

ROCKY FLATS STEWARDSHIP COUNCIL

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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, June 4, 2018, 8:30 – 10:40 AM

**Rocky Mountain Metropolitan Airport, Terminal Building, Mount Evans Room
11755 Airport Way, Broomfield, Colorado**

- 8:30 AM Convene/Introductions/Agenda Review
- 8:35 AM Chairman’s Review of April 30th Executive Committee meeting
- 8:40 AM Public Comment: Comments are limited to the Consent Agenda and non-agenda items
- 8:50 AM Business Items
1. Consent Agenda
 - o Approval of meeting minutes and checks
 2. Executive Director’s Report
- 9:05 AM Receive Stewardship Council 2017 Financial Audit (briefing memo attached)
- o The Board will be briefed on the results of the audit.
 - o No material problems were found, and the Stewardship Council was found to be in compliance with all applicable laws and regulations.
- Action item: Approve Motion Accepting Stewardship Council 2017 Financial Audit**
- 9:15 AM Host DOE Annual Meeting (briefing memo attached)
- o DOE will brief on site activities for calendar year 2017.
 - o DOE has posted the report on its website and will provide a summary of its activities to the Stewardship Council.
 - o Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.).
- Public Comment on DOE Briefing: Comments must focus on DOE’s briefing.

10:30 AM Board Roundtable – Big Picture/Additional Questions/Issue Identification
Adjourn

Upcoming Meetings: September 17, October 29

Business Items

- April 2, 2018, draft board meeting minutes
- List of Stewardship Council checks

2017 Audit

- Cover memo
- Draft audit

ROCKY FLATS STEWARDSHIP COUNCIL
Monday, April 2, 2018, 8:30 – 11:40 a.m.
Rocky Mountain Metropolitan Airport, Terminal Building, Mount Evans Room
11755 Airport Way, Broomfield, Colorado

Board members: Mark McGoff (Director, Arvada), Sandra McDonald (Alternate, Arvada), Cindy Domenico (Director, Boulder County), Summer Laws (Alternate, Boulder County), Lisa Morzel (Director, Boulder), Mike Shelton (Director, Broomfield), Kim Groom (Alternate, Broomfield), David Allen (Alternate, Broomfield), Jim Dale (Director, Golden), Libby Szabo (Director, Jefferson County), Pat O’Connell (Alternate, Jefferson County), Joyce Downing (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Chris Hanson (Director, Superior), Sandy Pennington (Alternate, Superior), Jan Kulmann (Director, Thornton), Emily Hunt (Alternate, Thornton), Cathy Shugarts (Alternate, Westminster), Jeannette Hillery (Director, League of Women Voters), Sue Vaughn (Alternate, League of Women Voters), Murph Widdowfield (Director, Rocky Flats Cold War Museum), Roman Kohler (Director, Rocky Flats Homesteaders), Kim Griffiths

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

Attendees: Sarah Borgers (Westminster), Ryan Hanson (Sen. Gardner), Carl Spreng (CDPHE), Lindsay Masters (CDPHE), Linda Kaiser (Navarro), Patty Gallo (Navarro), John Boylan (Navarro), Bob Darr (Navarro), Jeffrey Murl (DOE-LM), Scott Surovchak (DOE-LM), Vera Moritz (EPA), Lynn Segal, Marion Whitney, Bonnie Graham-Reed, Pat Mellen, Paul Karolyi (journalist, Changing Denver), Nathan Church (Harvey Pro Cinema), Patty Calhoun (Westword), Matt Mauro (KDVR), Jon Mocton (KDVR), Irene Rodriguez (The Nation Report), Randy Stafford, Dale Avery, LeRoy Moore, Judith Mohling, Linda Hladik, David Wood, John Yoder, Brittany Gutermuth, Travis Milnes, Kim Seroff, Das Ellis, Elizabeth Panzer, Elaine McNeely.

Convene/Agenda Review: Vice Chair Chris Hanson opened the meeting at 8:30 a.m.

Public comment on Consent Agenda and Non-Agenda Items: Lynn Segal voiced her concern with opening the Rocky Flats National Wildlife Refuge.

Business Items:

Consent Agenda: Approval of Minutes and Checks: Lisa Morzel moved to approve the minutes and checks; Roman Kohler seconded the motion. The motion was approved 14-0.

Executive Director’s Report: David Abelson began by welcoming the new Board member, Summer Laws, Boulder County policy advisor. He next discussed Ann Lockhart’s decision to cease preparing the Stewardship Council minutes. David stated he is not sure how he will proceed, but for this meeting, Barb Vander Wall and Rik Getty will help take notes which David will use to compile the minutes.

David next explained that the 2017 audit will be presented at the June 4th meeting. Jennifer Bohn and David have reviewed the draft and did not find any issues. Barb Vander Wall will

next review it. David said that the auditor is preparing a clean audit, as the auditor has done each year he has conducted the audit. David next discussed local government dues, noting that all dues have been received except from one government. That payment is in process.

David next updated the Board on federal funding, explaining that Congress passed and the President signed funding for the remainder of the federal fiscal year. DOE secured the funding it needs for this fiscal year, and while he has not been tracking USFWS funding, the fact that the agency is moving forward with opening the Refuge, funding for that agency's work at Rocky Flats seems secure.

Finally, David spoke about uranium values at the Walnut Creek Point of Compliance (WALPOC). Rik and David, along with local government staff, continue to track uranium values at WALPOC. The Board has been briefed numerous times on uranium values, including fluctuations in the concentrations. Notably, the majority of the uranium is naturally-occurring (68-86%), but from a regulatory compliance standpoint, that distinction between man-made and naturally-occurring is not important as standards are standards and have to be met. The March staff update will include reference to and a short discussion of the latest issues described in contact record 2018-04. That record was issued in response to what is called a "reportable condition," an exceedance of the 30-day average at WALPOC. The standard is 16.8 micrograms/liter. The composite sample was 24 micrograms/liter, and the duplicate sample was 21 micrograms/liter. By comparison, the drinking water standard that local governments must meet is 30 micrograms/liter. As discussed in the contract record, the parties agreed that no mitigating action is required at this time. David said he will continue to update the Board as needed and trusts the issue will be discussed at the June 4, 2018, meeting.

CDPHE -- Follow Up to February 5, 2018 Stewardship Council Briefing

CDPHE began its presentation by outlining four questions from the February meeting:

1. Does the assessment of risk from plutonium exposure at Rocky Flats include dust inhalation? Carl Spreng said the answer is "yes."
2. Is inhalation risk significantly different than the risk from skin contact? Carl Spreng said the answer is "yes."
3. Does the risk from inhalation alone of plutonium differ from the overall risk presented at the February 2018 Stewardship Council meeting? Carl Spreng said the answer is "yes."
4. Are the doses from alpha radiation different from other types of radiation? Can you compare mrem levels when the radiation sources are different? Carl Spreng said the answer is "yes."

Lindsay Masters next explained the four-stage risk assessment process:

1. Hazard identification (which chemicals are of concern)
2. Toxicity assessment (numerical toxicity value)
3. Exposure assessment (where are the receptors and who are they)
4. Risk characterization (includes magnitude of risk and uncertainty of the estimate)

In turn, risk equals the probability of harm multiplied by the magnitude of the possible harm. To help illustrate this point, they showed four types of risk: (1) drinking diet soda and the resulting cancer risk from saccharin and obesity, (2) large asteroid impacting Earth, (3) cosmetics (namely, the risks from lead and other chemicals), and (4) cars and motorcycles.

With this background, Lindsay and Carl turned to the CERCLA risk range and the question of how clean is clean. The CERCLA target risk range is an increased cancer risk to the individual of 1-in-10,000 to 1-in-1,000,000. In Colorado, they noted, roughly 1 in 2 men get cancer and 1 in 3 women get cancer. The increased risk allowed under CERCLA is, they noted, extremely low.

Carl and Lindsay next showed a number of slides that address how site personnel and the regulatory agencies addressed dust inhalation. The human exposure pathways are from inhalation, ingestion, dermal absorption, injection, and external irradiation. They explained that as a gamma emitter, the greatest risk from americium is from external exposure. For plutonium, an alpha emitter, that pathway is negligible. Plutonium, in contrast, must be inhaled. Risk, in turn, is linked to the type of radionuclide (alpha, beta and gamma).

In short, Carl and Lindsay explained how inhalation rates were used to calculate risks to potential receptors. They concluded by noting that the greatest risk to people living in close proximity to Rocky Flats is from radon gas. Radon is estimated to cause about 21,000 lung cancer deaths per year in the U.S. Radon is a naturally-occurring radioactive gas that comes from the breakdown of uranium in the soil. High radon levels have been found in all 50 states and in all parts of Colorado. In Colorado, about half the homes have radon levels higher than the EPA recommended action level of 4 picoCuries per liter (pCi/L).

CDPHE Presentation – Buffer Zone Sampling

Carl and Lindsay began by explaining the Rocky Flats operational features.

1. Industrial Area (IA) – Approximately 350 acres, the IA housed the plant operations. That area included approximately 400 buildings.
2. Buffer Zone (BZ) – The BZ was the security and safety area surrounding the IA. The area was expanded to 6,150 acres in the 1970s following the 1969 fire.
3. Central Operable Unit (COU) – This area is the land DOE currently manages. Approximately 1,308 acres, the COU includes most of the former IA plus areas that are part of the final remedy.
4. Peripheral Operable Unit (POU) – These lands surround the COU. They were transferred to USFWS in 2007 for the express purposes of the Rocky Flats National Wildlife Refuge.
5. Rocky Flats National Wildlife Refuge – At 5,237 acres, the Refuge includes the POU plus acreage acquired when mining leases were extinguished using Natural Resource Damages funds.

With that background, they explained that for sampling purposes Rocky Flats was divided into 12 exposure units. The exposure units were established to facilitate investigation and assessment of the site. Rocky Flats was then divided into 30-acre grids. Within each grid, site personnel sampled five spots (one in the center and four in each corner). As shown on a map that they

provided, a map that is also included in the Stewardship Council's briefing packet, site personnel and the regulatory agencies recognized that they had enough data for some of the cells and thus did not sample those cells. One such area was the Wind Blown Exposure Unit.

Sandy Pennington asked for clarification on the sample methodology. Carl responded that the site was divided into 30-acre grids. Four samples, each six inches deep, were taken from the corners of grid, and one sample was taken at center. All five samples were then combined.

Shelley Stanley asked about the size of the Wind Blown Exposure Unit. Carl responded that it was approximately 0.5 square miles. Sandy Pennington next asked about the proposed access points for the Rocky Flats National Wildlife Refuge and the proposed trails. Carl pointed them out on a map, explaining it is his understanding that one proposed trail would be through the Wind Blown Exposure Unit.

Lindsay and Carl next showed sampling maps indicating plutonium contamination in surface soils, and subsurface soil sampling. They also showed a map indicating sampling of the 903 Pad and 903 Lip Area. Lisa Morzel asked about the scale of 903 Pad and Lip area. Carl replied that area is approximately 40 acres. In response to a question from Jim Dale regarding how contamination spread, Carl replied that the contamination got into the soil via leaking drums. Over time, the prevailing winds from west to east spread the contamination. Regarding hotspots at the 903 Pad, Lisa Morzel asked how site personnel remediated them. Carl responded that personnel removed dirt. Chris Hanson asked how personnel identified the hot spots. Carl said they used a FIDLER instrument, a field instrument for detecting low energy radiation.

Next, Lindsay and Carl explained the EPA's 2005 confirmatory sampling. In 2005, following the completion of the 2004 sampling, analyses, and data validation, EPA performed its own surface soil testing. Agency staff selected the 30-acre cell within each of the 12 EUs which had the highest mean plutonium value. Next, they obtained five samples from each cell (one sample at the center and four near the corners), but instead of compositing the five samples into one sample, they analyzed all five discrete samples. That data was included in a slide that showed plutonium values being extremely low, far lower than the regulatory standards.

From there, they turned to other efforts to independently verify the soil contamination values. Those efforts included ORISE's independent verification, an aerial survey, USFWS's 2006 sampling, ATSDR's 2005 review, CDPHE split samples, and other third-party reviews.

Sandy Pennington said she was concerned that even with the extensive work, hot spots could be missed. David Abelson noted that Sandy's concerns were widely shared at closure, and that the Rocky Flats Coalition of Local Government's independent review (conducted by MACTEC) reached the same conclusion. David said the likelihood of hotspots in the former Industrial Area (IA) and around the 903 Lip Area is why comprehensive water quality monitoring, particularly surface water monitoring, remains imperative.

Public Comment on CDPHE's Presentation: Marion Whitney said an ecosystem keeps changing, and that this fact is not often appreciated. She explained that when water levels are high, plutonium concentrates on the stream banks, and that after the water recedes, children will

expose themselves to the contaminants. She said if people want additional information, go to the Community Right to Know website. Pat Mellen asked about the statement that the CERCLA review considered the Refuge lands. Lindsay Masters said she would provide additional information to Pat. Lynn Segal asked about people eating plants grown on Rocky Flats. Judith Mohling said that additional information can be found on the Rocky Mountain Peace Center's website. David Wood said additional information can be found at rockyflatsneighbors.org. He noted that he tested soils at his home that neighbors Rocky Flats, and that the values are low and consistent with other analyses.

Pat Mellen Briefing

Pat is an attorney and a resident of Superior. She requested time to address concerns she had with CDPHE's presentation at the February 5, 2018, Stewardship Council Board of Director's meeting. She titled her presentation "Rocky Flats: Concerns and Challenges." Her stated goal is not to change anyone's point of view but instead present another viewpoint.

Pat began her presentation by describing her goals for today: "consolidated summary of diverse concerns, clarification of context around complex issues, and renewed efforts at collaboration by all parties." She next provided context to CDPHE's "Big Truths" from the February 5, 2018, meeting: (1) Rocky Flats once was highly contaminated, (2) environmental crimes committed during Plant Operations, (3) some on and off-site residual contamination remains, and (4) will persist a long time." Regarding #1, she noted plutonium fires (1957, 1969), "misguided waste storage/disposal decisions," 903 Pad, East Trenches, Pondcrete/Saltcrete, and the Solar Ponds."

Regarding #2, she focused her comments on the Rocky Flats grand jury and the fact that Rockwell pleaded guilty to 10 charges, paying an \$18 million fine. Those fines were a result of RCRA and Clean Water Act violations. She noted that due to contractual obligations, the taxpayers ultimately paid the \$18 million fine. In addition, as part of providing context for truth #2, Pat laid out a timeline for the various cleanup agreements. She presented her understanding of what it meant to accelerate the cleanup, noting that the legal basis for the cleanup flipped the normal process for investigating the extent of the contamination prior to undertaking remedial activities. She further noted that Rocky Flats competed with other sites for cleanup dollars and that ATSDR cautioned against allowing access to Rocky Flats until the completion of remedial activities and an assessment of the risk.

Additionally, regarding #2, Pat also noted that no remedial actions were taken on the lands that now comprise the Refuge or off-site.¹ She also discussed efforts by Broomfield and the Standley Lake Cities (Westminster, Northglenn and Thornton) to secure new water supplies and protect existing supplies. Those projects were completed in 1995, when cleanup was in the early stages. She also said that the Refuge Act was approved by Congress before cleanup standards were established.

Pat next turned to truth #3, noting that plutonium standards for surface soil (defined at the top 3' of soil) are 50 pCi/g. Standards for soils 3'-6' below grade are 1,000 pCi/g. Below 6' plutonium standards are "unlimited." Hot spots in the surface soils in the former Industrial Area likely

¹ This latter part of the statement tracks what Pat said but is partly inaccurate. There was a soil remediation project located just east of Indiana Street.

exist. She also noted that contamination spread off-site, referencing the Krey Hardy map that was compiled for the Atomic Energy Commission.

Regarding truth #4, she discussed the disposal of a safe at the Hanford Site in Washington State that contained a bottle holding plutonium. She said she has heard anecdotal evidence of workers burying waste underground at Rocky Flats.

Pat next turned to the fact that DOE provides funding for both CDPHE and the Stewardship Council. Without discussing any specifics, she noted that Carl Johnson, who worked for the Jefferson County Health Department, was fired because he found plutonium off-site of Rocky Flats. Pat O'Connell asked when Johnson was fired. Pat said she did not know. Randy Stafford, a citizen, said he was fired in the early 1980s. Libby Szabo asked whether Pat had seen Dr. Johnson's personnel file and knew the reason for his firing. Pat said she did not. Jim Dale, who retired from the Jefferson County Health Department in 2011, questioned the connection Pat was making, arguing it was irresponsible to conclude that Dr. Johnson's firing was a result of his work on Rocky Flats without concrete proof. Other Board members questioned the point Pat was making—namely, those who get funding from DOE are compromised, and those who challenge DOE are fired. Pat reiterated that she was only reporting what she was told but did not have any first-hand knowledge of the employment determination, including the reason why he was fired.

