

ROCKY FLATS SITE

REGULATORY CONTACT RECORD 2017-04

Purpose: OLF 2017 Interim Maintenance Work: Creating Positive Drainage and Minor Adjustments to Berm Heights, in accordance with Soil Disturbance Review Plan

Contact Record Approval Date: October 6, 2017

Site Contact(s)/Affiliation(s): Scott Surovchak, U.S. Department of Energy (DOE); Jeremy Wehner, Linda Kaiser, David Ward (Navarro)

Regulatory Contact(s)/Affiliation(s): Carl Spreng, Colorado Department of Public Health and Environment (CDPHE); Vera Moritz, U.S. Environmental Protection Agency (EPA); Lindsay Masters (CDPHE)

Date of Consultation Meeting: September 21, 2017

Consultation Meeting Participants: Scott Surovchak, Carl Spreng, Vera Moritz, Lindsay Masters, Linda Kaiser, Jeremy Wehner, David Ward, John Boylan, George Squibb, Michelle Hanson

Related Contact Records: CR 2013-02, CR 2013-03, CR 2014-09, CR 2015-03, CR 2015-06, CR 2016-03, CR 2016-04, CR 2017-01

Discussion:

Original Landfill 2017 Maintenance Work to Create Positive Drainage

Maintenance activities at the Original Landfill (OLF) are planned and expected to be performed in October 2017. The planned 2017 maintenance activities are consistent with activities outlined the *Original Landfill Monitoring and Maintenance Plan*. A geotechnical evaluation (Contact Record 2015-06 *Implementation of Interim Action to Reestablish Surface Water Management on Portions of the OLF*) is in progress; it is evaluating the effects of 2015-2017 events on slope stability. At the completion of the evaluation, additional actions may be selected for implementation at the OLF to increase slope stability. Field implementation of these additional actions is expected to begin in summer 2018.

The OLF 2017 maintenance work will include:

- (1) regrading the lower portion of the slump to (a) eliminate cracks and pooling areas and (b) create positive drainage,
- (2) conducting minor regrading of the upper portion of the slump for positive drainage, and
- (3) conducting surface compaction of the entire slump area to minimize infiltration.

Erosion controls and revegetation will be installed in accordance with the approved *Erosion Control Plan for Rocky Flats Property Central Operable Unit* (2007).

The East Perimeter Channel (EPC) outlet is blocked by the slump below Berm 7 (as described in the May to current monthly inspection reports). The slump completely blocks flow in the EPC, forcing channelized flow in the EPC to overflow its east (lower) bank, and then flow downgradient through the well-established vegetation to Woman Creek. OLF berms and the EPC are shown in the attached figure.

Similar slumps into the EPC were removed during the 2014, 2015, and 2016 maintenance work. However, it appears that the current slump toe is acting as a buttress to the hillside above, which has moved in prior years. Before the May slump event, a small tension crack developed north of Berm 4 in the vicinity of the 2015 slump scarp (as noted in monthly reports). In order to minimize adverse impacts to the hillside stability, EPC slump material will not be removed during the 2017 maintenance work. Instead, the current flow path—as described above—will be left in place until the 2018 slope stabilization project design is underway and the discharge location(s) can be reevaluated. This new overland flow area will be inspected during all routine OLF inspections, and maintenance conducted as needed. No erosion has been noted in this area to date.

Minor Adjustments to Berm Heights

The 2009 *Original Landfill Monitoring and Maintenance Plan* (M&M Plan), Section 3.4.1, “Monitoring Locations and Procedures,” discusses monitoring for the OLF soil cover and states:

“If visual inspections of the diversion berms indicate a departure from the design heights, as shown in Figure 3–3, the height and gradient will be measured to determine if maintenance is required. In addition, the periodic topographical survey results shall be evaluated to determine if berm maintenance is required.”

Contact Record (CR) 2015-06 “OLF Implementation of Interim Action to Reestablish Surface Water Management on Portions of the OLF, with Soil Disturbance Review Plan,” states:

“The important concept here is to not add any more weight to the OLF cover or water management structures during this interim action. Therefore, the designed berm heights and cover thickness will not be maintained in these areas during this action.”

