1427 A SURVEY OF BLOOD LEAD LEVELS IN HOUSEHOLD PETS.

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Lead is considered to be a major environmental health hazard, particularly for children. Household pets have the potential to be used as sentinels for monitoring lead contamination from environmental sources. Pets may closely parallel children, having similar habits of mouthing objects, consuming non-food items, such as paint chips, house dust and soil. A pilot study was undertaken to determine the blood lead values in household pets (dogs and cats) from rural Macon county, Alabama. Blood samples were collected from 45 household pets during the summers of 1995 and 1996 and analyzed for lead contents by atomic absorption spectrophotometry. The mean blood lead value in dogs was 6.36 μg/dl with a range of 2.0 – 39.00 μg/dl. Male dogs had a mean blood lead levels of 5.70 μg/dl with a range of 2.00 – 23.00 μg/dl and female dogs averaged 7.24 μg/dl with a range of 2.00 – 39.00 μg/dl. Young dogs (0.23 to 2.67 years old) had blood lead concentrations of 6.45 μg/dl while the old dogs (3 to 13 years old) had an average concentration of 6.80 μg/dl. The blood lead concentrations between male vs. female and young vs. old dogs did not show any statistically significant difference. Mean blood lead concentrations in cats was 2.32 μg/dl with a range of 1.0 and 11.00 μg/dl. These data suggest that pets may be used for determining and assessing environmental hazards and monitoring environmental quality.

1428 AMBIENT LEVELS OF METALS IN SOILS AT US NAVY BASES IN CALIFORNIA.

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Small numbers of background samples can severely limit a risk assessor's ability to identify metals in soil to be eliminated as constituents of potential concern (COPC). We present results for 28 metals in soils from 10 US Navy bases where judgmentally designated background samples of soil are pooled with samples from potentially contaminated areas. Plots of cumulative probability of pooled data vs. concentration permit separation of contaminated from uncontaminated populations, even when non-native fill materials are present. Despite problems with varying detection limits, the larger sample sizes yield robust descriptions of ambient conditions. Geochemical mechanisms can broaden the statistically defined ambient distributions. At a base with harbor dredge spoil as fill, cumulative probability of Cu in soil shows two populations. Plotting Cu vs Fe identifies the lower, while Cu vs organic carbon in harbor sediments identifies the higher as organo-Cu complexes. The 95th quantile for Cu in soil increases >10-fold by combining the two populations. Once ambient conditions were described with a large data set, many techniques become available for making comparisons. Representative quantiles of the ambient set may be estimated parametrically or with rank statistics. COPC may be selected using tests of means at waste sites vs. the ambient set (*e.g.* Wilcoxon rank-sum test Quantile tests). Other tests can be used when frequency of detection is low.

1429 DETERMINATION OF A SAFE SOIL ARSENIC CONTENT.

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Arsenic is found naturally-occurring in soils and it has been used for agricultural, medical and forensic purposes. Arsenic toxicity observed in exposed animals usually results from dips, herbicides and defoliants, and toxicity in humans has been documented in poisoning practices. Epidemiological studies have indicated that arsenic caused skin, liver, lung, kidney and bladder cancers in humans. In the U.S., studies showed soil arsenic concentrations of 1 to 20 ppm (mean 7.5 ppm) and the eastern region had 0.1 to 73 ppm (mean 4.8 ± 2.56 ppm). In Florida, surface water showed arsenic levels <20 ppb whereas sediments showed arsenic levels <10 ppm with most values <5 ppm. Annual and total daily arsenic doses ingested and inhaled from soil were calculated using the worst-case scenario (10 ppm) detected in Florida. The estimated annual oral dose of arsenic for a child in Florida is 1.3×10^{-4} mg/kg-day and total daily dose is 2×10^{-3} mg/day. The estmated annual inhalation dose of arsenic is 1.8×10^{-9} mg/kg-day and total daily dose is 2.8×10^{-8} mg/day. The estimated annual oral and inhalation doses when multiplied by the U.S. Environmental Protection Agency (EPA) oral cancer slope factor resulted in total lifetime cancer risk attributable to arsenic in soil of 2.7×10^{-6} for oral exposure and 3.8×10^{-11} for inhalation exposure. The Agency for Toxic Substances and Disease Registry (ATSDR) estimated chronic oral No Observable Adverse Effect Level (NOAEL) for arsenic is 8×10^{-4} mg/kg-day and chronic oral Minimum Risk Level (MRL) is 3×10^{-4} mg/kg-day. Studies are needed to evaluate soil arsenic content and to determine any beneficial effects and potential health risks for exposed humans and animals.

1430 COMPARISON OF TWO SAMPLING METHODS FOR AMBIENT AIRBORNE CHROMIUM(VI) IN CALIFORNIA: IMPLICATIONS FOR RISK ASSESSMENT.

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Field studies were conducted to compare two sampling methods for measuring ambient air concentrations of hexavalent chromium [Cr(VI)] in California. The cellulose filter method employed by the California Air Resources Board (CARB) in a statewide monitoring program is compared to the American Society for Testing and Materials (ASTM) bicarbonate solution triple impinger collection system. Co-location sampling using these two techniques suggests that the cellulose filter method may understimate background airborn Cr(VI) levels by 4- to 7-fold compared to the ASTM impinger method. Ambient air Cr(VI) levels using the ASTM method were 2.6 ± 0.6 (range: 2.1 to 3.4) based on measurements at four locations in southern and central regions of California. These findings indicate that the current CARB sampling technique may substantially underestimate background exposures and risks of Cr(VI) relative to other air pollutants monitored in the valuable historical database created by CARB.

1431 THE AMOUNT AND PARTICLE SIZE OF SOIL INGESTED BY CHILDREN.

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This study assessed the hypothesis that one of the causes of intertracer variation in soil ingestion estimation was related to differences in soil tracer concentration by particle size. The study analyzed the tracer concentration in soil for children in the Anaconda, Montana soil ingestion study for the particle size fraction less than 250 um in diameter. Soil ingestion estimates for these children were recalculated based on the new soil concentration values and compared to previous findings when the soil concentrations were determined for soil particle size diameter of <2 mm. The results indicated that five tracers (Al, Si, Ti, Y, and Zr) did not have their soil concentrations changed by particle size. However, for three tracers (La Ce and Nd) the concentration increased by two- to four-fold with the smaller particle size. Recalculation of soil ingestion estimates indicates that the soil ingestion estimates of the five tracers not varying by particle size did not change while those of the remaining three tracers were decreased by approximately 60%. The revised calculations provide a substantial improvement in intertracer estimates of soil ignesiton and suggest that the children ingested soil of small particle size.

1432 THE MAXIMUM ALLOWABLE LEVEL FOR BISPHENOL A IN POTABLE WATER

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Direct additive use of bisphenol A was assessed by NSF International under ANSI/NSF Standard 61: Drinking Water System Components - Health Effects. NSF used data available in published literature to establish exposure limits under this consensus standard. Bisphenol A is a leachate from some epoxy materials used as, or in drinking water contact surfaces. The NSF evaluation of the toxicological data on bisphenol A lead to the establishment of a maximum allowable level (MAL) value for bisphenol A in potable water. In accordance with Standard 61, negative mutagenicity results from an Ames assay and *in vitro* chromosomal aberration assay supported the presence of bisphenol A at potable water concentrations of 10 ppb or less. A subchronic feeding study was conducted on both Fischer 344-rats and B6C3F1 mice to establish a dose range for a cancer bioassay. This study, in conjunction with data from a reproductive study with CD rats, a developmental study with CD rats and CD-1 mice and an oncogenicity study on Fischer 344 rats and