



Beyond Waste Issue Paper

Regulatory Compliance and Hazardous Waste

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Regulatory Compliance and Hazardous Waste

Getting “Beyond Waste”

The Department of Ecology (Ecology) has embarked on a project to update the statewide solid and hazardous waste management plans. The aim of the Beyond Waste Project is to guide Washington in a new direction away from simply managing wastes and toward preventing wastes from being generated in the first place. The vision statement for Ecology’s Beyond Waste Project is, *“We can transition to a society that views waste as an inefficient use of resources and believes that many wastes can be eliminated. Eliminating wastes will contribute to social, economic, and environmental vitality.”*

This is one of eight issue papers prepared by Ecology staff to help in the development of strategic plans to move Washington in a new direction, a direction that will take us beyond waste.

Introduction

The hazardous waste management programs at both the state and federal levels are preventive programs that feature a high degree of reliance on a strong, although complex, regulatory component. In Washington State, the largest driver in ensuring safe hazardous waste management over the last twenty-five years has been the regulatory compliance program administered by the Washington State Department of Ecology (Ecology). This paper will examine where Ecology’s Hazardous Waste and Toxics Reduction (HWTR) Program has been and where it may potentially be going.

More specifically, this paper will:

- Describe the current structure of the compliance program (along with its history and some of its strengths and weaknesses).
- Predict what the future will look like if no changes are made.
- Discuss efforts toward compliance made by people other than HWTR Program staff.
- Give recommendations for incremental improvement and regulatory change.

Background

Until the first state hazardous waste regulations were promulgated in 1977, open burning and unregulated dumps were the prevalent means of solid waste disposal in rural Washington counties. More populous counties were using “sanitary landfills” where waste was not burned, but was at least periodically covered with soil. There were no restrictions on where industrial waste could be disposed of, and it routinely ended up in dumps at the sites where it was produced. We are still facing issues

surrounding what was proper disposal in the past that continue to be environmental threats today. An example of this was the ability to dispose of pesticide waste by farmers by burying it on their own property as long as it was done “away from foodstuffs and water bodies.”

The health and environmental hazards associated with these uncontrolled disposal practices were generally not widely recognized nor appreciated. However, in 1976 the Washington State Legislature had the foresight to address the growing threat posed by improper management of hazardous waste by passing the Hazardous Waste Management Act (HWMA), Chapter 70.105 RCW. The Legislature also proposed a referendum to the voters that provided grant funds for solid waste and wastewater treatment facilities. The voters approved both of these proposals.

In 1976, federal legislation resulted in the promulgation of the Resource Conservation and Recovery Act (RCRA). The Environmental Protection Agency (EPA) adopted final hazardous waste regulations in November 1980. In 1980, Chapter 70.105 RCW, the Hazardous Waste Management Act, was amended to give Ecology clear regulatory authority to regulate dangerous waste, and extremely hazardous waste and to gain federal authorization for the state’s hazardous waste program from EPA.

The federal rules provided specific management standards for generators and transporters of hazardous waste and for operators of treatment, storage, and disposal (TSD) facilities. The State, through an agreement with EPA, used the federal law and its existing rule to ensure proper management of regulated wastes from 1980 until 1984. In 1982, Ecology adopted a new set of rules that combined the state and federal systems into Chapter 173-303 WAC, Washington’s *Dangerous Waste Regulations*. These rules were significantly more comprehensive than those used by EPA due to a broader definition of hazardous waste. Ecology included a new toxic category that considered the toxic effects on certain biological receptors, specific polychlorinated biphenyl waste sources not regulated by the Toxic Substance Control Act, many persistent and carcinogenic wastes, and solid corrosive wastes that all needed to be managed in an environmentally protective manner. Major additions to the federal rule occurred in 1984 and 1985, including the incorporation of land disposal restrictions, financial assurance, and rules governing recycling activities.

