

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
Nancy Newell

Monthly Status Report – July 2015

Board meeting summary

There was no meeting this month

Legacy Management monthly site inspection summary

DOE reports that in addition to routine monitoring and maintenance activities, site personnel conducted the following activities in June.

Surface water and groundwater monitoring

- Completed second quarter 2015 groundwater sampling.
- Sample results received June 11 for point of evaluation (POE) monitoring location SW027, which is the outfall of the South Intercept Ditch (SID) before it enters terminal pond C2, had a plutonium concentration in excess of the standard, triggering a “reportable condition.” (See discussion below of Contact Record 2015-05)
 - The required RFLMA and Adaptive Management Plan (AMP) notices for the reportable condition were sent to stakeholders.
 - DOE and contractor personnel conducted a walk down of the area that drains to SW027, including the 903 Lip hillside and the SID.
 - The RFLMA parties consulted on this issue on June 23.
 - DOE installed wattles on the hillside north of the SID and in the vicinity of SW027 to help decrease the amount of soil and sediment movement. Additional wattles will be installed to enhance and optimize the existing erosion controls.
- Started site-wide seep mapping.

Groundwater Treatment Systems

Flows at all three treatment systems remain significantly above average

- Mound Site Plume Treatment System (MSPTS): The air stripper sump and pump were cleaned. The high flows are starting to drop off.
- East Trenches Plume Treatment System (ETPTS): Flows at the system remain higher than the designed maximum. For context, on June 11, the air stripper treated over 10,000 gallons. Based on historic ETPTS data, the design parameters for the system estimated a short-term maximum of less than 6,000 gallons in one 24-hour period, and a multi-year average volume of approximately 2,300 gallons. Previous flow data indicated that 80%

of the time, total volumes would be less than 2,900 gallons. The system has been treating more than 6,000 gallons/day for well over a month.

- Solar Ponds Plume Treatment System (SPPTS): High flows are beginning to taper at the main trench (SPIN), but not at the secondary (ITSS). The system continues to experience flow issues from bio-fouling and media clogging in the “big box.” Planning is underway for a project to address the flow issues.

Ecology

- Continued wetland delineation/mapping project.
- Continued commercial herbicide applications.
- Began mapping Dalmatian toadflax across the central operable unit (COU).
- Sprayed various flume and dam outfall locations to remove vegetation blocking flumes and access routes.
- Cut off Scotch thistle tops at various locations to prevent seed production.
- Installed wattles at the ETPTS to control hillside erosion.

Miscellaneous

- On June 8, the former building areas were inspected after the significant rain event over June 6-7. Another weather-related inspection was conducted on June 12 after the site received slightly more than 1 inch of rain in less than 24 hours. Cracking and subsidence was noted along the shoulder of the road near the southeast corner of the former B771, apparently aligned with the old stack and the tunnel between the building and the stack. The deepest area was filled the same day and the rest will be filled when soil can be brought in.
- Conducted a site tour for a workshop co-sponsored by the International Atomic Energy Agency (IAEA) for member nations in Eastern Europe and Central Asia. Presentations were given on the site history, groundwater sampling, revegetation, and surface water monitoring.

Landfills

- Additional minor movement and cracking has occurred and some soil is falling off the face of the big scarp in the northeast corner of the Original Landfill (OLF). Several cracks were filled. RFLMA-required inspections are conducted when the site receives more than an inch of precipitation; staff checked the landfill several times a week. The system of temporary drains appears to be effective in conducting water off the landfill cover and reducing ponding.
- The subcontracted geotechnical engineer provided his recommendations for the interim repairs to be performed this summer when soil conditions permit. A follow-on engineering evaluation will address the feasibility of groundwater controls and recommendations for additional repairs.

