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Sightline Policy Analysis:

Bulk Discounts for Polluters

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Summary

One of Washington State's few fees designed to discourage toxic pollution through the "polluter pays principle"—the Hazardous Waste Planning Fee—is undermined by a peculiar flaw: it gives bulk discounts to the biggest polluters and, as a result, lands hardest on small- and mid-size businesses.

- In 2006, Canyon Creek Cabinet Company in Monroe—a typical mid-size waste generator that makes wooden cabinets for new homes and remodeling projects—paid **$220 per ton** for each of the 23 tons of used paint solvent and other hazardous materials it disposed of.

- The same year, specialty chemicals-maker Emerald Kalama Chemical (formerly Noveon Kalama), the state's largest hazardous polluter, paid just **81 cents per ton** for the more than 20,000 tons of toxic-laden tar and other wastes it generated at its plant beside the Columbia River.

Like Canyon Creek, the overwhelming majority of hospitals, laboratories, manufacturers, metals processors, and other facilities that generated appreciable quantities of hazardous materials in Washington paid $220 per ton. This uniform tax rate gave them a steady reminder to put their ingenuity to work on the challenge of finding safer compounds and processes. It also funded state programs that helped companies adopt cleaner methods.

But Emerald Kalama Chemical and 46 other very large generators of hazardous wastes—the 12 percent of firms that together produced more than 90 percent of hazardous wastes covered by the program[1]—paid less than $16 per ton, on average. In fact, these most prolific of polluters got a discount averaging 93 percent. And the more they polluted, the bigger the discount.

The cause of this inverted incentive scheme is that the Hazardous Waste Planning Fee is capped by law. No matter how much toxic waste a facility generated in 2006, for example, it could not pay more than $16,755.

[1] These 47 firms accounted for 92 percent of all hazardous wastes covered by the Hazardous Waste Planning Fee. This figure may overstate their importance because it excludes some hazardous wastes and small generators. Waste that is "non-recurrent," such as waste from spills or accidents, is not subject to the fee. Firms that generate less than 1.3 tons of hazardous waste a year also are exempt from the fee.

Eliminating this cap so that all waste is taxed equally would clean Washington's air and water far more effectively than does the current fee, because it would motivate waste prevention among bulk polluters. It would call all generators of hazardous waste to account for the true costs—the costs to human health and our natural heritage—of the pollutants they discharge.

It would also make the tax fair to the hundreds of small and mid-size firms who are already doing their part for a clean Washington by paying the regular fee. Finally, it would increase the state Department of Ecology's financial self-sufficiency, freeing up as much as $10 million of state general funds per year for other priorities.

Eliminating loopholes for particular circumstances would also improve the fairness and effectiveness of the fee: correcting glaring inequalities in the way the current fee structure treats facilities with similar waste streams. To make it an even more powerful incentive, lawmakers could better tune tax rates to match the risks imposed by particular hazardous wastes, which range from poisonous but short-lived substances such as methanol (wood alcohol) to intensely potent, long-lived toxics such as dioxin.

Rather than rewarding bulk polluters with a bulk discount, the legislature could revise the hazardous waste planning fee to make it fair to all kinds of businesses, large and small. In the process, the revised fee would help protect our health, protect our natural heritage, and make prices tell the truth.

Solutions: Making the Hazardous Waste Planning Fee Fair

In 1990, Washington lawmakers set a goal of reducing the state's hazardous waste generation by 50 percent over 5 years. The key feature of the legislation was that it required all firms that generate substantial quantities of hazardous materials to develop and implement hazardous waste reduction plans. To add an incentive to these plans and to help pay for the state's participation, lawmakers followed the "polluter pays principle" by levying a per-ton fee on companies that generate hazardous wastes—essentially a pollution tax.[2] They dedicated the proceeds to a state program to "help facilities find ways to avoid or reduce hazardous substances use and hazardous waste generation."[3]

[2] An introduction to pollution taxes is Alan Thein Durning and Yoram Bauman, *Tax Shift* (Seattle: Northwest Environment Watch, 1998). Imposing taxes on firms in proportion to the environmental harm they cause—the so-called "polluter pays principle"—is a powerful way to correct one of market economies' biggest flaws: blindness to the ecological costs of production. Among the various administrative fees and taxes that Washingtonians have created to help fund environmental improvements in the state, the Hazardous Waste Planning Fee is actually a fairly good one. That is, it comes closer than most to the standards of environmental taxation that policy experts generally endorse. Unlike most pollution-related taxes and fees in the state, the Hazardous Waste Planning Fee is proportional to waste generation for most firms (though not for the largest). Furthermore, it does have one feature designed to tax more-dangerous wastes at a higher rate. Most of the state's pollution-related taxes and fees are flat: they do not reflect quantities of pollutants nor their relative risks.

[3] Department of Ecology, *Hazardous Waste Planning Fee-2006: Ecology Fact Sheet*, Publication #03-04-016, May 2006.

