

Policy Paper

on

Hazardous Waste Handling and Disposal

The Canadian Chemical
Producers' Association

The Canadian chemical industry is committed to ensuring that its operations and the use and ultimate disposition of its products do not present an unacceptable risk to its own employees, customer industry employees, the public or the environment. We support the development of equitable, workable and attainable standards that ensure the safe disposal of hazardous industrial wastes. In our view, the best way to develop Canadian regulations respecting chemical wastes is to ensure that such regulations are based on scientifically supported data and are realistic in terms of cost/benefit considerations.

In 1978, the Canadian Chemical Producers' Association, in the course of studying the waste disposal problem, carried out a survey of its member companies to obtain their views on the issue.

These were later consolidated and summarized as follows:

- The Canadian chemical industry considers disposal of hazardous wastes to be a problem that can be solved only by joint effort and co-operation among the federal, provincial and municipal governments and industry. It would be undesirable and costly if unilateral action were taken without prior extensive consultation with all interested parties.
- There is need for a clear and concise definition of terms based on supportable, scientific fact. This will facilitate the rational development and equitable enforcement of necessary standards.
- Regulations should be based on a demonstrated need, and compliance should be achieved by the most appropriate cost-effective means available.
- Public acceptance of waste disposal sites will be slow in coming but may be accelerated by information and education programs designed to provide facts about waste disposal, the degrees of hazard involved, control methods used and technology available to protect human health and the environment. We recognize the need for industry to become more active in this area.
- The federal government should concentrate on developing needed research, the collection and dissemination of information, education, and possible interim financial incentives to assist in establishing disposal facilities.
- Control legislation, regulations and enforcement should be left to the provinces because of their jurisdiction over disposal sites.
- The collection and safe disposal of hazardous wastes can be effectively and efficiently carried out by industry once the ground rules have been established.
- Industry does not have in its power the ability to establish criteria for the selection or designation of disposal sites. This is the task of government and requires urgent attention.
- The justified confidentiality of proprietary information should be actively protected and preserved.

We have indicated above that there is a need for clear and concise definition of terms based on supportable scientific fact. The definition of hazardous waste must therefore be unequivocal.

At the suggestion of the Canadian Chemical Producers' Association, the federal Environmental Protection Service convened a Task Force on the Definition of Hazardous Wastes, with representatives from federal and provincial governments, the National Research Council, industry and others. The following definitions were agreed on:

Waste: A waste is any substance for which the owner or generator has no further use and which he discards.

Hazardous Wastes: Those wastes which, due to their nature and quantity, are potentially hazardous to human health and the environment and which require special disposal techniques to eliminate the hazard.

We support these general definitions, but draw attention to the concept of "hazard", which is a function of both toxicity and degree of exposure.

Toxicity is a property of a hazardous polluting substance which produces adverse effects in living organisms when they ingest it, inhale it, contact it or are injected with it at sufficient concentrations. Toxicity then is primarily a biological concept. As yet there is no instrument that can measure toxicity; it can only be determined by the response of an organism.

The toxicity of a substance, therefore, is not a discrete property but a relative one. "Level of toxicity" therefore has meaning only when one substance is compared to another. All elements, chemicals, and mixtures of chemicals, produce toxicity at some exposure over a certain amount of time. To compare toxicities one must fix either the amount of the toxicant or the period of exposure. For example, both table salt and arsenic are toxic. However, salt is considered less toxic than arsenic because more is needed for a fixed exposure time, or exposure to a fixed amount is needed over a longer period of time, to produce toxic effects.

For most substances, there is a threshold dose, or exposure level, below which no adverse effects occur, regardless of the length of exposure. A small number of chemicals however are believed, for all practical purposes, to have virtually no safe threshold, e.g., chloromethyl methyl ether and B-Naphthylamine. Ideal criteria would reflect the relative hazard that a waste poses to society and the environment.

Formally designating hazardous wastes for regulatory control purposes, however, is fraught with difficulties. Efforts to designate hazardous wastes in jurisdictions other than Canada have resulted in inclusion of such everyday items as soft drinks, concrete, wood ash, leaves, newspaper and vinegar.

Against this background, it is clear that the orderly development of a consensus on the general definition of hazardous wastes could be a long time in coming. On the other hand, most qualified scientists can readily agree on specific wastes which pose a health or environmental threat.