Pat next turned to the question of how someone who has no knowledge of Rocky Flats can make a reasonable assessment of the risks associated with the site. She discussed the complexity of the issues and science, noting, for instance, that the final regulatory documents (the Remedial Investigation/Feasibility Study (RI/FS)) is 23 volumes, much of it complex and technical. Complicating the challenge is that the RI/FS was completed at the end of cleanup, not as the start as is the norm for RCRA and CERCLA cleanups.²

Next, she questioned CDPHE's statements from the February 5, 2018, briefing concerning inhalation of a small particle of plutonium. She noted that plutonium can be extremely dangerous and toxic if inhaled. She continued by noting that other toxins are of concern, not just plutonium. From there she questioned that impacts that would result from building the Jefferson Parkway. That road is slated to utilize Indiana Street and 300' along the Indiana Street/Rocky Flats eastern boundary that was previously conveyed to the local jurisdictions for building the road. That conveyance of the 300' right-of-way was authorized in the Rocky Flats refuge act. Pat questioned the impact of disturbing soils along the 300' right-of-way as those activities would release plutonium into the environment. She commented that there are no emergency response plans should workers uncover disposal trenches along the right-of-way. Mike Shelton questioned whether she really believes that waste drums were disposed of in the lands that now comprise the Rocky Flats Refuge, especially the far reaches along the eastern boundary. Pat replied that there is anecdotal evidence from former workers that waste was disposed of in trenches. David Abelson pointed out that the lands Pat is discussing were in private ownership until 1974/1975. Pat replied that she is only reported what she has heard, but she has not researched the issue herself. Other Board members questioned that accuracy of her statement,

² In legal terms, what Pat was referencing was that the cleanup was done under the interim action provisions of RCRA and CERCLA.

and the implication that there were burial tranches on the lands that now comprise the Rocky Flats Refuge.

She next turned to the cessation of air quality sampling following the closure of the site. In support of her concerns, she showed a document that was provided by Gale Biggs. It appears to be a 1982 air report from Building 771. Scott Surovchak with DOE said that he had previously seen that document from Gale and that it is not a Rocky Flats document. Scott said it does not track the form the AEC/DOE used. Scott asked if she could provide the source of that document. Pat replied that she had not checked into the source, trusting Biggs, but would find the document source and provide that information to Scott.

She next turned to averaging plutonium soil values and comparing them to soil cleanup levels. She said whether cleanup values are safe or not safe is not the question, but rather what is safe today might not be safe tomorrow. Cancer risk, she noted, is not the only standard. She noted that the site is not static and that if the numbers prove inaccurate what is the fall back position. In support of this point, she introduced the idea of risk communication, citing a study by Satterfield and Levin. “Risk adverse” versus “risk tolerance” is a point of view, she said. Regarding embracing evolving risk and decision-making, she highlighted Love Canal and contaminated drinking water in Flint, Michigan. From there, she returned to disposal problems at Hanford and ongoing instability of the Original Landfill at Rocky Flats.

She next turned to the question of the impacts of wildfires and construction activities, arguing that based on others’ personal experience the amount of smoke visible from the 1969 fire contradicted official accounts. David Abelson asked whether she was comparing a fire at a plutonium building during production to the impact of a wildfire today. Pat said she was not making that connection but did not explain why she mentioned the two types of fire during this portion of the presentation.

Returning to the aforementioned water quality protection projects for Broomfield and Standley Lake, she said that use restrictions on Standley Lake were a result of plutonium in the sediments. (This issue reemerged during Board questions/comments.) She also said the goal was to prevent Standley Lake from ending up like Great Western Reservoir but did not explain that reference.

Finally, she questioned where the missing plutonium might be, noting that prairie dogs can dig quite deep.

Her bottom line is:

- “What is the purpose and the responsibility of this Council v. individual local governments to protect the public – who owns any future problems?”
- “LSO v. Non-LSO distinctions”
- “Public awareness of the difference”
- “Expansion into the Refuge activities”

Pat then took questions from the Board. Chris Hanson asked about restrictions on activities at Standley Lake, noting that local governments often place various restrictions on the use of public reservoirs holding municipal drinking water. Cindy Domenico echoed Chris’ comment. Shelley

Stanley, City of Northglenn staff and a member of the authority that manages the Woman Creek Reservoir, noted that the hydrologic connection between Rocky Flats and Standley Lake was severed in 1995 by the completion of the Woman Creek Reservoir. She explained that none of the use restrictions on Standley Lake are associated with Rocky Flats or plutonium in the sediments.

Sandy Pennington asked about the ATSDR report that Pat mentioned. She said that USFWS should heed ATSDR's caution regarding restriction access restrictions to Rocky Flats. She also noted that USFWS should take that counsel into account when developing the compatibility determination. David Abelson explained that USFWS' compatibility determination has nothing to do with contamination but stems from the agency's organic act and regulations. The determination, he said, is a function of permissible uses of the refuge.

Public Comment on Pat's Presentation: Elaine McNeely moved to Five Parks in Arvada in 2004. She and her husband were not notified of what she called the "dangers of living near Rocky Flats." In 2014, her husband, Brian, was diagnosed with cardio angiosarcoma, a cancer she described as rare. Brian died in 2015. She said others in her neighborhood, including a child, have Parkinson's, MS and other cancers.

Bonnie Graham-Reed said that no testing of the refuge lands has been conducted since closure in 2006. She said the site is not static and that it should be treated accordingly and err on the side of caution. David Wood, a resident of Candelas, said that the public is distorting the data, and that burrowing animals is not an issue. Regarding the issue of cancer clusters, causation is hard to prove, and that instead of making judgements people should look at the statistics. Marion Whitney stated that she needs more research to be completed on the health risks of Rocky Flats, and until such studies are completed, the Refuge should be closed.

Elizabeth Panzer spoke of her son who is also battling cardio angiosarcoma. Her son is the neighbor of whom Elaine spoke. She said that looking at risks through statistics dehumanizes what she and her family are experiencing. She also noted that she may have found some link between her son's cancer and chemicals found at Rocky Flats. People need to stay flexible in their thinking so that they do not miss the human stories.

Randy Stafford echoed Elaine and Elizabeth's comments. She noted that over the history of Rocky Flats there have only been six studies on the health impacts of communities neighboring the site. Of those studies, the only one to not find any health issues is the one conducted by CDPHE. He urged the Board to view CDPHE's critically. Lynn Segal said that what you do not know can hurt you.

Board Roundtable: David Abelson discussed the Big Picture. At the June 4th meeting, the Board will receive the 2017 audit, hear from DOE, and meet with USFWS to learn more about its plans for the Refuge.

The meeting was adjourned at 11:40 a.m.

Prepared by David Abelson

Rocky Flats Stewardship Council
Check Detail 2018
March 7 through May 8, 2018

Type	Num	Date	Name	Account	Paid Amount	Original Amount
Check		03/31/2018		CASH-Wells Fargo-Operating		-3.50
				Admin Services-Misc Services	-3.50	3.50
TOTAL					-3.50	3.50
Bill Pmt -Check	1910	04/06/2018	Blue Sky Bistro	CASH-Wells Fargo-Operating		-300.00
Bill	2959	04/02/2018		Misc Expense-Local Government	-300.00	300.00
TOTAL					-300.00	300.00
Bill Pmt -Check	1911	04/06/2018	Crescent Strategies, LLC	CASH-Wells Fargo-Operating		-8,546.59
Bill	3/31/18 Billing	03/31/2018		Personnel - Contract	-7,517.50	7,517.50
				Personnel - Contract	-232.50	232.50
				Meeting Expense	-33.44	33.44
				TRAVEL-Local	-77.39	77.39
				Postage	-15.99	15.99
				Supplies	-10.00	10.00
				Subscriptions/Memberships	-525.70	525.70
				Telecommunications	-134.07	134.07
TOTAL					-8,546.59	8,546.59
Bill Pmt -Check	1912	04/06/2018	Jennifer A. Bohn	CASH-Wells Fargo-Operating		-418.00
Bill	18-19	03/31/2018		Accounting Fees	-418.00	418.00
TOTAL					-418.00	418.00
Bill Pmt -Check	1913	04/06/2018	Seter & Vander Wall, P.C.	CASH-Wells Fargo-Operating		-2,615.14
Bill	76160	02/28/2018		Attorney Fees	-2,251.64	2,251.64
Bill	76301	03/31/2018		Attorney Fees	-363.50	363.50
TOTAL					-2,615.14	2,615.14
Check	1914	04/06/2018	Century Link	CASH-Wells Fargo-Operating		-27.63
				Telecommunications	-27.63	27.63
TOTAL					-27.63	27.63
Check	1915	05/03/2018	Century Link	CASH-Wells Fargo-Operating		-33.81
				Telecommunications	-33.81	33.81
TOTAL					-33.81	33.81
Bill Pmt -Check	1916	05/03/2018	Crescent Strategies, LLC	CASH-Wells Fargo-Operating		-8,012.88
Bill	4/30/18 Billing	04/30/2018		Personnel - Contract	-7,750.00	7,750.00
				TRAVEL-Local	-112.82	112.82
				Postage	-15.99	15.99
				Telecommunications	-134.07	134.07
TOTAL					-8,012.88	8,012.88
Bill Pmt -Check	1917	05/03/2018	Fiscal Focus Partners, LLC	CASH-Wells Fargo-Operating		-4,000.00
Bill	1016	04/01/2018		Annual Audit	-4,000.00	4,000.00
TOTAL					-4,000.00	4,000.00
Bill Pmt -Check	1918	05/03/2018	HUB International	CASH-Wells Fargo-Operating		-3,385.61
Bill	2018 Quote	05/01/2018		Insurance	-3,385.61	3,385.61
TOTAL					-3,385.61	3,385.61
Bill Pmt -Check	1919	05/03/2018	Jennifer A. Bohn	CASH-Wells Fargo-Operating		-712.50
Bill	18-20	04/30/2018		Accounting Fees	-712.50	712.50
TOTAL					-712.50	712.50

9:19 PM

05/08/18

Rocky Flats Stewardship Council

Check Detail 2018

March 7 through May 8, 2018

Type	Num	Date	Name	Account	Paid Amount	Original Amount
Bill Pmt -Check	1920	05/03/2018	The Hartford	CASH-Wells Fargo-Operating		-500.00
Bill	11599945 4/18/18	04/18/2018		Insurance	-500.00	500.00
TOTAL					-500.00	500.00

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League of Women Voters ~ Rocky Flats Cold War Museum ~ Rocky Flats Homesteaders
Kim Griffiths

MEMORANDUM

TO: Board
FROM: David Abelson
SUBJECT: 2017 Stewardship Council Financial Audit
DATE: May 22, 2018

Attached for your review is Fiscal Focus Partners' draft 2017 financial audit of the Rocky Flats Stewardship Council. As he has done in past years, Eric Barnes will discuss the audit and answer your questions. He did not find any material deficiencies and issued a clean audit.

The Stewardship Council is not required by either state law or the DOE grant to secure an audit. However, an independent audit is an important check that confirms both the Board and staff are managing the finances in accordance with applicable laws and regulations.

The Stewardship Council will need to formally accept the audit at the meeting.

Action Item: Approve motion accepting Stewardship Council's 2017 audit

Rocky Flats Stewardship Council
FINANCIAL STATEMENTS
With Independent Auditor's Report
December 31, 2017

Draft

Rocky Flats Stewardship Council

BASIC FINANCIAL STATEMENTS

December 31, 2017

Independent auditor’s report..... I

Basic financial statements:

Government-wide financial statements:

 Statement of net position..... 1

 Statement of activities 2

Fund financial statements:

 Balance sheet – governmental fund 3

 Statement of revenues, expenditures, and changes in fund balance –
 governmental fund..... 4

 Reconciliation of the statement of revenues, expenditures, and changes
 in fund balance of governmental funds to the statement of activities 5

 Statement of revenues, expenditures, and changes in fund balance –
 budget and actual – general fund 6

Notes to financial statements 7

Draft

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors
Rocky Flats Stewardship Council

We have audited the accompanying financial statements of the governmental activities and each major fund of Rocky Flats Stewardship Council (the Council) as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise the Council's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of Rocky Flats Stewardship Council, as of December 31, 2017, and the respective changes in financial position thereof, and the respective budgetary comparison for the General Fund for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Management has omitted management's discussion and analysis that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Our opinion on the basic financial statements is not affected by this missing information.

Lakewood, Colorado
March 15, 2018

ROCKY FLATS STEWARDSHIP COUNCIL

STATEMENT OF NET POSITION

December 31, 2017

	Governmental Activities
ASSETS	
Cash and cash equivalents	\$ 188,316
Other receivable	1,065
Capital assets, net	111
Total assets	189,492
LIABILITIES	
Accounts payable	10,414
Unearned grant revenue	979
Total liabilities	11,393
NET POSITION	
Net investment in capital assets	111
Restricted for grant expenditures	979
Unrestricted	177,009
Total net position	178,099

The accompanying Notes to the Financial Statements are an integral part of these statements.

1
Draft

ROCKY FLATS STEWARDSHIP COUNCIL
STATEMENT OF ACTIVITIES
For the Year Ended December 31, 2017

	Program Revenue				Net (Expense) Revenue and Changes in Net Position
<u>Functions/Programs</u>	Expenses	Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities
Primary government	\$ 138,146	\$ -	\$ 145,908	\$ -	\$ 7,762
Total primary government	\$ 138,146	\$ -	\$ 145,908	\$ -	7,762
General revenues:					
Interest income					27
Total general revenues					27
Change in net position					7,789
Net position - beginning					170,310
Net position - ending					\$ 178,099

The accompanying Notes to the Financial Statements are an integral part of these statements.

ROCKY FLATS STEWARDSHIP COUNCIL

**BALANCE SHEET
GOVERNMENTAL FUND**

December 31, 2017

	General Fund	Total Governmental Funds
ASSETS		
Cash and cash equivalents	\$ 188,316	\$ 188,316
Other receivable	1,065	1,065
Total assets	189,381	189,381
 LIABILITIES AND FUND BALANCES		
LIABILITIES		
Accounts payable	10,414	10,414
Unearned grant revenue	979	979
Total liabilities	11,393	11,393
 FUND BALANCES		
Restricted for:		
Grant expenditures	979	979
Unassigned:		
General government	177,009	177,009
Total fund balances	177,988	177,988
Total liabilities and fund balances	\$ 189,381	
 Amounts reported for governmental activities in the statement of net position are different because:		
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.		111
Net position of governmental activities		\$ 178,099

The accompanying Notes to the Financial Statements are an integral part of these statements.

ROCKY FLATS STEWARDSHIP COUNCIL
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
GOVERNMENTAL FUND

For the Year Ended December 31, 2016

	Total General Fund and Governmental Funds
REVENUES	
Grants	\$ 135,908
Contributions from local governments	10,000
Interest income	27
Total revenues	145,935
 EXPENDITURES	
General government	
Annual audit	4,019
Accounting fees	4,608
Attorney fees	17,566
Administrative service	129
Insurance	3,886
Local government	1,480
Personnel - contract	96,038
Postage	606
Subscriptions/membership dues	1,457
Supplies	10
Telecommunications	1,978
Travel - local	758
Travel - out of state	5,464
Total expenditures	137,999
 Net change in fund balances	 7,936
 Fund balances - beginning	 170,052
Fund balances - ending	\$ 177,988

The accompanying Notes to the Financial Statements are an integral part of these statements.

ROCKY FLATS STEWARDSHIP COUNCIL

**RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN
FUND BALANCES OF GOVERNMENTAL FUNDS TO THE STATEMENT OF ACTIVITIES**

For the Year Ended December 31, 2017

Amounts reported for governmental activities in the statement of activities are different because:

Net change in fund balances - total governmental funds:	\$	7,936
---	----	-------

Governmental funds report capital outlays as expenditures. In the statement of activities capital outlay is not reported as an expenditure. However, the statement of activities will report as depreciation expense the allocation of the cost of any depreciable asset over the estimated useful life of the asset.

