



**Northwest Indiana/Southeast Cook County GEI  
Environmental Progress 1988-92  
A Report on Selected Environmental Indicators**

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**GEI Task Force  
USEPA, Region 5  
15 July 1993**





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF.

July 15, 1993


C-3T

***To The Reader***

I am pleased to announce the completion of the Northwest Indiana/Southeast Cook County GEI Environmental Progress Report covering the period 1988 through 1992. The report for the Geographic Enforcement Initiative charts the progress of selected environmental indicators over a 5-year period.

I trust that you will find the report useful in identifying many aspects of the toxic pollutant problem within the GEI area. Although the report does not provide an exhaustive evaluation of specific pollutants, sources, or pathways, it nevertheless provides a good overview of the situation, and should be useful in targeting further compliance and assessment activities.

If you have questions concerning the report or would like additional copies, please contact Mr. Noel Kohl, Chairman, GEI Data Integration Subcommittee, at (312) 886-6224.

  
Bertram C. Frey, Chairman  
NW Indiana/SE Cook Co. GEI Task Force



**Environmental Progress 1988-92:  
A Report on Selected Environmental Indicators**

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# 1 Executive Summary

## Background

The following environmental progress report was developed for the Northwest Indiana/Southeast Cook County Geographic Enforcement Initiative (GEI) area by the GEI Task Force. Progress is reported in terms of selected environmental indicators, and covers the period of 1988 through 1992. In August 1992, the GEI Task Force agreed upon the array of indicators set forth on page 9 of this report, *infra*. Divided into three categories, the indicators measure: 1) activity levels and results for several categories of enforcement and clean up actions, 2) reductions in loadings of selected toxic substances to the environment as measured by Toxic Release Inventory (TRI) data, an *indirect environmental indicator*, and 3) direct environmental improvements or degradation in the Grand Calumet River as measured by the Index of Biotic Integrity (IBI). Each direct or indirect environmental indicator is related to several pollutants of concern (POCs) that have been identified either as national problems, or persistent localized problems. The indicators reflect a multi-media perspective, and may not be the most appropriate measures of single medium progress. In addition, due to time and resource limitations, the report does not provide an exhaustive analysis of these pollutants. Nevertheless, the report does provide a general sense for pollutant levels, sources, and trends.

## Activity Measures

This report addresses six activity measures ranging from numbers of inspections per year, to numbers of spill responses per year. Although benchmarks are generally not available against which progress could be gauged, the indicators appear reflective of an aggressive enforcement program. As further experience is available for other geographic enforcement initiatives, additional interpretation of the NW Indiana/SE Cook Co. results may be accomplished.

Especially since Fall 1990, the Region has achieved a number of impressive enforcement settlements in Northwest Indiana. Major, precedential consent decrees have been achieved to remedy longstanding violations at Inland Steel's East Chicago facility, USX's Gary Works and the City of Gary's sewage treatment facility and to clean up MIDCO I and II Superfund sites. The Region has also concluded a number of smaller, but important, civil judicial and administrative settlements with Bethlehem Steel (under the air program), Federated Metals, LTV and others.

## **Indirect Environmental Indicators**

All of the indirect indicators are pollutant load related. Almost without exception, the toxic chemical releases reflected in the 33/50 program declined substantially, showing a 26% overall reduction since the 1988 base year. This reduction may be attributable to a number of factors including more accurate reporting of data, increased public awareness, voluntary reductions, changing economic conditions, pollution prevention initiatives, and aggressive enforcement practices.

## **Direct Environmental Indicators**

As improvements are reflected in the indirect indicators, the results should begin to show up via improvements in the direct indicators. At this time, the number of direct indicators that have been reliably tested and generally accepted are few but should increase as the Agency gains experience, particularly through the Environmental Monitoring and Assessment Program (EMAP). The only direct indicator reported in this document was the Index of Biotic Integrity which has been widely used in the Midwest and other locations for classifying the general well being of aquatic ecosystems. The results reported in Section 3.3 are consistent with a number of historical observations and reflect very stressed conditions in the East Branch of the Grand Calumet River and the Indiana Harbor and Ship Canal. It is not likely that the biology will improve until significant quantities of contaminated sediment are removed from these waterways.

## **Recommendations**

The GEI Task Force should focus more attention on developing and bringing enforcement actions in the Illinois portion of the initiative area. Although the pattern, distribution and mix of enforcement actions within the GEI area was not explicitly reflected in any of the reported measures and indicators, it is recommended that this aspect be examined in future progress reports.

Continued emphasis needs to be placed on the 33/50 program within the GEI area. Although the area is making good progress toward achieving the 33% reduction goal, achieving the 50% reduction goal may require greater pollution prevention initiatives than have been undertaken by EPA and the concerned States.

The GEI Task Force needs to follow the progress of the Corps of Engineers dredging project. Creative solutions, including enforcement settlements, for siting, financing, building, and maintaining a combined disposal facility for dredged spoil from the Grand Calumet River bottom must be pursued. Improving sediment quality is a key link in overall water quality for the Indiana portion of the GEI area.



The GEI Task Force should evaluate the enforcement targeting software developed by Region 10 and consider a pilot project employing the software. Results should be addressed in the next progress report.

The next GEI progress report should also include equity indicators. Based on a review of work by other EPA Regions, at least two equity indicators are proposed. One would map the percent of minority population vs. an indirect pollutant exposure parameter such as TRI releases. The other would map the location of low income and poverty households vs. the location of remediation projects. Each type of indicator would be evaluated out to a distance of about one mile from the pollutant source or remediation project.

## **2 Background**

### **2.1 Introduction**

The purpose of this document is to report on environmental progress within the Northwest Indiana/Southeast Cook County Geographic Enforcement Initiative (GEI) area. Progress is reported in terms of selected environmental indicators (see discussion under Section 3.1.1 below), and covers the period of 1988 through 1992. This report is not an exhaustive evaluation of all available environmental data for the area, but an attempt to identify selected pollutants of concern (POC), track the POC releases over time, and display these data along side inspection and compliance activity information within the geographic area.

### **2.2 History of Geographic Enforcement Initiatives**

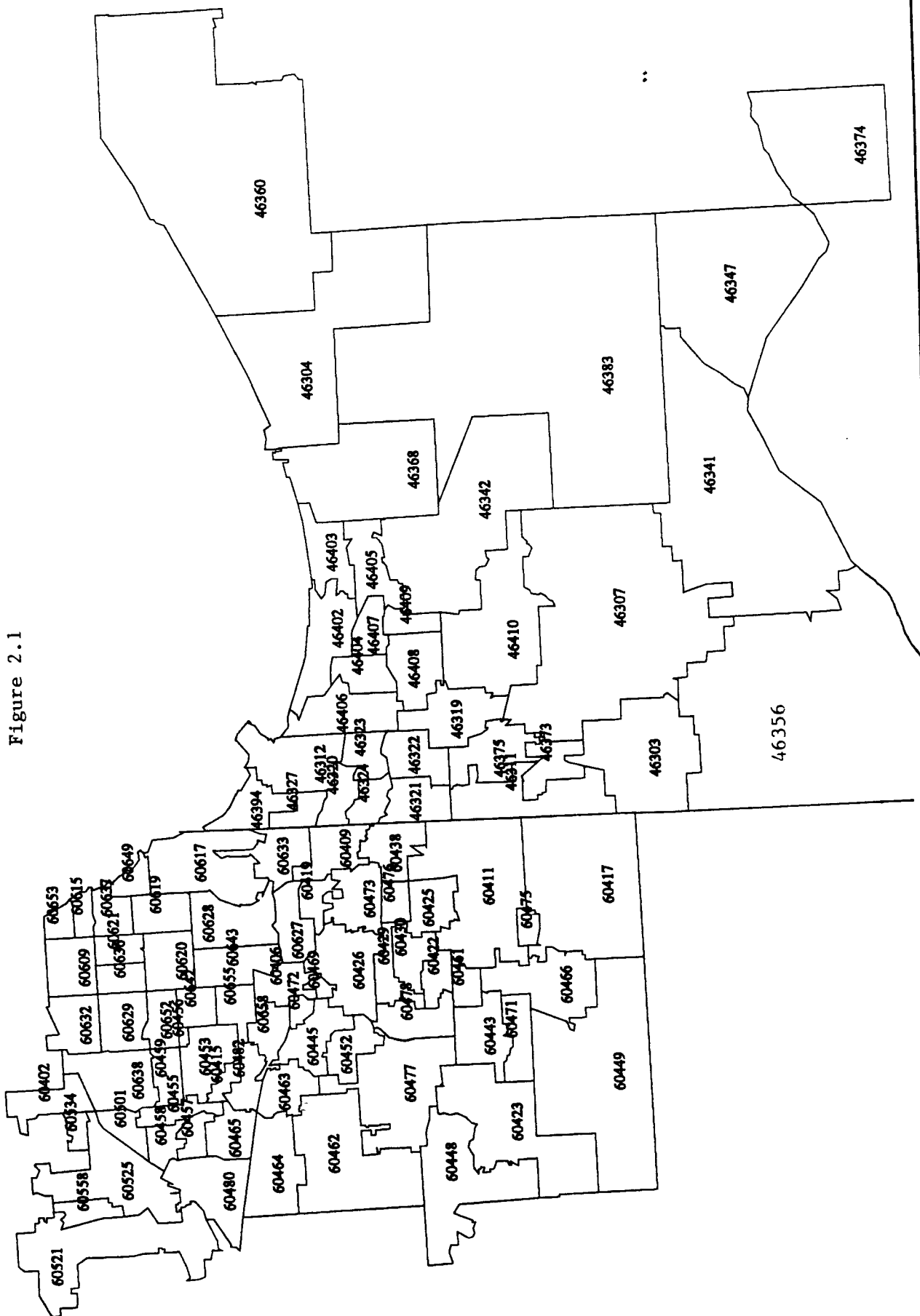
Pilot Geographic Enforcement Initiatives were established in all ten EPA regions in the Spring of 1990 as part of a National initiative to enhance enforcement actions and gain environmental benefits. This was to be accomplished through a multi-media planning and implementation effort that spans all of the key environmental programs for air, land and water. Region 5's participation began with the formation of the Northwest Indiana/Southeast Cook County GEI Task Force, which met initially on May 23, 1990. The Task Force subsequently established three subcommittees: a Multi-Media Litigation Screening Subcommittee, a Multi-Media Inspection Subcommittee and a Data Integration Subcommittee. This report documents much of the work accomplished by the GEI Task Force, in cooperation with the program offices.

