

AUGUST 2011 AREA AIR AND DUST MONITORING REPORT - REVISION 1.0
BANNISTER FEDERAL COMPLEX
GENERAL SERVICES ADMINISTRATION
1500 EAST BANNISTER ROAD
KANSAS CITY, MISSOURI 64131
TERRACON PROJECT NUMBER: 02107144
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The following is a brief synopsis of this report. **For a complete copy of this entire report please contact:**

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4th Quarter BE-U-Y Report - Rev 1.0

Conclusions

The August 2011 air monitoring results do not indicate concentrations of beryllium, yttrium at concentrations above the laboratory reporting limits. When analyzed by NIOSH Method 7300 modified.

The laboratory reporting limits for beryllium did not exceed the carcinogenic or noncarcinogenic RSLs for industrial air. The laboratory reporting limits for uranium did not exceed the non-carcinogenic RSL for industrial air.

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In addition, the laboratory reporting limits for uranium, are within the EPA's target cancer risk range of 1×10^{-6} to 1×10^{-4} , which are based on uranium's radiological activity.

The August 2011 surface dust monitoring results do not indicate concentrations of uranium at concentrations above the laboratory reporting limits. Beryllium was detected in three of the dust samples collected (B1SB-Q25, B1SB-V19, and B1F1-F25) at concentrations of 0.29, 0.63, and 1.0 milligrams per kilogram (mg/kg), respectively. The identified beryllium concentrations do not exceed the EPA Industrial RSLs of 2,000 mg/kg.

The laboratory reporting limits for beryllium do not exceed its industrial soil RSL. The laboratory reporting limits for uranium do not exceed its industrial air RSL, which is based on non-cancer health effects.

In addition, the laboratory reporting limits for uranium, are within the EPA's target cancer risk range of 1×10^{-6} to 1×10^{-4} , which are based on uranium's radiological activity.

As previously described, building dust typically contains soil from the outside environment, and detections of naturally occurring trace metals such as Be and Y were considered in interpretation of the results. The Be and Y concentrations detected in the Building 1 and 2 bulk dust samples as identified in Table 1, were consistent with Be and Y concentrations typically found in Missouri soils.

Project-required reporting limits for total uranium in air and dust samples were selected during development of the Work Plan/QAPP based on the RSLs for industrial air and soil (reporting levels below RSLs). However, the currently published RSL tables do not include a carcinogenic (cancer causing) screening level for uranium. Thus, comparing analytical results to the RSLs alone would not provide a screening of cancer risk associated with uranium's radioactivity. EPA provides risk-based screening levels for radionuclides in their publication, *Radionuclide Toxicity and Preliminary Remediation Goals for Superfund* tables (EPA 2007) and in risk assessment guidance applicable to radionuclides (EPA 2000, 2001). This information was used by GSA to develop total uranium concentrations (Site Specific RSLs – SRSLs) in air and dust, which are based on the calculation of risk associated with individual uranium isotopes (U-234, U-235, and U-238 – radiological activity) that correspond to an acceptable cancer risk range of 1×10^{-6} to 1×10^{-4} (EPA 1990).

Uranium was not detected in the air or dust samples collected during the August 2011 sampling event. Uranium detection limits for August 2011 air and dust samples were below their respective non-cancer site-specific screening level. Comparison of the same detection limits for the August 2011 air and dust samples show that, the typical detection limit for total uranium in dust (approximately 57 milligrams per kilogram [mg/kg]) was less

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than total uranium concentrations corresponding to an acceptable cancer risk range and the typical detection limit for total uranium in air (approximately 7.3×10^{-5} milligrams per cubic meter [mg/m³]) was within the concentration range corresponding to an acceptable

cancer risk range.

Based on data collected during the August 2011 air and surface dust monitoring event, the levels of beryllium and uranium in air and surface dust do not appear to pose unacceptable health risks (cancer risks greater than 1×10^{-4} or non-cancer hazard index greater than 1) to current building occupants.

Contaminant migrations may exist through perforations in the firewall separating GSA and DOE controlled spaces and outdoor intakes of GSA ventilation systems. However, based on samples collected during the August 2011 air and surface dust monitoring event, it does not appear that contaminants, if present in the DOE controlled spaces, are migrating to the GSA controlled spaces at concentrations above levels that would pose unacceptable health risks (cancer risks greater than 1×10^{-4} or non-cancer hazard index greater than 1).