

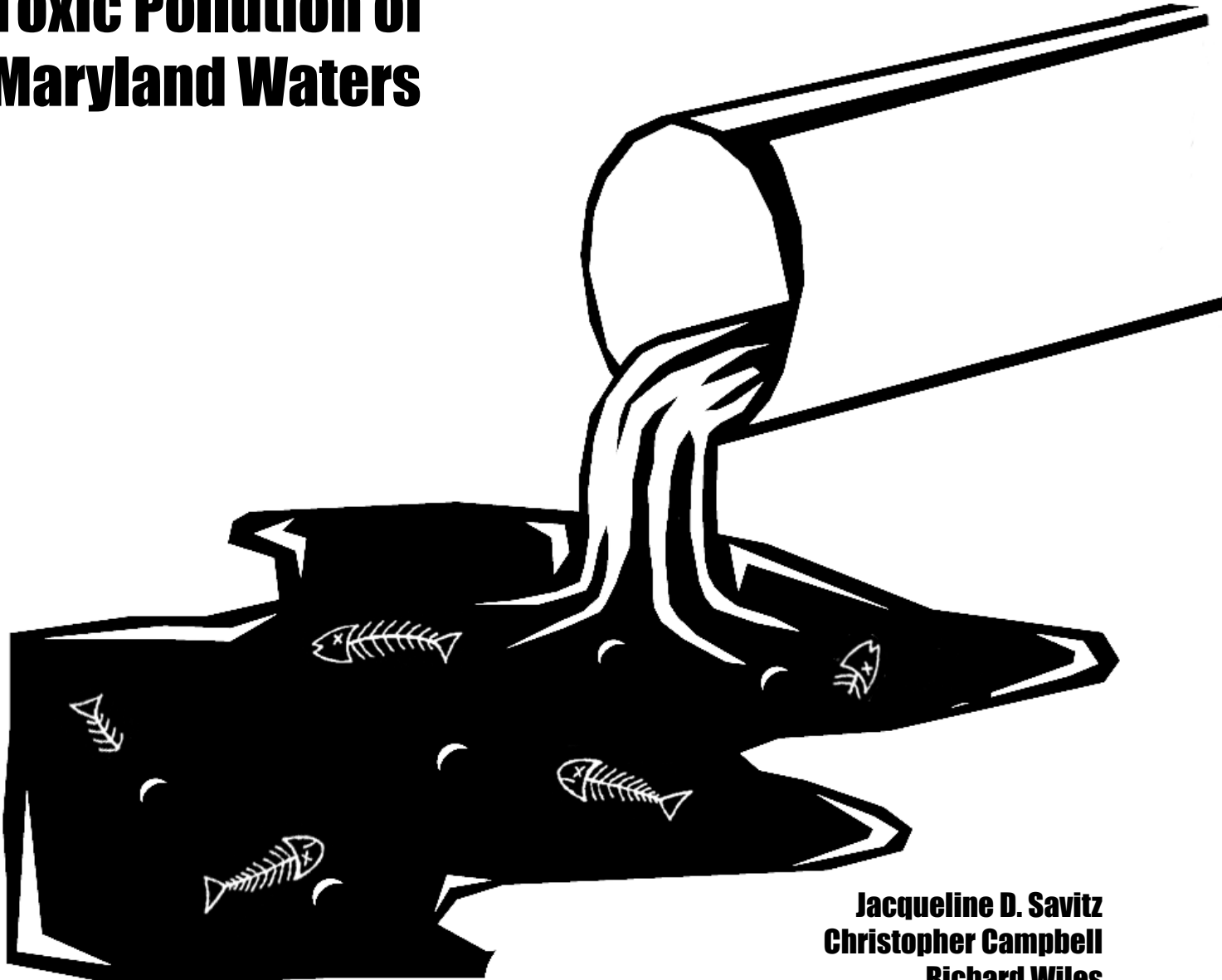


The State PIRGs



Dishonorable Discharge

Toxic Pollution of Maryland Waters



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Toxic Pollution of Maryland Waters

Executive Summary

Most Maryland citizens would be surprised to learn that scores of businesses and facilities across the state *legally* dump tons of toxic chemicals into the state's rivers, streams, lakes, and bays. Many of these same polluters flush millions more pounds of toxic substances down the drain to sewage treatment plants that taxpayers pay to operate and maintain. None of the toxic chemicals sent to publicly financed sewage treatment systems are reported as pollution by the EPA, even though a great deal of the toxic load eventually finds its way to Maryland streams and rivers.

The citizens of Maryland have a right to know about any pollution of their water, air or land that may pose a risk to human health or the environment. The goal of *Dishonorable Discharge* is to inform the public about the massive level of toxic pollution of the waters in their state, and point out the need for more comprehensive reporting of toxic chemical use, transport, and pollution, in Maryland and nationwide.

