mountains, loop trails are introduced for those seeking an easy, short walk. These loops expose visitors to views of the gulch, and mountains, as well as the prairie ecosystem. The loops provide an accessible experience in the natural environment with interpretation facilities. Trailheads connecting the larger hiking trail system to the multipurpose building will be located on the loop trails. Finally, the axis terminates in an overlook near the edge of the plateau. This allows for exceptional views of the distinctly different ecosystem in the gulch below, as well as open views of the Rocky Mountains.

COST SUMMARY

Highway 128 Improvements	\$0.45M
Site Improvements	\$2.59M
Building	\$1.56M
Interpretive Exhibits	\$0.66M
TOTAL BASE COST	\$5.26M

ROCKY FLATS MULTI-PURPOSE BUILDING | SCHEMATIC DESIGN

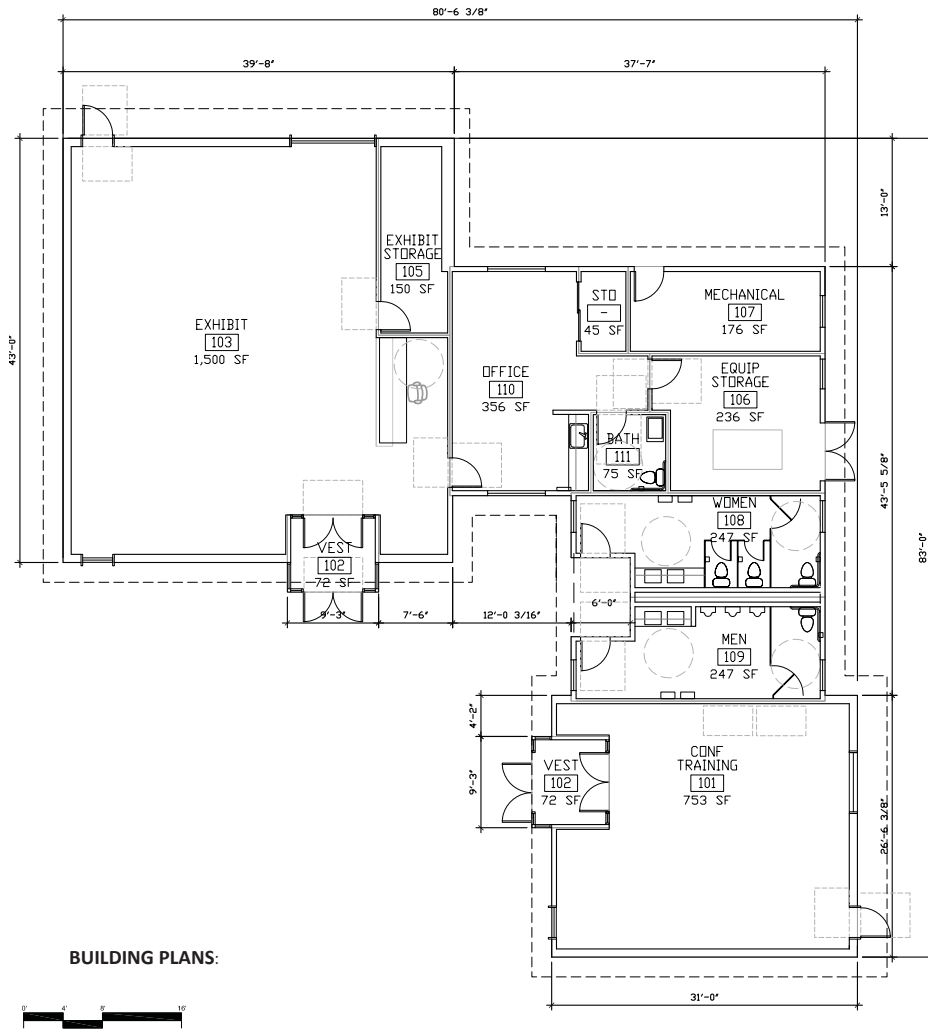
Executive Summary | November 23, 2016



US Department of Fish and Wildlife



Hanmi Global Partner



BUILDING NARRATIVE:

Floor Plan – Design Goals:

- One contiguous building
- Durability, low maintenance materials
- Create simple, traditional building forms
- Delineate a clear entry for the Exhibit Hall
- Context:
 - Respond to view of the Rockies
 - Mitigate wind
 - Orient the building for net zero energy
 - Provide shade and picnic zone

Building Program:

The building contains two main public functions with the Exhibit Hall and the Conference/Training Room. These spaces are supported by restrooms, staff office area, equipment storage and mechanical spaces. The original program had the Conference/Training Room as a separate building, but through the Value Engineering Analysis meetings the direction has shifted to design a single contiguous building. In addition, the square footage allocated for the exhibit hall has increased to 1500 sf with a 150 sf storage room.