Contact Record 2015-04

Mound Site Plume Treatment System (MSPTS) Reconfiguration Conceptual Approach

This contact record concerns potential improvement to the Mound Site Plume Treatment System (MSPTS), and the possibility of routing MSPTS effluent to the East Trenches Plume Treatment System (ETPTS) for further treatment through use of the ETPTS air stripper.

As provided in the record, the MSPTS “includes a groundwater collection trench, treatment components, and a subsurface discharge gallery. Groundwater collected in the trench gravity flows through two plastic treatment cells (approximately 10 feet in diameter and 11.5 feet tall) filled with zero-valent iron (ZVI) media.”

Further, as provided in the record:

Because the MSPTS system effluent typically contains one or more volatile organic compound (VOC) constituents at levels above Rocky Flats Legacy Management Agreement (RFLMA) standards, the RFLMA Parties have consulted on ways to optimize treatment to further reduce the potential VOC contaminant load to surface water (RFLMA Contact Record [CR] 2010-07, dated November 2, 2010). A solar-powered pump was installed in the existing MSPTS effluent manhole to circulate water from the bottom of the manhole through a spray nozzle (also situated within the effluent manhole) to further treat the effluent using the air-stripping process (RFLMA CR 2011-01, dated January 14, 2011). This has been extremely effective, but requires significant maintenance to keep the treatment effectiveness high, and even then at least one VOC typically exceeds the corresponding RFLMA Table 1 value.

Additionally,

While in planning to remove the spent ZVI media at the MSPTS, DOE also evaluated the potential for the addition of a commercially available air stripper unit to eliminate the use of ZVI media at this treatment system, as was accomplished at the ETPTS.... The model results indicate that the MSPTS influent could be added to ETPTS influent and the combined influent could be treated by the ETPTS air stripper to meet stream standards. A conceptual approach has been developed and discussed among the RFLMA parties. This approach includes routing the MSPTS influent to the ETPTS air stripper.

The parties agree that DOE will prepare engineering designs to treat MSPTS effluent in the ETPTS air stripper. This project, should it proceed to construction, must comply with the site oil disturbance review plan.

The contact record can be found at: http://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx

Contact Record 2015-05

Reportable condition for plutonium 12-month rolling average at Point of Evaluation (POE) SW027

As discussed in the June 2015 Stewardship Council update, there was what is termed a “reportable condition” for plutonium and americium levels at SW027, a surface water

monitoring point along the South Interceptor Ditch (SID) just north (uphill) from Woman Creek. As presented in the June update and this contact record, the following is a synopsis of the data:

No samples collected 5/7/14–3/8/15 due to lack of flow

Composite 3/9/15–3/11/15; Pu = 0.116 pCi/L, Am = 0.030 pCi/L

Composite 3/11/15–4/17/15; Pu = 0.139 pCi/L, Am = 0.030 pCi/L

Composite 4/17/15–5/6/15; Pu = 0.251 pCi/L, Am = 0.040 pCi/L

Composite 5/6/15–5/9/15; Pu = 1.02 (duplicate = 0.754) pCi/L, Am = 0.18 (duplicate = 0.157) pCi/L

The record describes the plan and schedule to address the reportable condition (quoting from the record):