Three additional geographic initiatives have recently been planned or undertaken. These include the Southeast Michigan Initiative (SEMI), the East St. Louis Geographic Initiative, and the Tri-State Geographic Enforcement Initiative. The latter initiative is a cooperative effort with Region 4. Both SEMI and the East St. Louis initiatives will have an enforcement component.

### **2.3 Description of the GEI Area**

A map of the GEI area is shown in Figure 2.1. The area includes Lake and Porter Counties in Indiana and the southeast portion of Cook County in Illinois. It encompasses 99 zip code areas. Figure 2.1 is a map of the zip codes within the GEI area. Region 5 selected the GEI area largely based on its reputation as having one of the highest concentrations of known environmental problems within Region 5.

Figure 2.1



## **2.4 Recommended Uses of the Environmental Progress Report**

The Progress Report gives general background information on key pollutants of concern in the GEI area, presents trends in pollutant releases, and details progress in enforcement activities over the past several years. As EPA gains additional experience with monitoring and reporting direct environmental indicators, future Progress Reports will attempt to focus more on quality of life factors measuring human and environmental health. We envision that future reports will include measures of environmental equity, which has surfaced as an issue within the GEI area, most notably the SE Cook County area.

The Progress Report is not intended to provide an exhaustive treatment of all environmental conditions, data or trends because the focus of the report concerns selected indicators suitable for multi-media evaluation. Individual medium (land, air, water) reports should be researched for more detailed information as required.

### **3.1 Environmental Indicators: General Discussion**

#### **3.1.1 Background.**

The history of environmental indicators in EPA reaches back to the mid-1970s, when Agency staff periodically attempted to shift away from relying primarily on administrative measures of environmental success toward more direct measures of environmental quality. Momentum for the shift picked up considerably when William Reilly began his Strategic Planning Initiative in 1989. He called for measuring environmental progress in terms environmental indicators. The relationship of new indicators with the previous "activity measures" is described Figure 3.1 below.

#### **Pollutants of Concern (POC) in the GEI Area.**

Pollutants of concern receive special emphasis in this report because of historical problems caused by the POCs in the GEI area, or because the pollutant has been identified as national problem. The GEI Task Force agreed in September 1992 that the toxic pollutants addressed under EPA's 33/50 Pollution Prevention Program should be addressed in the Progress Report. The 33/50 program has the objective of voluntarily reducing the 33/50 targeted chemicals by 33% by 1992 and 50% by 1995, computed from 1988 release levels. The other basis for designating the pollutant as a POC was the historical problems affecting Lake Michigan. For a number of years, the Great Lakes National Program Office has published a list of Critical Pollutants affecting the Great Lakes. The 1993 Great Lakes Action Plan identifies 16 chemicals, or families of chemicals, that are critical in the Lake Michigan basin. Table 3.1.1 identifies these pollutants along with the "17 plus 1" 33/50 chemicals. The "plus 1" is in reference to Dioxin, which was added to the list and then subsequently deleted. The number of chemicals listed in Table 3.1.1 may exceed the numerical number referenced above. This occurs because "compounds" of the pollutants of concern are listed in addition to the basic elemental chemical. This assures complete reporting for the POC.

#### **Activity Measures.**

As suggested above, activity measures represent administrative activities undertaken by EPA or the States that are necessary to eventually achieve reductions in the POCs. Since they are not direct measures of pollutant concentrations or measures of the effects of pollutants, they are not considered to be environmental indicators. Nevertheless, they represent important activities that gauge program initiatives. Table 3.1.2 lists six activity measures that are addressed in the balance of this report.

# CONTINUUM OF MEASURES OF ENVIRONMENTAL PROGRAM EFFECTIVENESS

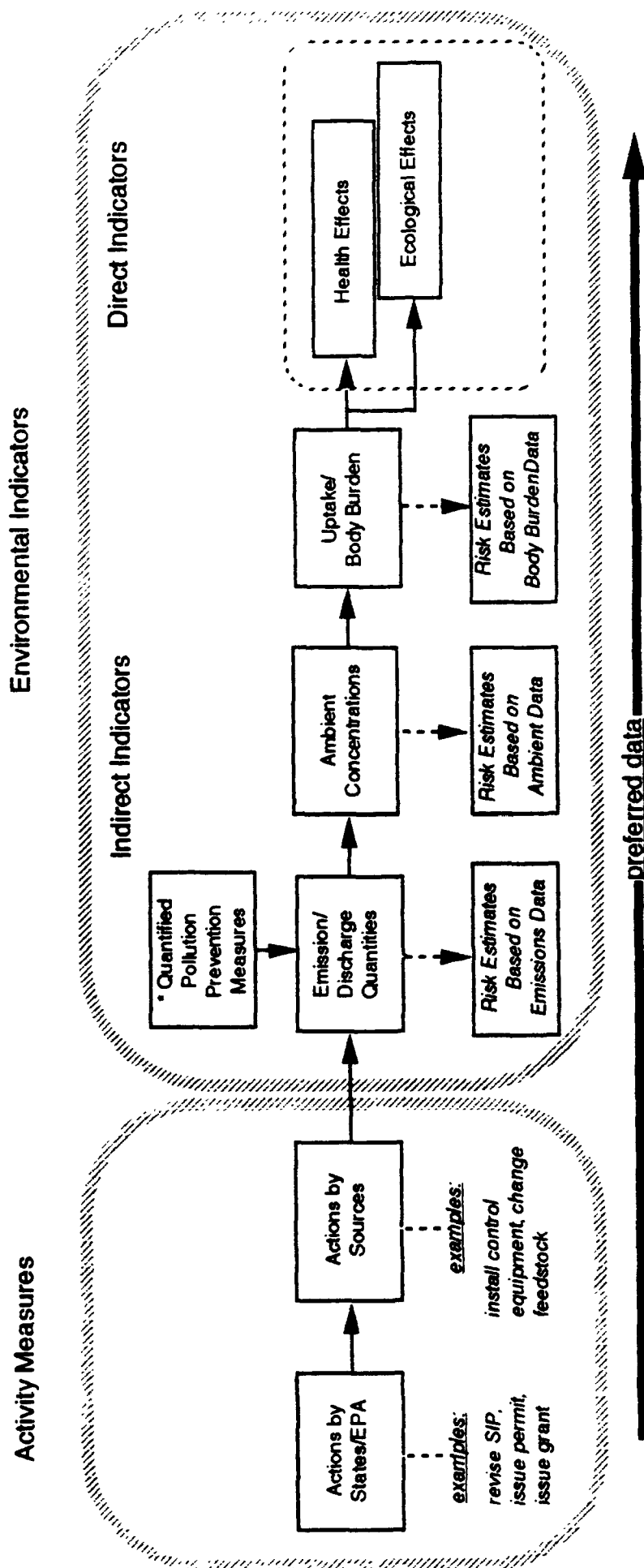


Figure 3.1

Theme 1: Managing for Environmental Results. Data to the right are closer to the "adverse ultimate impacts of pollution" that the States and EPA are charged with preventing or mitigating. All else being equal, data further to the right are better indicators of environmental result than data further to the left.

Theme 2: Emphasizing Pollution Prevention. Pollution prevention should result in the same kinds of environmental improvements as all Agency programs, so all these indicator types may be used to reflect pollution prevention successes. However, to prove the results are due to pollution prevention, data would be

## *Pollutants of Concern in the GEI Area*

Table 3.1.1

Pollutants of Concern (POC) in the GEI Area constitute the "17 plus 1" 33/50 chemicals and the Lake Michigan Critical Pollutants of Concern. (See Below)

CAS_NO	CHEM_NAME	33/50 CHEMICALS	LK MICH PRIORITY POLLUTANTS
000071556	1,1,1-TRICHOLORETHANE	X	
001746016	2,3,7,8 TCDD DIOXIN		X
055722275	2,3,7,8 TCDF FURAN		X
000071432	BENZENE	X	
000050328	BENZO (A) PYRENE (PAH)		X
007440439	CADMIUM	X	X
000056235	CARBON TETRACHLORID	X	
000057749	CHLORDANE		X
000067663	CHLOROFORM	X	
007440473	CHROMIUM	X	X
000020064	CHROMIUM COMPOUNDS	X	X
007440508	COPPER		X
000020086	COPPER COMPOUNDS		X
000020097	CYANIDE	X	
003424826	DDE		X
000050293	DDT		X
000060571	DIELDRIN		X
000118741	HEXACHLOROBENZENE		X
007439921	LEAD	X	X
000020111	LEAD COMPOUNDS	X	X
007439976	MERCURY	X	X
000078933	METHYL ETHYL KETONE	X	
000108101	METHYL ISOBUTL KETN	X	
000075092	METHYLENE CHLORIDE	X	
007440020	NICKEL	X	
001336363	POLYCHLOR BIPHENOLS		X
000127184	TETRACHLOROETHYLEN	X	
000108883	TOLUENE	X	
008001352	TOXAPHENE		X
000079016	TRICHLOROETHYLENE	X	
001330207	XYLENES (MIXED ISO)	X	
000020199	ZINC COMPOUNDS		X

**Environmental Indicators**  
**NW Indiana/SE Cook County GEI Area**

Table 3.1.2

1. The following suite of environmental indicators by category was approved for implementation by the GEI Task Force on 8/27/92 . Reference to Pollutants of Concern (POC) mean the 33/50 chemicals and the Lake Michigan Pollutants of Concern.

