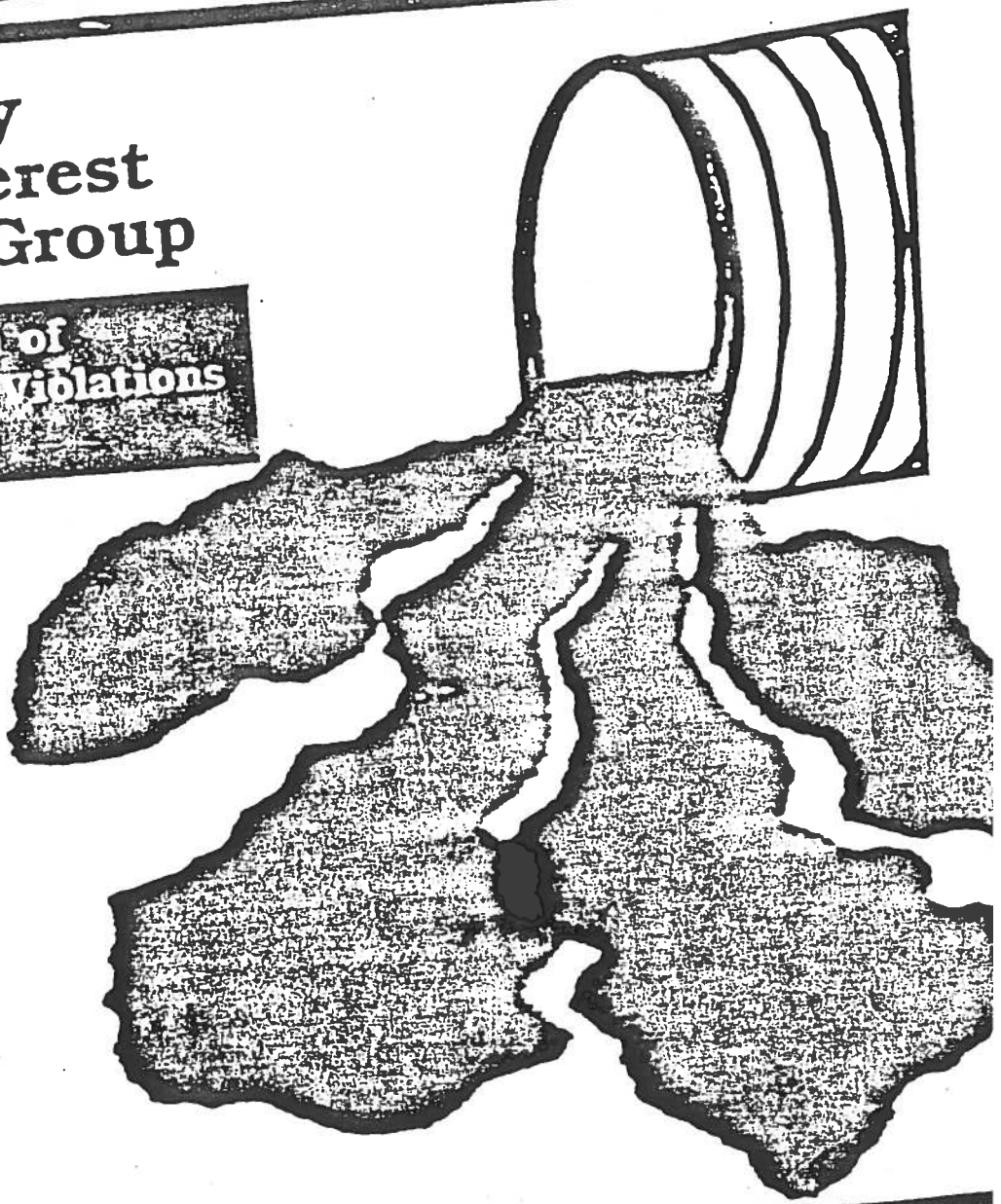
POLLUTERS PLAYGROUND

New Jersey
Public Interest
Research Group

An Investigation of
Water Pollution Violations
in New Jersey



February 19, 1988

NJPIRG
99 Bayard Street
New Brunswick, NJ
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February 18, 1988

Richard Dewling, Commissioner
New Jersey Department of Environmental Protection
401 E. State Street
Trenton, NJ 08608

Dear Commissioner Dewling,

The New Jersey Public Interest Research Group (NJPIRG) has recently completed a two year study of the implementation of the New Jersey Water Pollution Control Act. The study results will be released at a news conference this Friday, February 19th.

The report documents that DEP and EPA clean water enforcement actions have been limited. NJPIRG concludes with recommendations for state legislation which would set mandatory fines for permit violators, require limits on toxic discharges, and mandate jail terms for chronic violators. We have also recommended that DEP restructure NJPDES record keeping and improve public access to permit information.

We hope to be able to work with the Department in a joint effort to implement these suggestions and thereby improve New Jersey's water quality. We would be glad to meet with you or DEP staff at your convenience.

Sincerely,

Kenneth Ward
Executive Director

Jeannie Jenkins
Clean Water Research
Director

encl:

NJPIRG

Summary

The New Jersey Public Interest Research Group (NJPIRG) has completed a comprehensive investigation of water pollution law violations by industry and municipal sewage treatment plants. "Polluters' Playground: An Investigation of Water Pollution Violations in New Jersey," documents chronic and substantial permit violations and a pattern of government inaction that violates federal and state law.

NJPIRG examined discharge monitoring reports, permits, government reports and sewage treatment plant records for the two year period October 1984-October 1986, with follow-up research through February 1987. Based on file research, NJPIRG projects that a minimum of 6,000 violations occured during the study period.

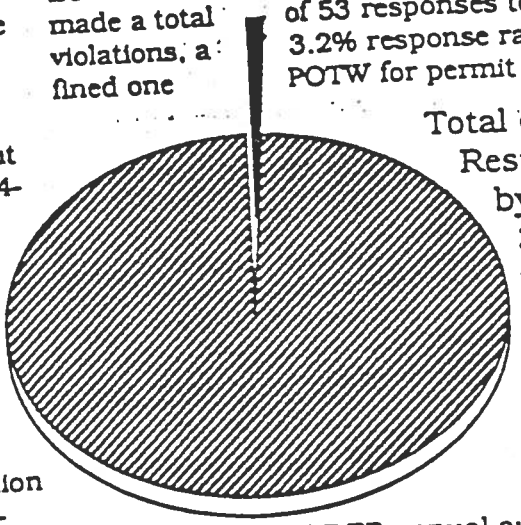
The study documented 3,009 individual permit violations by industry and sewage treatment plants. The N.J. Department of Environmental Protection (DEP) and U.S. Environmental Protection Agency (EPA) responded to only 53 of these violations (2% response rate) with only two fines recorded (20 respones by EPA, 33 responses by DEP).

NJPIRG examined monitoring files for one half (78) of the major industrial dischargers in the state, documenting 1,367 reporting and discharge violations. Virtually all companies studied (91%) were found to be in violation. Almost two-thirds (62%) of companies recorded "substantial" violations (50% over permit limits or higher) and half (49%) were classified as "chronic" polluters (4 or more violations in a 6 month period). Over one third (39%) were both chronic and substantial polluters.

The study profiled nine companies in chronic violation. A follow-up study of records through February 1988 found most of these nine companies to be in continuing violation.

DEP and EPA combined responded in only 42 instances to these company-reported violations - a 3% response rate. Only 7 responses appeared to have resulted in companies coming into compliance, an "effective" government response rate of 1%.
DEP imposed just one fine for permit violations.

NJPIRG investigated records for the 22 largest sewage treatment plants in the state identifying 1,642 permit violations. All of the sewage treatment plants studied were in violation of permits. Over three-quarters (805) of treatment plants were chronic violators, and two thirds (63%) were both chronic and substantial violators. Only one treatment plant permit contained limits on the discharge of toxic effluent, even though all 22 plants accept toxic effluent from "indirect" industrial dischargers. DEP made a total of 53 responses to permit violations, a 3.2% response rate. DEP fined one POTW for permit violations.



NJPIRG examined DEP annual audits for treatment plants and municipal records for industries which discharge toxic wastewater into treatment plants. The study documented 1000 "pretreatment" permit violations and spills with few recorded enforcement actions beyond warnings taken by treatment plants.

The report concludes that "The overall picture which emerges from this study is of a status quo reporting system which meets the most minimal requirements of the Clean Water Act without seriously inconveniencing polluters. A clear pattern of industry law-breaking and the laissez-faire approach of government agencies has created a polluters' playground in which chronic and substantial pollution violations are routine."

NJPIRG proposes passage of amendments to state law, the "Clean Water Enforcement Act" which would establish a system of mandatory fines for water polluters, require limits on toxic discharges, and make jail terms mandatory for repeat violators. The study notes the effectiveness of lawsuits filed under the the citizen suit provisions of the federal Clean Water Act and recommends that New Jersey expand citizens' right to sue.

The New Jersey Public Interest Research Group (NJPIRG) is a nonprofit, nonpartisan organization with 75,000 members throughout New Jersey. NJPIRG engages in research, education, litigation and advocacy in the areas of environmental preservation, consumer protection, and governmental reform. NJPIRG's Clean Water Project was founded in 1972 to monitor implementation of the federal Clean Water Act in New Jersey.

This report was authored by Jeannie Jenkins, Suzanne Dice, and Kenneth Ward, with assistance from Paula McDonald , Debora Laurano and Diane Brown.

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Glossary

Chronic Violator - A permittee that violates discharge permits 4 or more times within a 6 month period.
Compliance Inspection - An on-site inspection conducted by state agencies or EPA to determine facility compliance.
Discharge Monitoring Report (DMR) - A report submitted by the permittee to the state and/or EPA that details amounts of pollutants discharged based on self-monitoring and testing.
Discharge Permit - A state and/or EPA set license allowing the discharge of set levels of pollutants into specified waterways.
DEP - New Jersey Department of Environmental Protection.
Discharge Violation - Any exceedance of effluent limits.
Effluent - The wastewater discharged by an industry or municipality.
Effluent or Discharge Limitations - Restrictions established by a state or EPA on quantities, rates and concentrations of chemical, physical, biological and other constituents discharged from point sources.
EPA - United States Environmental Protection Agency.
Major Industrial Discharger - A state or EPA classification generally based on a discharge of 50,000 + gallons per day, proximity to drinking water supplies, and toxicity of effluent.
National Pollutant Discharge Elimination System - The national system of effluent permits, self-monitoring, and government penalties established by the 1972 Clean Water Act Amendments.
Permittee - Company or POTW which holds a discharge permit.
Point Sources - Specific sources of pollution that can be readily identified, such as factories and sewage treatment plants.
POTW - Publicly Owned Treatment Works (sewage treatment plant).
Substantial Violation - Violation at least 50% over permit levels.
Toxic Substance - A chemical or mixture that may present a risk of injury to health or the environment.
Water Pollution - Contamination or other alteration of the physical, chemical or biological properties of water, including changes in temperature, tastes, color, or odor or the discharge into the water of any liquid, gaseous, radioactive, solid or other substance that may create a nuisance or render such water detrimental or injurious to public health, safety or welfare.

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"Although the primary responsibility for water quality decision-making is vested by law in public agencies... active public involvement in and scrutiny of the intergovernmental decision-making process is desirable to accomplish these objectives... The intent of these regulations is to foster a spirit of openness and a sense of mutual trust between the public and the State and Federal Agencies in an effort to restore and maintain the integrity of the Nation's waters."

40 CFR Section 105.2

1.0 Introduction

In 1972, Congress adopted amendments to the Clean Water Act with the long range goal of eliminating the discharge of pollutants into our nation's navigable waterways. Under the act, the U.S. Environmental Protection Agency (EPA) was charged with establishing a system by which all public and private entities intending to discharge pollutants into surface waterways must obtain and comply with individual discharge permits (the National Pollution Discharge Elimination System, 40 CFR 122).[1]

The amount of pollution allowed under each permit was to be based on the type of pollutants discharged, the sophistication of available control technology, and water quality standards for the receiving waterway. Once a nationwide system for permitting dischargers had been established, EPA was to gradually tighten permits based on emerging control technologies. Progressive permit tightening, coupled with enforcement action against permit violators would gradually reduce industrial and municipal pollution levels in order to achieve the interim Clean Water Act goal of "fishable and swimmable" waterways.

In 1987, Congress reiterated its support for the Clean Water Act, reauthorizing the legislation and strengthening key sections. Pollution control requirements for industrial and municipal dischargers were tightened and penalties for violations under the Act were increased. Increased focus was placed on toxic "hot spots" - areas where water quality standards remain poor even with the imposition of stricter discharge limits. New programs were created to address non-point source pollution and to require permits for municipal storm sewers. The 1987 amendments reauthorized federal funding for improvements in publicly owned treatment works (POTWs) and established a program to phase in state revolving funds for facility upgrades.

1.1 New Jersey Pollution Discharge Elimination System (NJPDES)

The U.S.EPA Region II administered the NPDES program from its inception until 1982. With passage of the New Jersey Water Pollution Control Act, the New Jersey Department of Environmental Protection (DEP) was granted authority to administer the program in March of 1982 and subsequently the program was renamed the New Jersey Pollutant Discharge Elimination System (NJPDES). DEP is responsible for writing permits for industrial and municipal facilities discharging directly into waterways, for monitoring compliance with permit limits and for enforcement of permits. EPA Region II retains oversight responsibility for the program.

The NJPDES permits written by DEP specify both the type and amount of pollutants that may be legally discharged into New Jersey waterways. Under

1. The National Pollutant Discharge Elimination System (NPDES) permitting program regulates municipal and industrial discharges to receiving waters. Indirect discharges, via POTWs, are regulated under the National Pretreatment Program.

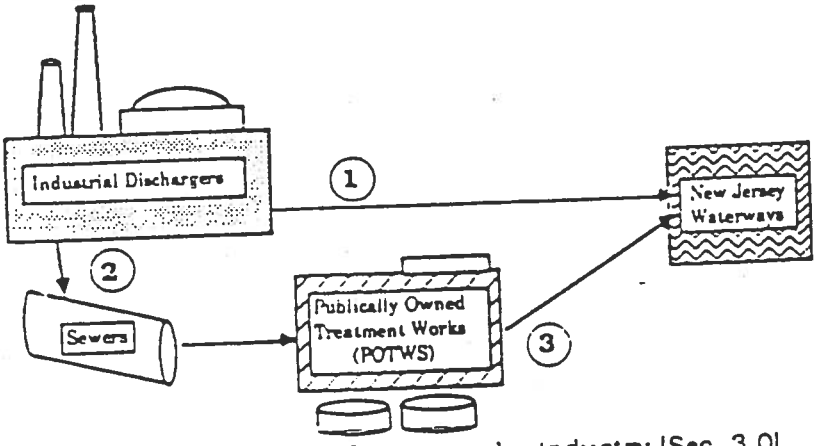
both the federal and state Acts, only pollutants listed in the permit may be discharged. Permits may be issued for a maximum of 5 years. If a facility or DEP identifies additional pollutants in a permittee's wastewater discharge or if substantial process changes occur, the permit must be modified. DEP can modify, suspend or revoke any NJPDES permit for violations of its terms or conditions or for any misrepresentation of information necessary for the permit.