The CCPA believes that, for practical purposes, the U.S. Environmental Protection Agency (EPA) has developed the most extensive listing extant. It can serve at least as a starting point for more sophisticated future listings. On this premise, and in order to expedite the implementation of effective waste disposal procedures and guidelines, the Association recommends that the EPA list be considered an interim Canadian listing of hazardous wastes. We would recommend that it be reviewed and revised periodically by the appropriate authorities in Canada. As well, Canadian government agencies should establish "hazard criteria" to determine if a waste classified as "hazardous" should be granted an exemption from such classification in Canada if the level of hazard can be demonstrated to be minimal.

To be successful, a hazardous waste disposal system must ensure that wastes reach their intended destination – the designated disposal facility. Because waste usually has little or no value, this may require a “routing manifest” tracking system, covering the manufacturer, the transporter and the disposal operator.

We recommend the use of such a system and believe it should be compatible from one jurisdiction to another within Canada. Such a system would comprise the following elements:

- (1) Manifest serial number;
- (2) Shipping description;
- (3) A unique identification number (this implies that a list of hazardous wastes is developed);
- (4) Quantity shipped;
- (5) Consistency of waste;
- (6) Trailer registration number;
- (7) Transport method/number of containers;
- (8) Generator's name and address;
- (9) Transporter's name and address;
- (10) Disposer's name and address;
- (11) Transfer dates between generator, transporter and disposer;
- (12) Signature of authorized representative of generator, transporter and disposer;
- (13) Emergency response telephone numbers;
- (14) Safe handling code.

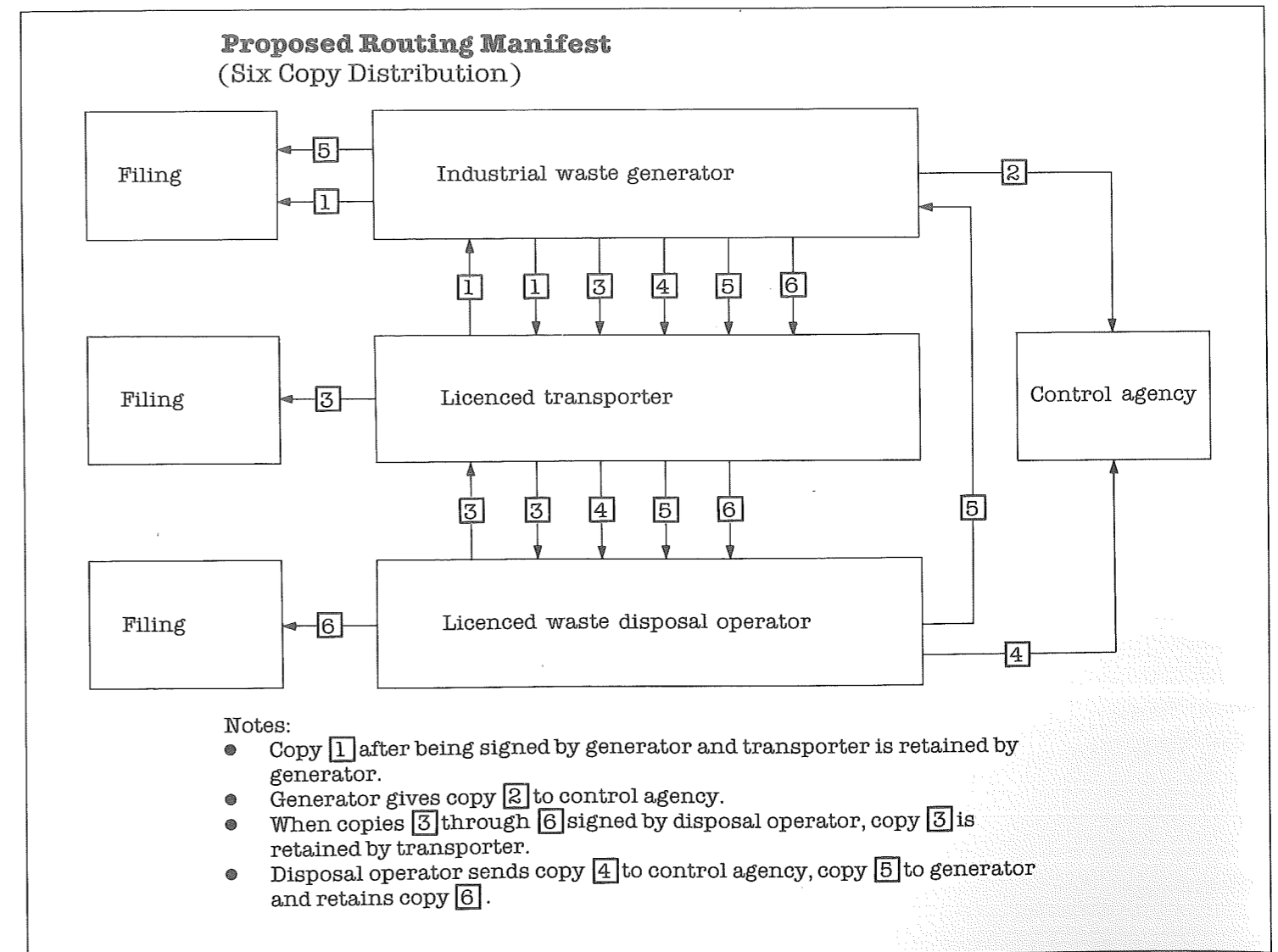
The distribution of the manifest forms should be such that a record of all transfers between the waste generator, transporter and waste disposer is made available to each party. Further, this manifest system should be used to form a “closed loop” so that both the waste generator and the appropriate control agency can be assured that any particular waste has been received by an approved disposal operator. We further recommend that hazardous industrial wastes be handled only by licenced waste transporters and disposal operators. The suggested routing of the manifest forms is shown on the Proposed Routing Manifest. (see page 7)