Program	Indicator Category	Description of Indicator	Data Source
All	Indirect (Load)	Number of Facilities Reporting POC Releases/yr	TRI
All	Indirect (Load)	Total POC Releases All Media in pounds/yr all sources	TRI
All	Activity Indicator	Numbers of Inspections total/yr multi & single media	GEI TF Programs
All	Activity Indicator	Numbers of Referrals total/yr multi & single media	GEI TF Programs
All	Activity Indicator	Numbers of Settlements total/yr multi & single media	GEI TF ORC
All	Indirect (Load)	Pollutant Reductions which result from Enforcement Settlements in pounds/yr	GEI TF ORC
All	Activity Indicator	Cost (in dollars) of injunctive relief and SEPs from Enforcement Agreements or conclusions	GEI TF ORC Programs
Air	Indirect (Load)	POC Releases to Air Media in pounds/yr all sources	TRI
Water	Indirect (Load)	POC Releases to Water Media in pounds/yr all sources	TRI
Water	Direct (Eco)	Index of Biotic Integrity as IBI score by sampling loc.	R5 Reports
Waste RCRA	Indirect (Load)	POC Releases to Land Media in pounds/yr all sources	TRI
Waste SF	Activity Indicator	Reduction in Immediate Threats in # spill responses/yr	WASTLN
Waste SF	Activity Indicator	Removal & Remedial Actions in # sites progressing/yr	WASTLN
Waste SF	Indirect (Load)	Materials Addressed by Tech Based Controls in cu yds/yr	WASTLN
Water TSCA	Indirect (Load)	Volume of Contaminated Sediment Removed in cu yds/yr	IPPTF PTSB



### **Indirect Environmental Indicators**

Indirect Environmental Indicators represent a step closer in measuring indicators of actual human or ecological health. Indirect indicators seek to measure factors which relate to pollutant loads or concentrations. The level of attainment of environmental standards falls within this category of indicators. Table 3.1.2 lists eight indirect environmental indicators that are discussed below.

### **Direct Environmental Indicators**

Direct environmental indicators represent measures of human or ecological health. Ultimately, environmental protection efforts are designed to improve human and ecological health, and minimize or eliminate risks to the health of these communities. A major problem with direct indicators is that the end effect (community health) is often a function of many complex social and environmental factors in addition to pollution levels. For instance, a community may present a picture of poor health due in part to widespread economic problems. It is therefore very difficult to isolate exact relationships in a cause and effect fashion. Nevertheless, measuring direct environmental indicators is a goal that pollution control agencies should strive to accomplish. This report provides data for an excellent direct environmental indicator termed the Index of Biotic Integrity (see section 3.3.3 below).

## **3.2 Multi-Media Indicators: 1988-90**

### **3.2.1 Numbers of Facilities Reporting POC Releases**

Figure 3.2.1 describes the total number of facilities reporting releases of POCs from 1988 through 1990. The source of the data is the Toxic Release Inventory System, maintained by the Office of Pollution Prevention and Toxics (OPPT). The data was obtained from the system in June 1992. Pulls obtained at other times may display slight differences because OPPT updates the TRI database as corrections are needed. The 1990 data was the most current TRI information available at the time this report was assembled. In general, there was little change in the number of facilities reporting POC releases, which remained relatively constant at about 150 facilities for each of the reporting years. It is important to note that the 150 facilities referenced are only about one-tenth of the total number of facilities in the GEI area that report a release of TRI chemicals. The reason for the large difference is that the POCs covered in this report consist of only 29 compounds and substances out of a total of over 200 reportable substances under the Toxic Release Inventory program.

The location of the reporting facilities is presented in Figure 3.2.2. While the bulk of facilities are located in SE Cook County, NW Indiana contains more of the larger facilities, particularly steel mills which are major sources of POCs.

### **3.2.2 Total Reported POC Releases and Trends**

Figure 3.2.3 describes the total reported POC releases from 1988 through 1990. The term 'Priority Pollutant' as used in the chart is synonymous with 'Pollutant of Concern'. Upon examining the data, a steady downward trend is readily apparent. The 1990 value at 29.7 million pounds represents a 26% reduction from the 1988 value of 40.28 million pounds released. This is well on the road to meeting the 33% interim target for 33/50 pollutants projected for 1992.

Figures 3.2.4-A and 3.2.4-B break the total reported POC releases into its component parts. While the figures display release data for most of the POCs, there are no data for several POCs such as chlordane, DDT, dieldrin, and toxaphene which are restricted pesticides that are no longer in general use. These pollutants often impair sediment quality.

Figure 3.2.5 presents some insight concerning sources of POC releases by displaying the top 15 priority pollutant releasers based on 1990 TRI data. Inland Steel in Indiana tops the list by contributing one third of the total of 29.7 million pounds released in 1990.

# Toxic Release Inventory for NW Indiana/SE Cook Co. GEL

## Number of Facilities Reporting Releases 1988-1990

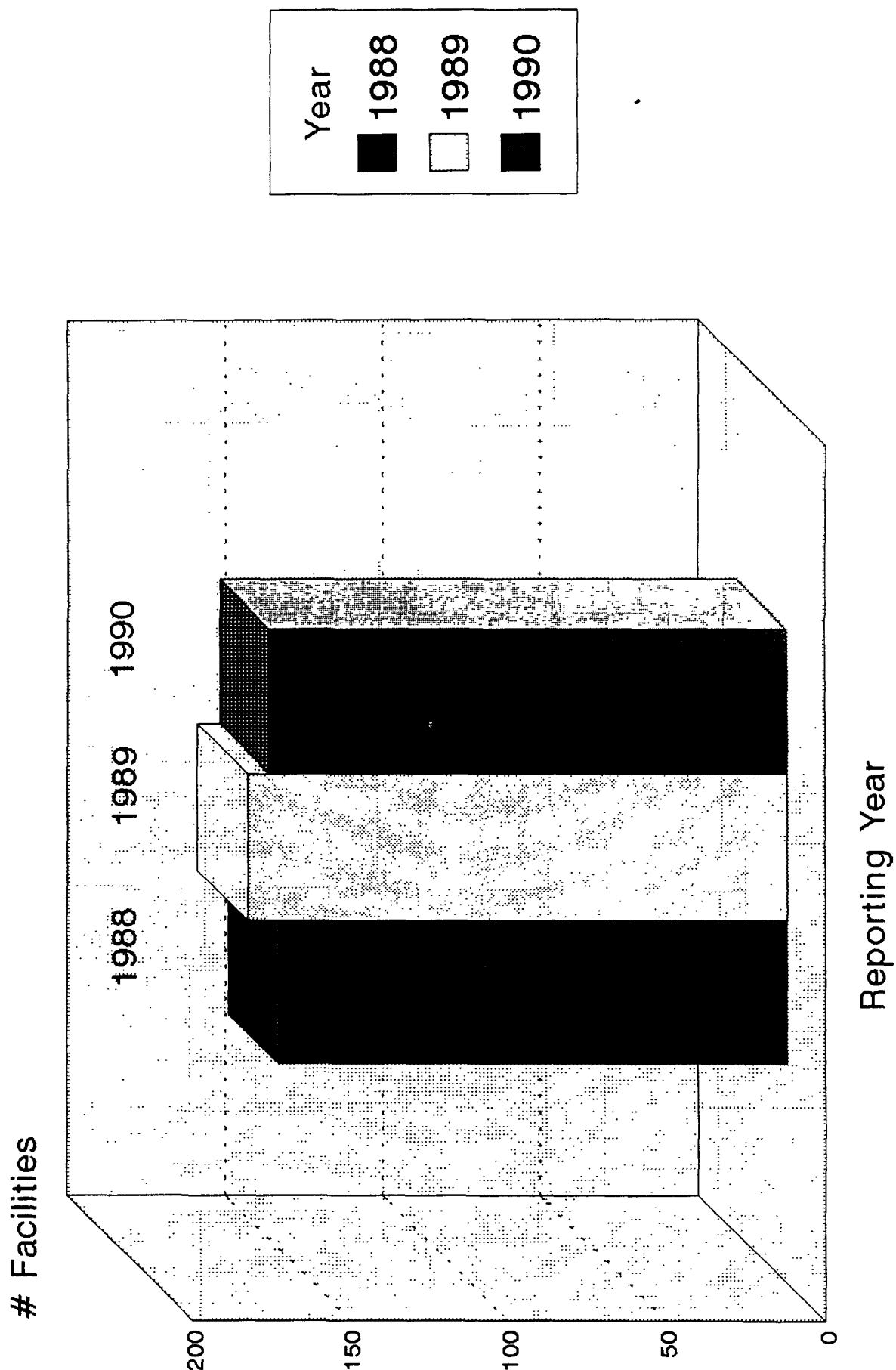
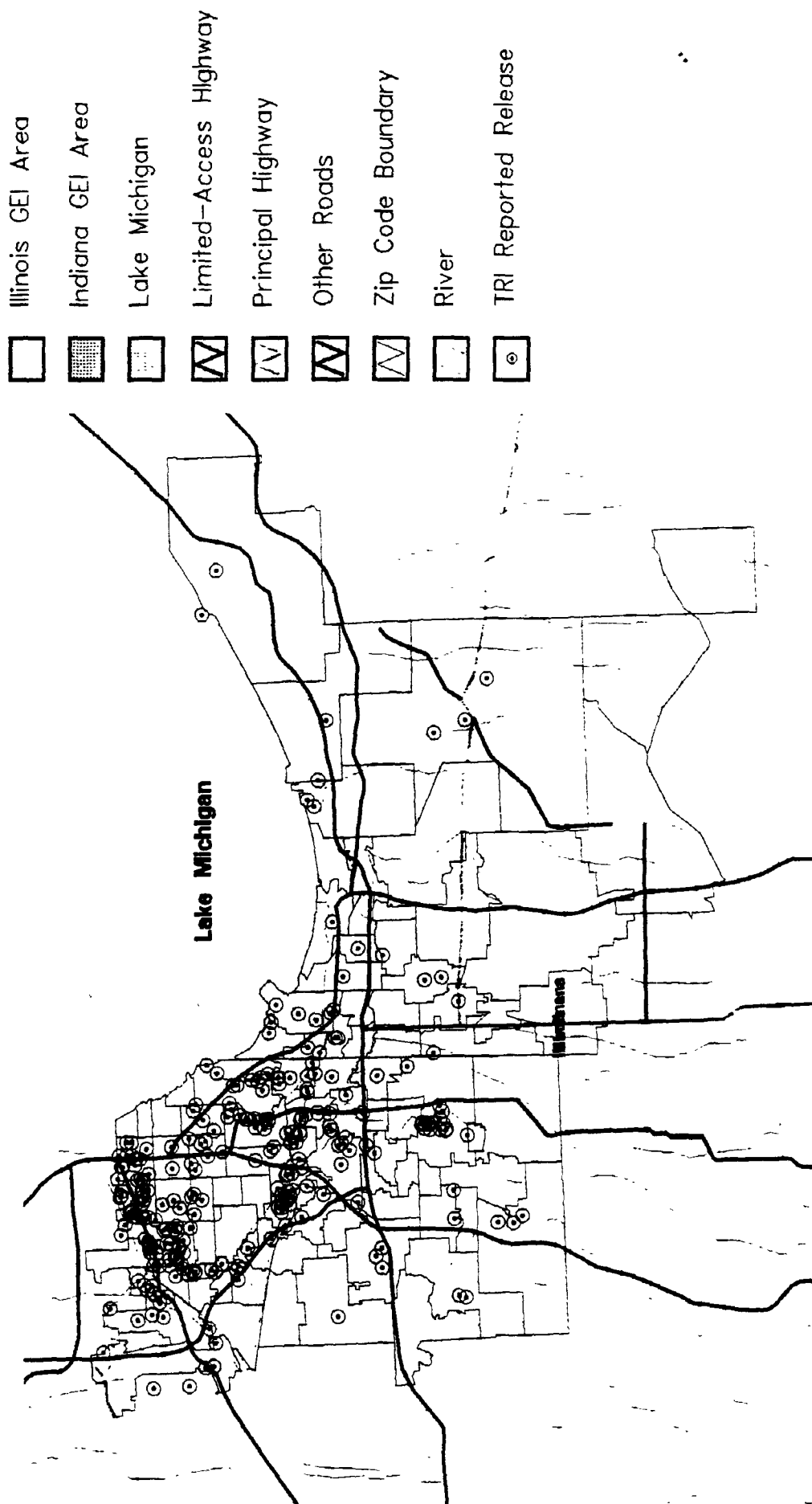