The limits designated for pollutants or parameters included in permits are based on EPA effluent guidelines using the "best available technology economically achievable" for a particular industry (BAT). All new dischargers are required to meet "New Source Performance Standards" (NSPS) which are comparable to or stricter than BAT. In some cases, the quality of the waterways receiving industrial or municipal wastewater will be impaired even if BAT or NSPS are met. In these cases, DEP may set water quality based limits for pollutants that are stricter than the technology based standards.

Compliance with pollutant limits specified in the permit is monitored in two ways. The principal mechanism for determining compliance is the discharge monitoring reports (DMRs) prepared by permittees and submitted to DEP. DMRs are forms on which the permittee documents the average and maximum concentration and/or mass discharged for each pollutant or parameter listed in the permit. The other mechanism is the compliance inspection.

2.Grab samples are individual samples of at least 100 milliliters collected over a period of time not exceeding 15 minutes. Composite samples are either a combination of individual or continuously taken samples of at least 100 milliliters, collected at intervals over the entire discharge day.

I. Point Sources of Surface Water Pollution



1. Direct discharges to surface water by industry [Sec. 3.0].
2. Indirect discharges to sewage treatment plants [Sec. 5.0].
3. Direct discharges by Publicly Owned Treatment Works (POTWs). [Sec 4.0]

NJPDES permits stipulate the pollutants and parameters to be measured, how the measurement is to be taken, and how often the facility must sample or measure. Permits may require continuous measurement of parameters such as flow, temperature, and pH. Measurement of other parameters, including both conventional and toxic pollutants, may include grab samples or composite sampling on a daily, weekly, or monthly basis.[2]

The permit also specifies the frequency with which the permittee must submit monitoring data to DEP and EPA. Although a facility's permit may require daily or weekly sampling, the summarized data may be reported monthly or only once a year on DMRs.[3] The DMR records only one average and one maximum concentration and/or mass violation for any given pollutant or parameter during a reporting period unless the permit specifically states otherwise.

3.The frequency of reporting is important because DMRs represent the only information available to DEP and citizens on the amounts of pollutants discharged unless independent samples are taken by a regulatory agency.

4.Industrial dischargers are divided into minor and major dischargers based on flow and toxicity of effluent. See Section 3.0.

Beginning in 1985, DEP began adding requirements for acute toxicity monitoring in permits. The tests - acute bioassays - are designed to determine the short-term health effects of wastewater on aquatic life. DEP has set a minimum standard for acute bioassays prohibiting the discharge of wastewater which at half strength is lethal to more than 50% of test organisms within a 96 hour period.

On-site inspections are conducted by DEP to monitor permittee compliance with the NJPDES program. EPA requires annual inspections of all industrial facilities classified as "major".[4] Inspections by DEP evaluate compli-

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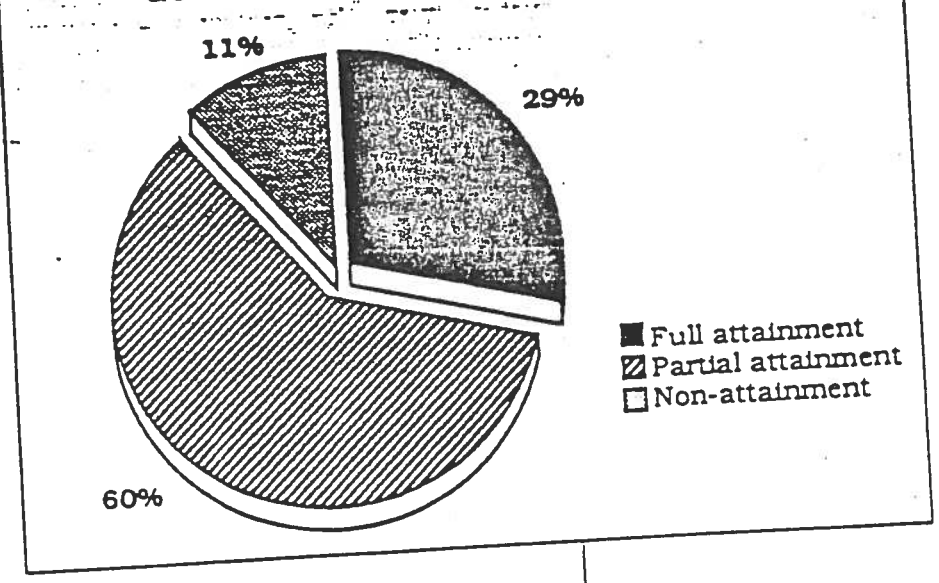
ance by observing housekeeping practices, color and odor of effluent, operation and maintenance records, and review of DMRs. No independent sampling or analysis of effluent is done by DEP.

The New Jersey Water Pollution Control Act requires that DEP take one or more of five actions whenever a permittee violates the conditions or terms of a permit. At a minimum, DEP must issue an order requiring the permittee to comply with the permit.[5] In addition, DEP has the authority to bring civil actions, levy administrative penalties and petition the Attorney General to bring criminal action against any industrial or municipal permittee in violation of a NJPDES permit.

II. Attainment of Interim Clean Water Goals in New Jersey Rivers & Streams



1.2 Water Quality In New Jersey

Approximately 1100 of the 6500 miles of rivers and streams in New Jersey are monitored regularly for water quality. The monitored waterways reflect the diversity of uses and water quality found in the state. The 1986 New Jersey Water Quality Inventory Report [305b report][6] identified pervasive pollution in all areas of the state with widespread occurrence of industrial and municipal pollutants. At present, 1500 industrial and municipal facilities have NJPDES permits to discharge treated wastewater into New Jersey waterways. The DEP estimates that an additional 4,000 industrial facilities discharge indirectly into waterways through municipal treatment plants.[7] Virtually all larger waterways in the state have at least one industrial or municipal discharger located on them with the largest numbers of dischargers found in the more urban coastal areas.

The quality of surface waters in the state has not improved substantially since 1977. Only 29% of the monitored waterways in New Jersey are now meeting the swimmable and fishable goal of the Clean Water Act. Of 44 streams and rivers assessed in the 1986 305(b) report, only two, the Pequannock and Wanaque Rivers, were determined to be meeting swimmable and fishable standards for their entire length.

At present, little data is available on contamination of sediments in the fresh and tidal waters of the state. However, it is clear that many of the state's waters are contaminated in at least some sections with low levels of toxic and hazardous substances. It is impossible to determine sources of much of the contamination that has been documented although it is clear that industrial point discharges play a role. Most pollutants are in widespread use and thus are not easily traceable to one specific industrial source.

PCB contamination has been identified in two tributaries of the Delaware River, the Cooper River and Pennsauken Creek. Currently, the four-state Delaware River Basin Commission is collecting data for the main stem of the Delaware River to determine the extent of toxic substances including pesticides, heavy metals and synthetic organic chemicals present in the water column and sediments.

5.Section 58:10A-10

6.New Jersey Department of Environmental Protection, New Jersey 1986 State Water Quality Inventory Report, 305(b) Report (Trenton, NJ: July 1986)

7.Indirect dischargers are regulated under the General Pretreatment Standards prescribed under the 1977 amendments to the federal Clean Water Act.

The quality of the water in the Raritan River is reported to be heavily influenced by both point and nonpoint sources. The 1986 305(b) report states that the elimination of the American Cyanamid discharge at South Bound Brook has resulted in significant improvement in the quality of water in the Raritan River. The greatest single water quality improvement in New Jersey between 1981 and 1985 is attributed to the closing of the Johns-Manville plant on the Raritan River below Manville. Numerous other industrial dischargers on the river are thought to contribute to the high levels of volatile organic compounds presently found in the lower Raritan.

Arsenic contamination has been identified in a tributary of the Maurice River and in Union Lake. The source of the pollution has been widely attributed to the Vineland Chemical Corporation in Vineland.

Most monitoring of estuarine and coastal waters is limited to measurements of fecal coliform in shellfish and bathing areas (DEP 1986 305(b) report). Based on these data, much of the tidal waters of northern New Jersey do not meet the swimmable and fishable goals of the Clean Water Act. In addition, the tidal Delaware Bay area near Philadelphia is considered a non-attainment area. Other coastal areas are periodically closed to swimming during the summer months due to inadequate treatment of municipal wastes, algal blooms, and other causes.

High concentrations of PCBs, chlordane, and other pesticides have been found in some fish in New York-New Jersey interstate waters. Sediments, fish, and shellfish heavily contaminated with dioxin have been identified in the Passaic River and Newark Bay. The high levels of dioxin are suspected to have originated from the Diamond Shamrock facility, a former manufacturer of Agent Orange. The 12- mile sludge dump site in the New York Bight area also records high levels of sediment contamination by toxic materials.

High concentrations of toxic organics and heavy metals have been found in sediments off Ortley Beach. A number of sources are thought to have contributed to the contamination, including direct discharges from POTWs, migration of toxics from the 12-mile site, contaminated sediments from the Hudson-Raritan plume and the ongoing permitted industrial discharges by the Ciba-Giegy chemical plant in Toms River.

1.3 Enforcement Studies

Despite unwavering Congressional commitment and widespread public support, there is strong evidence that implementation of the Clean Water Act by both federal and state environmental agencies has been ineffective. A 1987 Office of Technology Assessment (OTA) study found "a considerable degree of 'acceptance' of the routine, but environmentally very significant discharge of effluents."[8] An OTA review of literature noted 12 studies which, to varying degrees, identified problems with the permitting programs of EPA and state and local agencies.

A 1983 study by the General Accounting Office (GAO) examined permit data from 6 states, including New Jersey, for an 18 month period.[9] The GAO found that over 80% of dischargers exceeded one or more permit limits at least once during the year and a half period. Almost half of the permittees violated more than 6 discharge parameters, and 20% had violated 12 permit limits. The study found that 76% of the industrial dischargers and 86% of the municipal dischargers examined in New Jersey violated their permit limits at least once during the study period.

A study of EPA Region II enforcement was conducted by the New Jersey Public Interest Research Group (NJPIRG) in 1981, the year prior to EPA's delegation of authority for the program to DEP.[10] The study found that of

8.U.S. Congress. Office of Technology Assessment. Wastes in Marine Environments. OTA-0-334 (Washington. D.C.: U.S. Government Printing Office. April 1987.

9.U.S. Congress. General Accounting Office. Wastewater Dischargers Are Not Complying With EPA Pollution Control Permits. (Washington. D.C.: December 2. 1983

4,327 self-reported permit violations in four states (New York, New Jersey, Puerto Rico and the Virgin Islands). EPA responded to only 13%, with an average response time of one year. EPA responded to 14% of the violations documented in New Jersey. Only 9% of the violations involving toxic substances received any response during the study period.

2.0 Goals of the Study

The New Jersey Public Interest Research Group (NJPIRG) conducted a study of the New Jersey Pollution Discharge Elimination System during 1987, with the following goals:

1. To determine the extent of NJPDES violations by major industrial dischargers, in-direct dischargers and Publicly Owned Treatment Works (POTWs).
2. To quantify the number and timeliness of government response and enforcement actions to violations.
3. To evaluate the effectiveness of industrial pretreatment programs.
4. To evaluate the effectiveness of NJPDES permits in limiting toxic substances discharged to New Jersey waterways.
5. To identify barriers to effective citizen action under the Clean Water Act.

3.0 Industrial Dischargers

New Jersey has classified 163 companies discharging to surface waters of the state as major industrial dischargers. Major industrial dischargers usually have a minimum flow of 50,000 gallons of effluent per day. In addition, other factors such as toxicity of effluent and proximity to drinking water supplies are used in the classification procedure. Federal regulations for major industrial dischargers require DMRs to be submitted at least annually. DEP policy requires major industrial dischargers to submit DMRs monthly.[11]

Permit files for major industrials are kept at both DEP and EPA Region II offices. Major industrial dischargers are required to submit DMRs to both DEP and EPA. The DEP is required to send to EPA copies of permit applications, draft and final permits, records of all inspections, and correspondence including enforcement actions. EPA, in turn, sends all relevant correspondence and inspection information to DEP. DEP is responsible for entering violation and enforcement data into the national EPA computer data base system for the NPDES program (Permit Compliance System).

3.1 Methodology

NJPIRG obtained a list of the 163 major industrial dischargers in New Jersey from the U.S Environmental Protection Agency (EPA). Through the use of a random numbers table, NJPIRG initially chose 87 companies to be examined, representing over 50% of the permitted major industrial dischargers in the state. Nine companies were omitted from the study for various reasons.[12]

For each company, pollutant discharge files were examined for permit information, Discharge Monitoring Reports (DMRs), correspondence, inspections, and records of enforcement action for the period of October 1984 - October 1986. The majority of files were examined at EPA Region II offices in New York City. Information for some companies was obtained at the N.J. Department of Environmental Protection (DEP) file room in Trenton, NJ.

Additional information was collected for nine companies profiled in case

10. New Jersey Public Interest Research Group (NJPIRG), Enforcement Under the Federal Water Pollution Control Act by the U.S. EPA Region II, 1975-1980 (Trenton, NJ: 1981)

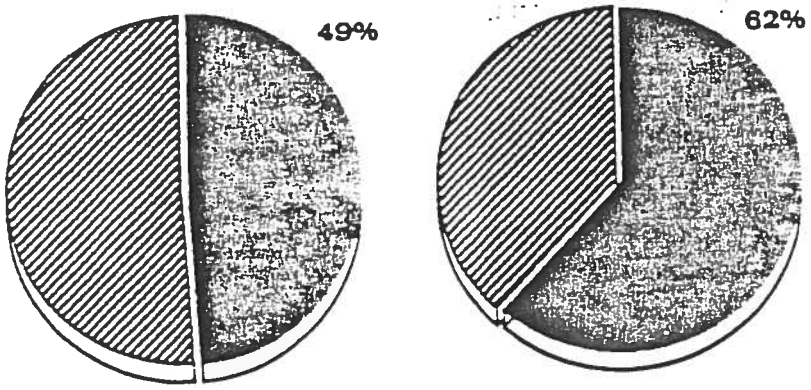
11. Letter sent September 16, 1986 from DEP Commissioner Dewling to the New Jersey Environmental Federation in response to Enforcement Questions submitted June 16, 1986.

12. Six of the companies were no longer discharging, in 2 cases first permits had been issued since the beginning of the study period so that two years worth of DMRs were not available, and in 1 case a number of modifications had been made to the permit precluding the collection of reliable data.

studies. Files for these companies were reexamined in February of 1988, and violation, inspection and enforcement data was collected for the period November 1986 through the most recent information in the files.

Pollutant limit violations listed in each DMR were recorded and the percent over permit limits for each violation was determined. The number(s) of violations over 50%, termed substantial violations, were recorded.[13] Pollutants were coded as "toxic" or "non-toxic." Pollutants considered toxic included all substances on the EPA Priority Pollutant list.[14]

III.% Chronic and Substantial Dischargers



% Chronic Violators

% Substantial Violators

Violations due to failure to submit discharge data, either individual parameters on DMRs or missing DMRs, was also recorded. Reporting violations were divided into two categories: failure to submit an entire DMR (at least one month of missing data), and failure to report an individual parameter. In every case where data was missing, attempts were made through the EPA Region II office or DEP to locate the information.