Factories and other industrial facilities dumped more than four million pounds of toxic substances directly into Maryland's waters between 1990 and 1994, according to a new analysis of the federal Toxics Release Inventory (TRI) (Table 1). Maryland ranked 26th among the states in toxic water pollution reported over those five years. Because of weaknesses and loopholes in federal pollution laws, most, if not all of these toxic discharges are perfectly legal.

As large as they are, these figures substantially underestimate toxic releases to waters and the environment because the TRI requires reporting of only about 340 of the 73,000 chemicals in commerce. The TRI also exempts certain industries from reporting, including utilities, sewage treatment plants, municipal incinerators, and manufacturing facilities with fewer than ten employees.

In addition, over twenty (21.9) million pounds of toxic materials were flushed to sewage treatment plants in Maryland from 1990 through 1994, 21st in the nation (Table 1.) EPA estimates that twenty-five percent of all discharges nationwide flow through sewage treatment plants untreated (EPA 1995). Applying this 25 percent estimate to Maryland raises the total amount of toxics dumped to the state's waters to an estimated 9.5 million pounds (Table 1).

The Patapsco River received the greatest amount of toxic water pollution in Maryland from 1990-1994, a total of 2,330,000 pounds, followed by Old Road Bay, the Conococheague Creek, and the Potomac River (Table 2). The ten most polluted waterways in Maryland received 4,000,000 pounds of toxic pollution between 1990 and 1994, 98.9% percent of the total in the State.

The top three facilities reporting the most toxic pollution of Maryland's waters over this period were Grace Davison in Baltimore, which dumped 1,180,000 pounds of toxic

chemicals, followed by Bethlehem Steel Corporation, and Chemetals Inc., both located in Baltimore as well (Table 3). The toxic chemicals dumped in the greatest amounts were ammonia, a total of 1,910,000 pounds, followed by zinc compounds, and manganese compounds (Table 4).

Bethlehem Steel Corporation dumped the most carcinogens into Maryland's waters, a total of 79,900 pounds, followed by Avesta Sheffield East Inc. and Armco (Table 8). The Old Road Bay received the greatest amount of cancer-causing toxic chemicals in Maryland, a total of 57,000 pounds, followed by the Patapsco River and Bear Creek (Table 7).

Bethlehem Steel Corporation also dumped the greatest amount of persistent toxic metals in Maryland's waters, a total of 851,000 pounds, followed by Chemetals Inc. and SCM Chemicals (Table 8). Old Road Bay received the greatest amount of persistent toxic metals, a total of 759,000 pounds, followed by the Patapsco River and Bear Creek (Table 7).

Bethlehem Steel Corporation dumped the greatest amount of toxic chemicals that cause reproductive damage or birth defects into Maryland's waters, a total of 3,000 pounds, followed by ABC Rail Corporation* and Cox Creek Refining Company (Table 8). The Patapsco River received the greatest amount of toxic chemicals that cause reproductive damage or birth defects, a total of 5,000 pounds, followed by the Gwynns Falls and the Little Patuxent River (Table 7).

These discharges to Maryland's waters include only those wastes released by companies physically located in Maryland. Many waterways receive additional pollution from sources outside of the state. Information on toxic water pollution in other states can be found in EWG's state reports series, and in the national report, *Dishonorable Discharge*.

Recommendations

Americans have a right to know about any use, transport, or release of toxic substance in their communities that might pose a risk to human health or the environment. Required reporting under the TRI provides only a small portion of this information. Much more complete reporting is needed. Americans also have a right to know about toxic chemicals in the products they buy that may pose a risk to them and their children.

Full accounting of the use of toxic materials reveals many low cost opportunities for pollution prevention. In New Jersey, state officials estimate that every dollar spent on such materials accounting practices generates five to eight dollars in increased efficiency (GAO 1994). Without materials accounting industry will miss many opportunities for substantial low cost reductions in pollution, and the public and policy makers will be unable formulate strategies that most effectively reduce exposure to toxic substances in the environment and consumer products.

We recommend:

- Timely implementation of the EPA's proposed expansion of industries and facilities required to report toxic releases under the TRI.
- Expansion of TRI reporting requirements to include full materials accounting for any facility or industry that uses or releases a toxic substance that may pose a risk to human health and the environment.

*This facility reported no discharges in 1994, and may also have reported zero discharges for other years.

Dishonorable Discharge

Toxic pollution of rivers, lakes, streams, and bays is a serious problem in all 50 states. Twenty five years after the passage of the Clean Water Act, nearly forty (40) percent of America's rivers, lakes, and coastal waters remain unsafe for fishing, swimming or basic recreation (EPA 1996b). (EPA 1995b). The pollution that fouls these waterways costs the state's economy millions of dollars in tourism, fishing, and development revenues that otherwise could be earned on or near these waters were they not so polluted (EPA 1996b).

