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Paul Aveling Redhead

Personal

Name: Paul Aveling Redhead

Date of Birth: May 25th 1924

Birth Place: Brighton, England

Married: Yes

Children: Two daughters

Death: July 9th 2005 in Ottawa, Ontario at the age of 81 years old

Education

B.A Honors in Physics from Cambridge University in 1944

M.A in Physics from Cambridge University in 1948

P.H.D in Physics from Cambridge University in 1969

Honors

Fellow, Institute of Electronic and Electrical Engineers, 1958

Fellow, Royal Society of Canada, 1968

Fellow, American Physical Society, 1970

Honorary Member, American Vacuum Society, 1970

Medard W. Welch Medal of the American Vacuum Society, 1975

Jubilee Medal, 1977

Fellow, IEEE (Institute of Electrical and Electronics Engineers)

Canadian Association of Physicists

Royal Society of Chemistry

Career

| | |
|---------|---|
| 1944-45 | Department of Naval Ordnance (United Kingdom), Scientific Officer |
| 1945-47 | Services Electronics Research Laboratory (United Kingdom), Senior Scientific Officer |
| 1947- | National Research Council of Canada |
| 1947-54 | Electron Physics Section, Radio and Electrical Engineering Division, Research Officer |
| 1954-70 | Electron Physics Section, Radio and Electrical Engineering Division, Head |
| 1970-71 | Program Planning and Analysis Group, Head |
| 1971-72 | Program Planning and Analysis Group, Director |
| 1972-73 | Planning, Director General |
| 1973- | Division of Physics, Director |
| 1974-83 | Physical/Chemical Science Laboratories, Group Director |
| 1975- | Advisory Board on TRIUMF, Chairman |
| 1975-81 | Tactical Studies Committee, Chairman |
| 1980-82 | Program Selection Committee, Chairman |
| 1981- | Committee of Laboratory Directors, Chairman |

Volume 1

Golder Associates. *Final Report on Oil Sands Dry Landscape Reclamation: Phase 2: Toxicity and Chemistry of Leachates from Various Reclamation Materials*. Alberta Oil Sands Technology and Research Authority, Suncor Inc. Oil Sands Group.

Golder Associates. *Report on Toxicity and Bioaccumulation Potential of Fine Tails and Tailings Water from Oil Sands Extraction*. Alberta Oil Sands Technology and Research Authority, Suncor Inc. Oil Sands Group.

Correspondence between Nelson R.L and Sparks, B.D. *Re: Fine Tails Consortium*. December 15th, 1995 to May 8th, 1996.

Agreement to Perform Services as an Engineering Consultant. Terra Energy LTD. And Kilborn Energy Inc.

Agreement between The National Research Council of Canada, Alberta Oil Sands Technology and Research Authority and Terra Energy Limited concerning the Spherical Agglomeration with Solvent Extraction (SESA) Process.

Agreement between Canadian Patents and Development Limited and Terra Energy Limited concerning "Agglomeration and Separation of Selected Solids from Mixes of Solids Suspended in Liquid Mediums- Case #2763".

Sludge Reports Consortium Binder

Kotlyar, L.S., Ripmeester, J.A., & Sparks, B.D. *Isolation and Characterization of Various Types of Organic Matter in Oil Sands Tailing Sludge*. Institute for Environmental Chemistry. National Research Council of Canada.

Kotlyar, L.S., Ripmeester, J.A., Woods, J.R. & Sparks, B.D. *Characterization of Strongly Bound Organic Matter Present in Athabasca Tailings Pond Sludge using a Combination of Alkaline and Supercritical Fluid Extractions*. Institute for Environmental Chemistry. National Research Council of Canada.

Kotlyar, L.S., Ripmeester, J.A., & Sparks, B.D. *Characterization of Sol-Gel Transformation by Deuterium NMR Spectroscopy*. Institute for Environmental Chemistry. National Research Council of Canada.

