

ROCKY FLATS SITE REGULATORY CONTACT RECORD 2022-01

Purpose: North Walnut Creek Slump (NWCS) Exploratory Test Pits

Contact Record Approval Date: October 5, 2022

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Regulatory Contacts and Affiliations: Lindsay Murl, Colorado Department of Public Health and Environment (CDPHE); Jesse Aviles and Rob Stites, U.S. Environmental Protection Agency (EPA)

Date of Consultation Meeting: August 3, 2022

Consultation Meeting Participants: Lindsay Murl, CDPHE; Jesse Aviles, Rob Stites, EPA; Andy Keim, DOE; Kirk Briscoe, Ryan Wisniewski, John Boylan, George Squibb, Jody Nelson, Karin McShea, Alan Smith, Harry Bolton, Justin Hugo, RSI

Related Contact Records: None

Introduction:

DOE is proposing to conduct subsurface investigation in the fourth quarter of calendar year 2022 or the first quarter of calendar year 2023 at the Rocky Flats Site, Colorado, in the Solar Ponds Plume Treatment System (SPPTS) and the North Walnut Creek Slump (NWCS) area. This activity is part of the larger North Walnut Creek Hillside Stabilization and Groundwater Management (NWCHSGM) Project to better understand factors contributing to the hillside's instability. The investigation will include excavating temporary exploratory test pits or slot trenches to locate two pipelines which cross(ed) the Interceptor Trench System (ITS) and the SPPTS groundwater collection trench, believed to still be in place. Confirming the location and condition of these pipelines and any associated bedding material associated with the utility corridor will provide important information related to groundwater flow in this area, particularly regarding the collection trench and the ITS Sump (ITSS).

Discussion:

As-built drawings for the SPPTS groundwater collection trench (installed in 1999) show the ITS lines were cut where the collection trench intercepted them. However, two lines that were not part of the ITS, a 3-inch and a 6-inch PVC line, are shown on those drawings as remaining and crossing the collection trench. Based on historical utility drawings, these two pipelines are believed to run from an area immediately east of the former Solar Evaporation Ponds then northeast to a location adjacent to the ITSS. The former Solar Evaporation Ponds make up the source area for contaminated groundwater that is treated by the SPPTS. If still present, these two pipes and any associated bedding material (e.g., sand or gravel) may act as a preferential path for groundwater entering the collection trench and provide a path to bypass the collection trench and continue downgradient to the ITSS. Understanding whether these lines and associated bedding

material are still present and functioning is essential in long-term planning regarding the ITSS, the collection trench, and NWCS.

To confirm the location and condition of these two pipes as it relates to their intersection with the collection trench, an exploratory test pit will be excavated where drawings indicate that the pipes cross the collection trench. A second exploratory test pit will be excavated in the same manner as the first to locate the two pipes upgradient (south). This second test pit will be utilized to confirm the orientation of the two pipes and associated utility corridor. Together, the test pits will confirm whether these historical pipelines and pipe bedding materials exist, what condition they are in, and pinpoint their depth and location.

The exploratory test pits will be completed by air vacuum excavation technology (air knifing) to avoid damaging collection trench components or potentially creating any additional degradation to the pipelines being targeted. The pipes are expected to be approximately 6-feet (ft) deep where the excavations will be conducted. The test pits will be excavated to a depth needed to reach the pipes and provide visual confirmation of their presence and the surrounding subsurface conditions. If the pipes are not located within the upper 10 ft below grade, a determination will be made that they are not present in that location.

It is anticipated that the test pits will be roughly 2 ft wide and extend 10–20 ft long or less if the pipes in question are identified sooner. The downgradient test pit will be excavated along the mapped location of the collection trench. If the pipes are located, the test pit will then be extended along the pipes in a downgradient (north-trending) direction to evaluate their relationship to the piezometer 72517 borehole. The excavation will also allow a comparison of soil conditions within the collection trench with those just outside of the trench. The test pit on the upgradient side of the collection trench will help to establish the orientation of the pipes and bedding.

The test pit excavations will expose the pipes and provide the ability to visually inspect the pipes from the surface. Personnel will not be permitted to enter the excavation during this identification and confirmation activity. Characteristics such as soil conditions, pipe depth, and overall location will be noted, and pipe locations will be marked for easy location in the future.

