

# Diane Lister, M.A.Sc., P.Eng.



Environmental Engineer

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## Professional summary

An environmental specialist with 10 years' experience in a variety of environmental management roles for mining projects, including some assignments in the health and safety field. Consulted independently in Perú for three years from 1999 through 2002. Key skill areas include design and implementation of EHS management systems, environmental auditing, emergency response planning, waste rock geochemistry, and design and implementation of monitoring systems. Proficient in Spanish at an advanced level, and currently consults independently based out of Kelowna, British Columbia, Canada.

## Professional qualifications and affiliations

Professional Engineer (Environmental), Association of Professional Engineers and Geoscientists of British Columbia, Canada.

Member, B.C. Water and Waste Association, Canada.

## Education

M.A.Sc., Mining Engineering (Environmental Specialization), University of British Columbia, Canada, 1994.  
Thesis: *An assessment of acid rock drainage potential of waste rock and implications for long term weathering of the North Dump at Island Copper Mine, Port Hardy, B.C.*

B.A.Sc., Geological Engineering, University of British Columbia, 1989. Thesis: *Character of unoxidized gold-silver mineralogy and its relationship to beneficiation at the Brown-McDade Zone, Mt. Nansen property, south-central Yukon.*

## Short Courses Completed:

Understanding and Implementing ISO 14001, American Management Association Communication Book Division (AMACOM), 2003.

Environmental Auditing (25 hours), Arthur D. Little, British Columbia, 1995.

Water Distribution Systems I (30 hours), B.C. Water and Waste Association, 2001.

Legal Surveying (5 months), Yukon College, Whitehorse, 1984.

## Languages

Primary: English; Secondary: Spanish.

## Professional history

EHS consultant, Altura Consulting, based in Kelowna, British Columbia, 2003 to present

Environmental and safety consultant, based in Huaráz, Perú, 2000-2002

Environmental Coordinator, Brewery Creek Mine, Yukon, Canada, 1996-1999

Environmental Engineer, Quintette Coal Mine, British Columbia, Canada, 1994-1996

Graduate Researcher, UBC Dept. of Mining and Mineral Processing, 1992-1994

Geological / Environmental Engineer, Windy Craggy Project, British Columbia, Canada, 1990-1992

Project Manager, Blende Pb-Zn Exploration Project, Yukon, Canada, 1989

Exploration Geologist and Field Assistant, various summer projects in Yukon, Canada, 1981-1989

## Experience Highlights

### **IIA/EIA Review and Review Coordination, Pascua-Lama Project, Compañía Minera Nevada Ltda., 2003.**

Pascua-Lama is gold-silver-copper project that spans the Argentina-Chile border in the south-central Andes. As a member of the environmental impact assessment team, coordinated project information transfer to the consultants and document review.

### **EIA Review and Review Coordination, Alto Chicama Project, Minera Barrick Misquichilca S.A., 2003.**

Alto Chicama is a heap leach mine currently under construction in northern Perú. The multi-volume EIA was produced on a tight timeline, and for several months worked in Lima with Barrick staff and the EIA consultant to coordinate the corporate review of the various EIA chapters. Worked with the consultant to ensure that reviewer comments were addressed, and that the EIA project remained on schedule. Also participated as a reviewer for certain sections including waste rock management and hydrology.

### **Brenda Mine, Noranda Inc., 2003.** Over four months, assisted in the operation of this decommissioned mine site in British Columbia including writing of a revised Operation, Maintenance and Surveillance (OMS) manual, and operating a ferric co-precipitation molybdenum water treatment facility.

### **Environmental Management Systems, Compañía Minera Antamina S.A., 2001-2002, and 2003:** Worked with the environmental department during startup and commissioning of this copper-zinc-molybdenum open pit operation in Perú and developed various procedures and standards for monitoring, hazardous materials management, waste management, internal inspections and auditing, and government and internal reporting. Drafted various emergency response plans, and assisted in delivery of a crisis management workshop to upper management.

### **Emergency Response Plan, Tailings and Water Management System, Compañía Minera Antamina S.A., 2001-2002:** Working with the senior tailings engineer, community relations, and security personnel, wrote final and draft versions of the Antamina Tailings and Water Management System Emergency Response Plan. In addition to operational response and communication procedures, the plan included procedures for downstream community evacuation in the event of a potential tailings dam failure.

