

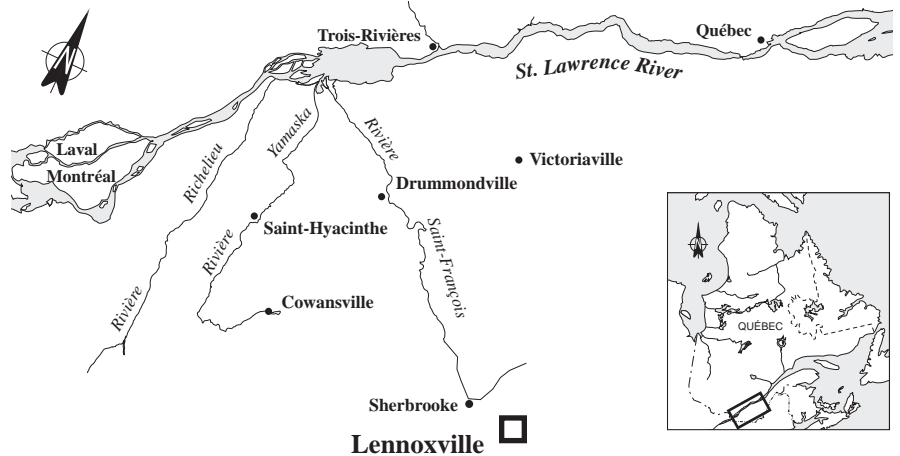
FACT SHEET 104

Scott Paper Limited

8 College Street

Lennoxville, Quebec

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A list of 106 industrial plants has been established under St. Lawrence Vision 2000 (SLV 2000), the second phase of the St Lawrence Action Plan, launched in 1988. The overall objective is to reduce toxic effluent and virtually eliminate discharges of persistent toxic substances.

The 106 industrial plants designated under SLV 2000 are divided into four groups, each with a specific objective. The SCOTT PAPER LIMITED mill in Lennoxville is part of Group 3, comprising regulated industrial plants.

The objectives for Group 3 are to assess the toxic waste of regulated plants in terms of environmental objectives and establish corrective measures for optimum reduction of any harmful impact on the receiving environment.

INDUSTRIAL PLANT

Paper tissue mill

The SCOTT PAPER LIMITED mill in Lennoxville manufactures tissue papers (paper towels, toilet paper) using bleached Kraft pulp purchased commercially and de-inked pulp from the SCOTT PAPER LIMITED mill in Crabtree. A higher proportion of de-inked pulp is used in the production of finished products. Only one paper machine is used to produce the paper. The product obtained is dried and rolled for shipping. The mill has a production capacity of 37 605 t/yr. of finished products. In 1995, the mill works at 38% capacity and employs 57 workers.

PRODUCTION

PRINCIPAL RAW MATERIALS

- Bleached Kraft pulp (purchased)
- De-inked pulp (from Crabtree plant)
- Chemicals

FINISHED PRODUCTS

- Toilet paper
- Paper towels

TREATMENT MEASURES

INITIAL EFFLUENT VALUES

Small loads

Based on company data, in 1993 the mill had an effluent discharge of 3710 m³/d, containing notably:

- 191 kg/d of suspended solids (ss)
- 47 kg/d of biochemical oxygen demand (BOD₅)

RESOURCES AND USES TO PRESERVE

Water sports area

Discharge from the SCOTT PAPER LIMITED mill in Lennoxville flows into the Massawippi river on the left bank, about 400 metres upstream from the point where it meets the Saint-François river. Waterfowl habitats and a number of fish are found between Lennoxville and Bromptonville. Frequented by kayak, canoe, pedal-boat, camping, and sport fishing enthusiasts, the Massawippi river is bordered by picnic areas, trails and parks.

Discharge is drawn downstream to the Saint-François river. Spawning areas and areas with designated fishing seasons for yellow walleye and pike are located between Bromptonville and Drummondville. The Drummondville drinking water intake is in this area, as are numerous wildlife and recreational areas. Commercial fishing for bait is also practised from Drummondville to Windsor, and industrial water intakes for Kruger in Bromptonville, Domtar in Windsor and Celanese in Drummondville are located in this area.

ENVIRONMENTAL DISCHARGE OBJECTIVES

Environmental protection

Environmental discharge objectives are established to preserve local resources and uses. These guidelines, expressed as maximum permissible loads and concentrations for effluent released into the environment, are used in choosing treatment methods which best promote environmental protection. The water quality based objectives for SCOTT PAPER LIMITED have been calculated and are available on request.

EFFLUENT TREATMENT

Primary treatment

Industrial wastewater from the mill is treated in a clarification unit with a 20-metre sedimentation tank with a central drive mechanism and sludge recovery system. Cooling water is recovered and channeled into the mill water supply reservoir. Domestic sewage is discharged into the public sewerage system.

PREVENTION AND CLEANUP MEASURES IMPLEMENTED

Protection against accidental spills

In 1994, SCOTT PAPER LIMITED built dikes around its main chemical and oil storage tanks to prevent accidental spills from harming the environment.

REGULATORY COMPLIANCE - WATER COMPONENT

Compliance with standards

The SCOTT PAPER LIMITED mill in Lennoxville is subject to the provincial regulation on pulp and paper mills and the federal regulation governing pulp and paper mill effluent. In general, the mill satisfies the latest provincial standards, which came into force on September 30, 1995.