If needed, excavated soil from this activity will be staged nearby within the “limits of disturbance” (Figure 1). Once the identification and confirmation objectives are completed, the excavated soil will be returned to the test pits and compacted to reestablish previous grade. Any temporary soil stockpile will be managed in accordance with all applicable or relevant and appropriate requirements listed in Table 21 of the 2006 *Corrective Action Decision/Record of Decision* and will be consistent with the then in-effect approved *Erosion Control Plan for Rocky Flats Property Central Operable Unit* (currently, DOE-LM/1497-2007).

This activity does not anticipate generating any hazardous waste or any other regulated waste. Should any regulated waste be generated, DOE will perform a waste determination and dispose of the waste in accordance with applicable regulatory requirements.

At project completion, the disturbed areas will be seeded with a native seed mix and erosion controls will be installed.

Preble's Meadow Jumping Mouse:

The exploratory test pits are in Unit 6 of the critical habitat of the Preble's meadow jumping mouse (PMJM) (*Zapus hudsonius preblei*). Activities in PMJM habitat were consulted on in the Rocky Flats Programmatic Biological Assessment, the associated Programmatic Biological Opinion, and subsequent consultation documents. The exploratory test pits are located within the PMJM exclusion area for the SPPTS and/or within the NWCHSGM Project boundary (Figure 1).

The PMJM exclusion areas were established to allow work to be done at groundwater treatment systems without repeated consultation between DOE and U.S. Fish and Wildlife Service (USFWS). The exclusion areas were taken as a permanent loss of habitat, and mitigation was done to account for these areas. No further mitigation is required for work conducted within these exclusion zones, and only a project notification to USFWS is required before conducting work within these zones.

The proposed exploratory test pit activities are a part of the NWCHSGM Project. In 2016, DOE consulted with USFWS on the NWCHSGM Project and continues to notify USFWS on activities related to this ongoing project including the planned exploratory test pit activities.

DOE notified USFWS of the planned exploratory test pits on September 8, 2022. No response from the USFWS is needed or expected.

Wetlands:

Project-related activities will not impact wetlands; therefore, no action is needed related to wetlands.

Migratory Bird Treaty Act:

Project-related activities are scheduled to occur between August 31, 2022, and April 1, 2023, outside of the migratory bird nesting season along the Colorado Front Range. Therefore, there is little likelihood that the project will impact nesting migratory birds. Should a bird nest be found in the work area, the site ecologist will be contacted immediately. DOE will comply with applicable requirements of the Migratory Bird Treaty Act.

Institutional Control (IC) Evaluation:

The *Corrective Action Decision/Record of Decision Amendment for Rocky Flats Plant (USDOE) Central Operable Unit* (issued September 2006) requires specific ICs to ensure the protectiveness of the remedy at the Rocky Flats Site. These ICs are required by and enforceable through the 2017 Restrictive Notice for Rocky Flats, recorded with Jefferson County, Colorado. The *Rocky Flats Legacy Management Agreement (RFLMA) Attachment 2, Table 4*, lists the Restrictive Notice's ICs for the Central Operable Unit (COU), including requirements for soil disturbance evaluation.

The soil disturbance work is subject to IC 2, which is shown in Table 1. The required Soil Disturbance Review Plan for IC 2 is included as Attachment 1.

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.
	<p>Objective: Prevent unacceptable exposure to residual subsurface contamination.</p> <p>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.</p>

Resolution:

CDPHE, after consultation with EPA, has approved the activities described in this contact record (CR). Based on the information provided, CDPHE determined that the proposed activities will not result in an unacceptable release or exposure to residual subsurface contamination and will not damage any component of the remedy. CDPHE has also determined that the proposed activities meet the rationale and objectives of IC 2.

The work will be conducted after approval of this CR, but DOE will not conduct the approved soil disturbance until 10 calendar days after this CR is posted on the Rocky Flats Site webpage and stakeholders are notified of the posting in accordance with the RFLMA Public Involvement Plan.

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 periods in which these activities occur.

Action Complete:

The activities approved in this CR will be complete when the pipe identification and confirmation of the exploratory test pits as identified above has been performed, the excavations have been backfilled to the original grade or higher, post-disturbance reseeding has been performed, and post-disturbance soil erosion controls as identified in the approved *Erosion Control Plan for Rocky Flats Property Central Operable Unit* are in place.