***Dishonorable Discharge* Underestimates Toxic Pollution**

The Toxics Release Inventory (TRI) provides a rough estimate of a small portion of the toxic chemicals that flow into America's waters. The toxic discharges reported in this study are based on TRI reported toxic releases to waterways and so-called "transfers" of toxics to publicly owned treatment works (POTWs) — the term of art that industry and the EPA use when an industrial facility dumps toxic chemicals into the local sewer.

The figures reported in *Dishonorable Discharge* dramatically underestimate the total amounts of toxic compounds that have been discharged, dumped, or made their way into rivers and lakes across the country over the past five years.

About 90¹ percent of all toxic discharges coming out of pipes into water (so-called point source discharges) are not reported to the TRI. This is because the TRI requires reporting on only about 343² of some 73,000 chemicals used in commerce, and because the TRI exempts many polluters (utilities, certain industries, and those with fewer than ten employees) from reporting requirements (EPA 1996).

About half of all toxics that pollute rivers come from surface runoff and air deposition, as opposed to pipes. Comprehensive accounting of this "nonpoint source" pollution is not available for all rivers on a national basis.

Taking all of the limitations of the existing information into account, Environmental Working Group believes that an accurate estimate of the total load of toxic pollution in many rivers and lakes over the past five years might be 20 times greater than the amounts reported here.

Hiding Toxics in the Sewer

The EPA does not include so-called "transfers" of toxic chemicals to sewer systems as an official "release" of a toxic chemical into the environment (EPA 1996). At the same time, the EPA estimates that 25 percent of all toxic chemicals transferred to sewers from industrial facilities pass through treatment and into the waterways that receive wastewater (EPA 1995).

Transfers of toxic chemicals to publicly owned treatment works (POTWs) — otherwise known as sewage treatment plants — were four times greater in 1994 than the amount of toxic chemicals released directly to water that are reported in the entire TRI that year. To estimate the total amounts of toxic substances dumped into Maryland's waters, we used EPA's assumption that 25 percent of all toxic chemicals transferred to POTWs pass-through untreated³. Table 1 presents the EWG estimate of toxic chemicals assumed to be discharged by the POTWs in Maryland. Estimates of toxic discharges from POTWs to specific rivers and bodies of water could not be accurately estimated because the sewage treatment plants are not required to report to the TRI.

Assuming a 25 percent flow-through also does not permit discharge estimates for individual toxic chemicals that flow through the sewer system into waterways. In reality some chemicals flow through POTW's untouched, while others are removed and held in the sludge, broken down in treatment, or allowed to evaporate into the ambient air as toxic pollutants.

How Toxic is Toxic?

Some 340 substances were required to be reported to the EPA for the years analyzed in this report. According to the EPA:

“For a chemical or chemical category to remain on or be added to the TRI list, it must be known to cause or reasonably be anticipated to cause one of the following:

- Significant adverse acute health effects at concentration levels that are reasonably likely to exist beyond facility boundaries as a result of continuous, or frequently recurring releases;
- In humans — cancer; teratogenic effects; or serious irreversible reproductive dysfunction, neurologic disorders, heritable genetic mutations, or other chronic health effects;
- A significant adverse effect on the environment because of its toxicity, its toxicity and persistence in the environment, or its toxicity and tendency to bioaccumulate in the environment of sufficient seriousness to warrant reporting under EPCRA section 313” (EPA 1996).

For most of the TRI chemicals, federal regulators and scientists have a disturbingly incomplete understanding of the long term toxic effects on the environment or human health. The vast majority of compounds reported in the TRI are not fully studied, even though they have triggered one of the above criteria.

Toxic discharges and runoff to water are a serious and largely unaddressed environmental and human health problem. Most, if not all of the pollution reported in Dishonorable Discharge is legal. Current pollution control laws like the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substances Control Act (TSCA) do little to move the nation towards reducing the toxic pollution cited in this report. In effect, these laws issue pollution licenses or exemptions from regulations.

One of the more glaring exemptions may be the so-called “domestic sewage exclusion” under RCRA, whereby toxic contaminants sent to sewage treatment plants escape otherwise applicable federal hazardous waste regulations. This accounts for the huge amounts of toxic chemicals that were dumped down the drain by American industry and end up in the nation’s rivers and streams. Another major source of toxic pollution of waters is agricultural pesticides. The runoff of pesticides from agricultural fields is not regulated under any federal law, and is not tabulated by the TRI nor included in this report. About 1.1 billion pounds⁴ of pesticides were used in the United States in 1993 alone (Aspelin 1994).

Dishonorable Discharge is based on data collected by the U.S. Environmental Protection Agency’s Toxics Release Inventory (TRI) for the reporting years 1990 through 1994, which includes the most recent data available. It includes the releases of only 343 chemicals from about 27,000 manufacturing facilities. The limitations of these data have been described above.