Depreciation expense		(147)
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Change in net position of governmental activities	<u>\$</u>	<u>7,789</u>
---	-----------	--------------

The accompanying Notes to the Financial Statements are an integral part of these statements.

ROCKY FLATS STEWARDSHIP COUNCIL

**STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - BUDGET AND ACTUAL -
GENERAL FUND**

For the Year Ended December 31, 2017

	Original and Final Budget	Actual	Variance with Final Budget Favorable (Unfavorable)
Revenues			
U.S. Department of Energy - Office of Legacy Management	\$ 130,000	\$ 135,908	\$ 5,908
Contributions from local governments	10,000	10,000	-
Carry over - Rocky Flats Coalition of Local Governments	16,100	-	(16,100)
Interest income	-	27	27
Total revenues	156,100	145,935	(10,165)
Expenditures			
General government			
Personnel	93,000	96,038	(3,038)
Travel	6,700	6,222	478
Equipment	500	-	500
Supplies	1,200	10	1,190
Contractual	40,100	27,802	12,298
Insurance	4,000	3,886	114
Postage	1,500	606	894
Printing	2,000	-	2,000
Subscriptions/membership dues	2,400	1,457	943
Telecommunications	2,700	1,978	722
Website	2,000	-	2,000
Total expenditures	156,100	137,999	18,101
Net change in fund balance	-	7,936	7,936
Fund balance - beginning of year	141,267	170,052	28,785
Fund balance - end of year	\$ 141,267	\$ 177,988	\$ 36,721

The accompanying Notes to the Financial Statements are an integral part of these statements.

Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS

December 31, 2017

Note 1 – Summary of significant accounting policies

A. Reporting entity

The Rocky Flats Stewardship Council (Council) was organized on February 13, 2006 through an Intergovernmental Agreement (IGA) by and among the following governments: the City and County of Broomfield, the Counties of Jefferson and Boulder, the Cities of Arvada, Boulder, Golden, Northglenn, Thornton, and Westminster, and the Town of Superior. All jurisdictions are located adjacent to or near the former U.S. Department of Energy's Rocky Flats weapons plant. All jurisdictions are permanent parties, with continuous representation on the Board of Directors. The Council was organized as the successor organization to the Rocky Flats Coalition of Local Governments (Coalition), also formed through an IGA, which concluded its existence shortly following the organization of the Council, having fulfilled its purpose in connection with the closure of the Rocky Flats Site.

The Council was formed for the purpose of overseeing all post-closure Rocky Flats activities. The legislative and administrative power of the Council is vested with a Board of Directors not to exceed 14 in number. Members are community stakeholder representatives, selected by the remaining Board of Directors upon application, and have a right to appoint a Director to the Board.

Under the terms of the IGA, the status of the Council is to be reviewed periodically by the local governments which are parties to the agreements to determine whether the Council will continue in existence. Also under the terms of the IGA, the Council is established as an "enterprise", as defined by Article X, Section 20 of the Colorado constitution, commonly referred to as the Taxpayer's Bill of Rights, or Tabor (Note 5).

The Council has no employees and all operations and administrative functions are contracted.

The Council follows the Governmental Accounting Standards Board (GASB) accounting pronouncements which provide guidance for determining which governmental activities, organizations and functions should be included within the financial reporting entity. GASB pronouncements set forth the financial accountability of a governmental organization's elected governing body as the basic criterion for including a possible component governmental organization in a primary government's legal entity. Financial accountability includes, but is not limited to, appointment of a voting majority of the organization's governing body, ability to impose its will on the organization, a potential for the organization to provide specific financial benefits or burdens and fiscal dependency.

Rocky Flats Stewardship Council

**NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2017**

As of December 31, 2017, no component unit has been identified as reportable to the Council, nor is the Council a component unit of any other primary governmental entity.

B. Government-wide and fund financial statements

The government-wide financial statements include the statement of net position and the statement of activities. These financial statements include all of the activities of the Council. Both statements distinguish between governmental activities, which normally are supported by taxes and intergovernmental revenue, and business-type activities, which rely to a significant extent on fees and charges for support.

The statement of net position reports all financial and capital resources of the Council. The difference between the assets and liabilities of the Council is reported as net position.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment is offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services or privileges provided by a given function or segment, and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for governmental funds. Major individual governmental funds are reported as separate columns in the fund financial statements.

C. Measurement focus, basis of accounting and financial statement presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Expenditures for property and equipment are shown as increases in assets.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are

Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS (continued) December 31, 2017

collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting.

Eligible grant receipts and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. Other revenue items are considered to be measurable and available only when the Council receives cash.

The government reports the following major governmental fund:

The general fund is the Council's primary operating fund. It accounts for all financial resources of the general government.

When both restricted and unrestricted resources are available for use, it is the Council's policy to use restricted resources first, then unrestricted resources as they are needed.

D. Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires Council management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Actual results could differ from those estimates.

E. Assets, liabilities, and fund equity

1. Deposits and investments

The Council's cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with maturities of three months or less.

Investments for the government are reported at fair value.

2. Capital assets

Capital assets, which include furniture and equipment, are reported in the government-wide financial statements. Capital assets are defined by the Council as assets with an initial, individual cost of more than \$250. Such assets are recorded at historical cost if purchased or constructed. Donated capital assets are recorded at estimated fair market value at the date of donation.

Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS (continued) December 31, 2017

The cost of normal maintenance and repairs that do not add to the value of the asset or materially extend the life of the asset are not capitalized. Improvements are capitalized and depreciated over the remaining useful lives of the related fixed assets, as applicable. Depreciation expense is computed using the straight-line method for all assets, based on the estimated useful lives of the assets, estimated at 3 years.

3. Fund equity

Fund balance for governmental funds should be reported in classifications that comprise a hierarchy based on the extent to which the government is bound to honor constraints on the specific purposes for which spending can occur. Governmental funds report up to five classifications of fund balance: nonspendable, restricted, committed, assigned, and unassigned. Because circumstances differ among governments, not every government or every governmental fund will present all of these components. The following classifications describe the relative strength of spending constraints:

Non-spendable fund balance – The portion of fund balance that cannot be spent because it is either not in spendable form (such as inventory) or is legally or contractually required to be maintained intact.

Restricted fund balance – The portion of fund balance constrained to being used for a specific purpose by external parties (such as grantors or bondholders), constitutional provisions or enabling legislation.

Committed fund balance – The portion of fund balance constrained for specific purposes according to limitations imposed by the Council's highest level of decision making authority, the Board of Directors, prior to the end of the current fiscal year. The constraint may be removed or changed only through formal action of the Board of Directors.

Assigned fund balance – The portion of fund balance that is constrained by the government's intent to be used for specific purposes, but is neither restricted nor committed. Intent is expressed by the Board of Directors to be used for a specific purpose. Constraints imposed on the use of assigned amounts are more easily removed or modified than those imposed on amounts that are classified as committed.

Unassigned fund balance – The residual portion of fund balance that does not meet any of the above criteria.

If more than one classification of fund balance is available for use when an expenditure is incurred, it is the Council's policy to use the most restrictive classification first.

Rocky Flats Stewardship Council

**NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2017**

At December 31, 2017, the Council had \$979 restricted by grantors (for expenses connected with monitoring of post-closure Rocky Flats activities – see Note 1A above).

The remaining fund balance is considered by the Council to be unassigned. At December 31, 2017, the Council had an unassigned fund balance in the general fund of \$177,009.

F. Budgetary information

Annual budgets are adopted on a basis consistent with generally accepted accounting principles for all governmental funds. In accordance with the Colorado State Budget Law, the Council's Board of Directors follows these procedures in establishing the budgetary data reflected in the financial statements:

1. On or before October 15, the Board prepares a proposed operating budget for each fund, based on their respective basis of accounting, for the fiscal year commencing the following January 1. The operating budget includes proposed expenditures and the means of financing them.
2. After considering comments received, the Board approves the budget. The budget is formally adopted by resolution, published, and filed with the state.
3. Before December 31, the expenditures are appropriated for the ensuing year. The appropriation is at the total fund level and lapses at year-end.

Note 2 – Cash and Investments

Cash and investments as of December 31, 2017 are classified in the accompanying statements as follows:

Statement of net position:	
Cash and cash equivalents	<u>\$188,316</u>

Deposits with Financial Institutions

Colorado statutes require that the Council use eligible public depositories as defined by the Colorado Public Deposit Protection Act (the Act). Under the Act, amounts on deposit in excess of federal insurance levels must be collateralized. The eligible collateral is determined by the Act and allows the institution to create a single collateral pool for all public funds. The pool is to be maintained by another institution or held in trust for all the uninsured public deposits as a group. The market value of the collateral must be at least equal to 102% of the aggregate uninsured deposits.

Rocky Flats Stewardship Council

**NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2017**

The State Regulatory Commissions for banks and financial services are required by Statute to monitor the naming of eligible depositories and reporting of the uninsured deposits and assets maintained in the collateral pools.

At December 31, 2017, all of the Council's deposits were covered by insurance provided by the federal government. The Council was not subject to custodial credit risk at December 31, 2017.

The Council's cash deposits at December 31, 2017 are as follows:

	<u>Carrying Balance</u>	<u>Bank Balance</u>
Deposits with financial institutions	\$188,316	\$ 188,316
Total cash and cash equivalents	<u>\$188,316</u>	<u>\$ 188,316</u>

Investments

The Council has not adopted a formal investment policy, however, the Council follows state statutes regarding investments. Colorado revised statutes limit investment maturities to five years or less unless formally approved by the Board of Directors. Such actions are generally associated with a debt service reserve or sinking fund requirements.

Colorado statutes specify investment instruments meeting defined rating and risk criteria in which local governments may invest which include:

- Obligations of the United States and certain U.S. government agencies securities
- Certain international agency securities
- General obligation and revenue bonds of U.S. local government entities
- Bankers' acceptance of certain banks
- Commercial paper
- Local government investment pools
- Guaranteed investment contracts
- Written repurchase agreements collateralized by certain authorized securities
- Certain money market funds

As of December 31, 2017, the Council had no investments.

Rocky Flats Stewardship Council
NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2017

Note 3 – Capital Assets

An analysis of the changes in capital assets for the year ended December 31, 2017 follows:

	Balance 12/31/16	Additions	Deletions	Balance 12/31/17
Capital assets being depreciated:				
Furniture and equipment	\$ 840	\$ -	\$ 60	\$ 780
Total capital assets	840	-	60	780
Accumulated depreciation	(582)	(147)	-	(669)
Capital assets, net	\$ 258	\$ (147)	\$ -	\$ 111

Note 4 – Net position

The Council has net position consisting of three components – net investment in capital assets, restricted, and unrestricted.

Net investment in capital assets consists of capital assets, net of accumulated depreciation. As of December 31, 2017, the Council had \$111 net investment in capital assets.

Restricted assets include net position that are restricted for use either externally imposed by creditors, grantors, contributors, or laws and regulations of other governments or imposed by law through constitutional provisions or enabling legislation. As of December 31, 2017, the Council had \$979 of restricted net position.

As of December 31, 2017, the Council had unrestricted net position of \$177,009.

Note 5 - Risk management

The Council is exposed to various risks of loss related to torts, thefts of, damage to, or destruction of assets, errors or omissions, injuries to personnel, or natural disasters. The Council maintains commercial insurance for all risks of loss. Settled claims have not exceeded the commercial insurance coverage limits in any of the past three years.

Note 6 - Concentration

The Council receives the majority of its funding through a grant from the U.S. Department of Energy (DOE). The DOE grant has a current expiration date of February 28, 2022.

Rocky Flats Stewardship Council
NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2017

Note 7 - Tax, spending and debt limitation

Article X, Section 20 of the Colorado Constitution, referred to as the Taxpayer's Bill of Rights (TABOR), contains tax, spending, revenue, and debt limitations which apply to the State of Colorado and all local governments.

Spending and revenue limits are determined based on the prior year's Fiscal Year Spending adjusted for allowable increases based upon inflation and local growth. Fiscal Year Spending is generally defined as expenditures plus reserve increases with certain exceptions. Revenue in excess of the Fiscal Year Spending limit must be refunded unless the voters approve retention of such revenue.

As an enterprise (Note 1), management believes that the Council is exempt from the provisions of TABOR. However, TABOR is complex and subject to interpretation. Ultimate implementation may depend upon litigation and legislative guidance.

DOE Annual Report Briefing

- Cover memo
- Excerpts of the annual report

ROCKY FLATS STEWARDSHIP COUNCIL

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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

MEMORANDUM

TO: Stewardship Council Board
FROM: Rik Getty & David Abelson
SUBJECT: 2017 Annual Report Briefing
DATE: May 20, 2018

DOE will present its 2017 annual report (https://www.lm.doe.gov/Rocky_Flats_Archive.pdf#2017ann). We have attached the Executive Summary, an overview of the contact records issued in 2017, and a few key maps from the report.

Highlights – The following highlights are taken from the Executive Summary:

- Site Inspection: The annual inspection was conducted on March 16, 2017. There was no evidence of violations of the institutional or physical controls. Likewise, no evidence of adverse biological conditions was discovered during the inspection. Minor depressions around former building 771 were noted; the area will be filled at a later point.
- Present Landfill (PLF): Per the RFLMA, the PLF was inspected quarterly. Due to weather conditions, it was also inspected on May 21, August 8, September 25 and October 3. No significant issues were observed.
- Original Landfill (OLF): Per the RFLMA, the OLF was inspected monthly. Due to weather conditions, it was also inspected on May 21, August 8, September 25 and October 3. The OLF was also monitored weekly as a Best Management Practice.
 - On May 21, slumping was observed between berms 6 and 7, as well as cracking through the east end of berm 7.
 - In Spring, cracking and slumping were observed on the eastern hillside in the same area where similar movement was observed in Spring 2016. Slumping blocked the East Perimeter Channel (EPC) at the southeastern edge of the OLF. Repairs were completed in October 2017. All work was conducted outside the waste footprint.
 - To provide options for stabilizing the OLF, additional measures were evaluated and data collected. A detailed, site-specific slope stability analysis was completed using data from previous geotechnical investigations. The report included recommendations for controlling infiltration, stabilizing the toe, and diverting groundwater. Additional geotechnical information is needed to confirm the subsurface stratigraphy before the final design phase. This data will be collected in 2018.
 - To improve the diversion of groundwater from the eastern supporting hillside, repairs and upgrades of the East Subsurface Drain (ESSD) in the northeast corner of the OLF were

undertaken, and two temporary groundwater intercept wells were installed. Work at the ESSD was completed in January 2017 and operated from the end of March through October 2017.

The system was winterized and is on standby for use in 2018.

- North Walnut Creek Slump (NWCS): This area is the hillside east of the Solar Ponds Plume Treatment System (SPPTS). DOE is collecting information to (a) complete a geotechnical slope stability evaluation, (b) make recommendations for hillside stabilization, and (c) assist in the development of a conceptual design.
- Solar Ponds Plume Treatment System (SPPTS): The SPPTS continued to treat nitrate effectively via the full-scale, interim lagoon constructed in 2016. Effluent concentrations of nitrate met RFLMA standards. The system also reduced uranium concentrations. Additional testing was performed on uranium treatment; further evaluations are in process.
- East Trenches Plume Treatment System (ETPTS): The ETPTS now treats water from both the East Trenches and Mound Site. Treatment effectiveness remained very high throughout 2017 and continues to represent a dramatic improvement over the original configuration of these systems.
- Uranium: Reportable 30-day average occurred in the first and second quarters for surface water at RFLMA Point of Compliance monitoring location WALPOC, which is located on Walnut Creek at the eastern COU boundary. The 12-month rolling average remained below the RFLMA water quality standard for the year.
- Plutonium: The 12-month average was reportable during the first quarter for surface water at RFLMA Point of Evaluation monitoring location SW027, which is located at the downstream end of the South Interceptor Ditch, upstream of Pond C-2. As of April 30, plutonium concentrations were no longer reportable at SW027. Due to very low flows, no samples have been collected at SW027 since May 22. As of December 31, the 12-month rolling average for plutonium at SW027 was no longer reportable at 0.066 picocuries per liter (pCi/L), below the RFLMA standard of 0.15 pCi/L.

Attachments

We want to draw your attention to the final eight maps of the attachments. These maps show changes since 1997 in plutonium, americium and uranium concentrations at specific surface water monitoring points in the Central Operable Unit (the DOE-managed lands). The two timeframes are 1/2/97 – 10/13/05 and 10/13/05 – 12/31/17. October 13, 2005, is the date the contractor announced the completion of remedial activities. As a reminder, the site-specific plutonium and americium standards are 0.15 pCi/L; the site-specific uranium standard is 16.8 ug/L.