All enforcement actions noted in the files, including administrative consent agreements and judicial action, letters and telephone calls, were recorded. The number of actions resulting in permit compliance were also recorded.

13.EPA considers any toxic violation 20% over permitted limit and any nontoxic metal or conventional pollutant violation at least 40% over permitted limit to be a significant violation. The DEP considers any industrial violation over 20% and any municipal violation over 40% to be significant. The 1983 GAO study (see footnote 9) considered any violation over 50% to be significant. To be conservative, NJPIRG has considered violations over 50% in this report. NJPIRG has used the term substantial to distinguish this number from the EPA, DEP and GAO definitions of significant violations. NJPIRG does not mean to imply that violations of less than 50% are not important and in fact would support identifying and taking action against all permittees with violations exceeding permitted limits by 20% over more.

3.2 Findings

3.2.1 Discharge Violations

Review of the DMRs documented 1,367 reporting and limit violations in the two year period of the study. Over half (749) were pollutant discharge limit violations, with 89 toxic violations recorded. Over half (54%) of the discharge violations were determined to be "substantial" (50% or greater over limits).

During the study period, 91% of the companies studied (71 companies) were in violation of discharge limits or reporting requirements. The number of violations of discharge limits ranged between 1 to 123 per discharger, with a median number of violations of 18 per discharger. The highest monthly average violation was recorded for a Total Suspended Solid violation 4,391% over permit limits (Magnesium Elektron). The single highest maximum violation was 11,190% over permit limits (Standard Tank Cleaning).

Almost two thirds (62%) of the companies reported substantial violations and 68% reported violations at least 20% over limits. Half of the companies (49%) were determined to be "chronic violators" (discharge violations reported for 4 or more months in a six month period). Over one third (39%) of the companies studied reported both chronic and substantial violations.

3.2.2 Reporting Requirements

Permits for major industrial dischargers do not always require DMRs to be submitted monthly. One third (26) of the facilities examined were not required to submit monitoring information monthly. Permits for 21 of the companies specified quarterly reporting, 4 required DMR submission twice a

year, and 1 company was required to submit once a year. In at least one instance, a permittee submitted DMRs quarterly although operating under a permit requiring monthly reporting (Georgia Pacific).

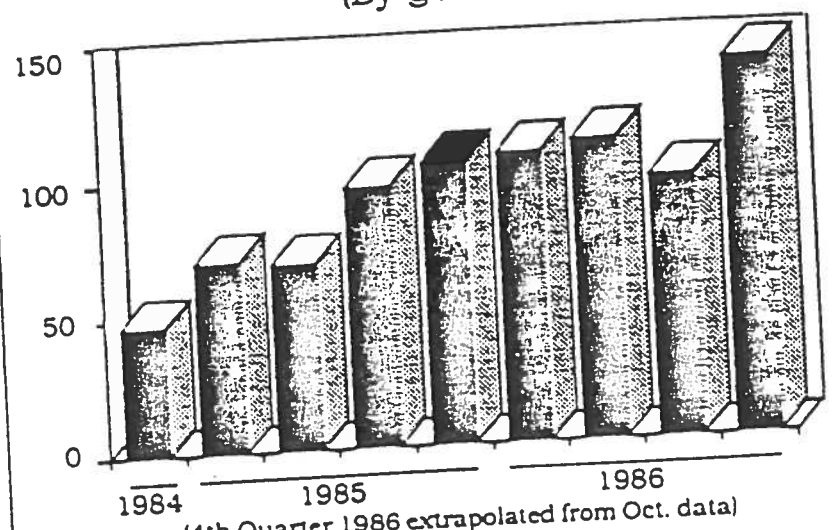
3.2.3 Reporting Violations

Almost 600 non-reporting violations were recorded for the study period. These included 276 instances where discharge information for individual pollutants was omitted, 246 instances where complete DMRs were missing, and 76 cases where bioassays were not submitted.

Underestimations of pollutants discharged were noted for several companies not required to report monthly. Incomplete reporting of discharge levels for parameters and incorrect compilation of data can seriously alter discharge averages. In one instance, a permittee was required to submit DMRs quarterly with discharge data recorded on a monthly basis. DMRs for the study period demonstrated that the facility had reported discharge information averaged over the three month period, seriously understating their violations (CP Chemicals).

Discrepancies between self-reported violations on DMRs and analyses of effluents performed by contract or inhouse labs can also occur. These differences may be difficult to uncover because original lab sheets are not submitted by the facility with DMRs.[15]

IV. Permit Violations by Major Industrials
(By Quarter)



(4th Quarter 1986 extrapolated from Oct. data)

3.2.4 Site Inspections

Almost all facilities studied received annual on-site inspections. Facilities received ratings of acceptable, conditionally acceptable, or unacceptable depending on the number and degree of violations observed during the inspection. One third (36%) of on-site inspection reports for the study period cited moderate to serious violations ["conditionally acceptable" or "unacceptable" ratings]. These violations included unlicensed plant operators, unpermitted discharge pipes, pollutant discharge limit violations and serious sampling and analysis errors. In several cases where permittees were contesting permit limits, inspections were performed but no ratings were assigned (Texaco, PSE&G, Bergen Co. Utilities Authority). NJPDES inspections conducted by the DEP do not include sampling or independent analysis of wastewater samples. Inspections include a walk-through tour of the facility during which inspectors examine housekeeping practices, color of effluent, odors, and operator certification. Inspectors depend on self-reported violations on DMRs to determine facility compliance with permit limits. Past DMR limit violations were reported in 28 of the 67 on-site reports noting deficiencies.

Chronic violators with substantial violations received no more inspections, on the average (1.2 per year), than companies with less frequent or less serious violations (1.2 per year). Of the 30 chronic violators with substantial violations, a quarter (23%) received two or more inspections per year. One fifth (20%) received less than one inspection per year.

The DEP may refer any permittee to the EPA's New Jersey field office in

14 CFR 122 Appendix D

15. See Struthers-Dunn Case Study Section 3.3

Edison for a more detailed inspection including independent sampling and analysis of wastewater and an examination of laboratory procedures (Performance Audit). Less than 10% [16] of the 214 site inspections were of this more detailed type.

3.2.5 Government Response to Violations

The determination of appropriate enforcement response is at the discretion of DEP. DEP enforcement staff may make telephone calls to violators, issue written notices of violation, impose fines and/or administrative consent orders, or refer cases to the State Attorney General for civil and criminal prosecution. With these available tools, DEP may require compliance schedules, impose penalties for past violations, set stipulated penalties for future violations, and seek action against company employees responsible for violations.

V. Violations and Agency Responses
Major Industrial Dischargers*

	Oct 84-March 85	April 85-Sept 85	Oct 85 - March 86	April 86-Sept 86
Number of Company Violations	121	164	209	206
Total DEP and EPA Responses	1	13	4	2

* Including notices of violation, telephone calls and other actions.

The total of DEP and EPA responses to violations identified in this study was 42 responses to 1,367 violations, a 3% response rate (See table).

No government response was recorded for over 90% of documented violations, even though a notice of violation is required under state law.[16] 37 out of the 42, or 90%, were standard notices of violation or telephone calls.

Almost half of the recorded letters and telephone calls (15) were in response to discharge violations, a response rate of 2.7%. All responses to limit violations were made by the DEP. On the average, six months elapsed between the submission of a DMR with violations and governmental response. The DEP responded to 6% of the 89 violations involving toxic pollutants. The average response time to toxic limit violations was 287 days.

There were 22 responses by DEP and EPA to missing or delinquent DMRs (9% response rate), of which 20, or 91% originated with EPA. There was no response taken in the 276 instances where DMR data for one or more discharge parameters were missing.

Bioassays were submitted to the DEP in only 84 of the 160 instances (53%) where they were required. No responses were taken to the 76 instances of missing bioassays.

Enforcement Action

The DEP took five actions beyond telephone calls and written warnings. Administrative orders were issued in 3 cases; 1 case was referred to the Attorney General's Office, and civil penalties were imposed in 1 instance.

Of the 15 companies receiving responses from the DEP for violations of discharge limits (20 responses), one third of the companies appear to have corrected permit violations (5 companies receiving 7 responses). In addition, one company became an indirect discharger, not subject to the NJPDES program (Accurate Forming), and one company's violations were

16. Section 58:10a-10(a) New Jersey Pollution Control Act

resolved through modifications of its permit (Exxon).

Of the 15 companies receiving responses from the DEP, only 7 appear to have come into compliance by the end of the study period. Therefore, the "effective rate" of enforcement action taken against industrial polluters - the ratio between total number of limit violations and number of DEP responses which resulted in companies in permit compliance - was 1%.

3.2.6 Permitting

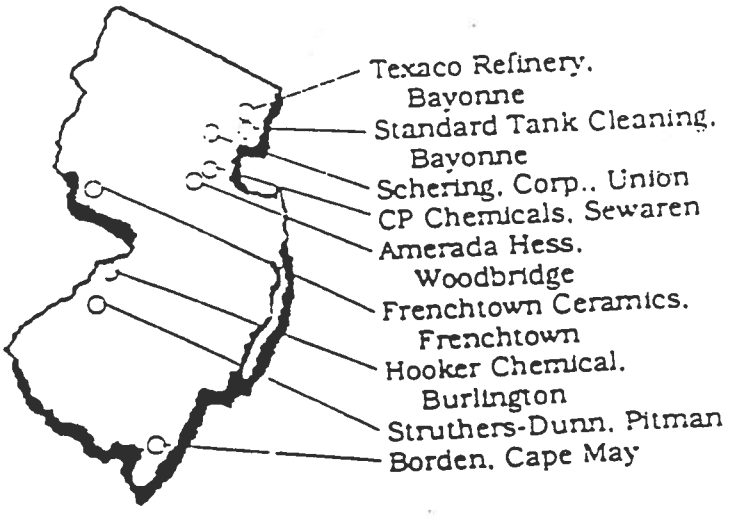
Current permits of 55 companies (33% of the operating major industrials) were compared with the companies' previous permit to determine whether permits were being strengthened at renewal. When applicable, pollutant limits were usually tightened to meet Best Available Technology (BAT) limits set by EPA. In cases where BAT had not been determined, local limits (set by the municipality or regional regulatory agency) or the best professional judgement of the permit writer were relied upon.

Permits for 10 companies (18% of those examined) were made less restrictive for some pollutants discharged. In all, limits for 13 categories of pollutants were less restrictive in the new permit than in the previous permit - including loosening permit limits by 50% for three categories of toxic pollutants.[117]

Permits for the 78 companies in the study were examined for limits on toxic pollutants. Over half (59%) of the permits contained no limits for any toxic substances. Two thirds of the companies with no toxics limits in their permits were directly involved in the manufacture or use of organic or inorganic chemicals.

This study can not conclusively say whether the facilities examined are discharging toxic pollutants. However, a 1986 study prepared by the Chemical Manufacturers Association and Engineering Science, Inc. concluded that almost all hazardous waste (a list of 350 toxic chemicals regulated under the Resource, Conservation and Recovery Act) in the chemical industry is discharged to surface waters, either directly, or indirectly through POTWs.[118] The organic chemical industry is thought to be responsible for 83% (112 million pounds per year) of hazardous organic discharges directly to surface waters and almost 80% (154 million pounds per year) of hazardous waste discharges to POTWs.[119]

VI. Location of Major Industrial Case Studies



17.BF Goodrich (Cu, Pb).
Standard Tank Cleaning (Phenol)

3.2.7 Compliance Schedules

Compliance schedules - agreements between the DEP and a polluting company - are designed to put violators on strict, enforceable schedules for the purchase and installation of pollution control equipment in exchange for less restrictive, temporary permit limits. Few facilities examined were on compliance schedules and no record of issuance of schedules was noted in files.

3.3 Case Studies

The nine companies profiled in the case studies point to a number of serious problems with the NJPDES system. One third of these companies were not required to submit discharge data monthly. Three permits contained no limits on toxics even though the potential for discharge of toxics was high. In one case - Schering Corporation - the permit contained no limits for toxics although groundwater contamination by toxic discharge had been confirmed. Inspection reports for the nine facilities did not accurately reflect the ongoing violations and in two cases, permits were allowed to lapse. In all nine of these cases, enforcement was at best insufficient and in many cases nonexistent, with only one instance of penalties assessed.

Hooker Chemical

Hooker Chemical (now known as Occidental Chemical), in Burlington, is a manufacturer of vinyl chloride products. Hooker Chemical discharges to Bustleton Creek and had 57 self-reported limit violations between October 1984 and October 1986. The majority of Hooker Chemical's violations were for fecal coliform, Biological Oxygen Demand (BOD), and Total Dissolved Solids (TDS). Hooker Chemical had at least 2 violations in every month during the study period. Over two thirds (70%) of the violations exceeded permit limits by at least 50% and over one third (40%) were at least 100% over permit limits.

Even though Hooker Chemical is classified as an organic chemical manufacturing facility, Hooker Chemical's permit contained no limits for any organic chemicals until February of 1985. At that time, the facility was issued a new permit which increased the reporting period for DMRs from once every six months to monthly and added limits for two toxic substances - vinyl chloride and arsenic.

A requirement for bioassay testing was also added to the 1985 permit. The results of all subsequent bioassays demonstrated that Hooker Chemical's effluent was highly toxic. The facility's effluent failed every bioassay (6) between April of 1985 (the first required) and August of 1986. Hooker Chemical received only one inspection during the study period. The inspection, in January of 1985, noted "minor deficiencies" and made no recommendations for permit compliance.

In November of 1986, Hooker Chemical put in a carbon-treatment pollution control system. The bioassay for December of 1986 demonstrated that effluent diluted to one-tenth of the concentration discharged to Bustleton Creek was lethal to test organisms.

Hooker Chemical's DMRs indicate that the facility has been in compliance with its permit for the last 12 months.

The Hooker Chemical facility has been responsible for groundwater contamination on site. The groundwater is contaminated with vinyl chloride and trichloroethylene. A permit allowing Hooker Chemical to discharge to groundwater became effective February of 1988.