Kotlyar, L.S., Ripmeester, J.A., Woods, J.R. & Sparks, B.D. *Supercritical Fluid Extraction of Bitumen Free Solids Separated from Athabasca Oil Sand Feed and Hot Water Process Tailings from Pond Sludge*. Institute for Environmental Chemistry. National Research Council of Canada.

Kotlyar, L.S. & Sparks, B.D. *Isolation and Characterization of Organic-Rich Solids Present in Athabasca Tailings Pond Sludge*. AOSTRA Journal of Research, 6 (1990) 41.

Kotlyar, L.S., Ripmeester, J.A., & Sparks, B.D. *Isolation and Characterization of Various Types of Organic Matter in Oil Sands Tailing Sludge*. Institute for Environmental Chemistry. National Research Council of Canada.

Sparks, B.D & Majid, A. *Settling Behaviors of Syncrude Sludge Pond Tailings After Treatment by Oil Phase Agglomeration*. Institute for Environmental Chemistry. National Research Council of Canada.

Schutte, R. *Influence of Composition of Process Water on the Formation and Shrinkage of Sludge*. Syncrude Canada Ltd.

Schutte, R. Nrlson, R. & Mikula, R. *Amorphous Iron in Sludge (Draft)*. Department of Mine Engineering. National Research Council of Canada.

Clay Organic Interaction: Sub-Committee Report. National Research Council of Canada.

Chow, R.S. *Electroacoustic and Electrophoretic Properties of Sludge*. Discipline Subcommittee Annual Report. Sludge Fundamentals Consortium. October 4th 1990.

Year End Report 89/90. Institute for Environmental Chemistry. National Research Council of Canada.

FTFC Management & Technical Committees Minutes & Trip Reports Binder

Gietz, C.W. *Proposal: Fine Tails Fundamentals Consortium Public Information Document*. Alberta Department of Energy. October 27th 1995.

Consortium Managemnet Committee Members Re: Bids on the Write-up of the Public Information Document for the fine Tails Fundamentals Consortium. Alberta Energy. October 30th 1995.

Re: Fine Tails Fundamentals Consortium- "Public Information document". Alberta Energy. October 11th 1995.

Response for Proposals for the Fine Tails Fundamentals Consortium. MacKenzie Communication Services Ltd. October 22nd 1995.

Fine Tails Fundamentals Consortium Management Committee Meeting. Syncrude Research Centre. January 24th 1995.

Fine Tails Fundamentals Consortium Final Report Planning Meeting. Syncrude Research, Edmonton. January 24th 1995.

Fine Tails Fundamentals Consortium Management Committee Meeting. Syncrude Research, Edmonton. March 8th, 1995.

Emerging Technology Bulletin: Development of a Photothermal Detoxification Unit. Superfund Innovative Technology Evaluation. United States Environmental Protection Agency. May 1995.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. December 10th, 1991.

Sludge Fundamental Consortium Technical Committee Meeting Preparation. January 16th 1992.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. January 15th 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium.* AOSTRA. Edmonton. January 15th 1992.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. January 15th, 1992.

Agenda Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. February 27th, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium.* AOSTRA. Edmonton. February 27th, 1992.

Agenda Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. April 1st, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium.* AOSTRA. Edmonton. April 1st, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium.* AOSTRA. Edmonton. April 28th, 1992.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. May 26th, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium.* AOSTRA. Edmonton. June 25th, 1992.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. June 25th, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium.* AOSTRA. Edmonton. August 12th, 1992.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. August 12th, 1992.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. October 1st, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium.* AOSTRA. Edmonton. October 1st, 1992.

Management Committee Meeting: Sludge Fundamental Consortium Meeting Minutes. AOSTRA. Edmonton. October 1st, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium*. AOSTRA. Edmonton. October 1st, 1992.