Floor Plan – Concept:

Conceptually, the building is focused on the idea of transformation and return to nature. The building forms recall the intermittent use of the land having inhabitants. Transitioning materials, from stone, to wood, to hardie-paneling, to metal panel on the buildings, attempts to illustrate the change of the site use over time, while providing variety of material. Views to and through the building frame the mountains beyond and connect to the grassland. This in turn allows the building to nestle into the land, respecting the landscape and allowing it to overlap with program. The project is sited to sit close to the gulch edge overlooking the Rocky Mountains, providing a place to ponder and have the opportunity to reflect on the long history of the site. Inside, the exhibit hall will provide a place to review the history of the site and allow visitors to reflect on the transformation this site has seen over time. Outside, the building is encircled with a walk path, representing the tall grass prairie that has always been present on the site. The buildings integration into the site plan is based on site orientation to provide the best result for solar access, wind protections, creation of a shared plaza, and views to refuge features and distant vistas.

Proposed Floor Plan – Design/Materials:

The final proposed floor plan is a 3,920 sf building divided into 3 components and shaped into a compact, embracing footprint. With the Exhibit Hall and Conference/Training room separated by the support spaces, the overall form reveals a visual hierarchy with the building mass and roof forms. The main functions of the building have corresponding single sloped roof forms that orient to the south and west opening to the mountains and orienting inward toward the entry plaza. The support spaces in the connecting building are lower in height and take a more traditional form with a gable roof. The exterior skin is clad in a variety of wood, hardie panel and lap metal panel with some wood and stone details. A light colored standing seam metal roof reflects heat helping to minimize heat gain. Roof overhangs emphasize a traditional form while providing for solar and weather protection. The color palette is grey and tan muted tones to blend with the grass and local stone. This patterning provides a modern interpretation of weathered wood slats that resemble the farm house on the Refuge. The Exhibit Hall entry projects outward and upward from the building form and rises above the roof line. The interior and is detailed with an Alaskan Yellow Cedar wood panel continuing the story of transformation. Some complementary color accents will be added to highlight the entry areas and the Exhibit hall entry will have a more prominent presence over the Conference/Training room. A simple, singled sloped shade structure adjacent the building, stands to the west and helps to frame the plaza. The shade structure is constructed of steel, but has wood detailing that responds to the building materials and correlates with the concept of transformation. The building form and color are intended to fit in and connect with the landscape.

ROCKY FLATS MULTI-PURPOSE BUILDING | SCHEMATIC DESIGN

Executive Summary | November 23, 2016





ROCKY FLATS MULTI-PURPOSE BUILDING | SCHEMATIC DESIGN

Executive Summary | November 23, 2016



US Department of
Fish and Wildlife



MWH 

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ROCKY FLATS MULTI-PURPOSE BUILDING | SCHEMATIC DESIGN

Executive Summary | November 23, 2016



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MWH 

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ROCKY FLATS MULTI-PURPOSE BUILDING | SCHEMATIC DESIGN

Executive Summary | November 23, 2016



US Department of
Fish and Wildlife



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CITY COUNCIL
FACSIMILE: 720-898-7515 ▲ TDD: 720-898-7869
PHONE: 720-898-7500

July 22, 2022

Mr. Carmelo Melendez
Director
U.S Department of Energy, Office of Legacy Management
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Melendez:

With continued drought and increased fire activity throughout the state of Colorado, the City of Arvada is concerned about the impact on surrounding communities resulting from a wildfire at Rocky Flats. These concerns have been brought to the fore following the December 30, 2021, Marshall Fire that devastated communities immediately north of Rocky Flats. Our partner governments and constituents share this concern.

Following the Marshall Fire, there have been numerous discussions amongst local governments regarding the redeployment of air quality monitors in the vicinity of Rocky Flats to identify, through data collection, any impacts on our communities resulting from the transport of material during and following a wildfire. The deployment of air quality monitors prior to, during, and following a fire would provide local governments and the public a baseline understanding of how material is transported off-site, if at all, and clarify any potential public health risks. By deploying air monitors prior to a fire, we would secure critical baseline data during normal (pre-burn) conditions, and be able to compare this data to conditions during and after a burn.

Accordingly, the City of Arvada requests that the Department of Energy, Office of Legacy Management (DOE) install air quality monitors now in an effort to further our understanding of material transport and its effect on public health. The City pledges to work with DOE, Environmental Protection Agency, Colorado Department of Health and Environment, United States Fish and Wildlife Service, and other local governments to achieve this broadly-shared goal, including the siting of such monitors on off-site lands.