But the drafters of this pioneering incentive, beset by industry pressure, put a cap on the fee that any one facility would have to pay.[4] Under the provisions of the cap, facilities pay $220 per ton for the first 76 tons of waste. Any additional hazardous waste is exempt from fees.[5] Once a facility is over the cap, it has no incentive to cut back on pollution: the more waste a facility releases, the greater the discount (see Table 1 on page 4 and the complete list of fee payers in Appendix 2).

The per-facility cap puts many small- and medium-sized businesses at a disadvantage relative to the biggest polluters. For example, Western Pneumatic Tube, a Kirkland-based manufacturer of high-performance tubing for aviation and space flight (see page 13 for a case study), paid almost as much for its 60 tons of hazardous materials in 2006 as did Emerald Kalama Chemical, which generated 343 times more.

[4] Peggy Morgan, Washington State Department of Ecology, Olympia, private communication, March 20, 2007. The fee structure was proposed to the legislature by the state Department of Ecology, which was following the advice of a stakeholder panel. Industry representatives on that panel won the per-facility cap on the fee.

[5] $220/ton with a cap of $16,755 were the 2006 rates. Both rates and cap rise somewhat over time. Each year's fees are based on hazardous wastes generated two years before. So, for example, 2006 fees were calculated based on 2004 waste generation.

Table 1. 2006 Hazardous Waste Planning Fee, Washington State

Rank among fee payers	Facility (Top three waste generators, plus selected others)	2004 Hazardous Wastes[1] (Tons)	2006 Fee Paid	Fee/ton
1	Emerald Kalama Chemical	20,562	$ 16,755	$ 0.81
2	Weyerhaeuser Longview	4,733	16,755	3.54
3	Transalta Centralia Generation	3,136	16,755	5.34
55	Western Pneumatic Tube (Kirkland)	60	13,184	220
102	Canyon Creek Cabinet (Monroe)	23	5,151	220
159	Alaskan Copper Works (Seattle)	11	2,347	220
256	Gordon Trepus Painting (Redmond)	4	880	220
261	Cascade Analytical (Wenatchee)	4	844	220
342	Children's Hospital (Seattle)	2	444	220

[1] Waste tonnage includes wastes reported to the US EPA's Toxic Releases Inventory plus "dangerous" and "extremely hazardous" wastes reported to the Washington State Department of Ecology.

Sources: Bert Ponton, Washington State Department of Ecology, Olympia, private communication, January 24, 2007.

Recommendation #1. Eliminate the fee cap: make big polluters pay their fair share.

Eliminating the per-facility cap would turbocharge the waste-reduction incentive by extending it to the firms that generate the most hazardous waste in the state. For a multinational chemicals company such as Emerald Kalama Chemical that produces 233,000 tons of chemicals per year and is owned by a private investment firm with $3.5 billion under management, an annual waste fee of less than $17,000 provides little incentive to change.[6] But the prospect of a waste fee denominated in millions of dollars would spur innovation, motivate ingenuity, and dramatically accelerate pollution prevention. Furthermore, every dollar that the state Department of Ecology receives from pollution taxes is one less dollar the department needs from the state's general fund, freeing those resources for other priorities—whether general tax reductions or new spending. A flat $220/ton fee would have increased revenue by as much as $10 million in 2006.[7]

[6] http://www.emeraldmaterials.com, April 30, 2007; http://biz.yahoo.com/ic/111/111610.html, April 30, 2007.
[7] Of course, a flat fee would have motivated pollution prevention among the largest waste generators, reducing both their waste stream and their fees. The magnitude of this responsiveness—"price elasticity," to economists—is unknown.

Alternatively, lawmakers could remove the cap and also lower the fee below the 2006 rate of $220. For example, a uniform fee of $100/ton would lower the cost to small business, generate about $3.7 million of additional revenue, and represent a smaller increase in rates for the top polluters. If legislators opt not to free up general funds and decide instead to simply use the fee to fund the hazardous waste planning program, as in the past, a uniform, uncapped fee of about $31/ton (escalating with inflation) would restore equity and still provide adequate revenue for the program. Minnesota's pollution prevention fee is such a uniform fee; it's set at $40 per ton and has no cap.[8] Meanwhile, Missouri's fee is capped, but at the higher level of $84,000.[9]

A related but lesser point: Just as the biggest polluters pay a flat fee, so do the smallest polluters that are covered by the program. Facilities that generate at least 1.3 tons but not more than two tons of covered wastes annually pay just $60 a year (except in a certain cases discussed below). These waste generators have little incentive to prevent pollution. A flat fee applied to these facilities, as to the largest ones, would create a uniform incentive for waste reduction and pollution prevention.

Eliminating the fee cap (and the two-ton threshold) would boost the fairness and effectiveness of the Hazardous Waste Planning Fee. Correcting a spate of lesser flaws in its design would complete the job.

Recommendation #2. Cover all kinds of hazardous wastes: eliminate the "TRI" loopholes. The regulations that detail the hazardous waste planning fee define three categories of wastes as subject to the fee[10]—"dangerous wastes," "extremely hazardous wastes," and "toxic releases" to land, air, and water (as recorded in the US EPA's Toxics Release Inventory (TRI) [11]). Each of these categories comprises a distinct list of chemicals and waste types: each unit of waste goes in no more than one of these categories.[12] Unfortunately, the regulations treat wastes in different categories unequally at different stages of the fee calculation procedure.

