

POSITION PAPER
ON HAZARDOUS WASTE
HANDLING AND DISPOSAL

The Canadian Chemical Producers' Association

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INTRODUCTION

The Canadian chemical industry is committed to ensuring that its operations and the use and ultimate disposition of its product do not present an unacceptable risk to its employees, customers, the public or the environment. It supports the development of equitable, workable and attainable standards where appropriate and believes the best way to protect the health and well-being of Canadians and their environment is to:

- Ensure that guidelines and regulations established by governments with respect to the hazards of chemicals are based on scientifically supported data and are realistic in terms of societal cost/benefit considerations; and to
- Ensure that the justified confidentiality of proprietary information is actively protected and preserved.

GENERAL PHILOSOPHY

In 1978, CCPA's Environmental Quality Committee began actively studying the waste disposal problem and carried out an opinion poll of its member companies to obtain their views.

The philosophy expressed by CCPA's member companies in this survey is outlined below:

- Industry considers hazardous waste disposal to be a problem that can be solved only by joint effort and co-operation between the federal, provincial, 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 clear and concise definitions 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 education programs designed to provide facts about waste disposal, the degrees of hazard involved, control methods used and technology required to protect human health and the environment. We recognize the need for industry to become more active in this area.
- The role for the federal government should be concentrated on developing needed research, the collection and dissemination of information, education, possible interim financial incentives and the development of guidelines.
- Control legislation, regulations and enforcement should be left to the provinces.
- Collection and safe disposal of hazardous wastes can be effectively and efficiently done by industry once the ground rules have been established.
- Industry does not have in its power the ability to establish criteria and designate disposal sites. This is the job of government and requires urgent attention.

WASTE CLASSIFICATION

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 CCPA's suggestion, 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. After three meetings, the following definitions emerged:

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

Hazardous Waste: 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 and endorse these general definitions.

Toxicity, a property of hazardous polluting substances, is the ability to produce adverse effects in living organisms when they are exposed to the substances through ingestion, inhalation, contact or injection. As yet there is no instrument that can measure toxicity; it can only be determined by the response of an organism. Therefore, the concerns about toxicity are strictly biological in origin.

The toxicity of a substance is not a discrete property but a relative one. High toxicity has meaning only when one substance is compared to another. All elements, chemicals, and mixtures of chemicals produce toxicity at some exposure and 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 over a longer period of time is needed for a fixed amount to produce toxic effects.

For some 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 no safe threshold, eg. chloromethyl methyl ether and B-Naphthylamine. Ideally therefore, for the vast majority of wastes, criteria should be able to be developed which reflect the hazard that a waste poses to society and the environment.

Formally, defining hazardous wastes however is fraught with difficulties. Attempts to define hazardous wastes in other jurisdictions have resulted in including such everyday items as soft drinks, concrete, wood ash, leaves, newspaper and vinegar.

Clearly, we cannot wait for the orderly development of a consensus on the general definition of hazardous wastes. On the other hand, most qualified scientists can readily agree on specific wastes which pose a health or environmental threat. Accordingly, CCPA is now of the opinion that it would be practical to draw up a short list of specific wastes regarded as hazardous and provide criteria to permit the deletion of items from the list if the danger they pose can be shown to be minimal. Testing should be concentrated to develop such lists. Once the lists have been developed, testing would be minimized.

WASTE MANAGEMENT SYSTEM

A successful hazardous waste disposal system must ensure that wastes reach their intended destination, i.e. the disposal facility. Because waste by definition has no value, this may not happen automatically. A manifest system, covering the generator, the transporter and the disposal operator, is generally considered necessary.

We agree on the need for a manifest system. We believe it should be compatible from one jurisdiction to another within Canada. We believe that a system comprising the following elements will adequately meet the need:

- (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.

The distribution of the manifest forms should be such that a record of all transfers between the generator, transporter and disposer is available to each party. Further, there should be a closed loop so that both the generator and the appropriate control agency are aware that any particular waste has been received by an approved disposal operator. We 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 attached Figure 1.

To make the system workable, we recommend that in addition to providing a list of hazardous wastes, appropriate care must be taken to identify any safety needs such as the compatibility of wastes if mixed, flammability, etc. Also, in our view, the means of disposal should be identified for each waste type along with a list of approved disposal operators which identifies the type of wastes each can handle.

LEGISLATION AND REGULATIONS

Hazardous waste disposal can be achieved only by joint effort and cooperation, but there must be proper division of responsibility between federal, provincial, municipal governments and industry. In our view, the role of the Federal Government should be to undertake research, disseminate information, promote public understanding, develop guidelines and possibly provide interim financial incentives.

Legislation must be effective to protect both man's health and the environment. It must be developed with cost effectiveness as an important criterion in order to maintain Canada in a competitive position on the world market. And it must be planned and executed so that manufacturing and processing operations can operate without unnecessary interruption and without resorting to costly interim storage of waste products.

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. We believe that the reason for the lack of approved facilities is because of the lack of approved sites. Industry does not have it in its power to designate or approve disposal sites. In our view, this is the highest priority role of government in the area of waste disposal.