Analyzing Discharges by Body of Water

Discharges from TRI facilities were assigned to a given waterway based on the “receiving stream” reported to the EPA. Most waterways reported as “tributary” streams were included with their respective rivers in this report when it was possible to link them. For purposes of this analysis, toxic release data for major rivers themselves are tabulated separately, not summed as part of larger watersheds. For example, a “Tributary to the Mississippi River” was counted as Mississippi River, while the Missouri River was not, even though it eventually joins the Mississippi just above St. Louis. Small streams receiving large quantity discharges (such as Gravelly Run in Virginia and Clear Creek in Colorado) were reported individually, just as they are recorded in the TRI. State-level reports only include discharges to a given river from facilities that are physically located in this state, not discharges from facilities located in other states upstream.

Reporting Toxics Dumped Down the Drain

Enormous quantities of toxic chemicals are discharged to waterways via sewer systems. These so-called “transfers” of toxic chemicals to publicly owned treatment works (POTWs) totaled more than 250 million pounds in 1994, compared to 66 million pounds of direct discharges to waters reported in that same year. While the EPA does not count these transfers as environmental releases in the TRI, the Agency estimates that an average of 25 percent of these transfers flow through sewer systems into receiving waters (EPA 1995).

To better illustrate the amount of toxic chemicals that actually make it into the nation’s waters each year, we assumed that on average 25 percent of the toxic chemicals transferred to POTWs (a.k.a. sewers) by a reporting facility, ultimately pass through the sewage treatment plant untreated and in most cases are discharged to receiving waters.

Toxic chemical releases through POTWs were estimated statewide, but were not attributed to specific rivers at the state level due to the difficulty of verifying the receiving waters. Environmental Working Group will attempt to identify receiving waters more precisely future reports. All other analyses including facility discharges and top chemicals reflect direct discharges only, and not POTW release estimations.

Total discharges of persistent toxic metals, known or possible carcinogens, and chemicals known to cause reproductive effects, were calculated for specific rivers

based on information characterizing the toxic properties of these substances previously published by the EPA, the State of California, and the State of New Jersey, as well as other toxicological literature (Environmental Protection Agency, 1996; California Code of Regulations; New Jersey Department of Health; and Dixon, 1986). EPA's inclusion of known, probable, and possible carcinogens is based on determinations made by the Occupational Safety and Health Administration (OSHA), the National Toxicology Program (NTP), and the International Agency for Research on Cancer (IARC) (EPA 1996). Lists of chemicals included are found in the Appendix.

Notes

¹Estimate based on EPA report (National Sediment Contaminant Point Source Inventory: Analysis of Release Data for 1992. Final Draft.) (EPA, 1995) where data from TRI were compared to the Permit Compliance System (PCS) Database and found to represent only about 9%, at most, of discharges reported in PCS. Estimates from the GAO indicate that PCS regulates only 23% of all toxic water pollution (GAO, 1994).

²The exact number of chemicals required varies with the year. In 1994, 343 chemicals were reported. EPA has recently expanded the inventory to include about 650. These data, to be reported for 1995, will be available in 1997.

³EPA uses this factor since it is unlikely to greatly overestimate or underestimate the exact treatment efficiency (EPA 1995). This number will vary for any specific chemical; however it estimates pass through for chemicals as a whole, and is not applied to specific chemicals in this report.

⁴This value refers to pesticide active ingredients. The total volume of pesticide products, including so-called inert ingredients is far higher.