Sludge Fundamentals Consortium Minutes of Management Committee Meeting. Alberta. October 28th, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium*. AOSTRA. Edmonton. December 2nd, 1992.

Fine Tailings Fundamentals Consortium Minutes of Management Committee Meeting. Edmonton. December 2nd, 1992.

Meadus, F.W. *Trip Report Sludge Fundamental Consortium*. AOSTRA. Edmonton. December 2nd, 1992.

Fine Tailings Fundamentals Consortium Minutes of Management Committee Meeting. Edmonton. September 24th, 1993.

Management Committee Meeting. AOSTRA. Edmonton. January 21st, 1994.

Fine Tailings Fundamentals Consortium Minutes of Management Committee Meeting. Edmonton. March 11th, 1994.

Technical Committee Meeting Cancellation on January 14th 1992. Inter Office Memo. Sheeran, D.

Technical Committee Meeting Sludge Fundamentals Consortium Minutes. Edmonton. January 21st, 1992.

Re: Ranking of Worksopes for Year 3. Oil Sands Technology and Research Authority. January 28th, 1992.

Agenda Technical Committee Meeting Sludge Fundamentals Consortium. AOSTRA. Edmonton. March 9th, 1992.

Report on Technical Committee Meeting. Edmonton. April 27th 1992.

Comments Re: Sludge Densification Proposal (Alcross Enterprises) as Submitted to the Sludge Fundamentals Consortium. April 14th, 1992.

Technical Committee Meeting Sludge Fundamentals Consortium Minutes. Edmonton. May 20th, 1992.

Notes from Technical Committee Meeting. June 24th 1992.

Technical Committee Meeting Sludge Fundamentals Consortium Minutes. Edmonton. June 24th, 1992.

Technical Committee Meeting Sludge Fundamentals Consortium Minutes. Edmonton. October 23rd, 1992.

Trip Report: Sludge Fundamentals Consortium Technical Committee Meeting. June 24th, 1992.

Technical Committee Meeting Sludge Fundamentals Consortium Minutes. Edmonton. July 28th, 1992.

Sludge Fundamentals Consortium Technical Committee Meeting Minutes. Edmonton. October 23rd, 1992.

Sludge Fundamentals Technical Committee Meeting Minutes. Syncrude Research. Edmonton. December 15th, 1992.

Fine Tailings Fundamentals Consortium Technical Committee Agenda. Edmonton. December 15th, 1992.

Fine Tailings Fundamentals Consortium Joint Technical/Management Committee Meeting Minutes. Edmonton, Alberta. March 2nd, 1993.

Fine Tailings Fundamentals Consortium Technical Committee Meeting. Edmonton. April 22nd, 1993.

Sparks, B.D. *Trip Report: Fine Tailings Fundamentals Consortium Technical Committee Meeting*. January 20th 1994.

Lord, T. *OHWE/CHWE Claims*. Hand Written Notes.

Fine Tailings Fundamentals Consortium Joint Technical/Management Committee Meeting Minutes. Edmonton. September 14th, 1993.

Fine Tailings Fundamentals Consortium Joint Technical/Management Committee Meeting Minutes. Edmonton. January 20th, 1994.

Devenny, D., Johnson, G.G. & Paul, R. *Options for Managing Oil Sand Tailings*. Calgary, Alberta.

George, R. *Suncor Adds 1 Billion BBL to Reserves & Restructures Oil Sands Plant*. Suncor Newslines. Number 92-42. October 28th, 1992.

Notes on Mini-Sludge Forum October 14th-15th. November 2nd, 1992.

Schutte, R. *Justification of Sludge Research Proposals in Terms of Impact Applications*. Syncrude Canada Ltd. July 23rd, 1992.

Devenny, D., Corti, A., Paul, R., Dereniwski, T., Claridge, F.B., Taplin, D. & Johnson, G. *Induced Consolidation to Solidify Oil Sand Sludge*. 53:1-6.