Once treatment facilities are in place, we recommend that a list of approved facilities be made available along with the types of wastes that each location is authorized to handle. Once the ground rules are established, collection and safe disposal of hazardous wastes can be effectively handled by industry.

OWNERSHIP, FINANCING, ETC.

As stated above, industry is capable of resolving existing problems if appropriate legislation is passed and firmly implemented by government and if temporary financial incentives are provided where waste disposal is excessively costly.

We believe that disposal facilities could best be operated by private businesses. Provided monopolies which could charge prohibitive fees are avoided, this would tend to ensure the most economic operation. The private disposal industry should assume the responsibility for design, construction and operation of treatment facilities to meet the relevant criteria and should contract with industry to handle waste materials according to the regulations. We recommend that industrial wastes be handled only by licenced waste transporters and disposal operators.

At present, economics and lack of decisive government action allow the operation of the unethical waste disposer. Companies which properly treat their wastes operate 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 financial incentives, or both. Unethical operators can best be eliminated 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 has strong economic reasons for supporting the development of publicly available hazardous waste disposal facilities. First, we favour establishment of uniform standards for all who handle chemicals. Secondly, we recognize that smaller companies, many of which use our chemical products, should be provided with safe and accessible means for disposing of their wastes. No attempt however should be made to direct specific wastes to specific treatment facilities if these wastes are already being effectively treated.

User fees should, as far as possible, reflect actual costs associated with disposal but should ensure an adequate return on investment. In some areas, financial incentives may need to be provided (by government) where the economics are not viable to encourage private industry to invest in this area. Those incentives could take the form of lower general taxation or tax incentives for equipment to process waste.

With regard to perpetual care, CCPA recognizes that this aspect of waste disposal deserves special attention and that our Association is in complete agreement with the philosophy that monitoring and maintenance of disposal operations are necessary over the long term in order to ensure that the environment is adequately protected.

We advocate strict government control of all hazardous waste disposal operations. One possible measure which we would strongly recommend is that deeds covering waste disposal sites be clearly marked to this effect.

We believe that industry should be actively involved in discussions on the matter of perpetual care since it may effect the costs of our products. It is essential that industry be able to obtain necessary insurance at realistic costs. We are opposed, in principle, to the accumulation of capital funds in an insurance reserve because, in our view, this would tie up capital that could otherwise be productively used. In addition, any charges, levies or user fees should be consistent with the anticipated needs and be based on both the quantity and type of waste generated.

PUBLIC REVIEW AND INPUT

CCPA recognizes that public review, comment and information is a necessary part of any approval process. We encourage objective public participation and review since we believe this will lead to a better understanding of the issues. It is questionable, however, because of the emotional nature of the subject whether any amount of discussion or input will result in agreement being reached on site location. Everyone will agree generally that facilities are required, but will insist that they be located in someone else's backyard. There is a need for a mechanism which will produce binding decisions in politically difficult situations.

It is important to realize that high initial costs are incurred by a prospective operator prior to a public hearing to cover detailed engineering work and environmental impact assessments. This, coupled with uncertainty as to whether any approval will be granted, effectively discourages future proposals from industry. The lack of assurance that approval will be granted also discourages industry from participating in hearings. Industry would be much more willing to participate if they knew the process would lead somewhere.

Industrial participation would be encouraged both to participate in public hearings and to initiate treatment proposals, if:

- (1) All participants are required to submit written briefs in advance of public meeting; these briefs to be made available to other participants.
- (2) Cross examination of all participants is encouraged.
- (3) A final decision, either for or against the proposal, is required from the appropriate government body within a reasonable time period.

COLLECTION AND DISSEMINATION OF INFORMATION

Much of the information on hazardous wastes is likely to be derived from other countries and international groups. Other information may come from the perception or experience of individual localities or organizations in Canada. Given the mass of data and need for easy access to it, it would appear that the collection and dissemination of information can be performed most effectively by the federal government.

In operating an adequate information service, it is essential to take the available data and prepare it in a clear, concise form that can be used by provincial authorities to develop suitable controls and to provide meaningful data to manufacturers, waste handling groups, fire and rescue groups, interested and informed academics, and the public at large.

This information should be assembled in the form of a directory or index, should be made readily available and should have provision for updating as required.

Undoubtedly, there will, from time to time, be certain incidents where a substance previously regarded as innocuous is found to pose long term toxic hazards or is incompatible with certain other substances. When this occurs, a national centre is needed to rapidly collect such data, screen it, and, if warranted, disseminate directives in the form of alerts and restraints respecting its handling and disposal. However, although this must be handled rapidly and thoroughly, it must also be handled with caution. Over-reaction could do as much harm to society as under-reaction. Actions must be initiated with a view to overall effects, both positive and negative, not just on a precautionary basis because of speculative and unproven health effects.

