Overview of the Second Quarter 2018 Surveillance and Maintenance Report for the Rocky Flats Site, Colorado

April to June 2018
Quarterly Monitoring and Reporting

- Quarterly reports are required under the *Rocky Flats Legacy Management Agreement* (RFLMA) to document that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedy continues to provide effective protection.

- Components of the remedy for Rocky Flats include:
  - Maintain two landfill covers
  - Maintain three groundwater treatment systems
  - Monitor surface water and groundwater
  - Maintain physical controls
    - Signage
    - Access restriction
Components of the remedy for Rocky Flats include:

- Enforce institutional controls
  - No occupied building construction
  - Excavation and soil-disturbance restrictions
  - No surface-water consumption or agricultural use
  - No groundwater wells, except for monitoring
  - Landfill covers and engineered-remedy components protection
Surface Water Monitoring

Second Quarter 2018
Select RFLMA Surface Water Monitoring Locations

- Indiana Street
- Walnut Creek
- Woman Creek
- Central OU Boundary
- Present Landfill
- Original Landfill
- PLFTS
- Pond A-4
- Pond B-5
- Pond C-2
- GS10
- GS59
- GS10 SW093
- GS59 SW027
- WOMPOC
- WALPOC
- Pond A-4
- Pond B-5
- Pond C-2
- Walnut Creek
- Woman Creek
- Indiana Street
Original Landfill Performance Monitoring

- Original Landfill (OLF) (location GS59)
  - Routine surface water sampling in Woman Creek, downstream of the OLF (GS59) during the second quarter of 2018 showed mean concentrations for all analytes below applicable RFLMA water-quality standards
Present Landfill Performance Monitoring

- Present Landfill (PLF) (location PLFSYSEFF)
  - Routine second quarter sampling showed concentrations for all analytes below applicable RFLMA water-quality standards
Point of Evaluation Monitoring

- No RFLMA point of evaluation (POE) analyte concentrations were reportable during the second quarter of 2018
Point of Compliance Monitoring

- Reportable 30-day average uranium concentrations were observed at WALPOC
  - Concentrations were reportable for February 11, 2018 through April 19, 2018 during winter/spring baseflow conditions
  - See RFLMA Contact Record 2018-04
  - The 12-month rolling average uranium concentration has remained below the reportable level

- All other RFLMA point of compliance analyte concentrations remained below reportable levels during the second quarter of 2018
Questions?
Groundwater Monitoring and Operations

Second Quarter 2018

U.S. DEPARTMENT OF ENERGY
Legacy Management
RFLMA Groundwater Monitoring Overview

- RFLMA monitoring network
  - Ten Resource Conservation and Recovery Act (RCRA) wells (quarterly)
    - Evaluate potential impacts from OLF and PLF
  - Nine Area of Concern (AOC) wells and one Surface Water Support location (semiannually)
    - Located in drainages downstream of contaminant plumes
    - Evaluate for plumes discharging to surface water
  - Twenty-seven Sentinel wells (semiannually)
    - Downgradient of treatment systems, edges of plumes, and in drainages
    - Look for plumes migrating to surface water and treatment system problems
RFLMA Groundwater Monitoring Overview (continued)

- RFLMA monitoring network (continued)
  - Forty-two Evaluation wells (biennially)
    - Within plumes, near source areas, and interior of Central Operable Unit (COU)
    - Evaluate whether monitoring of an area or plume can cease
  - Nine treatment system locations (seven semiannually, two quarterly)
Groundwater treatment system locations omitted for clarity
RFLMA Monitoring

- Heavy sampling period
  - All wells, including the biennial Evaluation wells
- Results generally consistent with previous data
  - Notable exception: AOC well 10304
- CDPHE inspection of groundwater monitoring
  - Performed periodically
  - In 2018, involved all four RCRA wells supporting OLF
  - Observed entire sampling activity at each well
RFLMA Monitoring (continued)