In addition to a listing of hazardous wastes, the manifest forms should specify any special safety information such as the compatibility of wastes if mixed, their reaction if exposed to flame, etc. As well, the means of disposal should be identified for each waste type along with a list of approved disposal operators and a statement of the types of wastes each can handle.

Effective disposal of hazardous waste in Canada can be achieved only by joint effort and cooperation, but there must be proper division of responsibility among federal, provincial and municipal governments and industry.

Legislation must be oriented to effectively protect both human health and the environment. It should also be developed with economic considerations as important criteria in order to help maintain Canada's competitive position on the world market. And it should be planned and implemented so that manufacturing and processing operations can operate without unnecessary interruption and without resorting to costly interim storage measures.

In our view, each province has a responsibility for the safe disposal of all hazardous wastes generated within its boundaries. The provinces should therefore assume the major responsibility for eliminating obstacles in securing appropriate site locations. Obviously, the present lack of approved waste disposal facilities is the result of lack of approved disposal sites. Industry does not have the power to designate or approve disposal sites. Only government can act in this area. In our view, this should be made one of government's highest priorities.



Disposal System Ownership and Financing

8 Industry is capable of resolving its own waste disposal problems. The costs of doing so will be part of the cost of doing business. Temporary bridge financing may, however, be necessary in some cases to assist manufacturing firms that face abrupt increments in hazardous waste disposal costs.

In our view, disposal facilities can be operated most efficiently by the private sector. Provided monopoly enterprises are avoided, private ownership would tend, we think, to ensure the most economic operation. The private disposal industry should assume the responsibility for design, construction and operation of treatment facilities to meet government criteria and should contract with manufacturers to handle waste materials according to regulations. We recommend that industrial wastes be handled only by licenced waste transporters and disposal operators.

At present, economic realities and lack of decisive government action allow the operation of the unethical waste disposal operator. Companies which properly treat their wastes can now find themselves operating at a financial disadvantage. There is an urgent need for decisive government intervention to correct this anomaly, either by imposing severe penalties for mismanagement of hazardous wastes or by offering financial incentives to foster proper management techniques, or both. Unethical operators can only be eliminated with certainty by making responsible waste management less burdensome than dumping.

Although many large chemical companies already operate their own on-site disposal facilities, the chemical industry nonetheless has compelling economic reasons for supporting the development of publicly available hazardous waste disposal facilities. First, we favour the establishment of uniform standards for all parties that handle chemicals. Secondly, we recognize that smaller downstream industries and companies, many of which use our chemical products, should have ready access to safe and reliable means for disposing of their wastes. It would be pointless, however, to direct that specific wastes go to specific treatment facilities if these wastes are already being effectively treated.

