

# Michael Holliday & Associates

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## ENVIRONMENTAL AND OCCUPATIONAL HEALTH SERVICES

Michael Holliday & Associates is a broad-based firm of consultants specializing in the fields of environmental and occupational health. The firm has been in existence since 1978 and, over the subsequent 29 years, has gained considerable practical experience in these fields. Through services to both government and private sector clients, it has established a reputation for skill and versatility, having carried out a wide range of projects, including preparation of scientific criteria, formulation of regulative strategies for environmental pollutants, hazardous-materials handling, program evaluations and system audits. We have recently broadened our abilities and now can also provide expertise in environmental engineering, mycology, and plant pathology.

The types of service offered include:

- EVALUATIONS AND ADVICE ON ALL ASPECTS OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH
- IN-DEPTH STUDIES CONCERNING SPECIFIC ENVIRONMENTAL OR OCCUPATIONAL-HEALTH HAZARDS
- COMPUTER MODELLING OF TOXICOLOGICAL AND ENVIRONMENTAL PROCESSES
- DEVELOPMENT OF OH&S AND ENVIRONMENTAL MANAGEMENT SYSTEMS
- COMPREHENSIVE EVALUATION OF COMPANIES' OH&S CULTURE
- FORMULATION OF REGULATIVE STRATEGIES
- TRAINING FOR WHMIS AND HAZARDOUS MATERIAL HANDLING
- POLLUTION CONTROL AND MONITORING
- ENVIRONMENTAL IMPACT ASSESSMENT
- INDUSTRIAL-HYGIENE SURVEYS
- SCIENTIFIC PEER REVIEW
- PROVISION OF EXPERT TESTIMONY

In the pages which follow, you will find brief biographies of the core members of our team [overleaf], details of the projects we have undertaken [pp. 3 to 14], and résumés of Team Members [pp. 15 to 34].



January 2007

Dr. Michael G. Holliday, QEP, CRSP  
Principal

## TEAM MEMBERS

MICHAEL HOLLIDAY, B.SC., PH.D., Q.E.P., C.R.S.P.: a chemist, founder and Principal of the firm, has had more than 25 years experience in managing and contributing to projects in the fields of occupational- and environmental-health. Through his experience and background in physical chemistry, he has a thorough understanding of the properties, behaviour and toxicological effects of hazardous chemicals. Dr. Holliday has participated in governmental working groups on indoor-air quality and drinking-water quality, acted as a scientific advisor to the Program Audit and Review Directorate of Health and Welfare Canada, and served on both the Environmental Advisory Committee for the City of Ottawa and the Environmental-health Advisory Group for the Regional Municipality of Ottawa-Carleton. He is certified as a Qualified Environmental Professional (Q.E.P.) with the Institute of Professional Environmental Practice, Pittsburgh, USA, and serves on their Admissions Committee. He is also a Canadian Registered Safety Professional (C.R.S.P.).

EGLA KANDIE, B.ED., M.SC., PH.D.: an environmental engineer and teacher, has recently become associated with the firm. She brings to the firm several years experience with training, research, and consulting in both North America and Africa. Her major areas of interest are waste management, and environmental law and policy. Dr. Cheboror has significant experience in industrial audits, environmental site assessments, waste-management decision-analysis, and in the development and delivery of training programs. She is a certified teacher with the Kenya Teachers Service Commission.

PHILIP MARTIN, B.SC., M.SC., PH.D.: a mycologist and plant pathologist, has recently become associated with the firm. He brings to the firm an extensive and international research, consulting and teaching reputation in these fields. Among his varied activities, Dr. Martin has carried out long-term investigations into the pathologic effects of fungi and their metabolites on both human and plant populations. He has also developed regulative strategies, both in Canada and in Southern Africa, to curb adverse effects of mycoflora on commercial crops, and environmental flora and fauna (including man). He serves as a reviewer of books on biodiversity for the Canadian Museum of Nature, Ottawa.

PETER STRAHLENDORF, B.SC., LL.M., S.J.D., C.R.S.P.: a lawyer and biologist, has been associated with the firm for over 20 years and has contributed to a number of the firm's projects in both the occupational and environmental health fields. He specializes in legislative aspects of toxic substance regulations. Dr. Strahlendorf is an Associate Professor at Ryerson University where, in addition to courses in environmental law, public-health law, and occupational health and safety law, he teaches systems-management courses on health and safety. He is a Canadian Registered Safety Professional (C.R.S.P.).

## PROJECTS UNDERTAKEN BY MICHAEL HOLLIDAY & ASSOCIATES

1. *Peer review services: Human-health risk-based assessments for contaminated sites*, AECI Limited, Modderfontein, Gauteng, South Africa (on-going from 2003).  
Peer review of human-health risk-based assessment reports for a number of sites slated for remediation in South Africa.
2. *Assessment of the internal responsibility system (IRS) and recommendations for its improvement*, Falconbridge's Sudbury Mines/Mill, Sudbury, Ontario (October 2006).  
The project was an assessment, through questionnaire survey of the workforce and follow-up interviews, and documentation review, of the state of the IRS at Sudbury Mines/Mill (the study encompassed three underground nickel/copper mines, a concentrate mill, and central-services support).
3. *Implementation Possibilities for Periodic Review of New Substance Assessment Reports*, Health Canada and Environment Canada, Ottawa (March 2006).  
This is the second stage of the development of a periodic-review system for the independent, **external** review of the assessments conducted by the two Departments. It is based on earlier work we undertook for the Departments [*Framework for Periodic Review of New Substance Assessment Reports*, Health Canada and Environment Canada, Ottawa (March 2004)].
4. *Assessment of the internal responsibility system (IRS) and recommendations for its improvement*, Kidd Creek Mine, Timmins, Ontario (August 2005).  
The project was an assessment, through questionnaire survey of the workforce and follow-up interviews, and documentation review, of the state of the IRS at the mine.
5. *Assistance in a Cost Benefit Analysis of a proposed control instrument for 2-butoxyethanol*, for HLB Decision Economics Inc., Ottawa, Washington, San Francisco (April 2005).  
HLB was asked by Environment Canada to conduct a Cost Benefit Analysis of proposed regulations aimed at controlling exposure of consumers to 2-butoxyethanol, who use consumer products containing the compound. We provided assistance in identifying possible human-health benefits that could arise from implementation of the regulations.
6. *Assistance in staffing a position within the New Substances Assessment and Control Bureau*, Health Canada, Ottawa (March 2005).  
Development of chemistry-based questions for an internal competition for a senior chemist position within the Bureau.
7. *Assessment of the internal responsibility system (IRS) and recommendations for its improvement*, Golden Giant Mine, Marathon, Ontario (November 2004).  
The project was an assessment, through questionnaire survey of the workforce and follow-up interviews, and documentation review, of the state of the IRS at the mine.
8. *Examination of regulatory programs that undertake risk assessments of polymers*, Health Canada, Ottawa (March 2004)  
This project was undertaken in support of Canada's initiative to undertake prioritization of all substances that were originally on the *Domestic Substances' List* (DSL)—some 23,000 substances—with respect to their potential to being “toxic” under the *Canadian Environmental Protection Act* (CEPA). Our task was to identify approaches used in Canada and a number of foreign jurisdictions—USA, Australia, Europe (UK, Germany, Switzerland), and Japan—to assess potential human-health effects of polymers.

9. *Framework for Periodic Review of New Substance Assessment Reports*, Health Canada and Environment Canada, Ottawa (March 2004).

The project developed an approach by which Health Canada and Environment Canada might commission and undertake independent, **external** review of the assessments conducted by the two Departments. The recommendation that the Canadian government periodically conduct such reviews was made by a multistakeholder consultation group [*Consultations on the CEPA New Substances Notification Regulations and New Substances Program: Final Report of the Multistakeholder Consultations*, Report EPS M-464. Ottawa, Ontario: Environment Canada, and Health Canada (December 2001)].
10. *Expert advice on the human-exposure component of new-chemical assessments conducted in various OECD countries*, Health Canada, Ottawa (January 2004)

As part of the *OECD New Chemicals Task Force: Work Element I—Multilateral Comparison of Assessment Reports* initiative, we provided expert advice on the similarities and differences in exposure assessment reports, conducted by six countries (Australia, Canada, Japan, Switzerland, UK, and USA), on three new chemicals.
11. *Provision of consultation services regarding development of new products*, GangaGen Life Sciences Inc., Ottawa (October 2002 – June 2003).

Advice on the regulatory aspects (both environmental and health) pertaining to novel biological products being produced by the company.
12. *Review of New Substance Notification (NSN) Assessments*, Health Canada, Ottawa (March 2003)

Peer review of the assessments, conducted by Health Canada staff, into the potential human exposures of new substances notified under the *Canadian Environmental Protection Act*.
13. *Provision of exposure-assessment services with the regard to the evaluation of Transitional and New Chemicals under the Canadian Environmental Protection Act*, Health Canada, Ottawa (October 2001 to May 2002, January to March 2001, October 1999 to March 2000, and November 1995 to March 1997).

This project involved assessing the potential for human exposure of chemicals identified as “transitional chemicals” and “new chemicals” under the Canadian Environmental Protection Act. The exposure assessments are based on known and predicted properties of the substances, the uses to which the substances are to be put, and the expected annual quantities used in commercial processes.
14. *A Guide to Programmatic Peer Review at Health Canada*, Health Canada, Ottawa (March 2002).

A draft document prepared for Health Canada’s Office of the Chief Scientist as part of the Department’s on-going development of an external peer-review program for its major scientific and technical activities.
15. *Provision of consulting services regarding chemical-hazard assessment and interpretation*, Husky Injection Molding Systems, Bolton (February 2002).

Review of background documentation, plant-visit, information analysis, and production of an evaluation report.
16. *Review of INCO’s Proposed “Voluntary Indoor Sampling Program”*, Ontario Ministry of the Environment, Toronto (November 2001).

A peer review of a proposed indoor air monitoring program associated with the clean-up and remediation of properties surrounding INCO’s nickel refinery in Port Colborne, Ontario.
17. *Canadian Population Exposure to Acrolein in the Indoor Environment—Levels and Sources*, Health Canada, Ottawa (October 2001).

An examination of the exposure of the general population to acrolein in the indoor environment, and the relative contributions from sources responsible for such exposure.

18. *Provision of consulting services with regard to a “needs analysis” of the Ontario aggregates industry*, Mining and Aggregates Safety & Health Association (MASHA), North Bay (December 2000).

The primary objective of this project is to examine health and safety programs in the aggregates sector and broaden MASHA’s understanding of its member firms needs. Our role is to serve as a resource to MASHA, help define the sample, and provide input into other aspects of the project such as questionnaire design and analysis.
19. *The Internal Responsibility System in Underground Mining*, Ontario Ministry of Labour, Toronto (July 2000).

This project was undertaken under the direction of a tri-partite Steering Committee (comprising labour, management and government-agency representatives). It involved providing a definition and description of the Internal Responsibility System, and the development of an audit tool to measure the effectiveness of the IRS in underground mining operations. During the course of the project, eight mines were visited. Our final report was submitted, by the Steering Committee, to the Minister of Labour in October 2000.
20. *Provision of consulting services to the Department of National Defence with regard to the development of occupational health & safety management systems*, Consulting and Audit Canada, Ottawa (January to March 2000).

Review of background documentation and draft OH&S management systems developed by the Director General Equipment Program Services (DGEPS); provision of advice to senior management and safety officials.
21. *Consulting and safety demonstration with regard to the use of flammable solvents*, Toyota Motor Manufacturing Canada Inc., Cambridge, Ontario (June 1999).