In principle, all hazardous waste generators of substantial size are supposed to pay a fee. To that end, the regulations set minimum thresholds of waste covered by the fee. As noted above, any facility that annually produces at least 2,640 pounds (1.3 tons) of dangerous waste must pay a fee. In addition, any facility that annually produces at least

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[8] Minnesota Office of Environmental Assistance, "Pollution Prevention Fees" (fact sheet), St. Paul, Minn., at <www.pca.state.mn.us/oea/publications/p2fees.pdf>, viewed March 20, 2007.

[9] The Missouri tax on hazardous waste generation is levied on waste that's destined for a land fill. It excludes TRI releases. The state has a second fee on hazardous waste generation of $1 a ton that's capped at $10,000.

[10] Dangerous Waste Regulations, [Ch. 173-303 WAC] (11/30/04).

[11] The TRI is a publicly available database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. http://www.epa.gov/tri, February 13, 2007.

[12] Dangerous wastes and extremely hazardous wastes must be treated on-site or transferred off-site for treatment or disposal. Wastes in the third category, TRI wastes, are toxins that facilities are allowed to release to air or water, or dispose of on-site in landfills or injection wells. The TRI tracks both on-site toxic releases to air, land, and water and off-site transfers of certain toxic wastes to sewage treatment facilities and treatment and disposal facilities. Off-site transfers listed on the TRI overlap with designated hazardous wastes and are thus not used to calculate the Hazardous Waste Planning Fee. There are 600 chemicals reported to the TRI. By contrast, dangerous wastes and extremely hazardous wastes included over 15,000 chemicals in 2004. See: Department of Ecology, *Chemicals in Washington State Summary Report 2004*, Publication #06-04-020, September 2006; at http://www.ecy.wa.gov/pubs/0604020.pdf, viewed April 22, 2007.

26 pounds of extremely hazardous waste must pay a fee. But any facility that annually produces less waste of those types than specified in those thresholds pays no fee, even if it causes huge quantities of the kinds of toxic releases that are reported to the TRI.

One example: The Pend Oreille Mine in Eastern Washington generated 3,525 tons of zinc compounds in 2004 and reported these toxic wastes to the TRI.[13] In quantities of hazardous materials, the mine was the second largest generator in the state after Emerald Kalama Chemical (formerly Noveon Kalama). But because the particular chemicals it generated were on the TRI list rather than on the dangerous waste list or the extremely hazardous waste list, the Pend Oreille Mine paid no fee whatsoever. Nothing.

Furthermore, in summing the wastes that count toward the two-ton limit, TRI releases do not count. Again, the results are unfair. Oceanus Plastics in Ferndale, for example, paid $60 in 2006 even though its TRI-reported releases of toxic air pollution alone were three tons—equal to the hazardous waste of Milton-based Harland dataPrint, which does high-volume printing. Harland paid 11 times more, at $659 in 2006.[14]

Recommendation #3: Tune the tax to the toxicity: make the fee better reflect the risks.

Extremely hazardous wastes (EHW) are materials such as PCBs that are marked by their high toxicity, persistence, or both.[15] To reflect the greater damage they cause to living things, state law requires that quantities of these wastes be multiplied by a factor of 10 before the per-ton fee is calculated. For example, a company that generates 10 tons of dangerous waste and 1 ton of extremely hazardous waste, pays the per ton fee for 20 tons (10 tons DW + (1 tons EHW x toxicity factor 10)). Unfortunately, this toxicity factor is not applied before the 2-ton threshold calculation.[16]

One unfair result of this policy is illustrated by the cases of TC Systems and Kelly Moore Paint Co. TC Systems generated 1.2 tons of dangerous waste and 0.7 tons of extremely hazardous waste, a total of 1.9 tons—just below the 2-ton threshold. Consequently, it paid $60. Kelly Moore, meanwhile, generated 8.6 tons of dangerous waste and 0 tons of extremely hazardous waste for a total of 8.6 tons. It paid $1,878. If extremely hazardous wastes were multiplied by ten before determining which facilities exceeded the 2-ton cutoff, both TC and Kelly Moore would have paid the same amount.[17]

The 10x toxicity factor that current regulation applies to extremely hazardous waste is better than nothing, but it's far from good enough. It ignores the immense variation in

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[13] Search was done 02/15/2007 using the RTK NET (Right-To-Know Network) copy of EPA's TRI database. RTK NET is run by OMB Watch , 1742 Connecticut Ave. NW, Washington DC 20009; also at: http://www.rtk.net.

[14] Furthermore, only "recurrent waste"—waste that is produced year after year—is counted toward the 4,000 pound total.