- AOC well 10304
  - Monitors groundwater downgradient of 903 Pad/Ryan’s Pit Plume
  - Elevated trichloroethene (TCE) in second quarter sample (26 µg/L; RFLMA standard is 2.5 µg/L)
  - If TCE is above 2.5 µg/L in sample collected in fourth quarter 2018, will be reportable for TCE
  - Was reportable for TCE from fourth quarter 2015 through second quarter 2017
    - Result in fourth quarter 2017: 2.3 µg/L
  - See Contact Record 2015-10 for discussion of previous reportable condition
    - Wet conditions were predicted to cause this
    - May still reflect waning effects of very wet spring of 2015
RFLMA Monitoring (continued)

- Groundwater treatment systems continuing to remove contaminants
  - East Trenches Plume Treatment System (ETPTS) effluent below applicable RFLMA standards
    - Applies to water from Mound Site Plume Collection System (MSPCS) as well as East Trenches Plume groundwater
  - Solar Ponds Plume Treatment System (SPPTS) effluent below applicable RFLMA standards for nitrate
    - Uranium concentrations reduced but above RFLMA target
- Data will be evaluated and discussed as part of the 2018 annual report
Treatment System Activities

- MSPCS and ETPTS
  - Routine maintenance
- SPPTS
  - Routine maintenance
  - Added new valve on effluent line to simplify maintenance
  - Replaced effluent pump in nitrate treatment component with higher-flow model
  - Subcontracted uranium treatment evaluation was completed
    - Removed associated test infrastructure
    - DOE is considering path forward
- Routine maintenance at all systems included annual inspection of solar/battery facilities
  - Replaced items as needed
Questions?
Site Operations

Second Quarter 2018
RFLMA Annual Inspection

- Scope: inspect the site and monitor for evidence of significant erosion and violation of institutional controls
- Conducted on April 5, 2018
- Verified the restrictive notice for the COU remains in the Administrative Record and on file with Jefferson County (March 30)
- Found no evidence of institutional or physical controls violations
RFLMA Annual Inspection (continued)

- Items identified were debris and trash that were picked up or subsequently removed.
- A couple of areas showed minor depressions, none required immediate action.
Quarterly Sign Inspections

- RFLMA physical control
- Signs inspected on May 21, 2018
  - No problems were observed with the signs
Site Operations: OLF

- Performed three monthly inspections
  - April 20, May 25, and June 25, 2018
  - One weather-related inspection on May 7
  - Some minor erosion occurred and maintenance was completed

- Surveyed eight settlement monuments on June 7
  - Vertical settling at each monument was within limits

- Seep 10 siphon – approximately 475,000 gallons diverted by the end of June

- Seep 2/3 collector pipe maintenance

- GWI wells – 166,000 gallons diverted by end of May
Site Operations: OLF (continued)
Site Operations: OLF (continued)

- East Subsurface Drain was inspected as part of the OLF monthly inspections
- Temporary groundwater intercept system was restarted for the spring and summer; not operated in June (generator maintenance)
Site Operations: PLF

- Performed combined quarterly and weather-related inspection on May 7
- Landfill in good condition; no maintenance required
Former Building Areas 371/374, 771, 881, and 991

- Weather-related inspection conducted on May 8 following rain event
- Second quarter inspection (best management practice) conducted on June 12
  - Routine inspection for erosion and subsidence
  - No new issues identified
North Walnut Creek Slump

- Completed geotechnical data report
- Geotechnical evaluation commenced
- Continued data collection from 15 piezometers and three inclinometers
- Slump monitoring points were surveyed on April 2, May 1, and June 7
  - Month-to-month movement accelerated between May 1 and June 7 readings, with vertical movements ranging from 0.14 foot to 0.44 foot for the period
- Crack was bladed, filled, and tamped in July to limit direct water infiltration
Site Roads

- No maintenance was conducted during the second quarter of 2018
- Repair and maintenance of site roads is being planned for fall (November)
  - Grade, scarify as necessary, moisture condition, compact, and repair damaged sections
  - Imported aggregate will be used as necessary
Questions?
Ecology Activities

- Weed mapping
- Spot control of small weed infestations
- Wetland water level monitoring
- Nest box surveys
- Prairie dog survey
- Installation of tree cages around woody plants
- Assisted U.S. Fish and Wildlife Service with Preble’s mouse trapping efforts
Questions?

Sally the salamander in our new office!