

# ROCKY FLATS SITE

## REGULATORY CONTACT RECORD 2015-01

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**Purpose:** Reportable condition for uranium 12-month rolling average at Point of Compliance WALPOC (this Contact Record supersedes RFLMA CR 2014-10)

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**Contact Record Approval Date:** January 14, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); George Squibb, Linda Kaiser, David Ward, Stoller Newport News Nuclear, Inc., (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

**Dates of Consultation Meetings:** November 19, 2014; January 5, 2015; January 7, 2015

**Consultation Meetings Participants:** Carl Spreng, CDPHE; Scott Surovchak, DOE; George Squibb, John Boylan, Jeremiah McLaughlin, David Ward, Linda Kaiser, SN3; Jody Nelson, J.G. Management Systems, Inc.

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**Discussion:** A reportable condition is expected to occur at surface water Point of Compliance (POC) WALPOC at the Rocky Flats Site, Colorado, for the period from November 1, 2013, through October 31, 2014. The automated composite sample for the period October 23–31, 2014, was not retrieved from the field until January 6, 2015, because the collected sample volume in the carboy is not of sufficient quantity for analysis. However, available data show that the *Rocky Flats Legacy Management Agreement* (RFLMA) Attachment 2, Table 1, standard for uranium of 16.8 micrograms per liter ( $\mu\text{g/L}$ ) will be exceeded when the final analytical results are received, regardless of the uranium concentration of the final sample. An evaluation of all available analytical results for uranium from composite samples and flow volume resulted in a calculated 12-month rolling anticipated average concentration for uranium of 17.2  $\mu\text{g/L}$  on October 31, 2014. This result exceeds the RFLMA Attachment 2, Table 1, standard for uranium of 16.8  $\mu\text{g/L}$ , triggering an RFLMA reportable condition. The evaluation was performed in accordance with RFLMA Attachment 2, Figure 5, and “Points of Compliance.”

Representatives of CDPHE and DOE met on November 19, 2014, to discuss this result and develop a path forward. The RFLMA Parties agreed that the available data justified not waiting for validated results from the composite sample collected during the period of October 23–31 to start the 15-day clock specified in RFLMA Attachment 2, Figure 5, to issue the notification to regulatory agencies and the public. Therefore the required notification to the regulatory agencies and the public will be issued by December 4, 2014. (The required RFLMA notice was issued on December 3, 2014.)

Pursuant to RFLMA Attachment 2, Section 6.0, "Action Determinations," a reportable condition necessitates the following actions:

- DOE must submit a plan and schedule for an evaluation to address the condition within 30 days of receiving the validated data for the reportable condition.
- DOE will consult with CDPHE and EPA to determine if mitigating actions are necessary.
- The objective of the consultation will be to determine a course of action (if necessary) to address the reportable condition and to ensure that the remedy remains protective.
- The results of the consultation will be documented in contact records, in written correspondence, or both.

This contact record documents DOE's consultation with CDPHE on November 19, 2014, and subsequent consultations on January 5, 2015, and January 7, 2015.

The RFLMA Parties agreed that further evaluation should be completed to aid in developing future mitigating actions if they become necessary. The RFLMA Parties also agreed no mitigating actions are necessary at this time. The relevant factors evaluated in making this determination include the following:

- Preliminary results from the ongoing geochemistry study, referenced in Contact Record (CR) 2014-05 ("Reportable condition for evaluation purposes for uranium at Point of Compliance WALPOC," dated April 8, 2014), indicate that the increases in the 30-day rolling average uranium concentrations at WALPOC were caused by the September 2013 100-plus-year flood event, and will eventually return to below the 16.8 µg/L concentration. This projected decrease in uranium concentrations at WALPOC did occur in May 2014, when the 30-day average and composite samples concentrations dropped below 16.8 µg/L (see Attachment 1).
- WALPOC has been a RFLMA monitoring location for roughly 3 years. According to precipitation data collected across the Rocky Flats site since 1990, over the course of that 3-year period the Site experienced one of its driest years (2012) and its wettest month (September 2013). Because uranium concentrations are influenced by changing environmental conditions, varying uranium concentrations at WALPOC are anticipated. While significant uranium concentration variability can be seen in individual sample results as well as in the 30-day and 12-month averages, the observed variability is not outside of anticipated ranges nor do these levels suggest the existence of a new source term.
- Although the forecasted 17.2 µg/L result will be above the Site standard of 16.8 µg/L, it remains well below the drinking water standard (i.e., the maximum contaminant level [MCL]) of 30 µg/L. The 30 µg/L was determined to be an acceptable level of uranium in public water supplies by EPA in 2000 and adopted by the State of Colorado in 2005 as the statewide stream standard. Therefore, because the forecasted result remains below the 30 µg/L drinking water standard, the remedy remains protective of the downstream water uses.

**Plan and Schedule to Address the Reportable Condition:** The RFLMA Parties agreed that steps described in this contact record shall serve as the plan and schedule for the evaluation.

The following steps were, or will be, taken to inform the evaluation:

- Several samples were collected from WALPOC and other Walnut Creek locations and were analyzed using high-resolution methods to determine the isotopic uranium distribution. Many of these samples were collected as part of the RFLMA CR 2014-05 reportable action plan and included multiple post-flood WALPOC samples that were compared with historical data. Analytical results confirmed the uranium reported at WALPOC includes both naturally occurring and anthropogenic uranium. These samples included a split from the December 18, 2013, composite sample that triggered the earlier reportable 30-day average condition. Samples were also collected at Pond A-4, GS11 (Pond A-4 outlet), Pond B-5, and GS08 (Pond B-5 outlet) for high-resolution analysis. The isotopic results show that before the September 2013 storm, the uranium reported at WALPOC ranged from 76 to 80 percent natural; following this storm, the uranium at WALPOC was between 75 and 82 percent natural. These results do not indicate a significant shift in the uranium signature related to the heavy precipitation, nor do they suggest the existence of a new source term.
- The information in the geochemistry study identified in CR 2014-05 will be utilized as part of the evaluation of this current WALPOC reportable condition.

The purpose of this study, as it relates to this reportable condition, is to evaluate variability in uranium concentrations—due to seasonal, hydrologic, geochemical, and geographic effects—through the collection of targeted analytical and field data. The study also incorporates the ongoing calculation of the percentages of natural uranium versus anthropogenic uranium in Walnut Creek.

- Split samples will continue to be collected from each flow-paced composite collected at WALPOC and held for possible high-resolution isotopic uranium analysis.
- Additional, recently collected split samples from WALPOC will be submitted for high-resolution isotopic uranium analysis to determine if the natural uranium concentrations have changed now that the effects of the September 2013 event have waned.
- Flow-paced composite samples routinely being collected at WALPOC will continue to be analyzed on a 2-week turnaround.
- Additional actions may be implemented as appropriate based on the data gathered from the above evaluations.

DOE will report the results of this monitoring and of the subsequent evaluation in RFLMA quarterly and annual reports of surveillance and monitoring activities. This plan and schedule may be modified based on the outcome of RFLMA Party consultation related to the evaluation.

To keep the public informed, the outcome of continuing RFLMA Party consultation regarding the evaluation will be reported in RFLMA quarterly and annual reports of surveillance and monitoring activities or in subsequent contact records.

**Resolution:** Carl Spreng, CDPHE, has approved this contact record.

**Closeout of Contact Record:** This contact record will be closed when the results from the evaluation have been transmitted to CDPHE, or as the RFLMA Party consultation related to this evaluation directs.

**Contact Record Prepared by:** David Ward, George Squibb, and John Boylan, SN3

**Distribution:**

Carl Spreng, CDPHE

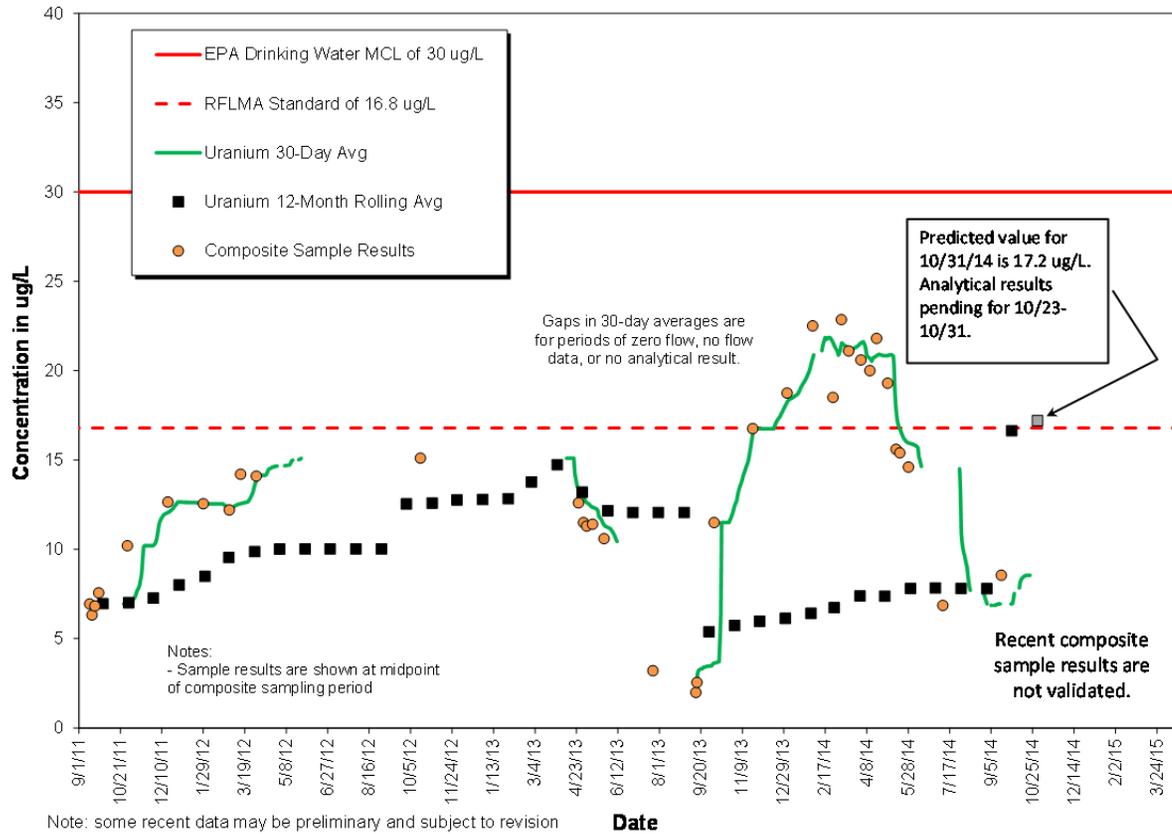
Scott Surovchak, DOE

Vera Moritz, EPA

Linda Kaiser, SN3

Rocky Flats Contact Record File

**POC Gaging Station WALPOC: Total Uranium Water Quality (9/12/11 - 10/22/14)**



**Attachment 1**

# ROCKY FLATS SITE REGULATORY CONTACT RECORD 2015-02

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**Purpose:** Soil Disturbance Review Plan (SDRP) for Storage Shed Photovoltaic Upgrades

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**Contact Record Approval Date:** April 25, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); Kurt Franzen, Linda Kaiser, David Ward, Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

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**Introduction:** This Contact Record concerns proposed upgrades to a storage shed that was constructed around 2001 at the Rocky Flats, Colorado, Site. The shed is on a concrete slab floor, with structural steel wall frames and roof trusses, rigid sidewall, and galvanized metal roofing and siding. A photovoltaic (PV) system at the storage shed provides power to operate overhead garage-doors motors and small LED emergency lights. The PV system operates with an inverter.