[15] A hazardous waste qualifies as extremely hazardous if it is greater than 1 percent halogenated organic compounds (those containing halogens such as chlorine and bromine such as PCBs and PBDEs) or polycyclic aromatic hydrocarbons. See: Dangerous Waste Regulations, [Ch. 173-303 WAC—p. 37] (11/30/04). See: Dangerous Waste Regulations, [Ch. 173-303 WAC—p. 13] (11/30/04).

[16] Note that at the lower, $60-flat-fee threshold, the implicit multiplier on extremely hazardous waste is 100-fold: the dangerous waste threshold is 100 times higher, at 2,640 pounds, than the extremely hazardous waste threshold, at 26 pounds—another inconsistency.

[17] TC Systems, Inc. produced the equivalent of 8.61 tons of hazardous waste (.74 tons of which is EHW) in 2004, while Kelly Moore Paint Co. generated 8.54 tons of hazardous waste, with no EHW.

risk among hazardous substances. For example, Weyerhaeuser Longview released 1.5 grams of dioxin and dioxin-like compounds into the air in 2004. Multiplying that quantity by ten doesn't come close to reflecting the vastly larger threat it creates for the health of humans and wildlife than 15 grams of methanol (wood alcohol), which fairly quickly breaks down from its poisonous form into carbon dioxide and water in the atmosphere. Yet the Hazardous Waste Planning Fee treats 1.5 units of dioxin (extremely hazardous waste) and 15 units of methanol (dangerous waste) as equivalent. Further, there are gaping differences in the relative safety of different substances even within the dangerous waste or extremely hazardous waste categories. For example, both the long-lived brain toxin mercury and the short-lived caustic chemical ammonia are considered dangerous waste and charged at the same rate.[18]

A toxicity factor that is tuned to the relative risks of different wastes would better serve the citizens of Washington than the current system. The State of Wisconsin ties wastewater discharge fees to the toxicity of the pollutants—the more harmful the pollutant, the higher the fee per unit.[19] Researchers at the University of California, Berkeley, have developed a risk scoring system that Washington could use to adjust fees for both air and water pollutants.[20] Using a computer model called CalTox to determine the health impact of a pound of a given chemical on the average exposed person, the researchers ranked each chemical relative to a reference chemical for releases into either water or air. Benzene is the reference chemical for carcinogens; toluene is the reference chemical for non-carcinogens. The more toxic the substance relative to the reference chemical, the higher is the score. For example, an air release of the highly carcinogenic chemical aldrin receives a score of 2,500, meaning the cancer risk is comparable to releasing 2,500 units of benzene into the air. The State of Minnesota has developed a similar system that the City of Minneapolis has considered using to adjust air pollution fees based on risk.[21]

These systems have limitations. First, they are not yet comprehensive. The Berkeley system provides risk factors for about 350 chemicals.[22] Second, some chemicals are better understood than others. Third, computer models are better at predicting the fate of certain categories of chemicals (for example, organic chemicals like benzene) than other categories of chemicals (for example, metals and acids). As a result, the computer models likely overstate some risks and understate others.[23] Still, tying Washington's hazardous waste fee to the Berkeley or Minnesota risk indexes would go a long way toward tuning the fee schedule to pollutants' real impact on humans and the place we live. That would make it a much more nuanced incentive than it is with its current, crude 10x toxicity factor.

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[18] http://en.wikipedia.org/wiki/Mercury_%28element%29, February 19, 2007.
[19] The Wisconsin effluent discharge fee is inversely proportional to the effluent limit for each pollutant. According to a 1997 study by the Environmental Law Institute, the Wisconsin fee "taxes the most harmful pollutants at the highest rate." The Wisconsin effluent fee is capped at $2,500 per pound. http://www.legis.state.wi.us/rsb/code/nr/nr101.pdf, March 19, 2007.
[20] http://www.scorecard.org/env-releases/def/tep_gen.html; Edgar Hertwich was the lead researcher for the risk scoring project. Hertwich is now with the Industrial Ecology Program of the Norwegian University of Science and Technology at Trondheim. See: http://www.tev.ntnu.no/edgar.hertwich/
[21] http://www.scorecard.org/env-releases/def/tep_others.html, April 19, 2007.
[22] http://www.scorecard.org/env-releases/def/tep_gen.html, April 19, 2007.
[23] http://www.scorecard.org/env-releases/def/tep_assum.html, April 19, 2007.

To create the most potent incentive for pollution prevention, Washington can revise its hazardous waste fee so that it fully reflects the accountability principle called the "polluter pays principle." An ideal structure for such a fee would be to set a single tax rate per ton, then apply a series of "factors" or multipliers to reflect the toxicity of the particular waste stream, the quality of waste stewardship, and the degree of uncertainty about health risks associated with the wastes, as diagramed in Box 1.[24]

[24] As an economic incentive for pollution prevention, an "upstream" fee on all hazardous substances, preferably at the point where they enter the Washington economy, would likely be more powerful than a "downstream" fee on hazardous wastes—even if it were improved as described in Box 1. But Washington already has an administrative system in place through which regulated facilities report their hazardous wastes to the Department of Ecology. Creating a new set of legal and administrative mechanisms for tracking all hazardous substances would be a much larger undertaking than simply revising the way the existing fee is weighted and charged. This analysis focuses on the more modest step.