Lord, T., Burns, B. & Dereniwski, T. *Notes on Technical Presentation at Annual Sludge Workshop*. June 23rd, 1992.

FTFC Year 5

Environmental Technical Planning Group (TPG) Agenda. Canadian Oil Sands Network for Research and Development. January 5th, 1994.

Fine Tailings Fundamentals Consortium Joint Technical Committee Meeting Minutes. Edmonton. June 16th, 1993.

Czarnecki, J & Lord, T. *Technical Accomplishments: Fine Tails Fundamentals Consortium.* Syncrude Research. June 19th, 1993.

Shutte, R. *Water Chemistry- Bulk Behavior and the Role of Ultrafines.* Consortium on Fine Tailings Fundamentals. December 1st, 1993.

Smith, R.G. *Questions and Justifications for the Technical Committee of the Fine Tails Consortium.* Syncrude Research. June 22nd, 1993.

Lord, T. *OHWE/CHWE Update: Comparison of Tailings Characteristics.* Syncrude Research. August 9th, 1993.

Sparks, B.D. *Re: Fine Tailings Fundamentals Consortium- Reduced Budget for Year 5 Projects.* Institute for Environmental Chemistry. National Research Council Canada.

Fine Tails Fundamental Consortium- Year 5 Projected Rankings. October 25th, 1993.

Sparks, B. *Cost Estimates for Analysis of OHWE-CHWE Samples.* Inter Office Memo. Institute for Environmental Chemistry. National Research Council Canada.

NRC Proposals with Cost Recovery Component. October 15th, 1993.

Effect of Anions on Gel Formation in Suspensions of Fine Tails. Proposal for Fine Tails Consortium.

Sparks, B. *New Sub-Project Codes for 93/94 Fine Tailings Consortium.* Inter Office Memo. November 4th, 1993.

M, McKinnon. *Leaching of MFT.*

Detoxification of Sludge using coke/Fly Ash etc. National Research Council.

Centrifuge Test for Enhanced Settling Evaluation. National Research Council.

Effect of Bitumen Content of Fine Tailings from Batch Extraction Tests. National Research Council.

Smith, R.G. *Questions and Justifications for the Technical Committee of the Fine Tails Consortium.* Syncrude Research. June 22nd, 1993.

Smith, R.G. *Draft of the Syncrude Work on the Oil Sands.*

Nelson, R.L. *Fine Tailings Fundamentals Consortium Management Committee Meeting Minutes*. Edmonton. November 24th, 1993.

Nelson, R.L. *Year 5 Workslope- Ranking of Proposals*. Oil Sands Technology and Research Authority. October 15th, 1993.

Nelson, R.L. *Fine Tailings Fundamental Consortium- Next Technical Committee Meeting*. Oil Sands Technology and Research Authority. September 1st 1993.

Schutte, R. *A Few Notes on Research Plans for 1994*. July 14th, 1993.

Nelson, R.L. *Re: Review of Critical Interest Areas by Champions at the Next Technical Committee Meeting, July 30, 0830, AOSTRA Edmonton*. Oil Sands Technology and Research Authority. July 5th, 1993.

Sheeran, D. *Technical Committee MTG*. Inter Office Memorandum. June 30th, 1993.

Nelson, R.L. *Review of Critical Interest Areas by Champions at the Next Technical Committee Meeting, July 30, 0830, AOSTRA Edmonton*. Oil Sands Technology and Research Authority. July 5th, 1993.

Fine Tailings Fundamentals Consortium Technical Committee Meeting Agenda. AOSTRA. Edmonton. April 22nd, 1993.

Fine Tailings Fundamentals Consortium Technical Committee Meeting Minutes. AOSTRA. Edmonton. April 22nd, 1993.

Lunde, S & Nelson, R.L. *Fine Tailings Fundamentals Consortium Management Committee: Change of Date*. Alberta Oil Sands Technology and Research Authority. May 31st, 1993.