Appendix

Carcinogens

1,1,2,2-Tetrachloroethane	beta-Propiolactone	Michler's ketone
1,1-Dimethylhydrazine (UDMH) (alar trans. prod.)	Bis (2-chloroethyl) ether	Mustard Gas
1,2-Dibromo-3-chloropropane (DBCP)	Bis(chloromethyl) ether	N-Nitroso-N-ethylurea
1,3-Butadiene	Bromodichloromethane	N-Nitroso-N-methylurea
1,3-Dichloropropylene	Bromoform	N-Nitrosodi-n-butylamine
1,3-Propane sultone	Cadmium	N-Nitrosodi-n-propylamine
1,4-Dioxane	Cadmium compounds	N-Nitrosodiethylamine
1-Amino-2-methylantraquinone	Captan	N-Nitrosodimethylamine
1-Naphthylamine	Carbon tetrachloride	N-Nitrosodiphenylamine
2,4,6-Trichlorophenol	Chlordane	N-Nitrosomethylvinylamine
2,4-Diaminoanisole	Chloroethane (Ethyl chloride)	N-Nitrosomorpholine
2,4-Diaminoanisole sulfate	Chloroform	N-Nitrososarcosine
2,4-Diaminotoluene	Chloromethyl methyl ether	N-Nitrosopiperidine
2,4-Dinitrotoluene	Chlorophenols	Nickel
2-Acetylaminofluorene	Chlorothalonil	Nickel compounds
2-Aminoanthraquinone	Chromium	Nitrotriacetic acid
2-Methylaziridine (Propyleneimine)	Cupferron	Nitrofen
2-Naphthylamine	D&C Red No. 19	Nitrogen mustard (Mechlorethamine)
2-Nitropropane	DDVP (Dichlorvos)	ortho-Anisidine
3,3'-Dichlorobenzidine	Di -(2-ethylhexyl)phthalate	ortho-Anisidine hydrochloride
3,3'-Dimethoxybenzidine (ortho-Dianisidine)	Dichloromethane (Methylene chloride)	ortho-Toluidine
3,3'-Dimethylbenzidine	Diepoxybutane	ortho-Toluidine hydrochloride
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	Diethyl sulfate	p-Aminoazobenzene
4,4'-Methylene bis(2-chloroaniline)	Dimethyl sulfate	p-Cresidine
4,4'-Methylene bis(N,N-dimethyl) benzenamine	Dimethylcarbamoyl chloride	p-Dichlorobenzene
4,4'-Methylenedianiline	Direct Black 38	p-Nitrosodiphenylamine
4,4'-Thiodianiline	Direct Blue 6	Pentachlorophenol
4-Aminobiphenyl (4-aminodiphenyl)	Direct Brown 95	Polybrominated biphenyls
4-Dimethylaminoazobenzene	Epichlorohydrin	Polychlorinated biphenyls
4-Nitrobiphenyl	Ethyl acrylate	Propylene oxide
5-Nitro-o-anisidine	Ethylene dibromide	Saccharin
Acetaldehyde	Ethylene dichloride (1,2-Dichloroethane)	Safrole
Acetamide	Ethylene oxide	Styrene
Acrylamide	Ethylene thiourea (EBDC trans prod.)	Styrene oxide
Acrylonitrile	Ethyleneimine	Tetrachloroethylene (Perchloroethylene)
Allyl chloride	Formaldehyde	Thioacetamide
Aniline	Hexachlorobenzene	Thiourea
Arsenic	Hexachloroethane	Toluene-2,4-diisocyanate
Arsenic compounds	Hexamethylphosphoramide	Toluene-2,6-diisocyanate
Asbestos	Hydrazine	Toxaphene (Polychlorinated camphenes)
Auramine	Hydrazine sulfate	Trichloroethylene
Benzene	Hydrazobenzene (1,2-Diphenylhydrazine)	Tris(2,3-dibromopropyl)phosphate
Benzidine [and its salts]	Isosafrole	Urethane (Ethyl carbamate)
Benzotrichloride	Lead	Vinyl bromide
Benzyl chloride	Lead compounds	Vinyl chloride
Beryllium and beryllium compounds	Lindane	Vinyl trichloride (1,1,2-Trichloroethane)
Beryllium compounds	Methyl iodide	

Persistent Toxic Metals

Antimony & Antimony Compounds
Arsenic & Arsenic Compounds
Barium & Barium Compounds
Beryllium & Beryllium Compounds
Cadmium & Cadmium Compounds
Chromium & Chromium Compounds
Cobalt & Cobalt Compounds
Copper & Copper Compounds
Lead & Lead Compounds
Manganese & Manganese Compounds
Mercury & Mercury Compounds
Nickel & Nickel Compounds
Selenium & Selenium Compound
Silver & Silver Compounds
Thallium & Thallium Compounds
Zinc & Zinc Compounds

Chemicals that Affect Reproduction

1,2-Dibromo-3-chloropropane
Cadmium
Carbon disulfide
Diethylhexyl phthalate
o-Dinitrobenzene
m-Dinitrobenzene
p-Dinitrobenzene
Ethylene glycol monoethyl ether
Ethylene glycol monomethyl ether
Ethylene oxide
Hexamethylphosphoramide
Lead
Styrene
Toluene
Trichloroethylene
Xylene(mixed isomers)
o-xylene
m-xylene
p-xylene
Di-n-butyl phthalate
Glycol ethers
Mercury Compounds
Mercury
Benzene
Aluminum
Arsenic
Nickel
Lindane
Vinyl Chloride

Source: Environmental Working Group. Compiled from California Proposition 65, EPA's TRI Public Data Release, New Jersey Department of Health, Hazardous Substances Fact Sheets, and Toxic Responses of the Reproductive System (Dixon 1986).

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Maryland

Toxic pollution of Maryland waters (1990-1994)

Table 1. Total reported toxic pollution of Maryland waters (1990-1994).

Direct Water Discharges	4,039,793 Pounds
Estimated Sewer Discharges‡	5,467,769 Pounds
Total Discharges to Waters	9,507,562 Pounds

Table 2. Maryland waters receiving the greatest amounts of toxic pollution (1990-1994).

