
Overview of the First Quarter 2009 Surveillance and Maintenance Report for the LM Rocky Flats Site



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Surface Water Monitoring and Operations



First Quarter 2009



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Pond Operations – First Quarter 2009

- Terminal Pond Discharges:
 - None
- Transfers:
 - None
- Pond Levels:
 - As of April 1, 2009, Ponds A-3, A-4, B-5, and C-2 and the Landfill Pond were holding approximately 15.0 MG (15.2 percent of capacity).



August 10, 2009,
Pond Levels

Landfill (21.3 percent)
A-3 (14.8 percent)
A-4 (32.8 percent)
B-5 (20.1 percent)
C-2 (12.1 percent)

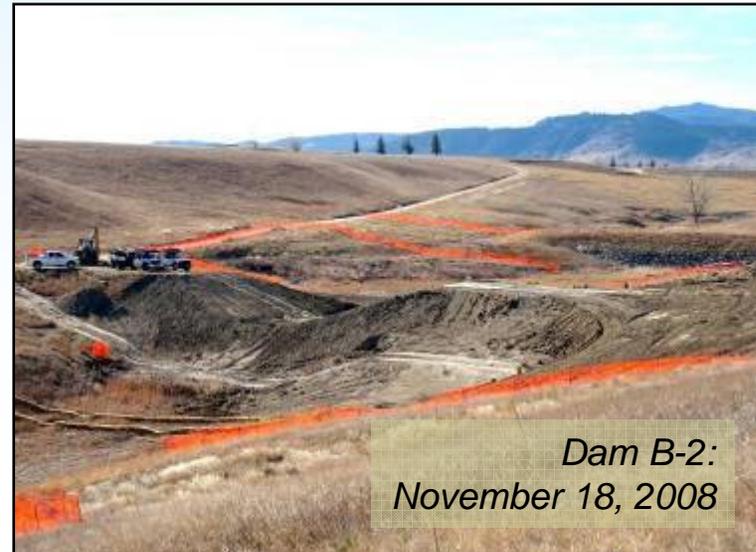


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Dam Breach Phase 1

- Construction at Dams A-1 and A-2 completed February 10, 2009.
- Construction at Dams B-1, B-2, B-3, and B-4 completed February 19, 2009.
- All erosion controls installed and revegetation completed March 5, 2009.



