

# ROCKY FLATS SITE REGULATORY CONTACT RECORD

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**Purpose:** Monitoring Results at Surface Water Point of Evaluation (POE) SW027.

**Contact Record Approval Date:** July 27, 2010

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

**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:** Surface water location SW027 is the Rocky Flats Legacy Management Agreement (RFLMA) POE at the eastern (downstream) end of the South Interceptor Ditch (SID), upstream of Pond C-2. In accordance with RFLMA Attachment 2, Legacy Management Requirements, continuous flow-paced composite samples for total plutonium (Pu), total americium (Am), total uranium (U), dissolved cadmium, dissolved silver, total beryllium, and total chromium are collected at SW027. The sampling results are evaluated in accordance with RFLMA Attachment 2, Figure 6, Points of Evaluation.

Per Figure 6, the 12-month rolling averages for the last day of the particular month for Pu, Am, and U are calculated and compared to the applicable values in RFLMA Attachment 2, Table 1, Surface Water Standards. These values represent a volume-weighted average for a period covering the previous 12 months.

The last continuous flow-paced composite sample collected at SW027 was retrieved from the field on April 27, 2010. The subsequent composite sampling begun on April 27, 2010, does not yet include a quantity of water sufficient for analysis. The SID flows intermittently when there is enough runoff, which was the case during March and April 2010, but the SID has been predominantly dry or not flowing since then. It is not known when additional sample volume will be collected at SW027 to complete the composite sampling begun on April 27, 2010. The analytical results for this sample must be received in order to calculate the April 2010 month-end 12-month rolling average.

However, based on the results for continuous flow-paced samples collected through April 27, 2010, when the April 30, 2010, Pu compliance value is calculated (including the analytical result for the composite sample currently being collected), it is anticipated that the 12-month rolling average value will exceed the Table 1 standard for Pu (0.15 picocuries per liter [pCi/L]). This is because even if the continuous flow-paced sample currently being collected has no detectable Pu, the volume-weighted 12-month rolling average for the end of April 2010 would be approximately 0.16 pCi/L, which is slightly above the Table 1 standard.

So far this calendar year (2010), four composite samples have been collected at SW027, as shown in the following table:

Date - Time start	Date - Time end	Pu result
1/13/10 - 11:11	3/29/10 - 11:55	0.122
3/29/10 - 11:55	4/23/10 - 11:11	0.300
4/23/10 - 11:11	4/23/10 - 19:12	0.294
4/23/10 - 19:12	4/27/10 - 12:07	0.029
4/27/10 - 12:07	continuing	N/A

The site received approximately 2.8 inches of rain from April 21 to 25, 2010. Most of the runoff was on April 23, 2010, as illustrated by the short period it took to collect the composite flow-paced sample started at 11:11 a.m. on that date.

**Discussion:** The 12-month rolling average for April, 2010 for Pu at SW027 cannot be formally calculated until the sample currently being collected is analyzed. If the calculated result exceeds the Table 1 standard, a reportable condition under RFLMA Attachment 2, Section 6.0, Action Determinations, is triggered. A reportable condition requires informing CDPHE and EPA within 15 days of receiving the validated data. Validation of the results through the April 27, 2010, sampling was completed on June 4, 2010. However, the SW027 composite sample currently being collected will not be validated until after the sample has been collected and analyzed; thus, the reportable condition will not be formally identified until that time.

Scott Surovchak informed Carl Spreng of the data evaluation based on the unvalidated sample results as of June 2, 2010, which included samples through the April 27, 2010, continuous flow-paced sampling. George Squibb summarized this data evaluation at the June 7, 2010, Rocky Flats Stewardship Council meeting, which Vera Moritz, Carl Spreng, and the Rocky Flats Stewardship Council representatives of the local communities attended.

On June 22, 2010, John Boylan and Rick DiSalvo met with Carl Spreng to provide the status of the steps taken to date and to discuss and next steps, as summarized below. Rick DiSalvo and Vera Moritz also toured the SW027 location on June 22, 2010, to view the conditions in the area and discuss the status of the sampling and evaluation. No flow was observed on that date.

The heavy runoff in late April 2010 likely mobilized low levels of residual contamination and impacted the surface water measured at SW027. The SW027 drainage includes the former 903 Pad/Lip area, which was remediated prior to closure. The 903 Pad area was revegetated in 2004, with the addition of several inches of soil followed by reseeding. Low levels of residual surface soil Pu contamination remains south of the former 903 Pad/Lip area and generally north of the eastern reach of the SID and in the SID sediment.

