General

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Mr. David Cobrain
Hazardous Waste Bureau
2905 Rodeo Park Dr. E/Bldg 1
Santa Fe, NM 87505

RE: Draft Screening Levels for Comparison of Surface Contamination Evaluated Using Swipe Samples.

Dear Mr. Cobrain:

As we have discussed, facilities (Los Alamos and Ft. Wingate) have been collecting swipe samples of building surfaces to evaluate levels of residual contamination. Accepted risk-based screening levels are not currently readily available for the assessment of swipe results Existing risk-based screening levels are based on bulk concentration. Therefore, the question becomes how to determine if residual levels of contamination found on a building surface are within acceptable risk-based levels.

In order to help address this issue, some draft screening levels were developed for the industrial worker and child resident scenarios for a select few example constituents. Please note that these are draft and that additional scenarios (adult resident) and/or constituents may be added as necessary.

The primary guidance applied was the *Human Health Risk Evaluation of Structural Surfaces Contaminated with Metals* (Department of Toxic Substances Control, California Environmental Protection Agency) along with a comparison to the paper *Derivation of Risk Based Wipe Surface Screening Levels of Industrial Scenarios* (May, et.al, 2001). The significant difference between the two methodologies outlined in the documents is the lack of an inhalation scenario in the DTSC methodology. Given that the structures of immediate concern will have been treated (presumably via pressure washing), it has been assumed that the inhalation risk would be negligible, and therefore was not included in the attached calculations. However, if this assumption is not appropriate i.e. treatment thru a sandblasting, scarifying or similar process, then the screening levels should be updated to include inhalation. For example, if hexavalent chromium is a concern, the inhalation pathway should be included in determining the total screening level for swipes.

The table below provides a summary of the draft screening levels developed for swipe sampling for the industrial worker and child resident scenarios. These data are from Table 7 of the attached spreadsheet.

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Draft Surface Screening Levels for Evaluation of Building Surface Swipe Samples		
Chemical	**Industrial Wipe Concentration (µg/100cm^2)**	**Child Resident Wipe Concentration (µg/100cm^2)**
Arsenic	4.95E-01	1.19E-02
Barium	6.56E+03	6.61E+02
Cadmium	1.46E+02	3.08E+01
Chromium III	4.92E+04	4.96E+03
Chromium VI	6.06E+01	7.52E-01
Copper	1.31E+03	1.32E+02
Selenium	1.64E+02	1.65E+01
Silver	1.64E+02	1.65E+01
Zinc	9.84E+03	9.92E+02
2,4-DNT	8.67E-01	6.68E-03
HMX	2.06E+03	2.67E+02
RDX	5.38E+00	4.32E-02
TNT	1.21E+01	6.03E-01
Acenaphthene	1.27E+03	2.91E+01
Benzo(a)pyrene	1.05E-01	2.69E-03
Aroclor 1254	3.08E-01	3.44E-03
DDT	1.22E+01	1.76E-02

Again, these are preliminary data to be used to determine if this methodology may be appropriate for further development. If the building surfaces are significantly porous or rough, then swipe sample may not provide the most representative data and concrete cores may need to be collected. Results of concrete cores may be compared to screening levels for soil to assess residual risk.

If you or any of your staff have questions, please contact me directly at (801) 451-2864 or via email at paigewalton@msn.com.

Thank you,

Paige Walton
AQS Senior Scientist and Project Lead

Enclosure

cc: Joel Workman, AQS (electronic)