*Dam B-2:
November 18, 2008*



*Dam B-2:
March 2, 2009*



Hydrologic Data – First Quarter 2009

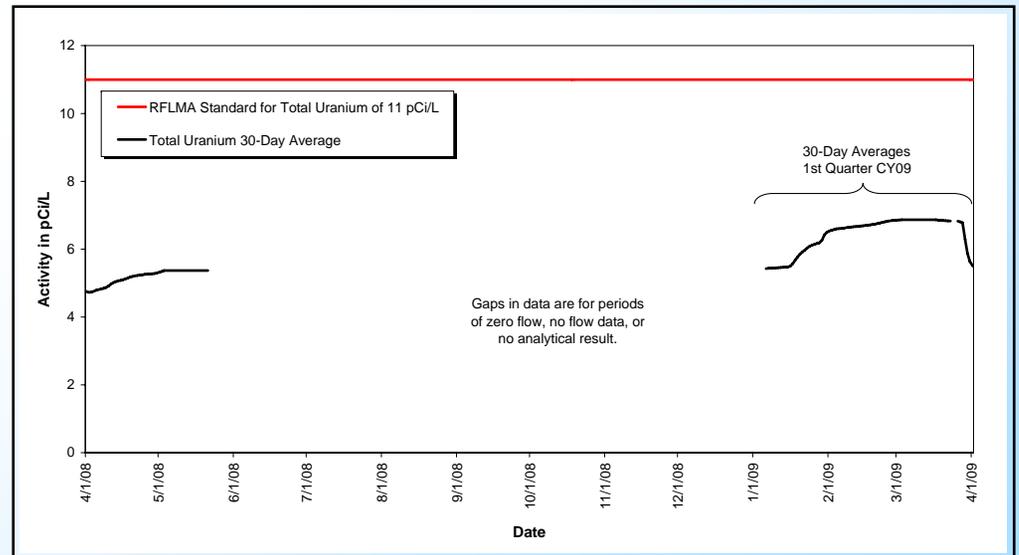
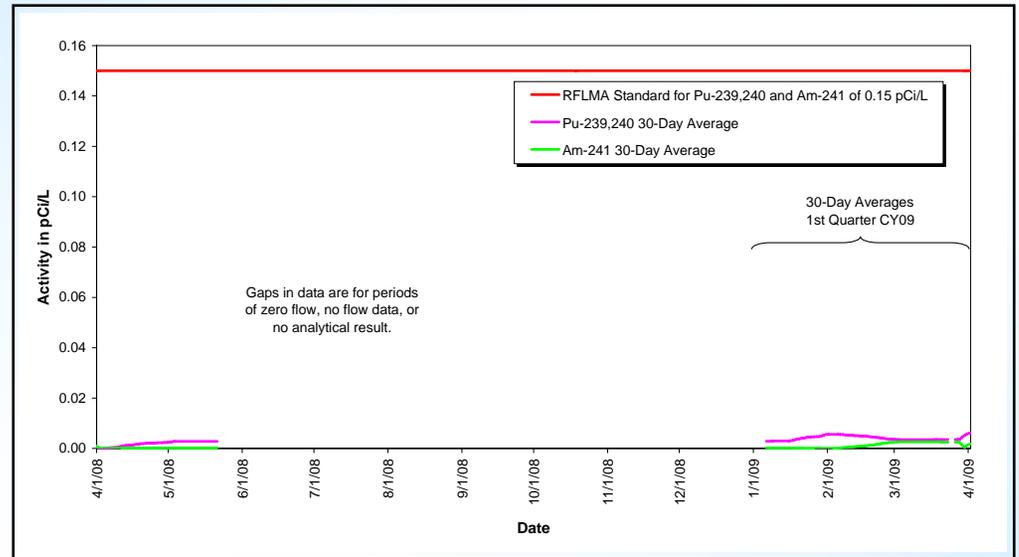
- Precipitation:
 - 0.45” total precipitation
 - 35 percent of WY93-08 average
- Flow rates (percentage of average):
 - GS01 (13 percent)
 - GS03 (no flow)
 - GS10 (15 percent)
 - SW027 (no flow)
 - SW093 (14 percent)