The fate and transport of residual contamination is evaluated in the June 2006 *RCRA Facility Investigation-Remedial Investigation/Corrective Measures Study – Feasibility Study Report for the Rocky Flats Environmental Technology Site (RI/FS)*. The RI/FS concluded that while erosional transport of soil and sediment will continue to impact surface water in this area, the remedial actions, land configuration, and revegetation in the area will reduce runoff volumes, peak discharge rates, and soil transport, thereby resulting in an overall improvement in water quality. Furthermore, erosion of

surface soils with residual contamination below the 50 pCi/g soil action level for Pu can result in exceedances of the 0.15 pCi/L RFLMA Table 1 surface water standard.

Reduced volumes of runoff predicted for the SID after closure has been confirmed through continuous flow measurement. No flow paced samples were collected at SW027 for calendar years 2006 and 2008 since no flow occurred. Also, post-closure erosion controls and revegetation have reduced soil transport, and in calendar years 2007 and 2009, when there was flow at SW027, the 12-month rolling averages for Pu during both years were below the RFMLA standard.

**Steps taken and next steps:** On June 7 and 8, 2010, Rocky Flats personnel walked the SID drainage area to look for physical indications that a source other than the expected soil erosion process may be affecting water quality. The personnel identified several areas of ground surface where additional revegetation could improve soil cover. Steps to improve vegetation cover would take time to be effective but will be implemented this summer.

Site personnel also noted several areas where additional localized erosion-control best management practices, such as installing erosion matting and wattles, could help minimize erosion and promote vegetation cover. Site personnel are evaluating approaches to installing such erosion controls if they would prove worthwhile.

The SID channel is covered with rip rap, dense vegetation, and/or vegetation debris, limiting movement of sediment within the SID. Site personnel are evaluating where additional erosion controls, such as permanent erosion matting, might be used for localized areas in the SID, and the approach to installing these items if recommended.

Carl Spreng suggested that grab samples might be collected at locations in the SID when precipitation causes flow there. The samples could show if a localized source of soil contamination was impacting the SID. However, collecting samples under such conditions would present a number of logistical problems. Rocky Flats personnel would have to collect the grab samples in the hazardous terrain around and in the SID when conditions are wet and slippery. If the precipitation event were associated with a thunderstorm (likely during the normally dry summer months), the window of opportunity would be limited, as site outdoor activities are prohibited until 30 minutes after lightning is no longer in the vicinity. It was agreed that this suggestion would not be implemented.

Gaging station GS51 has continued to be operated since closure in a small ditch that is a tributary to the SID, approximately 2,300 feet upstream of SW027. The drainage basin for GS51 is about 16 acres, and the drainage basin for SW027 (which includes the GS51 drainage basin) is about 178 acres. As at SW027, flows are present at GS51 intermittently when there is heavy precipitation or snowmelt. This location contributes about 10 to 12 percent of volume at SW027 when flowing. GS51 is equipped with a flow-paced sampler, and the samples are analyzed for total Pu and Am (and total suspended solids when the composite sample is collected within holding times for total suspended solid analysis). Site personnel are reviewing the results from GS51 to evaluate whether this location indicates a source of Pu residual contamination that could significantly impact water quality at SW027.

If the flow-paced sample currently being collected at SW027 is not large enough for Pu and Am analyses by the end of September 2010 (which is near the end of the 6-month holding time for these

analytes), the RFLMA parties will consider whether to perform the analyses from the then-existing partial volume or to extend the sample collection period beyond the formal hold time.

Pre-discharge sampling of Pond C-2 is planned for early July 2010.

**Report:** DOE will submit to CDPHE a report of completion of the steps presented above by August 31, 2010. (This will allow time for the Pond C-2 analysis results to be received.) DOE will include any recommendations and a schedule for additional actions beyond the revegetation and erosion controls already discussed and planned. Although the elevated Pu level at SW027 is not yet a reportable condition, pursuant to RFLMA Attachment 2, Section 6.0, CDPHE will consult with EPA regarding final mitigating actions for reportable conditions, if any.

**Closeout of the Contact Record:** This Contact Record will be closed out when the completion report is submitted to CDPHE.

**Resolution:** Carl Spreng, CDPHE, approved the summary of the consultation provided by this Contact Record and the steps for the evaluation.

**Contact Record Prepared by:** Rick DiSalvo

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**Distribution:**

Carl Spreng, CDPHE

Scott Surovchak, DOE

Linda Kaiser, Stoller

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