Chapter 173-303 WAC has been amended several times to incorporate new federal rules, correct errors, and make required changes. A major amendment was accomplished in 1995 that made significant changes in the way the state rule was applied. Changes were made in the application of the state toxicity criteria and the use of carcinogenicity was eliminated as a designation criteria. Several EPA waste exclusions not previously recognized by Ecology were adopted. Low toxicity solid dangerous waste (special waste) was allowed to be managed under improved municipal solid waste standards. Accumulation amounts for small quantity generators were raised to be consistent with federal requirements. A detailed discussion of

changes can be found in *Dangerous Waste Regulatory Reform Project, Policy Report*, Ecology Publication #95-403, Part A, dated January 1995.

Other changes in the rules include making it easier to recycle refrigerants and antifreeze and allowing generators to treat wastes at their facilities. Most of the federal requirements for used oil management were recently incorporated into the state rules in June of 2000. This broadened the definition of used oil which allowed more wastes to be managed as used oil. Parts of the federal Universal Waste Rule were also incorporated into the *Dangerous Waste Regulations* allowing for relaxed management of batteries, fluorescent light tubes, and mercury thermostats.

The regulations were last amended in June 2000 and are scheduled for another revision in early 2004. Additional details of the history of dangerous waste management in Washington State can be found in the Beyond Waste Issue Papers on the History of Hazardous Waste Management and Permitting/Corrective Action.

Recent History

Many generators of dangerous waste in Washington State have reduced their generation to less than 220 pounds per month. At this level, generators become conditionally exempt Small Quantity Generators (SQGs) and essentially they are able to drop out of the hazardous waste regulatory system. In response, many local governments have implemented programs to collect and dispose of hazardous waste generated by SQGs. Ecology and local governments share in the responsibility of working together to ensure that SQG waste is properly managed and disposed. Coordinated Prevention Grants provided through the State Toxics Control Account help fund local government programs. If funding of these local government programs decreases, there will be an increasing portion of the business population that is no longer serviced.

Recent financial and environmental problems with existing TSD facilities are making Ecology look for ways to ensure that wastes are managed properly and to ensure that sufficient financial mechanisms are maintained by facilities to deal with closure and contamination issues. One example of this problem is the shutdown of the CleanCare facility in Tacoma.

This large TSD facility and used oil processor experienced financial problems that led to poor waste management practices, including illegal discharges of oil and hazardous waste to the environment. Penalties issued by Ecology are claimed to have resulted in the company going out of business. However, the costs and extent of the cleanup point to failures by the owners including a failure to sufficiently fund cleanup activities for closure. Existing financial mechanisms intended to provide for required closure activities allowed the owner to gradually add to a trust fund, meant to cover closure of the hazardous waste portion of the facility. Hazardous waste rules applied to only a

small portion of the facility because of recycling exemptions, so closure funds proved to be grossly inadequate to cover the costs of closing CleanCare. State and federal funds have been used to stabilize immediate environmental problems there, and generators who trusted the facility to safely manage their waste may be required to provide funding for the cleanup problems remaining at the site.

Ecology is exploring a variety of ways to preclude such problems from occurring at the remaining commercial hazardous waste handlers in the state and has listed problems and provided options in the publication "*Hazardous Waste Management Facilities in Washington State - Problems and Options*" publication number 02-04-028, dated September 2002.

Influences on Dangerous Waste Management Trends

The expense associated with proper hazardous waste disposal has been a major driver in reducing the amount of hazardous waste generated in Washington State. When the regulations first became effective, there were many hazardous waste management companies offering services in Washington State. There was a higher volume of waste being generated then and there was a lot of confusion about how it could be handled. Little capacity existed for the on-site treatment of waste. This caused the market for off-site management to be good, but expensive. As time passed, companies discovered many ways to reduce the amount of hazardous waste they generated. Some switched to products that did not result in the generation of hazardous waste, some figured out how to recycle and reuse their wastes, some increased the efficiencies of their processes to produce less waste, and some developed their own on-site treatment processes to eliminate or reduce off-site disposal. Exemptions and guidance for generators who treat their own wastes were also written into the *Dangerous Waste Regulations*.