POC GS01

- Plutonium and Americium

- Total Uranium



POC GS03

- Plutonium and Americium

- Total Uranium and Nitrate + Nitrite as Nitrogen

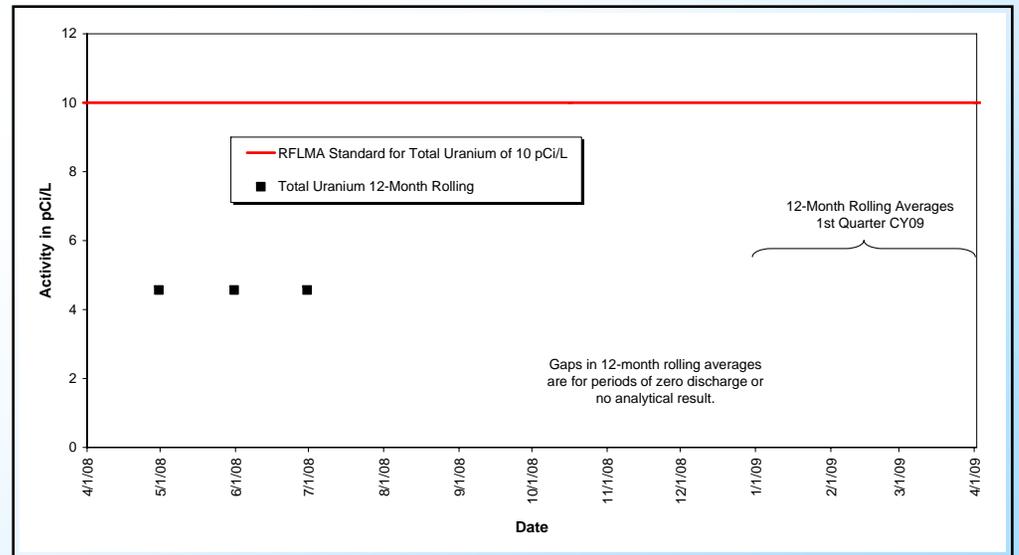
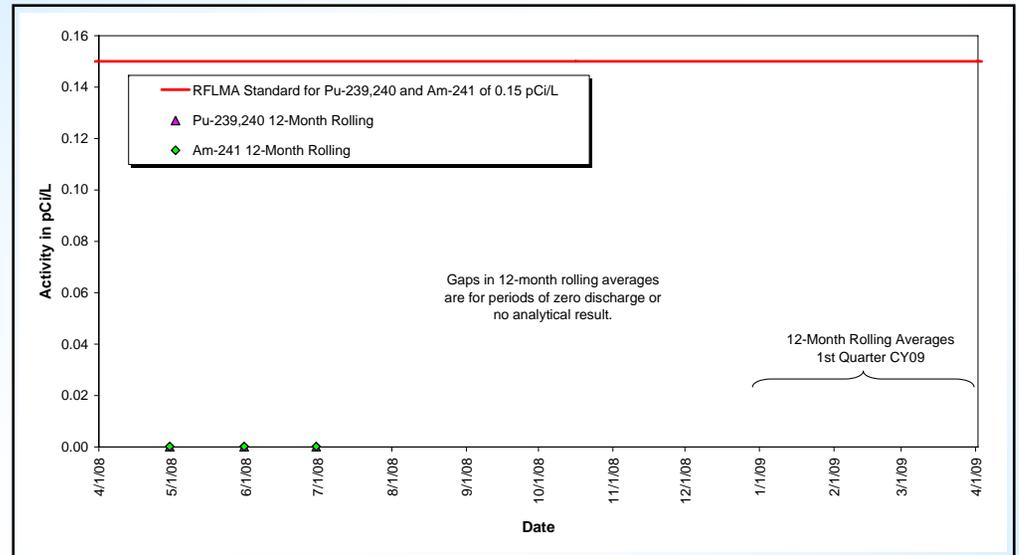
No flow at GS03 during the last 12 months.