River or Water Body	Toxic chemical release to waterbody (pounds)
Patapsco River	2,329,123
Old Road Bay	772,020
Conococheague Creek	354,151
Potomac River	208,501
Bear Creek	187,385
Kitts Branch	60,969
Church Branch	31,000
Higgins Mill Pond	30,699
Jones Creek	12,460
Stonehouse Cove	10,213

Table 3. Polluters reporting the greatest amounts of toxic chemicals discharged to Maryland waters (1990-1994).

Facility	City	Toxic chemical release to waters (pounds)
Grace Davison	Baltimore	1,177,784
Bethlehem Steel Corp.	Sparrows Point	1,110,955
Chemetals Inc.	Baltimore	624,985
Garden State Tanning Inc.	Williamsport	562,300
Simkins Ind. Inc.*	Catonsville	162,840
SCM Chemicals	Baltimore	100,674
Hudson Foods Inc.	Berlin	86,969
SCM Glidco Organics Corp.	Baltimore	77,437
Showell Farms Inc.	Showell	31,000
Red Star Yeast	Baltimore	30,950

Table 4. Toxic chemicals discharged in the greatest amounts to Maryland waters (1990-1994).

Chemical	Toxic chemical release to waters (pounds)
Ammonia	1,908,526
Zinc compounds	600,322
Manganese compounds	554,102
Ammonium sulfate (solution)	312,482
Sulfuric acid	163,898
Diethanolamine	127,700
Ammonium nitrate (solution)	114,300
Nickel compounds	51,822
Copper compounds	46,167
Cyanide compounds	39,887

Table 5. Polluters reporting the greatest amounts of toxic chemicals discharged to Maryland sewage treatment facilities (1990-1994).

Facility	City	Toxic chemical release to sewers (pounds)
Westvaco Corp.	Luke	13,770,930
Red Star Yeast	Baltimore	5,554,926
FMC Corp.	Baltimore	702,547
Rockland Bleach & Dye Works	Baltimore	276,352
Perdue Farms Inc.	Salisbury	244,000
Procter & Gamble Mfg. Co.	Baltimore	175,674
McCormick Ingredients	Hunt Valley	170,888
General Motors Corporation	Baltimore	110,656
A-1 Plating Co. Inc.	Baltimore	100,000
Carr-Lowrey Glass Co.	Baltimore	69,442

‡ Total discharges of toxic chemicals to sewer systems in Maryland was 21,871,079 in 1990-94. EPA estimates that 25% of all toxic discharges to sewers pass through sewage treatment plants to receiving waters (EPA 1995).

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Maryland

Toxic pollution of Maryland waters (1990-1994). Carcinogens, persistent toxic metals, and reproductive toxins

Table 6. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged into Maryland waters (1990-1994).**

Carcinogens	90,010 Pounds
Persistent Toxic Metals	1,319,804 Pounds
Reproductive Toxins	6,858 Pounds
Total (see note)	1,324,400 Pounds

Note: The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 6 may be larger than the total because a chemical may be in one or more categories, i.e. a chemical may be both a carcinogen and a reproductive toxin. Chemicals were counted only once for the total in Table 6.

Table 7. Maryland waters receiving the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** (1990-1994).**

Waters receiving the greatest amounts of carcinogenic chemicals in Maryland (1990-1994).**

River or Water Body	Carcinogens** released to waters (lbs.)
Old Road Bay	57,300
Patapsco River	19,528
Bear Creek	4,924
Bacon Creek	2,622
Gwynns Falls	1,270

Waters receiving the greatest amounts of persistent toxic metals in Maryland (1990-1994).

River or Water Body	Persistent toxic metals released to waters (lbs.)
Old Road Bay	759,000
Patapsco River	500,466
Bear Creek	23,030
Jones Creek	12,320
Potomac River	7,572

Waters receiving the greatest amounts of reproductive toxins in Maryland (1990-1994).**

River or Water Body	Reproductive toxins** released to waters (lbs.)
Patapsco River	4,922
Gwynns Falls	1,265
Little Patuxent River	250

Table 8. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Maryland waters (1990-1994).**

Top dischargers of carcinogenic chemicals to Maryland waters (1990-1994).**

Facility	City	Carcinogens** released to waters (lbs.)
Bethlehem Steel Corp.	Sparrows Point	79,876
Avesta Sheffield East Inc.	Baltimore	3,122
Armco	Baltimore	1,765
Garden State Tanning Inc.	Williamsport	1,490
ABC Rail Corp.*	Baltimore	1,270

Top dischargers of persistent toxic metals to Maryland waters (1990-1994).