Review of solvent use in spray-painting operations at Toyota Canada and a safety demonstration highlighting hazardous properties of materials as described in their MSDSs.
22. *Development of a framework for prioritization and resource allocation of laboratory activities within the Health Protection Branch*, Health Canada, Ottawa (March 1999).

This project involved participation in a working group, set up under the auspices of the Transition Team carrying out a reorganization of activities in the Health Protection Branch, examining how laboratory-science projects may be prioritized within the management-planning framework, development of a prioritization methodology, and writing the report.
23. *Aspects of Formaldehyde Exposure, CEPA Toxicity, and Control Options*, Health Canada, Ottawa (March 1999).

An examination of the exposure of the general population to formaldehyde, the possible effects of such exposure, and of possible control strategies to mitigate such effects.
24. *The Exxon Valdez as a Key Event in Oil Spill Prevention and Response Preparedness*, ENOVA Research Applications, Ottawa (November 1996 to January 1999).

Literature evaluation and analysis for a comprehensive project dealing with the private- and public-sector responses to marine oil-spill events.
25. *Training into the handling of chemical hazards*, Institute for Quality, Safety and Environmental Management (IQSEM), Toronto (November 1998).

Development and delivery of training courses on WHMIS and related topics.
26. *Chemical advice regarding a series of fire-retardant products*, PryoLogistix, Howe Island, Ontario (May–October 1998).

Provision of advice regarding the occupational- and environmental-regulatory requirements for the introduction of new chemical products into the Canadian marketplace.

27. *Scientific advice regarding a novel anti-organophosphate preparation*, THERAPEX, Anjou, Québec (May 1998).

Provision of advice regarding the occupational-health implications of a product that has anti-organophosphate properties.
28. *Consultation regarding land purchase*, Takaki Automotive, Ottawa (October 1997).

Provision of advice regarding environmental implications of a proposed facility expansion.
29. *The Lifetime of Benzene in the Canadian Atmosphere*, Health Canada, Ottawa (November 1996).

A scientific paper dealing with the lifetime of atmospheric benzene under conditions (temperature, solar insolation, source strengths) encountered in Canada
30. *Review of papers dealing with the potential health effects of emissions from electric-power generating facilities*, Health Canada, Ottawa (March 1996).

Scientific peer-review of papers dealing with emissions from fossil-fuel-fired electricity generating stations and of the potential health effects of such emissions.
31. *Scientific and Legal Aspects of the Canadian Environmental Protection Act*, Health Canada, Ottawa (December 1995).

A scoping document on how the Canadian Environmental Protection Act (CEPA) has been administered to address problems of national concern with respect to toxic substances in the environment. The document stresses the application of scientific principles to decision-making regarding the control of environmental pollutants. This document was prepared as a background to aid Health Canada and Environment Canada in an appeal to the Supreme Court of Canada in the case of *Canada (Procureure générale) c. Hydro-Québec*.
32. *Conducting case studies and provision of expert advice as part of the evaluation of the Environmental Hazards Program of the Health Protection Branch*, Health Canada, Ottawa (October 1995).

The purpose of the project was to provide expert advice to the Program Evaluation Division of Health Canada as this Division conducted its evaluation of Health Canada's Environmental Hazards Program. In addition, the project required that four case studies be conducted on aspects of the Program's activities—namely: CEPA assessments of Priority Substances; the Great Lakes Health Effects Program; the Bureau of Radiation and Medical Devices response to problems with Theratronics products; and the Environmental UV Program.
33. *Briefing Notes on Environmental Exposure to Cadmium*, Health Canada, Ottawa (August 1995).

This project involved the production of a series of briefing notes on various aspects of environmental exposure to cadmium from a Canadian perspective. The notes were designed to provide help for Health Canada's delegation to an OECD meeting on environmental cadmium, Stockholm, October 1995.
34. *The Exposure of Canadians to Cadmium*, Health Canada, Ottawa (May 1995).

The report relates the environmental sources of cadmium in Canada to the exposure of Canadians to the pollutant. In addition, the source-exposure relationships thus derived were considered in light of potential toxic end-points — specifically (but not exclusively), lung cancer and kidney toxicity.
35. *The Effects of Gasoline Reformulation on Human Exposure to Selected Air Toxics*, Health Canada, Ottawa (July 1994).

The report provides estimates of the effects that various gasoline reformulation options may have on the exposure of Canadians to carbon monoxide, nitrogen oxides, benzene, 1,4-butadiene, formaldehyde and acetaldehyde.
36. *Worksite-specific Training for WHMIS*, Toronto Hydro, Toronto (November 1993 to May 1994).

Development and delivery of train-the-trainer programs for Toronto Hydro, Canada's oldest municipal electric utility that employs 1600 workers.

37. *Approaches to Short-Term Drinking Water Quality Guidelines*, Department of National Health and Welfare, Ottawa (August 1993).  
The report explores ways in which short-term-exposure drinking-water-quality guidelines may be set using the information contained in the *Guidelines for Canadian Drinking Water Quality: Supporting Documentation*. As part of the project, a discussion workshop for employees of Health and Welfare Canada was conducted on the topic.
38. *Occupational Health Implications of Crude Oil Exposure: Literature Review and Research Needs*, Technical Report 93-007. Marine Spill Response Corporation, Washington, DC (August 1993).  
The report provides a review of the literature dealing with the health effects of exposure to crude oil and identifies, from the standpoint of assessment of the risk to oil-spill-cleanup workers, areas where information is lacking. The results of this review and research-needs analysis were presented at a 2-day workshop on Oil Spill Worker Health and Safety attended by oil industry representatives and oil-spill-response personnel. The comments and suggestions of the workshop participants were incorporated into the final report.
39. *Environmental Health Assessments and Regulatory Options Under the Canadian Environmental Protection Act*, Department of National Health and Welfare, Ottawa (June 1993).  
The purpose of the project was to help the Bureau of Chemical Hazards of Health and Welfare Canada construct an approach for its participation in control-option development under CEPA. Part of the project involved conducting a discussion workshop for employees of the Bureau on the topic. The comments and suggestions of the seminar participants were incorporated into the final report.
40. *Art Teacher be Aware*, Department of National Health and Welfare, Ottawa (March 1993).  
Preparation of a manuscript for a booklet aimed at grade-school art-teachers encouraging safe handling of art materials in schools.
41. *Occupational health & safety consulting*, William Neilson Ltd., Toronto (November 1991 to November 1992).  
Updating of the company's WHMIS training program (refresher training of instructors, etc.) and advice concerning development of an occupational health and safety system for compliance with Ontario's Bill 208.
42. *Consultation regarding remediation of a potential environmental hazard*, AIMCOR, Deerfield, Illinois (April 1990 to November 1992).  
Provision of advice, over a 20-month period, concerning the repackaging and stabilization of a quantity of low-level-radioactive material.
43. *Writing and editing services*, Department of National Health and Welfare, Ottawa (August 1992).  
Review, editing and writing of manuscripts regarding environmental health concerns of cookware and art materials.
44. *Occupational Health & Safety at Toronto Hydro*, Toronto Electric Commissioners (July 1992).  
Review of the current status of safety at Toronto Hydro, evaluation of its Safety and Environmental Services Department, and recommendations for an integrated health and safety management system.
45. *Investigation of the Potential for Lead Exposure in a Storage Room Adjacent to an Indoor Firing Range*, Ottawa Police Force, Ottawa (January 1992).  
Response to a request from the Ottawa Police Force to investigate the likelihood of workers being exposed to lead in a storage room abutting the force's indoor firing range.

46. *Target Tissue Concentrations and Environmental Health*, Department of National Health and Welfare, Ottawa (October 1991).

The report, produced for the Great Lakes Health Effects Project, reviews the availability of data on target-tissue concentrations of selected environmental pollutants, investigates how these concentrations may be related to potential health effects, and examines the feasibility of using such target-tissue data for environmental-health monitoring.
47. *Tetrachloroethene: A Health-effects Review*, Department of National Health and Welfare, Ottawa (September 1991).

The report estimates the intake and uptake of tetrachloroethene by non-occupationally exposed Canadians and, through a comprehensive review of pertinent literature, predicts the potential health effects of such environmental uptake. The document was produced to provide background information to help Health and Welfare Canada decide whether the compound is toxic under the provisions of the *Canadian Environmental Protection Act*.
48. *Investigation of Basement Air Quality*, Beechgrove Children's Centre, Smith's Falls (May 1991).

Investigation of the apparent quality of the air in the occupied basement of an assessment centre for disturbed children.
49. *Inspection of Battery-room Ventilation*, ADT Canada Inc., Ottawa (April 1990, March 1991).

Assessment of the indoor air quality and ventilation in a battery room.
50. *Protocols for Assessing New Polymers Under the Canadian Environmental Protection Act*, Department of National Health and Welfare, Ottawa (October 1990).

The report provides an investigation and analysis on how the potential human-health hazards of polymers new to Canadian commerce can be deduced from the relatively simple product-notification information required under CEPA.
51. *The Dry Cleaning Industry*, Department of the Environment, Ottawa (September 1990).

The document is a briefing note describing the product life-cycle of the dry cleaning industry from an environmental viewpoint. It was used by the Environmental Choice program of Environment Canada to develop the criteria by which dry cleaning firms would be granted an EcoLogo designation.
52. *Air Quality Investigation*, JDS Optics, Nepean (April 1990).

Assessment of the indoor air quality in a plant fabricating fibre-optic equipment.
53. *Disposal of Unwanted Pharmaceuticals in Canada*, Department of National Health and Welfare, Ottawa (April 1990).

The report is analysis of a mail-out survey, conducted by the Drugs Directorate of Health and Welfare Canada, into pharmaceutical disposal practices.
54. *Health-based Environmental Standards: Some Thoughts on the Multimedia Approach*, Department of National Health and Welfare, Ottawa (November 1989).

The report reviews the approaches for Multimedia Guideline development used by the Multimedia Guidelines Advisory Committee and suggests ways of expediting the derivation of Multimedia Guidelines.
55. *Worksite-specific Training for WHMIS*, York University, North York (March to September 1989).

Development and delivery of train-the-trainer programs for both faculty and support staff of York University.
56. *Worksite-specific Training for WHMIS*, William Neilson Ltd., Toronto, Georgetown, and Ottawa plants (1988 and 1989).

Development and delivery of worksite-specific training for dairy, confectionery and ice-cream facilities with a combined workforce of over 1200 employees.