Box 1. Best Case: Revised Hazardous Waste Planning Fee

Fee = Rate x Quantity x Toxicity Factor x Stewardship Factor x Uncertainty Factor

Where,
Fee: The pollution charge owed by each covered facility for each particular waste stream.
Rate: The pollution charge per ton (e.g., $220, as in Washington)
Quantity: The amount of hazardous waste generated, in tons
Toxicity Factor: A risk multiplier for the known toxicity and persistence of that particular waste stream (e.g., x0.09 for methanol; x1,200,000,000 for the most carcinogenic form of dioxin, as in the risk scoring system developed by UC Berkeley researchers)
Stewardship Factor: A risk multiplier used in Oregon to reflect how carefully hazardous materials are handled, recorded, and disposed (e.g., x0.5 for state-of-the-art recovery/recycling, x1 for disposal in state-of-the-art facility, x2 for disposal in conventional hazardous waste facility, x5 for "unknown" where there's a danger of illegal dumping).
Uncertainty Factor: A risk multiplier that escalates over time to encourage better waste categorization and better health assessments of hazardous chemicals, many of which are little understood (e.g., x 1 for PCBs and other well studied compounds; x 3 for phthalates and other less-understood compounds).

Conclusion

Big polluters in Washington State are getting off almost scot free. They're not paying the true costs—the costs to human health and nature—of the hazardous pollutants they are discharging. They're not pulling their weight in funding programs to prevent that pollution. To protect our health and the natural heritage of our state, the legislature can revise the hazardous waste planning fee—making it fair to all kinds of businesses, large and small. As early as 1995, a legislative committee recommended updating the planning fee,[25] but the legislature has yet to act. It can uncap the fee, eliminate loopholes, and tune the fee to toxic risks. In doing so, it will make prices tell the truth, thereby unleashing one of the most powerful forces in Washington—its businesses' own ingenuity—on the streams of toxic pollution that still issue from its workplaces.

[25] [Legislative Budget Committee, "Hazardous Waste Fees," October 1995.]

Appendix 1. Case Studies.

Here are descriptions of, and background notes about, the three top hazardous waste generators—the three companies that get the lion's share of the discount—and a selection of some smaller companies that don't get any discount.

Top Three Waste Generators:

Emerald Kalama Chemical, LLC, Kalama

81¢/ton

The state's leading hazardous waste generator is Emerald Kalama Chemical, LLC, which operates a chemical complex just north of Kalama, Washington on a site bordering the Columbia River. It is a Cleveland-based offshoot of BF Goodrich that makes cosmetics, plastic coatings, and polyvinylchloride (PVC). According to the US EPA, the plant's products are used in a variety of industries including wood products, flavor, fragrance, food, beverage, paint, pharmaceutical, and photography.[26] In 2004, the plant generated 20,442 tons of dangerous waste, 6 tons of extremely dangerous waste, and 57 tons of toxic releases to air, land, and water. Of these toxic releases, 0.7 tons went directly into the Columbia River.

The facility's waste streams include mixed copper oxides, cinnamic aldehyde, acetone, hydrochloric acid, benzene, and toluene. Ninety percent of the plant's hazardous waste that is transported off site for treatment or disposal was described as "by-product tar." The plant emitted about 40 tons of (smoke) stack air releases (as opposed to "fugitive" air releases from spills or storage of waste). The majority of the stack releases were the chemicals toluene (73 percent) and benzene (15 percent), both volatile organic compounds.[27] The company paid $0.81 per ton in 2006 hazardous waste planning fees.

Downstream from Emerald Kalama Chemical on the Columbia River, and likely exposed to its plume of toxic releases, are a string of parks and nature reserves, including the Hansen National Wildlife Refuge and the new Lewis and Clark National Historical Park. These sites provide habitat for amphibians, fish, and birds and outdoor recreation for anglers, birders, and others. Some of the toxic wastes of Emerald Kalama Chemical may ultimately end up stored in the body fat of Orcas, which eat large quantities of Columbia River Chinook salmon.

In 2002, the plant had 150 employees. The US Environmental Protection Agency (EPA) ordered Noveon, Inc. (the plant's owner at the time) to pay $56,995 for a release of about a quarter ton of ammonia from the plant that occurred on May 10, 2005.

Emerald Kalama Chemical is owned by an affiliate of Sun Capital Partners, a private investment firm that focuses on leveraged buyouts of successful companies near the top of their respective industries. The company has over $3.5 billion in assets under

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[26] U.S. Environmental Protection Agency, "Kalama chemical maker fined nearly $57,000 for ammonia release," Press Release, May 23, 2006, http://yosemite.epa.gov/opa/admpress.nsf/a8f952395381d3968525701c005e65b5/db68decaa1a6f347852571770054fe95, February 8, 2007.