**Discussion:** The storage shed photovoltaic upgrade project is designed to provide sufficient additional power at the shed to power the existing overhead garage doors, the existing LED lighting, and additional powered hand tools. The existing system shall be evaluated for reusing as much of the existing equipment as possible. The required new PV panels will rest on supports, including the one existing support. The new supports will require 12-inch diameter holes drilled approximately 3 feet deep. The holes will be filled with concrete. The supports will be in an 8-foot by 16-foot (approximate) array with the existing support on the east side of the array.

The soil disturbance that occurs during the excavation of the holes for the support of the new PV panels is subject to the requirements of certain *Rocky Flats Legacy Management Agreement* (RFLMA) institutional controls (ICs), as discussed below. An approved SDRP is required and the RFLMA parties agree that Figure 1 provides sufficient information for the SDRP for the proposed work.

**Institutional Controls Evaluation:** The soil disturbance work is subject to IC 2. Table 1 recaps this IC.

*Table 1. Institutional Controls*

Controls	Use Restrictions
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><b>Objective:</b> Prevent unacceptable exposure to residual subsurface contamination.</p> <p><b>Rationale:</b> Contaminated structures, such as building basements, exist in certain areas of the Central Operating Unit, 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>

The required SDRP is in Attachment 1.

**Resolution:** CDPHE has review information regarding the proposed soil disturbance and excavation and, after consulting with EPA, has approved the proposed activity and the proposed grading plan. CDPHE has determined that the proposed activity will not compromise or impair the function of the remedy or result in an unacceptable release or exposure to residual subsurface contamination. CDPHE has also determined that the proposed project meets the rationale and objectives of IC 2.

The work will be conducted after CDPHE's approval, but DOE will not conduct the approved soil disturbance until 10 calendar days after this Contact Record is posted on the Rocky Flats site's website and stakeholders are notified of the posting in accordance with the RFLMA Public Involvement Plan. The work is planned to be conducted and completed in the spring of 2015.

Information regarding the drilling of these support footings will be reported in quarterly reports, annual reports, or both, depending on when the activities occur.

**Closeout of Contact Record:** This contact record will be closed when the new supports are installed, the excavation is backfilled, and any revegetation and erosion controls are in place.

**Contact Record Prepared by:** David Ward

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**Distribution:**

Carl Spreng, CDPHE  
Scott Surovchak, DOE  
Vera Moritz, EPA  
Linda Kaiser, SN3  
Rocky Flats Contact Record File

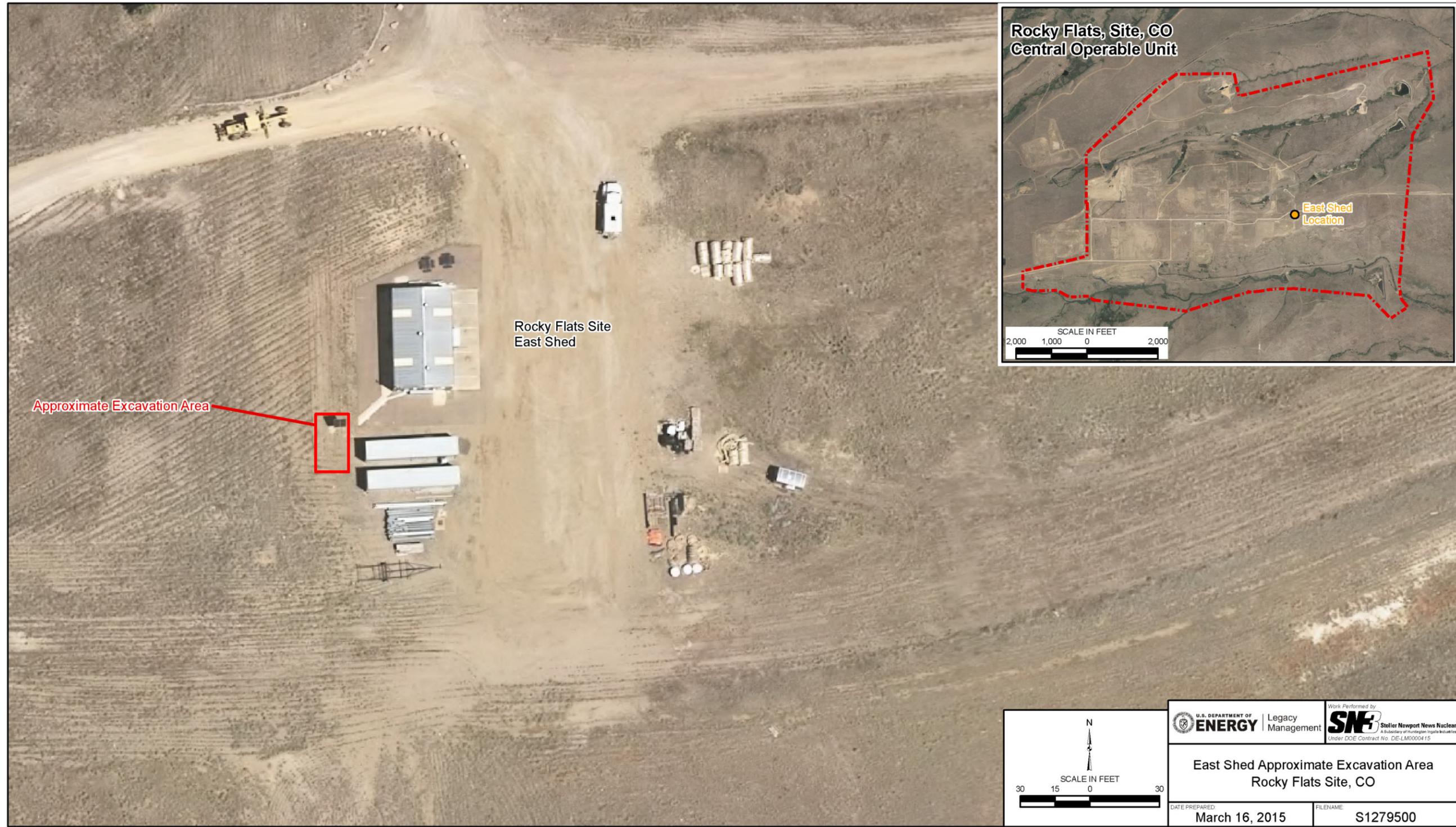


Figure 1. Location of Excavation for Storage Shed PV Upgrades Project

## Attachment 1

### Rocky Flats Legacy Management Agreement (RFLMA) Soil Disturbance Review Plan (SDRP)

#### **Proposed Project:** SDRP for Storage Shed Photovoltaic Upgrades

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

*(1) Description of the proposed project, including the purpose, the location, and the lateral and vertical extent of excavation.*

The purpose of the project is to provide additional power to a storage shed (formerly known as building 920B) for operating additional hand tools. Additional photovoltaic (PV) panels are required to provide the additional power.

Holes, 12-inches in diameter and approximately 3 feet deep, will be drilled and filled with concrete. The additional PV panels will be supported by the new concrete footings. Figure 1 in Contact Record 2015-02 shows the approximate location of the new supports.

*(2) Information about any remaining subsurface structures in the vicinity of the proposed project.*

The shed was a vehicle inspection building (formerly known as Building 920B) for the east gate. There are no subsurface structures in the vicinity of this project.

*(3) 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.*

No IHSSs were identified in the project area.

*(4) Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored).*

The holes will be filled with concrete and the surrounding surface will be returned to the existing grade. Therefore, the original contours will be restored.

# ROCKY FLATS SITE

## REGULATORY CONTACT RECORD 2015-03

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**Purpose:** Original Landfill (OLF) Immediate Response to Recent Precipitation

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**Contact Record Approval Date:** May 26, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); Kurt Franzen, Linda Kaiser, David Ward, Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

**Date of Consultation Meeting:** May 13 and 14, 2015

**Consultation Meeting Participants:** Carl Spreng, CDHPE; Scott Surovchak, DOE; Kurt Franzen, SN3; David Ward, SN3, John Boylan, SN3

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**Introduction:** The past several weeks of precipitation events have led to unusually high groundwater volumes that, in turn, have caused portions of the Original Landfill (OLF)—particularly in the area of the East Perimeter Channel (EPC)—to subside. This movement is evident over daily to weekly periods and is appearing as surficial cracks, settling (depressions), or rotational slumping. Repairs that have been completed on these features have needed to be repeated multiple times because the ground surface continues to move. These repairs have not been able to keep up with the recent movements.

Since the movement is being caused by excessive groundwater, it is necessary to improve control of this moisture. Action is urgently needed to drain and divert as much surface water and groundwater as possible away from the eastern edge of the OLF cover and the EPC. The pre-existing subsurface drain in this area appears to have been compromised, based on the presence here of seeps and pools on the surface. Therefore, this action may include drilling or digging holes greater than 3 feet deep to locate and intersect the groundwater and this drain, repairing and potentially reconfiguring this drain, and then diverting the water away from the OLF cover and EPC.

Localized instability of the EPC first occurred as the result of the rain event from September 9 through September 16, 2013, and was identified as a reportable condition in Contact Record 2013-02, dated September 18, 2013. The efforts to repair, reconfigure, and stabilize the EPC that are listed in Contact Record 2013-03 and modified in Contact Record 2014-09 were completed in January 2015. Since that time the Site has received over 11 inches of precipitation and movement of the ground surface in this area has resumed.

Although the effort to correct the EPC is an ongoing, reportable condition, its current status requires immediate action. CDPHE was notified on May 13, 2015, of the potential need to

RFLMA Contact Record 2015-03

excavate holes greater than 3 feet deep in order to investigate the subsurface drain and dewater the area. CDPHE and DOE walk down the OLF on May 14, 2015, and agreed this action is an immediate need to dewater and stabilize the EPC and the eastern portion of the OLF cover.