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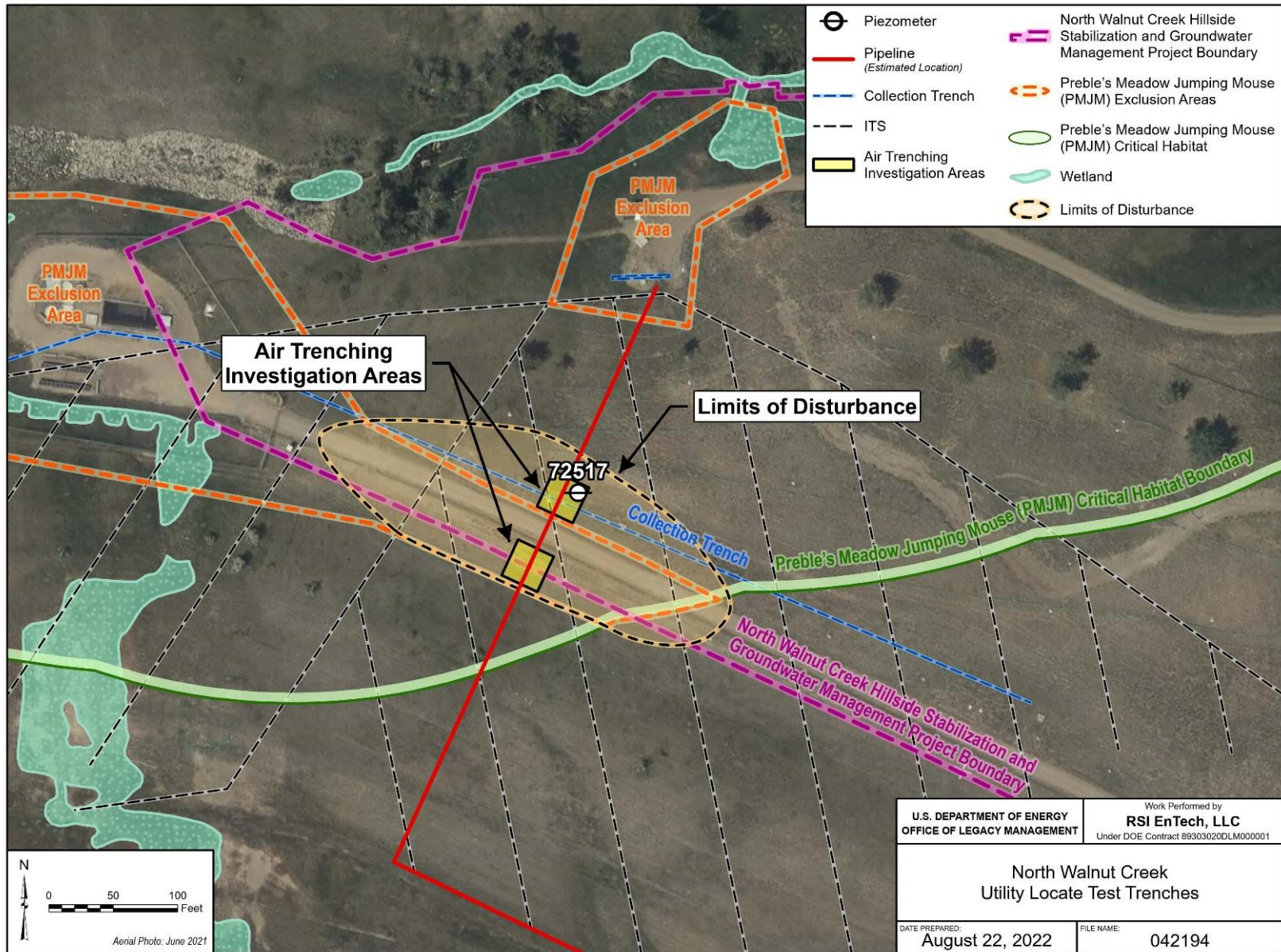


Figure 1. NWCS Exploratory Test Pits Overview

Attachment 1

Rocky Flats Legacy Management Agreement Soil Disturbance Review Plan

Proposed Project: North Walnut Creek Slump Exploratory Test Pits

This Soil Disturbance Review Plan provides information required by *Rocky Flats Legacy Management Agreement* Attachment 2, “Legacy Management Requirements,” Section 4.1, “Soil Disturbance Review Plan,” regarding the work proposed by the U.S. Department of Energy (DOE).

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

DOE is proposing to conduct subsurface investigation at the Rocky Flats Site, Colorado, around the Solar Ponds Plume Treatment System (SPPTS) and the North Walnut Creek Slump (NWCS) area. The investigation will include excavation of exploratory test pits or slot trenches to locate two pipelines which cross(ed) the Interceptor Trench System (ITS) and are believed to still be in place. Identifying the existence of these pipelines and any associated bedding material associated with the utility corridor may provide important information on groundwater flow and contributors to the hillside’s slumping movement.