- Evaluation of the steps taken in 2010 when it was anticipated the 12-month rolling average for plutonium would exceed the standard at SW027 as reported in CR 2010-06. This includes a review of “Report of Steps Taken Regarding Monitoring Results at Surface Water Point of Evaluation (POE) SW027,” August 31, 2010, and “Calendar Year (CY) 2011 Status Report of Actions Taken in Point of Evaluation SW027 Drainage,” January 2012.
- On June 17, 2015, Rocky Flats personnel walked the SID drainage area and identified opportunities to enhance the revegetation and erosion controls previously implemented in 2010 and 2011 (Figure 1). Also during the June 17 inspection, limited areas in the SID showed evidence of local erosion and/or sediment deposition. Based on these general observations, a geotechnical engineer was scheduled to inspect the areas and provide recommendations.
- During the June 17 inspection, locations were identified for immediate installation of new wattles (Figure 2); installation was completed on June 22, 2015. RFLMA Contact Record 2015-05
- Additional erosion control methods will be installed in the SW027 drainage, predominantly on the hillside above GS51. These measures will include matting, wattles, GeoRidge berms, and organic mulch. Several areas in the SID will also receive erosion matting; other longerterm actions for the SID are dependent on recommendations from the geotechnical engineer. Figure 3 shows the planned locations for these measures; final locations will be documented after installation. This work is scheduled to be completed by August 2015.
- On June 29, 2015, geotechnical engineers, CDPHE, and Rocky Flats personnel walked down the SID to evaluate potential use of water and sediment management devices or structures. The geotechnical engineers will provide recommendations for water and sediment management in the SID. These recommendations will be implemented in the longer term as appropriate.
- Sampling will continue as currently scheduled when surface water runoff is available.
- Status of the above items will be reported in quarterly and annual reports or both, depending when the activities occur.

The contact record can be found at: http://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx

Contact Record 2015-06

Original Landfill (OLF) Implementation of Interim Action to Reestablish Surface Water Management on Portions of the OLF, with Soil Disturbance Review Plan

This contact record concerns ongoing problems on the eastern edge of the Original Landfill. These issues have been discussed with the Stewardship Council and have been included in prior

monthly updates. The record approves immediate action to address subsidence and standing water on the landfill.

As provided in the record,

Localized instability of the East Perimeter Channel (EPC) of the OLF first occurred as the result of the rain event from September 9 through September 16, 2013, and was identified as a reportable condition in CR 2013-02, dated September 18, 2013. The efforts to repair, reconfigure, and stabilize the EPC that are listed in CR 2013-03 and modified in CR 2014-09 were postponed due to continuing moisture and weather conditions, and were ultimately completed in January 2015. Since that time, the site has received over 20 inches of precipitation. The subsidence has begun to slow in most areas and stopped in some areas.

DOE proposes in part to

1. reduce the slope by cutting up to 6 feet of the scarp and putting it at the bottom of the scarp
2. change some of the piping in the east perimeter channel
3. evaluate whether the drain at the northeast edge of the landfill is clogged

CDPHE has approved a soil disturbance plan as required under the Rocky Flats Legacy Management Agreement.

The Woman Creek Reservoir Authority wrote DOE with its concerns. That letter is attached to this update.

The contact record can be found at: http://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx

Stewardship Council update

Next meetings:

September 14, October 26



Woman Creek Reservoir Authority

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August 6, 2015

Mr. Scott Surovchak
U.S. Department of Energy
Office of Legacy Management
Rocky Flats Site
11025 Dover Street, Suite 1000
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Re: Contact Record 2015-06

Dear Mr. Surovchak,

I am writing on behalf of Woman Creek Reservoir Authority (the "Authority"), a political subdivision and public corporation of the State of Colorado created under C.R.S. 29-2-204.2. The Authority is the owner and operator of Woman Creek Reservoir generally located at the intersection of Woman Creek and Indiana Street, immediately adjacent to the historical boundaries of what has been formerly known as the Rocky Flats Plant Buffer Zone. The Reservoir physically separates Standley Lake, the drinking water source for the Cities of Northglenn, Thornton and Westminster, from surface water leaving the former Rocky Flats site. I am writing to provide comment on the recent posting of Department of Energy, Office of Legacy Management (DOE) Contact Record 2015-06 Original Landfill (OLF) Implementation of Interim Action to Reestablish Surface Water Management on Portions of the OLF, with Soil Disturbance Review Plan.