VII. Summary of Data on Case Studies

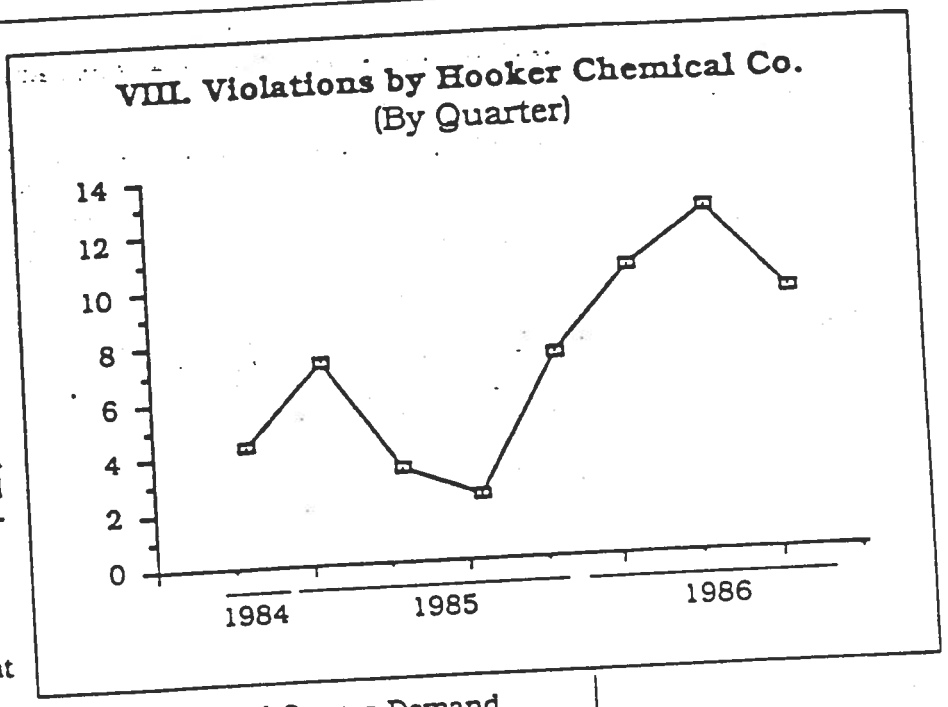
Company	Violations Oct 1984 - Oct 1986	Violations Nov 1986 - Dec 1987	
Hooker	69	4	
Schering	57	29	
CP Chemicals	99	30*	
Frenchtown	60	34	
Hess	53	27	
Borden	30	43	
Standard Tank	20	8	
Struthers-Dunn	24	0*	
Texaco	42	2	(Currently discharging to ground water without permit)

*Citizen suit filed by NJPIRG.

18. Chemical Manufacturers Association and Engineering Science, Inc. 1984 CMA Hazardous Waste Survey. January 1986.

19. Cutting Chemical Wastes. Inform. 1985

NJPIRG



Only one action by the DEP or EPA was noted in the files. Hooker Chemical had not submitted DMRs for three consecutive months in 1986. EPA requested that the reports be sent and the company complied. No actions were reported for any of Hooker's numerous violations.

Schering Corporation

The Schering Corporation facility in Union manufactures, packages and conducts research on pharmaceuticals. The company's wastewater is discharged to the Elizabeth River. Schering had 44 limit violations during the study period, of which almost three quarters (73%) were at least 50% over permit limits. The majority of the company's violations were for Chemical Oxygen Demand (COD), Biological Oxygen Demand and Total Suspended Solids (TSS). The permit for Schering contains no bioassay requirement and no limits for any organic chemicals.

At the request of the DEP, the EPA conducted a performance audit of the Schering facility in June of 1985. The inspection determined that the company was not in compliance with permit requirements. The following month the DEP sent a notice of violation to Schering for repeated violations of its TSS limit. No mention of Schering's BOD and COD violations were made in the notice even though these violations exceeded permit limits by greater amounts and were far more numerous. The Schering facility was reinspected in March of 1986 and in January of 1987 and found to be in compliance, in spite of 44 limit violations between June of 1985 and January 1987.

In November of 1985, Schering entered into an Administrative Consent Agreement with the DEP for groundwater contamination at the site. Tests dating back to April 1984 indicated that the groundwater was seriously contaminated with high concentrations of volatile organic chemicals - primarily benzene, chloroform and methylene chloride. Monitoring wells are now installed on site.

Schering's violations continued through December 1987, the last month's report in the files. In December of 1987, Schering reported 8 violations of BOD and COD for 3 different discharge locations at the facility. All 8 violations were at least 50% over permit limits.

CP Chemicals

CP Chemicals in Sewaren is an inorganic metal finishing and chemical manufacturing facility. The facility has been discharging toxic chemicals into the Woodbridge Creek since the late 1970's. CP Chemicals had 42 limit violations between October 1984 and October 1986. Over half (57%) of the violations exceeded the permit limits by 100%. Three quarters (74%) of CP Chemical's violations were for toxics violations. CP Chemicals had 29 violations of cyanide, zinc, copper, and nickel during the study period.

CP Chemicals' permit requires quarterly submission of DMRs. Although the permit stipulated that individual monthly averages be calculated for compli-

ance monitoring, each CP Chemical's DMR averaged the discharge over the three month period. It is therefore possible that the number of violations is triple what was actually reported.

CP Chemical's permit requires that the facility's wastewater hve no measurable toxicity. CP Chemical's bioassays have consistently demonstrated that their effluent is extremely toxic. In some tests, wastewater diluted to only 1% of its original concentration was lethal.

Only two inspections - February and March of 1986 - are recorded for the facility. Both inspections found serious violations of the permit requirements. In addition to limit violations, the inspections found serious problems with CP Chemicals' sampling techniques and found that the lab analyzing the samples was not certified by the state. The inspection reports also noted that CP Chemicals frequently omitted discharge information from the DMRs and in some cases did not submit the reports at all. In addition, CP Chemicals was found to have serious deficiencies in managing chemicals on the plant site.

In March of 1986, CP Chemicals was referred by DEP field staff for enforcement action. However, no action was ever taken against the company.

In May of 1987, a citizen suit was filed against CP Chemicals by NJPIRG and Friends of the Earth. Following the filing of the suit, CP Chemicals continued to violate its permit with massive toxic violations. In 5 months of 1987 alone, CP Chemicals discharged 5,950 pounds of 3 toxic pollutants, or about the weight of 3 compact cars into the Woodbridge Creek. In December 1987 NJPIRG won a court injunction requiring CP Chemicals to comply with its permit.

At the present time, CP Chemicals is asking for a modification of its permit that would loosen permit limits for five pollutants by as much as 2000%.

Frenchtown Ceramics

Frenchtown Ceramics in Frenchtown Borough had 43 violations of COD, TDS, copper and nickel between November 1984 and April 1986. Over three quarters (80%) of their violations were at least 100% over permit limits. The facility, which does plating and polishing, discharges into the Delaware River. Frenchtown Ceramics did not submit any DMRs for the last six months of the study period.

A November 1987 letter from the company to DEP stated that a number of DMRs had been inadvertently withheld, and were forwarded with the letter.

The facility had three inspections during the study period. All inspections reported serious deficiencies. Each inspection report noted DMR violations and requested that the company state what actions had been taken to achieve compliance. In June of 1985 (following the first inspection), the DEP sent a notice of violation to Frenchtown Ceramics requiring the company to set a timetable for compliance. However, the file information indicates that no follow up was made by the DEP.

Frenchtown Ceramics has continued to violate its permit. DMRs submitted between December 1986 and November 1987 (last available DMR) document 34 violations for the period. Almost three quarters (70%) of these violations were at least 50% over permit limits.

Amerada Hess

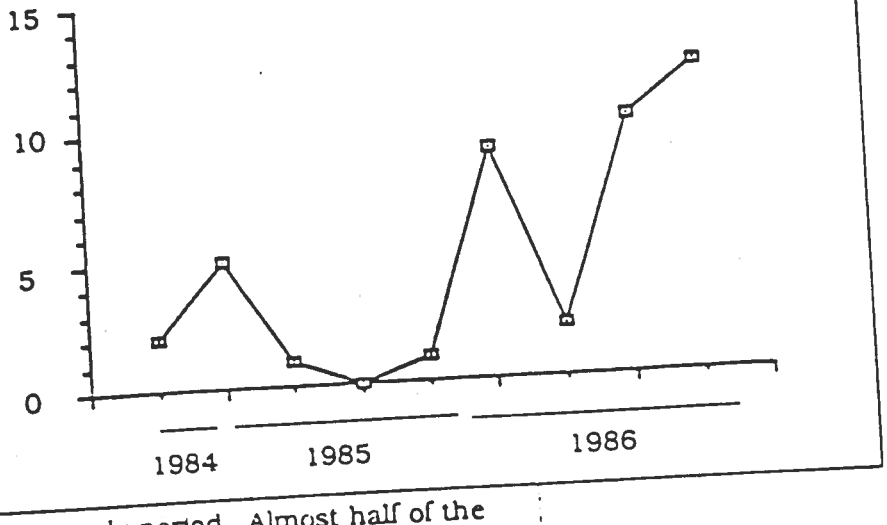
NJPIRG

The Amerada Hess oil refinery, storage and transfer facility, located in Woodbridge, discharges wastewater into the tidal waters of the Arthur Kill. The company had 48 limit violations of TSS, petroleum hydrocarbons and ammonia between October 1984 and October 1986. Almost half (43%) of the violations were at least 100% over permit limits. Hess violated its permit for 17 of the 25 months examined. Amerada Hess' permit required that the results of bioassays be reported quarterly. However, no bioassays were reported for the entire study period.

The facility received three inspections during the study period. Hess was given a rating of "acceptable" on all inspections indicating that the facility was in compliance.

Hess self-reported 24 violations between March and December of 1987. Almost three-quarters (71%) of these violations were at least 50% over permit limits. No enforcement action was taken in response to Hess' violations.

IX. Violations by CP Chemicals
(By Quarter)



Borden, Inc.

Borden's Snowfood Products Division in Cape May harvests and processes clams. The facility discharges wastewater via a ditch to the ocean. Borden had 30 violations of TSS and oil and grease during the study period. Almost half of the violations (43%) were at least 50% over permit limits.

Borden was inspected three times during the study period. On each occasion, minor to moderate deficiencies were recorded. The inspections noted that the samples for oil and grease were not being collected or preserved correctly and that the inhouse lab analyzing the samples was not certified. The inspections also noted that flow measurements for the facility were not accurate because no flow meter had been installed.

Borden's discharge permit expired in October of 1986 although the permit was extended by the DEP through October 31, 1987. A public hearing for a permit modification to loosen the limits for oil and grease and TSS was scheduled for January of 1987.

In March 1987, a letter from Borden's engineer stated that it was the company's position that the "facility's discharge does not currently nor cannot in the near future" meet the limits for TSS, oil and grease, or floating solids. Borden threatened to go out of business at the Cape May location if they did not receive a "satisfactory hearing" for relief from restrictive permit limits. In September of 1987, Borden sent another letter stating that because a permit hearing had not been scheduled, "[Borden] feels that Borden is in compliance with the currently effective permit but will not continue further compliance planning until their requests for relief are considered." Borden reported 23 violations between March and September 1987.

In October of 1987, the DEP fined Borden $25,000 for violations between February of 1986 and March of 1987 and placed the company on a compliance schedule. DEP could have assessed up to $25,000 per day per violation [20] for a maximum possible fine of $800,000 per day, or almost $300 million

20. Currently, the New Jersey Water Pollution Control Act provides for a maximum fine of $50,000 per day per violation.

dollars.

The last DMR in the files (December 1987) indicated 4 permit violations, 2 of which were 100% over permit limits.

Standard Tank Cleaning

The Standard Tank Cleaning facility in Bayonne cleans ballast and oily materials from ships in the Kill Van Kull. The facility had 64 recorded violations between August 1983 and July 1986, an average of 21 violations per year. Standard Tank Cleaning's permit expired in 1983 and the company continued to operate without a new permit until August 1986. The expired permit had required quarterly submission of DMRs. Five DMRs were submitted during the study period (October 1984-October 1986) but only one DMR was filled out.

Standard Tank Cleaning's violations included excessive discharges of zinc, phenols, iron, TSS, lead, and total organic carbon. Bioassays submitted by the facility demonstrated the high toxicity of the effluent. The only bioassay filed during the study period showed that wastewater diluted to 3% of its original concentration was lethal to test organisms.

The facility had two inspections recorded for the study period. The first inspection in April of 1985 found that Standard Tank Cleaning violated limits for 11 of the 17 pollutants in the permit. A second inspection was attempted in March of 1986. However the facility was not discharging at the time and so the facility could not be rated. No follow up inspection was scheduled.

Standard Tank Cleaning was issued a new permit in August of 1986. The new permit contained two sets of limits, very loose interim limits to be in effect for the first 18 months of the permit, and stricter limits to go into effect afterward. The first set of limits loosened Standard Tank's discharge limits up to 500 times the limits in the previous permit written in 1978. Pollutants for which limits were made less restrictive included zinc, TSS, BOD, total organic carbon, iron and phenols. The limits for Standard Tank Cleaning after the 18 month interim period set limits for three of these pollutants that were less restrictive than the 1978 permit limits.

In 1978, Standard Tank Cleaning entered into an administrative consent order with the DEP. However, the facility continued to pollute the Kill Van Kull without further sanctions. On two occasions, the DEP and the EPA requested that the facility submit missing DMRs. No records of any letters or phone calls concerning Standard Tank Cleaning's ongoing violations were in the EPA files. Attempts to check Standard Tank Cleaning's file at the DEP were unsuccessful. The file had been removed from the file room and staff had no record of who had taken the file or when it had been removed.

Standard Tank Cleaning has received two inspections since the study period. Inspections in January and June of 1987 demonstrate serious deficiencies. The inspections reported DMR violations, acute toxicity of effluent, and under-reporting on DMRs.

The last DMR in the files reported discharge levels for April 1987. The facility self-reported 4 violations of oil and grease and phenol. No enforcement action has been taken against the company.

Strathers-Dunn

Struthers-Dunn produces relays for industrial and military uses. The facility discharges heavy metals and cyanide into Mantua Creek in Pitman. The facility self-reported 19 violations between August of 1985 and October of 1986. All but one of the pollutants discharged in illegal amounts were toxic substances. Struthers-Dunn did not submit DMRs for the months between January and July of 1986.

Prior to August 1985, Struthers-Dunn was only required to submit DMRs once every six months. A modification of the permit in 1985 required monthly reporting of the majority of parameters. The facility was required to submit discharge information for lead, silver, zinc, and total toxic organics on a quarterly basis.

A performance audit conducted by the EPA in June of 1985 found no violations at the plant. Between September 1985 and October 1986, DMRs indicate that the company violated its permit at least twice a month in every month during the study period for which self-monitoring information was available. Over half (65%) of the violations were at least 50% over permit limits.

In May of 1987, a citizen suit was filed against the company by NJPIRG and Friends of the Earth. Through examination of lab analyses and other data acquired in discovery, it is apparent that Struthers-Dunn violated its permit 1127 times over the 6 year period from January 1981 through November 1987. These violations include 219 limit violations, 206 sampling violations, 658 reporting violations, and 44 instances where records were improperly kept. DEP and EPA files recorded no actions taken against the company.

Texaco Refining

The Texaco Refinery located in Bayonne discharges to the Kill Van Kull and Newark Bay. The facility self-reported 40 violations of TSS, pH, BOD and oil and grease between October 1985 and November 1986. Almost half (47%) of the violations were at least 100% over permit limits. The actual number of violations may be underestimated because the company was only required to submit DMRs quarterly.

Texaco's permit was renewed in June of 1983 and immediately contested by the company. Texaco refused to send DMRs to DEP or EPA during 1984 and most of 1985. The company stated that it was not required to send the reports until a final decision was made on the permit. The facility continued to operate during this period. Two inspections were conducted by the DEP between 1984 and the end of 1985. However, the facility was not rated either year as a result of the permit dispute. No recorded DEP or EPA actions are on file for violations during this period.