Figure 3.2.1

# SE Cook Co./NW Indiana GEI Area 1990 TRI Reported Releases for Pollutants of Concern

Figure 3.2.2



# Toxic Release Inventory for NW Indiana/SE Cook Co. GtI

## Reported Priority Pollutant Releases 1988-1990

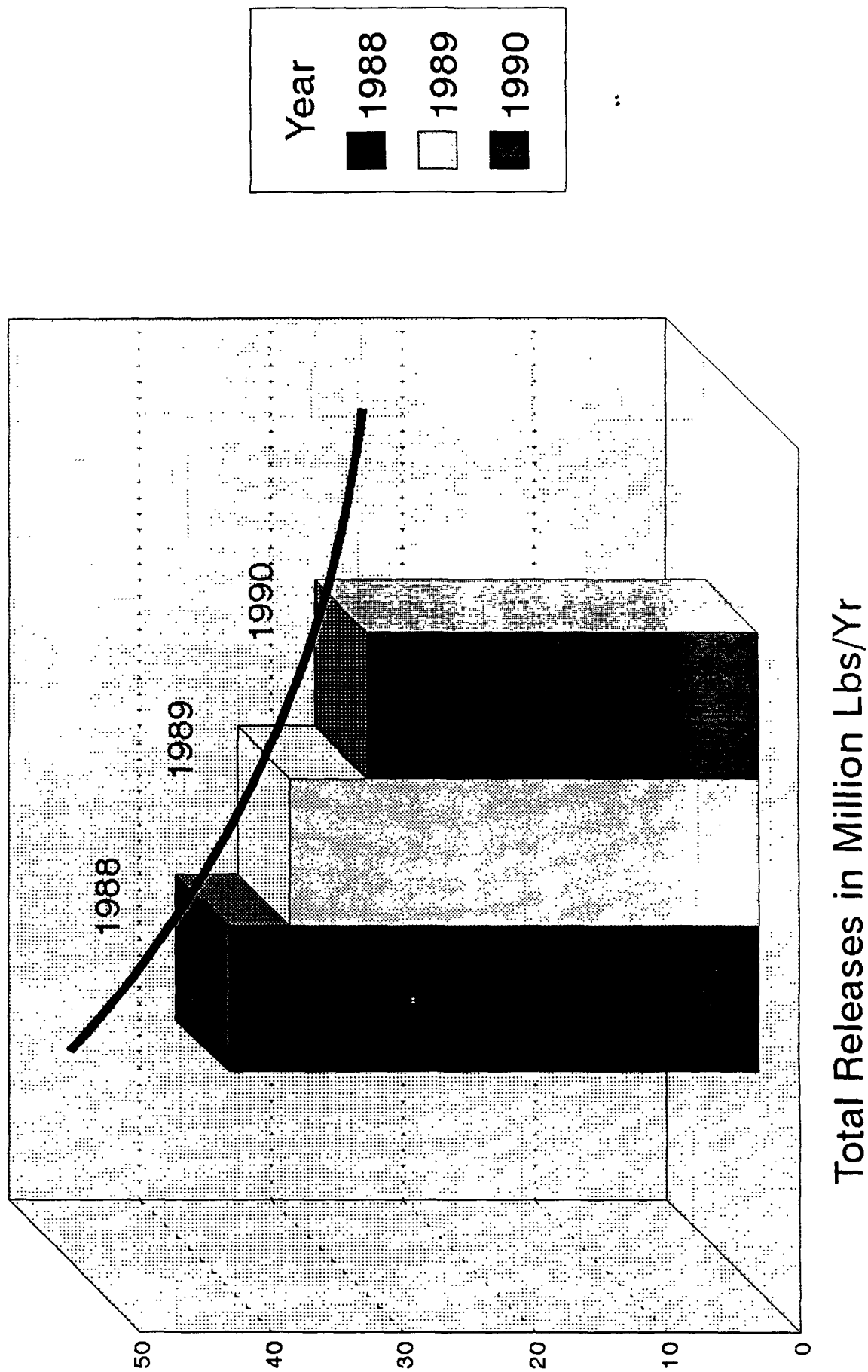


Figure 3.2.3

# Toxic Release Inventory for NW Indiana/SE Cook Co. GEI

## Reported Priority Pollutant Releases 1988-1990

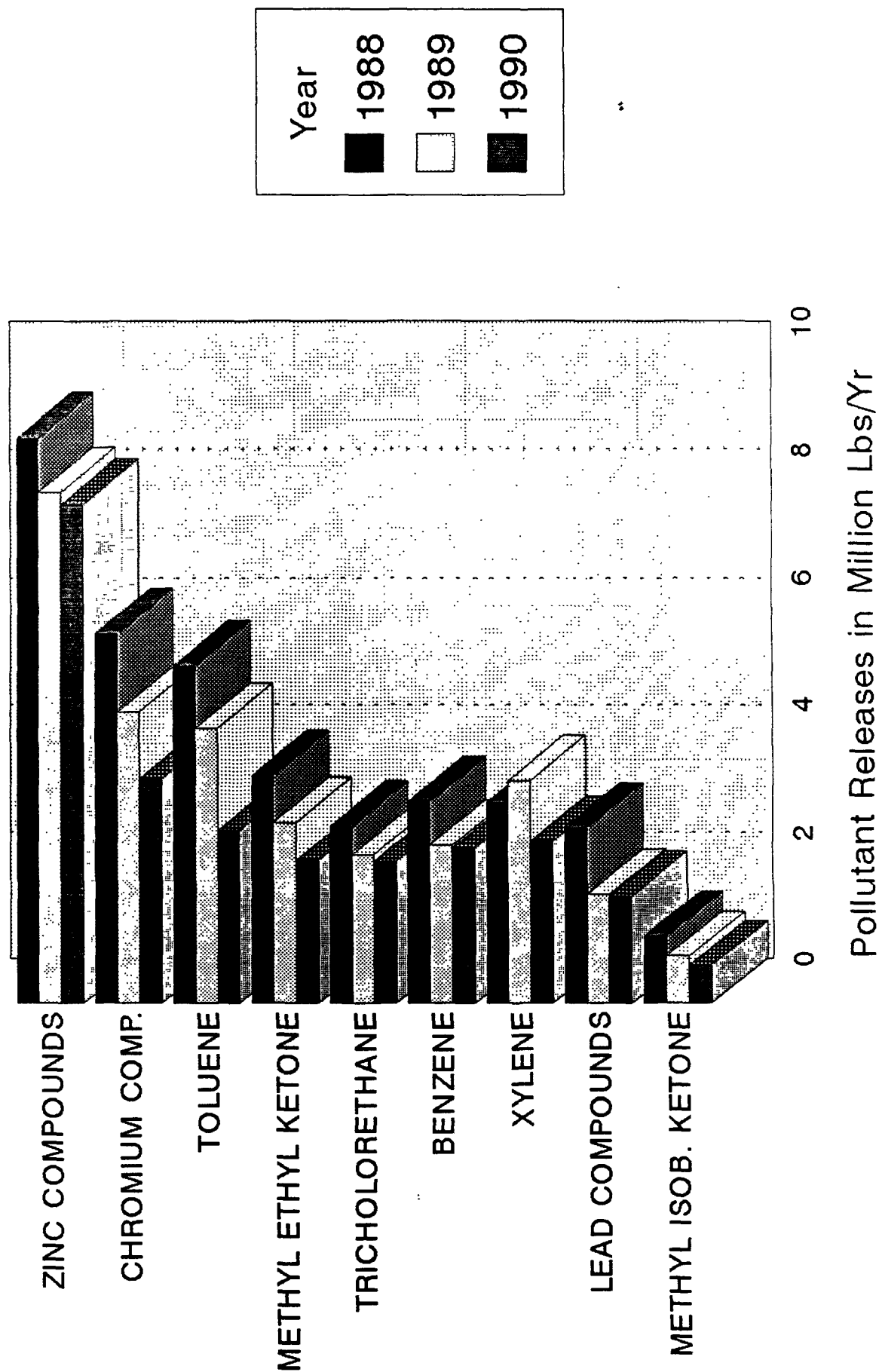


Figure 3.2.4.a

# Toxic Release Inventory for NW Indiana/SE Cook Co. GEI

## Reported Priority Pollutant Releases 1988-1990

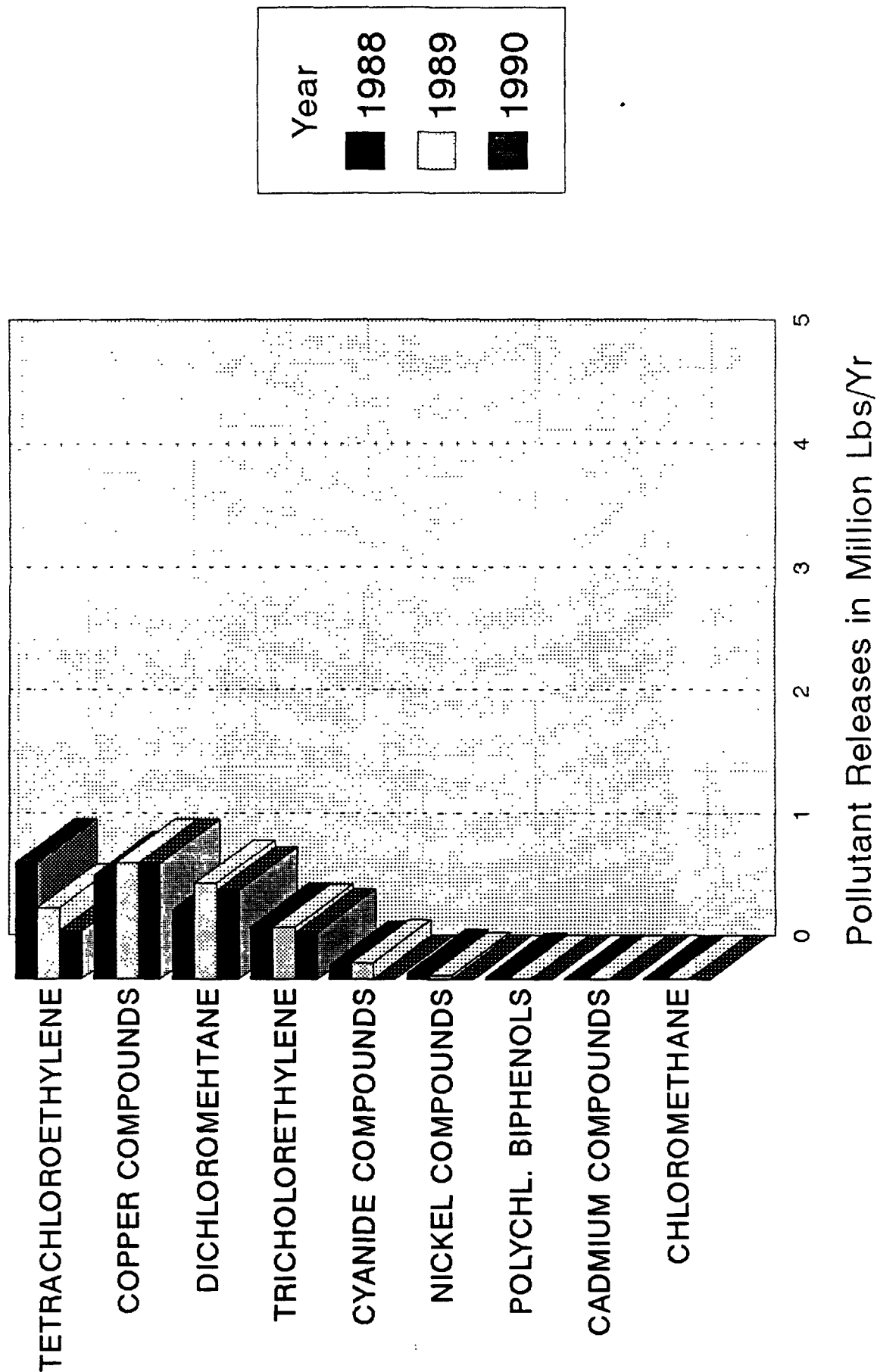


Figure 3.2.4.b

# Toxic Release Inventory for NW Indiana/SE Cook Co. GEI

## Top 15 Priority Pollutant Releasers - 1990

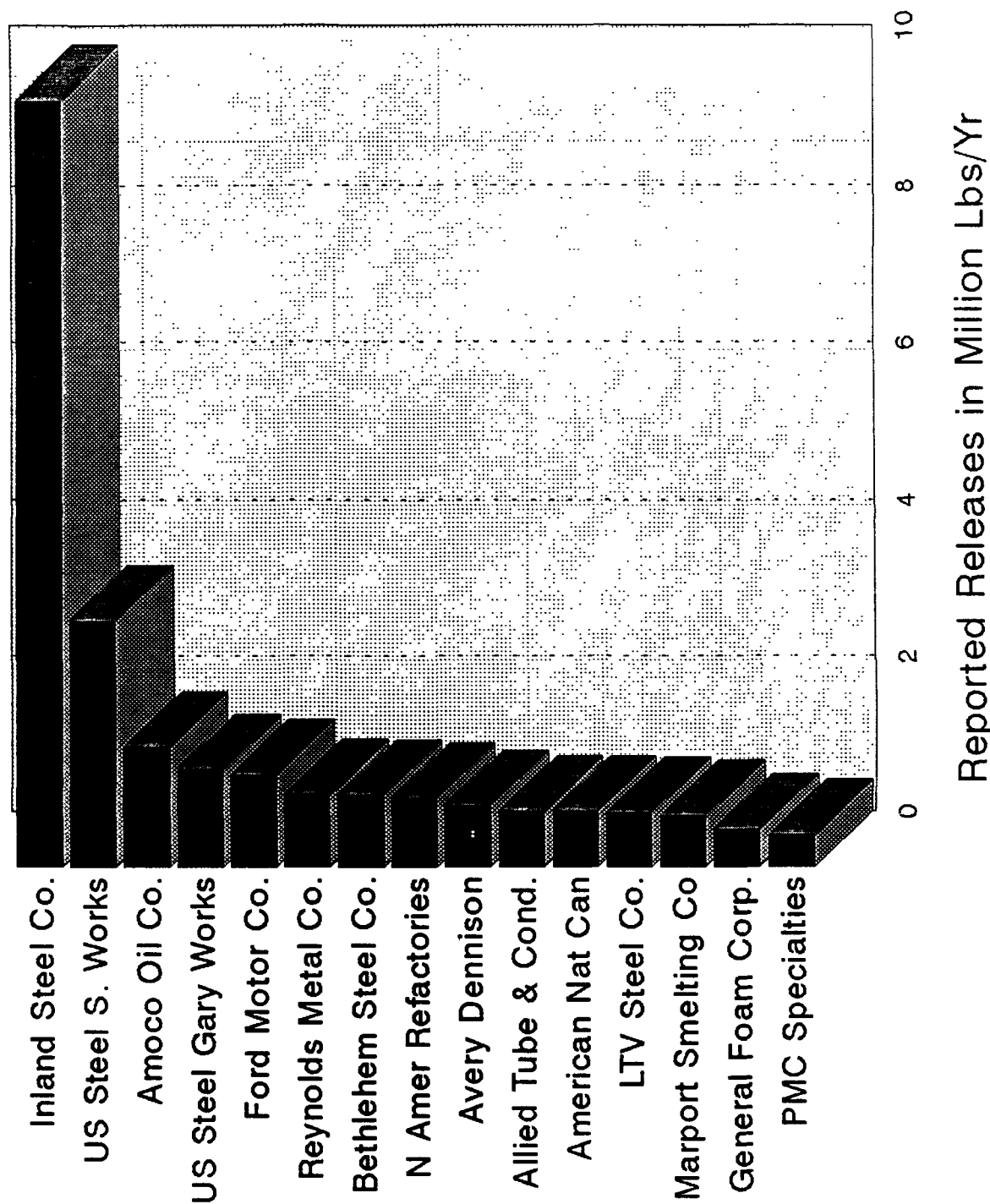


Figure 3.2.5



In describing release categories of the priority pollutants, Figure 3.2.6 provides a bar chart showing the amount by general releases by major category. The largest category is 'Off Site Releases' which means that these POCs were transferred to another responsible party, such as waste-haulers, for ultimate release at a site different from the reporting facility's location. 'Fugitive Air Release' is the second largest category and represents estimates of POC releases to the atmosphere from evaporation, volatilization, or wind action at a reporting facility. Other air releases include those from stack or stationary sources. The releases to Water Media, including POTWs, direct water discharge, or underground injection, are very small priority pollutant contributors in this area.

Mapping of the POCs by release category is accomplished in Figure 3.2.7, which shows total release data aggregated to the zip code level. The map suggests that POC releases to the water medium are not as major as other media releases. It is important to note the pollutants of concern in SE Cook Co./NW Indiana area represent only a subset of the total pollutants released in the area. For instance, POTWs are large sources of ammonia, which is classified as a toxic substance, but is omitted from the list of POCs described in Table 3.1.1 above.

