Environment Canada
Atlantic Region

Environnement Canada
Région de l'Atlantique

THE ATLANTIC REGION TOXIC CHEMICALS MANAGEMENT PLAN

1983-1987

THE ATLANTIC REGION TOXIC CHEMICALS MANAGEMENT PLAN
1983 TO 1987

INTRODUCTION

The Atlantic Region Toxic Chemicals Management Program is directed toward minimizing the harmful effects of toxic chemicals in the environment by (1) preventing or controlling the entry of toxic chemicals to the environment; (2) reducing exposure to chemicals already in the environment; (3) encouraging changes in processes and uses which are more in harmony with the environment; and (4) influencing others to do the same and, where appropriate, apply our guidelines and standards. To achieve this objective, a coordinated regional effort to ensure an effective program and efficient resource utilization is necessary. To this end, a toxic chemical profile document was prepared for the Regional Toxic Chemicals Committee (RTCC). This document identified regional problem areas having a toxic chemical component. Priorities for chemicals associated with those problems were then established on a consensus basis. While steps have been taken in a management sense, the program is still in its infancy and a state of flux.

PRIORITIES

The Atlantic Region Toxic Chemicals Management Plan for the four year period 1983-1987 reflects the priority established through the work of the RTCC. For the plan period, the service elements in the region have agreed to focus their activities in three areas:

1. Research and monitoring of pesticides: Included for study are pesticides being currently tested or used by spray applicators, plus ethylene thiourea, a breakdown product of some concern. Emphasis will change from forestry to agricultural pesticides during the planning period.

2. Studies on chemicals (or wastes) with known or suspected harmful characteristics: Substances included are derived from national and regional consultations between all Services and are represented by priority concerns, including chlorophenols, polyaromatic hydrocarbons, metals, and hazardous wastes. This list will change as new inventory, measurement or characteristic data is generated, and as additional information becomes available on abandoned and existing waste sites.

3. Regulation of chemicals or chemical wastes: Substances consist of those chemicals or chemical wastes which are covered by federal regulatory mechanisms, including the ECA, ODCA, CAA, and FA.

An integral part of the program will be an ongoing review of chemicals and chemical problems, largely through the inventory function. Greater effort will be devoted to the implementation of an integrated inventory of toxic chemicals. For this reason, changes in regional priorities may result in the later years of the plan. A mechanism will be developed for consulting with the public and provinces, universities, industries and ENGOs on these priorities.

PLANNED ACTIVITIES

The activities of the DOE Services involved in the Toxic Chemicals Program are grouped into four categories. These are:

Program Management: RDGO (EPS, RTCC)
Inventories - substances in production and in use: EPS
Measurements - monitoring and research: CFS, CWS, IWD, EPS, AES
Control - regulation and influence: EPS, CFS, CWS.

The following sections indicate the planned activities of the Services, along with the program objectives and targets. The management process is

not yet at a stage where all Service activities are totally identified. For example, tentative operational plans of CFS indicate a limited involvement in toxic chemicals over the next five years. Pesticide research and characterization will constitute their major thrust.

AES plans are contingent upon the availability of TOXFUND resources. To date, such resources have not been provided, and their future availability is unclear. However, resources devoted to the CANSAP network provide data on deposition of toxic chemicals in the region.

As an appendix, a list of regional priorities for appropriate studies in inventory, measurement and characteristics has been included.

Resource levels (PY and $), which are identified in Tables 1 and 2, are to be considered with care for two reasons. First, not all Services have finalized their long range operational plans; second, extraction of resources devoted to toxic substances projects from an overall program area is often a subjective exercise.

It should be noted that TCMP Dedicated Resources are those resources serving no program area other than TCMP. Total resources include dedicated resources as well as those utilized in toxic chemicals activities which fall within other program areas (e.g., commercial chemicals activities).

PROGRAM MANAGEMENT

Management activities of the Atlantic Region Toxic Chemicals Program will consist of causing priorities for TCMP to be developed and influencing Services and OGDs to address them; evaluating submissions for the contract fund; revising and promoting the regional toxic chemical profile; providing the secretariat for the RTCC and the Interdepartmental Liaison Group (ILG); inter-Service management of regional plans of action to

address priority problems; synthesizing program outputs across Services, evaluating program effectiveness and ensuring the public is informed and consulted in order to assist in guiding prevention and amelioration activities.