[27] Search was done 02/15/2007 using the RTK NET (Right-To-Know Network) copy of EPA's TRIS database. RTK NET is run by OMB Watch, 1742 Connecticut Ave. NW, Washington DC 20009; also at: http://www.rtk.org.

management.[28] Until May 2006, the company was owned by Noveon Inc., a subsidiary of the publicly-traded Lubrizol Corporation. Lubrizol Corporation, the plant's former parent company, sold the plant in 2006 for an undisclosed amount.[29] Lubrizol previously acquired the Kalama facility and other manufacturing plants as part of a $1.8 billion acquisition of Noveon Inc. in 2004. Noveon reported 2003 revenue of $1.2 billion.[30]

Weyerhaeuser Co. Longview, Longview
$3.54/ton

Weyerhaeuser Longview, the state's second largest hazardous waste generator, is an industrial complex in Longview, Washington. The facility includes a pulp and paper plant, wood manufacturing and a log export area. The property is approximately three miles long by one mile wide, adjacent to the Columbia River.[31]

In 2004, the company generated 3,121 tons of dangerous waste, no extremely hazardous waste (at least none that qualified as "recurrent" and was therefore subject to the fee), and 1,612 tons of toxic releases to air, land, and water. Of these toxic releases, some 117 tons went into the Columbia River.[32] Of the 1,471 tons of stack air releases in 2004, 63 percent were the chemical methanol[33] and 18 percent were the chemical acetaldehyde.[34] The Weyerhaeuser complex in Longview paid $3.54 per ton in 2006 hazardous waste planning fees.

Downstream on the Columbia from Longview (as from Kalama), is a string of natural areas that is likely exposed to its toxic releases. The facility's wastes lace the food web of the Columbia River's ecosystems, including its wild salmon and the marine ecosystems they traverse.

In 1998, the US EPA and Weyerhaeuser settled "an EPA complaint alleging that Weyerhaeuser's pulp and paper mill at Longview, Washington, failed to make prompt notification of a chemical spill to local and state emergency officials in January 1997." The settlement also required Weyerhaeuser to keep EPA informed of the status of a $6 million environmental protection improvement program at Longview.[35]

In 2003, the company announced that it was ending production of fine papers at the Longview facility, eliminating 119 jobs. At that time, the company reported "1,700 employees will continue to be employed in Longview in the company's pulp and bleached paperboard, newsprint, lumber and timberlands operations."[36] Friedrich Weyerhaeuser

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[28] http://biz.yahoo.com/ic/111/111610.html, April 30, 2007. The Sun Capital Partners affiliate is Emerald Performance Materials, LLC.
[29] http://pubs.acs.org/cen/news/84/i13/8413lubrizol.html, April 30, 2007.
[30] Andrejczak, Matt, "Lubrizol to buy Noveon for $1.84 bln: Additives maker also lifts Q1 earnings forecast," CBS.MarketWatch.com, April 16, 2004.
[31] http://www.eho.wa.gov/searchdocuments/1995%20Archive/pchb%2094-240%20final.htm, February 8, 2007.
[32] Toxic releases to the Columbia River were 80 tons in 2005.
[33] Methanol is a naturally occurring chemical compound. In the atmosphere, methanol oxidizes to carbon dioxide and water in several days of exposure to sunlight. Methanol information from http://en.wikipedia.org/wiki/Methanol, February 8, 2007.
[34] Acetaldehyde occurs naturally in ripe fruit, coffee, and fresh bread. It is produced by normal metabolism of plants. At the same time, it is flammable in liquid form, toxic in significant quantities, and is a possible carcinogen. Acetaldehyde information from http://en.wikipedia.org/wiki/Acetaldehyde, February 8, 2007.
[35] http://yosemite.epa.gov/opa/admpress.nsf/b1ab9f485b098972852562e7004dc686/0083587f32381e70852570cb0075e14d!OpenDocument, February 8, 2007.
[36] http://www.weyerhaeuser.com/popups/_frameset.asp?bodyFrame=/popups/pressReleases.asp?id=03-11-12_Longview, February 8, 2007.

and 15 partners founded the publicly-held company in 1900.[37] It reported $733 million in net earnings for 2005. The total workforce was 49,900 employees in 2006.[38]

TransAlta Centralia Generation, Centralia $5.34/ton

TransAlta Centralia Generation facility is the state's third largest hazardous waste generator. Founded in 1911, the company is based in Alberta, Canada. The Centralia power generation complex has two coal-fired units, four natural gas units, one "combined-cycle" cogeneration (waste heat) unit, and one hydro unit. In 2004, the complex generated 658 tons of Dangerous Waste, no Extremely Hazardous Waste, and 2,478 tons of toxic releases to air, land, and water. Of the company's Dangerous Waste, 95 percent was described as "boiler chemical clean." Nearly all of the remaining hazardous waste in 2004 is described as "water with ammonia" (30 tons). The company paid $5.34 per ton in 2006 hazardous waste planning fees.