As the amount of waste requiring off-site management decreased, excess disposal capacity grew. The market became much more competitive and costs associated with hazardous waste disposal decreased. Many waste management companies found that they could no longer compete and they went out of business or were bought by other companies engaged in hazardous waste management. Corrective action costs coming into play also resulted in some marginal facilities folding. Another possible reason that some companies went out of business is that they were being held to a higher environmental standard, thus having to spend more money on treatment and disposal of the wastes they generated or managed.

As a result of these factors, a great deal of consolidation has occurred in off-site waste management companies. Only a few major players are now doing business in Washington, and the market appears to have stabilized. Despite the fact that there are now fewer companies offering hazardous waste management services in Washington, prices seem to be reasonable and capacity is adequate for the amount of waste currently being generated.

EPA's Office of Enforcement and Compliance Assurance (OECA) Initiative

Ecology's Hazardous Waste Program recently completed a two year EPA sponsored (OECA) project designed to: 1) establish a state-wide baseline for quantitative measure of environmental compliance using only those regulatory violations that are the best proxies for serious actual or potential environmental threats, 2) determine if there is a relationship between hazardous waste inspections and generator compliance with hazardous waste regulations, and (3) if a relationship exists, how it changes over time.

The project concluded that, on a state-wide basis, Medium Quantity Generators (MQGs), businesses that generate between 220 and 2,200 pounds per month, are on average more in compliance with hazardous waste regulations than Large Quantity Generators (LQGs), businesses that generate greater than 2,200 pounds per month. About 38% of MQG facilities can be expected to have one or more relatively serious violations when inspected, compared with about 51% of LQGs.

For both LQGs and MQGs, the environmental indicator found to have the fewest violations was "spills" and the indicator with the second fewest was "illegal disposal." This is reassuring, since these two categories represent serious environmental threats. The indicator with the most violations, for both LQGs and MQGs, was the "designation" category; the "container management" indicator had the second greatest number of violations. Project data also suggests that facilities tend not to have just one type of hazardous waste management problem; when there are waste management problems they often are not isolated, but span several different management categories. With a lack of attention, such management problems would be expected to become broader and more systemic over time.

By comparing the time elapsed since facilities were last inspected, the OECA project reached the following conclusion about the effect of regulatory inspections: **hazardous waste inspections of facilities positively affect compliance with hazardous waste regulations (and, thus, contribute to protecting the environment)**. The positive effects of compliance inspections tend to wear off over time, although the deterioration in compliance is minimal for the first few years after an inspection. After about five years, the deterioration in hazardous waste compliance becomes more pronounced and the potential for negative environmental impact can be expected to increase.

Actions Taken To Improve Compliance

It has long been felt in the HWTR Program that rates of compliance with the *Dangerous Waste Regulations* could be increased if Ecology had more field contact with those subject to the regulations. There have been a number of initiatives developed to implement this concept.

Work has been done to improve inspection efficiency and allow compliance inspectors to increase the time they spend doing field work. Inspection paperwork was streamlined and a system of triage called "Hitting the High Points" was implemented. This system related to "compliance indicator" violations and it allowed inspectors to spend less time on paperwork violations in businesses that they recognized were properly managing hazardous waste. Inspectors generally prioritized large quantity generators and set targets for number of inspections performed. The number of compliance inspections has gone up 334% between 1991 and 2000 and the number of environmental threats resolved has increased 243% over that same period. This is summarized in the "*Compliance and Enforcement Summary Report*," publication #01-04-020.

Two single-industry campaigns have provided technical assistance with compliance issues during short, on-site visits to specific industry sectors. The first project of this nature was titled Shop Sweeps and it focused on the auto service industry. The second project, called Snap Shots, concentrated on photo processors, printers, and lithographers. Other campaigns have focused on vehicle recyclers and school laboratories (although the latter was aimed at toxics reduction goals rather than compliance goals). These single-industry campaigns have spawned efforts by both compliance and toxics reduction staff to carry a combined message of compliance/pollution prevention to regulated businesses with a positive outcome. Shop Sweeps resulted in 82% of the shops visited implementing at least one of the recommendations proposed by Ecology and Snap Shots had a 90% implementation rate.

