



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION IX**  
75 Hawthorne Street  
San Francisco, CA 94105

May 12, 2011

Mr. Rick Cooper, Field Manager  
Hollister Field Office  
Bureau of Land Management  
20 Hamilton Court  
Hollister, CA 95023

Dear Mr. Cooper:

EPA has reviewed the report, "Preliminary Analysis of the Asbestos Exposures Associated with Motorcycle Riding and Hiking in the Clear Creek Management Area (CCMA) San Benito County, California", that was prepared by the International Environmental Research Foundation (IERF) under contract to California State Parks Off-Highway Motor Vehicle Recreation Division. IERF conducted air sampling to determine asbestos exposures during recreational activities in CCMA and collected a total of 8 motorcycle riding samples (lead and trailing rider on two days with two riding runs per day), two hiker samples, one sample from the outside of a vehicle, two ambient air samples, and two "control" samples. The study was designed to compare airborne asbestos exposures with those reported in earlier CCMA studies, specifically Cooper et al, 1979, and U.S. EPA 2008. IERF sampling was conducted April 22 and 23, 2010.

EPA Comments:

- We were not able to do an in-depth analysis of the IERF results because the report does not include the information necessary to allow an independent judgment of how the samples were collected and analyzed or a check of the validity of the conclusions. For example, the report never states what method was used to analyze the samples, and what fiber definitions and counting rules were employed. This is basic information that is key to a study of asbestos exposures, and is one of many technical parameters that would typically be presented in such a report. In addition, the report is missing information that would permit a reviewer to examine the basis for the reported fiber concentrations, i.e. volume of air, flow rate, flow rate quality control, total time, and number of grids counted. There is also little information on the meteorological conditions under which the samples were collected. These are all critical parameters that are easily supplied, but conspicuous in their absence in the study.
- If the IERF results are taken at face value and compared to the exposure levels reported in U.S. EPA 2008, the values are consistent with those EPA found under similar

meteorological conditions and with similar riding positions. Our independent evaluation of the weather conditions under which the IERF samples were collected indicates that the conditions are most comparable to the EPA wet season sampling event. While IERF used two riders for the motorcycle sampling, it biased the sample collection by keeping a distance of 15 to 20 feet between riders and directing the trailing rider to avoid or minimize exposure to dust generated by the lead rider. The IERF results for both riders are therefore most comparable to the EPA lead rider data. The resulting correlation between the IERF samples and the lead rider data collected by EPA for the different weather conditions is represented graphically on the attachments to this letter. The IERF results are plotted on Figure 4 taken from the U.S. EPA 2008 report, and in Figure A with a different scale focusing on the low concentration range. The individual sample points show the similar concentrations between the EPA and IERF samples. Although not presented on the figures, the ambient air results found by IERF are also in the same range as previously reported for CCMA in this season, and are lower than the activity samples.

- The risk assessment assumptions used in the report do not reflect typical CCMA use patterns and result in a deceptively low risk estimation. The IERF report bases its assessment of risk on the exposure that a 30-year old rider would incur from riding at CCMA for five days in one year under wet conditions and without coming within 20 feet of another rider or encountering any sort of dust cloud. This use assumption is inconsistent with known CCMA use patterns and presents an exposure that is significantly less than what is typically reported. The PTI Human Health Risk Assessment, which was prepared for BLM in 1992, estimated that five visitor days a year was a reasonable exposure level, but, based on user surveys and BLM CCMA visitor information that indicated more frequent use, also included a high estimate of 12 off-road rides a year. These rides occur during wet, moist, and dry meteorological conditions and involve groups containing both lead and trailing riders and adults and children. In addition, user information has shown that these exposures happen each year for many years or decades. Preparing a risk estimation for a total lifetime exposure of five days of essentially single riding under wet conditions is misleading and does not reflect the risk experienced by most CCMA users.