To minimize weight on the cover the designed berm heights will not be maintained until the longer-term implementation for the OLF stabilization is complete.

The periodic topographical survey required by the OLF M&M Plan was performed in 2017. A majority of the berm heights meet or exceed the minimum required heights recalculated in the 2013 technical memorandum. In 2015, berm areas impacted by slumping were regraded in accordance with CR 2015-06 and reconfigured to promote positive drainage, without adding additional weight to the OLF cover. Since 2015, positive drainage off the cover has been maintained to eliminate ponding. However, this Contact Records documents the proposal that minimum berm heights will not necessarily be maintained so as to minimize weight on the cover as recommend in CR 2015-06. Minor adjustments to berm heights may be required to prevent downgradient erosion. Work will be performed in some berm channels to reduce ponding.

The longer-term implementation for OLF stabilization, based on recommendations from the geotechnical evaluation in progress, is scheduled to be completed in fall 2018.

Soil disturbance, filling, and grading on the OLF cover are subject to the requirements of Rocky Flats Legacy Management Agreement (RFLMA) institutional controls (ICs), discussed below. An approved SDRP is required. Here, the SDRP is included as Attachment 1 to this CR. The *Erosion Control Plan for Rocky Flats Property Central Operable Unit*, which has been approved by CDPHE and EPA, provides erosion control best-management practices that meet the IC 3 requirements.

IC Evaluation: Soil disturbance work is subject to ICs 2, 3 and 6. Table 1 recaps these ICs.

Table 1. Institutional Controls

IC 2	Excavation, drilling, and other intrusive activities below a depth of three feet are prohibited, without prior regulatory review and approval pursuant to the Soil Disturbance Review Plan in RFLMA Attachment 2.
	Objective: Prevent unacceptable exposure to residual subsurface contamination. Rationale: Contaminated structures, such as building basements, exist in certain areas of the Central OU, and the Comprehensive Risk Assessment did not evaluate the risks posed by exposure to this residual contamination. Thus, this restriction eliminates the possibility of unacceptable exposures. Additionally, it prevents damage to subsurface engineered components of the remedy.
IC 3	No grading, excavation, digging, tilling, or other disturbance of any kind of surface soils is permitted, except in accordance with an erosion control plan (including Surface Water Protection Plans submitted to EPA under the Clean Water Act) approved by CDPHE or EPA. Soil disturbance that will not restore the soil surface to preexisting grade or higher may not be performed without prior regulatory review and approval pursuant to the Soil Disturbance Review Plan in RFLMA Attachment 2.
	Objective: Prevent migration of residual surface soil contamination to surface water. Rationale: Certain surface soil contaminants, notably plutonium-239/240, were identified in the fate and transport evaluation in the Remedial Investigation as having complete pathways to surface water if disturbed. This restriction minimizes the possibility of such disturbance and resultant impacts to surface water. Restoring the soil surface to preexisting grade maintains the current depth to subsurface contamination or contaminated structures.
IC 6	Digging, drilling, tilling, grading, excavation, construction of any sort (including construction of any structures, paths, trails, or roads), and vehicular traffic are prohibited on the covers of the Present Landfill and the Original Landfill, except for authorized response actions.
	Objective: Ensure the continued proper functioning of the landfill covers. Rationale: This restriction helps ensure the integrity of the landfill covers.

Resolution: CDPHE, after reviewing information regarding the proposed soil disturbance and excavation and after consultation with EPA, has approved proposed activities in this Contact Record. CDPHE has determined that the proposed activity: (1) will not compromise or impair the function of the remedy, and (2) will not result in an unacceptable release or exposure to residual subsurface contamination. CDPHE also determined that the proposed project meets the rationale and objectives of IC 2, 3 and 6.

DOE will conduct this work after (1) CDPHE's approval, and (2) 10 calendar days from the date stakeholders are notified of the posting in accordance with the RFLMA Public Involvement Plan (i.e., posting this Contact Record on DOE's Rocky Flats website).