Thank you for your attention to this important issue. We look forward to working with you.

Regards,

A handwritten signature in black ink, appearing to read 'Marc Williams'.

Marc Williams
Mayor, City of Arvada

Cc: Jill Hunsaker Ryan, Executive Director, Colorado Department of Health and Environment
Kathleen Becker, Regional Administrator, EPA Region 8
Congressman Ed Perlmutter, U.S. House of Representatives, Colorado District 7
Congressman Joe Neguse, U.S. House of Representatives, Colorado District 2
Rocky Flats Stewardship Council
City of Arvada City Council



Mr. Carmelo Melendez
Director, U.S Department of Energy, Office of Legacy Management
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Melendez:

With continued drought and increased fire activity throughout the state of Colorado, the City and County of Broomfield - similar to other communities surrounding Rocky Flats - are concerned about the multilevel impact from a wildfire at Rocky Flats. Our community has suffered public health impacts from the Rocky Flats areas for decades, and now, adding to the potential concerns, includes wildfires.

The Marshall Fire on December 30, 2021, which devastated communities immediately north of Rocky Flats and stopped just shy of our community's border, drives our request to immediately seek the strategic deployment of air quality monitors in the vicinity of Rocky Flats. This deployment would identify, through data collection, any impacts on our communities resulting from the transport of material during and following a wildfire.

Through our extensive air quality monitoring program, the City and County of Broomfield is well versed with the deployment of air quality monitoring devices, data collection techniques, and the power of understanding the air quality impacts on public health. The heightened sense of urgency is twofold - one, knowing that wildfires will be occurring at a much higher rate in the future, and secondly and most concerning, what is buried at Rocky Flats.

If we have learned anything over the last few years of monitoring Oil & Gas operations, gathering data to establish a baseline prior is critical to understanding the actual change in air quality and allows for better public policy and decision making.

We stand ready to share our experience in the air quality monitoring arena: strategic monitoring area deployment, data signatures in the results, understanding public health impacts and community communications, lessons learned, making data driven decisions, and robust stakeholder involvement/engagement.

The City and County of Broomfield is committed to work with DOE, Environmental Protection Agency, Colorado Department of Health and Environment, United States Fish and Wildlife Service, and all community partners to gather data, share resources, and better understand the impact of air quality on Coloradans' health.

Thank you for your attention to this important issue.

A handwritten signature in blue ink that reads "Guyleen Castriotta".

Mayor Guyleen Castriotta

Cc: Jill Hunsaker Ryan, Executive Director, Colorado Department of Health and Environment
Kathleen Becker, Regional Administrator, EPA Region 8
Congressman Ed Perlmutter, U.S. House of Representatives, Colorado District 7
Congressman Joe Neguse, U.S. House of Representatives, Colorado District 2
Rocky Flats Stewardship Council
City and County of Broomfield City Council



Board of County Commissioners

October 3, 2022

Mr. Carmelo Melendez

Director, U.S Department of Energy, Office of Legacy Management

1000 Independence Avenue, SW

Washington, DC 20585

Dear Mr. Melendez:

With continued drought and increased fire activity throughout the state of Colorado and Rocky Mountain West, Boulder County, like other communities surrounding Rocky Flats, is concerned about the multilevel impact from a potential wildfire at Rocky Flats. These concerns have been brought to the forefront following the December 30, 2021 Marshall Fire that swept through the City of Louisville, Town of Superior, and unincorporated Boulder County, destroying and damaging more than 1,000 homes and over 30 commercial structures, just north of Rocky Flats.

In the aftermath of the Marshall fire, personnel associated with the DOE and Rocky Flats expressed confidence that a fire on the grounds of Rocky Flats would not cause elevated levels of harmful substances. Members of the community were, in our view, rightly concerned about the potential for complacency regarding the risk of toxic airborne substances. We believe the most prudent course of action is to have monitoring in place so that public health officials and members of the public have an informed basis for evaluating the risk.

Boulder County respectfully requests the Department of Energy seek the strategic deployment of air quality monitors in the vicinity of Rocky Flats and the sharing of data collected from these monitors with the public and local and state governments. This deployment would identify, through data collection, any impacts on our communities resulting from the transport of material during and following a wildfire, and would help inform any necessary decision-making, communication, and action to protect public health.

Through our staff's own experience in developing and implementing an extensive air quality monitoring program, Boulder County is well versed with the deployment of air quality monitoring devices, data collection techniques, and the power of understanding air quality impacts on public health to inform decisions and actions to protect public health. We stand ready to share our experience in the air quality monitoring arena.