*Rocky Flats Legacy Management Agreement (RFLMA)*, Attachment 2, Section 4.0, “Institutional Controls,” provides that “Except for situations where immediate action is warranted, DOE will not implement the activity for which the regulatory determination is required until 10 calendar days after the contact record or written correspondence approving the activity is posted on the Rocky Flats website and notification of the posting is made to stakeholders in accordance with the RFLMA Public Involvement Plan.”

**Discussion:** During the walk down on May 14, 2015, of the EPC and OLF cover, representatives of the DOE and CDPHE determined that immediate action is warranted to get the water off of, or out of, the EPC and OLF cover. To achieve this, it would be appropriate to start excavating to depths greater than 3 feet deep to locate and intercept the groundwater and subsurface drain as soon as practicable and not wait 10 days after posting of a contact record. The area is currently saturated. A third-party geotechnical engineer with extensive knowledge of the OLF is currently evaluating where and how deep to dig. One or more localized subsurface drains may be added. Longer-term actions are also being evaluated.

Efforts are already underway to drain the surface water off the face of the OLF cover with shallow trenching and flexible piping. The sampling of the RCRA wells in the vicinity of the OLF was completed recently and the results will be available in June. The surface water monitoring location downstream of the OLF in Woman Creek (GS59) was collected as a composite sample in a carboy. The last carboy, which covers the period from May 9 to May 18, was collected on May 18, 2015. These results will also be available in June.

The *Original Landfill Monitoring and Maintenance Plan*, Section 6.0, “Reporting and Contact Information,” requires “DOE will follow RFLMA requirements for reportable conditions, and potentially impacted communities will be notified immediately of conditions that occur at any time that require immediate attention.” The potentially impacted communities were notified on May 14, 2015, of the need to take immediate action with the EPC and OLF cover.

**Resolution:** CDPHE agrees with the need to take immediate action to remove surface water and groundwater from the EPC and the OLF. DOE has started surface water removal and is preparing to intercept groundwater as soon as practicable.

Any interim or long term plans for addressing the EPC and the OLF cover that require a regulatory determination, and is not immediate action, will be documented in a later contact record posted on the Rocky Flats webpage as required by the RFLMA process.

Progress of this 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.

**Closeout of Contact Record:** This Contact Record will be closed when the work is completed, post-construction reseeding has been performed, and post-construction erosion controls are in place.

**Contact Record Prepared by:** David Ward

RFLMA Contact Record 2015-03

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**Distribution:**

Carl Spreng, CDPHE

Vera Moritz, EPA

Scott Surovchak, DOE

Linda Kaiser, SN3

Rocky Flats Contact Record File

# ROCKY FLATS SITE REGULATORY CONTACT RECORD 2015-04

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**Purpose:** Mound Site Plume Treatment System (MSPTS) Reconfiguration Conceptual Approach

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**Contact Record Approval Date:** July 8, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); John Boylan, George Squibb, Linda Kaiser, David Ward, Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

**Date of Consultation Meeting:** May 20, 2015

**Consultation Meeting Participants:** Carl Spreng, CDHPE; Vera Moritz, EPA; Scott Surovchak, DOE; Linda Kaiser, SN3; David Ward, SN3; John Boylan, SN3; George Squibb, SN3

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**Introduction:** The existing 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. The ZVI is obtained from a source in Detroit, Michigan, and is trucked to the site for installation. Periodic spent-media removal and replacement is costly and labor intensive and requires the use of heavy construction equipment. The most recent MSPTS media replacement was performed in 2010–2011, and based on historical operations of the MSPTS, routine media replacement is required approximately every 4–5 years. Routine maintenance to remove the existing spent ZVI was planned for calendar year 2015.

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.

RFLMA Contact Record 2015-04

The positive results of the MSPTS effluent manhole air stripper eventually led DOE to install a commercial air stripper, adapted to the existing solar/battery power facility, at the East Trenches Plume Treatment System (ETPTS) to replace the ZVI treatment media in 2014 (RFLMA CR 2012-02, dated October 16, 2012; RFLMA CR 2014-01, dated January 21, 2014; and RFLMA CR 2014-04, dated February 19, 2014). Following completion of the air-stripper installation in January 2015, concentrations of VOCs in ETPTS effluent have met all corresponding RFLMA Table 1 standards.

Information on the status of operation and performance of the MSPTS and ETPTS air strippers is provided in RFLMA quarterly and annual site surveillance and maintenance reports. RFLMA contact records and site surveillance and maintenance reports are available on the Rocky Flats public website at [http://www.lm.doe.gov/rocky\\_flats/Sites.aspx](http://www.lm.doe.gov/rocky_flats/Sites.aspx).

**Discussion:** 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. Included in the evaluation was a more cost-effective option to treat the MSPTS influent in the ETPTS air stripper. The manufacturer of the commercial air stripper installed at the ETPTS modeled treatment using the ETPTS air stripper to treat the combined influent from both the MSPTS and 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; see Figure 1. The existing MSPTS tanks will initially be maintained and modified for optional water storage. The existing MSPTS effluent manhole will be replaced with a lift station and pump; water collected by the MSPTS will be pumped from this lift station to the ETPTS influent manhole. The combined MSPTS and ETPTS influents would then flow to the ETPTS influent tank and be pumped to the ETPTS air stripper in batches, just as is currently done with ETPTS influent alone. Additional solar power, piping, valves, instrumentation, and other necessary components would be installed to support this approach. Minor modifications to RFLMA Attachment 2 to reflect changes in MSPTS effluent and performance sampling locations have also been identified.

Based on DOE's evaluation of the combined MSPTS and ETPTS influent VOC concentration and flow rate, the amounts and types of VOCs that the air stripper will volatilize to the air will meet Colorado Air Quality Control Regulations exemption criteria for Air Pollutant Emission Notice (APEN) reporting thresholds and permitting.

The following minor modifications to RFLMA Attachment 2 are required for the MSPTS reconfiguration and one additional updating modification. Modifications to tables and figures are summarized:

1. Table 2, "Water Monitoring Locations and Sampling Criteria," for the Mound Site Plume and Treatment System (MSPTS): rename rows for sampling locations MOUND R2-E (MSPTS effluent location) to MSETEF and GS10 (MSPTS performance location) to POM2; and for the East Trenches Plume and Treatment System (ETPTS), rename ET

EFFLUENT (ETPTS effluent location) to MSETEF to reflect the combined influents being treated.

2. Figure 1, “Water Monitoring at Rocky Flats: RFLMA,” sampling location MOUND R2-E will be relocated to the previous ET EFFLUENT location and renamed MSETEF, and sampling location ET EFFLUENT will be renamed MSETEF.
3. Figure 11, “Groundwater Treatment Systems,” in Note 5, “Effluent locations,” rename R2-E to MSETEF and ET EFFLUENT to MSETEF; and in Note 6, “Performance locations,” change GS10 to POM2.
4. Figure 2, “Composite Plume Map”, update to reflect changes in Site base features.

**Resolution:** It was agreed that DOE will prepare engineering designs for treating the MSPTS influent using the ETPTS air stripper. The RFLMA parties will consult in a timely manner on proceeding with the MSPTS reconfiguration to allow further planning and implementation as part of the MSPTS ZVI media removal project. Approval of the reconfiguration and of any required Soil Disturbance Review Plan for the work will be documented in a subsequent contact record.

**Closeout of Contact Record:** This contact record will be closed when consultation on the MSPTS reconfiguration project engineering design is completed and the minor modifications to RFLMA Attachment 2 are approved.

**Contact Record Prepared by:** David Ward

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**Distribution:**

Carl Spreng, CDPHE  
Vera Moritz, EPA  
Scott Surovchak, DOE  
Linda Kaiser, SN3  
Rocky Flats Contact Record File