Short compliance technical assistance visits called "Increased Generator Contact Visits" have been done in specific geographic areas -- such as industrial parks, a sole source aquifer, and/or small communities -- to increase awareness of Ecology's presence and to get the message out on how to manage hazardous waste safely. New notifier visits that are offered to help businesses understand hazardous waste management in a technical assistance mode have also increased awareness in the regulated community. Increased contact with businesses concerning these issues should foster better compliance with the regulations, more comfort in asking questions of Ecology, and reduced environmental impacts.

The Future

Assuming current population growth trends in Washington State continue, more businesses will be needed to satisfy increased demand for goods and services. As a result of this increased demand, it is likely that the generation of waste, both solid and hazardous, will increase proportionately as will the use of hazardous products. Today's waste management programs must change if we are to move toward our vision of reducing the risks associated with hazardous material use and hazardous waste generation.

Population growth and the associated increase in the number of businesses generating dangerous waste will increase the pressure on the HWTR Program to modify its approach to protecting human health and the environment. Incorporation of sustainability principles into this approach will be a valuable and necessary tool for use in attaining that goal.

At the same time, public support for tax reducing initiatives threatens to decrease the budgets that are necessary for hazardous waste compliance and the prevention of contaminated sites. As a result, the ratio of compliance inspectors to the number of businesses will likely decrease along with the number of inspections. According to our OECA grant project data, this will lead to lower rates of compliance and thus to an increased threat to human health and the environment. In order to compensate for these trends, policies and approaches will need to change. Incorporation of the ideas and goals of all of the issue papers in the Beyond Waste effort should provide the roadmap for that change, and updating the State Hazardous Waste Plan should be the vehicle used to travel this road.

These same effects are likely to be felt by local governments, which have played an important role in the management of Washington State's hazardous waste. By planning for and implementing local education and collection programs for SQG waste, local governments have had a positive effect on lowering the risks presented by these hazardous materials and wastes. These Moderate Risk Waste programs have incorporated some of the same ideas and goals that are being considered by the Beyond Waste Project in order to help reduce these risks.

Ecology's HWTR Program can only reach the goals of the Beyond Waste vision by having good working relationships with other governing agencies. A vivid example of how a relationship can work to the benefit of all is the Interagency Regulatory Analysis Committee (IRAC) in King County. This entity has provided a forum for several regulatory bodies to network with one another to develop policies and solutions to common environmental issues and regulatory conflicts. Recent accomplishments include development of a rule revision to deal with pharmaceutical wastes, coordination on dealing with troublesome cleanup sites, and the Rehab the Lab Project to reduce risks at school laboratories.

Coordinating education efforts by working with various trade associations has shown to be an efficient means to communicate the environmental message to targeted businesses. This was evident in the efforts of automobile associations that worked with Ecology both during and after the Shop Sweep campaign to get the message of environmental stewardship out to the automotive industry.

Undoubtedly, there will also be technology updates and discoveries that will have an impact on hazardous material use and hazardous waste generation. If sustainable principles are not considered or possibly even required as population and demand

increase, resource depletion and accompanying risks may be inevitable. Technology should be a valuable tool to reduce the need for more resources and to help utilize the resources we already have by providing more recycling opportunities. This will help us all reach the vision of the Beyond Waste Project.

Vision, Goals, and Obstacles

As the Beyond Waste Project vision states on page 1, the goal is to transition to a society that views wastes as inefficient uses of resources and believes that most wastes can be eliminated. From a regulatory compliance viewpoint, there are some valuable signposts along the way to the desired final outcome. For one thing, the whole point of enforcing compliance with the *Dangerous Waste Regulations* is that Ecology believes that if the rules are followed, the potential for harm will be reduced. So it makes sense that one of our perfect-world interim goals should be to reach a point where all businesses comply fully and willingly with the *Dangerous Waste Regulations*.