Texaco's file indicates that the facility has had no discharge since January 1987. However, a letter from DEP to the facility in October 1987 states that the facility had actually been discharging to groundwater since January. The DEP requested that Texaco apply for a groundwater permit. Texaco responded with a letter stating that the facility did not need a permit because its discharge was runoff. The DEP is currently pursuing the issue.

3.4 Summary of Data for Major Industrial Dischargers

Major industrial dischargers self-reported 1,367 reporting and discharge violations for the period between October 1984 and October 1986. Virtually all (91%) of the facilities studied reported permit violations. One third of the companies reported both chronic violations and violations exceeding permit limits by at least 50%. Over half of the self-reported violations (749) were pollutant discharge limit violations. Over half (54%) of the discharge viola-

tions were at least 50% over permit limits.

Industrial dischargers recorded 598 reporting violations including nonreporting of one parameter on DMRs, nonsubmission of complete DMRs, and omissions of acute toxicity data (bioassays).

The DEP and EPA responded to only 42 of the 1,367 violations, a 3% response rate. Half of the responses (20) were to limit violations (2.7% response rate) and half (22 responses) were to reporting violations (9%). The response rate to toxics discharge violations was 6%. On average, 6 months elapsed between the time a discharge violation was reported and DEP response. The DEP average response time to toxic violations was 287 days.

Compliance inspections were conducted annually as required, but polluters with chronic and substantial violations were no more likely, on average, to receive additional inspections than companies in compliance.

Permit limits in the majority of NJPDES permits reviewed (78%) were made more restrictive at renewal. However the remaining permits were made less restrictive for some parameters.

Limits on toxic pollutants were not widely seen in permits. Less than half of the permits contained limits for even one toxic substance. Two thirds of the companies with no limits on toxics in permits were directly involved in the manufacture or use of organic or inorganic chemicals.

4.0 Publicly Owned Treatment Works

New Jersey has permitted approximately 500 publicly owned treatment works (POTWs) to discharge to surface waters of the state. POTWs with average daily flows exceeding 100,000 gallons per day are generally classified as major municipal facilities. NJPDES discharge files for major municipal facilities are maintained at DEP and EPA Region II offices.

To date, the DEP has designated 22 POTWs in the state as facilities which are required to operate industrial pretreatment programs (See Section 5.0, Industrial Pretreatment Programs). The criteria used to designate POTWs that must develop pretreatment programs include high flow (approximately 5 million gallons per day) and/or significant industrial contribution to the wastestream. All industrial pretreatment programs must be approved by the DEP.

4.1 Methodology

A list of the 22 POTWs with approved industrial pretreatment programs in New Jersey was obtained from the DEP. The NJPDES permit file information including the discharge monitoring reports, correspondence and permits were reviewed at EPA Region II for the period October 1984-October 1986. The methodology described in Section 3.1 was used to determine number of violations, toxicity, government response rate and enforcement actions.

Additional file information was collected for three POTWs profiled in case studies. The files for these facilities were reexamined in February of 1988 and additional violations, inspections and governmental actions were recorded for the period November 1986 through the most recent data in the files.

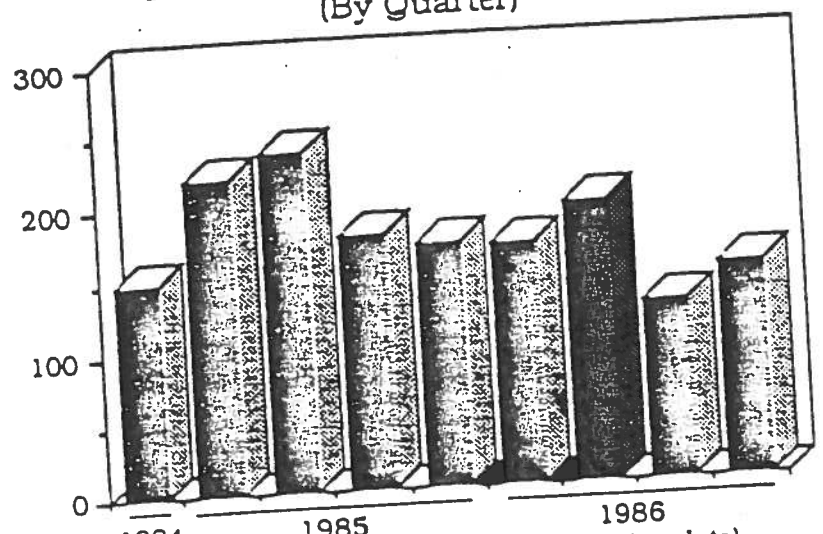
4.2 Findings

4.2.1 Violations of POTW Discharge Permits

Review of DMRs document 1,642 reporting and limit violations of the 22 POTWs' NJPDES permits in the two year period. All POTWs violated permit requirements. Over half (53%) of the limit violations were at least 40% over permit limits. The average monthly limit violation per POTW ranged from 8% to 27,708% over permit limits, with 91% of POTWs ranging between 8% and 400%.

The lowest average percent over limits was 8% at the Ewing-Lawrence Sewerage Authority plant, and the highest average limit violation was 27,708% at the Stony Brook Regional Sewerage Authority's River Road plant. The Stony Brook's River Road Plant was also responsible for the most severe violation, a discharge of fecal coliform in May of 1985 which was 1,119,900 (over 1.1 million) percent over permit limits.

X. Permit Violations by POTWs
(By Quarter)



(4th Quarter 1986 extrapolated from Oct. data)

Virtually all of the identified violations were for conventional pollutants including total suspended solids (TSS) and biological oxygen demand (BOD) limits, fecal coliform, and chlorine. The study found only 7 toxics violations (see section below).

Over three quarters (80%) of the POTWs surveyed were chronic violators. Almost two thirds (63%) of the facilities in chronic violation reported discharge violations of at least 50% over permit limits. The facility with the highest number of violations during the study period was the Hanover Sewerage Authority plant, with 358 violations in 25 months, an average of 14.3 violations per month. Each POTW studied had on average 34 violations per year. Over 90% (91.8%) were pollutant limit violations and the remaining 8.2% were reporting violations. No POTW was completely without violations during the 2 year period of the study, although one POTW had only reporting violations and no limit violations (Two Bridges Sewerage Authority).

4.2.2 Toxic Limits in POTW Discharge Permits

A review of NJPDES permits for POTWs with industrial pretreatment programs revealed that only one of the 22 POTWs has limits on any toxic pollutants - for only one parameter. Three POTWs require monitoring of a broad range of priority pollutants on a quarterly or semiannual basis. A fourth permit requires monitoring for two heavy metals.[21]

4.2.3 DEP Response to Violations

DEP responded to 53 of the 1642 limit and reporting violations, a response rate of 3.2%. Of the 1492 limit violations, only 12 (0.8%) received responses. On average, 3 months (98 days) elapsed between the submission of a DMR with violations and governmental response.

The DEP responded to half (50%) of the 11 instances where DMRs were not submitted. There were no actions taken in the 60 instances where DMR data for one or more discharge parameter were missing. No enforcement actions

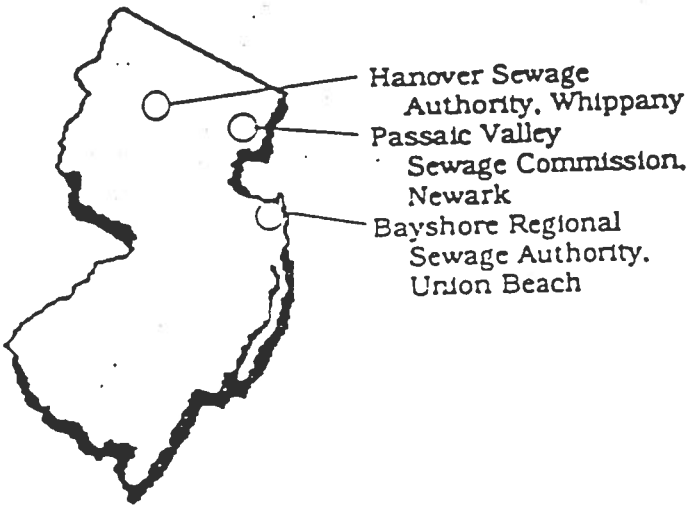
21. City of Trenton Sewer Utility has limits in its permit for the discharge of zinc, and the nontoxic metal iron. Passaic Valley Sewerage Commissioners, Somerset Raritan Valley Sewerage Authority and Middlesex County Utilities Authority are required to monitor for priority heavy metals and organics. Hanover Sewerage Authority is required to monitor for cadmium and cyanic

were taken when two related parameters were repeatedly omitted on DMRs (Passaic Valley SA). Similarly, there were no enforcement responses to the 53 instances of missing or delinquent bioassays.

4.3 POTW Case Studies

The three POTWs profiled in the case studies document a number of serious roadblocks to effective enforcement of municipal NJPDES permits. Significant numbers of reporting and discharge limit violations were allowed to continue with virtually no enforcement action. Both Hanover Sewerage Authority and Bayshore Regional Sewerage Authority reported over one hundred discharge limit violations for the three year period. Files for the two facilities show only one letter during the three year period addressing discharge violations. Passaic Valley Sewage Authority was allowed to omit data for two permit parameters for nine months between October 1984 and October 1986. No action was taken by the DEP. Some inspection reports also ignored serious problems and gave acceptable ratings to facilities not in compliance with permit requirements.

XI. Location of POTW Case Studies



Passaic Valley Sewage Commission

The Passaic Valley Sewage Commission (PVSC) is the largest sewage treatment plant in New Jersey. PVSC, located in Newark, discharges approximately 214 million gallons of wastewater per day to the upper New York Bay and Newark Bay. Sludge from the facility is currently disposed of by ocean dumping.

The NJPDES permit for PVSC was renewed in October of 1986. The permit does not place limits on the discharge of any toxic substances from the treatment facility. PVSC is required to monitor 4 times a year for EPA priority pollutants.

Passaic Valley self-reported 34 violations of its NJPDES permit between October 1984 and 1986. Nearly two thirds (64%) of the violations were for nonsubmission of chlorine and fecal coliform data. PVSC did not report the amounts of chlorine and fecal coliform discharged for 9 of the 25 months in the study. No enforcement actions were recorded in the files for effluent violations or nonsubmission of DMR information.

PVSC reported 41 violations of oil and grease, pH, chlorine, TSS, and BOD between November 1986 and October of 1987 (last available month's data). An inspection in April of 1987 noted serious effluent violations and rated the facility unacceptable.

PVSC has 360 industrial users of which 158 dischargers are subject to federal categorical standards for industries with highly toxic effluents.

PVSC reported influent levels of 7 metals discharged into the treatment facility in its 1986 annual pretreatment report, documenting that priority pollutants are entering the facility. The monitored toxics were cadmium, chromium, copper, lead, mercury, nickel and zinc. The amounts of these metals present in the effluent were not reported or required in the pretreat-

ment annual report. No mass-balance analysis was reported that determined the amounts of metals or organic pollutants recovered in the sludge or air or discharged to coastal waters. For the period August 1985-July 1986 PVSC reported that 146 companies discharged pollutants in illegal amounts into the treatment facility.

In June of 1987, the DEP entered into an Administrative Consent Order with PVSC for 2 spills into Newark Bay. PVSC spilled approximately 10,000 gallons of thickened sludge into a stormwater catch basin in February of 1986. In June of 1986, 48,000 gallons of treated sludge was discharged into Newark Bay during loading onto a sludge barge. The DEP fined PVSC a total of $5,000 for the two spills.

Hanover Sewage Authority

Hanover Sewage Authority is located in Whippany . The facility discharges 2 million gallons per day of wastewater into the Whippany River. Industrial dischargers are responsible for approximately one quarter (20-25%) of Hanover's total flow. Hanover self-reported 357 limit violations of Biological Oxygen Demand, Ammonia, Total Suspended Solids, Chlorine, Dissolved Oxygen and Chemical Oxygen Demand during the study period.

Hanover Sewage Authority operated under an expired permit from 1982 until December of 1985 when the POTW's permit was renewed. The new permit does not include any limits for toxic substances. The facility is required to monitor the amounts of cadmium and cyanide discharged in the facility's wastewater.

Hanover Sewage Authority was inspected twice during the study period. A November 1984 inspection gave the facility a rating of "acceptable". An inspection the following year, in December of 1985, found minor to moderate deficiencies and the facility was rated as "conditionally acceptable". No enforcement actions in response to Hanover's numerous violations are on record.

Hanover recorded 17 violations of permit limits between January and December of 1987 (last available DMR). The majority of the violations were for minimum dissolved oxygen levels and BOD.

A notice of intent to file a citizen suit was issued in December 1, 1987.

Bayshore Regional Sewage Authority

Bayshore Regional Sewage Authority (BRSA) discharges millions of gallons of treated wastewater to the Atlantic Ocean daily. The facility, located in Union Beach, reported 118 violations of BOD, TSS, chlorine, dissolved oxygen, and oil and grease during the study period.

BRSA's permit contains no limits for toxic pollutants. The facility is required to submit the results of bioassays on a quarterly basis. Only two bioassays were submitted. Both demonstrated the effluent to be more toxic than allowed by state regulations.

The DEP sent four letters to BRSA during the two year period - three letters for nonsubmission of required DMR information, and one letter sent in response to limit violations. A sewer ban was placed on the community between March and September of 1986. In the three months following the lifting of the ban, BRSA reported 23 violations. Almost half (43%) of these violations were at least 50% over permit limits.

BRSA received an unacceptable rating after a September 1987 inspection by

DEP. The inspection noted that the effluent flow meter was inaccurate (flow readings have been unavailable since 1985), fecal coliform counts were three to four times higher than allowed, and that numerous other limit violations had been self-reported.

No record of any enforcement action since September 1986 was noted in the files.

4.4. Summary of POTW Discharge Permit Data (NJPDES)

The 22 largest POTWs in New Jersey self-reported 1,642 discharge and reporting violations for the study period. All of the POTWs reported violations. Over three quarters (80%) of the POTWs were chronic violators. Almost two thirds (63%) of the facilities in chronic violation self-reported discharge violations at least 50% over permit limits.

Over half of the discharge violations were at least 40% over permit limits. The maximum violation reported during the period was a violation of fecal coliform 1,119,900 (over 1.1 million) at the Stony Brook Regional Sewerage Authority's River Road Plant in May of 1985.

The DEP responded to only 53 of the 1,642 violations, a response rate of 3.2%. Of the 1,492 discharge limit violations, only 12 received any response (0.8% response rate). On average, 3 months time elapsed between the submission of a DMR with discharge violations and governmental response.

The permit for only one of the 22 POTWs contained any limits on the discharge of toxic substances from the facility. Four other POTWs are required to monitor for EPA priority pollutants.

5.0 Industrial Discharges to POTWs - Industrial Pretreatment Programs

The 1977 amendments to the Clean Water Act expanded the regulation of toxic pollutants discharged by industrial facilities into POTWs. The National Pretreatment Program was established by EPA in 1981 to administer the program. The purpose of the program was to safeguard the functioning of municipal treatment works and receiving streams by requiring indirect industrial users to pretreat waste prior to discharge to POTWs.