# Toxic Release Inventory for NW Indiana/SE Cook Co. GEI

## Reported Priority Pollutant Releases 1990

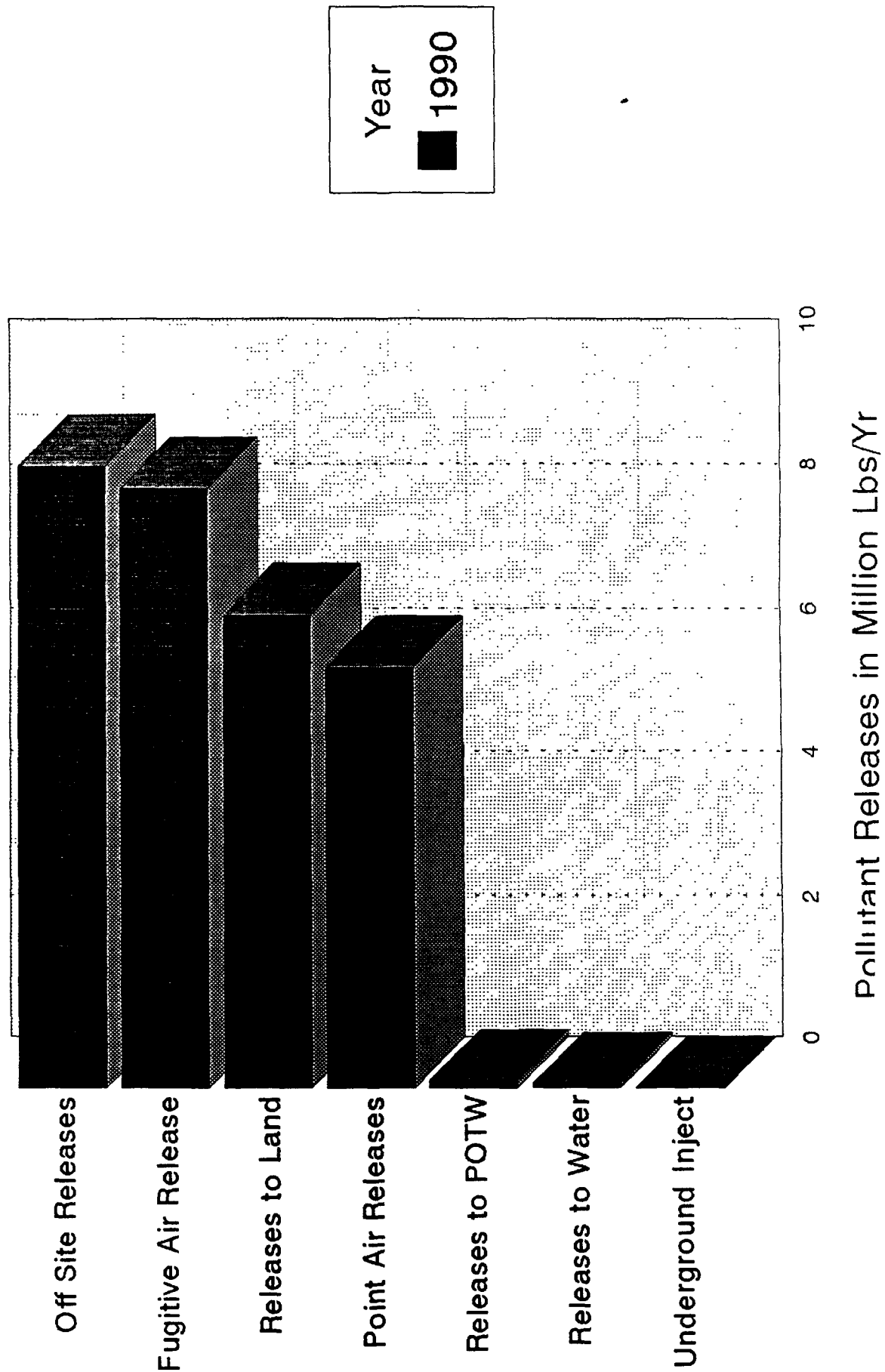
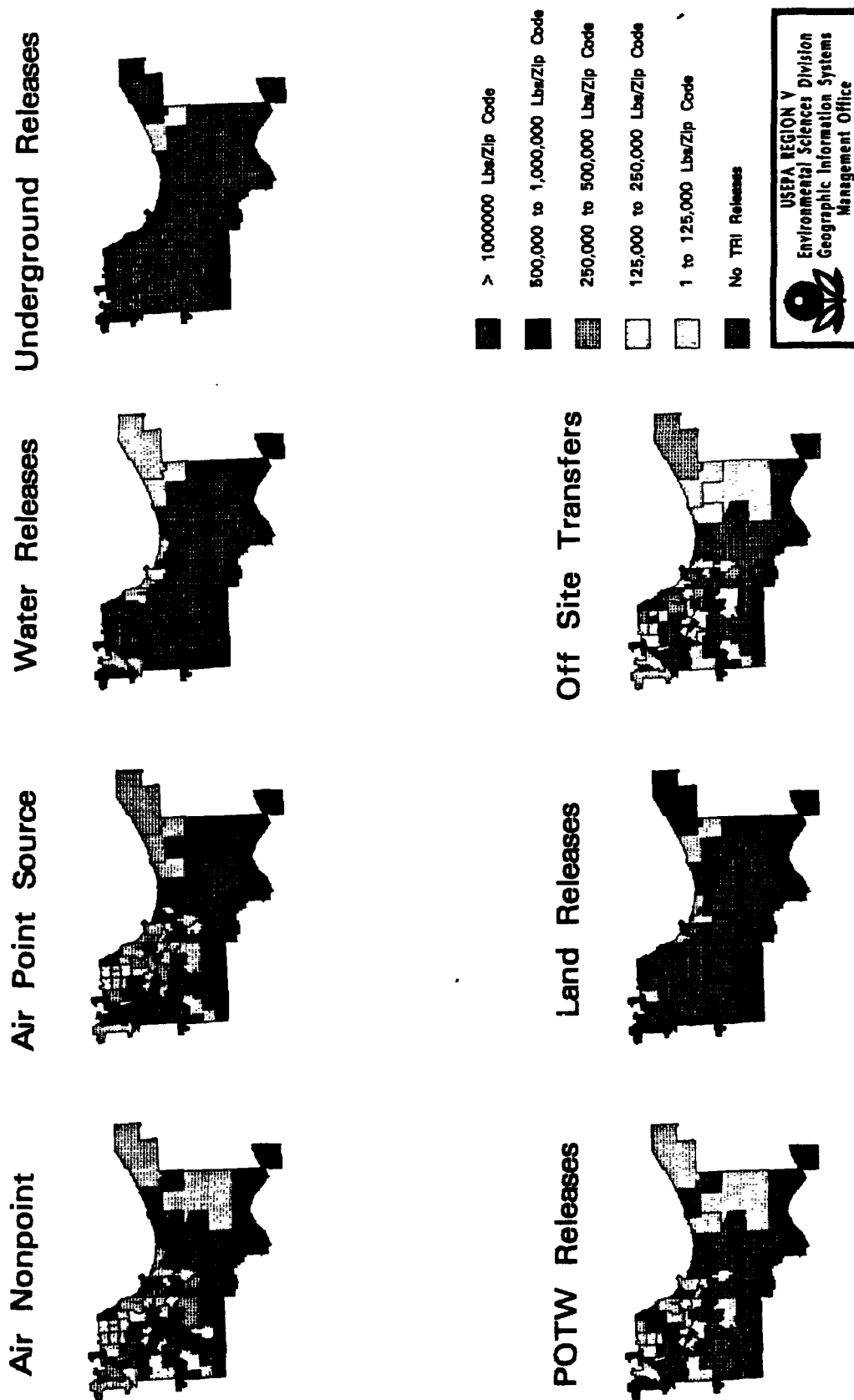


Figure 3.2.6

# SE Chicago/NW Indiana GEI AREA 1990 TRI RELEASES BY ZIP CODE

Figure 3.2.7



### **3.3 Water Medium Indicators: 1988-92**

**3.3.1 POC Releases to the Water Medium.** POCs releases to the Water medium are shown in Figure 3.3.1. The figure displays releases directly to waterways, releases to publicly owned treatment works (POTWs) and underground injection releases. The trend in water releases follows the overall downward trend displayed for total releases.

**3.3.2 Annual Removal of Contaminated Sediments.** Contaminated sediments is a serious problem in the Grand Calumet River and the Indiana Harbor and Ship Canal. The Corps of Engineers plans to dredge portions of these waterways as soon as a confined disposal facility is constructed. In 1992, only a few cubic yards of contaminated sediment were removed. Ultimately, several thousand cubic yards will be removed.

**3.3.3 Index of Biotic Integrity as a Measure of Biologic Health (Karr et. al., 1986).** This indicator is based on numbers and diversity of the fish community. It was developed several years ago by Dr. J. R. Karr and associates, and has been used by a number of State agencies, universities and USEPA. Figure 3.3.2 shows the results of applying the index to the Grand Calumet River based on sampling from 1985 through 1990. The results are not encouraging, and suggest no significant improvement over time. The waterway displays poor biotic integrity, probably due in large part to continuing poor sediment quality.

# Toxic Release Inventory for NW Indiana/SE Cook Co. GEI Reported Priority Pollutant Releases 1988-1990 Releases to Water, POTWs, and Underground Injection

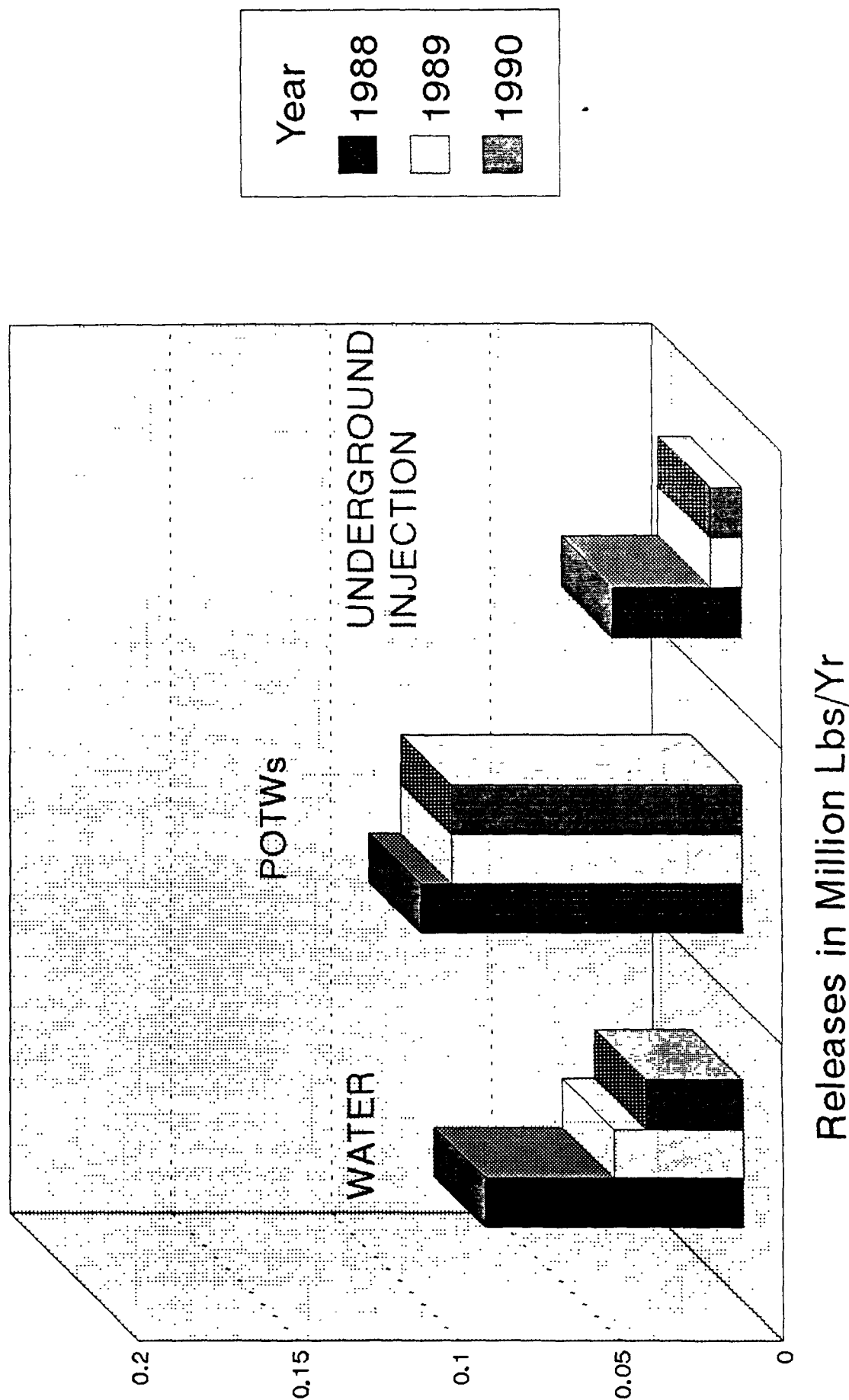


Figure 3.3.1

# Index of Biotic Integrity (IBI)- 1985 Through 1990 East Branch Grand Calumet River at Bridge Street Based on Fish Community Sampling