Also, part of our task for this issue paper is to explore ways to eliminate contaminated sites in Washington State. A Washington without contaminated sites is not a Washington that has reached the endpoint that we're aiming for, but it's certainly an improvement.

It is important to remember that actions taken to move toward one of these goals will not necessarily also contribute to progress toward another. As long as hazardous substances are used, there will be associated contamination and safety issues, even if the end products from a process are always used as raw materials for another process. For instance, the *Dangerous Waste Regulations* don't have any effect on the ways in which product – rather than waste – can affect workers' health. They also don't have any jurisdiction over how product is stored, and while the regulations distinguish between solvent in the drum and solvent in the parts washer, the environment does not. If we are to eliminate contaminated sites, action will have to be taken outside of the framework currently provided by the *Dangerous Waste Regulations*. Therefore, if we are to reach our goals, our compliance system will need to become more outcome-based and less centered around enforcing particular regulations. Increased cross-media integration will also be essential.

Several other issues stand in the way of reaching the goals of the Beyond Waste Project. For one thing, there is little economic incentive to reach "zero waste." In some situations there is even an economic disincentive to do so. It is often expensive to go from simply throwing something in the dump to handling it as dangerous waste, and generally the cost of recycling is higher still. For example, it can cost significantly more to recycle fluorescent bulbs than it does to dispose of them as dangerous waste. Another problem can be a lack of infrastructure or techniques that can be used to turn waste into ingredients.

The problems associated with hazardous substances, dangerous waste, and contaminated sites are not currently a major public focus. This means that there's a lack of political will to take action, and often there is even resistance – “didn't we already solve that problem?” Lip service to recycling and waste reduction has become part of American culture, but follow-through can be lacking, and little urgency is associated with waste issues in environmental discussions.

Ecology resources – both in terms of money and personnel – are limited, as is the information available to us. There are also some bureaucratic issues that stand in the way because different governmental organizations have authority over different wastes. For instance, hazardous waste sent into a sewer is regulated by the Water Quality Program rather than the HWTR Program.

Working With Others

Partnerships with local governments, businesses, and environmental organizations are necessary to effectively protect public health and to prevent mismanagement of waste materials. Working as partners fosters a regulatory system that is more efficient, more flexible, and less complex than the current federal hazardous waste system. The moderate risk waste program that deals with hazardous wastes excluded from the hazardous waste system in Washington State is a good example of how the different regulatory entities can work cooperatively toward a common goal. The moderate risk waste program has incorporated several ideas in the areas of education, collection, and the substitution of less-hazardous ingredients that could work as well for management of regulated waste. This model should be used to make future efforts more effective.

We must also be able to measure the effectiveness of changes to the hazardous waste compliance program as we approach our visionary goal of waste being incorporated back into the system as a necessary product. To do this, we must be able to use data to show that:

- Compliance rates are increasing.
- Fewer contaminated sites are being created.
- There is less waste that requires disposal.
- The use of hazardous substances has decreased.

The HWTR Program will need to tap into other sources of data to figure out how to measure the effectiveness of changes to the compliance program.

Regular periodic updates to the State Hazardous Waste Plan should be used as checkpoints or milestones to help determine if the issues discussed by all of the Beyond Waste issue papers are steering us toward achieving our vision. Changes and revisions should be developed and implemented as required. The State Plan should be used to help build a vision with other stakeholders and partner agencies.

The federal and state hazardous waste management systems' approaches to fixing past problems of waste management and disposal were a good starting point, considering

the problems that were prevalent at their inception. Now it is essential to refocus our efforts to address the hazardous waste compliance issues of today and the future.

Recommendations

Under the current dangerous waste regulatory system there are tools available to help us move toward our eventual goal of zero waste. Using each one of these established tools in an efficient manner can provide a framework to help us realize that goal. Assuming that greater compliance with the *Dangerous Waste Regulations* will equal less harm and fewer contaminated sites, use of recently developed “tools” in the compliance program will help. The coordination of how these tools are used will determine their effectiveness.