Boulder County is committed to working with the U.S. Department of Energy, the U.S. Environmental Protection Agency, the Colorado Department of Public Health and Environment, the United States Fish and Wildlife Service, other local jurisdictions, and other community partners in the development and implementation of a strategic air quality monitoring program in the vicinity of Rocky Flats.

Thank you for your attention to this important issue.

Sincerely,

Marta Loachamin
Chair

Claire Levy
Vice-Chair

Matt Jones

Cc:

Jill Hunsaker Ryan, Executive Director, Colorado Department of Health and Environment

Kathleen Becker, Regional Administrator, EPA Region 8

U.S. Senator Michael Bennet

U.S. Senator John Hickenlooper

U.S. Representative Joe Neguse

Rocky Flats Stewardship Council

Matt Jones County Commissioner **Claire Levy** County Commissioner **Marta Loachamin** County Commissioner

Boulder County Courthouse • 1325 Pearl Street • Boulder, Colorado 80302 • Tel: 303.441.3500 • Fax: 303.441.4525
Mailing Address: P.O. Box 471 • Boulder, CO 80306 • www.BoulderCounty.org • commissioners@bouldercounty.org



Department of Energy

Washington, DC 20585

September 29, 2022

Mayor Mark Williams
City Council of Arvada
8010 Ralston Road
Arvada, CO 80002

Subject: Response to Request for Air Quality Monitors near Rocky Flats

Dear Mayor Williams:

Thank you for the letter regarding your concern about the potential impact on the surrounding community from a wildfire at the U.S. Department of Energy (DOE) Rocky Flats Site. The DOE Office of Legacy Management values your input and is committed to the protection of human health and environment at the Rocky Flats Site as we fulfill our long-term stewardship responsibilities.

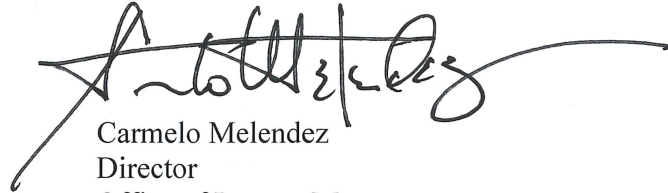
We share community concerns on wildfires and the impact they can have on people, property, and infrastructure. We take actions to prevent fires at the site with operating procedures that minimize ignition sources and maintenance activities designed to reduce fuel loads and the spread of fire. In the event of a fire, we will repair or replace any damaged remediation and monitoring systems necessary to ensure continued protectiveness.

DOE performed extensive air monitoring during production, site cleanup and post-cleanup phases at Rocky Flats. Additional studies include data collected from controlled burns and wildfires, and exposure modeling for first responders. These efforts and the site conditions supported the determination by the regulatory agencies that air emissions at Rocky Flats do not present health or environmental concerns. More information is available on the Rocky Flats Wildland Fire Information webpage ([Rocky Flats Wildland Fire Information | Department of Energy](#)).



The DOE Office of Legacy Management (LM) would like to offer you the opportunity to meet and have an open discussion on your concerns. We propose meeting at LM's Operations Center in Westminster, CO (11035 Dover Street, Suite 600) during the week of November 14, 2022. David Abelson, Executive Director of the Rocky Flats Stewardship Council, will reach out to you and other interested communities in coordinating this meeting.

Sincerely,

A handwritten signature in black ink, appearing to read 'Carmelo Melendez', with a long horizontal flourish extending to the right.

Carmelo Melendez
Director
Office of Legacy Management

cc via email:

David Abelson, RFSC
Lindsay Murl, CDPHE
Jesse Aviles, USEPA
Adam Eisele, USEPA
Cliff Carpenter, DOE-LM
Jay Glascock, DOE-LM
Shawn Eichelberger, DOE-LM
Allison Finelli, DOE-LM
Andy Keim, DOE-LM
Peter O'Konski, DOE-LM
DOE Read File
E/19/607 F/20/248



Department of Energy

Washington, DC 20585

September 29, 2022

Mayor Guyleen Castriotta
Office of the City Council
One DesCombes Drive
Broomfield, CO 80020

Subject: Response to Request for Air Quality Monitors near Rocky Flats

Dear Mayor Castriotta:

Thank you for the letter regarding your concern about the potential impact on the surrounding community from a wildfire at the U.S. Department of Energy (DOE) Rocky Flats Site. The DOE Office of Legacy Management values your input and is committed to the protection of human health and environment at the Rocky Flats Site as we fulfill our long-term stewardship responsibilities.

