



Department of Energy  
Office of Legacy Management

OCT 27 2005

Gary Janosko, Chief  
U.S. Nuclear Regulatory Commission  
Fuel Cycle Facilities Branch  
Mail Stop T-8A33  
Washington, DC 20555-0001

Subject: Confirmatory Ground Water Sampling at the Shirley Basin South, Wyoming, UMTRCA  
Title II Disposal Site

Dear Mr. Janosko:

The Shirley Basin South, Wyoming, disposal site, was accepted by the U.S. Department of Energy (DOE) under the NRC general license on June 8, 2005. DOE conducted its first annual sampling event in July 2005. Recently completed validation of the analytical data indicates that alternate concentration limits (ACLs) were exceeded in two point-of-compliance (POC) wells.

In well 5-SC, the cadmium result of 0.093 milligrams per liter (mg/L) exceeded the ACL of 0.079 mg/L. The enclosed time-concentration plot for cadmium in the POC wells, which includes historical data provided by Petrotomics Company, shows that cadmium exceeded the ACL as recently as 2001. The 2005 result is within the range of historical measurements and may not be anomalous.

In well 5-DC, the radium-228 result of 40.5 picocuries per liter (pCi/L) exceeded the ACL of 25.7 pCi/L. The enclosed time-concentration plot for radium-228 in the POC wells, which includes historical data provided by Petrotomics, shows that the 2005 result may be anomalous due to some undetermined reason.

In accordance with Section 3.7 of the Long-Term Surveillance Plan (LTSP) for the site, confirmatory sampling will be conducted for cadmium and radium-228 at the respective wells. Weather permitting, sampling will be conducted in November 2005. Results will be provided to NRC as soon as they are validated. If they verify ACLs are exceeded, DOE will initiate development of an evaluative monitoring plan as stipulated in the LTSP.

If you have any questions, please call me at (970) 248-6048.

Sincerely,

Thomas C. Pauling  
Site Manager

Enclosures (2)

19901 Germantown Road, Germantown, MD 20874

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

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REPLY TO: Grand Junction Office

2597 B 3/4 Road, Grand Junction, CO 81503

626 Cochran's Mill Road, P.O. Box 10940, Pittsburgh, PA 15236

cc w/enclosures:

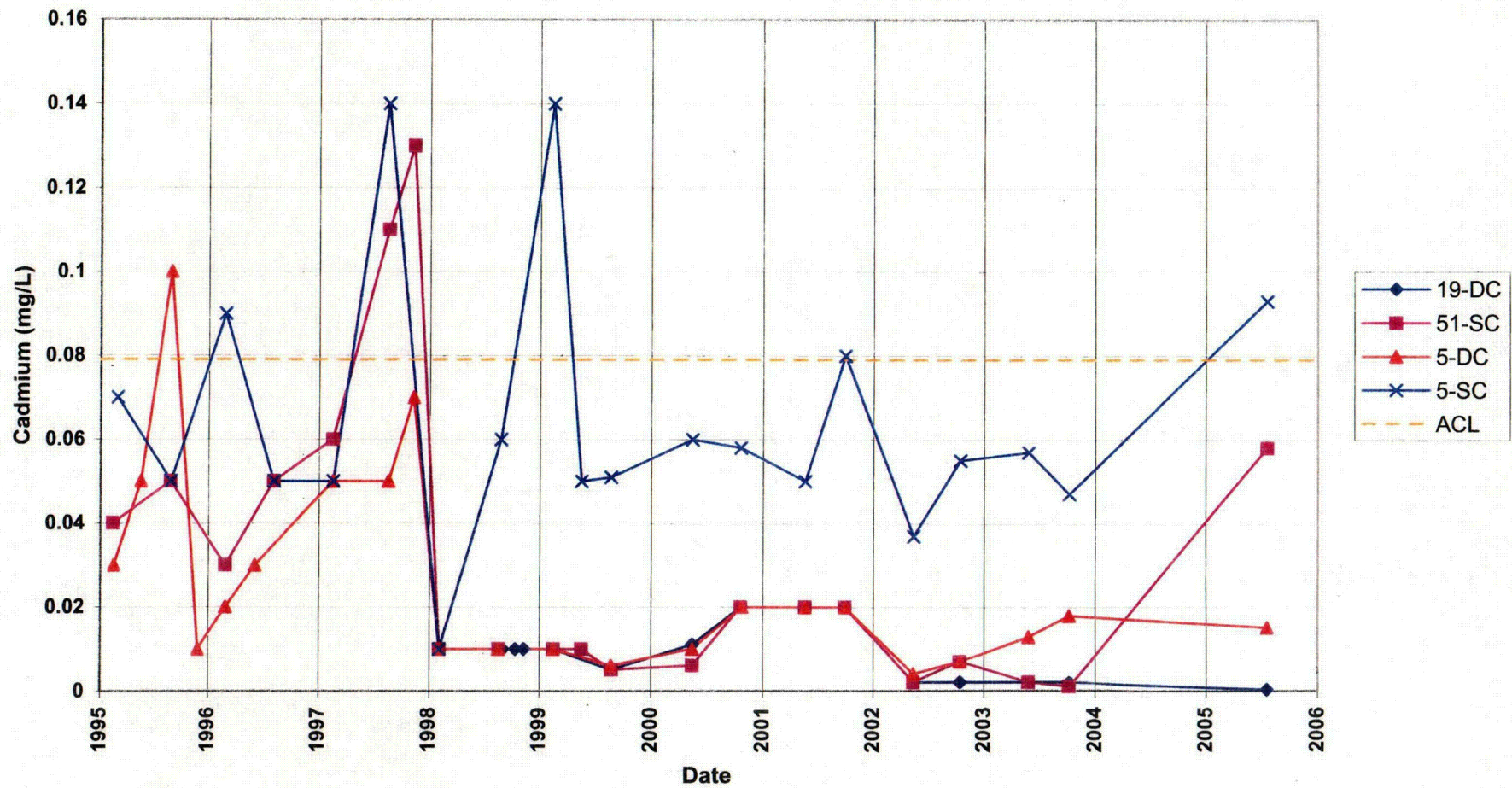
M. Thiesse, Wyoming Department of Environmental Quality