The test pits will be conducted as identified in CR 2022-01.

Information about any remaining subsurface structures in the vicinity of the proposed project.

Other than the components identified and sought in CR 2022-01 and several piezometers, there are no structures near the activity. These components include the SPPTS (including its groundwater collection trench, which contains a pipe in the bottom and a high-density polyethylene liner along its downgradient side), the ITS, the ITS Sump (ITSS), and the two historical pipelines further described in CR 2022-01.

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

IHSS 101, Solar Evaporation Ponds: A large area south of the SPPTS is within the former IHSS 101, Solar Evaporation Ponds. This IHSS was closed with No Further Accelerated Action in 2003. A closure summary is provided below.

In accordance with the *Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation FY02 Notification #02-08* (IA-A-001066), soil was removed from six hot spot locations. Confirmation sampling was conducted in the excavations to confirm that sufficient soil had been removed. All contaminant concentrations and activities were less than Rocky Flats Cleanup Agreement (RFCA) Tier II soil action levels (SALs), except for one beryllium concentration, which was slightly greater than the RFCA Tier II SAL (1.10 milligrams per kilogram [mg/kg] versus 1.04 mg/kg). None of the results exceeded the wildlife refuge worker (WRW) SALs.

Fourteen surface and 25 subsurface soil samples were collected and analyzed for radionuclides and metals. Some of the samples were also analyzed for nitrate. All contaminant concentrations and activities in the sampled areas were below RFCA Tier II SALs, except for one beryllium concentration and 16 arsenic concentrations. The beryllium concentration that exceeded the Tier II SAL was 1.10 mg/kg, and the SAL was 1.04 mg/kg. The arsenic concentrations that exceeded the Tier II SAL ranged from 13.0 to 36.3 mg/kg, and the SAL was 2.99 mg/kg. All contaminant concentrations and activities were less than the WRW SALs, except for one subsurface manganese concentration and eight arsenic concentrations (in surface and subsurface soil). The manganese concentration that exceeded the WRW SAL was 5900 mg/kg, and the WRW SAL is 3480 mg/kg. The arsenic concentrations that exceeded the WRW SAL ranged from 22.4 to 36.3 mg/kg, and the WRW SAL is 22.2 mg/kg.

After completion of accelerated actions, No Further Action was recommended for IHSS 101 based on the following:

- Contaminant concentrations and activities were less than RFCA Tier II SALs, with minor exceptions; no Tier I SALs were exceeded
- Results of an evaluation indicated additional action was not necessary

After review of the closeout report for IHSS Group 000-1 by the regulatory agencies, DOE received approval from CDPHE for the No Further Accelerated Action status for the Solar Evaporation Pond Area of Concern (IHSS 101) on July 25, 2003.

Building 308D: Two of the geotechnical boreholes will be drilled near the ITSS, which is located east-southeast of the former Interceptor Trench Pump House known as Building 308D. The building was removed as documented in the September 22, 2003, Type 1 Facility Closeout Report for Buildings 308B and 308D. The closeout report indicates that utilities were disconnected and capped 3 ft below grade.

PAC NE-1409: Former PAC NE-1409 is also in the vicinity of the ITSS. This was the location of a fully contained spill of hazardous waste in 1993. No release to the environment was known to have occurred from the incident. However, soil samples were collected around the containment structure. Results indicated that all analyte concentrations were less than the SALs and PAC NE-1409 was closed with No Further Action in 2002.

Additional information on the closure of these areas may be found in the “FY2005 Final Historical Release Report,” which is Appendix B to the *RCRA Facility Investigation – Remedial Investigation/Corrective Measures Study – Feasibility Study Report for the Rocky Flats Environmental Technology Site* (issued June 2006). This document is available on the LM Rocky Flats webpage.

There is a potential for contaminated groundwater to be encountered during drilling activities. The proposed borehole locations overlie parts of the Solar Ponds Plume, which contains groundwater contaminated with nitrate and uranium. Groundwater from the Solar Ponds Plume is treated at the SPPTS. Groundwater encountered during the project will be field-screened using nitrate as a contamination indicator. If excess water is generated during these activities, and that water is contaminated with nitrate, it will be dispositioned upgradient of the SPPTS collection trench as previously approved in CR 2008-06. Contamination control and worker protections are addressed in the project planning documents.