

ROCKY FLATS SITE REGULATORY CONTACT RECORD

Purpose: Reportable Condition for Uranium at Point of Evaluation GS10

Contact Record Approval Date: July 8, 2011

Site Contact(s)/Affiliation(s): Scott Surovchak, U.S. Department of Energy (DOE); Gwen Hooten, DOE, John Boylan, S.M. Stoller Corporation (Stoller); Rick DiSalvo, Stoller; Linda Kaiser, Stoller; George Squibb, Stoller

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

Discussion: A reportable condition at surface water Point of Evaluation GS10 was determined based on an evaluation of validated analytical results for uranium from the composite sample collected during the period from 10:50 a.m. on April 11, 2011, to 11:39 a.m. on May 4, 2011.

The evaluation was performed in accordance with *Rocky Flats Legacy Management Agreement* (RFLMA) Attachment 2, Figure 6, "Points of Evaluation," which resulted in a calculated 12-month rolling average concentration for uranium on April 30, 2011, of 18.8 µg/L. This amount exceeds the RFLMA applicable Table 1 standard of 16.8 µg/L. Validated results were received on June 14, 2011, and notification to the regulatory agencies and the public, in accordance with RFLMA Attachment 2, Figure 6, was made by e-mail on June 16, 2011.

Pursuant to RFLMA Attachment 2, Section 6.0, "Action Determinations," for a 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 the 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.
- 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 and EPA on June 16, 2011.

The RFLMA Parties agreed on the evaluation steps described below and agreed that no mitigating actions are necessary while the condition is being evaluated, for the following reasons:

- Downstream monitoring indicates that the remedy remains protective. The current 12-month rolling-average uranium concentration at the Pond B-5 outlet, Point of Compliance GS08, is 7.8 µg/L and includes the sample results through the last Pond B-5 discharge from March 24

to 30, 2011. Uranium results from the non-RFLMA monitoring project location B5INFLOW, which is upstream of GS08, have been reviewed, and concentrations are also below the RFLMA standard. B5INFLOW is also a flow-paced sampling station.

- The groundwater in the GS10 area has high concentrations of naturally occurring uranium as well as lower concentrations of anthropogenic uranium. Measured concentrations of uranium at GS10 include both naturally-occurring as well as anthropogenic uranium. Historically, naturally-occurring uranium has made up a much greater proportion of the concentration at GS10 - generally about 70 percent.
- In recent years, the elevated uranium concentrations at GS10 are a result of proportionally increased groundwater contribution to surface water baseflow due to reduced surface runoff resulting from the removal of impervious surfaces (e.g., pavement, buildings) during site closure. In addition to the general increase in groundwater contribution to the stream, the below-normal precipitation from the late fall of 2010 until mid-May 2011 resulted in a further proportional increase in groundwater contribution.
- The uranium concentrations are expected to vary due to the natural variability in environmental conditions such as the amounts of precipitation over time. Elevated uranium concentrations at GS10 above the RFLMA standard previously occurred for the period from April 30, 2006, to March 31, 2009, with the 12-month rolling averages in the range of 10.2 to 15.8 pCi/L. The RFLMA uranium standard was subsequently revised from an activity-based radionuclide parameter of 10 pCi/L to a concentration based metal parameter of 16.8 µg/L, which equates to approximately 11.3 pCi/L. Thus, the ranges in activity summarized above for 2006 to 2009 equate to approximately 15.2 to 23.5 µg/L. Levels returned to below the RFLMA standard after March 31, 2009, because precipitation levels increased.

However, the RFLMA Parties agreed that further evaluation should be done to help confirm the foregoing conclusions and aid in developing mitigating actions in the future 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 preliminary steps are being or have been taken and will inform the evaluation.

- The following samples have been sent to Los Alamos National Laboratory (LANL) for isotopic analysis to determine the percentages of natural and anthropogenic uranium to compare with percentages in pre-closure and post-closure samples previously analyzed by LANL:
 - Flow-paced surface water sample from GS10: Historically, this location has had approximately 70 percent natural uranium.
 - Groundwater sample from upgradient well 99405: Historically, this location has had reported uranium concentrations that typically exceed 100 µg/L and have been 99.9 to 100 percent natural uranium.

- Non-RFLMA sampling and analysis of uranium downstream of GS10 at B5INFLOW will continue. Contact Record 2010-03 describes the non-RFLMA sampling project.

In addition to this sampling, two temporary surface water sample locations upstream of GS10 will be established for biweekly uranium grab sampling. The RFLMA Parties will determine the duration of the grab sampling for these upstream locations, based on an evaluation of the results.

The results of the foregoing sampling and analysis will help to determine if the percentages of natural and anthropogenic uranium differ significantly from previous results or if levels of uranium upstream of GS10 might suggest the need for further investigation or mitigating actions.

DOE will report the results of this monitoring and 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.

Closeout of Contact Record: This Contact Record will be closed when the evaluation is completed.

Resolution: Carl Spreng, CDPHE, approved this Contact Record.

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Distribution:

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Rocky Flats Contact Record File