57. *Human Exposure to Benzene*, Department of National Health and Welfare, Ottawa (May 1989).  
Estimation of the intake of benzene by non-occupationally exposed Canadians.
58. *Application of a Xylene-based Water Repellent Masonry Sealant: Assessment and Recommendations*. Pigott Construction Ltd., Mississauga (April 1989).  
Development of safe working procedures for coating application at a construction site in Ottawa in response to a Ministry of Labour stop-work order.
59. *Assessment of Workplace Exposure to 1,1,1-Trichloroethane*, Sandvik Ltd., Arnprior (February 1989).  
Assessment of worker exposure to 1,1,1-trichloroethane during vapour degreasing.
60. *WHMIS Consultative Services*, Regional Municipality of Ottawa-Carleton (December 1988).  
Provision of general advice on the design and implementation of a WHMIS training program for the regional municipality.
61. *Methylene Chloride Exposure in Paint Stripping*, ARC Industries, Braeside, Ontario (December 1988).  
Evaluation of the situation regarding worker exposure to methylene chloride during furniture refinishing and recommendations how the situation can be improved.
62. *Benzene in VARSOL 140*, Centre local de services communautaires, Boucherville, Québec (August 1987 to August 1988).  
Research and advice concerning benzene in metal-cleaning solvents for a worker's compensation case in Québec.
63. *Carbon Monoxide Exposure During Loading of Car Orders*, The Great Atlantic & Pacific Company of Canada, Toronto (April 1988).  
Advice and expert testimony at an arbitration hearing.
64. *Indoor Air Quality and You*, Department of National Health and Welfare, Ottawa (March 1988).  
Preparation of the text of a pamphlet, to be distributed to the general public, on residential indoor air quality.
65. *Intake of Hexachlorobenzene by Canadians*, Department of National Health and Welfare, Ottawa (March 1988)  
Estimation of the intake of hexachlorobenzene by non-occupationally exposed Canadians.
66. *Canadian Exposure to Dichloromethane, 1,1,1-Trichloroethane and Tetrachloroethene*, Department of National Health and Welfare, Ottawa (March 1988).  
A review of the available literature concerning the release, transport and fate of these solvents and estimation of quantities adsorbed by non-occupationally exposed Canadians.
67. *Taste and Odour in Drinking Water: A Criteria Discussion*, Department of National Health and Welfare, Ottawa (December 1987).  
The report deals with the ramifications of taste and odour in drinking water; its causes, its measurement, its control, and possible health implications. A feature of the study was a questionnaire survey of a representative cross section of Canadian water-treatment facilities; a survey designed to gauge the extent of taste and odour problems and to collect opinions on the roles of taste and odour as drinking-water quality parameters. The report was a background discussion paper for the Federal-Provincial Subcommittee on Drinking Water Quality.
68. Federal-Provincial Working Group on *Indoor Air Quality in the Office Environment*, Department of National Health and Welfare, Ottawa (October to December 1987).  
Participation in the two Working Group meetings; leading a workshop dealing with the question of criteria for chemical and biological agents in the office environment vis-à-vis already extant occupational criteria; preparation of a report, Occupational Criteria for Chemical and Biological Agents in the Air of Canadian Office Buildings.

69. *Health Effects of Wood Dust Exposure*, Eastman and McMaster, Toronto (May to December 1987).  
Advice and presentation of expert testimony for a civil-action case in the Supreme Court of Ontario.
70. *Occupational Health Aspects of Exposure to Beryllium and Its Compounds in Ontario Industry*, Ontario Ministry of Labour, Toronto (November 1987).  
The report deals with: the industrial uses of beryllium metal, beryllium alloys and ceramics; the types of situations in which workers may be exposed to these substances, and the control measures used to reduce such occupational exposure; the views of industry, labour and the scientific community concerning the hazards of exposure and the control measures best suited to reduce the hazard; and a discussion of regulatory options.
71. *Handbook on Indoor Air Quality*, Department of National Health and Welfare, Ottawa (October 1986).  
The development of an explanatory handbook, aimed at the general public, to serve as a companion to the Canadian Indoor Air-Quality Guidelines.
72. *Benzene: Environmental Behaviour and Human Exposure*, Ontario Ministry of the Environment (August 1986).  
A review paper concerning: the release, transport and fate of benzene in the Ontario environment; a description and assessment of its toxicity to biota; and estimates of the extent to which the human population is exposed to the compound.
73. *Criteria Reviews for Drinking Water Quality*, Department of National Health and Welfare, Ottawa (April 1986).  
Revision and update of selected drinking-water-quality criteria reviews from the *Guidelines for Canadian Drinking Water Quality 1978*: cadmium, chromium, mercury, selenium, silver, and sodium.
74. *Occupational Health Aspects of Wood Dust Exposure in Ontario Industry*, Ontario Ministry of Labour, Toronto (March 1986).  
A general background study which deals with: exposure of workers to wood dust in the Ontario wood products industry; the control measures available to reduce occupational exposure to wood dust; a review of the literature dealing with the toxicity of wood dust; the views of industry, labour and the scientific community concerning the hazards of exposure and the control measures best suited to reduce the hazard; and a discussion of regulatory options. The Ontario Research Foundation participated in the study as a subcontractor.
75. Editing of the *Exposure Guidelines for Residential Indoor Air Quality*, Department of National Health and Welfare, Ottawa (March 1986).  
The provision of technical editing and review services for criteria developed by the Federal-Provincial Committee on Indoor Air Quality.
76. *Health and Domestic Air Quality: Questionnaire Development and Field Trial*, Department of National Health and Welfare, Ottawa (March 1986).  
The project involved the development of a health-related questionnaire suitable for a possible nationwide survey. As part of this development, trial questionnaires were administered to 50 Ottawa area households (comprising some 180 persons). The results of this exercise were presented in a report and used to establish the questionnaire and survey methodology.
77. *Criteria Document on Mono- and Dichlorobenzenes*, Department of National Health and Welfare, Ottawa (April 1985).  
An environmental-health criteria document prepared for the Department of National Health and Welfare. The document was destined for the World Health Organization International Programme on Chemical Safety.

78. *Dose-Response Relationships of Acute Exposure to Ammonia*, Atomic Energy Control Board, Report No. INFO-0153 (March 1985).

The report derives, from data published in the scientific literature, LC<sub>50</sub> and LC<sub>10</sub> values for exposure of human populations to high concentrations to ammonia for periods ranging from six seconds (one breath) to two hours. These LC values were used in the Board's risk assessment of uranium refining.

79. *Chemical Hazards and Energy Conservation in Buildings*, Department of National Health and Welfare, Ottawa (August 1984).

The report provides an assessment of relationships between health effects and chemical pollutants found in indoor air, and the bearing that energy conservation methods have on these relationships. The project entailed extensive review of the published literature and contact with scientists, architects, engineers, and government policy makers involved in the field.

80. *Reviews of the Human-Health and Environmental Effects of Chlorobenzenes*, Department of National Health and Welfare, and Department of the Environment, Ottawa (May 1984).

Two draft reports came from this study: A criteria document on the human-health effects of the compounds, their commercial uses, their environmental fate and regulatory controls; and a short review of the effects of the compounds on environmental biota (excluding man) in comparison with the levels found in the Canadian environment.

81. *Protective Clothing and Equipment for Pesticide Applicators*, Department of National Health and Welfare, Ottawa (March 1984).

A literature review and assessment of the effectiveness of personal protective equipment used in the application of pesticide formulations.

82. *A Compilation of Information Sheets on Active Ingredients of Pesticide Formulations*, Department of National Health and Welfare, Ottawa (March 1984).

A project that involved assessing the toxic effects of pesticide compounds and writing precautionary statements suitable for inclusion on pesticide labels.

83. *Drinking Water Criteria Reviews: Chlorobenzenes and Benzene*, Department of National Health and Welfare, Ottawa (March 1984).

Reviews of toxicology of the compounds pertinent to the development of drinking-water quality criteria.

84. *Regulation of Toxic Substances in Canada*, Department of National Health and Welfare, Ottawa (March 1984).

A review of selected Acts and Regulations aimed at controlling toxic substances in Canada. The information, presented in a form suitable for entry into an electronic database will be used by Health and Welfare Canada in the development of an information database which may be searched on a compound-by-compound basis.

85. *Pesticide Handling—A Safety Handbook*, Department of National Health and Welfare, Ottawa (March 1984).

Revision, update and partial rewrite of an earlier safety booklet, published by Health and Welfare Canada, on the aerial application of pesticides. The scope of the original booklet was broadened to make it applicable to all users of pesticides.

86. *Health-Related Statements on Pesticide Labels*, Department of National Health and Welfare, Ottawa (December 1983).

A review of health-related statements on pesticide labels in Canada and a comparison with the practices governing the use of such label statements in other countries. The report proposed a plan for the updating and rationalization of label statements for pesticide formulations currently registered in Canada.

87. *Occupational Health Aspects of Coal Tar Pitch Volatiles (CTPV) in Ontario*, Ontario Ministry of Labour, Toronto (June 1983).  
A general background study dealing with: the manufacture and use of coal tar in Ontario; the control measures available to reduce the occupational exposure to coal tar pitch volatiles; a review of the literature dealing with their toxicity; the views of industry, labour, and the scientific community concerning the hazards of exposure and the control measures best suited to reduce the hazard; the factors to be considered in assessing the economic impact of controls; and a discussion of regulatory options.
88. *Guidelines for Canadian Drinking Water Quality: Compendium of Methods Used in Canada for the Analysis of Drinking Water*, Department of National Health and Welfare, Ottawa (January 1983).  
Technical editing and writing, and preparation of camera-ready copy for publication.
89. *Chloronaphthalenes: An Environmental-Health Perspective*, Department of National Health and Welfare, Ottawa, Report No. 83-EHD-96 (October 1982).  
An in-depth study of chloronaphthalenes in the environment and the human-health considerations arising from the exposure of the general population.
90. *Occupational Health Aspects of Ethylene Oxide Use in Ontario*, Ontario Ministry of Labour, Toronto (August 1982).  
The report deals with: the industrial and commercial uses of ethylene oxide; the control measures available to reduce occupational exposure; a review of literature dealing with ethylene oxide toxicity; the views of industry, labour, and the scientific community concerning the hazards of exposure and the control methods best suited to reduce the hazard; the factors to be considered in assessing the economic impact of controls; and a discussion of regulatory options.
91. *Tapwater Consumption in Canada*, Department of National Health and Welfare, Ottawa Report No. 82-EHD-80 (March 1982).  
The report is an analysis of a survey (conducted by another company) which identified the amounts of tapwater and tapwater-derived beverages drunk by Canadians.
92. *Industrial Dossiers on Selected Companies in Ontario*, Department of the Environment (October 1979 to January 1982).  
Capsule descriptions of the activities and products of 132 Ontario chemical companies.
93. Editorial and writing services to the *Solar Energy Project*, National Research Council (October 1980 to March 1982).  
Technical editing of reports and writing of fact sheets dealing with solar and other renewable energies.
94. *Occupational Health Implications of Diesel Exhaust Emissions in Ontario Industry*, Ontario Ministry of Labour, Toronto (October 1981).  
A report dealing with: commercial activities using diesel powered equipment; the emission control measures available; an assessment of the toxicity of diesel exhaust; the views of industry, labour and the scientific community concerning the hazards of exposure; an evaluation of the options available to the Ministry for the protection of workers from the hazards of such emissions; and the factors to be considered in assessing the economic impact of controls.
95. Editing of *Sewage Collection and Treatment (SCAT) Reports*, Canada Mortgage and Housing Corporation (September 1979 to December 1981).  
Technical editing of reports dealing with wastewater and storm-water management.