Please let us know if you have any questions.

**Annual Report of Site
Surveillance and Maintenance
Activities at the
Rocky Flats Site, Colorado**

Calendar Year 2017

Overview

April 2018



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Appendix B	Water Quality Data
Appendix C	Landfill Inspection Forms, Fourth Quarter CY 2017
Appendix D	Data Evaluation Flowcharts Reproduced from the RFLMA
Appendix E	Uranium Isotopic Compositions and Concentrations of Rocky Flats Water Samples Submitted to Lawrence Berkeley National Laboratory
Appendix F	2017 RFLMA Contact Records and Written Correspondence

Abbreviations

BMPs	best management practices
CAD/ROD	Corrective Action Decision/Record of Decision
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also known as “Superfund”)
COU	Central Operable Unit
CR	contact record
CY	calendar year
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FR	<i>Federal Register</i>
ICs	institutional controls
LM	Office of Legacy Management
NOIPD	Notice of Intent for Partial Deletion
NPL	National Priorities List
OLF	Original Landfill
OLF M&M	<i>U.S. Department of Energy Rocky Flats Site, Original Landfill Monitoring and Maintenance Plan</i>
OU	operable unit
PLF	Present Landfill
PLF M&M	<i>Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, U.S. Department of Energy Rocky Flats, Colorado, Site</i>
POU	Peripheral Operable Unit
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFLMA	<i>Rocky Flats Legacy Management Agreement</i>
RFSOG	Rocky Flats Site Operations Guide
SPPTS	Solar Ponds Plume Treatment System
USFWS	U.S. Fish and Wildlife Service

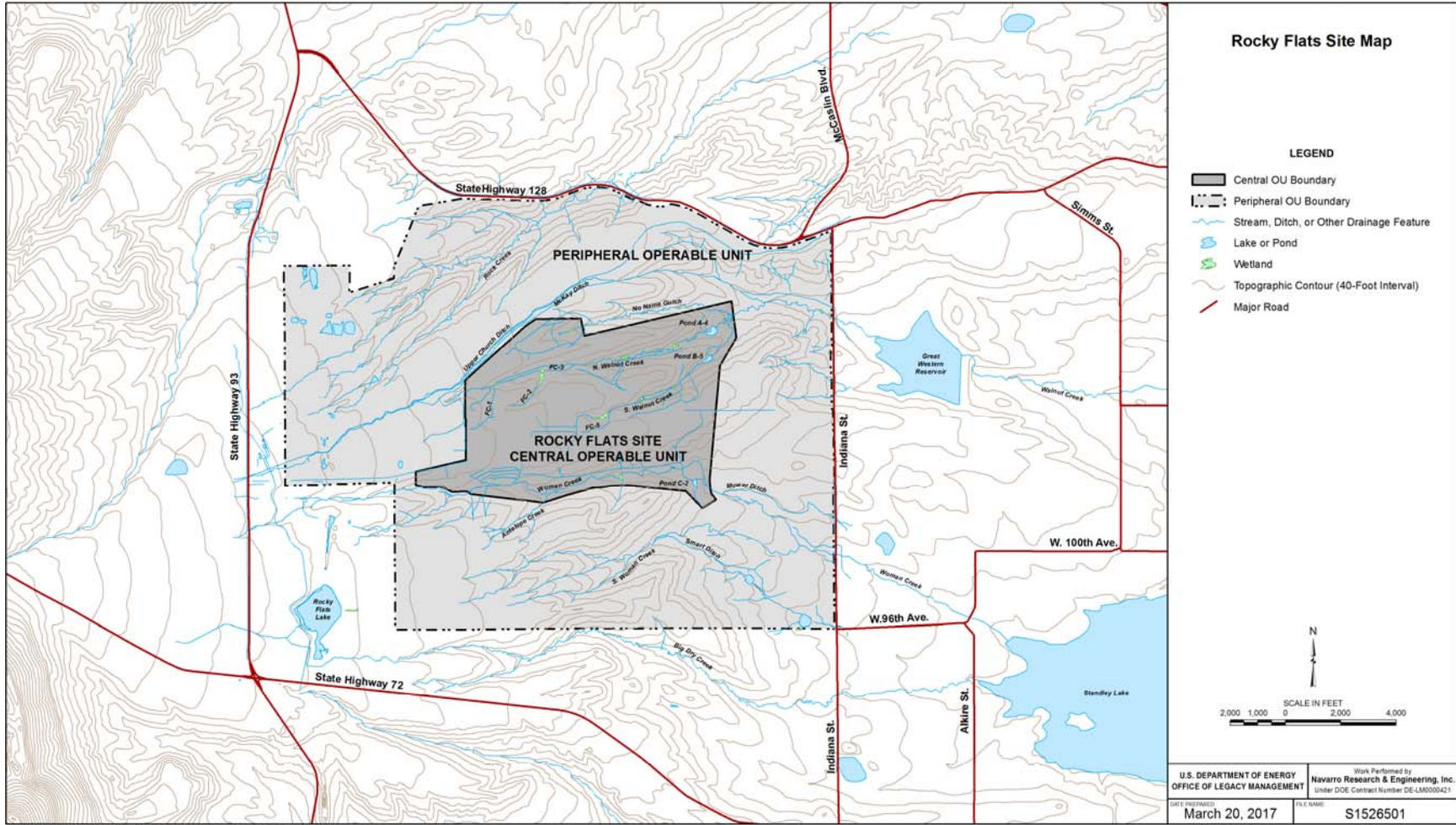


Figure 1. Rocky Flats Site, Colorado, Map

Executive Summary

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for implementing the final response action selected in the final *Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit*, known as the Corrective Action Decision/Record of Decision (CAD/ROD), issued September 29, 2006, for the Rocky Flats Site, Colorado. The CAD/ROD was amended in 2011. In addition to implementing the remedy, DOE is also responsible for ensuring the response action selected and approved in the final CAD/ROD for the Central Operable Unit (COU) (the Site) remains protective of human health and the environment.

Under the CAD/ROD, two operable units were established within the boundaries of the Rocky Flats property: the Peripheral Operable Unit (POU) and the COU. The COU consolidates all areas of the Site that require additional remedial or corrective actions while also considering practicalities of future land management. The POU, currently the Rocky Flats National Wildlife Refuge managed by the U. S. Fish and Wildlife Service, includes the remaining, generally unimpacted portions of the Site and surrounds the COU. The response action in the final CAD/ROD is no action for the POU. The response action for the COU is institutional controls (ICs), physical controls, and continued monitoring and maintenance. The CAD/ROD determined that conditions in the POU were suitable for unrestricted use. The U.S. Environmental Protection Agency (EPA) subsequently published a Notice of Partial Deletion from the National Priorities List for the POU on May 25, 2007, and the property was transferred from DOE to the U.S. Department of Interior, in July 2007, to establish the Rocky Flats National Wildlife Refuge.

DOE, EPA, and the Colorado Department of Public Health and Environment (CDPHE) agreed to implement the monitoring and maintenance requirements for the COU in the CAD/ROD under, and as described in, the *Rocky Flats Legacy Management Agreement (RFLMA)*, executed on March 14, 2007. Attachment 2 to the RFLMA, last revised in 2012, defines the COU remedy surveillance and maintenance requirements. The requirements include environmental monitoring; maintenance of the erosion controls, ICs, access controls (signs), landfill covers, and groundwater treatment systems; and operation of the groundwater treatment systems.

Highlights of the surveillance and maintenance activities conducted at the Site during calendar year (CY) 2017 (January 1 through December 31, 2017) are as follows:

- The annual Site inspection was conducted on March 16, 2017. Most inspection observations were related to debris or trash that was picked up. No evidence of violations of ICs or physical controls was observed. Likewise, no evidence of adverse biological conditions was discovered during the inspection.
- During the Site inspection, several areas showed minor depressions around former building areas. Site field operations subject matter experts evaluated those areas and none appeared to be significant. The minor depression associated with former Building 771, although not urgent, will be filled when appropriate equipment is onsite as part of another project.
- On March 27, 2017, the Environmental Covenant was superseded by a Restrictive Notice issued under Colorado law. The Restrictive Notice was posted to the LM website on March 27, 2017, and recorded with Jefferson County on April 5, 2017. Unlike the Environmental Covenant, a Restrictive Notice is enforceable by CDPHE against any person in violation of Site ICs.

- The Present Landfill (PLF) was inspected quarterly during CY 2017. The quarterly inspections conducted on May 21 and August 8 also served as weather-related inspections. Additional weather-related inspections were conducted on September 25 and October 3. No significant issues were observed during these inspections.
- The locations of former Buildings 371, 771, 881, and 991 were inspected each quarter in 2017 as a best management practice (BMP) and after significant precipitation events in May, August, September, and October. There were no significant changes identified with respect to depressions or subsidences. No other issues were noted.
- Site road maintenance was conducted in 2017. In November, the roads were regraded, road base was added as needed, and dust suppressant was applied on the primary routes to aid in dust control.
- The signs posted on the COU boundary fence were inspected quarterly during CY 2017. No significant issues were encountered. Signs were reinstalled as needed (usually after old wires broke or disturbance by deer or elk).
- Maintenance, repair, replacement, and monitoring of Site erosion control features continued through 2017. One monitored location met the success criteria for vegetation establishment; erosion control monitoring has been discontinued at that location.

Original Landfill

- The Original Landfill (OLF) was inspected monthly during CY 2017. In addition, weather-related inspections were conducted on May 21, August 8, September 25, and October 3. During the May 21 weather-related inspection, slumping was observed between berms 6 and 7, as well as cracking through the east end of berm 7. The OLF was also monitored weekly as a BMP.
- Following the seasonal precipitation in the spring of 2017, cracking and slumping were observed on the eastern supporting hillside of the landfill in the same area where similar movement was noted in the spring of 2016, including slumping that blocked the East Perimeter Channel (EPC) at the southeastern edge of the OLF. Repairs were completed in October 2017. The material blocking the EPC was left in place as a temporary stabilizing measure. All work was conducted outside the waste footprint.
- Minor maintenance at the OLF was conducted throughout the year as needed to fill small cracks and erosion gulleys as they were identified, using hand tools such as shovels and rakes.
- Throughout 2017, most of the OLF hillside outside the waste footprint was stable, with the exception of the southeastern portion as described above. No further movement of the slump area occurred after regrading and compaction were completed in October. The area of the OLF inside the waste footprint was stable with only minor cracking behind berm 4.
- To provide options for stabilizing future slumping at the OLF, additional measures were being evaluated and data collected, as follows:
 - A detailed, site-specific slope stability analysis was completed in 2017 using data from previous geotechnical investigations. The report made recommendations for controlling infiltration, stabilizing the toe, and diverting groundwater.

- Results from the slope stability analysis showed additional geotechnical data need to be gathered, to confirm the subsurface stratigraphy, before the final design phase is begun. This data will be collected from new boreholes, test pits, and piezometers in CY 2018.
- Additional actions to improve the diversion of groundwater from the eastern supporting hillside of the OLF included the repair and upgrade of the East Subsurface Drain (ESSD) in the northeast corner of the OLF and the installation of two temporary groundwater intercept (GWI) wells. Work at the ESSD began in December 2016 and was completed in January 2017. The GWI wells were operated from the end of March through October 2017. The system was winterized and is on standby for use in 2018.
- The *Original Landfill Path Forward, Rocky Flats Site, Colorado*, report was completed. The report was posted on the Rocky Flats website on February 1, 2017.

North Walnut Creek Slump

- The area of slumping on the hillside east of the Solar Ponds Plume Treatment System (SPPTS), referred to as the North Walnut Creek Slump (NWCS), was regraded in May and June of 2017. Regrading included removal of excess soil.
- Excess soil from the NWCS regrading project was placed over several of the East Trenches to ensure that positive drainage is maintained. In addition, approximately 1200 tons of soil were imported from an offsite location to complete this maintenance action for the East Trenches.
- After regrading was completed, a crack developed along the full length of the old slump scarp line (approximately 450 feet). New slump monitoring points were installed and have been surveyed monthly since the baseline survey in September. Since completion of the grading in June (6 months), visual observations and monitoring data indicate that slope creep continues, with visual observations indicating an estimated total vertical displacement of up to 18 inches in some locations along the crack.
- Initial visual observations of the crack width varied from 1/16 to 3 inches. Total displacements indicated by the slump monitoring points (located approximately 10 feet from the crack) show that as of the end of 2017 (3 months of monitoring), horizontal movements ranged from approximately 2 to almost 4 inches and vertical movements ranged from 2 to 4.5 inches.
- In the fall and winter of 2017, 14 geotechnical borings and 3 inclinometers were drilled and logged in the vicinity of the NWCS. Soil samples were collected and sent to a lab for geotechnical analyses. Contact Record 2017-03 describes these activities. The 14 geotechnical borings were converted to groundwater piezometers, which were developed, and initial groundwater readings were taken. Groundwater readings for the piezometers will continue in 2018. This information will be used to complete a geotechnical slope stability evaluation, to make specific recommendations for hillside stabilization, and to assist the development of a conceptual design.

Groundwater Collection and Treatment Systems

- The groundwater treatment systems continued to intercept groundwater and remove contaminant load before the groundwater reached the receiving surface water stream.
- The Mound Site Plume Collection System (MSPCS) functioned in 2017 as designed following the reconfiguration project in 2016, transferring water to the East Trenches Plume Treatment System (ETPTS) for treatment. The treatment component at the ETPTS, a commercial air stripper, now treats the combined influents using solar/battery power. Treatment effectiveness remained very high throughout 2017 and continues to represent a dramatic improvement over the original configuration of these systems.
- The treatment effectiveness at the ETPTS was not adversely affected by the addition of water transferred from MSPCS. Effluent from this system continued to meet RFLMA standards throughout 2017.
- The SPPTS continued to treat nitrate effectively via the full-scale, interim lagoon constructed in 2016. Effluent concentrations of nitrate met RFLMA standards throughout the year, and this lagoon also reduced uranium concentrations. Additional testing was performed on uranium treatment and a subject matter expert was contracted in the third quarter of 2017 to evaluate and recommend further evaluations of approaches to uranium treatment for the SPPTS.

Water Monitoring

- Given that 2017 was an odd-numbered year, not all 88 RFLMA groundwater monitoring locations were sampled during the second quarter of the year.
- Groundwater quality at the Site in 2017 was largely consistent with what was reported in previous postclosure years. One Area of Concern (AOC) well that entered a reportable condition for trichloroethene (TCE) in the fourth quarter of 2015 remained reportable through the second quarter of 2017. The concentration of TCE in the sample collected from this AOC well in the fourth quarter of 2017 met applicable RFLMA standards, and the reportable condition was terminated.
- Several samples were collected from selected locations and submitted to Lawrence Berkeley National Laboratory for high-resolution analysis of uranium and determination of natural versus anthropogenic content. The groundwater-related sample locations included six wells and three treatment systems. Results in all cases were consistent with previous determinations.
- The amount of precipitation measured in CY 2017 was slightly more than average, with the precipitation gaging stations at the Site measuring an average of 12.67 inches of precipitation, which is approximately 103% of the average (the CY 1993–2016 average is 12.3 inches).
- During 2017, the surface water monitoring network at the Site fulfilled the targeted monitoring objectives required by RFLMA. During CY 2017, the routine RFLMA surface water network consisted of eight gaging stations and 11 surface water grab sampling locations. A total of 132 samples, composed of 3559 individual aliquots (“grabs”), were collected at the routine surface water locations.

- Reportable 30-day average uranium concentrations occurred in the first and second quarters of 2017 for surface water at RFLMA Point of Compliance (POC) monitoring location WALPOC, which is located on Walnut Creek at the eastern COU boundary. The 12-month rolling average uranium concentration at WALPOC remained below the RFLMA water quality standard for the entire year.
- All other RFLMA POC analyte concentrations remained below reportable condition levels throughout CY 2017.
- The 12-month average plutonium concentrations were reportable during the first quarter of CY 2017 for surface water at RFLMA Point of Evaluation (POE) monitoring location SW027, which is located at the downstream end of the South Interceptor Ditch upstream of Pond C-2. As of April 30, 2017, plutonium concentrations were no longer reportable at SW027. Due to very low flows, no samples have been collected at SW027 since May 22, 2017. As of December 31, 2017, the 12-month rolling average for plutonium at SW027 was no longer reportable at 0.066 picocurie per liter (pCi/L), below the RFLMA standard of 0.15 pCi/L.
- All other RFLMA POE analyte concentrations remained below reportable condition levels throughout CY 2017.