Technical Committee Meeting Sludge Fundamentals Consortium Meeting Minutes. AOSTRA. Edmonton. September 17th, 1992.

Trip Report: FTFC Management Committee Meeting on 21st January 1994. January 26th, 1994.

Sparks, B.D. *FTFC Trip Report: Technical Committee Meeting*. July 30th, 1993.

Meadus, F.W. *Sludge Fundamentals Consortium: Management Committee Meeting*. AOSTRA. Edmonton, Alberta. June 25th, 1993.

Sparks, B.D. *Trip Report: Joint Management and Technical Committee Meetings*. Fine Tails Consortium. AOSTRA. Edmonton. March 2nd, 1993.

Meadus, F.W. *Trip Report: Management Committee Meeting*. Syncrude Research. Edmonton, Alberta. October 27th, 1993.

Sludge Consortium Proposals Vol. I

Schutte, R. *Chemical and Physical Properties of Tailing Pond*. Syncrude's Research Plans for 1990. November 30th, 1989.

Schutte, R. *Sludge Fundamentals*. December 5th, 1989.

NMR Projects Related to Sludge Characterization.

Letter to Sparks, B.D from Lown, E.M concerning correspondence from Dr. Strausz. January 4th, 1989.

Letter to Dr. Strausz from Sparks, B.D concerning extraction of bitumen from Athabasca Oil Sands. December 4th, 1989.

Clay and Organic Interactions. Technical Committee. December 18th, 1989.

Letter to Dr. R. Schutte from Sparks, B.D concerning funding for work on sludge fundamentals. November 24th, 1989.

Sludge Consortium. NRC Chemistry Division: Technical Contribution. November 2nd, 1989.

Summary of Studies on Oil Sand Sludges. Colloid and Clathrate Chemistry Section. Chemistry Division, NRC. Ottawa.

Sparks, B.D. *NRC Participation in Oil Sands Sludge Fundamentals Consortium*. Division of Chemistry, NRC Canada. July 14th, 1989.

Chemical and Mineralogical Characterization of Oil Sands. Objectives, Work Plans and Costs.

Abboud, S & Fuhr, B. *Clay-Organic Interactions Proposal*. Sludge Fundamentals Consortium. February 1990.

Babchin, A & Chow R. *Electrokinetic, Electroacoustic and Dielectric Properties of Sludge*. February 1990.

Effect of Freeze-thaw on Physical, chemical and Geotechnical Properties. Technical Committee. December 18th, 1989.

Electrokinetic, Electroacoustic and Dielectric Properties of Sludge. ARC.

Mechanisms of Sludge Reduction. ARC.

Microbiology. Suncor.

Letter to Schutte, R at Syncrude Research from Donini, J.C concerning Water Chemistry. October 19th, 1989.

Deslandes, Y & Pleizier, G. *The Chemical and Morphological Characterization of the Solid Fractions of Sludges from Athabasca Tar Sands.*

Dr. S Hrudey & Dr. P.M Fedorak. *Mass Spectrometric Characterization of Naphthenic Acids from Oil Sands Wastewaters with Regard to their Environmental Significance.*

Verbeek, G & Dr. W.C Mackay. *The Characterization of Acutely toxic and Mutagenic Compounds in Fine Tails Pore Water.*

Fripiat, J.J. *Workshop on Mineral/Mineral and Mineral/Organic Interactions.* Edmonton. January 16th and 17th, 1991.

NMR Projects Related to Sludge Characterization.

Sparks, B.D. *National Research Council Schedule A, B & C.* October 16th, 1990.

Sludge Fundamental Consortium. Institute for Environmental Chemistry. National Research Council. Ottawa.

Kodama, H. *Mineralogical Characterization of Oil Sand Sludge.* Proposal. Land Resource Research Centre. Ottawa, Canada.