According to Public Citizen and the Environmental Integrity Project, the TransAlta Centralia facility ranked 32 in total $C0_2$ emissions among the nation's power plants in 2003, emitting more than 13 million tons of CO_2. (It did not rank in the top 50 for SO_2.)[39] The facility violated its water pollution discharge permit 6 times in 2004 and was not fined for any of these violations, according to a WashPIRG report.[40]

According to the company's website, TransAlta added pollution control equipment in 2002, making the facility "one of the cleanest coal-fired power plants in North America."[41] The Transalta facility employs 225 people.[42] The company recently shut down its Centralia coal mine, laying off about 600 workers. It intends to bring in coal from Wyoming and Montana to fuel the plant.[43] The Centralia power plant is the state's only coal-fired power plant and is one of the state's largest sources of mercury pollution (the plant emitted 0.05 tons of mercury into the air in 2002).[44] The company reported 2006 earnings of $233.8 million (Canadian) versus 2005 earnings of $161.3 million (Canadian).[45]

A Selection of Small and Mid-size Waste Generators

Western Pneumatic Tube, Co., Kirkland
$220/ton

Western Pneumatic Tube Company was formed in 1952 to supply aircraft pneumatic ducting to the airframe industry. According to the company's website, "the company's tubing is part of the early Gemini and Apollo vehicles, is on the moon, and on the Venus and Mars probes. Enterprise and Columbia carry Western Pneumatic tubing

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[37] (Weyerhauser with two dots over the "a" is the original, proper spelling of Friedrich's name).
[38] http://en.wikipedia.org/wiki/Weyerhaeuser, February 8, 2007.
[39] http://www.whitehouseforsale.org/documents/dirtiest_plants2.pdf, February 8, 2007.
[40] http://washpirg.org/reports/takebackwaters.pdf, February 8, 2007.
[41] http://transalta.com/transalta/webcms.nsf/AllDoc/D7E5E521CBB488BF87257226006EEC84?OpenDocument, February 10, 2007.
[42] Hal Berton, "State's last coal mine shuts; Centralia hit hard," *The Seattle Times*, December 1, 2006.
[43] *Seattle Post-Intelligencer*, "TransAlta Corp. to pull out of Centralia mine," November 28, 2006; also at http://seattlepi.nwsource.com/business/293881_bizbriefs28.html, February 12, 2007.
[44] Lisa Stiffler, "High mercury risk in fish raises alarm," *Seattle Post-Intelligencer*, August 4, 2004; also at http://seattlepi.nwsource.com/local/184782_fish04.html. The Centralia plants' air emissions of mercury dropped from 256 pounds in 2002 (when the plant added a scrubber) to 107 pounds in 2004.
[45] http://biz.yahoo.com/iw/070126/0207864.html, February 10, 2007.

into orbit. The space station also will have Western Pneumatic tubing on board." The company has developed tubing for both the nuclear and solar energy industries.[46]

The company generated 41 tons of hazardous waste in 2004 and 9 tons of toxic releases. It paid $13,184 in fees. It described 90 percent of its hazardous waste as "waste water treatment cake" and the remainder as "trichloroethylene still bottoms." The plant's on-site toxic releases were fugitive air releases of trichloroethylene. Another 16 tons of nitrate compounds were transferred to the King County treatment facility. Western Pneumatic Tubing was one of only two companies to which King County awarded the Commitment-to-Compliance Award in 2005. This award recognizes companies that have no compliance violations for wastewater discharges for five consecutive years.[47]

Western Pneumatic Tube pays nearly as much as Emerald Kalama Chemical, Weyerhaeuser, and Transalta, but generates a small fraction of the waste.

Canyon Creek Cabinet Company, Monroe **$220/ton**

Founded in 1980, Canyon Creek Cabinets manufactures wooden cabinets for the home building and remodeling industry. The company, which has a corporate commitment to environmental stewardship[48], generated 23 tons of hazardous waste and toxic releases in 2004. The company described its two principal hazardous waste streams as "line flush" and "waste solvent." Total on-site TRI releases declined by 35 percent between 2002 and 2004. All releases in 2004 were methanol. The company paid a total of $5,151 in 2006 planning fees.

In 2006, Canyon Creek became the first cabinet company in the U.S. to win a certificate from the newly developed Kitchen Cabinet Manufacturer's Association Environmental Stewardship Program.[49]

According to the Department of Ecology, "The company uses innovative techniques to reduce air emissions, waste generation, and water and energy use." In 2001, the company introduced water-based coatings in some of its finishing operations, reducing the use of volatile organic compounds by 5 tons and allowing onsite treatment of 30 tons of wastewater that would otherwise have needed treatment offsite as hazardous waste. The company also reduced energy costs 38 percent by installing a variable drive system on its dust collector and participates in a voluntary greenhouse-gas reduction program sponsored by US EPA and Department of Energy.[50]

According to the company website, Canyon Creek has posted double-digit growth rates in recent years and added a 51,000 square foot addition to its plant in 2005.[51] The company has 680 employees.[52]

Alaskan Copper Works, Seattle **$220/ton**

Headquartered in Seattle, Alaska Copper & Brass Company and Alaskan Copper Works are the nation's largest combination full service center and manufacturer of corrosion resistant alloy products. The company has a 300,000 square foot warehouse in

[46] http://www.wptube.com/market.php, February 17, 2007.
[47] http://dnr.metrokc.gov/wlr/indwaste/Awards.htm, February 17, 2007.
[48] http://www.canyoncreek.com/about_us/green_company/ February 17, 2007.
[49] http://www.lakeforktc.com/press_room/press_releases/2006/11.asp, February 17, 2007.
[50] http://www.ecy.wa.gov/programs/hwtr/P2/p2success.html, February 17, 2007.
[51] http://www.canyoncreek.com/about_us/history/, February 17, 2007.
[52] http://www.lakeforktc.com/press_room/press_releases/2006/12.asp#c, February 17, 2007.