New Jersey was delegated responsibility for its industrial pretreatment program in 1982. Under the program, the state may delegate responsibility for writing permits, monitoring compliance and enforcement to individual POTWs. POTWs with flows greater than five million gallons per day or who receive nondomestic wastes that cause the POTW to violate its NJPDES permit, cause plant upsets, or contaminate sludge with toxic pollutants are required to develop pretreatment programs.

The first program was delegated by the state to a POTW in May of 1983. The most recent program was delegated in December of 1985. In all, twenty two New Jersey POTWs with large volumes of waste from industrial contributors have been delegated responsibility to administer industrial pretreatment programs[22], with DEP oversight.

POTWs use general standards, local limits, and categorical limits to write permits for industrial contributors. General standards include limits for any parameter that interferes with the general operation of the POTW (e.g., pH). Local limits are based on sewer use ordinances that may include limits for the discharge of any pollutants designated by the municipality. Categorical standards refer to 21 specific categories of industries with discharge

22. 2 of the 22 POTWs have 2 facilities each resulting in a total of 24 industrial pretreatment programs.

limits set by the EPA.

Categorical dischargers include those industries determined by EPA to have extremely toxic discharges. The categorical standards set uniform, industry-wide discharge limits for each toxic pollutant used by that category of industry. The limits function as a standardized discharge permit for all members of an industrial category, applying to a discharger in that category even if the industrial pretreatment permit has lapsed or has not been written.

EPA has been slow to set standards for categorical industries but at present 21 of the approximately 28 industrial categories have promulgated limits. Of these, only two categories, electroplaters and metal finishers, have limits set in milligrams per liter (mg/l). Other categories have production based limits that require computations based on flow to determine applicable limits. Perhaps for this reason, the only categoricals. [23]

All POTWs with designated industrial pretreatment programs are required to submit annual reports to the pretreatment division at DEP. The reports record the total number of industrial users, number and type of categorical dischargers, as well as violation and enforcement data. Influent monitoring data for priority metals and organics is required on an annual basis.

The DEP Pretreatment Division conducts yearly on-site audits of POTWs administering pretreatment programs. The purpose of the audits is to monitor the implementation and effectiveness of the programs. The audit evaluates the degree to which the POTW is meeting the overall requirements of the pretreatment program, staffing and program resources needs, quality of permits, legal authority to enforce permits, effectiveness of monitoring and enforcement, management and accessibility of data and records.

5.1 Methodology

Annual Reports submitted by POTWs with pretreatment programs and DEP annual audits of pretreatment facilities were examined at the DEP Pretreatment division in Trenton, NJ. Annual pretreatment reports for 1986 submitted by POTWs to the DEP were examined to determine the number of categorical dischargers, number of recorded violations at each facility, and enforcement actions taken by POTWs.

DEP Annual On-site Audits were reviewed for 1986-1987 to assess compliance with pretreatment program requirements. These were the most recent audit reports in the pretreatment files in February of 1988.

Permit files for industrial users were reviewed at six of the 22 POTWs with pretreatment programs in the summer of 1987.[24] Data was gathered on pollutant limit violations for two categories of dischargers regulated under federal pretreatment standards (electroplaters and metal finishers). Enforcement actions by the POTWs against indirect dischargers were recorded.

5.2 Findings

5.2.1 Industrial Users

The total number of industrial users at the 22 POTWs was 1,635. The number of dischargers at individual POTWs ranging from 5 (Township of Morris) to 375 (Passaic Valley Sewage Authority). The number of categorical dischargers ranged from 0 to 158.

All 21 categories of industrial dischargers with federally set standards were represented. The most common categories were: electroplaters with 121 individual dischargers, metal finishers with 117 dischargers, pharmaceuti-

23. Categorical standards apply to direct and indirect dischargers. The vast majority of electroplaters and metal finishers are indirect dischargers and so application of categorical limits has focused on industrial pretreatment programs.

24. Bergen County Sewerage Authority, Middlesex County Utilities Authority, Rahway Valley Sewerage Authority, Joint Meeting of Essex and Union Counties, Camden County Municipal Utilities Authority and Linden-Roselle Sewerage Authority.

cals with 62, and textile mills with 46 dischargers. Three quarters (75%) of the POTWs had fewer than 20 categorical dischargers each.

5.2.2 Violations by Industrial Users

In annual reports covering 1986, the 22 POTWs studied cited 911 pretreatment permit violations and 90 spills and emergency discharges by industry. Gloucester County Utilities Authority reported the death of a plant worker who died from toxic fumes. The source of the discharge has never been identified.

5.2.3 POTW Response to Violations

POTW pretreatment staffs monitor compliance by industrial users through independent sampling and inspections. POTWs can respond to industrial violations, either self-reported or identified through sampling by the POTW, with a wide range of enforcement actions. Actions available to POTWs include: verbal and written warnings, compliance schedules, consent decrees, criminal prosecution, fines, and termination of service. Some POTWs have limited enforcement options, although all have the authority to issue verbal and written warnings and to terminate service. The majority have the authority to use all of the actions listed above.

The maximum allowable fines for industrial users violating pretreatment limits ranges widely among POTWs. Only three POTWs reported maximum penalties exceeding $1,000 daily. Over one quarter (28%) have no authority to fine. Only three penalties were assessed by all 22 POTWs in 1986.

According to audit reports, the 22 POTWs issued approximately 653 written letters and notices of violation to violating industrial users for a one year period. Audit reports recorded 23 actions beyond warning letters. Half (50%) of these actions were schedules of compliance. Two POTWs reported terminating service to one violating industry each. Two fines were levied against violating companies. One POTW reported an unsuccessful attempt to terminate service and fine a company.

5.2.4 POTW Influent and Effluent Monitoring

The 22 POTWs fall into three groups based on the percentage of the flow into the plant attributable to industrial sources. One third of the POTWs (7) reported industrial flows of less than 5% of the total influent, one third (8) had industrial flows between 5 and 10% and in one third (7), the industrial contribution was greater than 10% of the total flow (high industrial flow)[See Appendix].

Some POTWs monitor influent and effluent levels of priority metals and organics beyond the requirements under either the NJPDES or pretreatment programs. POTWs with high industrial flows generally monitored both influent and effluent levels of priority pollutants more frequently than did smaller POTWs. Monitoring of heavy metals was generally more frequent than monitoring of toxic organic substances.

One third (32%) of the POTWs did not monitor effluent for priority metals at all and almost half (45%) of the POTWs did not monitor effluent for priority organic compounds.

Two of the POTWs with the largest industrial flows, Rahway Valley Sewerage Authority and Hanover Sewerage Authority, did not monitor for toxic organic pollutants in their wastewater. Camden County Municipal Utilities Authority, also in the high industrial flow category, did not test its effluent for heavy metals. Only three (Passaic Valley, Rahway Valley and Linden-

Roselle) POTWs with high industrial flow monitored effluent monthly for heavy metals. None of the 7 POTWs with high industrial flow monitored monthly for organics in their effluent.

Overall, Middlesex County Sewerage Authority demonstrated the most comprehensive monitoring program. Influent and effluent from the facility are tested every two months for all priority organics and heavy metals.

5.2.5 DEP Assessment of Pretreatment Programs

The DEP conducts annual on-site assessments of pretreatment programs. One quarter (27%) of the pretreatment programs received acceptable ratings. Half (50%) of the programs had substantial problems in 3 or more of the areas assessed [25] and were rated conditionally acceptable. The pretreatment programs at the four remaining POTWs were rated unacceptable. These four POTWs were referred by the pretreatment division to the DEP for initiation of enforcement actions.

The pretreatment program at the Joint Meeting of Essex and Union POTW received the highest audit rating. Joint Meeting has 95 industrial users, of which almost half (48%) are categorical users. The audit summary found Joint Meeting to have "one of the best industrial pretreatment programs in New Jersey."

The four programs considered unacceptable were Bergen County Utilities Authority (BCUA), City of Trenton (Trenton), Rockaway Valley Regional Sewerage Authority (RVRSA) and Northwest Bergen County Utilities Authority (NWBCUA). Two of the programs, RVRSA and NWBCUA had no permits in effect for industrial users and the four facilities had taken little or no enforcement action against identified polluting industries.

The audits identified a number of problems common to pretreatment programs. Eight of the programs had issued no permits and two more had significant backlogs of permits to be issued. Half (12) of the programs had problems implementing categorical standards. Almost half (10) of the programs showed deficiencies in monitoring procedures or reporting. Half (13) of the programs were cited for poor enforcement of limits (categorical limits are in effect with or without permits).

5.2.6 Review of Industrial Pretreatment Files

Files for electroplaters and metal finishers were reviewed at 6 of the POTWs with pretreatment programs in June and July of 1987. In all, files for 82 categorical dischargers were reviewed. Violations hundreds of times above permit limits were recorded from the pretreatment files. Of the companies with adequate monitoring data, (10 companies had not submitted preliminary monitoring data), one quarter (27%) were operating significantly out of compliance. Two third (65%) of the violators had flows under 10,000 gallons per day.

Pretreatment staff at all 6 POTWs voiced concerns about violations by industrial users. However, few actions beyond telephone calls and notices of violation were noted in the files. Actions by the POTWs for permit violations were consistent with Pretreatment Audit findings. The following are accounts of three instances where pretreatment staffs did attempt to take significant enforcement action against chronic industrial users with varying levels of success.

An industrial user at Bergen County Sewage Treatment Plant was discharging levels of total metals averaging 3,130% over permit limits. Four of the metals discharged by the electroplater: chromium, nickel, cyanide and lead

25. Pretreatment requirements, staffing and program resources, quality of permits, legal authority, monitoring, enforcement and data management and public accessibility.

are classified by EPA as significant threats to human health. The pretreatment staff had not been able to bring the company into compliance and had written memos to the Board of Commissioners requesting that legal action be taken. The Utility's Board of Commissioners decided to take action against the company only for cyanide violations, because if the imminent hazards posed by the discharges, but declined to take enforcement action to prevent the more long-term threats posed by heavy metal discharges. A citizen suit has been brought against the company by NJPIRG.

The pretreatment staff at Joint-Meeting Sewerage Authority received approval to disconnect the industrial hook-up to one metal finishing facility after that company had been in significant violation for over two years. However, the POTW was not given authority to disconnect the sanitary sewer hook-up and so the company remained open. The company is now continuing to contaminate water with heavy metals but instead of discharging this water to the POTW, it is storing the material in barrels behind the plant. A citizen suit has been filed against the company for violations of EPA categorical discharge standards by NJPIRG.

The permit for a metal finisher at Rahway Sewerage Authority was suspended after the company chronically violated categorical standards. The facility had installed pretreatment equipment but violations had continued. After suspension of the permit the company's president took personal responsibility for redesigning the company's discharge systems. After the company came into consistent compliance the permit was reactivated.

5.3 Summary of Industrial Pretreatment Programs

A total of 1,635 industrial facilities discharge into the 22 New Jersey POTWs, ranging from 5 to 375 per plant. 911 discharge violations and 90 spills and emergency discharges were recorded by industrial users.

DEP pretreatment audits indicate substantial problems in implementing pretreatment programs in one half to three quarters of the programs. Difficulties in identification of categorical users and implementation of federal categorical standards were cited in audits for half of the programs.

Review of files of 82 categorical dischargers at six POTWs indicate that little action beyond telephone calls and warning letters was taken against violating industrial users. Half of the programs were cited for poor or nonexistent enforcement against polluters. One quarter of POTWs have no ability to levy fines for violations.

6.0 Citizen Action

The Clean Water Act ("the Act") contains explicit language defining citizen rights to participate under the Act. Section 1-1 (e) states:

> "Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan or program established by the Administrator [of the Environmental Protection Agency] or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States."

Citizen's organizations, environmental groups, and individual citizens of New Jersey have made full use of the citizen participation provisions included in the Act and in regulations promulgated under it. However, New Jersey citizens face several roadblocks which limit citizen action for clean water. These include:

26.40 CFR 105

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Permit Review

EPA and state agencies administering the Act are obligated to develop procedures designed to offer meaningful citizen involvement in decision-making. Federal regulations specifically note that, "Conferring with the public after a final agency decision has been made will not meet the requirements of [these regulations]."[26]

Yet New Jersey citizens have faced instances of administrative action by DEP which seem designed to limit citizen involvement in decision-making. A recent case has been the permit review process followed for the Ciba-Geigy Corporation, now in court.

Plaintiffs[27] charge that DEP acted to issue a revised discharge permit for the Ciba-Geigy chemical plant in Toms River and denied requests by plaintiffs for an adjudicatory hearing. The Plaintiff's brief states:

"Despite the Clean Water Act's unique emphasis on ubiquitous, vigilant public participation in the process by which toxic discharges into America's waterways may occur, in this case material terms and conditions of Ciba's permit were not open to public scrutiny. DEP has never even attempted to articulate a basis in the record for material terms of the final Ciba brief. Appellants have been denied their dual statutory rights to scrutinize the justification for the final permit—through timely notice and comment, and, where material issues of fact persist, by means of formal administrative adjudication."[28]

Although data is not available on the number of adjudicatory hearings requested, held or denied, it is worth noting that DEP appears to have acted in violation of the citizen participation sections of the Act in reviewing and setting permit limits for the single industrial discharger into New Jersey ocean waters.

Citizen Suits

Section 505 of the Act gives citizens standing to file suit in federal court against EPA or state agencies for non-implementation of the Act and against dischargers for violations of permit limits. In the first ten years following passage of the Act, these provisions were used principally to force compliance with the Act by EPA and state agencies.[29] In more recent years, however, citizens have increasingly utilized the citizen suit provisions against permit dischargers for reporting and discharge violations.

Congress specifically noted the value of the citizen suit provisions during 1987 reauthorization of the Act. The Senate committee report on the 1987 amendments stated:

"Citizen suits are a proven enforcement tool. They operate as Congress intended—to both spur and [as a] supplement to government enforcement action. They have deterred violators and achieved significant compliance

XII. Chart of NJPIRG Clean Water Litigation

1. American Cyanamid(SJ)
2. Anchor Thread Co.(S, $25,000)
3. AT&T, Bell Labs (S, $75,000)
4. Arrow Industries(S, $50,000)
5. Fritzche, Dodge & Olcott(S)
6. Georgia-Pacific(S, $160,000)
7. Hercules, Inc.(SJ)
8. James River Corp.(S,$8,000)
9. JCP&L(S,$150,000)
10. Monsanto Co.(SJ)
11. National Starch(S,$75,000)
12. P.D. Oil, Inc.(SJ)
13. PSE&G(S,$71,800)
14. Ragen(S,$500,000)*
15. Rollins Env. Services
16. Southland Corp.(S,$ N/A)
17. Sybron Corp.(S,$ N/A)
18. Tenneco Polymers(S,$255,000)
19. U.S. Metals(SJ)
20. Struthers-Dunn
21. CP Chemicals
22. Carter-Wallace
23. Specialty Chemicals, Inc.
24. AMSPEC, Inc.
25. Art-Metal, USA
26. Edmar Creations(S,$2,500)
27. Ferro Merchandising(SJ)
28. Fresco Silver
29. PNC Inc.(S,$62,500)
30. Westwood Lighting, Inc.
31. Midak Industries
32. Suffern Plating Co.
33. Top Notch Metal Co.