96. *Dose Response Relationships of Acute Exposure to Sulphur Dioxide*, Atomic Energy Control Board, Report No. INFO-0041 (May 1981).  
The report reviews acute toxicity effects of sulphur dioxide and attempts the derivation of a dose-lethality curve for human exposure to sulphur dioxide for periods ranging from ten seconds to two hours. The data were used in the Board's risk assessment of heavy water manufacture.
97. *Beckers v. Pro Canada and De Carlo—Fire Loss: A Chemical Assessment*, for a Toronto law firm (March 1981).  
A background report dealing with the chemical aspects of a fire loss in which a hydrocarbon solvent was implicated.
98. Editing of the *Canada-Ontario Agreement (COA) Research Report Series*, Department of the Environment (May 1979 to March 1981).  
Technical editing of some 20 reports dealing with sewage and stormwater management.
99. *A Review of the Environmental and Health Effects of Tris(haloalkyl) Phosphates*, Department of National Health and Welfare, Ottawa, Report No. 86-EHD-103 (December 1980).  
A description of the commercial uses of the compounds; their potential environmental fate; and regulatory controls.
100. *A Review of the Environmental and Health Effects of Triaryl/alkyl Phosphates*, Department of National Health and Welfare, Ottawa, Report No. 82-EHD-73 (September 1980).  
A description of the commercial uses of the compounds; their potential environmental fate; and regulatory controls.
101. *Occupational Health Implications of the Use of Formaldehyde in Ontario*, Ontario Ministry of Labour, Toronto (July 1980).  
A report dealing with: the industrial use of formaldehyde and formaldehyde-containing compounds; the control measures to reduce human exposure; the health hazards associated with exposure; the views of industry, labour and the scientific community; and the regulatory options available.
102. *Occupational Health Implications of Acrylonitrile in Ontario*, Ontario Ministry of Labour, Toronto (June 1980).  
A report dealing with: the industrial use of acrylonitrile and products produced from acrylonitrile; the control measures to reduce human exposure; the health hazards associated with exposure; the views of industry, labour and the scientific community; and an assessment of the regulatory options.
103. *Development of a Fixed-Position, Fixed-Configuration, Air-Heating Solar Collector*, National Research Council (March 1980).  
Editing, illustration services and the preparation of camera-ready copy for publication.
104. *Occupational Health Implications of Benzene in Ontario*, Ontario Ministry of Labour, Toronto (December 1979).  
A report dealing with: the industrial production and uses of benzene; the control measures to reduce human exposure; the health hazards; the views of industry, labour and the scientific community; and an assessment of regulatory options.
105. *Human Health Effects of Benzene at Levels Found in the Canadian Environment and Workplace*, Department of National Health and Welfare, Ottawa, Report No. 79-EHD-40 (November 1979).  
A digest and evaluation of the human health effects of benzene.

106. *Static Eliminators—A Comparative Review*, Atomic Energy Control Board, Report No. AECB-1166 (March 1979).  
A report dealing with the extent of the commercial use of both radionuclide ( $^{210}\text{Po}$ ) and electronic static eliminators; and the comparative technical advantages and disadvantages of each type.
107. *The Effectiveness of a Booklet Entitled “36 Ways to Put Bilingualism to Work for You”*, Secretary of State’s Department, Ottawa (September 1978).  
Analysis of a survey, concerning responses to the booklet, carried out in 4 cities in Canada.
108. *Turbidity: Drinking-Water Criteria Review*, Department of National Health and Welfare, Ottawa (May 1978).  
A background document prepared for the 1978 Canadian Drinking Water Standards.
109. *H.M. Crocket—Fire Loss: A Chemical Assessment*, for a Thunder Bay law firm (April 1978).  
A report providing “expert testimony” for a civil-action case in the Supreme Court of Ontario, with respect to a fire loss in which organic solvents were involved.

## **MICHAEL GEORGE HOLLIDAY**

- Ph.D. Physical Chemistry, Surrey University, U.K. (1968)
- B.Sc. Honours Chemistry, University of London, U.K. (1965)
- Q.E.P. Certified as a Qualified Environmental Professional by the Institute of Professional Environmental Practice, Pittsburgh (1996)
- C.R.S.P. Canadian Registered Safety Professional, Board of Canadian Registered Safety Professionals (1999)

Principal of the scientific consulting firm, Michael Holliday & Associates, Ottawa.

### CONSULTING EXPERIENCE

With Michael Holliday & Associates, Ottawa (1978 to present):

- program manager, investigator and writer of numerous multidisciplinary studies dealing with the behaviour and effects of chemicals in the environment, workplace and human body;
- program manager and active participant in a project to develop an audit tool of the Internal Responsibility System (IRS) in underground mining for a tri-partite committee established by the Ontario Ministry of Labour;
- consultant on occupational and environmental health and safety to the private sector;
- peer reviewer of human-health and risk-assessment studies for government and private-sector clients;
- evaluator, for Health Canada, of industry submissions made under the New Substances Regulations of the Canadian Environmental Protection Act (CEPA);
- participant and workshop leader in meetings of the Federal-Provincial Working Group on Indoor Air Quality in the Office Environment;
- scientific advisor on chemical hazards to Program Audit and Review Directorate of the Department of Health.
- advisor on scientific and technical matters to law firms;

Voluntary consulting work:

- environmental advisor to the Hintonburg Community Association, Ottawa (2004–present);
- appointed by Council to serve on the Environmental-health Advisory Group for the Regional Municipality of Ottawa-Carleton (1998–2000);
- appointed by Council to serve on the Environmental Advisory Committee for the City of Ottawa (1996–2000);
- advisor and volunteer worker with the Programa de Desarrollo Socio-economico de los Altos de Chiapas (PRODESCH), a UNICEF sponsored development program in southern Mexico (1976–77).

### INDUSTRIAL EXPERIENCE

With Atomic Energy of Canada Ltd. (1972 to 1975):

- radiochemist charged with developing processes for the production of medical radioisotopes from irradiated uranium, and with evaluating other radioisotope production processes.

With Baird and Tatlock Ltd., U.K. (1961 to 1962):

- junior chemist employed in the development of automatic analytical techniques for the on-stream analysis of industrial effluents.

RESEARCH EXPERIENCE

At National Research Council, Ottawa (1970 to 1972):

- post-doctoral fellow studying the chemical reactions of electronically excited molecules using low-energy electrons to produce the excited species.

At Brookhaven National Laboratory, U.S.A. (1968 to 1970):

- research associate studying ion-molecule collision phenomena using a tandem mass spectrometer.

At Surrey University, U.K. (1965 to 1968):

- Ph.D. student studying the combustion of hydrogen and carbon monoxide in nitrous oxide, the ultra-violet absorption of nitrous oxide, and ion-molecule reactions in nitrous oxide/hydrogen and carbon dioxide/hydrogen mixtures.

SEMINARS AND TEACHING

Guest lecturer on occupational and environmental matters (1979 to present):

- *REGULATION & REMEDIATION: A Personal View*—Resource Protection and Waste, Department of Water Affairs and Forestry, Government of South Africa, Pretoria (2005)
- *SCIENCE?: Who Needs It?*—Environmental Health Program, Ryerson University, Toronto (2001)
- *TOXIC?: Science & Policy*—Environmental Health Program, Ryerson University, Toronto (2000)
- *Basic Toxicology*—Ontario Occupational Health Nurses Association, Toronto (1995)
- *Science in Society*—Ottawa University School of Public Administration, Ottawa (1994)
- *Chemicals & MSDSs*—Environmental Health Program, Ryerson University, Toronto (1986)
- *Occupational-health Effects of Coal Tar Pitch Volatiles*—Occupational Health Program of McMaster University, Hamilton (1983)
- *Occupational-health Effects of Ethylene Oxide*—Occupational Health Program of McMaster University, Hamilton (1982)
- *Environmental Radiation*—Environment Program of Ottawa University, Ottawa (1980)
- *Occupational-health effects of benzene*—Occupational Health and Safety Committee of the Canadian Labour Congress, Ottawa (1979)

With Algonquin College of Applied Arts & Technology, Ottawa (1999):

- lecturer, Environmental Health & Safety (Course ENV5501)—a component course of the Certificate Program *Building Environmental System Facility Manager*—for the Department of Continuing Education.

With the CEGEP de l'Outaouais, English section (1976):

- professor in charge of a course on the physical chemistry of aqueous solutions.

PROFESSIONAL MEMBERSHIPS

Board of Canadian Registered Safety Professionals (since 1999)

Institute of Professional Environmental Practice (since 1996)

American Industrial Hygiene Association (since 1988)

Air & Waste Management Association (since 1985)



## ARTICLES, REPORTS AND PUBLICATIONS

(\* Reports produced as a result of work carried out by Michael Holliday & Associates.)

### PUBLICATIONS

- \* M.G. Holliday and J.M. Park, *New Substances Notification Assessments: A Possible Framework for Periodic Review*, report prepared for the New Substances Assessment & Control Bureau, Catalogue No. H46-2/05-420. Ottawa, Ont.: Health Canada (March 2004).
- \* M.G. Holliday, P.W. Strahlendorf, and I.M. Plummer, "The IRS and your safety performance", in *Proc. Mining Health & Safety 2001*. North Bay, Ont.: Mines and Aggregates Safety & Health Association (April 2001).
- \* I.M. Plummer, P. W. Strahlendorf, and M.G. Holliday, *The Internal Responsibility System in Ontario Mines: Final Report*. Toronto, Ont.: Queen's Printer for Ontario (December 2000).
- \* J.M. Park and M.G. Holliday, "Occupational-health aspects of marine oil-spill response", *Pure Appl. Chem.*, **71**(1): 113–133 (1999).
- \* M.G. Holliday and J.M. Park, "Canadian kidney-cadmium levels, exposure and environmental control", paper 98-TA36.06, in *Proc. A&WMA 91st Annual Meeting* (1998).
- \* M.G. Holliday and J.M. Park, "The relevance to human health of changes in steady-state exposure to air toxics resulting from gasoline reformulation, as estimated by a simple photochemical model", paper 97-WP100A.05, in *Proc. A&WMA 90th Annual Meeting* (1997).
- \* A.W. Gunter and M.G. Holliday, *Theratronics Case Study: Technical Report #1*. Ottawa, Ont.: Strategic Planning & Review Directorate, Health Canada (August 1995).
- \* J.M. Park and M.G. Holliday, *Environmental UV Case Study Case Study: Technical Report #2*. Ottawa, Ont.: Strategic Planning & Review Directorate, Health Canada (August 1995).
- \* J.M. Park, M.G. Holliday, and C.E. Vardy, *CEPA Case Study: Technical Report #3*. Ottawa, Ont.: Strategic Planning & Review Directorate, Health Canada (August 1995).
- \* J.M. Park, C.E. Vardy, and M.G. Holliday, *Great Lakes Health Effects Program Case Study: Technical Report #4*. Ottawa, Ont.: Strategic Planning & Review Directorate, Health Canada (August 1995).
- \* M.G. Holliday and J.M. Park, *Occupational Health Implications of Crude Oil Exposure: Literature Review and Research Needs*, Technical Report 93-007. Washington, DC: Marine Spill Response Corporation (August 1993).
- \* M.G. Holliday, J.M. Park, and V.C. Armstrong, "Taste and odour in drinking water: Some perceptions and reactions", *Env. Hlth. Rev.*, **35**(2): 32 (1991).
- \* M.G. Holliday and J.M. Park, "Taste and odour in drinking water", in *Proc. 12th. Internat. Symp. Wastewater Treatment*, Montréal, 20 to 22 November 1989.
- \* M.G. Holliday, P.W. Strahlendorf, I. MacLachlan, and J.J. Engelhardt, *Some Occupational-Health Aspects of the Use of Beryllium and Its Compounds in Ontario*. Toronto, Ont.: Ontario Ministry of Labour (November 1987).
- \* M.G. Holliday, P. Dranitsaris, P.W. Strahlendorf, A. Contala, and J.J. Engelhardt *Occupational Health Aspects of Wood Dust Exposure in Ontario Industry*. Toronto, Ont.: Ontario Ministry of Labour (March 1986).
- \* F.R. Engelhardt and M.G. Holliday, *Dose-Response Relationships of Acute Exposure to Ammonia*, Atomic Energy Control Board, Report No. INFO-0153 (March 1985).
- \* M.G. Holliday and F.R. Engelhardt, *Occupational Health Aspects of Exposure to Coal Tar Pitch Volatiles (CTPV) in Ontario*. Toronto, Ont.: Ontario Ministry of Labour (June 1983).
- \* M.G. Holliday, F.R. Engelhardt, and A.M. Young, *Chloronaphthalenes: An Environmental Health Perspective*, Department of National Health and Welfare, Report No. 83-EHD-96 (October 1982).

