

ROCKY FLATS SITE

REGULATORY CONTACT RECORD 2014-10

Purpose: Reportable condition for uranium 12-month rolling average at Point of Compliance WALPOC

Contact Record Approval Date: December 18, 2014

Site Contact(s)/Affiliation(s): Scott Surovchak, U.S. Department of Energy (DOE); George Squibb, Linda Kaiser, David Ward, The S.M. Stoller Corporation, a wholly owned subsidiary of Huntington Ingalls Industries (Stoller)

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: November 19, 2014

Consultation Meeting Participants: Carl Spreng, CDPHE; Scott Surovchak, DOE; George Squibb, John Boylan, Jeremiah McLaughlin, David Ward, Stoller; Jody Nelson, J.G. Management Systems, Inc.

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, has not been retrieved from the field as of November 19, 2014, 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.

The RFLMA Parties agreed that no mitigating actions are necessary at this time. The relevant factors evaluated in making this determination include the following:

- 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) of 30 µg/L, which is also the second number in the State hyphenated uranium standard of 16.8–30 µg/L. State regulation 5 Code of Colorado Regulations 1002-31 (Reg. 31), Table III, "Metal Parameters," uranium standard 16.8–30 µg/L has two footnotes. Footnote 17 requires that:

When applying the table value standards for uranium to individual segments, the Commission shall consider the need to maintain radioactive materials at the lowest practical level as required by Section 31.11(2) of the Basic Standards regulation.

The reportable condition of exceeding 16.8 µg/L standard has triggered an evaluation to address the occurrence. This action is consistent with the footnote 17 requirement to "maintain radioactive materials as the lowest practical level." Footnote 13 provides:

Whenever a range of standards is listed and referenced to this footnote, the first number in the range is a strictly health-based value, based on the Commission's established methodology for human health-based standards. The second number in the range is a maximum contaminant level, established under the federal Safe Drinking Water Act that has been determined to be an acceptable level of this chemical in public water supplies, taking treatability and laboratory detection limits into account. Control requirements, such as discharge permit effluent limitations, shall be established using the first number in the range as the ambient water quality target, provided that no effluent limitation shall require an "end-of-pipe" discharge level more restrictive than the second number in the range. Water bodies will be considered in attainment of this standard, and not included on the Section 303(d) List, so long as the existing ambient quality does not exceed the second number in the range.

Therefore, since 17.2 µg/L does not exceed the second number in the range, the remedy remains protective of human health and the environment.

- WALPOC has been an 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.
- 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).

However, the RFLMA Parties also agreed that further evaluation should be completed to help confirm the foregoing conclusions and to aid in developing future mitigating actions if they become necessary.

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.
- The hyphenated standard will be documented in a future RFLMA Attachment 2 modification to make RFLMA Attachment 2, Table 1, consistent with the State's uranium standard. The State standard for uranium is a hyphenated standard of 16.8 µg/L–30 µg/L. As discussed above, the second number in the hyphenated standard is used to determine if a water body is in attainment of the standard. The following are details about this standard:
 - The 16.8 µg/L concentration represents the “lowest practical level” of uranium and exceedance of this value triggers an initial reportable condition and corresponding evaluation; and
 - The remedy is still protective of human health and the environment when the uranium concentration is less than 30 µg/L. An exceedance of the 30 µg/L standard will be added as an additional reportable condition.

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.

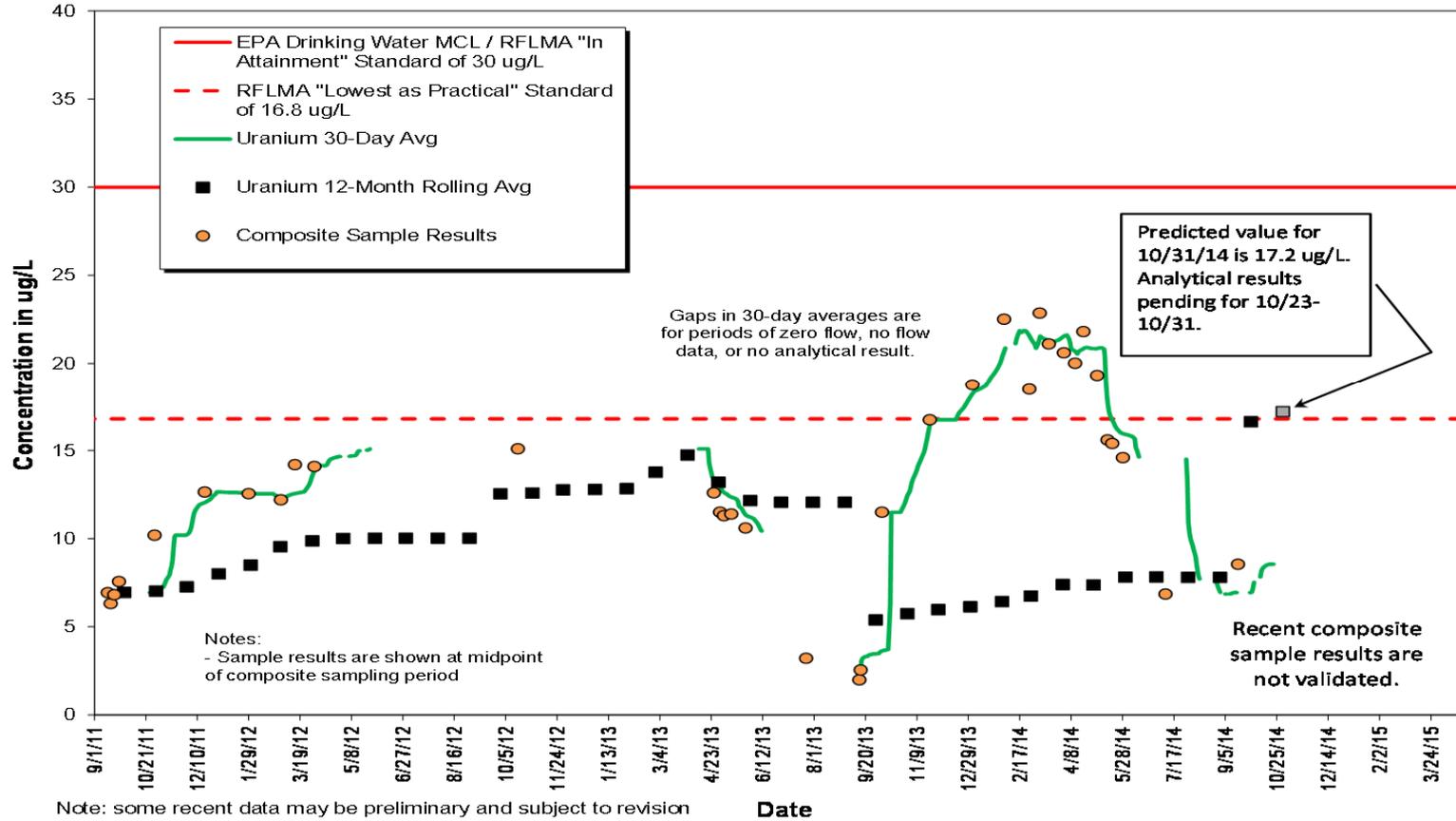
Closeout of Contact Record: This contact record will be closed when the results from the evaluation have been transmitted to CDPHE, or as the RFLMA Party consultation related to this evaluation directs.

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

Distribution:

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

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



Attachment 1