

Abstract of Meeting Paper

[Society for Risk Analysis](#) 1997 Annual Meeting

Comparison of State and Federal Soil Action Levels for Trivalent and Hexavalent Chromium [Cr(III) and Cr(VI)]. *E. C. Shay and D. M. Proctor, ChemRisk Division of McLaren/Hart, 8500 Brooktree Road, Suite 300, Wexford, PA 15090*

The USEPA Brownfields Action Agenda (USEPA, 1996) has prompted the development or adoption of soil action levels by state environmental agencies to facilitate and expedite reclamation of idle industrial properties. A survey of Cr(VI) and Cr(III) action levels was performed to evaluate the consistency and variability between the action levels from different state and federal agencies. Currently, 42 states and all 10 EPA regions utilize some type of action level for chromium in soil. All agencies maintain that action levels may be used as cleanup levels, or that site-specific risk assessment may be used *in lieu* of the non-site specific action levels. Although agencies typically utilize the USEPA risk assessment model described in the Soil Screening Level Guidance (USEPA, 1996), or some approximation of it, large variation in the values exists. State-utilized residential and non-residential Cr(III) action levels range from 200 mg/kg to 66,000 mg/kg, and 2,500 mg/kg to >1,000,000 mg/kg, respectively. For Cr(VI), residential and non-residential action levels ranged from 0.2 mg/kg to 2,000 mg/kg, and 64 mg/kg to 71,000 mg/kg, respectively. This high degree of variation can mainly be attributed to the different exposure pathways upon which these action levels are based (*e.g.* soil ingestion versus inhalation of particulates). However, even when grouped by exposure pathway, noticeable variation in action level concentrations still exists. The use of atypical input parameters by several agencies appears to be the secondary cause of variation in the action levels.