Sludge Fundamental Consortium: Clay/Organic Interactions. Institute for Environmental Chemistry. National Research Council. Ottawa.

Sludge Fundamental Consortium: Clay/Organic Interactions- Modeling Studies. Institute for Environmental Chemistry. National Research Council. Ottawa.

Sludge Fundamental Consortium: Clay/Organic Interactions- Sludge Fractionation and Characterization . Institute for Environmental Chemistry. National Research Council. Ottawa.

Sparks, B.D. *Sludge Fundamental Consortium: Clay/Organic Interactions- Modeling Studies.* Institute for Environmental Chemistry. National Research Council. Ottawa. November 23rd, 1989.

Sparks, B.D. *Sludge Fundamental Consortium: Clay/Organic Interactions- Origin of Sludge Forming Components.* Institute for Environmental Chemistry. National Research Council. Ottawa. November 22nd, 1989.

Babchin, A.J. *Fundamental Studies in Sludge Interparticle Interactions.* OSHR, Alberta Research Council.

Jonasson, R.G. & Zhou, Z. *Enhanced Diagenesis in Sludge.* Proposal to the Sludge Consortium. Alberta Research Council. September 27th, 1990.

Dr. A.C. Pierre. *Properties and Behavior Modek Ternary Systems.* University Research. August 16th, 1990.

Sego, D.C., Scott, J.D. & Morgenstern, N.R. *Study of the Influence of Freeze-thaw on Behavior of Oil Sand Sludge.* Syncrude Research. Edmonton, Alberta. December 4th, 1989.

- Dr. D. Segó. *Influence of Freeze Thaw: Budget Agreement*. January 30th, 1990.
- Pierre, A.C. *Research Proposal: Effect of Addition of Fe on the Drying Properties of Kaolinite and of Illite Clays*. October 31st, 1989.
- Segó, D.C., Scott, J.D. & Morgenstern, N.R. *Study of the Influence of Freeze-thaw on Behavior of Oil Sand Sludge*. Syncrude Research. Edmonton, Alberta. December 4th, 1989.
- Angle, C.W. *Proposal for Electrokinetics Studies on Sludge Derived from Athabasca Tarsands Processing Operations*. November 1st, 1989.
- Babchin, A & Chow R. *Electrokinetic, Electroacoustic and Dielectric Properties of Sludge*. February 1990.
- 5 Alternative Transportation Fuels*. Fiscal Year 1991/92. July 25th, 1990.
- Microbial Dewatering and Detoxification of Oilsands Tailings*. Study Proposal. Syncrude Canada.
- Boerger, H. & Costeron, W.J. *Role of Bacteria in the Reclamation of oil Sands Tailings Fines*.
- Schutte, R. *Influence of Composition of Process Water on the Formation and Shrinkage of Sludge*. February 15th, 1990.
- Dr. J. Czarnecki. *Determination of Water Activity in Sludge*. February 16th, 1990.
- Dr. J. Czarnecki. *Brownian-Dynamic Modelling of sludge*. February 16th, 1990.
- Dr. J. Czarnecki. *Determination of Water Permeability of Sludge and Overburden Clays*. February 16th, 1990.
- Danielson, L.J & Schutte, R. *Water and Geochemistry of Sludge*. November 2nd, 1989.
- Danielson, L.J & Zrobok, R. *Rheological Properties of Sludge*. November 2nd, 1989.
- Lord, E.R. *Tailings Pond Survey of chemical and Physical Properties*. February 16th, 1990.
- Biodegradation Properties of Oil Sands Tailing Sludge*. ARC.
- Schutte, R. *Response of sludge to Microbiological Activity*. Program Research.
- Pierre, A.C. *Study of the Properties and of the Shrinking and Swelling Behavior of Model Ternary Clay-Fe-Water Systems*. January 22^{ns}, 1990.
- Sludge Fundamentals Consortium Project #1-4*. Suncors' Contribution.
- Clay Organic Interface*. Sludge Consortium Annual Report: Draft. 1989/1990.
- Sparks, B.D. *Sludge Research Consortium- Quarterly Report: September '89-June '90*. June 15th, 1990.