Progress and the completion of the work will be reported by DOE in RFLMA quarterly and annual reports of surveillance and maintenance activities for the period(s) in which these activities occur.

It is expected that additional, OLF maintenance activities will be required to maintain positive drainage off the OLF.

Closeout of Contact Record: This CR will be closed out when the longer-term implementation for the OLF stabilization is complete.

Contact Record Prepared by: David Ward, Patty Gallo and Jeremy Wehner

Distribution:

Carl Spreng, CDPHE

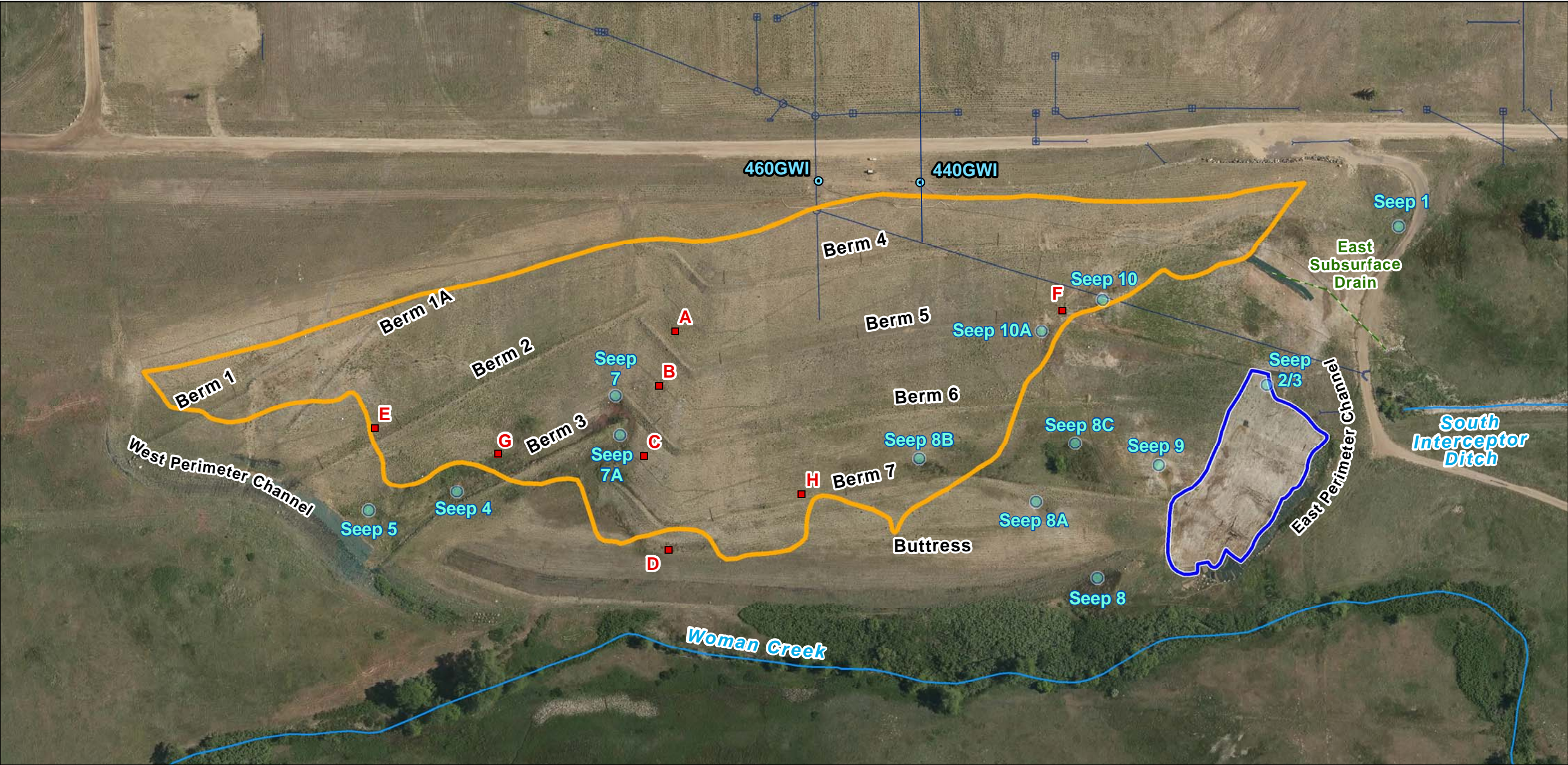
Vera Moritz, EPA

Lindsay Masters, CDPHE

Scott Surovchak, DOE

Linda Kaiser, Navarro

Rocky Flats Contact Record File



LEGEND

Groundwater Intercept Well	Culverts, Storm Drains, and Associated Features	Area of 2017 Slump Maintenance
Settlement Monument	East Subsurface Drain	
Apparent Seep Source (July 17, 2017)	Streams	
	Approximate OLF Waste Footprint	

Aerial Photo: June 26, 2017

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U.S. DEPARTMENT OF ENERGY
OFFICE OF LEGACY MANAGEMENT

Work Performed by
Navarro Research & Engineering, Inc.
Under DOE Contract Number DE-LM0000421

Original Landfill
August 2017
Rocky Flats Site

DATE PREPARED: October 4, 2017

FILE NAME: S1705300-01

N

SCALE IN FEET

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Attachment 1

Rocky Flats Legacy Management Agreement Soil Disturbance Review Plan

Proposed Project: Soil Disturbance Review Plan (SDRP) for Implementation of 2017 Interim Maintenance Work at the Original Landfill (OLF)

This SDRP provides information required by Rocky Flats Legacy Management Agreement (RFLMA) Attachment 2, “Legacy Management Requirements,” Section 4.1, “Soil Disturbance Review Plan,” regarding the work proposed by DOE.

Description of the proposed project, including the purpose, the location, and the lateral and vertical extent of excavation.

The purpose of the proposed project is to regrade portions of the OLF cover to reduce the slope grades in the slumped area, to improve slope stability, and improve or reestablish drainage features to minimize the potential for infiltration of precipitation in the short term.