POC GS08

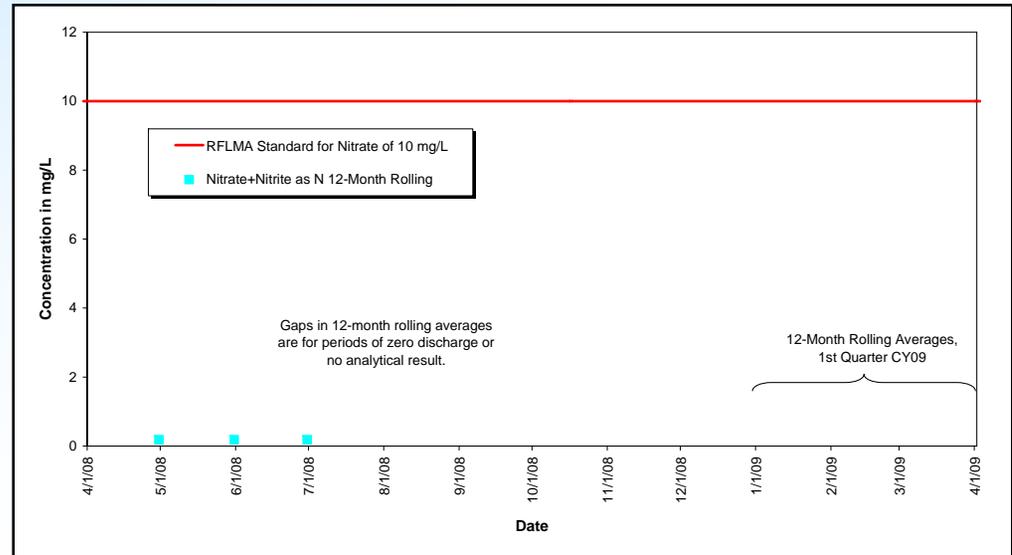
- Plutonium and Americium

- Total Uranium



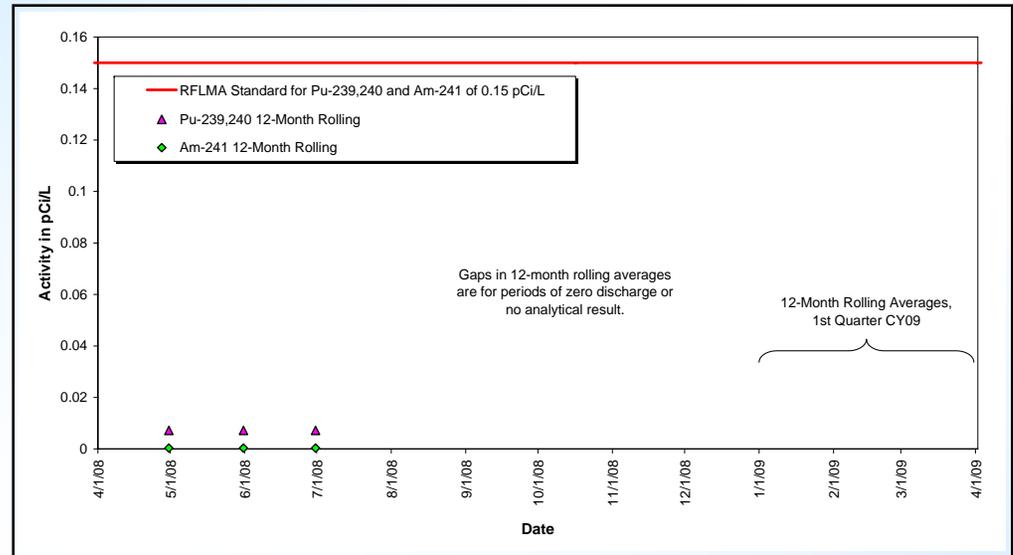
POC GS08

- Nitrate + Nitrite as Nitrogen

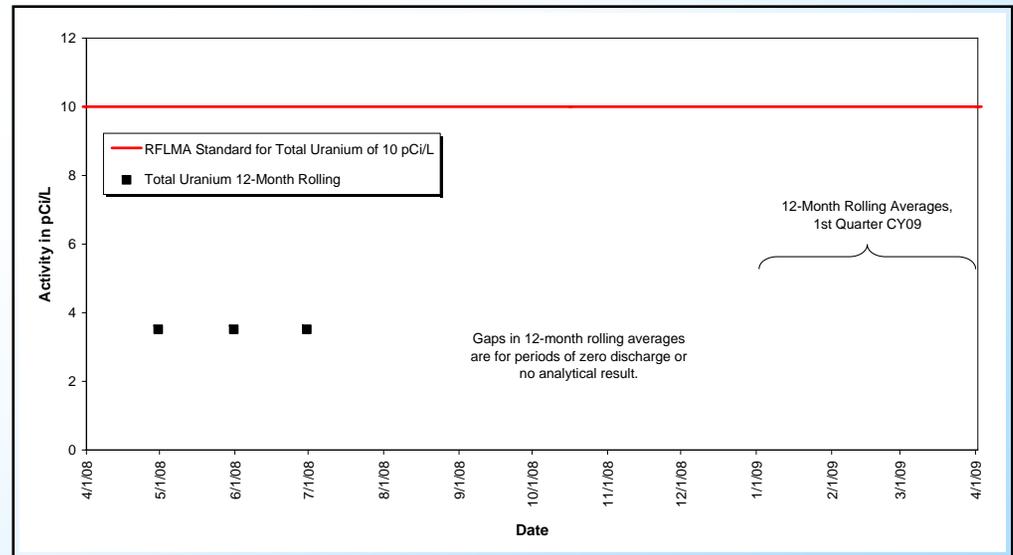


POC GS11

- Plutonium and Americium

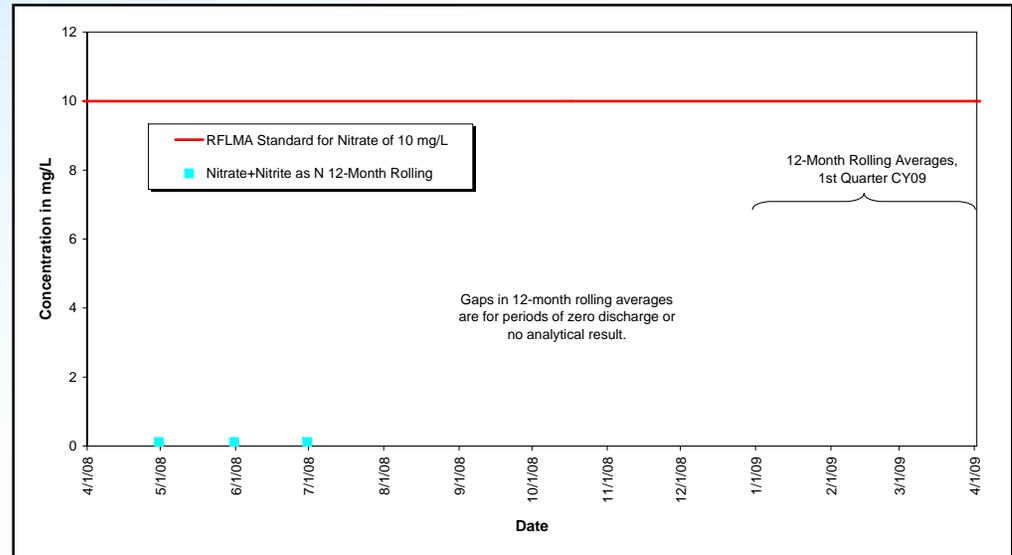


- Total Uranium



POC GS11

- Nitrate + Nitrite as Nitrogen



POC GS31

- Plutonium and Americium

No Pond C-2 discharge during the last 12 months.

- Total Uranium



Point of Evaluation Monitoring – First Quarter 2009

- Water quality at all Points of Evaluation, except GS10, was below applicable standards.
 - Reportable values for total uranium at GS10 continue to be observed. Uranium concentrations are impacted by reduced surface runoff and elimination of imported water after closure resulting in higher groundwater contribution to the creek. Upgradient groundwater wells and GS10 water show predominantly naturally occurring uranium.



Performance Monitoring – First Quarter 2009 Original and Present Landfills

- **Original Landfill (OLF):** Surface water quality results during first quarter 2009 triggered monthly sampling for silver.
 - Silver was not detected in the first monthly sample collected during first quarter 2009; monthly sampling was discontinued.
- **Present Landfill (PLF):** Surface water quality results triggered monthly sampling for vinyl chloride, selenium, and silver.
 - These analytes were not detected in the first monthly sample; monthly sampling was discontinued.



Questions?



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RFLMA Monitoring

- All RCRA wells were monitored.
- Results will be evaluated in the 2009 annual report.