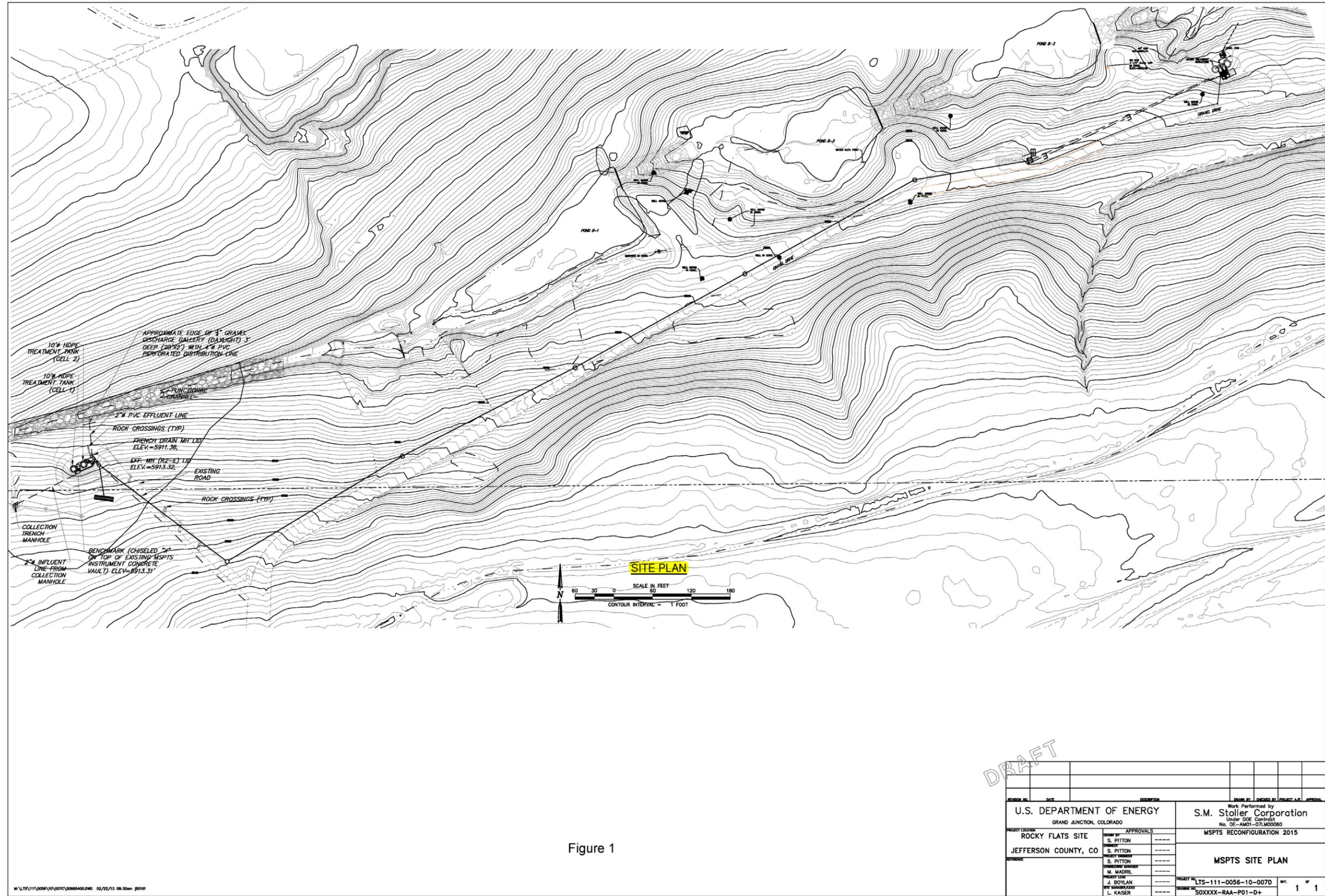


Figure 1

DRAFT

REVISION NO.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	PROJECT A.S.	APPROVAL
<b>U.S. DEPARTMENT OF ENERGY</b> GRAND JUNCTION, COLORADO			Work Performed by <b>S.M. Stoller Corporation</b> Under DOE Contract No. DE-AM01-07-M00080			
<b>ROCKY FLATS SITE</b> JEFFERSON COUNTY, CO			<b>APPROVALS</b> DRAWN BY: S. PITTON CHECKED BY: S. PITTON PROJECT NUMBER: S. PITTON CHECKED BY NUMBER: M. MADRIL		<b>MSPTS RECONFIGURATION 2015</b>  <b>MSPTS SITE PLAN</b>	
PROPERTY OWNED BY: BOYLAN BY: MADRIL L. KAISER			PROJECT NO.: LTS-111-0056-10-007D DRAWING NO.: S0XXXX-RAA-P01-D+		SHEET 1 OF 1	

# ROCKY FLATS SITE

## REGULATORY CONTACT RECORD 2015-05

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

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**Contact Record Approval Date:** July 8, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); George Squibb, Kurt Franzen, Linda Kaiser, David Ward, Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

**Date of Consultation Meeting:** June 23, 2015

**Consultation Meeting Participants:** Carl Spreng, CDHPE; Vera Moritz, EPA; Scott Surovchak, DOE; Kurt Franzen, David Ward, John Boylan, Linda Kaiser, George Squibb, SN3; Michelle Hanson, Jody Nelson, J.G. Management Systems, Inc.

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**Discussion:** This Contact Record documents DOE's consultation with CDPHE and EPA on June 23, 2015, regarding the evaluation of elevated concentrations of plutonium at POE SW027, which resulted in a reportable condition under RFLMA Attachment 2, "Legacy Management Requirements," Section 6.0, "Action Determinations."

A reportable condition was determined on June 11, 2015, based on evaluation of recently available validated analytical results for plutonium (Pu-239,240) from the composite samples collected during the period May 7, 2014–May 8, 2015. Americium (Am-241) is not reportable at this time. 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

RFLMA Contact Record 2015-05

The evaluation was performed in accordance with RFLMA Attachment 2, Figure 6, Points of Evaluation, which resulted in 12-month rolling average values of 0.037 pCi/L Am and 0.22 pCi/L Pu on April 30, 2015. The applicable RFLMA Table 1 standard for Am and Pu is 0.15 pCi/L.

Flow-through operations at Pond C-2 were initiated on November 7, 2011. The recent Pu and Am results from downstream location GS31 (Pond C-2 outlet) are higher than normal. Results from the downstream Point of Compliance WOMPOC (Woman Creek at COU boundary) have been received through May 17, 2015; all results were below the RFLMA Table 1 standard of 0.15 pCi/L and in fact below 0.09 pCi/L.

While the 12-month rolling average for Am is not reportable, the evaluation of the reportable Pu values will include consideration of the Am results.

Pursuant to RFLMA Attachment 2, Section 6.0, for a reportable condition:

- DOE must inform the RFLMA regulators and stakeholders identified in RFLMA Attachment 2, Figure 6 within 15 days of receipt of validated data for the reportable condition.
- DOE must submit a plan and schedule for an evaluation to address the condition within 30 days of receiving the validated data for the reportable condition.
- DOE will consult with CDPHE and EPA to determine if mitigating actions are necessary.
- The objective of consultation will be to determine a course of action (if determined necessary) to address the reportable condition and to ensure that the remedy remains protective.
- Results of consultation will be documented in Contact Records, written correspondence, or both.

The RFLMA parties have been kept informed of the elevated levels since the initial results were received, and a public-information e-mail was sent to the stakeholders on June 18, 2015.

This Contact Record describes the plan and schedule to address the reportable condition. The plan and schedule for evaluation and the status of actions related to the plan are described below:

- 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 longer-term 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.

**Resolution:** Carl Spreng, CDPHE, will review the above plan and schedule to address this reportable condition and, after consulting with EPA, may approve, approve with modifications, or disapprove this Contact Record.

**Closeout of Contact Record:** This Contact Record will be closed when the proposed erosion and water management control methods have been implemented and revegetation is complete.

**Contact Record Prepared by:** Jody Nelson, J.G. Management Systems, Inc.; David Ward, George Squibb, Kurt Franzen, SN3

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**Distribution:**

Carl Spreng, CDPHE  
Scott Surovchak, DOE  
Vera Moritz, EPA  
Linda Kaiser, Stoller  
Rocky Flats Contact Record File



*Figure 1.*



*Figure 2. June 17, 2015*

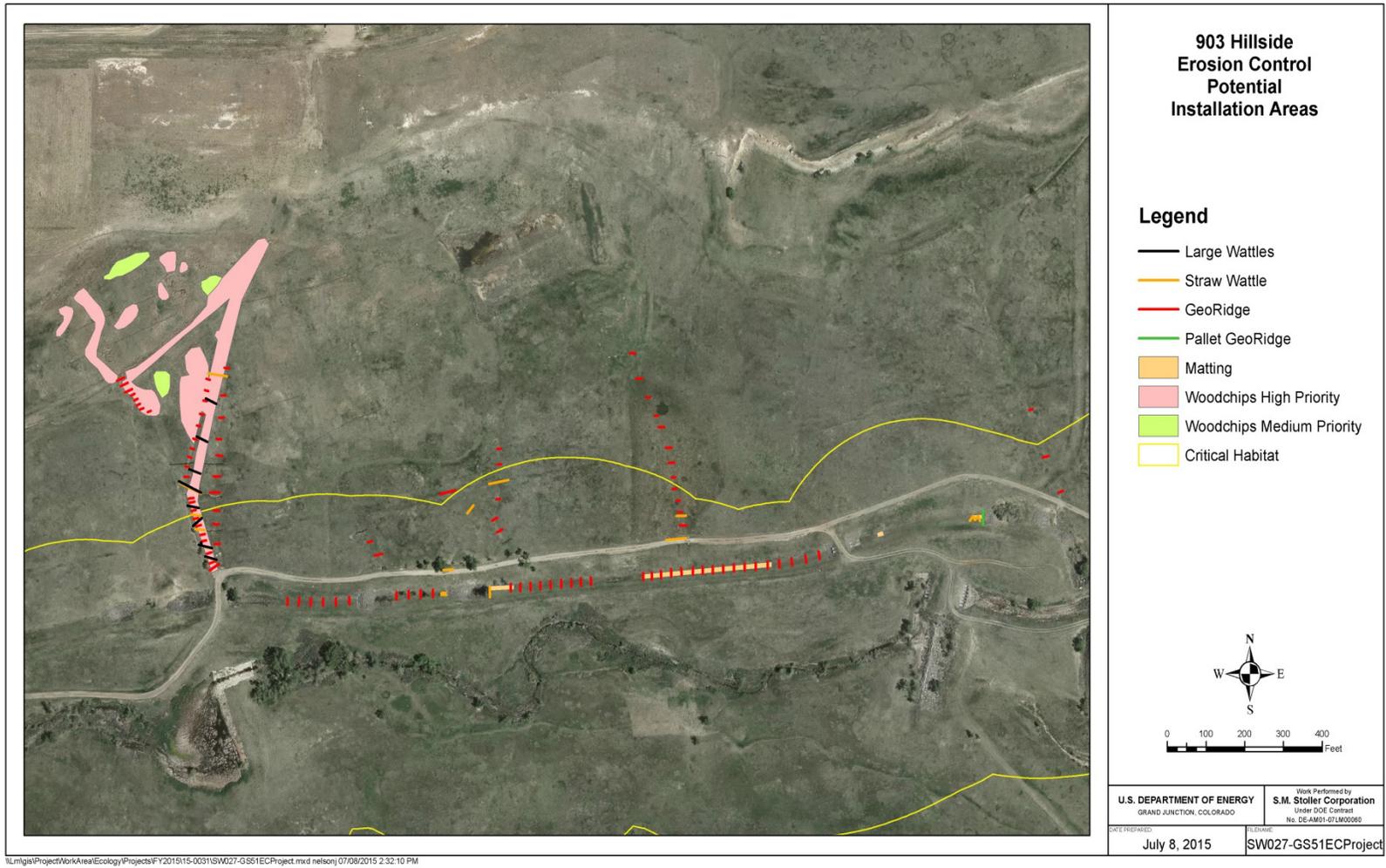


Figure 3. Planned Action Locations

# ROCKY FLATS SITE

## REGULATORY CONTACT RECORD 2015-06

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

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**Contact Record Approval Date:** July 28, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); Kurt Franzen, Linda Kaiser, David Ward, John Boylan, George Squibb, Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

**Date of Consultation Meeting:** July 22, 2015

**Consultation Meeting Participants:** Carl Spreng, CDHPE; Scott Surovchak, DOE; Vera Moritz, EPA; Linda Kaiser, David Ward, George Squibb, John Boylan, SN3; Jody Nelson, Michelle Hansen, JG Management Systems, Inc.

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**Introduction:** Contact Record (CR) 2015-03 approved immediate action to address areas of subsidence and the resulting standing water on portions of the OLF. This subsidence was caused by several weeks of precipitation in the spring of 2015. (May 2015 has been noted as the wettest May in Colorado's recorded history.) The immediate action has been successful in improving drainage of water on the surface of the OLF.

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.