Facility	City	Persistent toxic metals released to waters (lbs.)
Bethlehem Steel Corp.	Sparrows Point	851,347
Chemetals Inc.	Baltimore	328,989
SCM Chemicals	Baltimore	100,000
Garden State Tanning Inc.	Williamsport	8,893
Avesta Sheffield East Inc.	Baltimore	8,262

Top dischargers of reproductive toxins to Maryland waters (1990-1994).**

Facility	City	Reproductive toxins** released to waters (lbs.)
Bethlehem Steel Corp.	Sparrows Point	3,465
ABC Rail Corp.*	Baltimore	1,265
Cox Creek Refining Co.	Baltimore	755
Chevron USA Inc.*	Baltimore	714
General Electric Co.*	Columbia	250

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Environmental Working Group is a non-profit environmental research organization based in Washington, D.C.
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The Patapsco River in Maryland

Total toxic pollution reported (1990-1994): 2,329,123 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Patapsco River in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Grace Davison	Baltimore	1,177,784
Chemetals Inc.	Baltimore	624,985
Simkins Ind. Inc.*	Catonsville	162,840
Bethlehem Steel Corp.	Sparrows Point	138,853
SCM Chemicals	Baltimore	100,674
SCM Glidco Organics Corp.	Baltimore	77,437
Red Star Yeast	Baltimore	30,950
Bethlehem Steel Corp.	Sparrows Point	5,600
Armco	Baltimore	2,280
Cox Creek Refining Co.	Baltimore	

Table 2. Toxic chemicals discharged in the greatest amounts to the Patapsco River in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	1,497,685
Manganese compounds	440,428
Sulfuric acid	163,878
Ammonium nitrate (solution)	114,300
Cyanide compounds	29,225
Zinc compounds	18,721
Copper compounds	17,032
Lead compounds	9,600
Molybdenum trioxide	8,300
Naphthalene	7,095

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Patapsco River in Maryland (1990-1994).**

Carcinogens	19,528 Pounds
Persistent Toxic Metals	500,466 Pounds
Reproductive Toxins	4,922 Pounds
Total‡	504,638 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Patapsco River in Maryland (1990-1994).**

Top dischargers of carcinogens to the Patapsco River in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	16,645
Cox Creek Refining Co.	Baltimore	755
Grace Davison	Baltimore	666
Armco	Baltimore	505
Avesta Sheffield East Inc.	Baltimore	500

Top dischargers of persistent toxic metals to the Patapsco River in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Chemetals Inc.	Baltimore	328,989
SCM Chemicals	Baltimore	100,000
Bethlehem Steel Corp.	Sparrows Point	56,760
Bethlehem Steel Corp.	Sparrows Point	5,600
Armco	Baltimore	2,275

Top dischargers of reproductive toxins to the Patapsco River in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	3,453
Cox Creek Refining Co.	Baltimore	755
Chevron USA Inc.*	Baltimore	714

Old Road Bay in Maryland

Total toxic pollution reported (1990-1994): 772,020 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Old Road Bay in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Bethlehem Steel Corp.	Sparrows Point	772,020

Table 2. Toxic chemicals discharged in the greatest amounts to Old Road Bay in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Zinc compounds	578,000
Manganese compounds	93,500
Nickel compounds	38,700
Copper compounds	20,800
Lead compounds	18,600
Chromium compounds	9,400
Cyanide compounds	9,320
Phenol	3,700

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Old Road Bay in Maryland (1990-1994).**

Carcinogens	57,300 Pounds
Persistent Toxic Metals	759,000 Pounds
Reproductive Toxins	0 Pounds
Total‡	759,000 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Old Road Bay in Maryland (1990-1994).**

Top dischargers of carcinogens to Old Road Bay in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	57,300

Top dischargers of persistent toxic metals to Old Road Bay in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	759,000

Top dischargers of reproductive toxins to Old Road Bay in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Conococheague Creek in Maryland

Total toxic pollution reported (1990-1994): 354,151 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Conococheague Creek in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Garden State Tanning Inc.	Williamsport	354,151

Table 2. Toxic chemicals discharged in the greatest amounts to Conococheague Creek in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium sulfate (solution)	312,482
Ammonia	40,348
Chromium	1,080
Manganese compounds	241

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Conococheague Creek in Maryland (1990-1994).**

Carcinogens	1,080 Pounds
Persistent Toxic Metals	1,321 Pounds
Reproductive Toxins	0 Pounds
Total‡	1,321 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Conococheague Creek in Maryland (1990-1994).**

Top dischargers of carcinogens to Conococheague Creek in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Garden State Tanning Inc.	Williamsport	1,080

Top dischargers of persistent toxic metals to Conococheague Creek in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Garden State Tanning Inc.	Williamsport	1,321

Top dischargers of reproductive toxins to Conococheague Creek in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

The Potomac River in Maryland

Total toxic pollution reported (1990-1994): 208,501 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Potomac River in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Garden State Tanning Inc.	Williamsport	208,149
Eastalco Aluminum Co.	Frederick	352