Key: (SJ) - Summary judgement on liability.
(S) - Settlement on merits.
($) - Amount of settlement.
* - Reduced to $100,000

27. Borough of Lavelette, Borough of Seaside Park, Ocean County Citizens for Clean Water, Senator John F. Russo, Assemblyman John Paul Doyle, former Asemblywoman Marlene Lynch Ford, William Skowronski, Stephanie Wauter, Steven Molello, Christina Milick, G. Standford Reymond, Nancy McGreevy, Frank Massers.

28. Borough of Lavellete al. v. DEP

29. Water Law, William Goldfarb, Butterworth Publishers, 1984, pg. 18

gains."

Although no complete record is available, it appears that more clean water citizen suits have been filed in New Jersey than in any other state. Furthermore, it seems certain that more citizen suits have been filed by New Jersey citizens than by state and federal agencies combined.

Most of these suits have been brought by NJPIRG along with Friends of the Earth (see chart). Since 1983, NJPIRG has brought 33 suits under the Act. winning judgements on liability in 23, and achieving settlements in 15 cases. The suits have won agreements from industries on clean-up schedules, many with stipulated penalties for future violations. In four suits, injunctions have been issued prohibiting limit violations. NJPIRG has won a total of $1,124,500 in settlements for violations. $477,000 of the settlement money went to the U.S. Treasury and $647,500 went to support environmental projects in New Jersey.

Gwaltney v. Chesapeake Bay Foundation

A recent Supreme Court decision in the case of Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation has potentially serious impacts on the continued effective use of the CWA citizen suit provisions. The case holds that citizen plaintiffs cannot sue for penalties if it is clear that the company has come into compliance before the complaint is filed even though the company may have committed hundreds of violations over a period of many years. Motions to dismiss made by New Jersey companies with citizen suits pending indicate that the Court's decision may have seriously weakened the deterrent effect of the penalty provisions of the Act.

The Act requires that citizen plaintiffs send a notice of intent to sue to the polluter at least 60 days before the suit is filed. A polluter, under the Court's ruling, can prepare to bring itself into compliance but avoid these costs until it receives a notice letter. For example, a polluter could carry out engineering studies or enter into an agreement with a municipal wastewater treatment plant to accept the company's discharges. However, the company could delay installing the equipment or tying into the wastewater treatment plant to avoid the costs involved. Then, when the company received a notice letter from citizen plaintiffs, it could take the actions necessary to achieve compliance within the 60 day-notice period. As a result, the important deterrent effect from the threat of substantial penalties if companies do not meet the statutory deadlines for permit compliance will be seriously undermined.

There are indications that the Gwaltney decision will result in extensive litigation in clean water cases pending in New Jersey. Defendants will argue that the cases against them must be dismissed as long as they bring themselves into permit compliance at any time before final judgement even though compliance occurs long after the suit was brought. If this argument is accepted by the courts, the explicit intention of Congress in Section 505 of the Act, to allow citizen plaintiffs to obtain penalties as relief for permit violations, will be destroyed. Defendants can almost invariably bring themselves into compliance in the years which necessarily elapse from the time the complaint is filed until trial and final judgement. Even if this argument of the defendants is ultimately rejected by the courts, the time-consuming litigation over this issue will seriously interfere with the effectiveness of citizen suits for several years until the issue is definitively resolved.

Citizen Access to Information

Citizens' access to information is a necessary first step for meaningful citizen participation in water quality programs and is a requirement under

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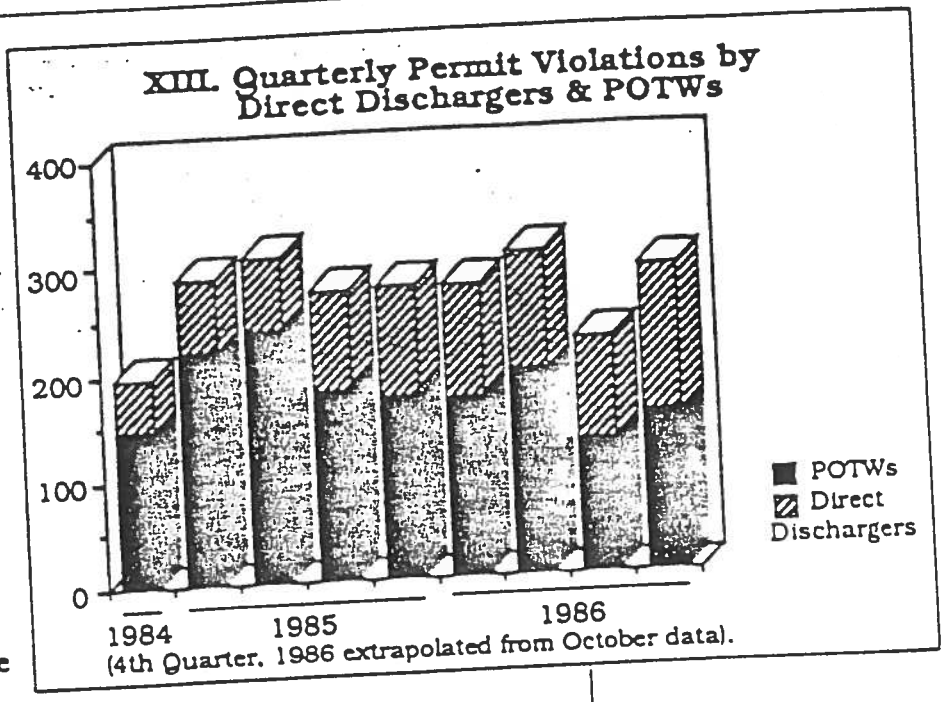
federal law (Title 40, Part 105.3):

"Each agency shall provide, either directly or through others, in an appropriate location or locations, one or more central public collections or depositories of water quality reports and data pertinent to the geographical area concerned. Examples of the materials available for public reference could include grant and permit applications, permits, effluent discharge information, compliance schedule reports, and materials specified in section 308 (b) of the Act."

NJPIRG found the DEP unresponsive to requests for information on permitted dischargers in the state as well as to requests for permit file review.



NJPIRG sent a letter in December of 1986 to the DEP Bureau of Permits Administration requesting a printout of all major industrial dischargers in the state. The request was followed up with phone calls in January, February and March of 1987. The information was never sent to NJPIRG.

NJPIRG initially requested access to files at the DEP file room in Trenton, New Jersey in December of 1986. At that time the file room was closed due to construction. The file room reopened in February of 1987. Between January of 1987 and May of 1987, NJPIRG made 4 written requests and several requests by telephone to review files. NJPIRG researchers were not granted access to the DEP files until May of 1987.

DEP files are organized alphabetically rather than by NJPDES permit number. Whole files and parts of files are misplaced due to confusion over facilities with two or more locations. The DEP appears to have no system for tracking files. It was not possible to determine whether missing file information or in some cases, entire files, had been misfiled, taken out of the room for review, or simply lost.

The DEP has no summary information for the NJPDES program available to citizens. Not only was NJPIRG not able to find out from the DEP who the major industrial dischargers in the state were, but no information on violations or actions taken against polluters was available.

7.0 Summary of Data

NJPIRG's study examined half of the major industrial dischargers and the 22 largest POTWs in the state which handle industrial discharges. Major industrial dischargers and POTWs with pretreatment programs represent the most closely monitored dischargers in the state. These facilities receive scrutiny from the DEP NJPDES program and oversight by EPA Region II. The POTWs receive additional monitoring by the DEP Pretreatment Division.

Assuming a uniform rate of violations, major industrial dischargers had a total of 2734 violations during the study period,[30] indirect industrial dischargers had a total of 1822 violations,[31] and the 22 largest POTWs had 1642 violations for a total of 6198 violations during the two year period. While it is impossible to estimate the number of violations by the 900+ minor

30. 1367 (number of violations by half major industrial dischargers) times 2 = 2734

31. 911 times 2 (years) = 1822

direct industrial dischargers, the 4000+ indirect industrial dischargers, and the additional 480 POTWs in New Jersey, it should be assumed that discharge violations from these sources are numerous and serious.

The number of violations did not decline over the study period, as would have been expected under an effective enforcement program. Nor did response rates increase [See chart].

The DEP and EPA made a total of 92 responses, and imposed only 2 fines, in response to 3009 limit and reporting violations by industrial dischargers and POTWs.

8.0 Conclusion

The overall picture which emerges from this study is of a status quo reporting system which meets the most minimal requirements of the Clean Water Act without seriously inconveniencing polluters. The Clean Water Act provided government with lofty goals but it also handed administrative agencies powerful tools with which they might be achieved. Yet there is little evidence to indicate that either DEP or EPA take the mandate to achieve clean water seriously, and both appear to have let the enforcement machinery of the Act lie idle. Government inaction of this magnitude is a violation of both state and federal law.

Nor should the role of individual companies and industries in undermining clean water laws be diminished. This study only examined major direct dischargers, which tend to be owned by the largest, most economically sound companies. With few exceptions, the plant modifications and routine maintenance necessary to meet permit limits are well within the budgetary reach of the industries involved. Failure to make the expenditures is based on a (accurate) reliance on government inaction, and cost-effectiveness calculations which evaluate permit violations as less expensive than meeting environmental quality standards. Indeed, those companies, few in number, which have conscientiously sought to meet the requirements of the law, have been placed at an economic disadvantage for their trouble.

In virtually every area of study, NJPIRG found a pattern of corporate and municipal violation of the NJPDES system, coupled with government action which can, at best, be described as lethargic. NJPIRG concludes:

There are widespread permit violations by major industrial dischargers and POTWs in New Jersey.

Virtually all industrial dischargers (91%) and all POTWs examined in the study were found to violate their NJPDES permit during the study period. Over one third (39%) of industrial and almost two thirds (63%) of the municipal dischargers were chronic and significant violators.

Under-reporting of pollutant discharges appears routine. Over 700 industry and POTW nonreporting violations were recorded for the study period. This included 336 instances of omission of one or more parameters on a DMR, 129 instances where bioassays were not submitted, and 268 occasions where entire DMRs were missing.

One third of the major industrial dischargers examined were not required to submit DMRs on a monthly basis. Consequently, discharge information for many facilities is not current. Additionally, discharge violations are easier to mask with less frequent reporting.

32. "Whenever on the basis of any information available to him the Administrator finds than any person is in violation... of any permit condition or limitation.. under Section 1342[NPDES]... he shall issue an order requiring such person to comply with such section or requirement, or he shall bring civil action." 33 USC 1319(A)(3).

33. "Whenever, on the basis of any information available to him, the commissioner finds that any person is in violation of any provision of this act, or any rule, regulation,

DEP and EPA responses to permit violations are minimal.

For all intents and purposes, DEP and EPA enforcement of NJPDES permit requirements is nonexistent. The DEP and EPA combined responded to only 3.1% of recorded violations, violating provisions of the federal Clean Water Act[32] and the New Jersey Water Pollution Control Act.[33] The combined response to limit violations was even worse: only 1.3% of all violations received even a telephone call . The overall "effective rate of enforcement", based on the number of permittees achieving compliance, was less than 1%. Records indicate that only two fines were levied in response to the over 3,000 violations documented in this study.

The overall response rate to DMR data or bioassays by DEP and EPA was 6.3%. No responses were recorded for submission of incomplete DMRs or omission of bioassay results.

The annual inspections conducted by the DEP are superficial and rely heavily on self-reported discharge information previously submitted by the permittee. No independent sampling or analyses are performed by the DEP to verify DMR data. Chronic violators were, on average, no more likely to receive additional inspections than companies in less serious violation.

The NJPDES program is ineffective in limiting the amount of toxic substances entering New Jersey waterways.

Permits for industrial dischargers may seriously understate the amount of toxics discharged into waterways. Permits for over half (59%) of the industrial dischargers in the study contained no discharge limits for any toxic pollutant. Two thirds of the companies with no discharge limits on toxics were directly involved in the manufacture or use of organic and inorganic chemicals.

The NJPDES permit of only one of the 22 New Jersey POTWs which accept toxic influent from categorical dischargers contained limits for toxic pollutants. Some POTWs monitored influent and effluent levels of some or all priority pollutants . However, one third (32%) of the 22 POTWs reported no monitoring of effluents for priority metals and almost one half (45%) did not monitor effluent for priority organic chemicals.

Without permit limits and testing requirements for industrial and POTW discharges, the NJPDES program cannot act as a efficient mechanism to reduce the discharge of toxics into New Jersey waterways.

The New Jersey industrial pretreatment program is not working.

POTWs are unprepared to take even elementary action to limit discharges by indirects. Permitting programs at many of the POTWs are still being implemented. DEP pretreatment audits indicate substantial problems in implementing pretreatment programs in one half to three quarters of the programs. Difficulties in identification of categorical users and implementation of federal categorical standards was cited in audits for half of the programs. Half of the programs were cited for poor or nonexistent enforcement against polluters, with one quarter lacking the power to fine violators.

Citizen enforcement under the Clean Water Act in New Jersey is effective, but faces several roadblocks.

Environmental organizations, community groups and some municipalities have used citizen suit provisions of federal law to prompt DEP enforcement action and to directly seek abatement of pollution from dischargers. However, DEP procedures and a recent Supreme Court decision may reduce

water quality standard.
effluent limitation, or
permit issued pursuant to
this act he shall:
(1) Issue an order requirir
any such person to compl
in accordance with
subsection b. of this
section; or
(2) Bring a civil action ...;
or,
(3) Levy a civil administr
tive penalty ...; or
(4) Bring an action for a
civil penalty ...; or
(5) Petition the Attorney
General to bring a crimi
action...; or Use of any
the remedies specified
under this section shall
preclude use of any oth
remedy specified.

citizens' ability to enforce the Act.

DEP does not provide reasonable access for citizens to NJPDES information.

9.0 Recommendations

New Jerseyans consistently, clearly, and emphatically support efforts to achieve and maintain clean water. Yet a clear pattern of industry lawbreaking and the laissez-faire approach of government agencies has created a polluters playground in which chronic and significant pollution violations occur as a matter of routine.

With the release of its 1981 report, NJPIRG noted that the failure of EPA to respond to permit violations might be alleviated by the impending decentralization of the NPDES control to DEP. It appears that such optimism was unfounded.

There is a clear and definite need for revamping state and federal clean water laws if there is to be any hope of utilizing end-of-the pipe regulation to help achieve clean water goals and reduce the spread of toxics in the environment. NJPIRG believes that a range of reforms are necessary, including changes in state and federal administrative procedures and amendments to New Jersey State Water Pollution Control Act. Ultimately, we believe that it will be necessary to seek strengthening amendments to the federal Clean Water Act. However, the protection of New Jersey's waters cannot wait on federal Congressional action - immediate steps must be taken.

The recommendations made here are grounded in the following principles:

Stiffening Penalties. In order to achieve compliance with the law, illegal water pollution must be made expensive. Fines for all levels of non-compliance - from non-reporting of parameters to chronic violations - must be increased. In addition, mandatory criminal penalties for individuals responsible for clean water violations should be specified and enforced.

Reduce Discretionary Authority. Simply setting higher civil and criminal penalties is unlikely, in and of itself, to produce more aggressive enforcement measures. Steps must be taken to reduce the discretionary authority of DEP in setting and enforcing permits. Certain obvious areas -like including toxic parameters in POTW discharge permits - should be required by law. A tiered, standard response-to-violations policy should be set which would require DEP to impose steadily increasing penalties on chronic violators.

