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To: Peter Stevenson/EPR/R8/USEPA/US@EPA
cc:
Subject: Recommended air levels for Pb, As, and Cd

ADMINISTRATIVE RECORD

Pete,

As we discussed earlier today, I recommend using the NAAQS for lead (1.5 ug/M3) as a reference point for public exposures during remediation of yards at the VBI-70 site. The NAAQS are measured as annual quarterly averages so a few day exposure to levels in this range is not associated with significant risk.

We recently participated with the State of Colorado in the development of chronic exposure limits for Cadmium relevant to State regulation of the Globeville smelter. The risk-based level for chronic cadmium exposure (peer reviewed in Cincinnati) was set at 3E-4 mg/M3. The health endpoint associated with this exposure level is increased urinary protein which is an indication of minor kidney dysfunction. I recommend multiplying this chronic exposure level by 10 to adjust for short term exposure. This results in a short term exposure recommendation of 3E-3 mg/M3 or 3 ug/M3.

Finally, exposure levels for arsenic inhalation are very low. The air concentration associated with a 10-4 cancer risk for chronic (lifetime) exposure is 2E-2 ug/M3. I recommend that short term exposure not exceed an approximate 1E-3 cancer risk (1/1000) which would set the recommended exposure at an air level of 0.2 ug/M3.

These levels can be monitored using TSP as a surrogate and assuming that soil metal concentrations are similar to air concentrations when dust is entrained. I would be glad to work further with you on this if you have any questions or require further information. But this should get you started.

Chris