D. Johnson, Stoller

File: SBS 410.02 (D. Roberts)

Pauling/Shirley basin s/nrc Ghost Letter 10-13-05.doc

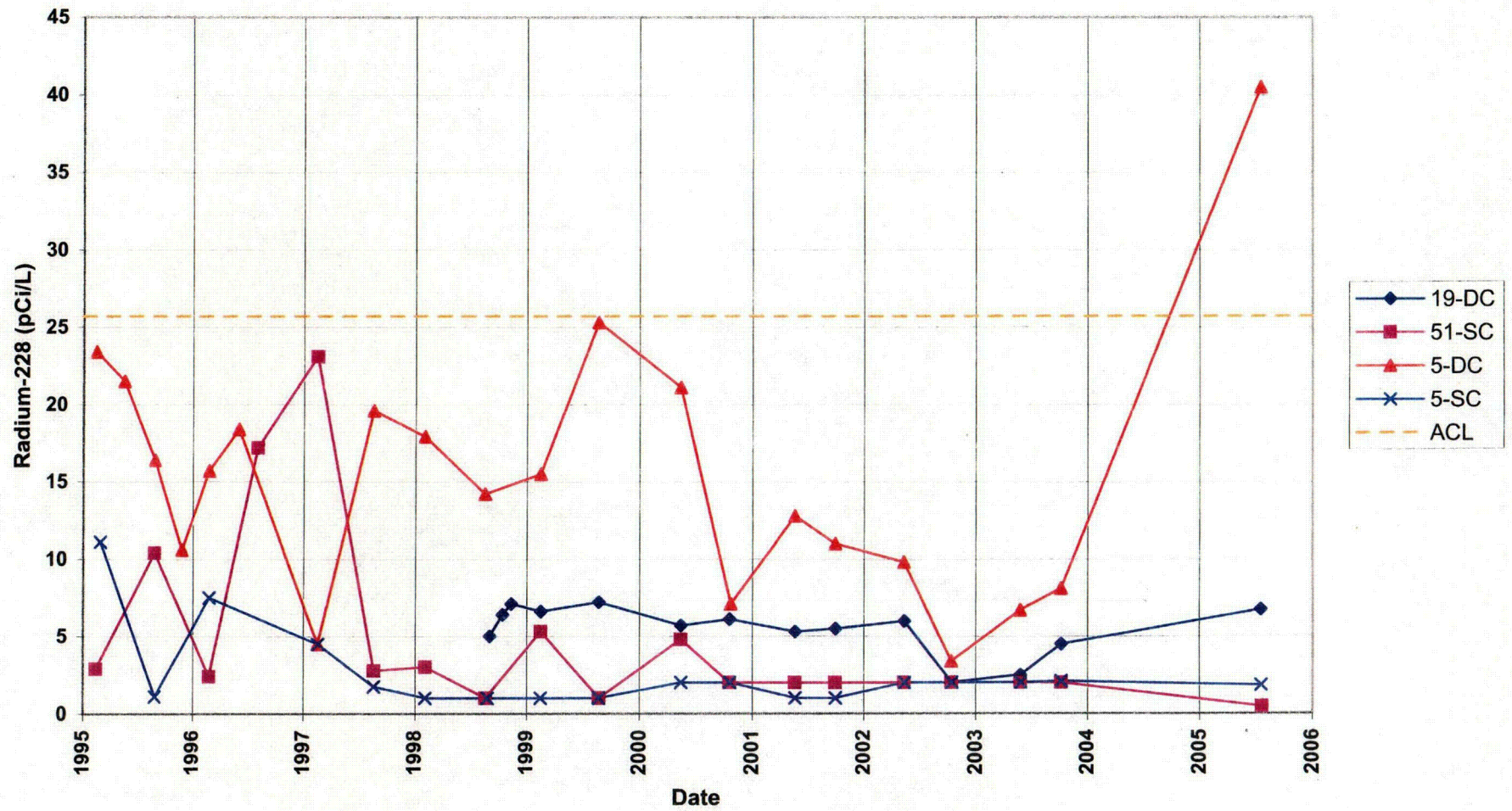
Shirley Basin South Disposal Site  
Point of Compliance Wells  
Cadmium Concentration  
ACL = 0.079 mg/L



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Shirley Basin South Disposal Site  
Point of Compliance Wells  
Radium-228 Concentration  
ACL = 25.7 pCi/L



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