**Discussion:** A qualified geotechnical engineer with prior experience at the OLF visited the OLF several times and made several recommendations to address the need to reestablish surface water flow off the OLF cover over the short term. Recommendations included "laying back" the ground at the top of the largest scarp to achieve a more gentle and uniform slope. This will require cutting up to 6 feet off the top of the scarp and placing the cut material at the base of the scarp, which will lessen the potential for excess erosion on the steep face and the resulting potential for deposits of eroded soil that could hamper the flow of water. To achieve this slope, a "field fit" approach will be used rather than detailed engineered designs. Re-grading this area would also reduce safety concerns presented by the steep scarp (see Figure 1).

Re-grading was also recommended to manage run on, requiring 3-foot cuts at the edge of the waste boundary and creating a series of smaller, but steeper than existing, berms as continuations of berms 4 through 7. Piping will also be added to convey water from the west end of the distressed area to the EPC. As part of the initial action (CR 2015-03), each of the berms was dammed and a pipe was installed to drain the water from the pools formed by the areas of subsidence off the landfill surface and down the slope. This existing piping can be repurposed to extend down the invert of the channels created by the new berms. The soil dams should remain to discourage water from bypassing the pipe. A series of rock dams can be placed over the pipe at intervals of 30 to 50 feet to ensure that piping remains in place until a longer-term solution is designed and implemented. The pipe and berms should slope approximately 10 percent or more to rapidly convey water across the distressed area to the EPC. In areas where relatively large flows have been observed following storm events, larger diameter pipe or multiple 4-inch diameter pipes could be used. Although these aboveground pipes will be subject to freezing for a short time during winter months, that risk should be offset by the ability to monitor pipe performance and correct issues over a comparatively long period of time during the remainder of the year. In addition, with the recommended slope there should be little water remaining in the pipes to freeze.

The area near the northeast edge of the OLF cover, where a rock drain was installed as a part of the OLF closure project, is very wet at the ground surface (see Figure 1). Observations by Rocky Flats staff and exploration using an excavator have shown that this drain appears to be at least partially blocked or clogged, hampering its effectiveness. The wet ground suggests the drain may be full of water that feeds permeable, low-strength lenses in the shallow soils. Excavation in the area to try to provide an outlet for water that may be collecting in the buried rock, thus providing a water source to the distressed areas, will be completed and will require an excavation of approximately 25 feet.

Cracks or voids observed at the ground surface will continue to be filled, tamped, or sealed off at the ground surface using heavy equipment or hand methods, as appropriate, to reduce infiltration of precipitation and snow melt. The ground surface will not be covered with an impermeable barrier, which would be subject to damage by high winds. Impermeable sheeting would also trap moisture and reduce evapotranspiration, potentially causing an increase in water content in the shallow subsurface.

Although distress has been less extensive on the western side of the OLF, local instabilities and distress have been noted (see Figure 1). These areas will be mitigated in a similar manner for the short term (but will not require intrusive work focusing on a subsurface drain, as planned on the eastern side). Scarps, hummocky surfaces, and other slope irregularities can be smoothed and drain pipes installed to more rapidly convey water across the distressed areas until the subsoils have dried and a longer-term solution has been designed.

Disturbed areas, both east and west, will be revegetated using a seed mixture that has proven successful in the area.

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. This is consistent with CR 2015-03, Original Landfill Immediate Response to Recent Precipitation, dated May 26, 2015.

DOE plans to start the work in August 2015 and complete it in September 2015. The longer-term approach to the stabilization of the OLF cover by a qualified geotechnical engineer is continuing.

Sampling of the Resource Conservation and Recovery Act wells that monitor the OLF is performed quarterly, and was most recently completed in May 2015. A composite sample at the surface water monitoring location downstream of the OLF in Woman Creek (GS59) was collected on May 18, 2015. This composite sample covers the period from May 9 to May 18. Results of the analysis of this sample will be available on GEMS (Geospatial Environmental Mapping System) after they are validated and will be reported in the corresponding quarterly report.

The soil disturbance, filling, and grading on the OLF cover are subject to the requirements of Rocky Flats Legacy Management Agreement (RFLMA) institutional controls (ICs) as discussed below. An approved Soil Disturbance Review Plan (SDRP) is required, and the RFLMA parties agree that the geotechnical engineer’s recommendation provides sufficient information for the SDRP for the proposed work.

**IC Evaluation:** The 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.
	<p><b>Objective:</b> Prevent unacceptable exposure to residual subsurface contamination.</p> <p><b>Rationale:</b> Contaminated structures, such as building basements, exist in certain areas of the Central Operating Unit, 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>
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.
	<p><b>Objective:</b> Prevent migration of residual surface soil contamination to surface water.</p> <p><b>Rationale:</b> 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.</p>
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.
	<p><b>Objective:</b> Ensure the continued proper functioning of the landfill covers.</p> <p><b>Rationale:</b> This restriction helps ensure the integrity of the landfill covers.</p>

The required SDRP is in Attachment 1. 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.

**Resolution:** CDPHE, after reviewing information regarding the proposed soil disturbance and excavation and after consultation with EPA, will approve, approve with modification, or disapprove the proposed activity. CDPHE will determine whether the proposed activity: (1) will not compromise or impair the function of the remedy or (2) will result in an unacceptable release or exposure to residual subsurface contamination. CDPHE will also determine whether the proposed project meets the rationale and objectives of IC 2, 3 and 6.

CDPHE approved the proposed activity stated in this CR on July 28, 2015.

The work will be conducted after CDPHE's approval, but DOE will not conduct the approved soil disturbance until 10 calendar days after this Contact Record is posted on the Rocky Flats site's website 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 period(s) in which these activities occur.

**Closeout of Contact Record:** This CR will be closed when the work is completed, post-construction reseeded has been performed, and post-construction erosion controls are in place.

**Contact Record Prepared by:** David Ward, John Boylan, and Kurt Franzen.

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**Distribution:**

Carl Spreng, CDPHE  
Vera Moritz, EPA  
Scott Surovchak, DOE  
Linda Kaiser, SN3  
Rocky Flats Contact Record File

## Attachment 1

### Rocky Flats Legacy Management Agreement Soil Disturbance Review Plan

**Proposed Project:** Soil Disturbance Review Plan (SDRP) for Implementation of Interim Action to Reestablish Surface Water Management on Portions of 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 and East Perimeter Channel (EPC) and to reduce the slope grades in this area to improve slope stability and improve or reestablish drainage features to minimize the potential for infiltration of precipitation in the short term.

Contact Record (CR) 2015-06 Figure 1 shows the location and the lateral extent of the planned regrading, excavation, and soil disturbance. Laying back the largest scarp to achieve a shallower and more uniformly sloping configuration will require a cut of approximately 6 feet. Regrading the face of the cover as noted on CR 2015-06 Figure 1 will require a 3-foot cut at the edge of the waste footprint and in the EPC. The pothole indicated on CR 2015-06 Figure 1 will be approximately 25 feet deep.

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 Contact Record 2015-06 Figure 1.

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. 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. Risks were calculated for benzo[a]pyrene and 2,3,7,8 TCDD TEQ. The estimated Tier 1 total excess lifetime cancer risk to the wildlife refuge worker at the EU is 8E-06, and the Tier 2 risk is 4E-06.

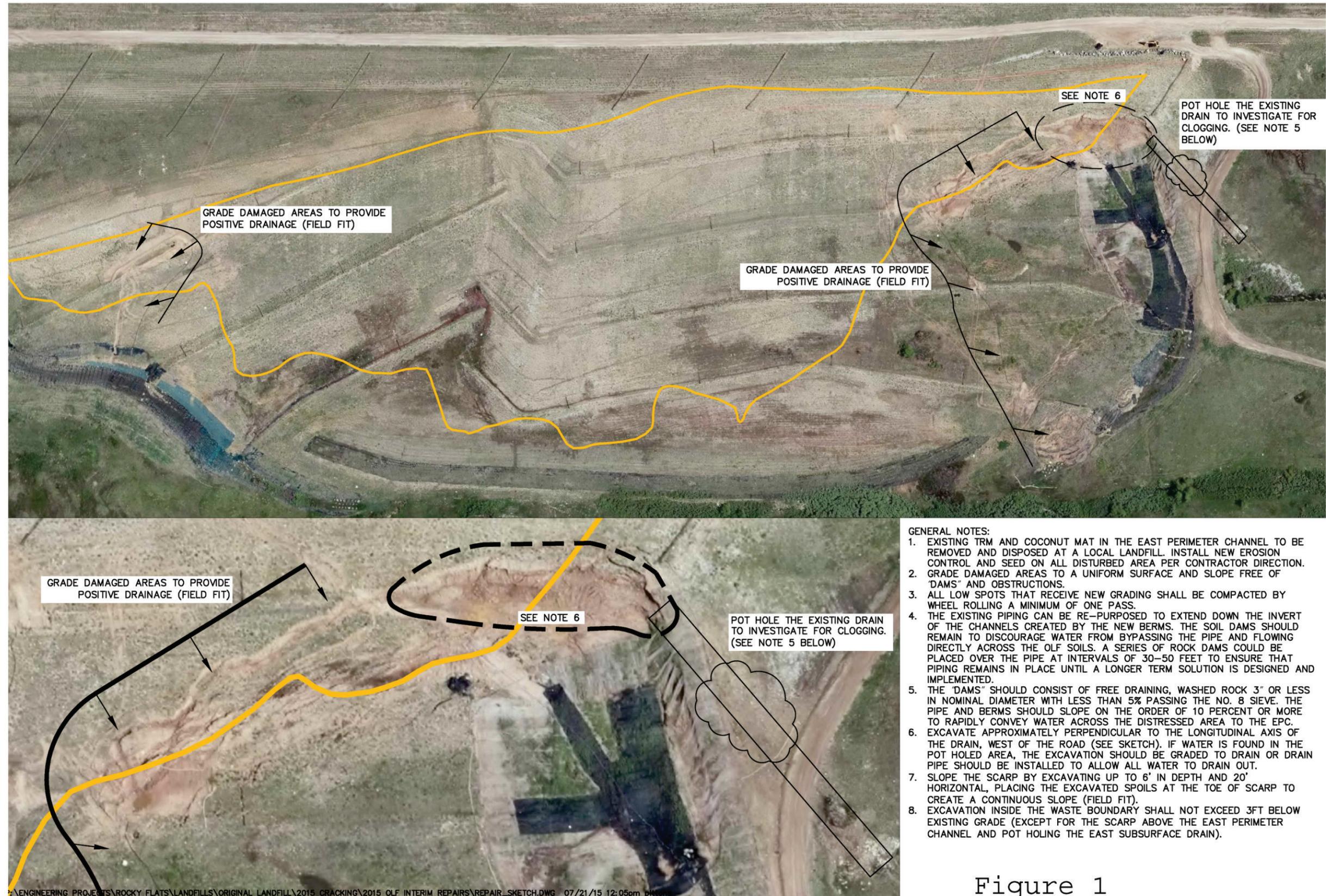


Figure 1

# ROCKY FLATS SITE

## REGULATORY CONTACT RECORD 2015-07

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**Purpose:** Vinyl chloride results from the Present Landfill Treatment System (PLFTS) effluent triggered the consultative process.