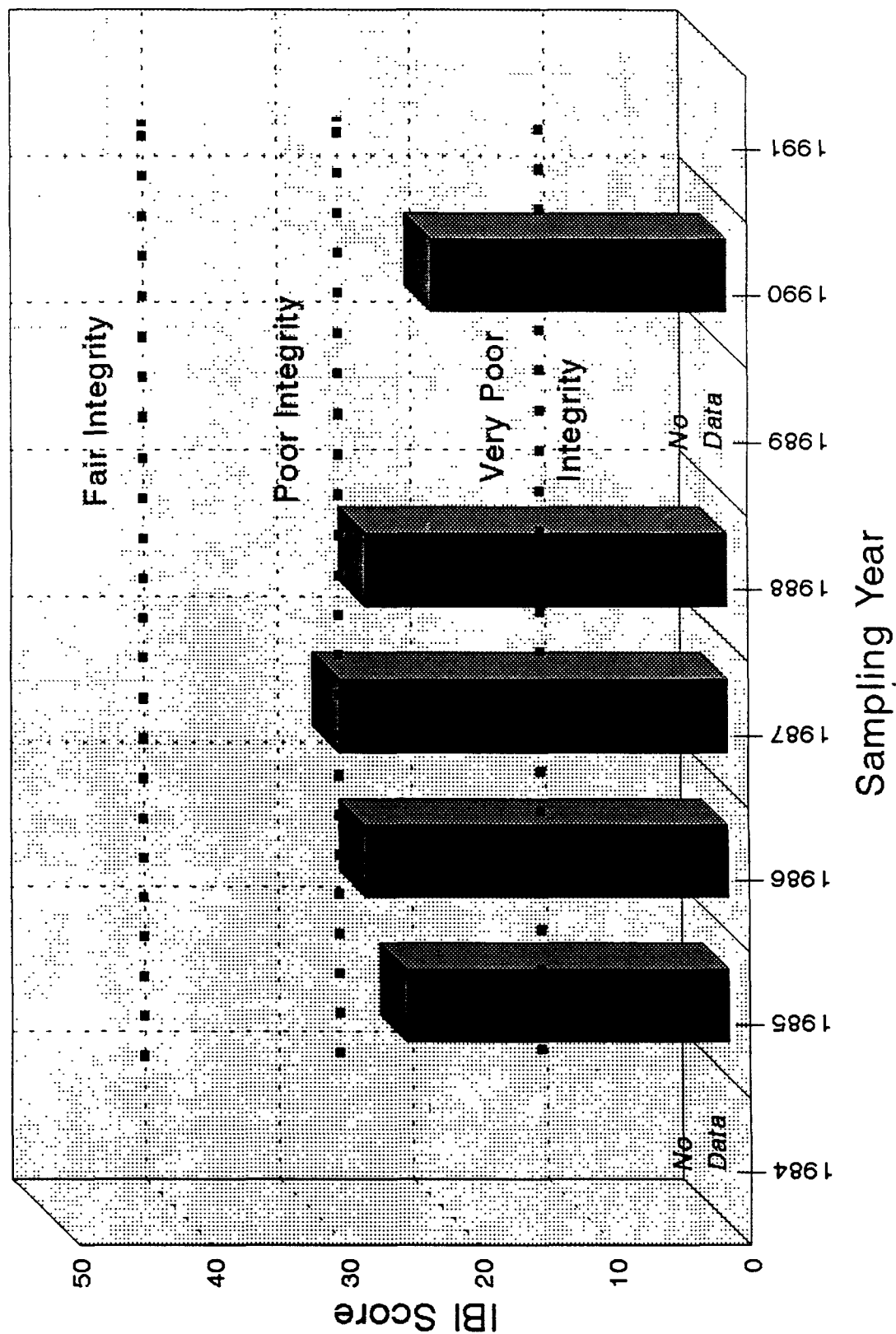


Figure 3.3.2

### **3.4 Air Medium Indicators: 1988-90**

**3.4.1 Stationary Source POC Releases to the Air Medium.** Stack air releases are shown in Figure 3.4.1. The reported releases show an increase in 1989 and then a significant decline in 1990.

**3.4.2 Fugitive POC Releases to the Air Medium.** Fugitive air releases are summarized in Figure 3.4.2. The trend shows a modest decline from 1988 to 1989 with no significant change between 1989 and 1990.

Toxic Release Inventory for NW Indiana/SE Cook Co. GEI  
Reported Priority Pollutant Releases 1988-1990  
Stack Air Releases

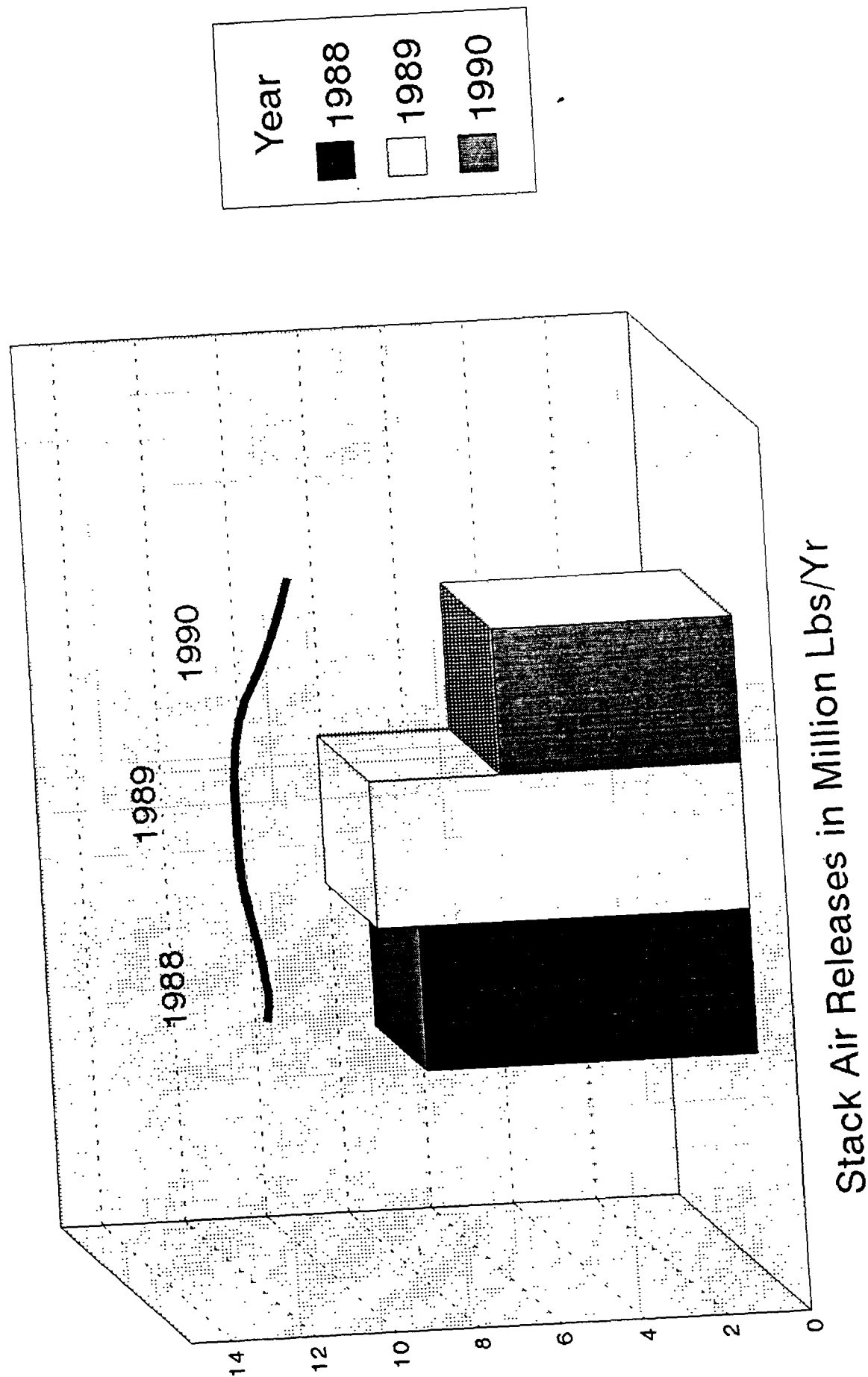


Figure 3.4.1



Toxic Release Inventory for NW Indiana/St. Cook Co. GRI  
Reported Priority Pollutant Releases 1988-1990  
Fugitive Air Releases