- \* M.G. Holliday, F.R. Engelhardt, and R.A. Meng, *Occupational Health Aspects of Ethylene Oxide Use in Ontario*. Toronto, Ont.: Ontario Ministry of Labour (August 1982).
- \* V.C. Armstrong, M.G. Holliday, and T.F. Schrecker, *Tapwater Consumption in Canada*, Department of National Health and Welfare, Report No. 82-EHD-80 (November 1981).
- \* M.G. Holliday, J.W. Sifton, F.R. Engelhardt, S.W. Langdon, and R. Meng, *Occupational Health Aspects of Exposure to Diesel Exhaust Emissions in Ontario*. Toronto, Ont.: Ontario Ministry of Labour (November 1981).
- \* F.R. Engelhardt and M.G. Holliday, *Dose-Response Relationships of Acute Exposure to Sulphur Dioxide*, Atomic Energy Control Board, Report No. INFO-0041 (May 1981).
- \* M.G. Holliday and F.R. Engelhardt, *A Review of Environmental and Health Effects of Tris(haloalkyl) Phosphates*, Department of National Health and Welfare, Report No. 86-EHD-103 (December 1980).
- \* M.G. Holliday, F.R. Engelhardt, and A. Holmes, *A Review of the Environmental and Health Aspects of Triaryl/alkyl Phosphates*, Department of National Health and Welfare, Report No. 82-EHD-73 (September 1980).
- \* J.F. Henderson, M.G. Holliday, and A. Holmes, *Occupational Health Implications of the Use of Formaldehyde in Ontario*. Toronto, Ont.: Ontario Ministry of Labour (July 1980).
- \* M.G. Holliday, J.W. Sifton, F.R. Engelhardt, and A. Holmes, *Occupational Health Implications of Acrylonitrile in Ontario*. Toronto, Ont.: Ontario Ministry of Labour (June 1980).
- M.G. Holliday, "Temperature", "Turbidity", "pH", and "Total organic carbon (TOC)", in *Guidelines for Canadian Drinking Water Quality 1978: Supporting Documentation*, Catalogue No. H48-10/1978-1E. Ottawa: Supply and Services Canada (1980).
- \* M.G. Holliday, F.R. Engelhardt, and A. Holmes, *Occupational Health Implications of Benzene in Ontario*. Toronto, Ont.: Ontario Ministry of Labour (December, 1979).
- \* M.G. Holliday, F.R. Engelhardt, and A. Holmes, *Human Health Implications of Benzene at Levels Found in the Canadian Environment and Workplace*, Department of National Health and Welfare, Report No. 79-EHD-40 (November 1979).
- \* A. Holmes and M.G. Holliday, *Static Eliminators: A Comparative Review*, Atomic Energy Control Board, Report No. AECB-1166 (March 1979).
- M.G. Holliday, J.D. Holmes, and D.E. Hopkins, "High school teaching and research", *Chemistry in Canada*, 23:4 (1971).
- M.G. Holliday, J.T. Muckerman, and L. Friedman, "An investigation of back-scattering in the D<sup>+</sup>/H<sub>2</sub> reaction system", *J. Chem. Physics*, 54:3852 (1971).
- M.G. Holliday, J.T. Muckerman, and L. Friedman, "Isotopic studies of the proton-hydrogen reaction", *J. Chem. Physics*, 54:1058 (1971).
- M.G. Holliday and B.G. Reuben, "La réaction de l'hydrogène avec l'oxyde azoteux", *Bull. Soc. Chim. France*, p. 3087 (1969).
- M.G. Holliday, Some Kinetic and Spectroscopic Studies of Nitrous Oxide and Its Ion, Ph.D. Thesis. Guildford, U.K.: University of Surrey (1968).
- M.G. Holliday and B.G. Reuben, "Temperature dependence of the absorption of nitrous oxide in the quartz ultra-violet", *Trans. Fara. Soc.*, 64:1735 (1968).

#### UNPUBLISHED REPORTS

- \* M.G. Holliday, *A Guide to Programmatic Peer Review at Health Canada*, report prepared for the Office of the Chief Scientist, Health Canada, Ottawa (March 2002).
- \* M.G. Holliday and J.M. Park, *Review of INCO's Proposed "Voluntary Indoor Sampling Program"*, report prepared for the Standards Development Branch, Ontario Ministry of the Environment, Toronto (November 2001).

- \* M.G. Holliday and J.M. Park, *Airborne Exposure to Acrolein in the Canadian Indoor Environment—Levels and Sources*, report prepared for the Department of Health, Ottawa (October 2001).
- \* I.M. Plummer, P.W. Strahlendorf, and M.G. Holliday, *THE INTERNAL RESPONSIBILITY SYSTEM IN ONTARIO MINES—Final Report: The Trial Audit & Recommendations*, report prepared for the Ontario Ministry of Labour, Toronto (July 2000).
- \* I.M. Plummer, P.W. Strahlendorf, and M.G. Holliday, *THE INTERNAL RESPONSIBILITY SYSTEM IN ONTARIO MINES—Interim Report #2: The Pilot Audit*, report prepared for the Ontario Ministry of Labour, Toronto (February 2000).
- \* I.M. Plummer, P.W. Strahlendorf, and M.G. Holliday, *THE INTERNAL RESPONSIBILITY SYSTEM IN ONTARIO MINES—Interim Report #1: Description of the IRS*, report prepared for the Ontario Ministry of Labour, Toronto (November 1999).
- \* J.M. Park and M.G. Holliday, *Aspects of Formaldehyde Exposure, CEPA Toxicity, and Control Options*, report prepared for the Department of Health, Ottawa (March 1999).
- \* F. R. Engelhardt, M.G. Holliday, J.E. Lees, D.S. Jensen, and A.B. Nordvik, *The Exxon Valdez as a Key Event in Oil Spill Prevention and Response Preparedness*, ENOVA Research Applications, Ottawa (January 1999).
- \* M.G. Holliday and J.M. Park, *The Lifetime of Benzene in the Canadian Atmosphere*, report prepared for the Department of Health, Ottawa (November 1996).
- \* J.M. Park, M.G. Holliday, and A.S.C. Wong, *The Exposure of Canadians to Environmental Cadmium*, report prepared for the Department of Health, Ottawa (May 1995).
- \* J.M. Park and M.G. Holliday, *Changes in Exposure to Air Toxics as a Result of Gasoline Reformulation*, for the Department of Health and Welfare (July 1994).
- \* J.M. Park and M.G. Holliday, *Approaches to Short-Term Drinking Water Quality Guidelines*, for the Department of National Health and Welfare (August 1993).
- \* M.G. Holliday, J.M. Park, P.W. Strahlendorf and T.F. Schrecker, *Environmental Health Assessments and Regulatory Options Under the Canadian Environmental Protection Act*, for the Department of National Health and Welfare (June 1993).
- \* P.W. Strahlendorf, M.G. Holliday and J.M. Park, *Occupational Health & Safety at Toronto Hydro*, for the Toronto Electric Commissioners (July 1992).
- \* J.M. Park and M.G. Holliday, *Target-Tissue Concentrations and Environmental Health*, for the Department of National Health and Welfare (October 1991).
- \* M.G. Holliday and J.M. Park, *Protocols for Assessing New Polymers Under the Canadian Environmental Protection Act*, for the Department of National Health and Welfare (October 1990).
- \* M.G. Holliday and E. Wolfe, *The Dry Cleaning Industry*, for the Department of the Environment (September 1990).
- \* M.G. Holliday, *Air Quality Investigation at JDS Optics*, for JDS Optics, Nepean (April 1990).
- \* M.G. Holliday and J.M. Park, *Disposal of Unwanted Pharmaceuticals in Canada*, for the Department of National Health and Welfare (April 1990).
- \* J.M. Park and M.G. Holliday, *Health-based Environmental Standards: Some Thoughts on the Multimedia Approach*, for the Department of National Health and Welfare (November 1989).
- \* M.G. Holliday and J.M. Park, *Human Exposure to Benzene*, for the Department of National Health and Welfare (May 1989).
- \* M.G. Holliday, *Application of a Xylene-based Water Repellent Masonry Sealant: Assessment and Recommendations*, for Pigott Construction Ltd., Ottawa (April 1989).
- \* M.G. Holliday, *Assessment of Workplace Exposure to 1,1,1-Trichloroethane*, for Sandvik Ltd., Arnprior (February 1989).

- \* M. G. Holliday, *Paint Stripping: Assessment and Solution*, for ARC Industries, Braeside, Ontario (June 1988).
- \* M. G. Holliday, *Intake of Hexachlorobenzene by Canadians*, for the Department of National Health and Welfare (March 1988).
- \* M. G. Holliday, *Human Exposure to Dichloromethane, 1,1,1-Trichloroethane and Tetrachloroethene*, for the Department of National Health and Welfare (March 1988).
- \* J.M. Park, M.G. Holliday, and J.J. Engelhardt, *Taste and Odour in Drinking Water*, for the Department of National Health and Welfare (December 1987).
- \* M.G. Holliday, *Health Effects of Wood Dust: A Literature Review*, for Eastman & McMaster, Toronto (May 1987).
- \* M.G. Holliday and F.R. Engelhardt, *Benzene: Environmental Behaviour and Human Exposure*, for the Ontario Ministry of the Environment (August 1986).
- \* M.G. Holliday and J.J. Engelhardt, *Health and Domestic Air Quality: Questionnaire Development and Field Trial*, for the Department of National Health and Welfare (February 1986).
- \* M.G. Holliday, D. Fletcher, and J.M. Park, *Chemical Hazards and Energy Conservation in Buildings*, for the Department of National Health and Welfare (August 1984).
- \* M.G. Holliday and F.R. Engelhardt, *Drinkingwater Criteria Reviews: Benzene and Chlorobenzenes* for the Department of National Health and Welfare (March 1984).
- \* M.G. Holliday, *Beckers v. Pro Canada and De Carlo—Fire Loss: A Chemical Assessment*, for Smiley and Allingham, Toronto (March 1981).
- \* A. Holmes and M.G. Holliday, *The Effectiveness of a Booklet Entitled “36 Ways to Put Bilingualism to Work for You”*, for the Department of the Secretary of State (September 1978).
- \* M.G. Holliday, *H.M. Crockett—Fire Loss: A Chemical Assessment*, for Carrel, Pustina, Zelinski, Knutsen and Johnson, Thunder Bay (April 1978).

#### CONFERENCE PRESENTATIONS

- \* M.G. Holliday, and J.M. Park, “Lifetime exposures to tetrachloroethylene metabolites in cancer bioassays and in exposed human populations, as predicted by pharmacokinetic modelling”, paper 439. Poster presentation at the *60th Annual AIHA Conference*, Toronto, Ont., (5-11 June 1999).
  - \* M.G. Holliday, J.M. Park, P.W. Strahlendorf, and T.F. Schrecker, “The Canadian Environmental Protection Act: Science, policy, and public health”. Platform presentation, *World Environmental Congress*, London, Ont., 17–22 September 1995.
  - \* M.G. Holliday and J.M. Park, “Canadian kidney-cadmium levels, exposure, and implications for environmental control”. Poster presentation, *World Environmental Congress*, London, Ont., 17 to 22 September 1995.
  - \* P. Dranitsaris, A. Contala, and M. Holliday, “Industrial hygiene characterization: Primary and secondary wood-using industries”. Poster presentation at the *47th Annual AIHA Conference*, Dallas, U.S.A. (May 1986).
- M.G. Holliday, J.T. Muckerman, and L. Friedman, “The reaction  $H^+ + H_2 = H_2 + H^+$ ”, at *Eighteenth Annual Conference on Mass Spectroscopy and Allied Topics*, San Francisco, U.S.A. (June 1970).
- M.G. Holliday and B.G. Reuben, “Ion-molecule reactions in  $N_2O/H_2$  and  $CO_2/H_2$  mixtures”, at *Fourth Meeting of the Mass Spectroscopy Group*, Sheffield, U.K. (September 1969).
- R.J. Coleman, M.G. Holliday, and B.G. Reuben, “Oxidation of carbon monoxide by nitrous oxide”, at *International Symposium on Gas Kinetics*, Szeged, Hungary (July 1969).
- M.G. Holliday and B.G. Reuben, “Some aspects of the combustion of hydrogen and carbon monoxide in nitrous oxide”, at *Gas Kinetics Symposium*, Swansea, U.K. (July 1967).