SPPTS Update

- Review: The SPPTS phased path forward consists of four phases:
 - Phase I: Collect additional contaminated groundwater and route it through treatment cells.
 - Status: Completed. Influent flow approximately doubled, influent concentrations of nitrate approximately 2 to 3 times higher, uranium approximately 1.5 times higher.
 - Phase II: Install new uranium treatment cell as first treatment step (future downstream nitrate treatment media will not be “rad waste”).
 - Status: Completed. Corresponding uranium treatment meeting goals.



SPPTS Update (continued)

- Phase III: Conduct pilot-scale studies to identify preferred nitrate treatment media.
 - Evaluating two pilot-scale cells: inert (plastic) media fed liquid carbon source and corn stover.
 - Status: Construction completed, studies ongoing.
 - Water storage sump developed leak, system automatically shut down.
 - Removed sump, revised Phase II plumbing so the cell acts as sump.
 - Seeing nitrate removal in both cells.
 - Concentrations at SPOUT (system effluent) have dropped sharply to below temporary modification (TM) (100 mg/L).



SPPTS Update (continued)

- Phase IV: Combine findings from Phase III (media) and flows measured since the completion of Phase I to design and construct a full-scale nitrate treatment cell.
 - Status: Will initiate following completion of Phase III in early FY 2010.



Questions?



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Update on WQCC Rulemaking

- DOE petition to revise uranium standard: hearing January 12, 2009.
 - WQCC revised uranium standard and deleted gross alpha/beta standard for Walnut Creek and Woman Creek (Big Dry Creek segments 4a, 4b, and 5), effective March 30, 2009.
 - Previous uranium standards were 10 pCi/L for Walnut Creek and 11 pCi/L for Woman Creek.
 - Based on 0.67 pCi/μg uranium conversion factor, 16.8 μg/L equates to 11.3 pCi/L.



Update on WQCC Rulemaking (continued)

- Triennial review South Platte River Basin: hearing June 8, 2009.
 - WQCC revised current arsenic standard (50 $\mu\text{g/L}$) to conform with new statewide water supply standard, effective January 10, 2010.
 - New standard will be 0.02 to 10 $\mu\text{g/L}$ (WQCC risk-based water consumption – EPA’s maximum contaminant level [MCL] for drinking water supply).
 - Water below MCL (based on 85th percentile of data) is considered in attainment with standard.
 - Water at Rocky Flats is in attainment with new standard.



Update on WQCC Rulemaking (continued)

- WQCC changed segment 4b recreation use classification from N (no recreation use) to P (potential recreation use) based on establishment of refuge outside of Central Operable Unit (COU), effective January 1, 2010.
 - E.coli standard will change from 630/100 ml to 205/100 ml.
 - Segment 5 retains N classification.
 - Portion of segment 4b now inside COU (from A-4 and B-5 terminal ponds to COU west boundary) will become segment 5.
 - Portion of segment 5 outside COU (North Walnut Creek west of COU boundary) will become segment 4b.



Update on WQCC Rulemaking (continued)

- DOE did not propose any extension/changes to expiring TMs.
 - Current Rocky Flats TMs (six VOCs, nitrate/nitrite) expire December 31, 2009.
- Changes to be incorporated in RFLMA Attachment 2, Table 1, Surface Water Standards, as part of planned Attachment 2 modification.



Annual Site (COU) Inspection – March 25, 2009

- Inspection and monitoring for evidence of significant erosion.
 - Conduct visual observation for precursors of significant erosion.
 - Evaluate proximity of any significant erosion to subsurface features.
- Inspect effectiveness of institutional controls (ICs).
 - Determine effectiveness by any evidence of violation of ICs and determine whether required signs are in place.
 - Verify that Environmental Covenant is in Administrative Record and on file with Jefferson County (verified March 31, 2009).
- Evidence of any adverse biological conditions observed during inspection.