POLLUTION ABATEMENT

CHIMIOTOX INDEX ABATEMENT OF TOXIC POLLUTION

Mainly PCBs

The Chimiotox index gauges the load of all toxic substances present in industrial effluent, using the toxicity factors assigned to each contaminant. It is used, among other things, to monitor discharge trends over the years (see Figure 1) and determine the toxic contribution of each pollutant (see Table 1).

Table 1 shows 1992 industrial effluent abatement program (PRRI) characterization data along with the Chimiotox values calculated using the data, assuming an effluent flowrate of 2826 m³/d. The data show that PCBs dominate in the treated water, representing 87% of the value of the Chimiotox index.

Figure 1 is based on PRRI characterization data collected in 1992. The Chimiotox index calculated using 1992 PRRI characterization data was used as is for 1993 to 1998. No major changes are brought to the process or the wastewater treatment system during this period.

Table 1 *Chimiotox Index (1992) - Scott Paper Limited**

Substance	Load (kg/d)	Toxic Weighting Factor	Chimiotox Units (CU)
PCBs	0.002	12 658 228	21 784
Total mercury	0.012	166 667	2 030
Mineral oil and grease	11.920	100	1 192
Total cyanides	0.160	200	32
Xylenes	0.782	25	20
Naphthalene	0.141	34	5
Total iron	0.585	3.3	2
Total manganese	0.152	10	2
Zinc total	0.079	9.4	1
2,4,6-trichlorophenol	0.001	667	1
CHIMIOTOX INDEX			25 069

* For an effluent flowrate of 2826 m³/d.

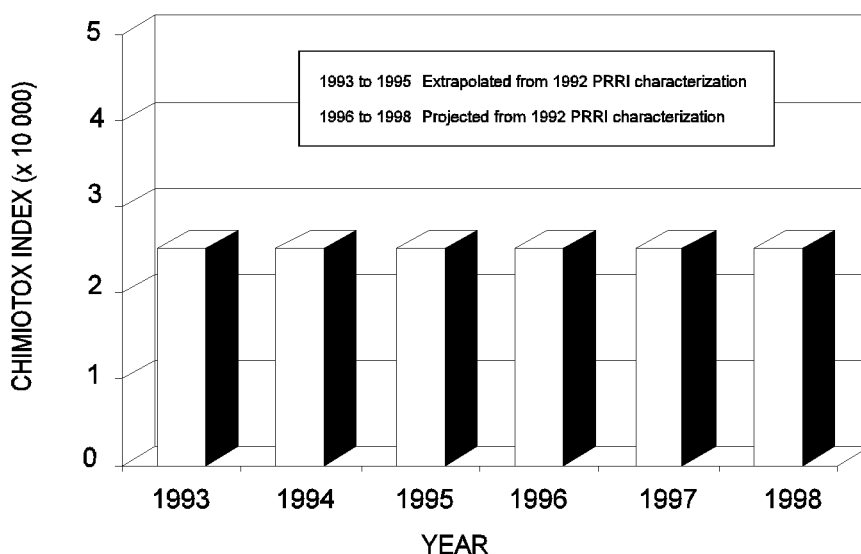


Figure 1 *Chimiotox Index Trends, 1993 to 1998
Scott Paper Limited*

VIRTUAL ELIMINATION OF PERSISTENT TOXIC SUBSTANCES

One long-range objective of SLV 2000 is the virtual elimination of eleven persistent and bioaccumulative toxic substances from the effluent of the 106 targeted plants along the St. Lawrence and its tributaries. The targeted substances are those designated by the International Joint Commission in August 1993: PCBs, DDT, dieldrin, toxaphene, dioxins, furans, mirex, mercury, lead alkyls, benzo(a)pyrene and hexachlorobenzene. To reach this objective, Protection has fixed the environmental discharge objectives set for applicable substances as its target by the end of SLV 2000 in 1998, thereby ensuring that all uses of the receiving environment are protected.

Based on 1992 PRRI characterization data, two of the eleven persistent toxics were detected: PCBs and mercury. Mercury has been quantified just once during the three sampling days and the measured concentration of mercury was 14 µg/L. The PCBs were also measured just once and their concentration was 550 ng/L. The data number being limited, validation of these results is recommended. The environmental discharge objectives have been established at 0.04 µg/L for mercury and at 0.045 ng/L for PCBs.

KEY POINTS

- Diking of main storage tanks in 1994 to prevent accidental spills
- Non-toxic effluent

ADDITIONAL INFORMATION

Chimiotox Index and PEEP:

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EFFLUENT TOXICITY

Non-toxic effluent

Since September 30, 1995, it has been illegal under the Quebec pulp and paper regulation to release into the environment or a storm sewer a final effluent that is acutely lethal to rainbow trout, as demonstrated by bioassays. For the SCOTT PAPER LIMITED mill, data for October to December 1995 indicate that final effluent is not toxic.

REDUCTION IN SUBSTANCES MONITORED

Discharge rate and loads stable

Based on company data, in 1995 the mill had an effluent discharge of 3944 m³/d, containing notably:

- 165 kg/d of suspended solids (ss)
- 56 kg/d of biochemical oxygen demand (BOD₅)

Effluent discharge and loads remained relatively stable from 1993 to 1995, and no major changes were made to the process.

Based on December 1995 inventory

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