We share community concerns on wildfires and the impact they can have on people, property, and infrastructure. We take actions to prevent fires at the site with operating procedures that minimize ignition sources and maintenance activities designed to reduce fuel loads and the spread of fire. In the event of a fire, we will repair or replace any damaged remediation and monitoring systems necessary to ensure continued protectiveness.

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Carmelo Melendez
Director
Office of Legacy Management

cc via email:

David Abelson, RFSC
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Peter O'Konski, DOE-LM
DOE Read File
E/19/607 F/20/248



Department of Energy

Washington, DC 20585

October 13, 2022

Board of County Commissioners
Boulder County
Boulder County Courthouse
1325 Pearl Street
Boulder, CO 80306

Subject: Response to Request for Air Quality Monitors near Rocky Flats

Dear Commissioners Loachamin, Levy, and Jones:

Thank you for the letter regarding your concern about the potential impact on the surrounding community from a wildfire at the U.S. Department of Energy (DOE) Rocky Flats Site. The DOE Office of Legacy Management values your input and is committed to the protection of human health and environment at the Rocky Flats Site as we fulfill our long-term stewardship responsibilities.

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Sincerely,

**Carmelo
Melendez**  Digitally signed by
Carmelo Melendez
Date: 2022.10.13
14:15:51 -04'00'

Carmelo Melendez
Director
Office of Legacy Management

cc via email:

David Abelson, RFSC
Lindsay Murl, CDPHE
Jesse Aviles, USEPA
Adam Eisele, USEPA
Rob Stites, USEPA
David Lucas, USFWS
Cliff Carpenter, DOE-LM
Jay Glascock, DOE-LM
Shawn Eichelberger, DOE-LM
Allison Finelli, DOE-LM
Andy Keim, DOE-LM
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ACRONYMS

Rocky Flats Acronym List
 Prepared for the Rocky Flats Stewardship Council
 Rev. 02/20

Acronym or Term	Means	Definition
Alpha radiation		A type of radiation that is not very penetrating and can be blocked by materials such as human skin or paper or one inch of air. Alpha radiation presents its greatest risk when it is inhaled or ingested. Plutonium, the radioactive material of greatest concern at Rocky Flats, produces this type of radiation.
Am	americium	A man-made radioactive element that is a byproduct of plutonium (Pu) production. Am emits gamma radiation, which can penetrate many types of protective shielding. During the production era at Rocky Flats, Am was chemically separated from Pu to reduce personnel exposures.
AME	Actinide Migration Evaluation	An exhaustive, years-long study by independent researchers who studied how actinides such as plutonium, americium, and uranium move through the soil and water at Rocky Flats.
AMP	Adaptive Management Plan	Additional water quality sampling and analysis that DOE is conducting, beyond the normal environmental assessments, to inform decisions regarding future breaches of remaining dams.
AOC well	Area of Concern well	A particular type of groundwater well.
B	boron	An inorganic compound that has been found in some surface water and groundwater samples at Rocky Flats.
Be	beryllium	A very strong and lightweight metal that was used at Rocky Flats in the manufacture of nuclear weapons. Exposure to beryllium is now known to cause respiratory disease in those persons sensitive to it.
Beta radiation		A type of radiation that is more penetrating than alpha (but less penetrating than gamma). Beta particles can be stopped after traveling through 10 feet of air or a thin layer of glass or metal. Some forms of uranium emit beta radiation.
BMP	Best Management Practices	A term used to describe actions taken by DOE that are not required by regulation but warrant action.
BZ	Buffer Zone	The portion of the Rocky Flats site that was added during production to provide a "buffer" between the neighboring communities and the industrial portion of Rocky Flats. The buffer zone covered approximately 6,100 acres. Most of the buffer zone lands now make up the Rocky Flats National Wildlife Refuge.
CAD/ROD	Corrective Action Decision/Record of Decision	The complete final plan for cleanup and closure for Rocky Flats. The Federal/State laws that governed the cleanup at Rocky Flats required a document of this sort.
CCP	Comprehensive Conservation Plan	The refuge plan adopted by the U.S. Fish and Wildlife Service in 2007.
CDPHE	Colorado Department of Public Health and Environment	The state agency that regulates Rocky Flats.