## **EGLA J. KANDIE**

Ph.D. Environmental Engineering, University of Guelph, Guelph, Ontario (1999)

M.Sc. Textile Science, University of Illinois, Urbana-Champaign, USA (1989)

B.Ed. Nairobi University, Nairobi, Kenya (1981)

Certified as Lead Expert, Environmental Audits and Impact Assessments, National Environment Management Authority (NEMA), Kenya (2003).

An environmental engineer and teacher with international experience; primary interests are research, policy analysis and consulting in waste- and environmental-management.

### CONSULTING EXPERIENCE

Free-lance consulting (mid-1990 to present):

- Undertook environmental impact assessments and prepared impact reports on proposed development projects in Kenya including the Kiserian Dam project for the National Water Conservation and Pipeline Corporation and a berthing and slipway for the Civicon Company in Mombasa.
- Prepared support materials and conducted workshops and advocacy campaigns targeted at electoral representatives, government officials, stakeholders and local communities to raise awareness and solicit support for the passage of the Kenya Forest Bill, 2005.
- Designed and conducted environmental audits of various industrial facilities in the city of Guelph;
- Researched and documented the effects of pollutants on the Grand River for the Grand River Watershed Development Authority (GRDA)
- Developed, designed and prepared multimedia presentation material for a waste management/cleaner production workshop in Harare Zimbabwe;
- Provided expert knowledge in program development and evaluation to government agencies responsible for curriculum development in textile science and technology at the Kenya Institute of Education

### ACADEMIC EXPERIENCE

Lecturer, Egerton University, Nakuru, Kenya (1982 to 1992):

- Developed university curriculum in education and textile production for undergraduate and continuing students;
- Delivered course programs, developed and administered evaluation tests, and provided feedback to respective departments and students;
- Provided guidance and counseling in courses and careers to undergraduates and continuing students;
- Supervised staff in the Textile Science section;
- Prepared departmental requisitions with the aid of staff and managed section budget;
- Provided professional coaching and mentoring to new staff; and
- Represented Textile Science section in Departmental and faculty meetings.

## RESEARCH EXPERIENCE

At University of Guelph (1997 to 1999):

- Designed and implemented a waste audit for a leather tanning industry and developed and recommended a waste reduction plan; and
- Developed a model to incorporate multi-criteria considerations in decision making on waste management and applied it in the analysis of management options for a tannery.

## AWARDS

Government of Canada, Millennium Scholarship (1999–2000)

Canadian Commonwealth Scholarship and Fellowship Program [CCSFP] (1992–1999)

United States Agency for International Development [USAID] scholarship (1987–1989)

## PROJECT WORK AND THESES

*An Illustrative Application of A Prototype Approach for Evaluating Waste Management Strategies for the Leather Manufacturing Industry.* Ph.D. Thesis: School of Engineering, University of Guelph (January 1999).

*Forms and Sources of Phosphorous and Their Importance With Respect to Aquatic Plant Uptake.* A paper prepared for the Grand River Conservation Authority (June 1998).

*Solid Waste Management in Urban Cities of Developing Countries: Case Studies.* Seminars in Solid Waste Management, School of Engineering, University of Guelph (Fall 1998).

*The potential Impact of Hazardous Waste Landfills on the Environment.* Seminars in Hazardous Waste Management, School of Engineering, University of Guelph (Fall 1996).

*Toxic Chemical(s) Pollution Control: Ontario Government Policies and Practices.* Seminars in Environmental Law and Policy, School of Engineering, University of Guelph (Spring 1994).

*The Fate of Polychlorinated Bi-Phenyls (PCBs) in the Environment.* Seminars in Environmental Contaminants Fate Mechanisms, School of Engineering, University of Guelph (Winter 1994).

*The Effects Of Commonly Used Detergents on the Physical Properties of Fibers.* Masters Thesis: Department of Textile and Interior Design, University of Illinois at Urbana-Champaign, May 1989 .

## PHILIP M. D. MARTIN

- Ph.D. Mycology, University of California at Los Angeles, U.S.A. (1964)  
 M.Sc. Mycology, Rhodes University, Grahamstown, South Africa (1960)  
 B.Sc. (Hons.) Botany, Rhodes University, Grahamstown, South Africa (1957)  
 B.Sc. Botany/Entomology, Rhodes University, Grahamstown, South Africa (1955)

A mycologist, agrologist and botanist, with extensive international research, consulting and teaching experience in these fields, gained in both government and academia.

### CONSULTING EXPERIENCE

Eastern Cereal and Oil Seeds Research Centre, Agriculture Canada, Ottawa (1996-1998):

- Research Associate investigating the distribution of strains of oat rust in Ontario and the destructive effect of the rust on a select group of susceptible, resistant and “slow rusting” oat varieties

Biotechnology Section, New Substances Division, Commercial Chemicals Evaluation Branch, Environment Canada, Hull (1996–1998):

- consultant for the development of the *New Substances Notification Regulations (Organisms)* and its attendant guideline document

Canada-Ukraine Partners Program Agri-Food Project (1995):

- participated, with a colleague and the Ukrainian hosts, in an exercise to determine which agriculture projects Canada might support in the Ukraine
- helped organise the transit of Atlantic sturgeon fry to the Ichthyology Research Centre, Kherson Agricultural College, Ukraine

### GOVERNMENT EXPERIENCE

Research Branch, Agriculture Canada, Ottawa (1991–1995):

- Plant Pathologist and Taxonomist (Mycology): Investigated the principal worldwide diseases of the economically important crops grown in Canada; published a comprehensive list of plant pathogens to be used by managers in Agriculture Canada to make policy decisions on a biological basis

Plant Health Directorate, Agriculture Canada, Ottawa (1983–1990):

- Agricultural Programs Officer: Investigated the problem of possible entry of karnal bunt (*Tilletia indica*), a potentially dangerous wheat pathogen into Canada and developed a comprehensive set of regulations to prevent entry of the pathogen into this country; reviewed and listed the worldwide diseases of grapevines to identify those of concern to Canada and materially assisted Agriculture Canada to formulate policy towards foreign countries and to develop a practicable and mutually acceptable series of tests for important foreign pathogens carried on grapestock.

Pesticides Directorate, Agriculture Canada, Ottawa (1982–1983):

- Evaluation Officer: involved in the evaluation of pesticide registration applications

South African Institute for Medical Research, Johannesburg, South Africa (1966–1969):

- Medical mycologist: reviewed records of mycotic diseases at the Institute, surveyed and analysed hospital records for epidemiological data, and published the first comprehensive review of mycotic diseases for Southern Africa.

ACADEMIC EXPERIENCE

University of Botswana and Swaziland (1977–1981):

- Reader; Faculty of Agriculture

University of Botswana, Lesotho and Swaziland (1969–1977):

- Senior Lecturer/Reader, Department of Biology

University of Witwatersrand, Johannesburg, South Africa (1966–1969):

- Part-time Lecturer in medical mycology

University of California at Los Angeles (1961–1964):

- Teaching Assistant, Department of Plant Science

Rhodes University, Grahamstown, South Africa (1959–1960):

- Junior Lecturer, Department of Botany

SCHOLARSHIPS AND AWARDS

1979: ICRETT Sabbatical study grant from International Union against Cancer

1973: Sabbatical study grant from the Tropical Products Institute, London, U.K.

1968: Watkins-Pitchford Prize for best research paper, South African Institute for Medical Research

1964: NRC (Canada) Postdoctoral Fellowship to study ringworm fungi at the University of Alberta Mold Herbarium, Edmonton.

1963: Burlingham Scholarship at the New York Botanical Garden

1958: South African Breweries Scholarship for postgraduate study

PROFESSIONAL MEMBERSHIPS

Canadian Phytopathological Society

Canadian Society of Agronomy

Ontario Institute of Agrologists

Ottawa Field-Naturalists Club

South African Association of Botanists

South African Association for the Advancement of Science



## PUBLICATIONS

- Martin, P.M.D., “The pathogens of wheat”, “The pathogens of the grapevine”, in: Kahn, R.P. (ed.), *Plant Protection and Quarantine*, pp. 1-22, 23-41. Boca Raton, FL: CRC Press (1989).
- Martin, P.M.D., and G.B. Hill, “Cervical cancer in relation to tobacco and alcohol consumption in Lesotho, Southern Africa”, *Cancer Detection and Prevention*, **7**: 109–115 (1984).
- Martin, P.M.D., “The Plant Control Act”, *Swaziland Government Gazette Extraordinary*, **19**(80), 134 pp. (1981).
- Martin, P.M.D., “An assessment of the public health hazard of the genus *Fusarium*”, in: Schoental, R. (ed.): *Dietary influences on Cancer: Traditional and Modern..* Boca Raton, FL: CRC Press (1981).
- Martin, P.M.D., “Agriculture in Swaziland—Past, Present and Future”, a summary of statistics presented at the *Conference of the Royal Society of Swaziland for Science and Technology* (1980).
- Martin, P.M.D., and P. Keen, “The cancer spectrum in Lesotho. II”, *S. Afr. J. Sci.*, **75**: 501–510 (1979).
- Martin, P.M.D., Plant Pathology section in the *Annual Report of the Malkerns Research Station for 1978*, Swaziland (1979).
- Martin, P.M.D., and P. Keen, “The occurrence of zearalenone in raw and fermented products from Swaziland and Lesotho”, *Sabouraudia*, **16**: 15–22 (1978).
- Martin, P.M.D., “The mycoflora of maize, sorghum, wheat and groundnuts”, *Res. Bull. No. 1*, Malkerns Research Station, Swaziland (1977).
- Martin, P.M.D., contribution to the Plant Pathology section in: Brook, C.E. (ed.), *Advisory Bulletin No. 1*, Malkerns Research Station, Swaziland (1977).
- Leibowitz, M.C., S.D. Berson and P.M.D. Martin, “A case of disseminated histoplasmosis in South Africa”, *S. Afr. Med. J.*, **51**: 315–317 (1977).
- Martin, P.M.D., and G.A. Gilman, “A consideration of the mycotoxin hypothesis” (a report based on personal research and on the mycological collections at the Commonwealth Mycological Institute, Kew, Surrey), **Report G105**, 112 pp. London, UK: Tropical Products Institute (1976).
- Martin, P.M.D., J.W.B. Perry, and P. Keen, “The Cancer Spectrum in Lesotho”, *S. Afr. J. Sci.*, **72**: 168–171 (1976).
- Freed, C.C., E. Bisset, P.M.D. Martin, and L. Ajello, “A case of infection by *Streptomyces somaliensis* in South Africa”, *Sabouraudia*, **23**: 315–322 (1975).
- Martin, P.M.D., “Fungi associated with common crops and crop products and their significance”, *S. Afr. Med. J.*, **48**: 2374–2378 (1974).
- Martin, P.M.D., and S.D. Berson, “Fungous diseases in Southern Africa”, *Mycopathologia et Mycologia Applicata*, **50**: 1-84 (1973).
- Martin, P.M.D., G.A. Gilman, and P. Keen, “The incidence of fungi in foodstuffs and their significance based on a survey of the Eastern Transvaal and Swaziland”, in: Purchase, I.F.H. (ed.), *Symposium on Mycotoxins in Human Health*, pp. 281–290. London, UK: Macmillan (1971).