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**Contact Record Approval Date:** August 31, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); George Squibb, Linda Kaiser, David Ward, Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

**Date of Consultation Meeting:** July 22, 2015

**Consultation Meeting Participants:** Carl Spreng, CDPHE; Vera Moritz, EPA; Scott Surovchak, DOE; Linda Kaiser, SN3, David Ward, SN3

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**Discussion:** As part of the Present Landfill closure, a passive seep interception and treatment system was installed to treat volatile organic compounds (VOCs) in landfill seep water and Groundwater Intercept System (GWIS) water. There are three sources of influent to the treatment system: two GWIS pipes and the Present Landfill seep. Effluent from the treatment system eventually flows to the former Landfill Pond area.

As required by the *Rocky Flats Legacy Management Agreement* (RFLMA) Attachment 2, Table 2, "Water Monitoring Locations and Sampling Criteria," the Present Landfill Treatment System (PLFTS) effluent monitoring requirements consist of routine quarterly sampling for VOCs, semivolatile organic compounds, and metals to evaluate remedy performance. In accordance with RFLMA Attachment 2, Figure 11, "Groundwater Treatment Systems," an exceedance of a surface-water standard at the PLFTS effluent monitoring location (PLFSYSEFF) triggers monthly effluent sampling to provide additional data for evaluation. If exceedances continue for three consecutive samples during the subsequent increased-frequency sampling period, sampling is triggered at location NNG01 (downstream of the former Landfill Pond area) for those constituents in question. Concurrently, consultation between the RFLMA parties takes place to determine whether a change in the remedy is required, if additional parameters need to be analyzed, or if a modification of the monitoring plan is warranted.

The routine quarterly effluent sample collected on 3/11/2015 (Table 1) showed a vinyl chloride concentration exceeding the practical quantitation limit (PQL) of 0.2 microgram per liter ( $\mu\text{g/L}$ ) standard from the RFLMA Attachment 2, Table 1, "Surface Water Standards." (As a point of reference the 0.2  $\mu\text{g/L}$  is based on the water supply standard and neither Walnut Creek nor Big Dry Creek have drinking water supply intakes.) Subsequent sampling at the increased frequency showed three consecutive vinyl chloride concentrations also exceeding the RFLMA PQL, which

triggered sampling at location NNG01 and consultation. The Site PQL of 0.2 µg/L is well below the drinking water standard (i.e., the maximum contaminant level of 2.0 µg/L).

Location NNG01 was sampled on 7/27/2015 (Table 2), and vinyl chloride was not detected.

Similar situations occurred in 2007 and 2014. The RFLMA parties took no additional actions, and the sampling protocol returned to the routine quarterly sampling at PLFSYSEFF for those occurrences.

The RFLMA parties have consulted regarding the results summarized in Tables 1 and 2 and have agreed to continue the RFLMA sampling protocol with no changes or additional actions.

*Table 1. Present Landfill Treatment System Effluent (PLFSYSEFF): Summary of Analytical Results*

Analyte	Sample Date	Result <sup>a</sup>	Units	RFLMA Attachment 2, PQL
Vinyl Chloride	<b>3/11/2015</b>	<b>0.23</b>	<b>µg/L</b>	<b>0.20</b>
	4/28/2015	0.24	µg/L	0.20
	5/28/2015	0.26	µg/L	0.20
	6/29/2015	0.25	µg/L	0.20

**Notes:** The initial result triggering monthly sampling is shown in **bold**. The routine quarterly samples are shown in italics.

<sup>a</sup> All results are J qualified. "J qualified" means the analyte was positively identified. The associated numerical value is an estimated quantity.

*Table 2. Former Landfill Pond Area Outflow (NNG01): Summary of Analytical Results*

Analyte	Sample Date	Result <sup>a</sup>	Units	RFLMA PQL
Vinyl Chloride	7/27/2015	<0.10	µg/L	0.20

**Notes:** The 6/29/2015 PLFSYSEFF result (Table 1) was received on 7/21/2015, triggering sampling at NNG01.

<sup>a</sup> The result is U qualified. "U qualified" means the analyte was not detected at a concentration greater than the method detection limit.

**Resolution:** Carl Spreng, CDPHE, approved this contact record.

**Closeout of Contact Record:** This contact record will be closed when it is posted on the Rocky Flats Site website.

**Contact Record Prepared by:** David Ward and George Squibb

**Distribution:**

Carl Spreng, CDPHE  
 Scott Surovchak, DOE  
 Vera Moritz, EPA  
 Linda Kaiser, SN3  
 Rocky Flats Contact Record File

# ROCKY FLATS SITE

## REGULATORY CONTACT RECORD 2015-08

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**Purpose:** Solar Ponds Plume Treatment System Interim Design and Implementation

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**Contact Record Approval Date:** September 8, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); John Boylan, Linda Kaiser, David Ward, Stoller Newport News Nuclear, Inc. (SN3), a wholly owned subsidiary of Huntington Ingalls Industries, Inc.

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

**Date of Consultation Meeting:** July 13, 2015

**Consultation Meeting Participants:** Carl Spreng, CDHPE; Scott Surovchak, DOE; John Boylan, Kurt Franzen, Linda Kaiser, George Squibb, David Ward, SN3; Michelle Hanson, Jody Nelson, JG Management Systems, Inc.

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**Introduction:** The Solar Ponds Plume Treatment System (SPPTS) at the Rocky Flats, Colorado, Site collects and treats water contaminated with nitrate and uranium. As described in several annual reports (especially the annual reports for 2006, 2007, 2008, and 2009) and documented in Contact Records 2007-02, 2008-03, 2008-06, 2008-08, 2009-01, and 2014-08, the SPPTS has been the focus of extensive study and modification over the past several years, particularly since the site closed. The primary objective has been to improve collection and treatment of contaminated groundwater, and has included repairs, subsurface exploration, treatability studies (laboratory, bench-scale, and pilot-scale), and the design and construction of system upgrades. Several factors drove these efforts, including the following:

1. Historically, concentrations of nitrate and uranium measured at the sampling location associated with the subsurface effluent discharge gallery (formally referred to as SPPDISCHARGE GALLERY, but often shortened to Discharge Gallery or DG) usually exceeded those in untreated influent to the system, even though this is where effluent confirmed to be adequately treated contributes to a pool of water on the ground surface.
2. Accessing and maintaining the treatment media and plumbing within the original structure is costly and difficult.
3. The original treatment media is not optimal over the long term. All of the currently viable alternatives for future system configurations eliminate use of the treatment media as configured in the original system.

The first factor listed above was addressed in 2008 with the installation of components that capture more of the contaminated groundwater. Recent annual reports (i.e., 2010, 2011, 2012, 2013, and 2014) have presented and discussed further efforts to optimize the effectiveness of the

SPPTS and to test alternatives for system reconfiguration, focusing on the performance of bench-scale and pilot-scale treatability studies.

The current focus has shifted to a more extensive reconfiguration of the system. Design of this reconfiguration was scheduled to begin in 2016. However, due to the condition of the media and the overburden within the large original treatment cell structure (the “Big Box”) and the fact that the Big Box has become clogged, this component needs to be emptied sooner. The heavy precipitation in the first 6 months of 2015 (greater than a typical year) has increased the need to empty the system and improve treatment of influent water. Evaluation of the best long-term configuration of the system is in progress, requiring further testing and alternatives analysis. Simply replacing the treatment media in the Big Box would not be appropriate or adequate due to the flow rates, the treatment targets, and the substantial waste that would result for such a short-term operation. Therefore, a different configuration is necessary in the interim period.

**Discussion:** During the July 13, 2015, Rocky Flats Legacy Management Agreement (RFLMA) parties’ consultation, the following SPPTS interim configuration was proposed and discussed:

1. Empty the Big Box material (overburden and treatment media) and dispose of the material as discussed below.
2. Take the Phase II uranium treatment cell out of service and remove and dispose of its contents as discussed below.
3. Create a lagoon in Cell 1 and a settling tank in Cell 2 of the Big Box. Cell 1 is the larger of the two cells and can provide a residence time for the entire SPPTS groundwater flow similar to the residence time that currently is used in the pilot-scale lagoons. The pilot-scale lagoons have been successful in removing nitrate (see the 2014 Annual Report). The pilot-scale lagoons also remove substantial uranium from the influent (generally 30 to 50 percent, sometimes more). No additional full-scale uranium treatment component will be installed in the interim system.
4. Install an insulated roof over the Big Box to reduce temperature fluctuations in the lagoon, which will help to maintain a healthy population of denitrifying bacteria.
5. Continue to test approaches for treating uranium, focusing primarily on the lagoon effluent. These tests will be performed on only a small portion of the effluent volume.

The proposal was based on the following considerations:

- The contents of the Big Box need to be removed very soon to resolve the clogged media problem.
- The pilot-scale lagoons have been successful in treating nitrate as well as in removing a substantial portion of the uranium.
- The recently tested microcell approach would be labor-intensive if it was operated at full scale. Based on current flows, approximately 10 microcells at a time would be needed to achieve a uranium concentration similar to what is seen from the pilot-scale lagoons, and each microcell would operate for only 1 to 2 weeks before needing replacement. This approach also would generate significant waste.
- A recently issued geochemical report shows that the SPPTS influent represents only a small portion of the uranium load in North Walnut Creek (i.e., less than 10 percent).

- Because nitrate can mobilize uranium through the chemical oxidation process, decreasing the nitrate in North Walnut Creek might also decrease uranium concentrations.

Therefore, the emphasis during the SPPTS interim configuration will be on treating nitrate in a full-scale lagoon.

This SPPTS interim configuration will be implemented starting in October 2015 when the Big Box will be emptied.

**Water Management:** While the Big Box is offline, untreated SPPTS influent will be pumped upgradient of the collection trench as previously approved in Contact Record 2008-06. (A small portion of the water will be directed to the pilot-scale lagoons periodically to maintain the treatment effectiveness of these components, as they will be the source of the denitrifying bacteria for the lagoon that will be installed in the Big Box.) Water that has passed through media in the Big Box is considered treated and the clear water (i.e., containing minimal particulates) generated during the process of removing and dewatering the media will be placed in the effluent manhole. If turbid water is generated during the process of dewatering the media, it will be placed upgradient of the SPPTS collection trench.