WASTE TECHNOLOGY AND RESEARCH

With regard to waste technology and research four basic questions can be asked about any waste material:

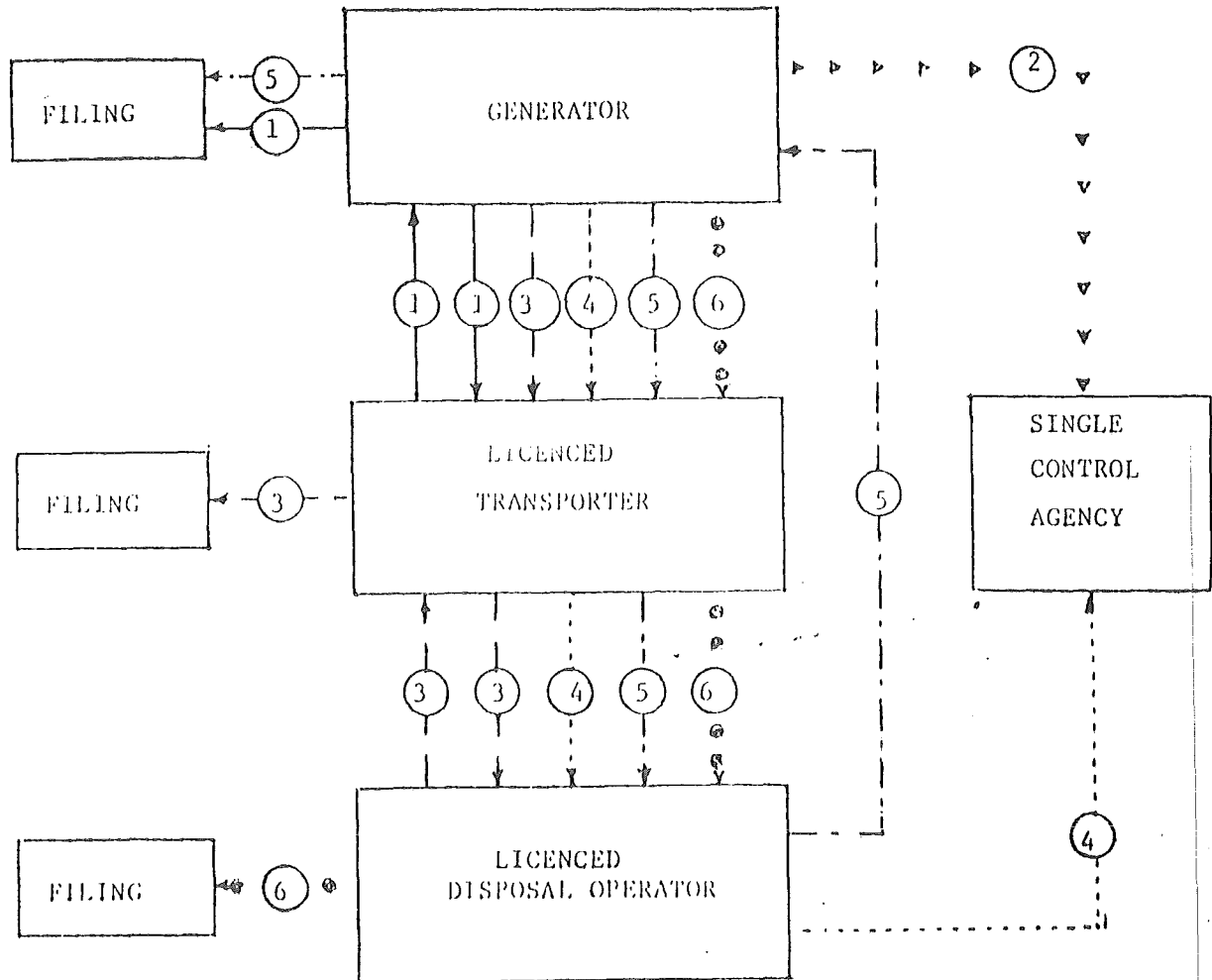
- Can it be eliminated at its source?
- Can it be recycled, either by the generator or by a second party?
- If hazardous, can it be converted into a non-hazardous form?
- If it must be disposed of, how can it be most effectively and efficiently processed?

No manufacturer intentionally generates hazardous wastes. Many wastes are unwanted but necessary by-products of manufacturing process. Today, much waste of this kind is recycled profitably and this trend is increasing. Undoubtedly, further improvements are possible and will result from research efforts.

Since progress in this field will benefit all society, assistance should be provided in the way of tax incentives, research grants, and possibly "seed money" to assist in getting test facilities established. The information so gained should be made available to benefit the country as a whole. A model worth studying is offered by the province of Ontario which is currently providing financial assistance to members of the private sector who are presenting proposals for waste treatment operations.

FIGURE 1

DISTRIBUTION OF MANIFEST (6 COPIES)



NOTES:

- copy ① after being signed by generator and transporter is retained by generator
- generator gives copy ② to control agency
- when copies ③ through ⑥ signed by disposal operator, copy ③ is retained by transporter
- disposal operator sends copy ④ to control agency, copy ⑤ to generator and retains copy ⑥.