Rocky Flats Acronym List
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Acronym or Term	Means	Definition
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	Federal legislation that governs the Rocky Flats cleanup. Also known as the Superfund Act.
cfs	cubic feet per second	A volumetric measure of water flow.
COC	Contaminant of Concern	A hazardous or radioactive substance that is present at Rocky Flats.
COU	Central Operable Unit	A CERCLA term used to describe the DOE-retained lands (about 1,300 acres) at Rocky Flats. The COU overlays the former Industrial Area (where manufacturing activities took place) and contains all engineered elements of the remedy (two landfills and four groundwater treatment systems) and areas of residual subsurface contamination.
CR	Contact Record	A regulatory procedure where CDPHE reviews a proposed action by DOE and either approves the proposal as is or requires changes to the proposal before approval. CRs apply to a wide range of activities performed by DOE. After approval, the CR is posted on the DOE-Legacy Management (LM) website and the public is notified via email.
Cr	chromium	Potentially toxic metal used at Rocky Flats.
CRA	Comprehensive Risk Assessment	A series of analyses that assess human health risks and risks to the environment (flora and fauna).
D&D	decontamination and decommissioning	The process of cleaning up and tearing down buildings and other structures.
DG	Discharge Gallery	The location where the treated effluent of the Solar Ponds Plume Treatment System (defined below) empties into North Walnut Creek.
DOE	U.S. Department of Energy	The federal agency that manages portions of Rocky Flats. The site office is the Office of Legacy Management (LM).
EA	Environmental Assessment	A study required by NEPA (defined below) when a federal agency proposes an action that could impact the environment. The agency is responsible for conducting the analysis to determine what, if any, impacts to the environment might occur due to a proposed action.
EIS	Environmental Impact Statement	An evaluation that is undertaken by a government agency when it is determined, via the EA, that a proposed action by the agency may have significant impacts to the environment.
EPA	U.S. Environmental Protection Agency	The federal agency that regulates Rocky Flats activities.
EEOICPA	Energy Employees Occupational Illness Compensation Program Act	An act passed by Congress in 2000 to compensate sick nuclear weapons workers and certain survivors.

Acronym or Term	Means	Definition
ETPTS	East Trenches Plume Treatment System	The treatment system near the location of the East Waste Disposal Trenches. This system treats groundwater emanating from the trenches that is contaminated with organic solvents, as well as groundwater routed from the Mound Plume Site Collection System. Treated effluent flows into South Walnut Creek.
FC	functional channel	Man-made stream channels constructed during cleanup to help direct water flow.
FACA	Federal Advisory Committee Act	The federal law that regulates federal advisory boards. The law requires balanced membership and open meetings with published Federal Register meeting dates.
Gamma Radiation		The most penetrating type of radiation at Rocky Flats. Thick, dense shielding is necessary to protect against gamma rays. Americium (Am) is a strong gamma emitter.
GAO	Government Accountability Office	Congressional investigative office that reports to Congress.
g	gram	A metric unit of mass.
gpm	gallons per minute	A volumetric measure of water flow.
GWIS	Groundwater Intercept System	A below-ground system that directs contaminated groundwater toward the Solar Ponds Plume and East Trenches Plume Treatment Systems.
IA	Industrial Area	The central core of Rocky Flats where all manufacturing activities took place. The IA covered 385 of Rocky Flats's 6,500 acres.
IC	Institutional Control	Administrative and legal controls employed to protect the integrity of the remedies in place and minimize the potential for human exposure to residual contamination.
IGA	intergovernmental agreement	A cooperative agreement between local governments that establishes the framework of the Stewardship Council.
IHSS	Individual Hazardous Substance Site	A name given during cleanup to a discrete area of known or suspected contamination. There were formerly over two hundred IHSSs at Rocky Flats.
ITPH	interceptor trench pump house	The location where contaminated groundwater collected by the interceptor trench is pumped to either the Solar Ponds Plume Treatment System or the East Trenches Plume Treatment System.
L	liter	Metric measure of volume (slightly larger than a quart).
LANL	Los Alamos National Laboratory	One of the US government's premier research institutions located near Santa Fe, NM. LANL is continuing to conduct highly specialized water analysis for Rocky Flats. Using sophisticated techniques, LANL is able to determine the percentages of both naturally occurring and man-made uranium, which helps to inform water quality decisions.
LHSU	lower hydrostratigraphic unit	Hydrogeological term for deep unweathered bedrock that is hydraulically isolated from the upper hydrostratigraphic unit (see UHSU). Data show that site COCs have not contaminated the LHSU.