Seattle, along with warehouses in Portland, Oregon, and Coquitlam, BC. Alaskan Copper Works was formed in 1913 and the distribution company was started in 1932. Beginning in the 1920s, the manufacturing company began producing a new weldable alloy, silicon bronze that replaced wood stave and cast iron as corrosion resistant materials for use in process industries, such as pulp and paper manufacture.[53]

The company generated 11 tons of hazardous waste and toxic releases in 2004[54]. The company paid $2,347 in 2006 hazardous waste planning fees.

Alaskan Copper was one of the winners of King County's Commuter Challenge Diamond Award for 2003. The company's commute program reduced single occupancy vehicle use by 18 percent over two years.[55] King County also awarded the company a Silver Award for compliance with the Industrial Discharge Program.[56]

Gordon Trepus Painting, Redmond **$220/ton**

Gordon and Joyce Chilcote Trepus founded this local firm in 1980. The company generated 4 tons of hazardous waste in 2004, all of which it described as unused paint thinner and paint-related material. The company paid $880 in 2006 hazardous waste planning fees.

According to Seattle Pacific University's alumni magazine, the Trepuses have employed 500 young people, including dropouts and runaways. The couple gives youth a chance by employing them and teaching them a marketable skill. Joyce also serves on the board of Warm Beach Christian Camp.[57]

Cascade Analytical, Wenatchee **$220/ton**

Cascade Analytical is an environmental testing company, specializing in agricultural environmental analysis. Laura Laurent Mrachek, a Horticultural graduate of Washington State University, founded the company in 1978. In the early years, the company focused on agricultural soil fertility analysis but expanded into environmental (pesticide and water) analysis in 1988 with media attention on the use of Alar in the apple industry.[58] Of the almost 4 tons of hazardous waste that the company produced in 2004, 87 percent was "acidic wastewater with metals." Other waste streams include caustic wastewater with phenol and bleach, solvent/water mix with traces of pesticides, and acid waste from glassware. The company paid $844 in 2006 hazardous waste planning fees.

Cascade Analytical was the first laboratory in Eastern Washington to be accredited by the Department of Ecology for the analysis of waste and wastewater, and certified by the Department of Health for the analysis of drinking water. Additionally, the lab is certified by the Women's Business Enterprise. The company employees fifteen people.[59]

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[53] http://www.alaskancopper.com/history.html, February 15, 2007.
[54] The company also generated 12 tons of additional hazardous wastes, which it recycled.
[55] http://www.commuterchallenge.org/cc/daw03_alaskan.html, February 15, 2007.
[56] The Silver Certificate recognizes companies that have had no King County monitoring violations, but have had a limited number of self-monitoring violations. Industrial waste award information at http://dnr.metrokc.gov/wlr/indwaste/Awards.htm, February 15, 2007.
[57] Seattle Pacific University, "The 2004 Medallion Winners," *Response*, Vol. 26, N. 7, Summer 2004, http://www.spu.edu/onlineresponse/summer2k4/alumni/medallion.html, February 15, 2007.
[58] http://www.cascadeanalytical.com/about_cascade/about.htm, February 17, 2007.
[59] http://www.cascadeanalytical.com/about_cascade/about.htm, February 17, 2007.

Laura Laurent Mrachek and her husband Mike Mrachek manage over 500 acres of orchard and vineyard, as well as a business devoted to irrigation scheduling and consulting. In addition, Mrs. Mrachek serves on the Washington State Horticultural Association board and on a county planning commission.[60]

Children's Hospital & Regional Medical Center, Seattle $220/ton

The Northwest's premier specialty medical center for pediatrics, Children's Hospital was founded 100 years ago and remains a non-profit institution. According to Ecology's fee payer spreadsheet, the facility generated 2 tons of hazardous waste in 2004. Children's Hospital paid $444 in 2006 fees.

[60] http://www.cascadeanalytical.com/about_cascade/about.htm, February 17, 2007.

Appendix 2. The attached table shows all the fee payers for 2006. It includes the actual fee paid by each business, the effective per-ton fee, and the fee they each would have paid if there were no bulk discounts for big polluters and no flat fee for small generators. Unfortunately, lack of publicly available information on each facility's waste stream makes it impossible to estimate what the fees would be under the ideal hazardous waste fee structure described in Box 1.

Where the fee is unexpectedly low, the explanation is usually that TRI-reported wastes account for a large share of the total. As noted in this analysis, TRI-reported wastes do not count toward the 2-ton threshold triggering per-ton fees.