- Keen, P. and P. Martin, "Is Aflatoxin carcinogenic in man? The evidence in Swaziland", *Trop. Geog. & Med.*, **23**: 44–53 (1971).
- Keen, P. and P. Martin, "The toxicity and fungal infestation of foodstuffs in Swaziland, in relation to harvesting and storage", *Trop. Geog. & Med.*, **23**: 35–43 (1971).
- Martin, P.M.D., D.D. Kanarek, S. Zwi, A.V. Boyd, and H.J. Koornhof, "The incidence of fungi in the throat", *Mycopathologia et Mycologia Applicata*, **45**: 165–187 (1971).
- Martin, P.M.D., "Studies in the Xylariaceae. I", *S. Afr. J. Bot.*, **33**: 205–240 (1967)  
II. *Ibid.*, **33**: 315–328 (1967).  
III. *Ibid.*, **34**: 153–199 (1968).  
IV. *Ibid.*, **34**: 303–330 (1968).  
V. *Ibid.*, **35**: 149–206 (1969).  
VI. *Ibid.*, **35**: 267–320 (1969).  
VII. *Ibid.*, **36**: 393–410 (1969).  
VIII. *Ibid.*, **36**: 73–138 (1970).  
Supplement, *Ibid.*, **42**: 71–83 (1976).
- Martin, P.M.D., N. Livni, D. Fuller, J.G. Cowley, H. Adams, T. Bramwell-Jones, and V. van Niekerk, "Notes on some common mycotic infections", *Med. Proc. (S.A.)*, **14**: 414–421 (1968).
- Carmichael, J.W., R.S. Julius, and P.M.D. Martin, "Relative similarities in one dimension", *Nature*, **208**: 544–547 (1965).
- Schutte, K. and P. Martin, "The influence of certain micronutrient deficiencies on the germination rates of radish and millet", *Plant & Soil*, **10**: 299–302 (1959).

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 Consultant in Occupational and Environmental Health and Safety

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### Education

B.E.S            Bachelor of Environmental Studies, University of Waterloo, 1997.  
 S.J.D.            Doctor of Juridical Science, University of Toronto, Faculty of Law, 1991.  
 LL.M.            Master of Laws, University of Toronto, Faculty of Law, 1987.  
 COHS            Certificate in Occupational Health and Safety, Ryerson Polytechnic Institute,  
                     1986.  
 LL.B.            Bachelor of Laws, Queen's University, Faculty of Law, 1980.  
 B.Sc.            Bachelor of Science, Honours Biology, First Class, Queen's University,  
                     Department of Biology, 1977.

### Professional Status and Memberships

Canadian Registered Safety Professional (CRSP) — 1992  
 Called to the Bar of Ontario — 1982  
 Member Law Society of Upper Canada  
 American Industrial Hygiene Association  
 Board for Canadian Registered Safety Professionals  
 Occupational Hygiene Association of Ontario  
 Canadian Society of Safety Engineering  
 American Society of Safety Engineers

### Employment History

1998 to present    Associate Professor, School of Occupational and Public Health, Ryerson  
                          Polytechnic University.  
 1992 to 1998      Assistant Professor, School of Environmental Health, Ryerson Polytechnic  
                          University.  
 1986 to 1992      Instructor at Ryerson.  
 1983 to present    Consultant in occupational and environmental health and safety.  
 1980 to 1983      Articled and practiced civil litigation with Borden & Elliot, a (then) 95-member  
                          law firm in Toronto.

### Honours

Received the *Significant Contribution Award* at the annual Awards of Excellence ceremony at the OSH '94 Conference on October 18, 1994 for developing educational opportunities for occupational health and safety professionals.

## Teaching at Ryerson University

Regularly teach:

- Occupational Health and Safety Law
- Health Law I
- Health Law II
- Occupational Health and Safety Systems
- Hazard Recognition and Control

Have taught:

- Environmental Law
- Accident Theory
- Occupational Hygiene
- Occupational Health & Safety Topics

## Consulting

Provides in house seminars on a variety of topics, including: Due Diligence, The Internal Responsibility System, Strategies for Senior Management, The Role of the Committee, WHMIS, Accident Investigations. Conducts, in conjunction with Michael Holliday & Associates, audits of the effectiveness of the Internal Responsibility System in Ontario Mines. Provides services for dozens of organizations in most provinces and territories in Canada. Provides general advice on the development of OHS management systems.

## Technical Reports

NOTE: Items marked with an asterisk (\*) were developed as a result of work for Michael Holliday & Associates

- \*1. M.G. Holliday, P. W. Strahlendorf, and I.M. Plummer, "The IRS and your safety performance", in *Proc. Mining Health & Safety Conf. 2001*, 18-19 April 2001, Sudbury. North Bay, Ont.: Mines and Aggregates Safety & Health Association (April 2001).
- \*2. I.M. Plummer, P. W. Strahlendorf, and M.G. Holliday, *The Internal Responsibility System in Ontario Mines: Final Report*. Toronto, Ont.: Queen's Printer for Ontario (December 2000).
- \*3. I.M. Plummer, P.W. Strahlendorf, and M.G. Holliday, *THE INTERNAL RESPONSIBILITY SYSTEM IN ONTARIO MINES—Final Report: The Trial Audit & Recommendations*, report prepared for the Ontario Ministry of Labour, Toronto (July 2000).
- \*4. I.M. Plummer, P.W. Strahlendorf, and M.G. Holliday, *THE INTERNAL RESPONSIBILITY SYSTEM IN ONTARIO MINES—Interim Report #2: The Pilot Audit*, report prepared for the Ontario Ministry of Labour, Toronto (February 2000).
- \*5. I.M. Plummer, P.W. Strahlendorf, and M.G. Holliday, *THE INTERNAL RESPONSIBILITY SYSTEM IN ONTARIO MINES—Interim Report #1: Description of the IRS*, report prepared for the Ontario Ministry of Labour, Toronto (November 1999).
6. P.W. Strahlendorf, *Subcontractor Safety in Saskatchewan*, September 1997, a report prepared for the Occupational Health and Safety Division of the Saskatchewan Department of Labour.

7. P.W. Strahlendorf, *Thinking About Safety Rules*, July 1997, a report prepared for Ontario Hydro.
8. P.W. Strahlendorf, *Response to the Discussion Paper on the Review of the Occupational Health and Safety Act*, April 1997, a submission to the Ontario Ministry of Labour.
- \*9. M.G. Holliday, J. M. Park, P.W. Strahlendorf, and T.F. Schrecker, *The Canadian Environmental Protection Act: Science, Policy, and Public Health*, at the World Environmental Congress in London, Ontario in September 1995.
- \*10. M.G. Holliday, J.M. Park, P.W. Strahlendorf and T.F. Schrecker, *Environmental Health Assessments and Regulatory Options Under the Canadian Environmental Protection Act*, for Health and Welfare Canada, June 1993.
- \*11. P.W. Strahlendorf, M.G. Holliday and J.M. Park, *Occupational Health & Safety at Toronto Hydro*, for the Toronto Electric Commissioners, July 1992.
12. P.W. Strahlendorf, *Blueprint for a Proposed Degree in Occupational Health and Safety*, report prepared for Ryerson Polytechnical Institute, May 1990.
- \*13. M.G. Holliday, P.W. Strahlendorf, I. MacLachlan, and J.J. Engelhardt, *Some Occupational Health Aspects of the Use of Beryllium and Its Compounds in Ontario*, Toronto, Ont.: Ontario Ministry of Labour (November 1987).
14. P.W. Strahlendorf, *New Chemicals Legislation in OECD Member States: A Review of Notification Requirements*, Report No. CC-8. Ottawa: Commercial Chemicals Branch, Environment Canada (June 1984) 313pp.
15. P.W. Strahlendorf, *Summary of Notification Requirements in New Chemicals Legislation in OECD Member States*, Report No. CC-7. Ottawa: Commercial Chemicals Branch, Environment Canada (June 1984).
- \*16. M.G. Holliday, P. Dranitsaris, P.W. Strahlendorf, A. Contala, and J.J. Engelhardt, *Occupational Health Aspects of Wood Dust Exposure in Ontario Industry*, for the Ontario Ministry of Labour (March 1986).
17. P.W. Strahlendorf, *Canadian Index of Hazardous Substance Regulation*, editions 2 and 3, for the Department of National Health and Welfare (March 1985 and March 1987) 1,700pp.
- \*18. J.J. Engelhardt, R.E. Flexer, and P.W. Strahlendorf, *A Compilation of Information Sheets on Active Ingredients of Pesticide Formulations*, for the Department of National Health and Welfare (March 1984) 494pp.
- \*19. P.W. Strahlendorf, *Regulation of Toxic Substances in Canada*, for the Department of National Health and Welfare (March 1984).
20. P.W. Strahlendorf, *Chlorinated Benzenes as Potential Environmental Health Hazards: A Review*, for the Department of National Health and Welfare (1978) 180pp.

### Articles (last few years)

1. P.W. Strahlendorf, "Professional Ethics in OH&S", **Occupational Health & Safety Canada**, vol. 18(5), July/Aug 2002, pp. 25-30.
2. P.W. Strahlendorf, "The Internal Responsibility System", **Occupational Health & Safety Canada**, vol. 17(2), March 2001, pp. 30-42.
3. P.W. Strahlendorf, "Ain't Misbehavin': Behaviour Based Safety", **Occupational Health & Safety Canada**, vol. 15(5), July/Aug 1999, pp. 33-38.
4. P.W. Strahlendorf, "Proactive Versus Reactive Due Diligence", **Workplace Environment, Health & Safety Reporter**, Oct. 1998, pp. 726-7.

5. P.W. Strahlendorf, "The Internal Responsibility System: Here We Go Again", **Occupational Health & Safety Canada**, vol 14(4), June/July 1998, p.62.
6. P.W. Strahlendorf, "Doomed if You Don't: Supervisory Due Diligence", **Occupational Health & Safety Canada**, vol. 14(1), pp. 34-42, Jan/Feb 1998.
7. P.W. Strahlendorf, "Expanding the Role of the Occupational Health Nurse", **OOHNA Journal**, vol. 16(1), pp. 16-20,23, Autumn 1997.
8. P.W. Strahlendorf, "Sick Organization Syndrome: A Self-test to Rate the Health of OH&S in Your Organization", **Occupational Health & Safety Canada**, vol. 13(4), pp. 22-28, June/July 1997.
9. P.W. Strahlendorf, "Legal Tug-of-war", **Occupational Health & Safety Canada**, vol. 13(2), pp. 36-41,54, March 1997.
10. P.W. Strahlendorf, "Work Refusals: Imminent Danger", **Occupational Health & Safety Canada**, vol. 13(1), p. 62, Jan/Feb 1997.
11. P.W. Strahlendorf, "The Occupational Health and Safety System: Tools for Due Diligence" **Workplace Environment, Health & Safety Reporter**, April 1996, pp.1-15.
12. P.W. Strahlendorf, "Reimbursing Fines: Who Pays the Price?", **Occupational Health and Safety Canada**, January/February, 1996.
13. P.W. Strahlendorf, "What Supervisors Need to Know", **Occupational Health and Safety Canada**, January/February, 1996.
14. P.W. Strahlendorf, "Accident Theory II" **Occupational Health & Safety Canada**, November/December, 1995.
15. P.W. Strahlendorf, "Accident Theory I" **Occupational Health & Safety Canada**, September/October 1995.
16. P.W. Strahlendorf, "*Arbitration Decisions on Occupational Health and Safety*", **Health and Safety Resource**, May/June 1995.
17. P.W. Strahlendorf, "*Who is Responsible for Safety? The Impact of Bipartitism on Internal Responsibility*", **Occupational Health & Safety Canada**, January/February, 1995.
18. With Julia Lewis, Ryerson's OHS Manager, and Mark Johnston of Topaz Communications, through the Rogers Communications Centre, prepared a one hour video titled "Due Diligence: Strategies for Senior Management". This video was premiered at the OSH '95 Conference in Toronto in October 1995. Wrote an 82 page manual of the same title to accompany the video.
19. P.W. Strahlendorf, *Training Senior Managers*, **Occupational Health & Safety Canada**, March/April 1994.
20. P.W. Strahlendorf, *Health and Safety Training for Senior Management*, in S. Williams (ed.), **OHS Canada Guide to Training**, Toronto: Southam, 1994.
21. P.W. Strahlendorf, *Health and Safety Training for Supervisors*, in S. Williams (ed.), **OHS Canada Guide to Training**, Toronto: Southam, 1994.