As far as possible, user fees should reflect the actual costs of disposal as well as ensuring an adequate return on investment to the disposal operator. This will provide an incentive to develop improved and cost effective waste treatment and will avoid penalizing manufacturers whose industrial wastes are easily neutralized. In some cases, government financial incentives may be necessary where market economies are insufficient to attract private capital to waste disposal operations. Such incentives might take the form of lower general taxes or tax incentives for the purchase of equipment to process waste.

9 The CCPA recognizes that waste disposal sites call for perpetual care. We fully support the view that the monitoring and maintenance of disposal operations are absolutely necessary over the long term if we are to ensure that the environment is adequately protected. One possible measure which we would strongly recommend is that deeds or other legal instruments covering waste disposal sites be clearly marked to show their past use.

While we advocate strict government control of all hazardous waste operations, we believe that industry should be involved in discussions of long term monitoring and maintenance – or “perpetual care” – criteria and objectives, since these may affect the costs of our products.

It is essential, from our point of view, that industry be able to obtain insurance covering the transportation and disposal of hazardous wastes at realistic costs. In principle we are opposed to the accumulation of funds in an insurance reserve because, in our view, this would tie up capital that could otherwise be productively used.

The Public's Role

The Canadian Chemical Producers' Association recognizes that public review, comment and participation are a necessary part of any process related to the review of designated disposal sites for hazardous wastes. We encourage full public participation and review in the process because we believe it will lead to a better understanding of the issues involved. Because of the emotional nature of the subject, however, we wonder whether any amount of discussion or input will necessarily result in agreement being reached on a specific site location. Everyone will agree with the proposition that facilities are required, but will insist that they be located in someone else's backyard. Logically then, there is need for a mechanism which will produce clear-cut decisions in such politically difficult situations.

It is important to realize that high costs are regularly incurred by prospective waste disposal operators prior to public hearings. These costs cover detailed engineering specifications and environmental impact assessments. Uncertainty as to whether site approvals will be granted, coupled with these costs, effectively discourage proposals from industry. The uncertainty of approval also discourages industry from participating in site selection hearings. Industry representatives would be much more willing to participate if they knew that the process would lead with some certainty to a conclusion.

More effective public hearings would, we believe, be encouraged:

- (1) if all hearing participants were expected to submit written briefs in advance of public meetings with these briefs being made available to other participants,
- (2) if cross examination of hearing participants were generally encouraged, and
- (3) if a final decision, either for or against a proposal, were required from the appropriate decision-making body within a reasonable time.

Collection and Dissemination of Information on Hazardous Waste Disposal

A great deal of the most current information on hazardous wastes is likely to be derived from the experience gained in other countries. As well, information may be available from within Canada through the experience of individuals or organizations. Given the mass of information available on the subject of hazardous waste disposal and the broad public need for access to it, data collection and dissemination should, we believe, be made a significant objective and role for the federal government.

In operating an information service on this subject, it is essential that the available data be presented in a clear and concise form so that provincial authorities can use it to develop suitable disposal controls and guidelines and provide useful information to manufacturers, waste handlers, fire-fighters, and rescue groups as well as the public at large.

We would suggest that this information be assembled in the form of a directory or index, readily available to all and easily updated as required.

Waste Technology and Research

12

Four basic questions can be asked about any industrial waste material:

- Can it be eliminated at its source?
- Can it be recycled, either by the generator or another expert party?
- If it is hazardous, can it be converted into a non-hazardous form?
- If it must be disposed of, how can it be most effectively and efficiently processed?

No manufacturer wants to generate hazardous wastes.

Industrial wastes are the unwanted, but necessary, by-products of the manufacturing processes that are intrinsic to contemporary life. Today, much industrial waste is economically recycled. This trend will undoubtedly continue and will be fostered by further innovations in research and technology. Even so, however great the progress in waste reduction and recycling, hazardous wastes will inevitably be produced in some form. Their safe disposal will therefore remain an important objective within the public policy elements that directly affect Canadian manufacturing industries.

Industrial Chemicals: a key and responsible Canadian Industry

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