Sparks, B.D. *Non-Program Research: Colloid and Clathrate Chemistry Section*. Chemistry Division. National Research Council, Ottawa. February 15th, 1990.

Mineral Research in Sludge. Project No. 1.4. April-June.

Quarterly Report. Sludge Research Consortium. April-June 1990.

Volume 2

Chiu, D. (1995). *Composting and Odour Analysis*. Simon Fraser University. Institute for Chemical Process and Environmental Technology, NRCC.

Hache, J.S. (1996). *Co-op Work Term Report: Part 1- Characterization and study of Automobile Shredder Residue (ASR), Part 2- Composter Temperature Control System*. University of Ottawa. Institute for Chemical Process and Environmental Technology, NRCC.

Senior, D. (1995). *Aerobic Composting of Municipal Solid Waste*. Institute for Chemical Process and Environmental Technology, NRCC.

Watts, J. (1995). *My Summer at NRC Researching Solid Waste Reduction*. Simon Fraser University. Institute for Chemical Process and Environmental Technology, NRCC.

Watts, J. (1994). *Composting Biosolids*. Institute for Chemical Process and Environmental Technology, NRCC.

Sheehan, S. *Laboratory Composting: Effects of Feedstock Composition and Detection of Heavy Metals*. University of Waterloo. Institute for Chemical Process and Environmental Technology, NRCC.

Furlong, K. *Examination of the Wright Environmental Group Method of Composting Organic Waste*. Carleton University. Institute for Chemical Process and Environmental Technology, NRCC.

Zaremba, L. (1996) *Laboratory Composting of Commercial Organic Waste*. Institute for Chemical Process and Environmental Technology, NRCC.

Berube, E. (2000). *Pulp and Paper Biosolids Composting: Influence of Pulping Method on Composting Potential and Process Parameters*. McGill University. Institute for Chemical Process and Environmental Technology, NRCC.

Berube, E. & Shaw, K. (2000). *Pulp and Paper Biosolids Composting: Influence of Waste Treatment on composting Potential and Process Parameters*. Vol. 1. Institute for Chemical Process and Environmental Technology, NRCC.

Berube, E. & Shaw, K. (2000). *Pulp and Paper Biosolids Composting: Influence of Waste Treatment on composting Potential and Process Parameters*. Vol. 2. Institute for Chemical Process and Environmental Technology, NRCC.

Dube, J.F. (1994). *Development of a Data Acquisition System for Composting Experiments*. University of Ottawa. Institute for Chemical Process and Environmental Technology, NRCC.

Harrigan, B. (1996). *Composting and Biodegradable Polymers*. University of Waterloo. Institute for Chemical Process and Environmental Technology, NRCC.

Kropp, C. (1994). *Composting of Biosolids*. Institute for Chemical Process and Environmental Technology, NRCC.

Sinclair, R.G. (1994). *The Case for Polylactic Acid as a commodity Plastic—An Overview*. Michigan Biotechnical Institute. An Arbor, MI.

Thomas, L.C. *Interpreting Unexpected Events and Transitions in DSC Results*. TA Instruments, Inc.

Collection of Black Bound Notebooks with Hand Written Notes

Composting Journal. May 1993. Vol. 1-3.

Methane GC Results. October 1990.

Summer 2000. Composter Test Descriptions.

De Gueman, J.C. Co-op Student. Book Serial No. 4699.

Shaw, K. Institute for Biological Sciences.

Ujwola. Book Serial No. 4668.

Shaw, K. February 1998. Book Serial No. 4779.

Yetter, J. *PLA Analyses*. May-August 1998.

Shaw, K. *Biodegradable Polymers*. February 1995.

