

Experience: Canada – Department of National Defense, National Environmental Agencies, National Research Council, Atomic Energy Control Board, Energy Mines & Resources, Bell Canada, Telesat, Trans Canada Tele System, Canadian Broadcasting Corp, and CNCP Telecom; US – Danray Inc, Harris Corp, CBS, NBC, and ABC; and Other Countries – South America, Central America, UK, West Germany, Austria, Italy, Greece, China, Philippines, and Australia.

Keywords: 5 = Communications; 7 = Electronics; 9 = Environment; 19 = Testing/Test Equipment; Nuclear Sensors = 9, 19; Geophysical Sensors = 9, 19; Nuclear Instrumentation = 9, 19; Analysis = 9; Simulation = 9; Power Supplies = 7; Telephone = 5; Voltage Transformers = 7; Voltage Regulators = 7; PC Board Design = 7; PC Board Fabrication = 7.

Revised: Dec 83

QUESTOR SURVEYS Ltd

Code: QSL

Address: 6380 Viscount Road
Mississauga, Ontario, Canada L4V 1H3

Contact: Mr. P G Lazenby, Chairman – (416) 676-9880

History: Originally a one aircraft operations section of a mining company, the company split in 1961 and formed a Contract Survey Services Division. During this period, the company operated one owned aircraft and three leased aircraft. In 1970, they began expanding operations, and in 1979 acquired the geophysics division of Northway Survey Corporation. During this period, they specialized in the use and development of the Barringer INPUT electromagnetic system. They are Canadian owned and have no subsidiaries.

Capability: Questor specializes in all state-of-the-art airborne sensing for base metal, uranium and oil. In addition to the Barringer INPUT system (Time-Domain electromagnetics), they also are capable of acquiring and analyzing data from airborne standard & high sensitivity magnetics, and standard & multi-channel spectrometry. They also design and build very high sensitivity magnetometers along with their associated data acquisition systems. Their aircraft fleet includes – two Skyvans, three Trislanders, three DC-3s and an Aero Commander. The INPUT systems generate a pulsed signal from a vertical dipole. The primary field induces eddy currents in conductive targets and these currents produce secondary fields. These secondary fields are then sensed. Through analysis of these secondary field anomalies, sulfide and graphite conducting pockets have been identified to a depth of 300 meters. Standard and high-sensitivity magnetometry provide detailed magnetic contour maps. Corrections for aircraft attitudes & maneuvers, and the use of precision clocks, etc., enable Questor to improve the normal high standard government contour maps by a factor of four in geologic resolution.

Gamma ray spectrometers are used to identify potential uranium deposits as well as for geologic mapping and identification of man-made radio-active wastes. Data reduction for all types of sensors/missions is provided by the company's specially developed algorithms and provides a variety of outputs depending on the users' needs.

Questor has recently organized an internal Research Division. They are presently working to improve the various sensors used by Questor to increase penetration, sensitivity and flexibility, and the new Division has recently developed a helicopter version of INPUT and vertical magnetic gradiometer system.

Average Work Force: PhD – 1
Prof Eng – 3
BsE – 10
Technicians – 15
Others – 91

Gross Sales: 1980 – \$6M
1981 – \$8M
1982 – No Data
1983 – No Data

Plant Size: 22,000 sq ft (plus rental hangar space)

Experience: Questor's clients include 49 different countries around the world for one or more of their surveys. Their surveys have led to the discovery of fourteen base metals, precious metals, or uranium deposits in a variety of geologic environments. In Canada, customers have included – Noranda Mines, Falconbridge Mines, Inco, Imperial Oil, Shell Oil, and Gulf Oil. They are interested in conducting research for the USAF.

Keywords: 1 = Aircraft; 8 = Energy; 9 = Environment; 17 = Software Services; 20 = Miscellaneous; Remote Sensing = 1, 8, 9, 20; Sensors = 8, 9, 20; Pollution = 8, 9; Software = 17; Mapping = 8, 9; Data Acquisition = 1, 8, 9, 20; Data Reduction = 1, 8, 9, 20; Data Analysis = 1, 8, 9, 20; Magnetometers = 8, 9; Helicopter Magnetic Gradiometer = 1, 8, 9; Magnetic Gradiometer = 1, 8, 9.

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RAYLO CHEMICALS Ltd

Code: RAY

Address: 8045 Argyll Road
Edmonton, Alberta, Canada T6C 4A9

Contact: Dr J F Prescott, Technical Manager – (403) 465-7937

History: Raylo Chemicals Ltd was incorporated in 1966 and became a wholly owned subsidiary of Terochem Laboratories Ltd, a private Canadian corporation, in 1981. Raylo has no US subsidiaries.

Capability: Raylo Chemicals specializes in contract research, custom synthesis, and sales of manufactured products. Areas of expertise include bench scale pilot plant design & operation; Synthetic chemistry (natural products, pharmaceuticals & hydrocarbon chemistry); high pressure & temperature reactions; polymer chemistry (synthesis of novel monomers and their polymers, characterization and chemical stability testing); and non-routine analysis. A major contract activity is polymer chemistry applied stable high-strength polymers for composites, elastomers, water soluble polymers, flocculation studies, and electrolyte cell separators. Other principal projects include supercritical gas technology applied to coal liquefaction & analyses of heavy oil, and development of physical & physicochemical data in support of various commercial industrial processes.

Raylo Chemicals offers custom manufacture of complex chemicals and polymers from a few grams to several thousand kilograms, including process design and development. Raylo routinely handles highly reactive solid, liquid, and gaseous reagents, and can operate under vacuum and inert atmospheres. The following reactions are performed regularly:

- Acylation
- Alkylation
- Condensation
- Dissolved Metal Reduction
- Friedel-Crafts Reactions
- Grignard
- Halogenation (substitution and addition)
- High Vacuum Distillation
- Hydrogenation
- Hydrolysis
- Metal Hydride Reduction
- Optical Resolution