Goals and Activities

1. To change for the better the profile of toxic chemicals in the region by influencing appropriate decision making processes.

2. To assist and encourage regional programs to address toxic chemical problems through activities of the RTCC and the ILG.

3. To influence national program planning and priorities through membership on appropriate coordinating committees (1983/84-86/87).

4. To ensure Regional toxic chemicals priorities are developed on an annual basis and to encourage the implementation of appropriate responses (1983/84-86/87), through the development of action plans and control strategies.

5. To inform our publics through interdepartmental committees, federal/provincial seminars and public consultation meetings (1983/84-86/87), and consult with them on the program and regional priorities.

6. To ensure a Regional plan of action relative to agricultural pesticides (1983/84) is developed.

7. To synthesize program outputs across Services and other agencies and evaluate the effectiveness of the Regional Toxic Chemicals Program (1983/84-86/87).

8. To evaluate and priorize Regional submissions for TCCF support to ensure the effective and consistent handling of Regional problems (1983/84-86/87).

MEASUREMENT

The identification of both the location and magnitude of toxic chemical problem areas is a priority in the region. This will be accomplished through toxic chemicals surveys conducted by Services, and where possible other departments and provinces. Effort will be devoted to the creation of an information mechanism that will ensure that measurement and characteristics data is brought into the decision making process.

Goals and Activities

1. To assess the impacts of toxic chemicals released to the environment by man, upon migratory birds, with particular reference to forest spraying:

   (a) By conducting research on and monitoring forest spray programs in New Brunswick, especially those using new chemicals (1983/84-86/87).

   (b) By preparing a progress report on the current research and monitoring studies of forest spray programs and their impacts on wildlife in New Brunswick (1983/84-86/87).

   (c) By assessing and planning studies on the effects of herbicide use on wildlife populations in the Region (1983/84).

   (d) By assessing and planning studies on the impacts of chemical sprays used in agriculture on wildlife populations in the Maritimes.

(e) Investigating the occurrence of heavy metals in wildlife populations in and around the Bay of Chaleur (1985/86).

2. To conduct research and measurement activities to provide information on the presence and pathways of toxic chemicals in the aquatic environment:

(a) By monitoring of aquatic matrices for specific chemicals on a priority basis (1983/84-86/ 87).

(b) By conducting such on-going projects as: radionuclide monitoring; sediment data banking; organic analysis of precipitation and monitoring of pesticide drift resulting from the New Brunswick Budworm Spray Program (1983/84-86/87).

(c) By collecting, analyzing and archiving data from water quality stations in compliance with international obligations, federal/provincial agreements and interjurisdictional agreements (1983/84-86/87).

(d) By evaluating the environmental impacts of ocean dumping activities through the collection of data on sediment chemistry at potential dredge and dump sites, as well as on spoils scheduled for ocean disposal (1983/84-86/87).

3. To monitor, document and evaluate the fate, distribution and effects of biocides applied in the Region:

(a) By monitoring spray operations and assessing the impact of aminocarb, fenitrothion, 2,4-D and 2,4,5-T on the non-target environment (1983/84-86/87).

(b) By assessing ecosystem effects of agricultural pesticides, particularly ethylene bisdithiocarbamates (1983/84-86/87).

4. To identify and assess environmental problems associated with commercial chemicals and industrial activities:

(a) By determining the extent of environmental accumulation of chemicals in the immediate environment of industrial operations. PCBs around fish plants and PAHs in the vicinity of a steel plant at Sydney will be a priority (1983/84).

(b) By providing ambient air data on toxic substances in the receiving environment through monitoring of fluoride and sulphur dioxide concentrations in the Long Harbour area of Newfoundland (1983/84-86/87); determining atmospheric discharge of PAH from residential wood combustion (1983/84) and industrial air emissions (1983/84-86/87).