Ecological Monitoring

- In 2017, approximately 139 acres were treated with herbicides to control a variety of weed species including diffuse knapweed, common mullein, Dalmatian toadflax, Scotch thistle, whitetop, teasel, and leafy spurge.
- Revegetation activities were conducted after project activities were completed at the NWCS, the East Trenches, and the OLF.
- Interseeding was conducted to increase vegetation cover and diversity at several other locations.
- Common milkweed seed was collected at the Site and spread at several locations to increase pollinator habitat.
- Revegetation monitoring was conducted at several revegetation locations and continued to document the successful establishment and sustainability of the plant communities at these locations.
- Evaluation of the forb (wildflower) nurseries at the Site documented that native forbs have been successfully established and that the plants are now spreading and expanding beyond their original seeded boundaries at several locations.
- Wetland monitoring confirmed that wetlands are being established at several mitigation locations. Final delineations were made at the GS10 mitigation wetlands and no further monitoring is necessary at these wetlands.
- Wildlife monitoring consisted of observing black-tailed prairie dogs, monitoring bird nesting boxes, and locating active raptor nests. No active black-tailed prairie dog towns were observed within the Site boundaries. Eighteen of the 21 nest boxes showed evidence of nesting activities in 2017. The species of birds using the nest boxes in 2017 included tree swallows, mountain bluebirds, and house wrens. No active raptor nests were observed within the COU boundary this year.

General information about the purpose and scope of the annual report, background, RFLMA contact records, and RFLMA modifications are provided in this report, which is one of the five volumes that compose the *Annual Report of Site Surveillance and Maintenance Activities at the Rocky Flats Site, Colorado, Calendar Year 2017*.

The other volumes of the 2017 annual report are:

- Operations and Maintenance
- Groundwater Monitoring
- Surface Water Monitoring
- Ecological Monitoring

Table 1. Actions Approved by the RFLMA Parties

Activity	Status as of December 31, 2017	CR No.	Approval Date
Construction of the OLF temporary Groundwater Intercept System	Actions Implemented. Construction of the Groundwater Intercept System was completed in March 2017, followed by installation of soil erosion controls and reseeding. This project is part of the larger OLF slope stabilization effort anticipated to be completed in 2018–2019.	2017-01	2/16/2017
Reportable condition for uranium at Walnut Creek Point of Compliance (WALPOC)	Evaluation Complete. The reportable condition for the 30-day average for uranium at WALPOC began in December 2016 and ended in the second quarter 2017. In accordance with CR 2017-02, high-resolution uranium analysis was conducted on select samples and a split sample was collected by the CDPHE. The evaluation commitments in the CR are satisfied and the reportable condition at WALPOC ceased.	2017-02	3/6/2017
NWCS 2017 maintenance	Actions Implemented. The project activities described in CR 2017-03 were conducted from early spring 2017 through the end of 2017. The bulk of field activities for the geotechnical drilling portion of the project were completed in December 2017; however, three inclinometers were installed as a field change in early January 2018. This field change was approved by CDPHE in late December 2017 (Field Change Concurrence 121917). This project is part of the larger NWCS slope stabilization effort anticipated to be completed in 2018–2020.	2017-03	3/27/2017
Maintenance work at OLF: Creating positive drainage and minor adjustments to berm heights	Actions Implemented. Regrading activities and other maintenance activities to promote positive drainage were completed at the OLF in October of 2017. While the activities approved in CR 2017-04 are complete, maintenance activities at the OLF will continue on a routine basis in accordance with the OLF M&M.	2017-04	10/6/2017
Geoprobe investigation of the groundwater upgradient of the OLF	Actions Implemented. The Geoprobe investigation and installation of piezometers upgradient of the OLF was completed in September 2016 and the area was revegetated.	2016-03	7/28/2016
Upgrade of the East Subsurface Drain Located in the East Perimeter Channel of the OLF	Actions Implemented. Construction of upgrades to the East Subsurface Drain was completed in early 2017; post-construction erosion controls were installed and reseeding was performed in the spring of 2017.	2016-04	10/19/16
Reportable condition for plutonium at POE SW027	Evaluation Complete. The reportable condition for the 12-month rolling average for plutonium at SW027 began in the second quarter of 2015 and ended in the second quarter of 2017. The proposed erosion and water management control methods in CR 2015-05 were implemented in 2015. The evaluation commitments in the CR are satisfied and the reportable condition at SW027 ceased.	2015-05	7/8/2015

Table 1. Actions Approved by RFLMA Parties (continued)

Activity	Status as of December 31, 2017	CR No.	Approval Date
Reportable condition for trichloroethene at AOC well 10304	Evaluation Complete. The reportable condition for trichloroethene at AOC well 10304 began in the fourth quarter of 2015 and ended in the fourth quarter of 2017. In accordance with CR 2015-10, a surface water grab sample was collected concurrent with the semiannual sampling of well 10304 from Woman Creek downstream of the well. The evaluation commitments in the CR are satisfied and the reportable condition at AOC well 10304 ceased.	2015-10	12/16/2015
Minor modification of RFLMA Attachment 2, "Legacy Management Requirements"	Actions Ongoing. It is anticipated that the RFLMA Attachment 2 modifications approved by CR 2014-02 will be incorporated in 2018.	2014-02	1/30/2014
Reportable condition at the OLF	Actions Implemented. The initial repair to the slump on the east side of the OLF was completed in January 2015. Subsequent slope movement in 2016 and 2017 prompted additional evaluation, repairs, and installation of temporary stabilization measures. The comprehensive slope stabilization evaluation at OLF continued through 2017. A final stabilization design is anticipated to be implemented in 2018–2019. This reportable condition will remain open until the RFLMA Parties determine that the reportable condition no longer exists.	2013-02	10/21/2013
Reportable condition for americium at POE GS10	Evaluation Complete. The reportable condition for the 12-month rolling average for americium at GS10 began in the third quarter of 2011 and ended in the second quarter of 2014. The proposed erosion and water management control methods in CR 2011-08 were implemented in 2008–2009. Although the reportable condition at GS10 ended in 2014, certain activities described in the CR continued through 2017. As the reportable condition has not recurred and the evaluation commitments in CR 2011-08 have been satisfied, the evaluation is considered complete.	2011-08	12/23/2011
Phase II and III upgrades to the SPPTS	Actions Implemented. Construction of Phase II and III upgrades to the SPPTS were completed in 2009, followed by installation of soil erosion controls and reseeded. Although the activities approved by CR 2009-01 are complete, optimization of the SPPTS is ongoing.	2009-01	2/17/2009

Notes:

Actions Implemented means that the original activities (e.g., installation of wells, treatment system upgrades) authorized by the approved CR have been completed and installation of erosion controls, reseeded, or both, are in progress or completed. This designation does not necessarily signify that the larger project (i.e., follow-on actions or data evaluation) that may be authorized by different CRs has been completed. For example, if a CR approved the installation of piezometers for collection of water level measurements, the **Actions Implemented** designation simply means that the piezometers were installed, not that data collection or evaluation of data for the project is complete.

Evaluation Complete typically applies to CRs documenting reportable conditions. This designation means that the actions (e.g., additional sampling, mitigating actions) included in the plan and schedule for the evaluation of the reportable condition are completed *and* the reportable condition no longer exists.

Abbreviations:

- AOC = Area of Concern
- No. = number
- POE = Point of Evaluation
- WALPOC = Walnut Creek Point of Compliance,

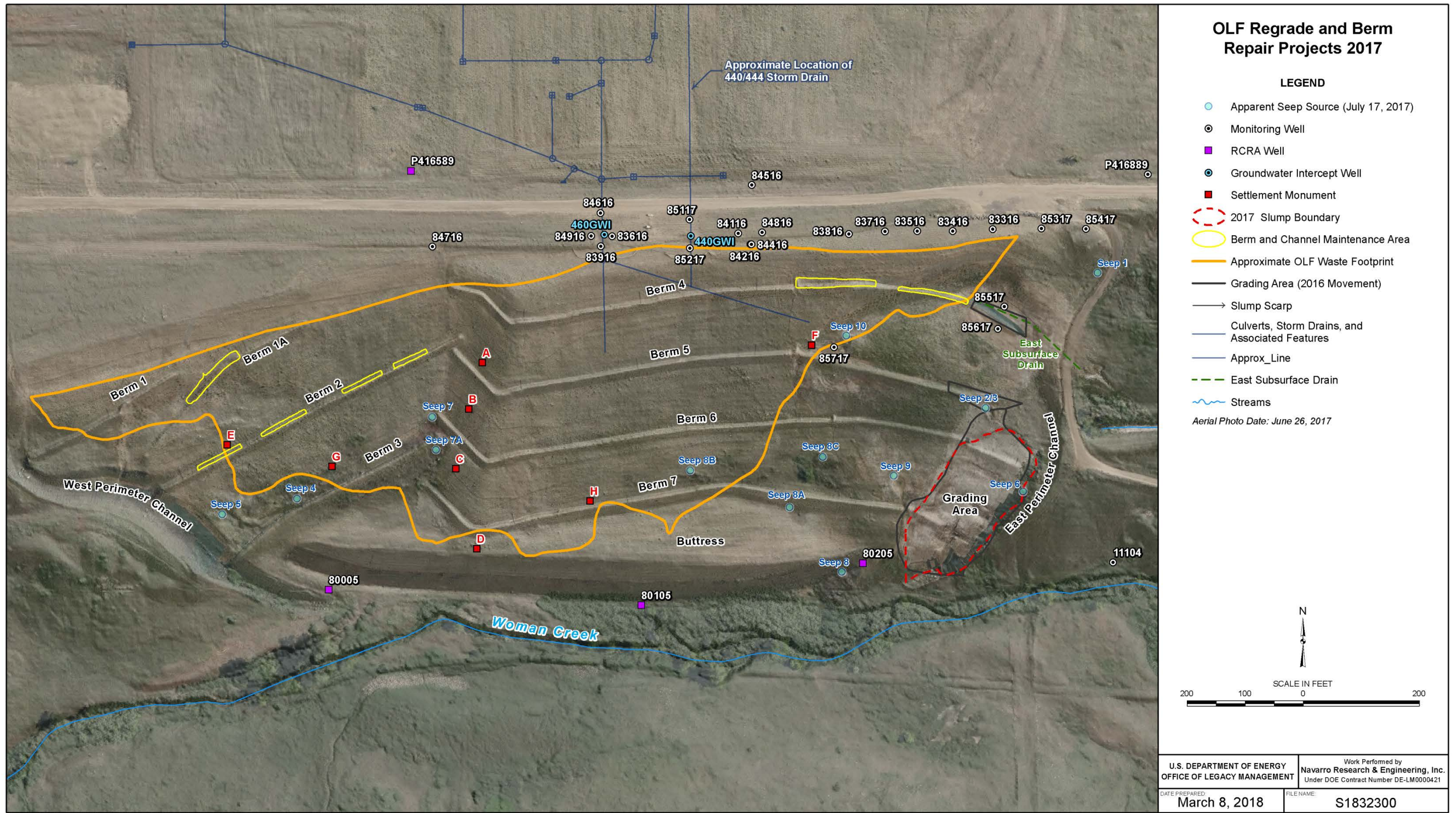


Figure 1. Original Landfill, Rocky Flats Site, Colorado

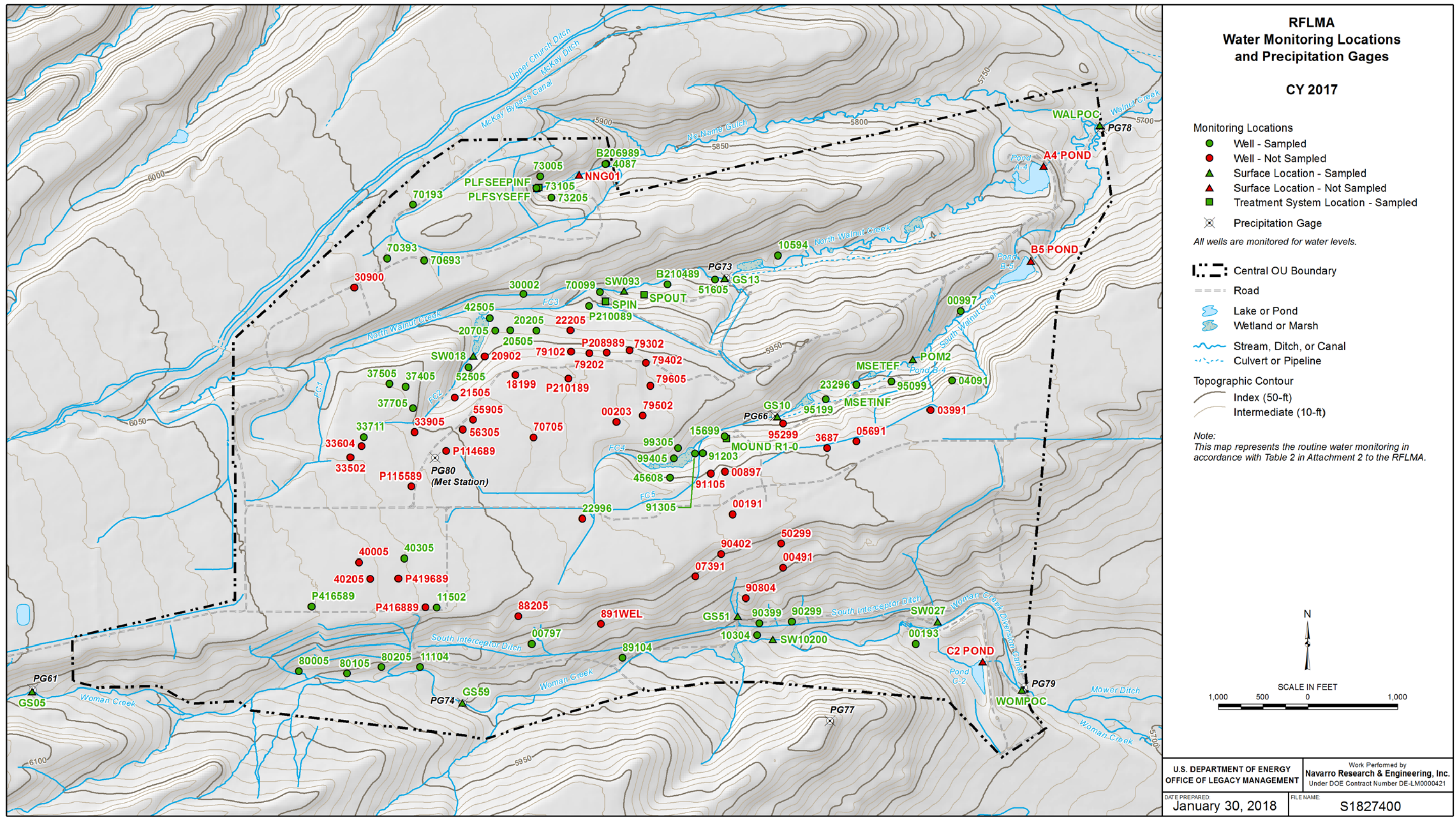


Figure 1. Rocky Flats Site Water Monitoring Locations and Precipitation Gages in 2017