Table 2. Toxic chemicals discharged in the greatest amounts to the Potomac River in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	200,577
Manganese compounds	5,086
Chromium compounds	2,076
Chromium	410
Chlorine	317

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Potomac River in Maryland (1990-1994).**

Carcinogens	410 Pounds
Persistent Toxic Metals	7,572 Pounds
Reproductive Toxins	25 Pounds
Total‡	7,597 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Potomac River in Maryland (1990-1994).**

Top dischargers of carcinogens to the Potomac River in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Garden State Tanning Inc.	Williamsport	410

Top dischargers of persistent toxic metals to the Potomac River in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Garden State Tanning Inc.	Williamsport	7,572

Top dischargers of reproductive toxins to the Potomac River in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Bear Creek in Maryland

Total toxic pollution reported (1990-1994): 187,385 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Bear Creek in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Bethlehem Steel Corp.	Sparrows Point	187,372

Table 2. Toxic chemicals discharged in the greatest amounts to Bear Creek in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Diethanolamine	127,700
Ammonia	30,600
Chromium compounds	10,000
Copper compounds	6,000
Nickel compounds	3,800
Phenol	3,600
Zinc compounds	2,100
Cyanide compounds	1,342
Naphthalene	1,000
Lead compounds	857

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Bear Creek in Maryland (1990-1994).**

Carcinogens	4,924 Pounds
Persistent Toxic Metals	23,030 Pounds
Reproductive Toxins	25 Pounds
Total‡	23,042 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Bear Creek in Maryland (1990-1994).**

Top dischargers of carcinogens to Bear Creek in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	4,911

Top dischargers of persistent toxic metals to Bear Creek in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	23,017

Top dischargers of reproductive toxins to Bear Creek in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Kitts Branch in Maryland

Total toxic pollution reported (1990-1994): 60,969 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Kitts Branch in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Hudson Foods Inc.	Berlin	60,969

Table 2. Toxic chemicals discharged in the greatest amounts to Kitts Branch in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	60,467
Chlorine	502

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Kitts Branch in Maryland (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
Total‡	0 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Kitts Branch in Maryland (1990-1994).**

Top dischargers of carcinogens to Kitts Branch in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Kitts Branch in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Kitts Branch in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Church Branch in Maryland

Total toxic pollution reported (1990-1994): 31,000 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Church Branch in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Showell Farms Inc.	Showell	31,000

Table 2. Toxic chemicals discharged in the greatest amounts to Church Branch in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	22,000
Chlorine	9,000

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Church Branch in Maryland (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
Total‡	0 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Church Branch in Maryland (1990-1994).**

Top dischargers of carcinogens to Church Branch in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Church Branch in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Church Branch in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Higgins Mill Pond in Maryland

Total toxic pollution reported (1990-1994): 30,699 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Higgins Mill Pond in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Darling Intl. Inc.*	Linkwood	30,699

Table 2. Toxic chemicals discharged in the greatest amounts to Higgins Mill Pond in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	30,699

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Higgins Mill Pond in Maryland (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
Total‡	0 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Higgins Mill Pond in Maryland (1990-1994).**

Top dischargers of carcinogens to Higgins Mill Pond in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Higgins Mill Pond in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Higgins Mill Pond in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Jones Creek in Maryland

Total toxic pollution reported (1990-1994): 12,460 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Jones Creek in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Bethlehem Steel Corp.	Sparrows Point	12,460

Table 2. Toxic chemicals discharged in the greatest amounts to Jones Creek in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Manganese compounds	10,000
Copper compounds	1,550
Lead compounds	770
Ammonia	140

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Jones Creek in Maryland (1990-1994).**

Carcinogens	770 Pounds
Persistent Toxic Metals	12,320 Pounds
Reproductive Toxins	0 Pounds
Total‡	12,320 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Jones Creek in Maryland (1990-1994).**

Top dischargers of carcinogens to Jones Creek in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	770

Top dischargers of persistent toxic metals to Jones Creek in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Bethlehem Steel Corp.	Sparrows Point	12,320

Top dischargers of reproductive toxins to Jones Creek in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Stonehouse Cove in Maryland

Total toxic pollution reported (1990-1994): 10,213 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Stonehouse Cove in Maryland (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
FMC Corp.*	Baltimore	10,213

Table 2. Toxic chemicals discharged in the greatest amounts to Stonehouse Cove in Maryland (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Methanol	8,869
Ethylene glycol	1,344

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Stonehouse Cove in Maryland (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
Total‡	0 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Stonehouse Cove in Maryland (1990-1994).**

Top dischargers of carcinogens to Stonehouse Cove in Maryland (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Stonehouse Cove in Maryland (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Stonehouse Cove in Maryland (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)