The figure attached to Contact Record 2017-04 shows the location and the lateral extent of the planned regrading, excavation, and soil disturbance in the slump area. In addition, minor regrading of berms 1, 1A, 2, 4, 5, and 6, and the channels behind these berms, will be conducted to maintain positive drainage and maintain a minimum berm height of 1-foot. Regrading the face of the cover in the berm and channel areas will require no more than a 0.5-foot cut. Regrading in the slump area (outside the waste footprint and cover) may require excavation depths up to 3-feet.

Information about any remaining subsurface structures in the vicinity of the proposed project (or state that there are none if that is the case).

There are no remaining subsurface structures in the vicinity of the proposed project. An abandoned buried natural gas line operated by Xcel Energy is in the utility easement corridor north of the OLF. The location and alignment of this abandoned line is well known and marked with signs. It is well outside of the soil disturbance area.

Information about any former Individual Hazardous Substance Sites (IHSSs), Potential Areas of Concern, or other known or potential soil or groundwater contamination in the vicinity of the proposed project.

The OLF is former IHSS 115. The OLF design had a 2-foot-thick soil cover over the location of the disposed waste materials and clean Rocky Flats Alluvium fill surrounding the waste materials for the placement and configuration of storm water and seep water management features. Limits of the waste area are shown in the figure attached to Contact Record 2017-04.

The project area is in the Upper Woman Drainage Exposure Unit (EU) evaluated in the Comprehensive Risk Assessment, Appendix A, of the Remedial Investigation/Feasibility Study. The only contaminants of concern (COCs) identified for this EU are benzo[*a*]pyrene and dioxins/furans for surface soil/surface sediment.

Dioxin/furan concentrations were converted to 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) toxicity equivalents (TEQs) for COC screening and risk characterization. Risks were calculated for benzo[*a*]pyrene and 2,3,7,8 TCDD TEQ. The estimated total excess lifetime cancer risk to the wildlife refuge worker at the EU is 8 in one million. Noncancer risks for benzo[*a*]pyrene and 2,3,7,8-TCDD TEQ were not evaluated because those COCs do not have noncancer toxicity values.