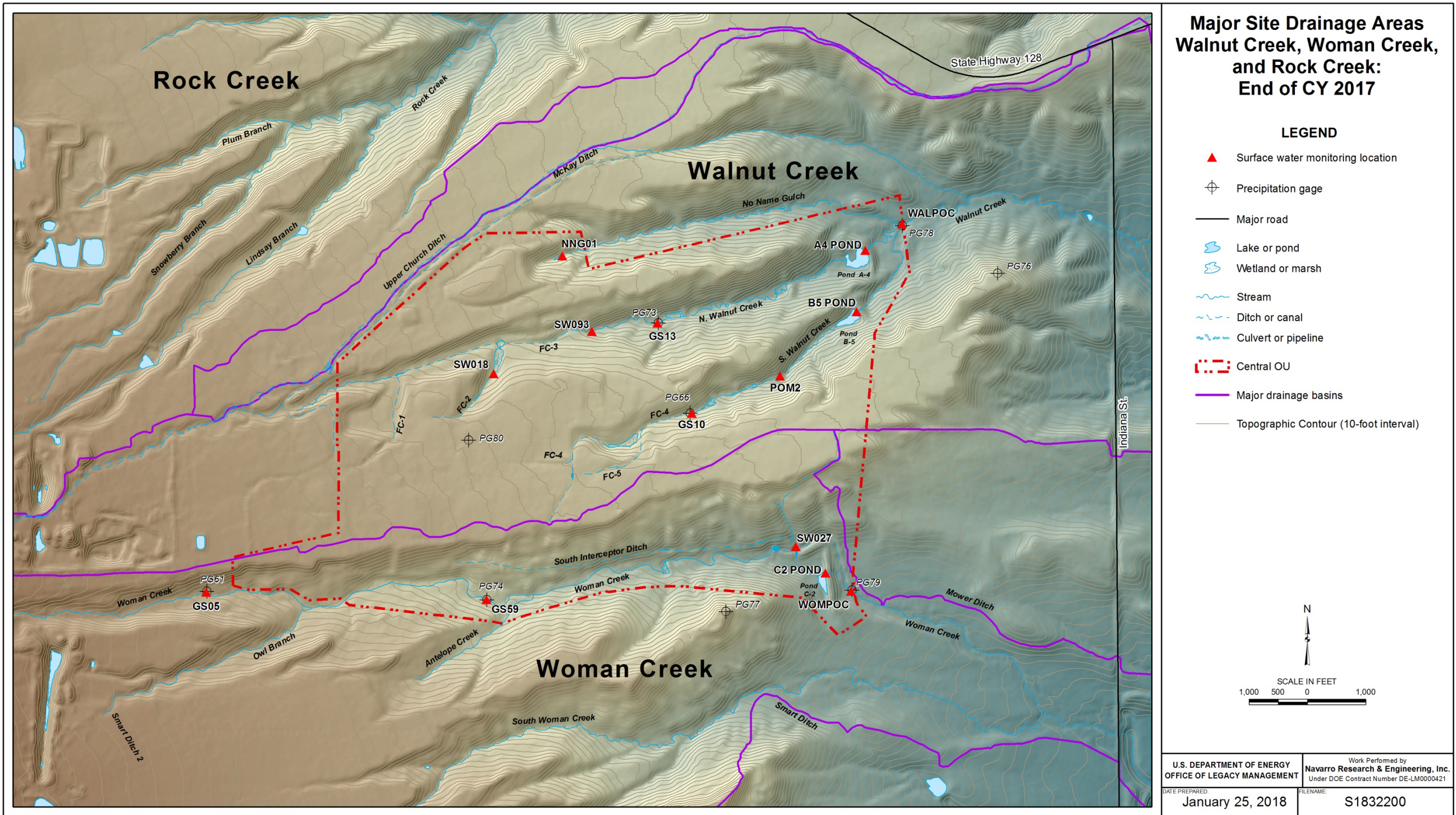
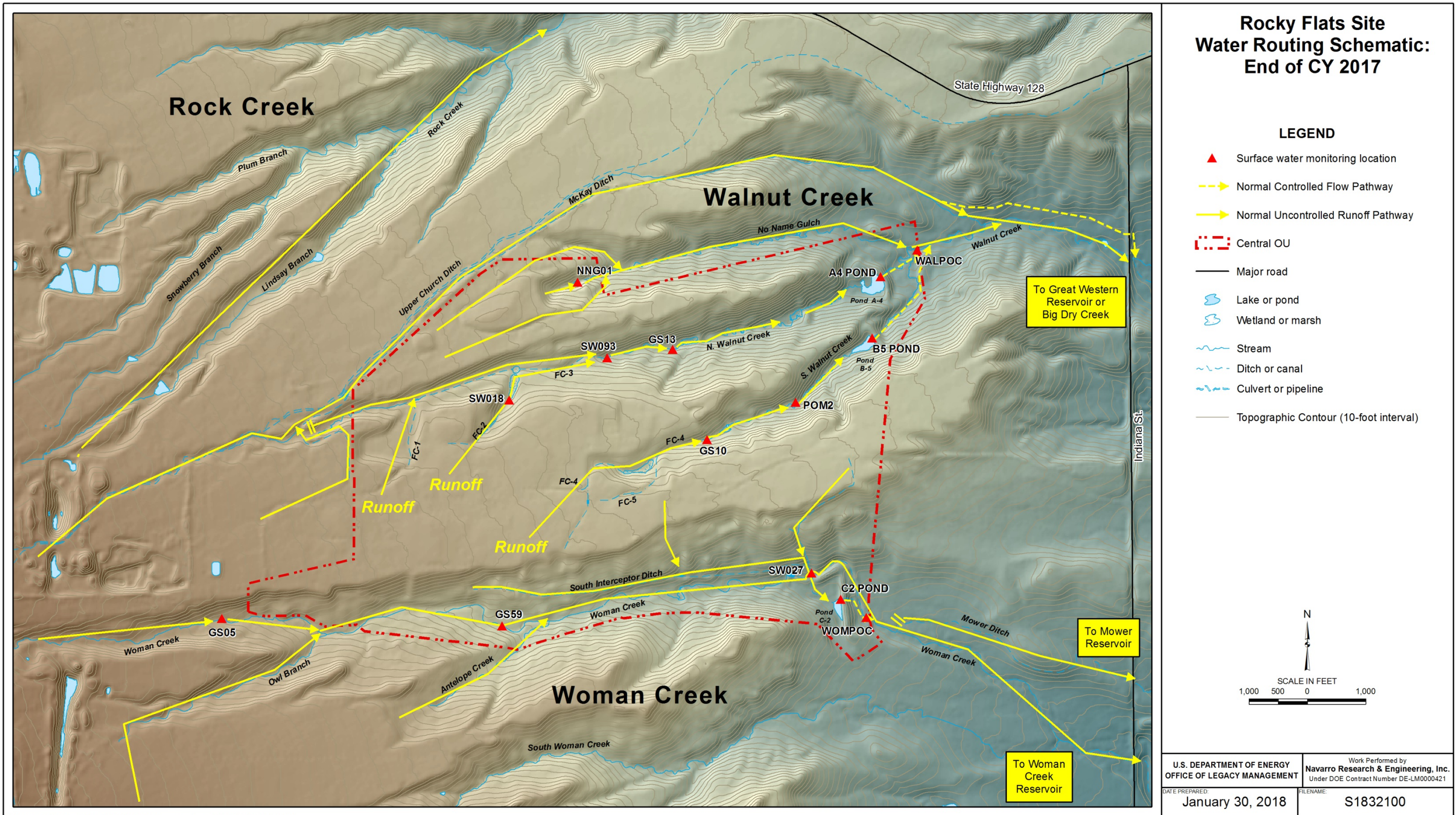
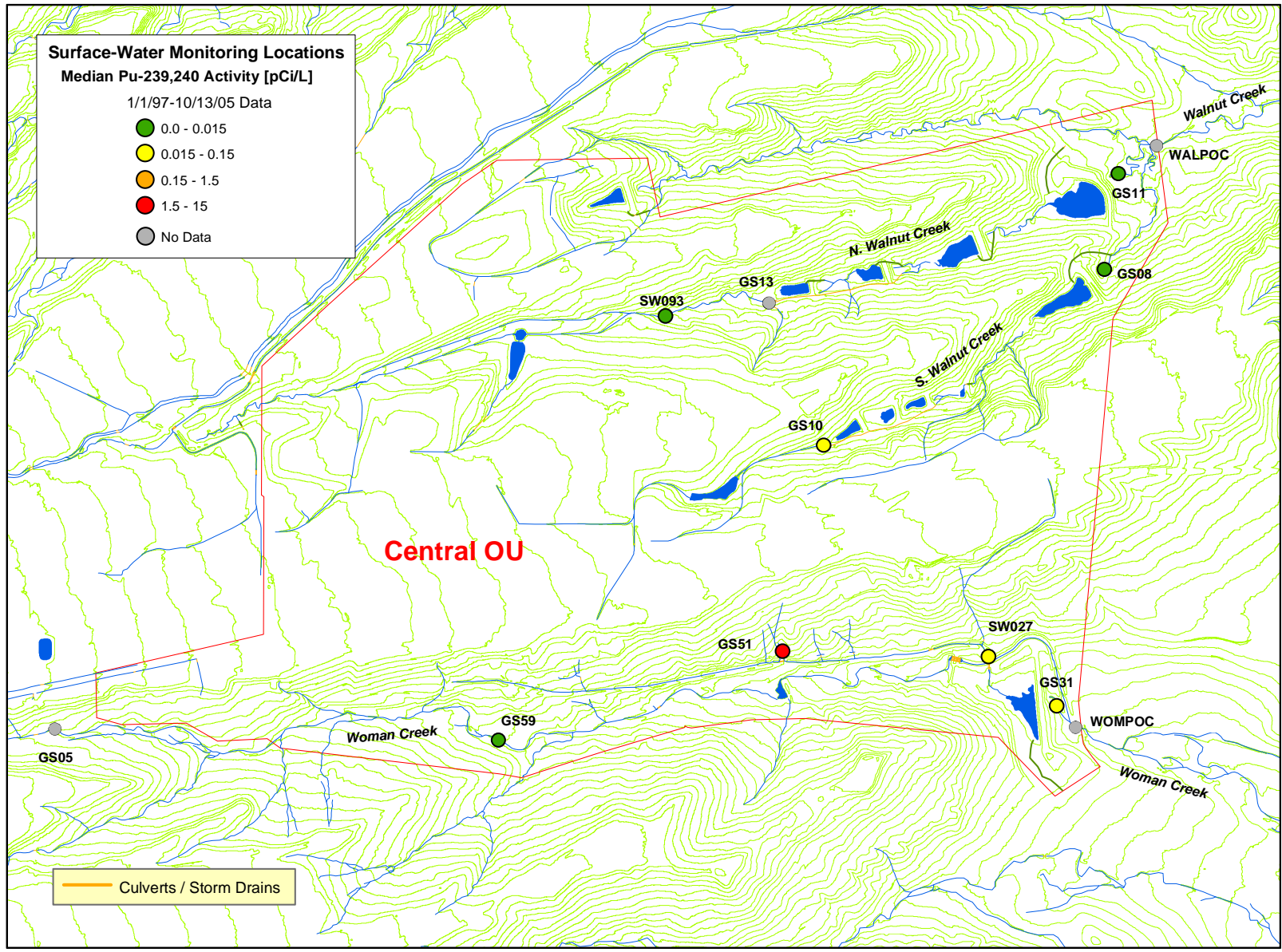


Figure 2. Major Site Drainage Areas—Walnut Creek, Woman Creek, and Rock Creek: End of CY 2017



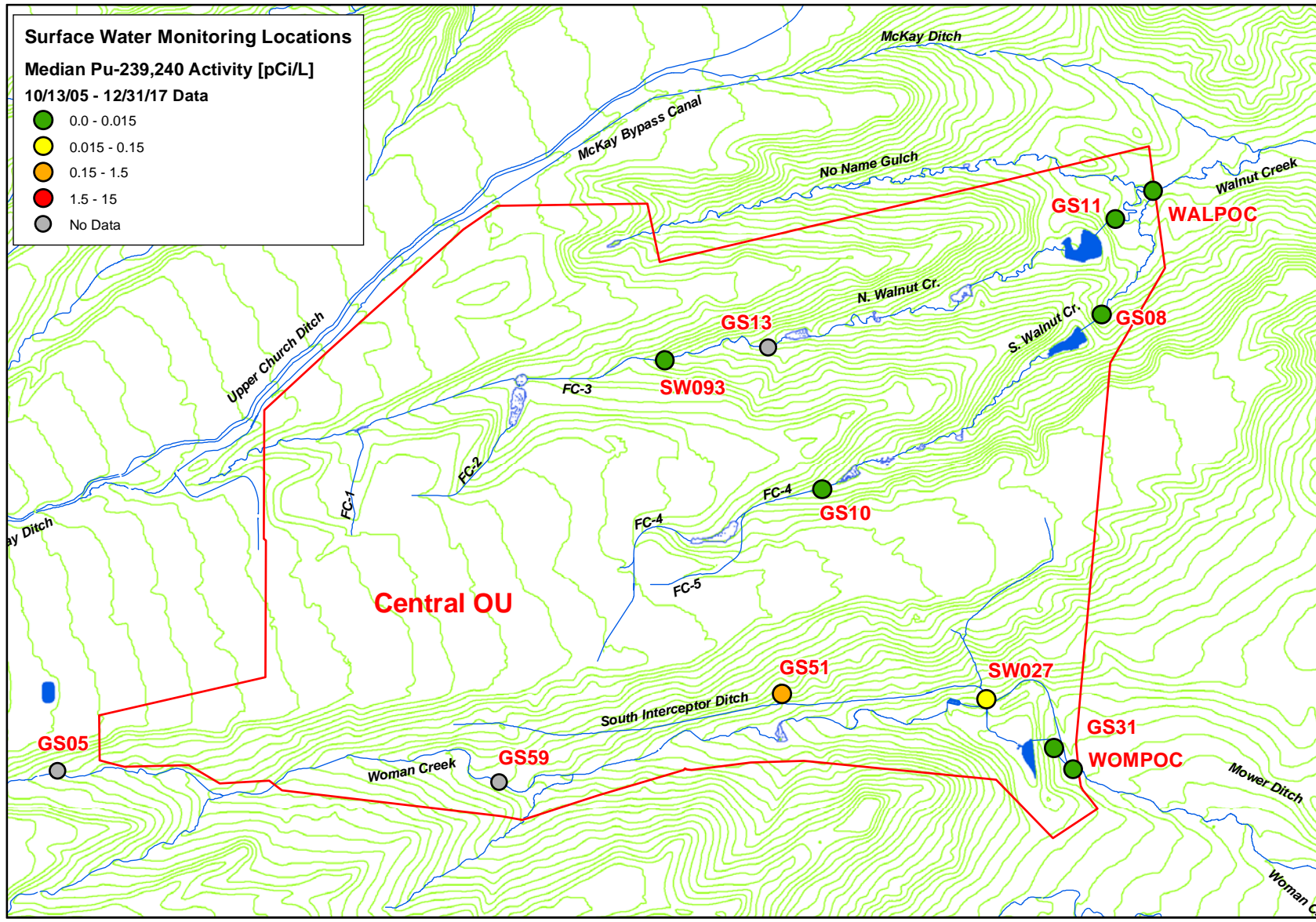
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Figure 3. Rocky Flats Site Water Routing Schematic: End of CY 2017



Note: Only locations with four or more results are mapped.

Figure 91. Median Plutonium Concentrations for January 1, 1997 – October 13, 2005



Note: Only locations with four or more results are mapped.