### **Chemical Incident Response Plan, Compañía Minera Antamina S.A., 2001:** Working with all operating and support departments of the operation, wrote a comprehensive plan to address emergency response to chemical incidents during product transport to the Antamina mine and port facilities, storage, and handling.

### **Proyecto Viviendo de El Pinar, Compañía Minera Antamina S.A., 2000-2001:** Worked with construction and operations staff of this new 700-home housing project for mine employees. Implemented potable and waste water monitoring and inspection programs, wrote EHS operating specifications for potable and waste water treatment plants, led a team of medical and corporate staff in writing and implementing a community medical emergency plan and simulation exercises, supervised consultant's compilation of baseline study, and selected and trained a national counterpart to continue established programs.

### **Safety Program Development, Firth Industries Perú S.A., 2000:** Developed and conducted safety workshop sessions for supervisors and managers for a company specializing in manufacture of concrete products.

### **Environmental Coordinator, Brewery Creek Mine, Yukon, Canada, 1996-1999:** The Brewery Creek mine was one of Canada's first heap leach gold operations. As part of the construction and startup team, was responsible for the design and implementation of the operation's environmental management program. Served as primary liaison to government for all permitting and regulatory issues, and acted as spokesperson for the company at formal hearings. Authored or supervised compilation of annual permit reports and other major government submissions (waste rock management plan, leach pad water balance, solution management plan). Coordinated the work of technicians in establishing site environmental management programs including reclamation, surface water management, water and air quality monitoring, waste rock management, special waste management, and internal auditing. Led a corporate environmental audit of a company facility in California.

### **Environmental Engineer, Quintette Coal Mine, British Columbia, Canada, 1994-1996:** Worked and trained in various aspects of mine environmental management before acting as Environmental Supervisor for a six-month term. Completed a course in environmental auditing, and participated in a corporate audit at another operation. Wrote a reclamation plan, annual reclamation report, and numerous other government and corporate submissions. Designed special waste containment and small-scale water management structures.

**Graduate Researcher, UBC Dept. of Mining and Mineral Processing, 1992-1994:** Research focussed on prediction of long term water quality emanating from a large on-land waste rock dump at Island Copper Mine on Vancouver Island, Canada. Established rock weathering characteristics using kinetic test work, mineralogy, geochemistry, and physical characterization (conducting most of own laboratory work), predicted long term physical and chemical weathering of waste dump material and hypothesized the water quality response. Also conducted kinetic test work for a co-mingling waste disposal project, and served as a technical advisor for Science World mining-environment exhibit.

**Geological / Environmental Engineer, Windy Craggy Project, British Columbia, Canada, 1990-1992:** The Windy Craggy deposit is a large VMS-type deposit located in northwest British Columbia. During initial permitting stages for the project, participated in the writing and editing Stage I Revised Mine Plan submission to government, conducted all surface, underground and test leach pad water quality sampling and monitoring, assisted environmental consultants in hydrology and fisheries studies, compiled and analysed water quality, climate, geochemical, and laboratory test work data, co-authored a comprehensive geological report on waste rock and water quality, and conducted core logging, underground mapping, and geological interpretation.

**Project Manager, Blende Pb-Zn Project, Yukon, Canada, 1989:** Supervised up to 12 employees on a helicopter supported grassroots base/precious metal project, and co-authored a comprehensive final report on the project. Managed startup of a road building, drilling and trenching program on a larger scale project.

#### **Presentations / publications**

Plan de Contingencia para el Transporte y Entrega de Combustible y Reactivos, Proyecto Antamina (Contingency Planning for Transport and Delivery of Reagents and Fuel, Antamina Project), by D. Riehm and D. Lister, presented at the CIMA conference, Lima, Peru, 2001.

Classification of Waste Rock at Island Copper Mine for Acid Rock Drainage Potential, by D. Lister and G.W. Poling, presented at 4th Int'l Symposium on Mine Planning and Equipment, Calgary, 1995.

Prediction and Reality: Static Analyses versus Actual Rock Weathering in Waste Dumps at Island Copper Mine, Port Hardy, B.C. by D. Lister, G.W. Poling, I.A. Horne, and M.G. Li, in 17th Annual British Columbia Mine Reclamation Symposium, 1993.

Geology of the Windy Craggy Deposit, by B.W. Downing, D. Lister, and M.P. Webster, presented at Northwest Geological Conference, Seattle, 1990.