

# MELISSA F. POLK

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## PROFESSIONAL PROFILE

Twelve years of environmental consulting experience, ranging from evaluation of toxicity and exposure data for projects spanning from litigation support and development of alternative cleanup standards to Master Planning and Cost-Life Cycle Analysis for Federal Programs.

Skills and experience in:

- Human Health Toxicity Evaluation
- Statistical Data Evaluation
- Exposure Modeling
- Litigation Support
- NEPA documentation
- RCRA Environmental Indicators Evaluation
- Cost and Life Cycle Analysis
- Master Planning

## PROFESSIONAL EXPERIENCE

### **Assistant Project Manager**

Civil & Environmental Consultants, Pittsburgh, PA

November 2004 - present

- Managed the development of human health risk assessments under the Pennsylvania Act 2 Program, Ohio Voluntary Action Program (VAP), Indiana Department of Environmental Protection Voluntary Program (IDEM-RISC), Region III Superfund, and Region V Superfund for the steel manufacturing industries.
- Environmental Indicator Evaluation conducted for facilities located in Ohio, Pennsylvania, and West Virginia.

### **Environmental Scientist and Master Planner**

Michael Baker Corporation, Pittsburgh, PA

August 1999 – November 2004

- Managed the development of several human health risk assessments for large federal programs including the United States Navy and Army Corps of Engineers.
- Managed the development of a site-wide risk assessment for PCBs and Chromium in soil and groundwater in Region I. Groundwater modeling to off-site residents and volatilization of chlorinated solvents was performed for this project.
- Provided human health risk support for the Pennsylvania Department of Environmental Protection (PADEP). Responsibilities included the review and development of human health risk assessments submitted to PADEP under the Act 2 Program.
- Planning experience included preparing master plans for the United States Department of Defense and the Department of Homeland Security facilities. Responsibilities included Facility Space Analysis, Cost Benefit Analysis, and Life Cycle Analysis. Master Plans were presented to Commanders of the US Coast Guard across the country. This position required managing budgets over \$200,000, and two to three personnel.

### **Health Scientist**

ChemRisk, Pittsburgh, PA

December 1994 – August 1999

- Provided technical support for the development of human health risk assessments for the steel and chrome manufacturing industries. Developed alternative cleanup standards for facilities located in

North Carolina, Ohio, Utah, Minnesota, Texas, New Jersey, West Virginia, Virginia, and Pennsylvania. Reviewed and provided technical comments to standards drafted by the New Jersey Department of Environmental Protection Agency, the Pennsylvania Department of Environmental Protection, and the Texas Natural Resource Conservation.

- Conducted a study to assess the potential for elicitation of allergic contact dermatitis (ACD) in Cr(VI) sensitized subjects following prolonged contact with Cr(VI) solution. The study was performed to address concerns regarding the potential elicitation hazard associated with environmental exposures to Cr(VI).
- Organized and implemented an expert panel to review the adverse health effects related to exposure to chromite ore processing residue. Specifically, we evaluated the appropriateness of using biomonitoring as a tool for detecting elevated levels of chromium in the environment.

## **EDUCATION**

1994 - BS Biology, University of Dayton – Dayton, OH

1999 - Graduate Courses in Environmental Engineering, Villanova University – Villanova, PA

1999-2004 – Graduate Courses in Environmental Engineering, Duquesne University – Pittsburgh, PA

## **PRESENTATIONS**

JM Otani, DM Proctor, **MM Fredrick**. Effect Levels Associated with Upper Respiratory Irritation and Asthma Following Exposure to Hexavalent Chromium. Society for Risk Analysis. December 1997. Washington, DC.

DM Proctor, JR Nethercott, **MM Fredrick**, BL Finley, DJ Paustenbach. Assessing the Potential for Elicitation of Allergic Contact Dermatitis in Cr(VI) Sensitized Subjects Following Prolonged Contact with Cr(VI) in Solution. Society of Toxicology. March 1997. Cincinnati, Ohio.

## **PUBLICATIONS**

DJ Paustenbach, JM Panko, **MM Fredrick**, BL Finley, DM Proctor. 1997. Urinary Chromium as a Biological Marker of Environmental Exposure: What are the Limitations? *Regulatory Toxicology and Pharmacology*. 26: S23-24.

DM Proctor, **MM Fredrick**, PK Scott, DJ Paustenbach, BL Finley. 1998. The Prevalence of Chromium Allergy in the United States and its Implications for Setting Soil Cleanup Standards Based on Allergic Contact Dermatitis: A Cost Benefit Case Study. *Regulatory Toxicology and Pharmacology*. 28(1): 22-37.

JF Fowler, CL Kauffman, JG Marks, DM Proctor, **MM Fredrick**, JM Otani, BL Finley, DJ Paustenbach, JR Nethercott. 1999. An Environmental Hazard Assessment of Low Level Dermal Exposure to Hexavalent Chromium in Solution among Chromium Sensitized Volunteers. *Journal of Occupational and Environmental Medicine*. 41(3):150-160.

## **LEADERSHIP & COMMUNITY INVOLVEMENT**

- 1999-Present, Society for Risk Analysis (national and local). Served as president for the local Pittsburgh chapter.
- Leadership Pittsburgh Inc, OnBoard, 2001-2002
- Leadership Pittsburgh Inc, Initiative, 2000-2001