Figure 92. Postclosure Median Plutonium Concentrations

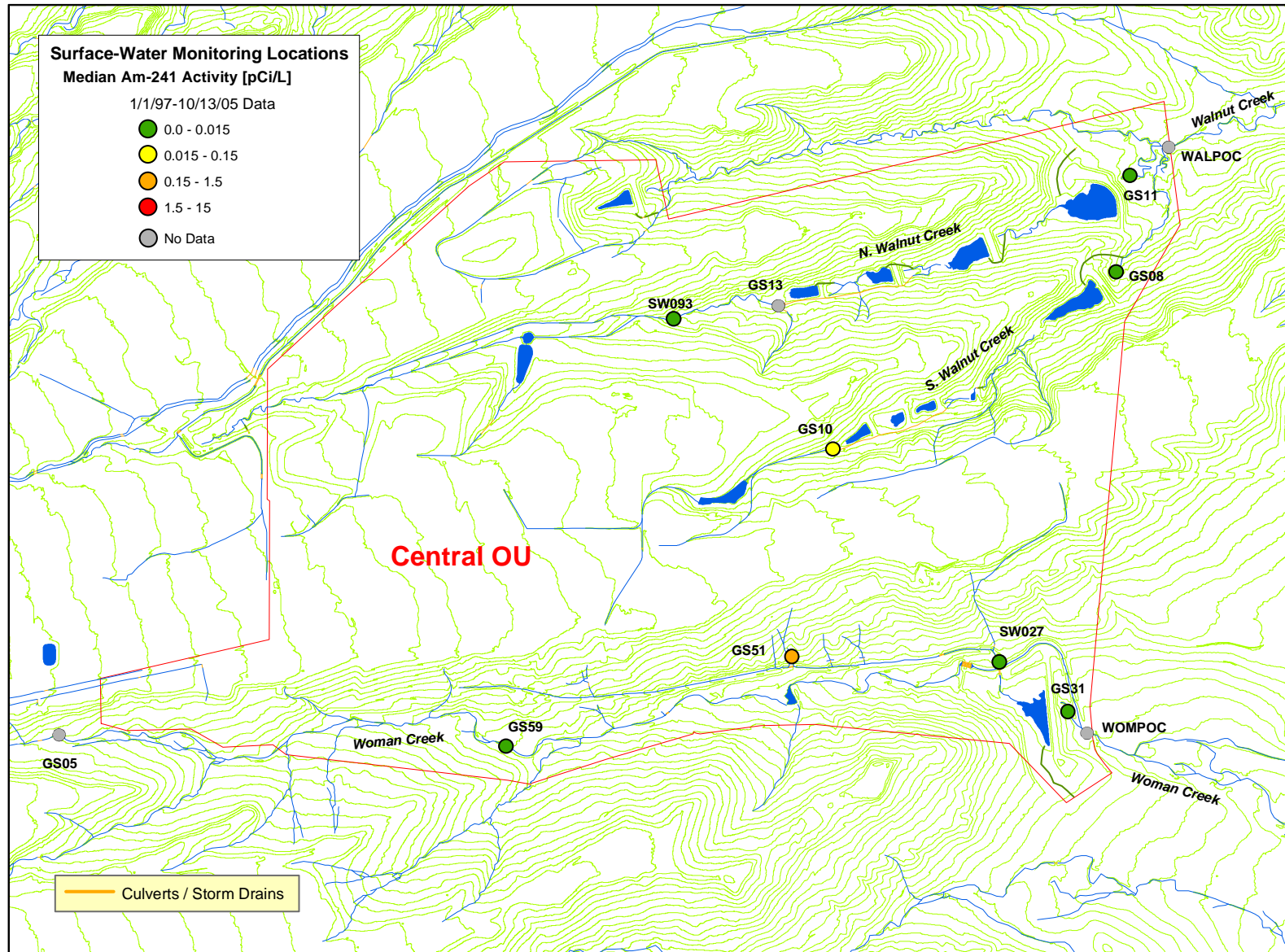
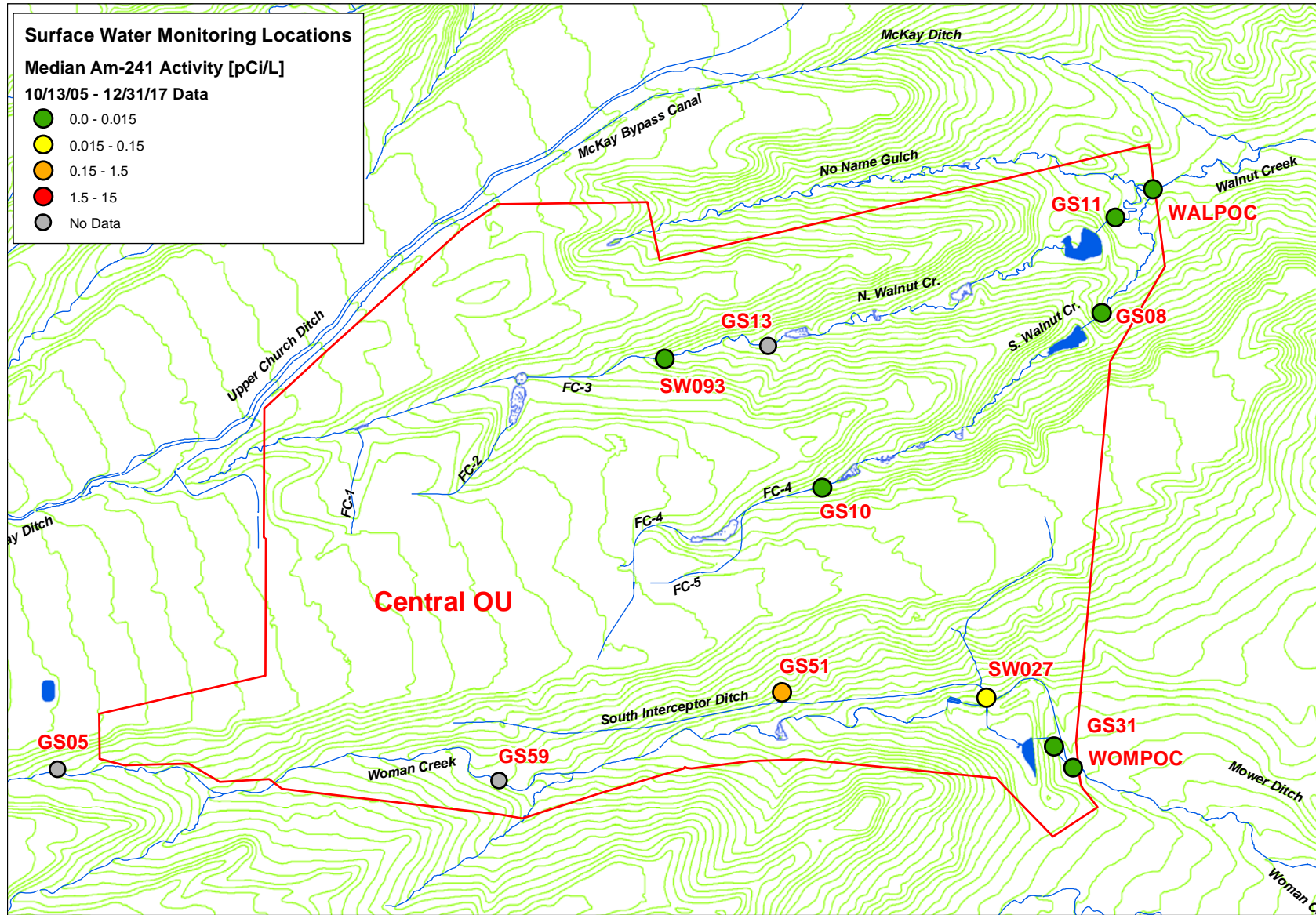
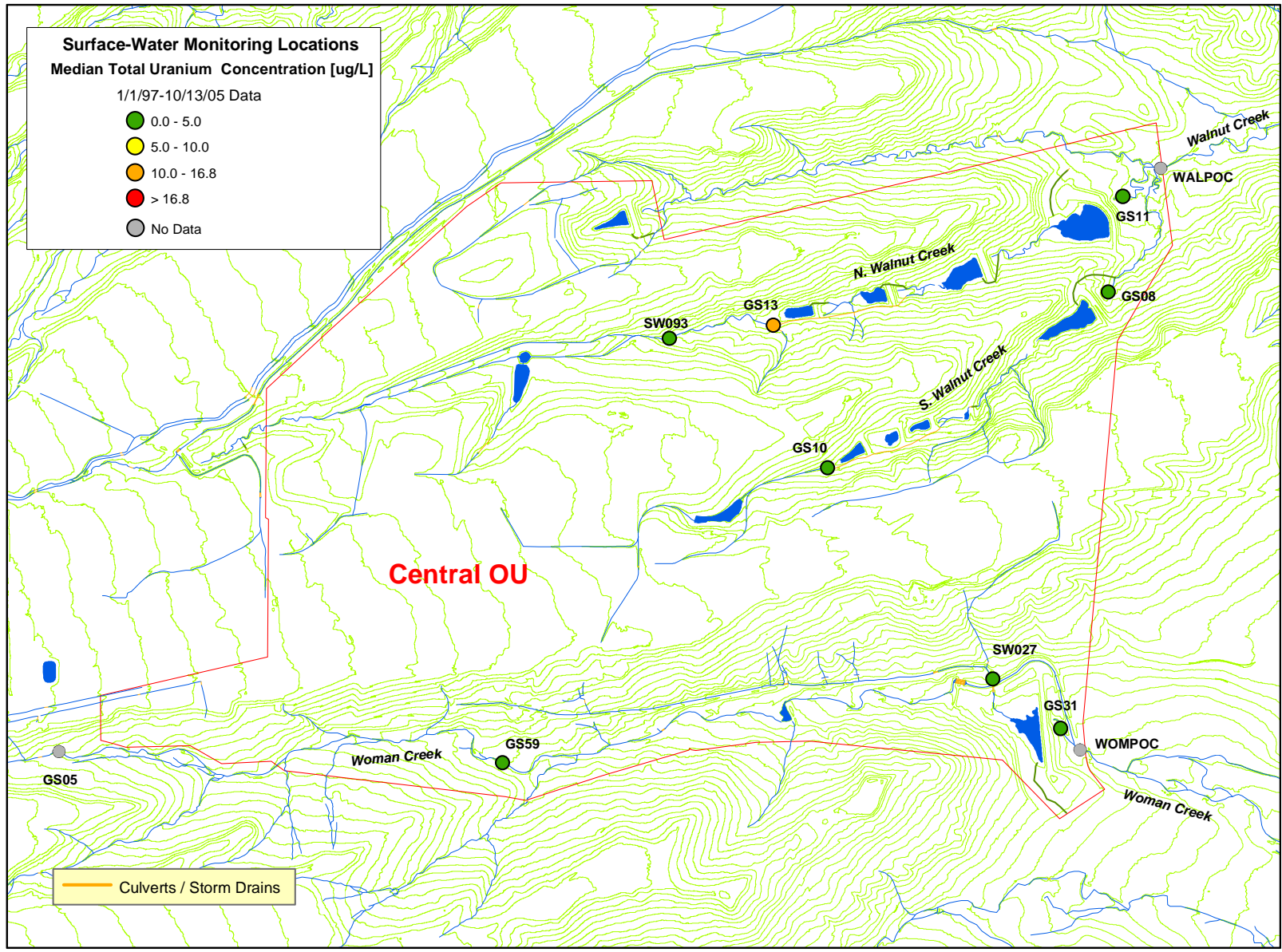


Figure 93. Median Americium Concentrations for January 1, 1997 – October 13, 2005



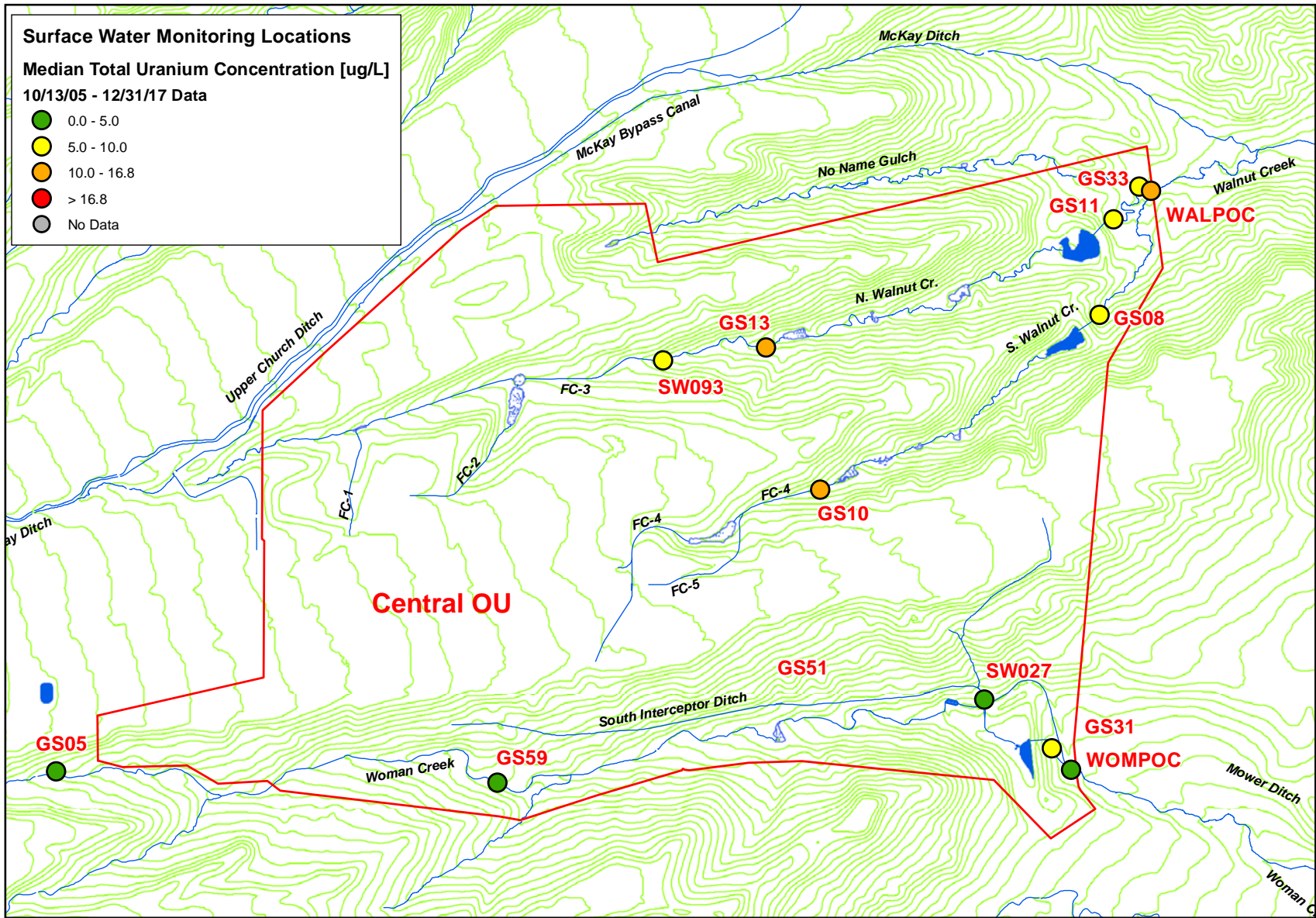
Note: Only locations with four or more results are mapped.

Figure 94. Postclosure Median Americium Concentrations



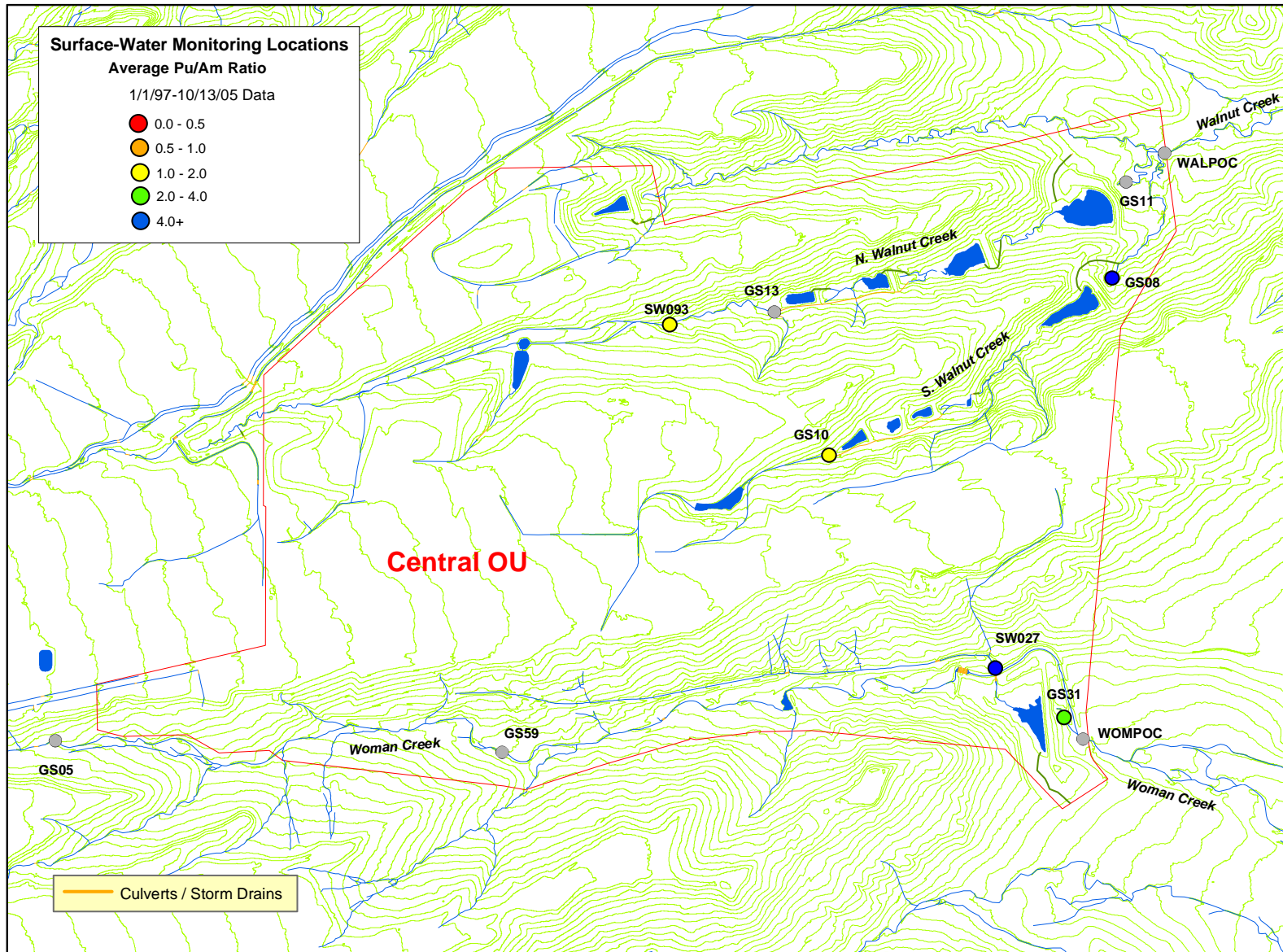
Note: Only locations with four or more results are mapped.

