

FACT SHEET 72

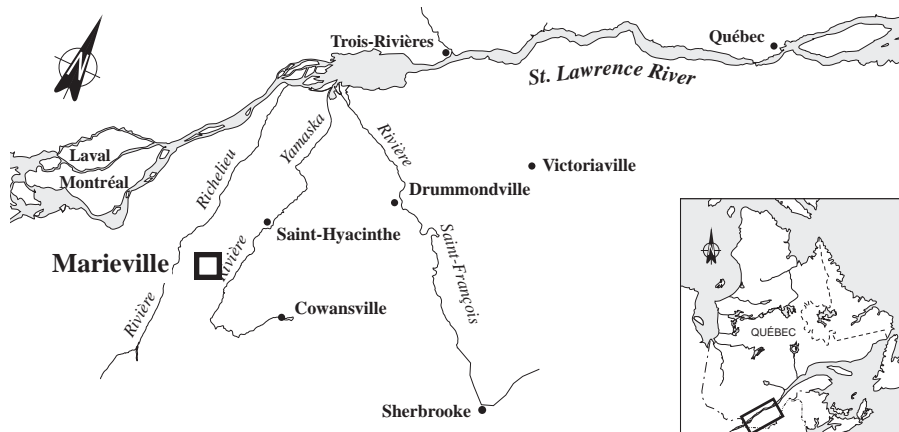
Infasco Division of Ifastgroupe and Company, Limited Partnership

700 Ouellette Street
Marieville, Quebec
J3M 1P6

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 INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP plant in Marieville is in Group 2, comprising plants that have already implemented treatment programs but whose effluent may contain toxic substances.

The objective for Group 2 is maximum reduction of toxic effluent of targeted plants.



INDUSTRIAL PLANT

Manufacture of bolts, nuts and specialty screws

The INFASCO plant in Marieville became a division of IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP in the fall of 1993; it was previously a division of IVACO INC. The plant makes nuts, bolts and specialty screws from steel wire. The wire is annealed, stripped using sulphuric acid, and then covered with phosphate and occasionally soap. The sulphuric acid used for stripping is regenerated by crystallization (Keramchemie process). The nuts are produced by hot forging. The finished products that require no additional heat treatment or coating are washed and stored awaiting shipment. The remaining nuts and bolts may undergo stress-relief, quenching in water or oil, and tempering. The quenched products are coated with rust inhibitor before being shipped. In 1994, the company ceased cold-forging of nuts; this operation was transferred to Ontario. Annual production capacity of the plant is 120 000 t. In 1995, the plant works at 85% capacity and employs a work force of 530.

PRODUCTION

PRINCIPAL RAW MATERIALS

- Steel wire in coils (low-carbon)
- Steel bars in coils (low-alloy, medium-carbon)
- Straight steel bars (low alloy, low-carbon)

FINISHED PRODUCTS

- Bolts
- Nuts
- Specialty screws

TREATMENT MEASURES

INITIAL EFFLUENT VALUES

Low loads

In 1993, based on company data, the plant discharged an average of 395 m³/d of effluent, containing notably:

- 5.04 kg/d of chemical oxygen demand (COD)
- 3.25 kg/d of suspended solids (ss)
- 1.01 kg/d of iron
- 0.27 kg/d of total phosphorus
- 0.17 kg/d of zinc

RESOURCES AND USES TO PRESERVE

Intensive farming area

Effluent from the INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP plant is discharged into Barré creek, a tributary of the Saint-Louis creek which flows into the Hurons River which joins the right bank of the Richelieu at Chambly Basin. Cattle regularly drink in the Saint-Louis and Barré creeks. There is a spawning ground used by northern pike, perch and carp at the mouth of the Hurons River. This river drains an area of intensive farming, where water quality is judged mediocre. Between the plant and Chambly Basin, the only recreational area identified is a campground on the north shore of the Hurons River, at the mouth of Saint-Louis creek. The main focus of recreational activities is the Richelieu. Chambly Basin is also used for many activities such as fishing, swimming and various other water sports. The first drinking water intake downstream from the plant is in Chambly Basin near the left bank of the Richelieu, used by Goyer, Lièvres and Demers islands.