**Media Management:** The material in the Big Box consists of the following:

- Overburden (approximately 260 cubic yards of 90 percent wood chips and 10 percent dirt)
- Cell 1 nitrate treatment media (approximately 218 cubic yards of 90 percent sawdust and 10 percent zero-valent iron [ZVI]), plus 1 foot of gravel (20 cubic yards)
- Cell 2 uranium treatment media (approximately 72 cubic yards of 85 percent pea gravel and 15 percent ZVI), plus 1 foot of gravel (7 cubic yards),

The materials in the Big Box have been determined to be a solid waste. As such, the contents will be disposed of as a single waste stream at a local landfill. The solid waste characterization is based on process knowledge, the analytical data from the 2011 sampling event, and an evaluation by a certified health physicist.

The Phase II treatment cell contains media consisting of a varying mixture of pea gravel and ZVI installed as layers (from approximately 15 percent ZVI in the bottom layer to 45 percent ZVI in the upper layer). This treatment media was installed in 2010 and has a slightly higher content of ZVI and a different type of pea gravel than the original Phase II media. The media removed in 2010 was analyzed and shipped to the Energy Solutions disposal facility in Utah as low-level waste. Based on the 2010 data and the fact that the current treatment media is treating the same groundwater plume, the media removed during fall 2015 will also be disposed of at the low-level waste disposal facility in Utah.

**Operations:** Going forward, the Big Box lagoon will be operated and monitored for a minimum of four full seasons to evaluate nitrate and uranium removal efficiency, sludge buildup, factors that affect removal efficiency, optimization needs, and operation and maintenance requirements and costs. Results will inform the consideration and design of a longer-term SPPTS configuration.

The RFLMA parties agreed with implementing the above proposed SPPTS interim configuration.

RFLMA Contact Record 2015-08

**Resolution:** CDPHE, after consultation with EPA, will approve, approve with modification, or disapprove this contact record.

After completion of the approval process and incorporation of any required changes CDHPE approved this contact record.

**Closeout of Contact Record:** 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. The contact record will be closed when the media is removed, the required infrastructures are installed and any required revegetation and erosion controls are in place.

**Contact Record Prepared by:** David Ward and John Boylan

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**Distribution:**

Carl Spreng, CDPHE

Vera Moritz, EPA

Scott Surovchak, DOE

Linda Kaiser, SN3

Rocky Flats Contact Record File

# ROCKY FLATS SITE

## REGULATORY CONTACT RECORD 2015-09

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**Purpose:** Soil Disturbance Review Plan for Solar Ponds Plume Treatment System Interim Configuration

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**Contact Record Approval Date:** December 7, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); Kurt Franzen, Linda Kaiser, David Ward, Navarro Research and Engineering, Inc. (Navarro)

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

**Date of Consultation Meeting:** October 28, 2015

**Consultation Meeting Participants:** Carl Spreng, CDPHE; Vera Moritz, EPA; Scott Surovchak, DOE; Linda Kaiser, John Boylan, George Squibb, Kurt Franzen, Michelle Hanson, David Ward, Navarro.

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**Introduction:** Contact Record 2015-08, “Solar Ponds Plume Treatment System Interim Design and Implementation,” summarizes the Rocky Flats Legacy Management Agreement (RFLMA) parties’ consultation and decision to convert the current Solar Ponds Plume Treatment System (SPPTS) Cell 1 and Cell 2 structure (the “Big Box”), which is currently filled with wood chips, mulch, and soil over treatment media consisting of sawdust mixed with zero-valent iron (ZVI) in Cell 1 and pea gravel mixed with ZVI in Cell 2, into a lagoon for the removal of nitrate. Testing for uranium removal approaches will be conducted on a portion of the lagoon effluent. The use of a lagoon to reduce nitrate has been demonstrated in the Phase III pilot-scale lagoon studies. Information on the status of operation and performance of the SPPTS is provided in RFLMA quarterly and annual site surveillance and maintenance reports. RFLMA contact records and site surveillance and maintenance reports are available on the Rocky Flats public website at [http://www.lm.doe.gov/rocky\\_flats/Sites.aspx](http://www.lm.doe.gov/rocky_flats/Sites.aspx).

**Discussion:** The following was discussed during the October 28, 2015 consultation: The design of the infrastructure required to support the operation of the Big Box as a lagoon and to continue testing for uranium removal is basically complete. Approval of the Soil Disturbance Review Plan (attached) is required. To accommodate continued uranium treatment testing, a concrete vault will be installed outside the east edge of the Big Box. This vault will provide space for study of uranium removal from lagoon effluent (for example, using microcells), and is designed to support a shed if more space is needed in the future.

Construction of the vault will require the excavation of approximately a 35 feet (ft) × 25 ft × 8 ft deep hole (see Attachment 2 for location). This “sidecar vault”, an 8 ft × 8 ft × 5 ft deep structure, will be attached to the outside of the eastern wall of the Big Box. The larger excavation is a safety requirement for access during construction.

**Construction:** As discussed in Contact Record 2015-08, the Big Box will be taken offline for approximately 8 to 10 weeks to allow for media removal, construction of a roof over the Big Box, installation of the sidecar vault, and installation of plumbing and pumps and associated electrical infrastructure. If more electrical power is required than is currently available, additional photovoltaic (PV) solar panels and batteries will be installed. PV solar panels and supports may be added near the existing solar array if additional power is required. A large, inner plastic tank may be inserted in the existing carbon (MCG) vault to contain the larger volumes of MCG that will be used.

The media and overburden from the Big Box, the prior Phase III Cell A and B media, the Phase II media, and spent microcell media will be removed and dispositioned as discussed in Contact Record 2015-08. The Phase II tank will remain empty, but during construction of the full-scale interim lagoon, it may be used to store water (including effluent from the pilot-scale Phase III lagoons).

A construction staging area will be located on the pediment south of the SPPTS. It will be used to support both waste removal and construction activities, since the SPPTS area has a minimal working area. The staging area is less than 1 acre in size and will be revegetated after use. A construction trailer will be located in the SPPTS area (see Attachment 2 for location). The construction trailer will be anchored to withstand 100-mile-per-hour winds.

**Institutional Controls (IC) Evaluation:** The soil disturbance work is subject to IC 2 and IC 3. Table 1 recaps these ICs.

*Table 1. Institutional Controls*

Controls	Use Restrictions
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><b>Objective:</b> Prevent unacceptable exposure to residual subsurface contamination.</p> <p><b>Rationale:</b> Contaminated structures, such as building basements, exist in certain areas of the Central Operating Unit, 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>
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.
	<p><b>Objective:</b> Prevent migration of residual surface soil contamination to surface water.</p> <p><b>Rationale:</b> 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.</p>

The required Soil Disturbance Review Plan is in Attachment 1.

RFLMA Contact Record 2015-09

**Resolution:** CDPHE has reviewed information regarding the proposed soil disturbance and excavation and, after consulting with EPA, has approved the proposed activity and the proposed grading plan. CDPHE has determined that the proposed activity will not compromise or impair the function of the remedy or result in an unacceptable release or exposure to residual subsurface contamination. CDPHE has also determined that the proposed project meets the rationale and objectives of IC 2 and IC3.

The work will be conducted after CDPHE's approval, but DOE will not conduct the approved soil disturbance until 10 calendar days after this Contact Record is posted on the Rocky Flats site's website and stakeholders are notified of the posting in accordance with the RFLMA Public Involvement Plan. The work is planned to be conducted and completed in the spring of 2015.

**Closeout of Contact Record:** Progress and the completion of the interim configuration construction 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. The contact record will be closed when the Big Box and Phase II cell have been emptied, the infrastructure (roof, plumbing, and vault) has been installed, and any required revegetation and erosion controls are in place.

**Contact Record Prepared by:** David Ward and John Boylan

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**Distribution:**

Carl Spreng, CDPHE  
Scott Surovchak, DOE  
Vera Moritz, EPA  
Linda Kaiser, Navarro  
Rocky Flats Contact Record File

## Attachment 1

### Rocky Flats Legacy Management Agreement (RFLMA) Soil Disturbance Review Plan (SDRP)

#### **Proposed Project:** SDRP for Solar Ponds Plume Treatment System (SPPTS) Interim Configuration

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

*(1) Description of the proposed project, including the purpose, the location, and the lateral and vertical extent of excavation.*

The purpose of the project is to convert the existing SPPTS “Big Box” (the concrete structure containing the two original treatment cells) from a reactive media-based treatment system (sawdust plus zero-valent iron [ZVI] in Cell 1 and pea gravel plus ZVI in Cell 2, all beneath an overburden of wood chips, mulch, and soil) to a lagoon, plus provide the necessary infrastructure to support the operations and additional uranium treatment testing. All of the planned construction is within the existing SPPTS disturbed area. A hole approximately 35 feet (ft) × 25 ft × 8 ft deep will be excavated to install the sidecar vault on the east end of the Big Box (see Attachment 2 to Contact Record 2015-09 for location). This vault will provide plumbing and space for testing uranium treatment components. After the vault is installed, the surrounding area will be graded to near the top of the vault. Photovoltaic (PV) solar panels and supports may be added near the existing solar array if additional power is required. The area around the Big Box will be graded with offsite material to bring the ground surface up to the level of the top of the concrete around the Big Box. The final grade will be higher than the existing grade. During construction, a temporary construction trailer will be located inside the SPPTS disturbed area as shown in Attachment 2 and will be anchored to withstand a minimum of 100-mile-per-hour winds. This trailer will be removed at the end of construction.

Another area of disturbance is the construction laydown area, less than an acre, located on the pediment upgradient of the SPPTS (see Attachment 2 to the Contact Record for location). The area will have 2-inch or 3-inch minus rock placed to support the construction activities. After this work has been completed, the rock will be removed and stockpiled onsite for reuse, and the area revegetated. Since the disturbance in this area will be returned to the existing grade or higher it is compliant with IC 3 and requires no approval.

All incoming borrow material will come from a local commercial aggregate facility.

*(2) Information about any remaining subsurface structures in the vicinity of the proposed project.*

Other than components of the SPPTS itself, there are no remaining subsurface structures in the vicinity, so cover assumptions will not be violated.