Figure 95. Median Uranium Concentrations for January 1, 1997 – October 13, 2005



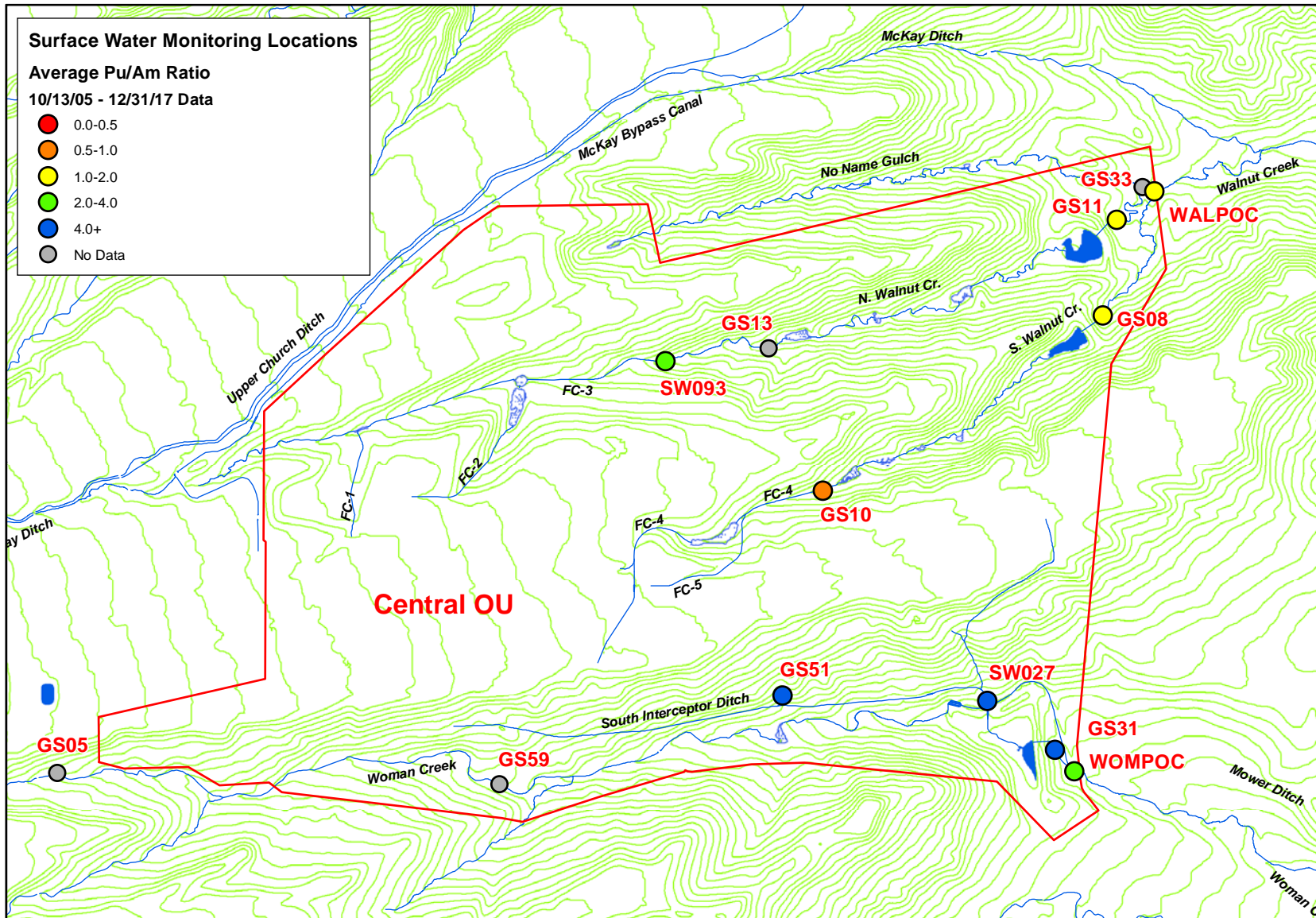
Note: Only locations with four or more results are mapped.

Figure 96. Postclosure Median Uranium Concentrations



Note: Only locations with four or more results are mapped.

Figure 98. Average Plutonium/Americium Ratios for January 1, 1997 – October 13, 2005



Note: Only locations with four or more results are mapped.

Figure 99. Postclosure Average Plutonium/Americium Ratios

Appendix

- Meeting Protocols
- Acronym List

ROCKY FLATS STEWARDSHIP COUNCIL

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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

Rocky Flats Stewardship Council – Meeting Overview and Protocols

The central purpose of the meeting of the Rocky Flats Stewardship Council Board of Directors is for the Board and public to learn about current site activities and monitoring results, to be briefed on any issues or challenges DOE and the regulatory agencies are facing, and other issues that come before the Board. The Board reserves time at each meeting to address governance-related issues. Those issues are identified in the meeting agenda, and could include the budget, work plan, minutes, and related items.

All meetings of the Board of Directors are open to the public. From time-to-time, and in accordance with § 24-6-402(4), Colorado Revised Statutes, the Board may go into executive session. Public notice of the executive session is provided in the meeting agenda.

Public Engagement Protocols: Time is allotted at each meeting for the public to address the Board of Directors and presenters. The following procedures apply to all meetings of the Board of Directors. The Chair reserves the right to modify these procedures.

1. **Public comment periods:** The public comment periods are identified on the meeting agenda. The goal is to have two public comment periods—one near the start of the meeting and another near the end. The public comment periods are not a Q&A with the Board.
2. **Time limit:** The Board requests that comments be to the point. If individual comments are too long and/or if there are a number of people who wish to speak, the Chair reserves the right to enact a time limit.
3. **Additional public comment:** As time allows, and as called on by the Chair, the public is allowed to ask questions or express an opinion during presentations. The Board will have the first opportunity to ask questions or make comments.

No personal attacks: All people speaking at the meeting must refrain from personal attacks and address the issues at hand.

Public Comment on Stewardship Council Website: The Stewardship Council website includes a section for public comment. To have your comment posted, you must email a copy of your comments to David Abelson (dabelson@rockyflatssc.org).

Noise: In order to help reduce background noise, sidebar and backroom conversations should be taken into the hall.

To be added to the Stewardship Council's email distribution list, please email David Abelson (dabelson@rockyflatssc.org).

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. Alpha radiation presents its greatest risk when it gets inside the human body, such as when a particle of alpha emitting material is inhaled into the lungs. Plutonium, the radioactive material of greatest concern at Rocky Flats, produces this type of radiation.
Am	americium	A man-made radioactive element which is often associated with plutonium. In a mass of Pu, Am increases in concentration over time which can pose personnel handling issues since Am is a gamma radiation-emitter which penetrates 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 Pu, Am, and U move through the soil and water at Rocky Flats
AMP	Adaptive Management Plan	Additional analyses that DOE is performing beyond the normal environmental assessment for breaching the remaining site dams.
AOC well	Area of Concern well	A particular type of groundwater well
B	boron	Boron has been found in some surface water and groundwater samples at the site
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 more penetrating than alpha and hence requires more shielding. Some forms of uranium emit beta radiation.

Rocky Flats Acronym List
 Prepared by Rik Getty, Rocky Flat Stewardship Council
 October 2014

BMP	best management practice	A term used to describe actions taken by DOE that are not required by regulation but warrant action.
BZ	Buffer Zone	The majority of the Rocky Flats site was open land that was added to provide a "buffer" between the neighboring communities and the industrial portion of the site. The buffer zone was approximately 6,000 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	State agency that regulates the site.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	Federal legislation that governs site 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 the site.
COU	Central Operable Unit	A CERCLA term used to describe the DOE-retained lands, about 1,500 acres comprised mainly of the former Industrial Area where remediation occurred
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-LM website and the public is notified via email.
Cr	chromium	Potentially toxic metal used at the site.
CRA	comprehensive risk assessment	A complicated series of analyses detailing human health risks and risks to the environment (flora and fauna).

Rocky Flats Acronym List
 Prepared by Rik Getty, Rocky Flat Stewardship Council
 October 2014

D&D	decontamination and decommissioning	The process of cleaning up and tearing down buildings and other structures.
DG	discharge gallery	This is where the treated effluent of the SPPTS 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	Required by NEPA (see 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	A complex evaluation that is undertaken by a government agency when it is determined that a proposed action by the agency may have significant impacts to the environment.
EPA	U.S. Environmental Protection Agency	The federal regulatory agency for the site.
EEOICPA	energy employees occupational illness compensation program act	This act was passed by Congress in 2000 to compensate sick nuclear weapons workers and certain survivors. Unfortunately the program has been fraught with difficulties in getting benefits to these workers over the years.
ETPTS	east trenches plume treatment system	The treatment system near the location of the east waste disposal trenches which treats groundwater contaminated with organic solvents emanating from the trenches. 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	This federal law regulated federal advisory boards. The law requires balanced membership and open meetings with published Federal Register meeting dates.
Gamma Radiation		This type of radiation is very penetrating and requires heavy shielding to keep it from exposing people. Am is a strong gamma emitter.
GAO	Government Accountability Office	Congressional office which reports to Congress. The GAO did 2 investigations of

Rocky Flats Acronym List
 Prepared by Rik Getty, Rocky Flat Stewardship Council
 October 2014

		Rocky Flats relating to the ability to close the site for a certain dollar amount and on a certain time schedule. The first study was not optimistic while the second was very positive.
g	gram	metric unit of weight
gpm	gallons per minute	A volumetric measure of water flow in the site's groundwater treatment systems and other locations.
GWIS	groundwater intercept system	Refers to a below ground system that directs contaminated groundwater toward the Solar Ponds and East Trenches treatment systems.
IA	Industrial Area	Refers to the central core of Rocky Flats where all production activities took place. The IA was roughly 350 of the total 6,500 acres at the site.
IC	Institutional Control	ICs are physical and legal controls geared towards ensuring the cleanup remedies remain in place and remain effective.
IGA	intergovernmental agreement	A cooperative agreement between local governments which sets up 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 over two hundred such sites 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 and East Trenches treatment systems
L	liter	Metric measure of volume, a liter is 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	Hydrogeology term for deep unweathered bedrock which is hydraulically isolated from the upper hydrostratigraphic unit (see

		UHSU). Data shows that site contaminants have not contaminated the LHSU.
LM	Legacy Management	DOE office responsible for overseeing activities at closed sites.
LMPIP	Legacy Management Public Involvement Plan	This plan 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).
M&M	monitoring and maintenance	Refers to ongoing activities at Rocky Flats.
MOU	Memorandum of Understanding	MOU refers to the formal agreement between EPA and CDPHE which provides that CDPHE is the lead post-closure regulator with EPA providing assistance when needed.
MSPTS	Mound site plume treatment system	The treatment system for treating groundwater contaminated with organic solvents which emanates from the Mound site where waste barrels were buried. Treated effluent flows into South Walnut Creek.
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 found in the North Walnut Creek drainage derived from Solar Ponds wastes. Nitrates are very soluble in water and move readily through the aquatic environment
Np	neptunium	A man-made radioactive isotope that is found as a by-product of nuclear reactors and plutonium production.
NPL	National Priorities List	A listing of Superfund sites. The refuge lands were de-listed from the NPL while the DOE-retained lands are still on the NPL due to ongoing groundwater contamination and associated remediation activities.
OLF	Original Landfill	Hillside dumping area of about 20 acres which was used from 1951 to 1968. It underwent extensive remediation with the

		addition of a soil cap and groundwater monitoring locations.
OU	Operable Unit	A term given to large areas of the site where remediation was focused.
PCE	perchloroethylene	A volatile organic solvent used in past operations at the site. PCE is also found in environmental media as a breakdown product of other solvents.
pCi/g	picocuries per gram of soil	A unit of radioactivity measure. The soil cleanup standard at the site was 50 pCi/g of soil.
pCi/L	picocuries per liter of water	A water concentration measurement. The State of Colorado has a regulatory limit for Pu and Am which is 0.15 pCi/L of water. This standard is 100 times stricter than the EPA's national standard.
PLF	Present Landfill	Landfill constructed in 1968 to replace the OLF. During cleanup 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 an 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 site that is monitored and must be found to 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)	These are locations at Rocky Flats at which surface water is monitored for water quality. There are no financial penalties associated with water quality exceedances at these locations, but the site 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 Wildlife Refuge lands of about 4,000 acres.

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Pu	plutonium	Plutonium is 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. Pu-239 is the primary radioactive element of concern at the site. There are different forms of plutonium, called isotopes. Each isotope is known by a different number. Hence, there are plutonium 239, 238, 241 and others.
RCRA	Resource Conservation and Recovery Act	Federal law regulating hazardous waste. In Colorado, the EPA delegates CDPHE the authority to regulate hazardous wastes.
RFCA	Rocky Flats Cleanup Agreement	The regulatory agreement which governed cleanup activities. DOE, EPA, and CDPHE were signors.
RFCAB	Rocky Flats Citizen Advisory Board	This group was formed as part of DOE's site-specific advisory board network. They provided community feedback to DOE on a wide variety of Rocky Flats issues from 1993-2006.
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 the site during cleanup years.
RFLMA	Rocky Flats Legacy Management Agreement	The post-cleanup regulatory agreement between DOE, CDPHE, and EPA which governs site activities. The CDPHE takes lead regulator role, with support from EPA as required.
RFNWR	Rocky Flats National Wildlife Refuge	The approximate 4,000 acres which compose the wildlife refuge.
RFSOG	Rocky Flats Site Operations Guide	The nuts-and-bolt guide for post-closure site activities performed by DOE and its contractors.
SEP	Solar Evaporation Ponds	In the 1950's when the site's liquid waste treatment capability was surpassed by the liquid waste generation rate, the site resulted to transferring liquid wastes to open-air holding ponds where solar energy was utilized to evaporate and concentrate the waste. The original SEPs were not impermeable and substantial quantities of uranium and nitrates made their way into

		groundwater. As a result the solar ponds plume treatment system was necessary to treat the contaminated groundwater before it emerged as surface water in North Walnut Creek.
SPPTS	solar ponds plume treatment system	System used 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 with only a slight portion man-made. Effluent flows into North Walnut Creek
SVOCs	semi-volatile organic compounds	These compounds are not as volatile as the solvent VOCs. They tend to be similar to oils and tars. They are found in many environmental media at the site. One of the most common items to contain SVOCs is asphalt.
TCE	trichloroethylene	A volatile organic solvent used in past operations at the site. TCE is also found in environmental media as a breakdown product of other solvents.
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 which was used in nuclear weapons. The second isotope was U-238, also known as depleted uranium. This had various uses at the site and only had low levels of radioactivity.
UHSU	upper hydrostratigraphic unit	A hydrogeology 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 the site is contaminated with various contaminants of concern while groundwater in other UHSU areas is not impacted. All groundwater in the UHSU emerges to surface water before it leaves the site.

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USFWS	United States Fish & Wildlife Service	An 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.
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 (also called TCE), perchloroethylene (also called PCE), and methylene chloride.
WCRA	Woman Creek Reservoir Authority	This group is composed of the three local communities, the Cities of Westminster, Northglenn, and Thornton, who use Stanley Lake as part of their drinking water supply network. Water from the site used to flow through Woman Creek to Stanley Lake but the reservoir severed that connection. The Authority has an operations agreement with DOE to manage the Woman Creek Reservoir.
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.
ZVI	zero valent iron	A type of fine iron particles used to treat VOC's in the ETPTS and MSPTS.