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. Environmental discharge objectives for INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP will be available by 1997.

EFFLUENT TREATMENT

Physico-chemical treatment

Industrial wastewater from the stripping shop receives physico-chemical treatment in three stages: pH stabilization, settling and filtration. Water from the hot-forging and quenching shops is re-used in the manufacturing process. Depending on the discharge point in the plant, boiler purge water and compressor cooling water are discharged either untreated into the Richelieu River or into the municipal storm sewerage system. Domestic sewage is sent to the Marieville sanitary sewerage system.

PREVENTION AND CLEANUP MEASURES IMPLEMENTED

No special measures

No additional cleanup measures have been taken since 1993. The results of the SLV 2000 characterization, the PEEP, and the environmental discharge objectives will be used in assessing whether any additional cleanup measures should be implemented.

REGULATORY COMPLIANCE - WATER COMPONENT

Standards met

The INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP plant is subject to the standards of an Authorization Certificate on effluent which the company has met. From 1981 to 1988, the company carried out work under a water cleanup program (PAE).

POLLUTION ABATEMENT

CHIMIOTOX INDEX ABATEMENT OF TOXIC POLLUTION

Characterization planned in 1996

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

Since no exhaustive effluent characterization has been carried out for the INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP plant, there is not enough data available to calculate the Chimiotox index. Effluent characterization under SLV 2000 is planned for 1996.

Table 1 *Chimiotox Index - Infasco Division of Ifastgroupe and Company, Limited Partnership*

Substance	Load (kg/d)	Toxic Weighting Factor	Chimiotox Units (CU)
<i>Since no exhaustive characterization was carried out on effluent from the INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP plant in Marieville, there are not enough data to calculate the Chimiotox index. Effluent characterization is planned for 1996, and this will provide results that can be used to calculate the Chimiotox index.</i>			
CHIMIOTOX INDEX			N/A

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.

The 1996 characterization will determine whether there are any persistent toxic substances in the effluent.

PEEP TOXICITY REDUCTION

Bioassays in 1996

The Potential Ecotoxic Effects Probe, or PEEP, combines the results of six standardized bioassays measuring the toxic effects of effluent. The results are expressed on a logarithmic scale of increasing toxicity ranging from 1 to 10 and are used to monitor discharge trends over the years. In the case of INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP, a series of bioassays will be conducted in connection with the characterization planned for 1996.

REDUCTION IN SUBSTANCES MONITORED

Stability of discharge

Based on company data for nine months of 1995, the plant discharged an average of 395 m³/d of effluent, containing notably:

- 6.57 kg/d of chemical oxygen demand (COD)
- 3.41 kg/ of suspended solids (ss)
- 0.81 kg/d of iron
- 0.13 kg/d of total phosphorus
- 0.12 kg/d of zinc

Effluent loads and flowrate between 1993 and 1995 were stable owing to the lack of any major changes to the process or water treatment system.

KEY POINTS

- Physico-chemical treatment system in place since 1985

Based on December 1995 inventory

ADDITIONAL INFORMATION

Chimiotox Index and PEEP:

Gilles Legault, Environment Canada
(514) 283-3452

Environmental discharge objectives:

Francine Richard, MEF (418) 521-3820

Records officer at the Ministère de l'Environnement et de la Faune du Québec (MEF):

Hung Duc Phan (514) 928-7607

Environment officer at INFASCO DIVISION OF IFASTGROUPE AND COMPANY, LIMITED PARTNERSHIP:

Salim Brahimi (514) 658-8741

Production team:

Environment Canada

Isabelle Bouchard Thérèse Drapeau
Gilles Legault Lucie Olivier
Sylvie Roberge Marc Villeneuve

Ministère de l'Environnement et de la Faune du Québec

Francine Richard
François Rocheleau

Somer

François Thériault

Published by authority of the Minister of the Environment

© Minister of Supply and Services Canada 1996
Catalogue No. En153-6/72-1996E

ISBN 0-662-23285-2

(Aussi disponible en français sous le titre
Établissements industriels : faits saillants)