Rocky Flats Acronym List
 Prepared for the Rocky Flats Stewardship Council
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Acronym or Term	Means	Definition
LM	Legacy Management	DOE office responsible for overseeing activities at closed sites.
LMPIP	Legacy Management Public Involvement Plan	A plan that follows DOE and EPA guidance on public participation and outlines the methods of public involvement and communication used to inform the public of site conditions and activities. It was previously known as the Post-Closure Public Involvement Plan (PCPIP).
O&M/OM&M	Operations, monitoring, and maintenance	Term that describes ongoing activities at Rocky Flats.
MOU	Memorandum of Understanding	The formal agreement between EPA and CDPHE specifying that CDPHE is the lead post-closure regulatory agency with EPA providing assistance when needed.
MSPCS	Mound Site Plume Collection System	The system that collects groundwater and routes it to the ETPTS for treatment.
MSPTS	Mound Site Plume Treatment System	The remediation system formerly in place (reconfigured in 2016) to treat groundwater contaminated with organic solvents emanating from the Mound Site (a portion of Rocky Flats where waste barrels were buried).
NEPA	National Environmental Policy Act	Federal legislation that requires the federal government to perform analyses of environmental consequences of major projects or activities.
nitrates		Contaminant of concern originating from Solar Ponds wastes. Nitrates have been detected in the North Walnut Creek drainage. Nitrates are very soluble in water and move readily through the aquatic environment.
Np	neptunium	A man-made radioactive isotope that is a by-product of nuclear reactors and plutonium production.
NPL	National Priorities List	A list of Superfund sites. The refuge lands were de-listed from the NPL, while the DOE-retained lands are still on the NPL because of residual groundwater contamination and associated remediation activities.
NWCS	North Walnut Creek Slump	Slumping observed on the hillside east of the Solar Ponds Plume Treatment System.
OLF	Original Landfill	Hillside dumping area of about 20 acres that was used from 1951 to 1968. The OLF underwent remediation with the addition of a soil cap and groundwater monitoring locations.
OU	Operable Unit	A distinct area within a cleanup site. These areas may address geographic areas, specific problems, or medium (e.g., groundwater, soil) where a specific action is required.
PCE	perchloroethylene (a.k.a. tetrachloroethylene)	A volatile organic solvent used in past operations at Rocky Flats.
pCi/g	picocuries per gram	A unit of radioactivity in soil.
pCi/L	picocuries per liter	A unit of radioactivity in water. CDPHE's regulatory limit for Pu and Am in surface water at Rocky Flats is 0.15 pCi/L. This standard is 100 times stricter than the EPA's drinking water standard.

Rocky Flats Acronym List
 Prepared for the Rocky Flats Stewardship Council
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Acronym or Term	Means	Definition
PLF	Present Landfill	Landfill constructed in 1968 to replace the OLF. During site remediation, the PLF was closed under RCRA regulations with an extensive cap and monitoring system.
PMJM	Preble's Meadow Jumping Mouse	A species of mouse found along the Front Range that is on the endangered species list. There are several areas in the Refuge and COU that provide adequate habitat for the mouse, usually found in drainages. Any operations that are planned in potential mouse habitat are strictly controlled.
POC	Point of Compliance (surface water)	A surface water monitoring location at Rocky Flats where contaminant concentrations must be in compliance with federal and state standards for hazardous constituents. Violations of water quality standards at the points of compliance could result in DOE receiving financial penalties.
POE	Point of Evaluation (surface water)	A surface water monitoring location at Rocky Flats where water quality is monitored. There are no financial penalties associated with water quality exceedances at these locations, but DOE may be required to develop a plan of action to improve the water quality.
POU	Peripheral Operable Unit	A CERCLA term used to describe the 4,800-acre area surrounding the Central Operable Unit.
Pu	plutonium	A metallic substance that was fabricated to form the core, or "trigger", of a nuclear weapon. Formation of these triggers was the primary production mission of the Rocky Flats site. There are different forms of plutonium, called isotopes. Each isotope is known by a different number, such as plutonium 239 (Pu-239) and plutonium 241 (Pu-241). Pu-239 is the primary radioactive COC at Rocky Flats.
RCRA	Resource Conservation and Recovery Act	Federal law regulating hazardous waste. In Colorado, EPA delegates to CDPHE the authority to regulate hazardous wastes.
RFCA	Rocky Flats Cleanup Agreement	The regulatory agreement that governed cleanup activities. DOE, EPA, and CDPHE were signatories.
RFCAB	Rocky Flats Citizen Advisory Board	The group formed as part of DOE's site-specific advisory board network. The RFCAB provided community feedback to DOE on a wide variety of Rocky Flats issues from 1993 through regulatory closure in 2006.
RFCLOG	Rocky Flats Coalition of Local Governments	The predecessor organization of the Rocky Flats Stewardship Council.
RFETS	Rocky Flats Environmental Technology Site	The moniker for Rocky Flats during cleanup years.
RFLMA	Rocky Flats Legacy Management Agreement	The post-cleanup regulatory agreement between DOE, CDPHE, and EPA that governs site activities. The CDPHE has the lead regulatory role, with support from EPA as required.
RFNWR	Rocky Flats National Wildlife Refuge	The 4,000 acres of Rocky Flats where unrestricted use is allowed. This land is now a wildlife refuge.