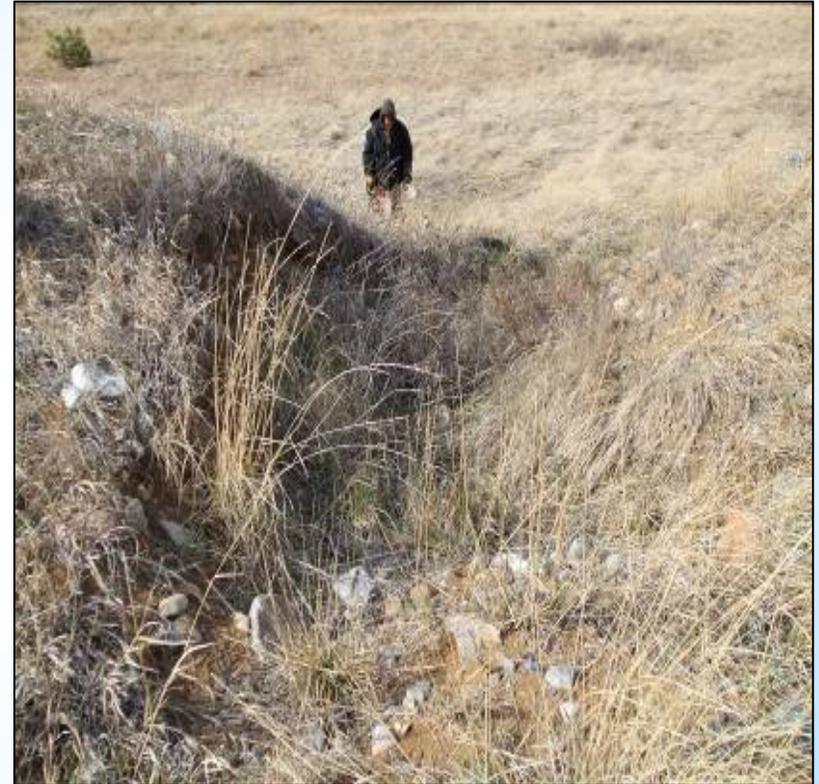
Annual Inspection (continued)

- COU divided into five areas:
 - A – Former 300 and 400 Areas
 - B – Former 700 and 991 Areas
 - C – Former 800 Area
 - D – Former 903 Pad and East Trenches Area
 - E – Former Ash Pits Area
- Landfills, treatment systems, and water monitoring stations inspected during the year on a routine basis.
- Team walked down surface of each area (A–E) to observe conditions.



Annual Inspection (continued)

- No significant erosion noted – minor holes, gullying, small animal evidence, and debris.
 - Very limited aerial extent – filled in.
 - Debris and trash collected or flagged for pick up.
- No adverse biological conditions noted.
- No evidence of IC violations.
- Signs in place.



Site Operations



First Quarter 2009



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Site Operations – First Quarter 2009

OLF – Inspections

- Monthly inspections at the OLF were completed on January 29, February 26, and March 26.
- A vegetation inspection was completed on March 9.



Site Operations – First Quarter 2009 (continued)

OLF – Seeps

- Seeps #4 and #7 were dry throughout the first quarter except for short durations following precipitation events.
- Seep #8 showed a surface flow of approximately 1 gpm throughout the first quarter.
- The West Perimeter Channel flowed at a rate of less than 1 gpm throughout the first quarter.



Site Operations – First Quarter 2009 (continued)

OLF – Settlement Monuments and Inclinometers

- Settlement monuments were surveyed on March 24; data are within the expected range per the OLF Monitoring and Maintenance Plan.
- Inclinometers were measured on February 3 and February 25. No significant displacement was observed.



Site Operations – First Quarter 2009 (continued)

PLF – Inspections and Surveys

- The quarterly inspection was completed on February 26.
- The vegetation inspection was completed on March 9.
- The settlement monument surveys were completed on January 9.



Site Operations – First Quarter 2009 (continued)

Non-Routine Inspections

- A special inspection of the site, including the landfills, was completed on March 30 following the melting of a snow event of approximately 16 inches. No problems were encountered at any of the locations inspected.



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