Limit Toxic Discharges by POTWs. An almost wholly unregulated source of toxics discharges to waterways is by indirect discharges into POTWs. The most immediate and straightforward means to require POTWs to develop more efficient enforcement programs for indirects is to write and enforce POTW permit requirements for toxics.

Strengthen Citizen Enforcement. Citizen enforcement efforts have proven to be efficient and cost-effective. State action should be taken to eliminate existing roadblocks to citizen enforcement and to provide additional assistance to encourage its expansion.

NJPIRG makes the following specific recommendations:

9.1 Passage of "Clean Water Enforcement Act" Legislation

Amendments to the New Jersey Water Pollution Control Act should be adopted which will tighten state enforcement action, assist citizen enforce-

ment efforts and increase penalties for non-compliance. A summary of a model "Clean Water Enforcement Act" is included in Appendix

9.2 Passage of Legislation to Establish an "Intervention Fund"

An Intervention Fund should be created to make funds available to citizens to participate in permit and enforcement proceedings before both DEP and the Office of Administrative Law, as well as to fund citizen enforcement lawsuits in the courts. The Fund would provide revolving loans to be replenished with penalties and attorneys fees collected through settlements and court judgements from citizen enforcement efforts. The Fund should initially be capitalized with a legislative appropriation of one million dollars. Further funding would come from a set-aside of 10% of all fines collected by DEP under the provisions of the Clean Water Enforcement Act, up to a ceiling of $1 million/year. The Fund should be administered by the Department of the Public Advocate.

9.3 DEP Administrative Procedure Changes

The DEP should establish standard procedures for the following:
1. Citizen review of file information;
2. A tracking system for files taken out for review; and,
3. Coding of confidential materials contained in files.

The DEP should make more efficient use of the Permit Compliance System (PCS) data base for NJPDES information.

Computerized violation and enforcement data should be available to citizens upon request.

Master files containing violation and enforcement data for all environmental permitting programs, including NJPDES, pretreatment, RCRA and air, should be established.

The DEP Pretreatment program should require that penalty policies at POTWs with pretreatment programs be consistent with the enforcement actions and fines allowed under the New Jersey Water Pollution Control Act.

Amendment to Section 58:10A-7(b):

(4) Requires DEP to include discharge limits in POTW permits for all substances for which federal categorical standards have been promulgated, where the POTW accepts discharges from industries covered by the standards, unless it can be demonstrated that such substances are not present in the POTW discharge.

Section 107. Adjudicatory Hearings.

Amendment to Section 58:10A-7(d).

Permits "any interested party" the right to request an adjudicatory hearing in the issuance or modification of a NJPDES permit.

Section 107. Schedule of Compliance.

Amendments to Section 58:10A-6.1:

a. (1) Provides for stipulated penalties of $1,000/day per violation in compliance schedules in addition to other penalties specified in the Act. Requires DEP to take into account "duration, extent, and toxicity of permittee's violations" in setting stipulated penalties.
(2) Requires the posting of a bond, or other financial guarantee, by permittee in setting a compliance schedule.

b. (1) Limits all compliance schedules to 18 months.
(2) Prohibits the renewal, extension or relaxation of a compliance schedule except as a "substantial modification of a permit."
(3) Prohibits issuance of compliance schedule within 2 years of the date of issuance of a permit.

c. Limits permittee to 1 compliance schedule for each permit issued.

Section 108. Violations, Remedies, Fines and Penalties; Enforcement.

Amendments to Section 58:10A-10:

(b) Requires DEP to review all notices of violations after 3 months to determine what actions have been taken by the permittee to achieve compliance. Requires DEP to issue an administrative order specifying steps which must be taken to achieve compliance or to commence civil action in Superior Court if it is determined that action taken by the permittee is not sufficient to achieve compliance.

c (1). Requires DEP to impose a civil penalty of up to $50,000/day per violation on permittees with chronic or significant violations.

c (2). Requires DEP to impose a civil penalty of not less than $5,000 per day per violation nor more than $50,000 per day per violation on permittees with chronic and significant violations.

c (3). Requires DEP to petition the Attorney General and the District Attorney of the jurisdiction in which the permittee is located to bring criminal action under the provisions of Section 58:10A-1(g) against individuals determined to be chronic violators for more than two six month reporting periods.

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Appendix

Summary of Proposed Amendments to New Jersey Water Pollution Control Act:
"Clean Water Enforcement Act"

additions in italics
[deletions in brackets]

The proposed legislation amends sections 101-112 of the New Jersey General Laws (the "New Jersey Water Pollution Control Act").

Sec 101. Definitions.

Amendments to Section 58:10A-3:

c. "Chronic violator" is defined as a permittee who has four or more violations of a NJPDES permit in for any parameter including no-reporting of data in any six month period.

r. "Significant violator" is defined as a permittee who has violated any parameter in a NJPDES permit by 20% or more.

Section 102. Civil Penalty Policy.

Amendment to Section 58:10A-4(f):

g. Requires the establishment of a civil penalty policy by DEP governing the uniform assessment of civil penalties which takes into consideration "harm done to public health or the environment the economic benefit gained by the violator, the degree of recalcitrance of the violator, and any unusual or extraordinary enforcement costs incurred".

Section 103. Delinquent Fines and Penalties.

Amendment to Section 58:10A-6:

f. Prohibits the issuance of a new permit or the modification of existing permit(s) to relax parameters where a permittee has failed to pay past penalties, unless a payment schedule has been set.

Section 104. Frequency and Scope of Inspections.

Amendments to Section 58:10A-6(h):

i. Requires annual on-site sampling inspections for all NJPDES permittees. Specifies that on-site inspections be held within 6 months of a permit application or renewal request.

j. Requires an on-site inspection within 30 days for any permittee who has had 2 violations in any 3 month period.

k. Requires that testing of effluent by permittees determined to be chronic violators be conducted by an independent certified laboratory, not owned or operated by the permittee.

Sec. 105 Permit Parameters.

Amendment to Section 58:10A-6:

g. Requires the submission of DMRs on at least a monthly basis by all permittees. Provides for an automatic fine of $100/day per violation for missing parameter data. Requires that DMRs be signed by the highest ranking corporate or municipal employee at the plant site.

m. Requires that POTWs conduct an annual discharge analysis.

Amendment to Section 58:10A-10:

[d.] e. Requires the DEP to impose all fines assessed.

[f.] g. Provides that "willful or negligent" violation of the act is considered a third degree crime punishable, upon conviction, by a fine of not less that $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than one year or by both. Punishment for a second offense under this subsection shall be a fine of not less than $10,000 nor more than $100,000 per day of violation *and a jail sentence of not less than 10 days nor more than two years, and up to 90 days of community service. Punishment for a third offense under this subsection shall be a fine of not less than $25,000 nor more than $200,000 per day of violation and a jail sentence of not less than 30 days nor more than two years, and up to 180 days of community service.*

Provides that any person who "knowingly makes a false statement, representation or certification in any application, record, or other document filed or required to be maintained under this act or who falsifies, tampers with or knowingly renders inaccurate, any monitoring device or method required to be maintained" shall, upon conviction, be subject to a fine of *not less than $10,000 nor more than $100,000 per day of violation* [not more than $5,000] and [or] by imprisonment *for not less than 10 days nor more than two years,* [for not more than six months], *and up to 90 days of community service.*

Section 109. Penalties to Department of Environmental Protection.

Amendment to Section 58:10A-10:

i. Provides that all fines and penalties collected under the Act are payable to the DEP.

Section 110. Public Notification.

Amendment to Section 58:10A-101.1:

a. Requires DEP to publish an annual report summarizing:
(1) The number of permittees in violation of the act.
(2) The number of enforcement actions brought by DEP.
(3) The amount of fines collected by the DEP.
(4) A list of all significant violators.
(5) A list of all chronic violators.
(6) The 10 worst municipal and 10 worst industrial violators.
(7) A list of all referrals of individuals for criminal action and the disposition of each case.

b. Requires the DEP to publish a list of the 10 worst municipal and 10 worst industrial dischargers in full page ads in 4 newspapers with statewide circulation.

Section 111. Citizen Enforcement Actions.

Proposed Section 58:10A-10.2 Citizen Suits:

a. Provides that any person may bring civil action under the law against any individual violator, or against the DEP for non-enforcement of the act for past and/or continuing violations.

b. Prohibits citizen suits where DEP has commenced and is diligently prosecuting civil [or criminal] action and/or where a penalty consistent with the commissioner's civil penalty policy as prescribed in Section 58:10A-4(f) [an appropriate penalty] has been assessed.

c. Provides that any person may intervene in civil actions brought by DEP.

d. Provides that the DEP may intervene in civil actions filed under this section.

e. Provides for the court award of "costs of litigation, including reasonable attorney and expert witness fees".

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Summary Data on Major Industrial Dischargers Examined in Study

Company	Location	Receiving Waterway	#	S	C
Federated Metals Corp	Trenton	Assunpink Creek	15	✓	✓
Georgia-Pacific Corp.	Delair	Delaware River	5	✓	
Pfizer Inc.	Leeming	Parsippany	17		✓
E.I. DuPont DeNemours	Pompton Lakes	Pompton Lake	11	✓	
National Starch and Chemical	Bloomfield	Yantacaw River	4		✓
LCP Chemicals-NJ Inc.	Linden	Arthur Kill	11	✓	
Royal Lubricants Co. Inc.	Hanover	Passaic River	2	✓	
B.F. Goodrich Co.	Oldsman Twp	Delaware River	19	✓	✓
Hercules Inc.	Middlesex Co	South River	62	✓	✓
Oxford Textile Finishing Co.	Oxford Twp	Furnace Brook	64	✓	✓
Amerada Hess Port Reading Co.	Woodbridge	Port Reading	42	✓	✓
Mobil Research and Dev. Co.	Hopewell	Stony Brook	105	✓	✓
Texaco Refining and Marketing	Bayonne	Newark Bay	1		
C P Chemical Inc.	Sewaren	Woodbridge Crk	3		
Green Hammer Metal Products	Dover	Rockaway River	2	✓	
Troy Chemical Corp	Newark	Pierson's Creek	70	✓	✓
Caschem	Bayonne	Newark Bay	24		✓
Hooker Chemical (Occidental)	Burlington	Trib. Delaware	0		
N L Chemical	Sayreville	Raritan River	14	✓	
BASF Corporation. Inmont Div.	Belvidere	Delaware River	23	✓	✓
J. T. Baker Chemical Co.	Phipsburg	Delaware River	16	✓	
PSE&G	Ridgefld	Hackensack River	9		✓
Merck and Co. Inc.	Linden	Kings Crk/Rahwa River	16	✓	
Passaic Rubber Co.	Wayne	Pompton River	6	✓	
Monsanto Co.	Bridgeport	Delaware River	30	✓	✓
Mc Lean Engr Labs Inc	W.Windsor	Little Bear Crk	1		
Magnesium Elektron Inc.	Kingwood	trib.to D&R Canal	4	✓	✓
Jersey Central Pwr & Light Co.	Milford	Delaware River	14	✓	
Mobil Chemical Co.	Edison	trib.to Raritan	9	✓	✓
Allied Chemical	Elizabeth	Newark Bay	16	✓	
Colgate Palmolive Co Inc.	Jersey City	Hudson River	8		
Exxon Co USA	Bayonne	Upper NY Bay	14		
J.L. Prescott Co.	Passaic	Passaic River	20	✓	✓
Jersey Central Power & Light	Sayreville	Raritan River	16	✓	✓
Standard Tank Cleaning Corp.	Bayonne	Kill Van Kull	30	✓	✓
Merck and Co Inc.	Somerset	Raritan River	1		
Borden Inc.. Snow Food Prod.	Cape May	Upper Thorofare	0		
Sandoz Chemical Corp.	East Hanover	Passaic River	19	✓	✓
H & N Chemical Co.	Totowa	Passaic River	25	✓	✓
PSE&G	Linden	Arthur Kill	0		
Hewlett Packard Co. Inc.	Rockaway	Hibernia Brook	10	✓	
Atlantic Electric	Atlantic City	Great Egg Harbr	9	✓	✓
Mobil Oil Corp.	Greenwich	Delaware River	5	✓	
M B A Printed Circuits	Wayne	Pompton River	10	✓	✓
Nuodex	Fords	Raritan River	11	✓	✓
Sterling Drug, Inc.	Trenton	Wallkill River	24	✓	
El DuPont DeNemours-Rapauno	Gibbstown	Delaware River	31		✓
Essex Chemical Corp.	Paulsboro	Delaware River	10	✓	✓
Metro Oil and Chemical Corp.	Ridgefield	Wolfs Creek	54	✓	✓
PSE&G	Trenton	Delaware River	0		
Diamond Shamrock Chemical	Carlstadt	Berrys Creek			
Duro-Test Corp.	Clifton	Mc Donald's Brk			

(# - total number violations. S - "Significant violations". 20%>. C - "Chronic violations". 4+ in 6 months)

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Company	Location	Recieving Waterway	#	S	C
Reheis Chemical Co.	Brkly Hts	Trib. Passaic R	0		
Adron	Parsippany	Lake Intervale	5		
Ciba-Geigy Corp.	Summit	Passaic River	12	✓	✓
Hercules Incorporated	Burlington	Delaware River	15	✓	
PSE&G	Jersey City	Hackensack Riv	9	✓	
El DuPont DeNemours and Co.	Linden	Arthur Kill	9	✓	
Frequency Engr. Labs	Farmingdale	Mingamahone Crk	2		
Schering Corp.	Union	Elizabeth River	57	✓	✓
Jersey Central Power and Light	Lacey Twp.	Oyster Creek	5		
Hoffman-La Roche Inc.	White Twp	Delaware River	11	✓	✓
James River Corporation	Holland Twp	Musconetcong River	20	✓	✓
Bendix Corp.	Teterboro	Berry's Creek	6		✓
ER Squibb and Sons Inc.	Princeton	Shiptauken Crk	3	✓	
Frenchtown Ceramics	Frenchtown	Delaware River	60	✓	✓
Columbian Chemicals Co.	Monmouth Jct	Heathcote Brook	2		
Accurate Forming Corp.	Hamburg	Wallkill River	23	✓	
Sandoz Pharmaceuticals Corp.	E. Hanover	Passaic	4	✓	
Essex Chemical Corp.	Newark	Passaic River	1		
Carter-Wallace Inc.	Cranbury	Cranbury Brook	20	✓	✓
Stepan Chemical Co.	Maywood	Lodi Brook	117	✓	✓
Ames Rubber Corp.	Hamburg	Wallkill River	8	✓	
Coastal Eagle Point	Westville	Delaware River	8		
Peerless Tube Co Inc.	Bloomfield	trib.to Passaic	9		
FMC Corp.	Carteret	Arthur Kill	11	✓	✓
Peerless Tube Co.	Bloomfield	Passaic River	4	✓	
Struthers-Dunn	Pitman	Mantua Creek	24	✓	✓

(# - total number violations. S - "Significant violations". 20%>. C - "Chronic violations". 4+ in 6 months)