A common message inspectors hear from regulated businesses is, “Just tell us what we need to do to be in compliance and we’ll do it.” The use of tools like targeted and frequent inspections, educational efforts such as generator workshops and publications, and cooperative efforts like sector projects to work with generators have been shown to be effective in answering the question about how to comply with the regulations.

Another tool available under the current regulations that will help us move toward our goal is cross-media coordination on inspections. Experience has shown that this type of approach helps the generators see the bigger picture of environmental compliance and thus reduces confusion. It also lets the generator ask all of their questions at one time and it minimizes any risk of the generator getting conflicting messages from Ecology staff from different programs.

A common problem encountered with using enforcement to achieve compliance has been the lengthy process of issuing administrative orders and penalties. Staff can become reluctant to use formal enforcement due to the time and effort involved. Compounding that difficulty is the reality of diminishing resources in the Attorney Generals Office, which we rely upon for help with formal enforcement. Suggestions have been made to allow inspectors to issue field tickets in place of the formal enforcement process as a way to do more enforcement with fewer resources. This would be a step toward increasing Ecology’s efficiency at “leveling the playing field” or internalizing the costs of non-compliance. Targeted enforcement toward bad actors in a sector could also help to improve that sector’s environmental performance, thus accelerating Washington’s progress toward the Beyond Waste goal.

Information technology has been identified in the draft EPA White Paper *“Beyond RCRA: Prospects for Waste and Material Management in the Year 2020”* as a means to increase communication between regulators and the regulated community. Use of this relatively new tool for that end has shown promise in the HWTR Program. Timeliness is germane in the hazardous waste world, especially since regulations and technologies can change rapidly. Increased communication with the regulated community will lead

to generators making better long-term choices that will help move toward achieving the Beyond Waste vision.

The efforts made by HWTR Program compliance staff working within current regulations have been an important driver in the improvement of hazardous waste management in Washington State over the past twenty-five years. We have come a long way from open burning and land disposal to treatment by generator, recycling, and promoting the use of lower toxicity substances, but we still have a way to go before reaching our goal of zero waste. Potential regulatory changes may help us get farther down that road.

Some of the best potential tools at our disposal are the economic incentives and disincentives brought about by regulatory reform. Pollution Prevention Planning fees were implemented several years ago to provide an incentive to reduce the amount of hazardous waste generated. Other reform initiatives that could be initiated or are currently underutilized are citizen suits, field ticketing, legislation that requires violators to pay those in compliance, and a restructuring of the tax system to provide incentives to not generate waste.

A recent paper written by Ecology staff and delivered to the legislature in September of 2002 concerning *“Hazardous Waste Management Facilities in Washington State – Problems and Opinions”* focused on how best to change regulations in order to shore up financial responsibility. Facilities with a track record of environmental non-compliance leading to environmental damage and contamination would be required to be financially responsible for their actions. Financial responsibility could be in the form of better liability coverage to address releases and contamination in combination with improved financial assurance for proper closure of a facility. This could be a big driver toward eliminating contaminated sites. It would also be an incentive to use less-hazardous substances and thus generate less hazardous waste.

Coordination with other regulatory programs within Ecology and with other external entities during regulation development would help to eliminate duplication of effort and simplify requirements. This would make it easier for generators to “do the right thing.” One example of a difficulty created by lack of coordination was when Ecology was encouraging recycling of solvents on-site, but some local fire jurisdiction fire codes were not allowing this activity. This is an example of a mixed message that could be worked out during regulation development.

Another regulatory change that deserves investigation is the integration of the regulation of waste and the substances or ingredients used to generate that waste. Making the regulation of these two sorts of chemicals integrated rather than separated by a bright line between hazardous ingredients and hazardous wastes would help to remove confusion regarding the overall management of chemicals. This would also have the potential to encourage the use of less-hazardous ingredients, since the regulatory burden would be lessened when a business used more benign ingredients.