The IERF report discounts the exposures of children. User surveys have shown that families are frequent visitors to CCMA and children ride the trails with their parents. The EPA study found that 64% of air samples collected at a child's breathing height contained more asbestos fibers than the paired adult sample. In addition, children are of special concern because a child's life expectancy exceeds the latency period for asbestos-related disease.

- The risk comparisons used by IERF in the study are incorrect and inappropriate to a risk assessment of recreational exposures of the general public. They also mislead a reader into believing that the exposures at CCMA do not present significant risk. The OSHA standard for asbestos is not a public health standard. It is designed to provide as much protection as is reasonably possible to healthy adults in a working environment with asbestos concentration air testing who are receiving regular medical monitoring for their

asbestos exposures. It is certainly not applicable to recreational exposures of the general public or children. In the preamble to the regulation, OSHA states that even for healthy adults “A significant risk remains at the PEL of 0.1 f/cc...”, but concludes that “...the operation-specific work practices mandated in the standard will be a most cost-effective means of assuring that significant risk is eliminated to the extent feasible.” Application of the U.S. EPA Integrated Risk Information System (IRIS) toxicity value for asbestos to the OSHA 0.1 f/cc standard finds that the exposure would result in excess lifetime cancers above the level that EPA considers to be acceptable. The IRIS toxicity value is the standard value that the U.S. EPA uses to assess exposures to asbestos and is designed to be protective of public health. The IRIS and the State of California Office of Environmental Health Hazard Assessment (OEHHA) asbestos toxicity values are the appropriate measures to be used to assess the risk of recreational exposures at CCMA. We have no comment on the Russian Federation “standard” cited in the IERF report and the World Health Organization background concentration of asbestos is not informative to the assessment of risk.

Overall, the IERF report appears to confirm the data from EPA’s wet season sampling event, and does not offer any technical or scientific information that would alter EPA’s risk evaluation of CCMA exposures. The conclusions of EPA’s 2008 Asbestos Exposure and Human Health Risk Assessment remain unchanged:

*Asbestos is a known human carcinogen. Despite the uncertainties inherent in risk assessment, the EPA evaluation of asbestos exposures and risks at the Clear Creek Management Area has led to some important conclusions.*

- *The Activity Causes the Exposure – The concentration of asbestos in the breathing zone is directly related to the degree that an activity disturbs the soil and creates dust.*
- *Children Are of Special Concern – In a majority of the samples, the concentration of asbestos measured in the child’s breathing zone exceeded the asbestos concentration in the companion adult sample. Further, a child’s life expectancy exceeds the latency period for asbestos-related disease.*
- *The Higher the Exposure, the Higher the Risk – The activities with the highest exposure - motorcycling, ATV riding, and SUV driving/riding - had the highest corresponding excess lifetime cancer risk.*
- *Reducing the Exposure Will Reduce the Risk – The risk of developing asbestos-related disease is dependent on the level of exposure, the duration of exposure, and the time since first exposure. Reducing exposure will reduce the risk of developing asbestos-related cancers and debilitating and potentially fatal non-cancer disease.*

*In summary, the asbestos exposures that EPA measured at CCMA are high and the resulting health risks are of concern.*

Please do not hesitate to call us at 415-972-3048 (Daniel Stralka) or 415-972-3094 (Jere Johnson) if you have any questions.

Sincerely,

*Original signed by/*

Daniel Stralka  
Toxicologist

*Original signed by/*

Jerelean M. Johnson  
Remedial Project Manager

cc Daphne Greene, California State Parks  
Gary Willard, Off-Highway Motor Vehicle Recreation Commission  
Steven Ross, Department of Toxic Substances Control  
Stephen DiZio, Department of Toxic Substances Control  
John Budroe, Office of Environmental Health Hazard Assessment  
Melanie Marty, Office of Environmental Health Hazard Assessment

**Figure 4: Comparison of Different Weather Conditions for Adult Receptors**