Furlong, K. June 1997. Book Serial No. 4721.

Photograph

A photograph of the members of the Institute of Environmental Chemistry.

Volume 3

Crabbe, R.S. (1979). *An Exploratory Field Study of Airborne Vapour and Aerosol Drift from Forest Spraying Operations in New Brunswick*. National Aeronautical Establishment. National Research Council Canada.

Bligh, E.G. (1988). *An Assessment of the Potential for a Fish Freshness Meter*. Atlantic Research Laboratory. National Research Council Canada.

Elias, L. (1981). *Development of a Portable Gas Chromatograph Explosive Detector*. National Aeronautical Establishment. National Research Council Canada.

Crabbe, R.S. & McCooeye, M. (1983). *Field Measurement of Ground Deposit and Windborne Drift from Herbicide Sprays in New Brunswick*. National Aeronautical Establishment. National Research Council Canada.

Crabbe, R.S. (1976). *Examination of Gradient-Transfer Theory for Vertical Diffusion Over Mesoscale Distances Using Instrumented Aircraft*. National Aeronautical Establishment. National Research Council Canada.

Seman, G., Wilson, D. & Elias, L. (1977). *Detection of Hidden Explosives on Passenger Aircraft*. Committee on Aviation Security. Transport Canada. National Research Council Canada.

Chiu, D. (1995). *Composting and Odour Analysis*. Simon Fraser University. Institute for Chemical Process and Environmental Technology, NRCC.

5 Copies of

Creating Innovation through Technology. (1998) Institute for Chemical Process and Environmental Technology. National Research Council Canada.

Photographs

Two packages of photographs, miscellaneous of the Institute of Environmental Chemistry members engaged in various activities including dinners, speeches, lunches and events.

Volume 4

Collection of Black Bound Notebooks with Hand Written Notes and Calculations

Coal & Clay_UF. 35. Serial No. 3657.

34. Serial No. 3665.

R.D.C. 33. Serial No. 3651.

*Germain.*23. Serial No. 3450.

R.D.C. 19. Serial No. 3362.

A.E.M.C. 19. Serial No. 3353.

R. Germain. 20. Serial No. 3376.

R. Germain. 21. Serial No. 3423.

McCurdy & Germain. 22. Serial No.3444.

R.D.C. 24. Compression Tests & Pneumatic Conveying. Serial No. 3396.

R.D.C. 31. Serial No. 3621.

32. Serial No.3637.

A.E.M. Serial No.3567

R.D.C. 29. Serial No. 3543.

A.E.M. 28. Canadiota Coal, Nova Scotia Coal. Serial No.3536.

R.D.C. 27. Meyer's Process. Serial No.3511.

R.D.C. Tar Sand. 26. Serial No. 3490.

A.E.M.C. 25. Serial No.3462.

3 Envelopes, One Handmade

1. *Size Analysis of Sands Used in this Last Falling Operation.* B-33-42 to 47.

Contains 3 silver paper squares, labeled *Sieve Analysis*

- Sample #C Slip
- Sample #F Slip
- Sample #F Slip

2. *Sample B: Thick Layer of Fines (-250 + 270)*

Contains 3 photographs, the reverse of the photographs reads,

- Thick Layer of Fines Sample B K86K371
- Thick Layer of Fines Sample B K86K371
- Thick Layer of Fines Sample B K86K371

3. Handmade envelope using ruled paper and masking tape

Contains 3 photographs of large systems made from tubing and pipes. Nothing printed or written on the reverse of the photographs.

5 Laminated Pieces of Graph Paper

Two Individual Sheets

Calibration of Oil Feed Feeding High Shear Mixer. May 15th, 1980. Rotameter Reading.

Calibration of Oil Feed Feeding High Shear Mixer. May 14th, 1980. Calibration Setting.

Set of 3 Sheets, Held Together Using Two Split Pins

Water Exit. Rotameter Reading (% of Full Scale)