Rocky Flats Acronym List
 Prepared for the Rocky Flats Stewardship Council
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Acronym or Term	Means	Definition
RF SOG	Rocky Flats Site Operations Guide	The nuts-and-bolt guide for post-closure site activities performed by DOE and its contractors.
RSAL	Radionuclide Soil Action Level	Concentration of radionuclide in soil above which remedial action should be considered so that people are not exposure to radiation doses above permitted levels.
SEP	Solar Evaporation Ponds	An area of Rocky Flats used in the 1950s to hold excess wastewater generated during manufacturing operations. Wastewater that could not be treated in the onsite treatment plant was sent to open-air holding ponds where solar energy was utilized to evaporate and concentrate the waste. The original SEPs were unlined, and substantial quantities of uranium and nitrates made their way into groundwater. As a result, the Solar Ponds Plume Treatment System was constructed to treat contaminated groundwater before it emerged as surface water in North Walnut Creek.
SID	South Interceptor Ditch	A water feature designed to intercept runoff from the southern portion of the COU. The SID flows from west to east into Pond C-2. Woman Creek water does not enter Pond C-2, but is diverted around Pond C-2 through the Woman Creek Diversion Canal.
SPPTS	Solar Ponds Plume Treatment System	Engineered system designed to treat groundwater contaminated with uranium and nitrates. The nitrates originate from the former solar evaporation ponds, which had high levels of nitric acid. The uranium is primarily naturally occurring. Effluent from the SPPTS flows into North Walnut Creek.
SVOCs	semi-volatile organic compounds	Organic compounds that are not as volatile as solvent-related VOCs. SVOCs are found in many environmental media at Rocky Flats. They are found in materials like oil, coal, asphalt, and tar.
TCE	trichloroethylene	A volatile organic compound used as a solvent in past site operations. TCE is also a degradation product of PCE.
U	uranium	Naturally occurring radioactive element. There were two primary isotopes of U used during production activities. The first was enriched U, which contained a very high percentage (>90%) of U-235 and was used in nuclear weapons. The second isotope was U-238, also known as depleted uranium. U-238 has low levels of radioactivity.
ug/L or µg/L	micrograms per liter	A unit of contaminant concentration in water.
UHSU	upper hydrostratigraphic unit	A hydrogeological term describing the surficial materials and weathered bedrock found at Rocky Flats. The UHSU is hydraulically isolated from the lower hydrostratigraphic unit (see LHSU). Groundwater in some UHSU areas of Rocky Flats is contaminated with site-related COCs, while groundwater in other UHSU areas is not impacted. All groundwater in the UHSU emerges to surface water before it leaves Rocky Flats.

Rocky Flats Acronym List
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Acronym or Term	Means	Definition
USFWS	United States Fish & Wildlife Service	The agency within the US Department of the Interior that is responsible for maintaining the nation-wide system of wildlife refuges, among other duties. The regional office is responsible for the RFNWR.
UUUE	unlimited use and unrestricted exposure	A regulatory term used to describe residual risk remaining after a site has been remediated. In 2007, the Peripheral Operable Unit (POU) was found to be suitable for unlimited use and unrestricted exposure (based on risk calculations). EPA removed the POU (now largely the Rocky Flats National Wildlife Refuge) from the EPA's National Priorities List of CERCLA or "Superfund" sites.
VOC	volatile organic compound	These compounds include cleaning solvents that were used in the manufacturing operations at Rocky Flats. The VOCs used at Rocky Flats include carbon tetrachloride (often called carbon tet), trichloroethene (TCE), perchloroethylene (PCE), and methylene chloride.
WALPOC	Walnut Creek Point of Compliance	The surface water Point of Compliance on Walnut Creek, at the COU boundary.
WCRA (or "the Authority")	Woman Creek Reservoir Authority	The group composed the cities of Westminster, Northglenn, and Thornton. These cities use Standley Lake as part of their drinking water supply network. Surface water from Rocky Flats formerly flowed through Woman Creek to Standley Lake, but the Woman Creek Reservoir was constructed to sever that connection. The Authority has an operations agreement with DOE to manage the Woman Creek Reservoir.
WOMPOC	Woman Creek Point of Compliance	The surface water Point of Compliance on Woman Creek, at the COU boundary.
WQCC	Water Quality Control Commission	State board within CDPHE tasked with overseeing water quality issues throughout the state. DOE has petitioned the WQCC several times in the last few years regarding water quality issues.
WRW	Wildlife Refuge Worker	User scenario on which exposure risks are calculated.
ZVI	zero valent iron	A type of fine iron particles formerly used to treat VOCs in the ETPTS and MSPTS.