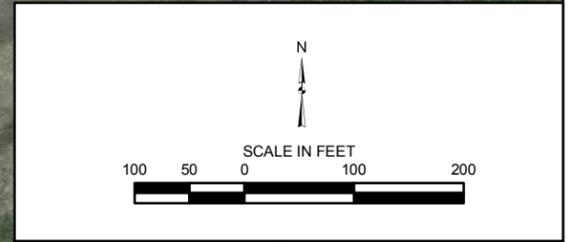
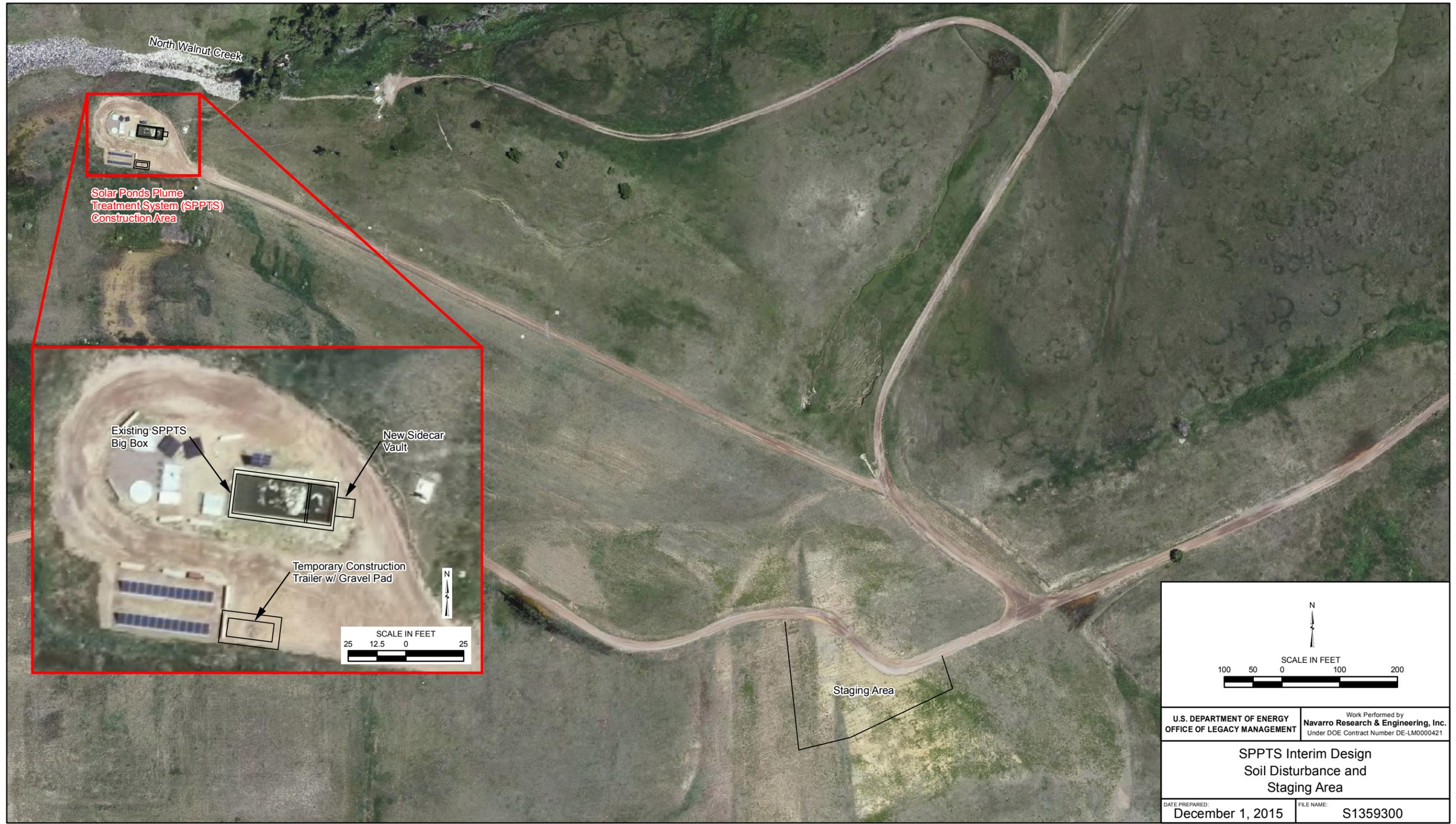
*(3) Information about any former Individual Hazardous Substance Sites (IHSSs), Potential Areas of Concern (PACs), or other known or potential soil or groundwater contamination in the vicinity of the proposed project.*

This construction area was not an IHSS. The *Facility Investigation - Remedial Investigation/Corrective Measures Study - Feasibility Study Report for the Rocky Flats Environmental Technology Site Nature and Extent of Soil Contamination* figures do not indicate soil contamination in this area. Groundwater in the vicinity is impacted by the Solar Ponds Plume. Any groundwater that is encountered in an excavation will be collected from the excavation, if necessary to conduct the construction work, and will either be pumped from the excavation to the surface generally southwest (upgradient) of the SPPTS to allow this water to seep back into the ground, as approved in Contact Record 2008-06, or will be containerized and held for treatment at the SPPTS for treatment when construction is completed, at the discretion of the field crew.

*(4) Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored).*

The sidecar vault will be installed in the approximately 35 ft × 25 ft × 8 ft deep excavation and the surrounding area will be graded to the top of the vault wall (which will be raised slightly above the existing grade). Any excavations for PV solar supporting structure(s) will be filled with concrete and the surrounding surface will be returned to the existing grade or higher.

The rock placed to reduce disturbance of the staging area will be removed from that area after construction is completed to help establish vegetation. The existing grade will be maintained. There are no other underground structures or infrastructure in the area.



U.S. DEPARTMENT OF ENERGY  
OFFICE OF LEGACY MANAGEMENT

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

**SPPTS Interim Design  
Soil Disturbance and  
Staging Area**

DATE PREPARED: **December 1, 2015** FILE NAME: **S1359300**

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# ROCKY FLATS SITE REGULATORY CONTACT RECORD 2015-10

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**Purpose:** Area of Concern Well 10304 Reportable Condition

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**Contact Record Approval Date:** December 16, 2015

**Site Contact(s)/Affiliation(s):** Scott Surovchak, U.S. Department of Energy (DOE); John Boylan, Linda Kaiser, David Ward, Navarro Research and Engineering, Inc. (Navarro)

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

**Date of Consultation Meeting:** December 1, 2015

**Consultation Meeting Participants:** Carl Spreng, CDPHE; Scott Surovchak, DOE

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**Background:** The *Rocky Flats Legacy Management Agreement* (RFLMA) defines several categories of groundwater monitoring wells at the Rocky Flats Site. Of these, Area of Concern (AOC) wells have reportable conditions defined. AOC wells are located within a drainage and downgradient of one or more contaminant plumes and are monitored semiannually to determine whether the plume(s) may be impacting surface water quality. The primary objective of AOC well 10304 is to evaluate groundwater quality adjacent to Woman Creek, downgradient of the 903 Pad/Ryan's Pit Plume.

As discussed in the *Quarterly Report of Site Surveillance and Maintenance Activities, Second Quarter Calendar Year 2015* (DOE 2015), a groundwater sample collected on May 7, 2015, from well 10304 contained an elevated concentration of trichloroethene (TCE). The RFLMA water-quality standard, set forth in Attachment 2, Table 1 to the RFLMA, is 2.5 micrograms per liter ( $\mu\text{g/L}$ ); the concentration in this sample was 15  $\mu\text{g/L}$ . While TCE (and other volatile organic compounds [VOCs]) has been detected previously in samples from well 10304, it has not been reported in samples from this well at concentrations exceeding the RFLMA standard. A non-RFLMA confirmatory sample was collected on June 17 to assess whether this result might be erroneous; the TCE result in that second sample was 5.4  $\mu\text{g/L}$ .

As outlined in RFLMA Attachment 2, Figure 7, a reportable condition for an AOC well exists when two consecutive, routine, semiannual samples contain the same analyte at concentrations exceeding the corresponding RFLMA standard. The fourth-quarter sample collected from well 10304 on October 29, 2015, contained a TCE concentration of 72  $\mu\text{g/L}$ . This represents the second consecutive semiannual result above the RFLMA standard, and therefore, a reportable condition exists for AOC well 10304.

Per RFLMA, within 15 days of receiving validated data defining a reportable condition, DOE must notify the agencies. Within 30 days of that date, DOE will provide a plan and schedule to

the regulators for an evaluation to address the occurrence. A consultation will follow and mitigating actions, if any, implemented thereafter.

**Discussion:** The potential for a reportable condition was noted in the above-referenced quarterly report for the second quarter of 2015. In fact, such a condition is anticipated during wet years, as described in the *Final Interim Measure/Interim Remedial Action for Groundwater at the Rocky Flats Environmental Technology Site* (Groundwater IM/IRA) (Kaiser-Hill 2005) and in the report on fate and transport modeling for VOCs (see *Fate and Transport Modeling of VOCs at the Rocky Flats Environmental Technology Site* [Kaiser-Hill 2004]). The Groundwater IM/IRA notes that “the downgradient portion of this plume only has the ability to impact surface water in wet years” (p. 6-31). The referenced modeling report concludes that groundwater from this plume may discharge to Woman Creek under conditions of higher-than-normal precipitation and notes that concentrations of TCE, in particular, in groundwater reaching Woman Creek may exceed standards. Therefore, given that 2015 has been an exceptionally wet year, the TCE results reported for AOC well 10304 are not unexpected. Installation of a groundwater treatment system downgradient of the 903 Pad/Ryan’s Pit Plume was considered as part of site closure; however, due to the infrequency with which it would be needed (in the 10 years since site closure, this is the first year treatment might have been considered) and the costs and effort required to operate and maintain such a system, it was not required as part of the selected remedy/correction action to ensure that the site remain protective of human health and welfare and the environment.

DOE verbally informed CDPHE of the results from the fourth-quarter sample the same day validation was completed, on December 1, 2015. The plan for evaluating this occurrence was discussed at the same time. An email notification to EPA and CDPHE followed on December 3, 2015.

This Contact Record describes the plan and schedule to address the reportable condition.

- A grab sample will be collected from Woman Creek downgradient/downstream and in the vicinity of well 10304 to evaluate the potential for VOC-contaminated groundwater to adversely affect surface water quality in this reach of Woman Creek. The location of the sample will be determined based on a field walkdown and will be suitable and convenient for sample collection while still being downgradient of the plume and in the immediate vicinity of the well.
- When the results of the surface water sample are available, there will be further consultation.
- Grab samples will be collected from this Woman Creek surface water location each time AOC well 10304 is sampled, until water quality at the well is no longer reportable.

Analytical results from these samples will be included in the corresponding quarterly and annual reports.

**Resolution:** CDPHE, after consultation with EPA, will approve, approve with modification, or disapprove this contact record.

After completion of the approval process and incorporation of any required changes CDHPE approved this contact record.

**Closeout of Contact Record:** This contact record will be closed when the water quality at well 10304 is no longer reportable.

**Contact Record Prepared by:** John Boylan, David Ward, Navarro

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