INVENTORY

For purposes of the Toxic Chemicals Program, an inventory has been defined as a determination of the types and quantities of toxic or potentially toxic chemicals, including those in commerce, which have entered or have the potential to enter the environment, through products, emissions, effluents, spills, or wastes, including locations of sources and points of release into the environment. Inventories document: (a) qualitative and quantitative information regarding chemicals produced, imported, transported, or used at specific locations in the Region; (b) the types of industries, raw materials used, production processes, products and by-products; (c) point source discharge and emission information indicating those substances being released into the ecosystem; and (d) information on the location, nature and number of disposal sites.

Goals and Activities

1. To develop, manage and implement programs to determine the extent and nature of use of industrial chemicals and pesticides:

   (a) By maintaining an updated PCB inventory for the Region (1983/84-86/87).

   (b) By developing regional use patterns for industrial chemicals (chlorinated solvents, chlorinated phenols) and pesticides (agricultural biocides) (1983/84-86/87).

2. To develop adequate information to determine the status of environmental protection and ensure that appropriate control mechanisms are developed and implemented at regional commercial facilities:

   (a) By conducting surveys to evaluate the effectiveness of pollution control at mining/preparation facilities, metal plating operations, chemical industries, ore loading facilities and wood preserving plants (1983/84-86/87).

   (b) By developing and maintaining regional data bases on toxic chemicals (e.g., RIPS, NAQUADAT, PCB Inventory, etc.) (1983/84-86/87).

CONTROL

Toxic chemicals pose a serious threat to the environment, and DOE is responsible for the maintenance of a rational and effective effort to resolve toxic chemicals problems. Over the next five years, emphasis will be placed on preventing or controlling the entry of harmful quantities of priority toxic substances to components of the environment, minimizing or

ameliorating adverse effects of toxic chemicals now in the environment and encouraging development and promotion of alternative products and processes. Emphasis will be placed on the preparation of control strategies.

Goals and Activities

1. To ensure compliance with pollution control requirements for toxic chemicals at selected regional operations:

   (a) By controlling the discharge of toxic chemicals from industrial operations (1983/84-86/87).

   (b) By evaluating proposals for operations that may discharge toxic substances and negotiating pollution control (1983/84-86/87).

   (c) By developing a strategy to address hazardous wastes in Nova Scotia and by providing advice on hazardous wastes disposal and management techniques (1983/84-86/87).

2. To implement and enforce Federal Regulations on toxic chemicals:

   (a) By ensuring compliance with Environmental Contaminant Act Regulations for PCBs and CFCs (1983/84-86/87)

   (b) By ensuring compliance with Clean Air Act regulations for secondary lead smelter, chlor-alkali and asbestos operations (1983/84-86/87).

   (c) By ensuring compliance at the refinery and retail levels with the Leaded and Lead Free Gasoline Regulations of the Clean Air Act (1983/84-86/87).

3. To protect the environment from unnecessary and unacceptable impacts resulting from biocide uses which are subject to federal and/or provincial licensing and approval processes:

   (a) By reviewing, evaluating and recommending changes in biocide use at federal facilities (1983/84-86/87).

   (b) By providing a coordinated DOE response, through the Atlantic Region Pesticide Advisory Committee, to provincial agencies on pesticide related matters.

TABLE 1 - RESOURCES BY PROGRAM

TOTAL RESOURCES (O&M AND CAPITAL IN $ x 1000)

Program	Year				
	82/83	83/84	84/85	85/86	86/87
Management:					
PY	0.8	1.3	1.3	1.3	1.3
O&M	9	16	16	16	16
CAP	-	-	-	-	-
Measurement:					
PY	9.7	11.8	11.8	11.8	11.8
O&M	85	85	85	85	85
CAP	8	8	8	8	8
Inventory:					
PY	2.9	2.9	2.9	2.9	2.9
O&M	30	30	30	30	30
CAP	-	50	10	10	-
Control:					
PY	7.4	7.4	7.4	7.4	7.4
O&M	81.6	81.6	81.6	81.6	81.6
CAP	-	-	-	-	-
Sum Total:					
PY	20.8	23.4	23.4	23.4	23.4
O&M	205.6	212.6	212.6	212.6	212.6
CAP	8	58	18	18	8

.../2

TABLE 1 - RESOURCES BY PROGRAM (Continued)