### **Conference Presentations (last few years)**

1. "What Occupational Health Nurses Need to Know About Safety", OOHNA Conference, Kingston, September 1999.
2. "Due diligence and the Internal Responsibility System", a teleconferenced presentation to the Nova Scotia Human Resources Association conference in Halifax, May, 1999.

3. "Due diligence and the Internal Responsibility System", CSSE Conference, Saskatoon, May, 1999.
4. "The Role of the Health & Safety Committee", CSSE Conference, Saskatoon, May, 1999.
5. "Due diligence and the Internal Responsibility System", Education Safety Association of Ontario conference, Toronto, April 1999.
6. "Due diligence and the Internal Responsibility System", Lake Superior Safety Conference, Marathon, April 1999.
7. "The Role of the Health & Safety Committee", Lake Superior Safety Conference, Marathon, April 1999.
8. "Due diligence and the Internal Responsibility System", Nova Scotia Safety Council annual conference, Halifax, March 1999.
9. "Liability of the OHS Professional", Nova Scotia Safety Council annual conference, Halifax, March 1999.
10. "Due diligence and the Internal Responsibility System", Estevan Safety Conference, Sask, March 1999.
11. "Due diligence and the Internal Responsibility System", Saskatchewan Safety Council, Regina, February 1999.
12. "Tuning up Your Health & Safety Committee", Saskatchewan Safety Council, Regina, February 1999.
13. Ontario Council of Universities, October 1998
14. "Due diligence and the Internal Responsibility System" , CSSE, Toronto, October 1998.
15. "Due diligence and the Internal Responsibility System" at the New Brunswick Safety Council annual conference, Saint John, June 1998.
16. "Responsibilities for Engineers Under Safety, Health and Environmental Legislation", Canadian Society for Mechanical Engineering Forum, Toronto, May 1998.
17. "Supervisor Due Diligence" at the Mining Safety Conference, Toronto, May 1998.
18. "OHS Management Systems into the Millennium" at the OMAFRA Conference, Guelph, May 1998.
19. "Due Diligence" at Canadian Institute, Toronto, February 1998.
20. "The Internal Responsibility System and the Canada Labour Code" at the Insight Seminar, Toronto, February 1998.
21. "Contractor Safety and Due Diligence" at the Aggregate Resources Safety Conference, Toronto, January 1998.
22. "The Internal Responsibility System" at the OSH '97 Southam Conference, Toronto, November 1997.
23. "The Internal Responsibility System", at the Employers' Advocacy Council conference, Toronto, October, 1997.
24. "The Expanding Role of the Occupational Health Nurse: Trends and Issues" at the Ontario Occupational Health Nurses Association annual conference, London, October 1997.
25. "Legal Liability of the Health and Safety Professional" at the CSSE Conference, St. John's NF, August 1997.
26. "The Internal Responsibility System" to the Employer's Council on Occupational Health and Safety, Toronto, September 1996.

27. "Managing Occupational Health and Safety: Towards the Year 2000" to the Labatts' Safety Conference, Toronto, September 1996.
28. "The Expanding Role of the Occupational Health Nurse: Trends and Issues" at the Ontario Hospital Association annual conference, Toronto, November 1996.
29. "Setting Up an Organizational Structure to Support the Integration of Management Systems", at the Canadian Institute Conference on Integrated OHS &E Systems, Toronto, November 1996.
30. "Managing Occupational Health and Safety into the 21st Century" at a national conference of OHS professionals and managers employed by Health Canada, Ottawa, January 1997.
31. Gave a presentation on "Safety Professional Liability" at the Western New York Safety Conference, Grand Island (Buffalo), New York, May 16, 1996.
32. Gave a presentation on "Integrating the Environmental Management System with the Occupational Health & Safety System" at a conference "Exploring the Need: A National Forum on Voluntary International Standards for Occupational Health and Safety Management Systems", sponsored by the Standards Council of Canada, May 15, 1996, in Toronto.
33. Gave a paper at the conference titled "Integrating Environmental Management Systems and Occupational Health and Safety Systems". conference March 5th and 6th '96 sponsored by the Canadian Institute
34. "Arbitrations and Human Rights: What are Non-OHS Decision-Makers Doing About OHS?" at the 6th annual Occupational Health & Safety Symposium '96 in Toronto April 1st and 2nd 1996, sponsored by the Canadian Institute.
35. "Accident Theories: What You're Missing if You Don't Use One", at the 6th annual Occupational Health & Safety Symposium '96 in Toronto, April 1st and 2nd, 1996, sponsored by the Canadian Institute.
36. "OHS Management Systems", a presentation to the Brazil (SENAI) Incept Mission Team, Brazil ETSN project through Ryerson International, at Ryerson, November 8, 1995.
37. "Arbitrations and Human Rights: What are Non-OHS Decision-Makers Doing About OHS?" at the 6th annual Occupational Health & Safety Symposium '96 in Toronto in November 1995, sponsored by the Canadian Institute.
38. "Accident Theories: What You're Missing if You Don't Use One", at the 6th annual Occupational Health & Safety Symposium '96 in Toronto, November 1995, sponsored by the Canadian Institute.
39. "Legal Liability of Occupational Health and Safety Professionals", Canadian Society of Safety Engineering, Annual Conference, Toronto, August 1995.
40. "Due Diligence, Health and Safety and Physical Plant", Association of Physical Plant Administrators, Annual Conference, Toronto, May, 1995.

### **Panel Discussions, etc.:**

1. Chairperson of the Federal OHS Conference at the Insight Seminar, Toronto, February 1998.
2. Chairperson of the OHS Conference at the Canadian Institute, Toronto, February 1998.
3. Chair of a panel discussion "Westray Mining Disaster -- What Went Wrong?" at a Canadian Institute Conference OHS '97, Toronto, February 1997.



4. Panelist "Quality Labour Inputs -- Hiring for Health and Safety", at a Canadian Institute Conference OHS '97, Toronto, February 1997.
5. Chair of a panel discussion "Professional Development -- Who Survives After Downsizing?", at a Canadian Institute Conference OHS '97, Toronto, February 1997.
6. Panelist "Is Due Diligence Misunderstood?" at the ONRSA Mining Safety Conference '97, Toronto, May 1997.
7. Panelist "Occupational Health and Safety Issues", a panel discussion in City of Toronto Council chambers organized by the City of Toronto during Occupational Health and Safety Week, Toronto, June 1997.
8. Chair of a panel session on "Policies: Is Yours Working for You?" -- a discussion of the effectiveness of policy statements on occupational health and safety employers are legally required to prepare, at the 6th annual Occupational Health & Safety Symposium '96 in Toronto, April 1996, sponsored by the Canadian Institute.
9. Panelist in a session, "Integrating Quality, Environment, Health and Safety". at the 6th annual Occupational Health & Safety Symposium '96 in Toronto, April 1996, sponsored by the Canadian Institute.
10. Was a co-chair of a two day conference March 5th and 6th '96 sponsored by the Canadian Institute. The conference was on ISO 14000, the new international standard for environmental management systems.
11. Chair of a panel session on "Policies: Is Yours Working for You?" -- a discussion of the effectiveness of policy statements on occupational health and safety employers are legally required to prepare, at the 6th annual Occupational Health & Safety Symposium '96 in Toronto, November 1995, sponsored by the Canadian Institute.
12. Panellist in a session, "Integrating Quality, Environment, Health and Safety". at the 6th annual Occupational Health & Safety Symposium '96 in Toronto, November 1995, sponsored by the Canadian Institute.
13. "Due Diligence: Strategies for Senior Management", a panellist at the session launching Ryerson's new video on occupational health and safety at the OSH '95 Conference in Toronto in October 1995.
14. Panellist for a conference session, "Personal Responsibility in Health and Safety", at the annual conference of the Ontario Natural Resources Safety Association in Toronto, September 1995.
15. Panellist for a conference session, "Working Alone", at the annual conference of the Ontario Natural Resources Safety Association in Toronto, September 1995.

### **Workshops (last few years)**

1. Two day workshops for occupational health and safety managers who are preparing to write the examinations for the Canadian Registered Safety Professional (CRSP) certification. (1992 onwards...on average 3 times a year).
2. Various seminars and workshops for members of the Industrial Accident Prevention Association on topics in occupational health and safety (1991 onwards...on average 3-4 times a year).
3. "Due Diligence and the OHS Management System", Board of Directors, Ontario Hydro Services Corporation, June 1999.

4. "Due Diligence and the Internal Responsibility System", a half day workshop at the E.B. Eddy Annual Safety Conference, Espanola, Ont., May 1999.
5. "OHS Management System", House of Commons Health & Safety Committee, Cornwall, February 1999.
6. "OHS Management System", 2 day workshop for officers with the WCB of The Northwest Territories, Yellowknife, June 1998.
7. "Liability of the OHS Professional", one day workshop, CSSE, Fort McMurray, AB, April 1998.
8. "WHMIS", 2 half day workshops for Ontario Place, Toronto, June 1998.
9. "Due Diligence and the OHS Management System", Environmental Compliance Conference '98, Toronto, April 1998.
10. "Supervisor Due Diligence", a one day workshop at the E.B. Eddy Annual Safety Conference, Espanola, Ont., March 1998.
11. "Due Diligence", one day workshop for Safety Officers of the Saskatchewan Department of Labour, Regina, December 1997.
12. "Due Diligence", one day workshop for Templegate Information Services, Toronto, October 1997.
13. "Accident Theory, Due Diligence and the Internal Responsibility System", one day workshop at the CSSE Saskatchewan Chapter Safety Conference, Saskatoon, June 1997.
14. "Professional Liability and the Occupational Health and Safety Consultant", one day workshop at the Canadian Society of Safety Engineering annual conference, Winnipeg, August 1996
15. "Due Diligence: Strategies for Senior Management", Canadian Institute OSH '97 Conference, Toronto, February 1997.
16. "Due Diligence and the OHS Management System", Environmental Compliance Conference '97, Toronto, March 1997.
17. Workshop on "Accident Theory, Investigations and Due Diligence" to the Alberta Construction Safety Association in Calgary in May, 1996.

### **Professional Activities**

1. Member of the Board of Governors of the Association for Canadian Registered Safety Professionals, 1996-98. Vice Chair 1998.
2. A member of a national focus group for the development of the program for the three day Occupational Health and Safety '95 Conference, which was held in Toronto in October, 1995.