The precipitation events in 2013 and thus far in 2015 have significantly exacerbated existing OLF soil instability and water draining issues. Seeps, cracks and subsidence concerns have resulted in surface ponding and varying degrees of settling and slumping on primarily the northeast side of the OLF and in the East Perimeter Channel (EPC). With regulatory approval, DOE promptly responded to the OLF and EPC instability issues in mid-May of this year with immediate response actions focused on rapidly draining surface water using pumps and flexible piping. Following these immediate response actions, additional work is needed to intercept and drain surface water runoff and groundwater. Contact Record 2015-06 presents some of this additional work and alludes to future work following further geotechnical review.

Several actions for reestablishing surface water flow off the OLF cover over the short term are outlined in Contact Record 2015-06. These actions will result in cutting and regrading of surface soils including some parts of the OLF cover, installation of some new berms and aboveground drain pipes, and excavation of a rock drain near the northeast edge of the OLF cover to a depth of 25 feet. Due to the extensive nature of the Contact Record 2015-06 proposed interim actions, the Authority respectfully submits the following four requests for additional information and post-work sampling:

Request #1: The Authority requests more detailed information about the immediate actions taken under Contact Record 2015-03 and the extent of success for each action in achieving increased drainage of surface or ground water.

The progress on the immediate actions is expected to be reported in the next quarterly report which will not be available for months. In order to fully understand the proposed interim actions related to surface water management, the Authority requests an update on the status of the immediate actions that were undertaken during the emergency response phase that were focused on groundwater management. For example, were one or more localized subsurface drains added? What were the observed effects on proximal groundwater levels, any pooled water and saturated surface soils?

Request #2. How would exposure of buried waste be handled during the proposed activities?

Due to the amount of localized earthmoving proposed, along with the statement in the Contact Record that the original two foot cover depth on the OLF will not be maintained in all areas, have procedures been developed for documenting and properly handling any exposed landfill waste materials? For the most part, the areas of concern are located outside the buried waste footprint, but some areas proposed earthwork are within the OLF boundary. Further, DOE has previously noted that one piece of metal waste was exposed due to the major recent (2015) slumping of the cover.

Request #3: The Authority requests additional information about the rock drain proposed to be excavated.

Figure 1 in the Contact Record details an existing rock drain that will be pot holed to a depth of 25 feet to facilitate examination of the drain for clogging. More information about the drain, its configuration and function would aid in understanding the proposed actions. How deep is the drain buried at the OLF end and how deep is it buried at the terminal end east of the road or does it daylight? What is the length of the drain and what types and sizes of materials were used to construct it? If the drain is determined to be clogged, what are the next steps? Were any actions taken in the undisturbed system (prior to potholing) to attempt to evaluate the rock drain for clogging (e.g., routing clean water into the drain and observing the outfall)? Have observations of water draining or failing to drain from this rock drain been made during saturated conditions?

Request #4: The Authority requests surface soil composite sampling of the reconfigured areas OLF cover following the proposed interim actions.

As a result of the proposed interim actions, previously buried soil will be exposed. The Authority proposes that a limited number of composite samples be collected in areas of soil disturbances within the OLF footprint. The contaminants of concern for the OLF comprise the analyte list for these samples.

Summary

In summary, the Authority generally supports DOE's proposed interim actions related to surface water management on the Original Landfill as outlined in Contract Record 2015-06. Recent record amounts of precipitation damaged the drainage channel repairs completed just months earlier and caused significant erosion of portions of the landfill cover. While the proposed interim actions may improve surface water management, it is important to acknowledge the potential for soil disturbance within the OLF footprint to expose contamination until such time as a plan is developed for long term stabilization of the OLF cover. The Authority desires a clearer understanding of past efforts and improved transparency regarding future stabilization proposals.

Sincerely,



Tamara Moon
President
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cc: Carl Spreng, Colorado Department of Public Health and Environment
Vera Mortiz, EPA
David Abelson, Rocky Flats Stewardship Council
Josh Nims, Woman Creek Reservoir Authority
James Boswell, Woman Creek Reservoir Authority
Lee Johnson, Attorney for Woman Creek Reservoir Authority