TCMP DEDICATED RESOURCES (O&M AND CAPITAL IN $ X 1000)

Program	Year				
	82/83	83/84	84/35	85/86	86/87
Management:					
PY	0.8	1.3	1.3	1.3	1.3
O&M	9	16	16	16	16
CAP	-	-	-	-	-
Measurement:					
PY	3.6	5.7	5.7	5.7	5.7
O&M	27	27	27	27	27
CAP	8	8	8	8	8
Sum Total:					
PY	4.4	7.0	7.0	7.0	7.0
O&M	36	43	43	43	43
CAP	8	8	8	8	8

TABLE 2 - TOTAL RESOURCES BY SERVICE (O&M AND CAPITAL IN $ X 1000)

Service	82/83	83/84	84/85	85/86	86/87
RDGO:					
PY	0.3	0.3	0.3	0.3	0.3
O&M	10	10	10	10	10
CAP	-	-	-	-	-
AES:					
PY	0.4	0.4	0.4	0.4	0.4
O&M	8	8	8	8	8
CAP	-	-	-	-	-
CFS:					
PY	0.6	0.6	0.6	0.6	0.6
O&M	6	6	6	6	6
CAP	-	-	-	-	-
ECS:					
PY	6.8	8.9	8.9	8.9	8.9
O&M	39	42	42	42	42
CAP	8	8	8	8	8
EPS:					
PY	12.7	13.2	13.2	13.2	13.2
O&M	143	147	147	147	147
CAP	-	50	10	10	10

APPENDIX I

Atlantic Region Priority Chemicals

The following priority listing of toxic chemicals has been prepared by the Atlantic Regional Toxic Chemicals Committee Secretariat to provide guidelines and assistance for regional DOE Services in planning fiscal 83/84 operations. Chemicals have been priorized principally on the basis of perceived regional significance, extent and nature of existing information gaps and the relative importance of alleviating the latter. Materials for which crucial data is lacking have been assigned a higher priority than chemicals with a reasonably well defined information base.

Categories have been established after due consideration of physical/chemical properties, chronic and acute toxicity data, occurrence and persistence in environmental matrices, commercial use patterns and regional industrial processes. This information was obtained from a variety of sources including: EPS Contaminants Control Branch Reports, EPA Criteria Documents, the 1980 Michigan Critical Materials Register and the DOE internal report, Toxic Chemicals in the Environment, an Atlantic Region Profile (1982).

Category 1

Toxic chemicals included are those which:

(i) pose a hazard based upon assessment of toxic effects, persistence and national quantity/use data;

(ii) preliminary regional information indicates substantial commercial use and/or significant environmental distribution on either a widespread or localized basis;

(iii) urgently require study to address a variety of regional information gaps.

halogenated phenols
polynuclear aromatic hydrocarbons
diothiocarbamate biocides
fenitrothion and formulations
aminocarb and formulations

Category 2

Toxic chemicals included are those which:

(i) pose a hazard based upon assessment of toxic effects, persistence and national quantity/use data;

(ii) are regional concerns based on environmental distribution and concentrations;

(iii) have a data base of sufficient detail to allow the identification of priority problem areas.

polychlorinated biphenyls
mercury
cadmium
chlorinated benzenes
arsenic
thiosalts

toxaphene
2,4-D
2,4,5-T

Category 3

Toxic chemicals included are those which:

(i) may pose a hazard based upon assessment of toxic effects, persistence and national quantity/use data;

(ii) are believed to have commercial application in the region, although the extent of use is undefined;

(iii) have a potential for environmental release although data on environmental distribution is (a) preliminary or non-existent or (b) indicates only very localized problem(s).

nitrogen dioxide
sulphur dioxide
polychlorinated dibenzo-p-dioxins
polychlorinated dibenzofurans
lead
fluoride
vanadium
molybdenum
selenium
chlorinated butadiene
aromatic amines

Category 4

Toxic chemicals included are those which:

(i) pose only a slight hazard based upon assessment of toxic effects, persistence and national quantity/use data;

(ii) are believed to have minimal commercial application in the region, although accurate use pattern information is unavailable;

(iii) are suspected to enter the regional environment but in limited quantities.

copper
zinc
iron
manganese
calcium