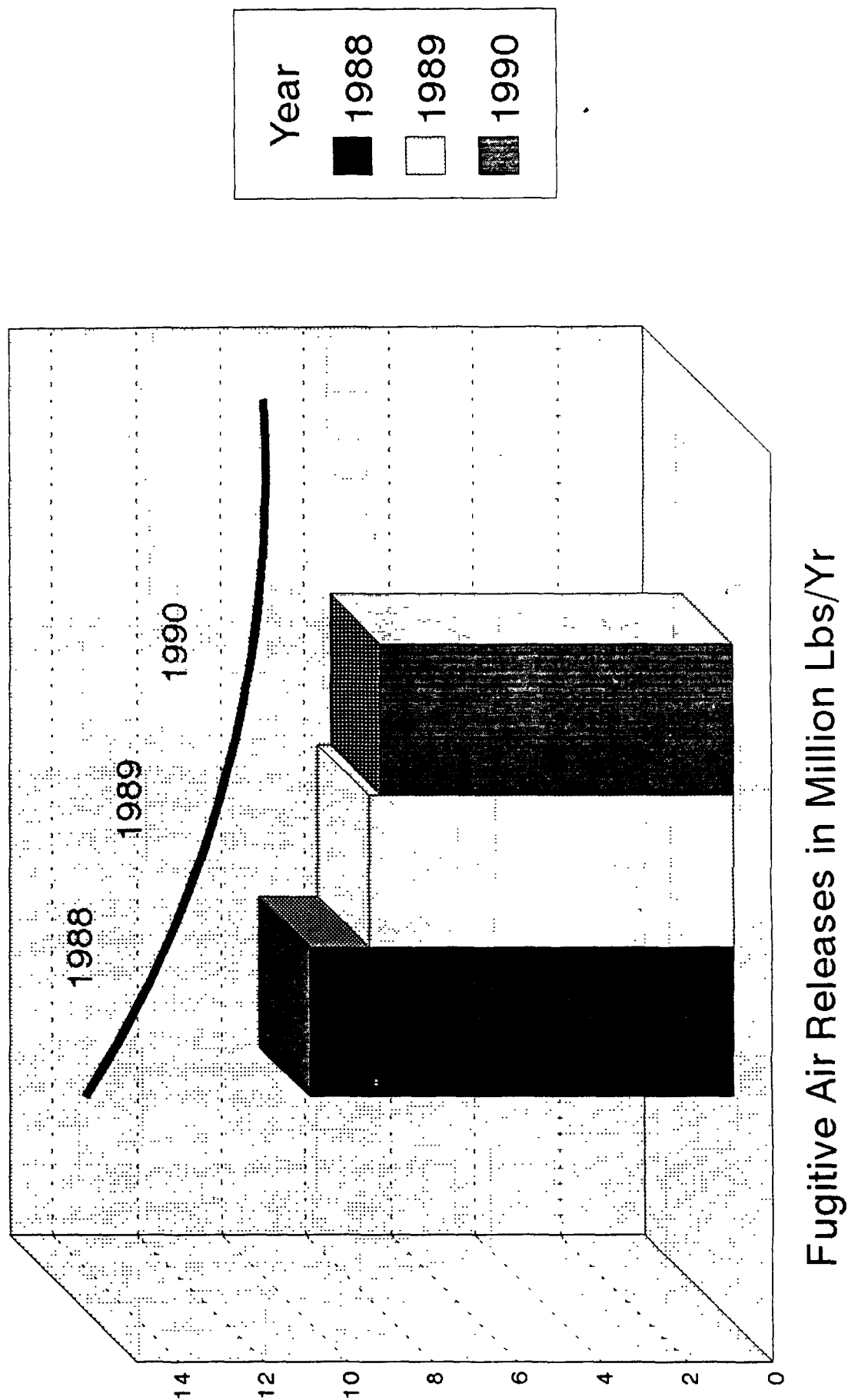


Figure 3.4.2

### **3.5 Land Medium Indicators: 1988-92**

**3.5.1 POC Releases to the Land Medium.** Figure 3.5.1 shows a modest decline in TRI releases to land from 1988 to 1989. This decline is similar to trends displayed in the other media.

**3.5.2 Reduction in Spill Impacts in the GEI Area.** Information provided by Region 5's Emergency Response Branch indicates that five spill responses were conducted in the GEI area in FY 1991 and six spill responses were conducted in FY 1992. Several of these spills required follow up removal actions.

**3.5.3 Removal and Remediation of Contaminated Soil.** The Region 5 Superfund Program reports four sites in the area that are currently on the National Priority List (Midco I, Midco II, 9th Ave Dump, and Lake Sandy Jo). A fifth site, USS Lead, was added in February 1992 as a proposed NPL project. Removal of waste and contaminated soil has been active at the four original sites. Two of these sites, Midco I & II, have partially achieved their remediation goals, but none of the sites has totally achieved remediation goals.

Toxic Release Inventory for NW Indiana/SE Cook Co. GEL  
Reported Priority Pollutant Releases 1988-1990  
Releases To Land

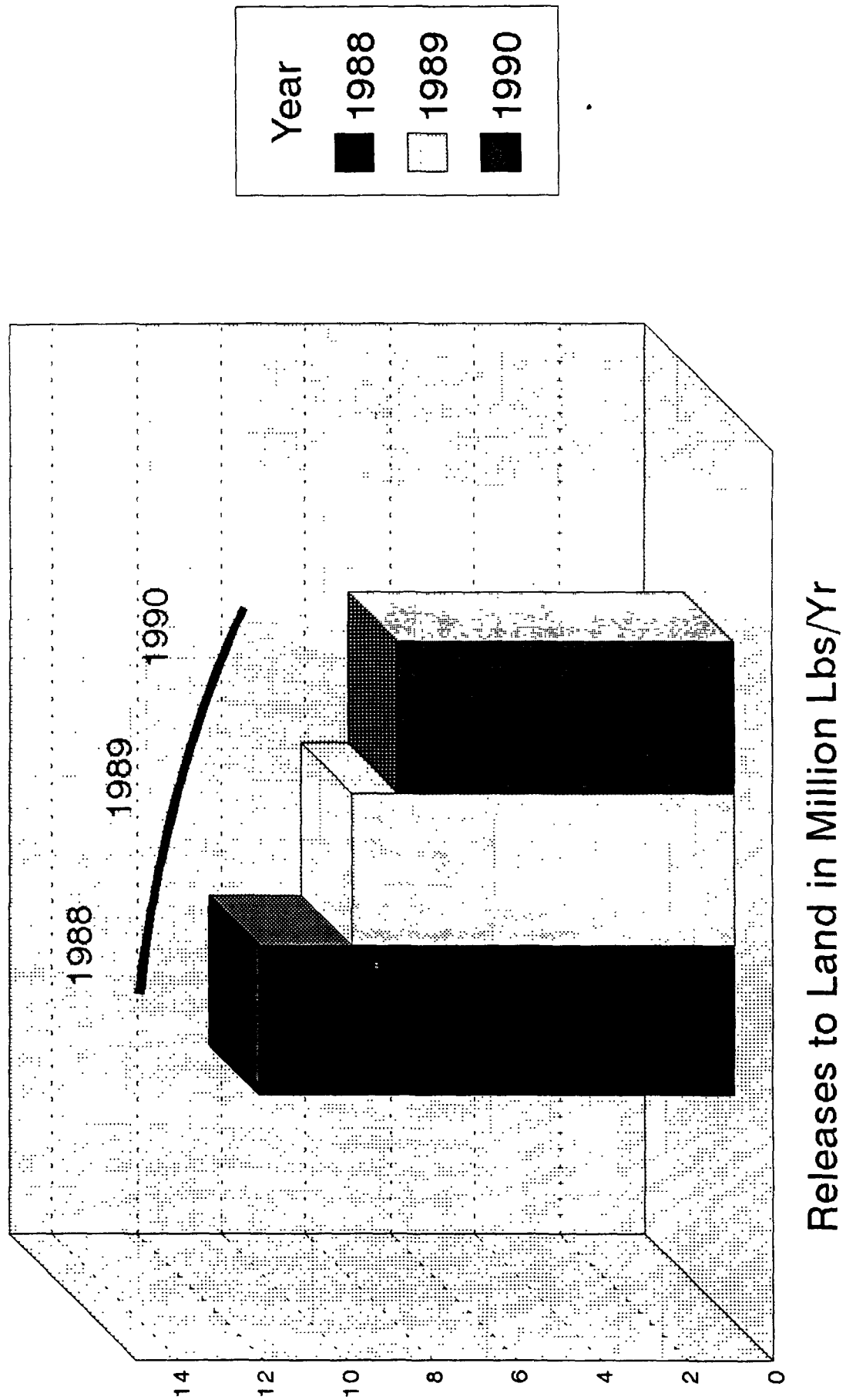


Figure 3.5.1

### 3.6 Enforcement Indicators: 1990-92

3.6.1 Compliance Inspections: Multi and Single Media. Table 3.6.1 below summarizes a portion of the total number of compliance inspections conducted by selected U.S. EPA offices over the 1990-92 period. It does not include inspections by some Regional offices because the inspection data were not organized along GEI boundaries, but rather along States or other political subdivision boundaries. The table also omits the numerous inspections conducted by the Illinois and Indiana State pollution control agencies. Their data were not immediately available for this report.

Table 3.6.1  
Federal Compliance Inspections: Multi and Single Media

Type of Inspection	FY 1990	FY 1991	FY 1992
Single Medium			
CDO Inspections *	20	84	46
Spill Prevention	ND	30	6
TSCA Enforcement	100	98	29
Undergrnd Tanks	≈ 3	≈ 5	8
Undergrnd Inject	12	12	19
Multi-Media	3	7	4
Total	138	236	113

\* Note: CDO Inspections include single medium inspections for Air, Water and Waste Management Programs.

3.6.2 Enforcement Referrals: Multi and Single Media referrals in the GEI area are reflected in Table 3.6.2. It should be noted that the level of effort in securing a Multi-Media referral is often equivalent to 3-4 single media referrals. The number of referrals appears to be on the rise as a result of an expanded inspection program.

Table 3.6.2  
**Judicial Enforcement Referrals: Multi and Single Media**

Type of Referral	FY 1990	FY 1991	FY 1992
Single Media	3	4	9
Multi-Media	2	0	1 *
Total	5	4	10

\* Level of effort equivalent to 4 single media referrals

3.6.3 Enforcement Settlements: Multi and Single Media. Table 3.6.3 below documents judicial enforcement settlements in the area for FY 1991 through FY 1992. Judicial enforcement settlements also display an upward trend reflective of increased activity.

Table 3.6.3  
**Judicial Enforcement Settlements: Multi and Single Media**

Type of Initiative	FY 1990	FY 1991	FY 1992
Single Media Consent Decree	1	4	4
Multi-Media Consent Decree	0	0	0
Total	1	4	4

3.6.4 Value of Injunctive Relief and Supplemental Environmental Projects (SEP). The value of injunctive relief obtained from selected consent decrees is highlighted in Table 3.6.4 below. The table includes only those consent decrees which have been entered by the court and those final administrative orders which have been filed during the time frame specified.

Table 3.6.4  
Value of SEPs and Injunctive Relief - FY 92

Type of Final Action	No. Cases / \$\$ Value
Suppl Env Projects	3 Cases / \$ 181,999
Injunctive Relief	2 Cases / \$27,072,000
Total	5 Cases / \$27,253,999

3.6.5 Administrative Actions. Administrative enforcement actions completed within the GEI area in 1992 are summarized in Table 3.6.5. These actions normally conclude with the issuance of an administrative order, penalty, or other action short of the formal judicial process. Data prior to FY 1992 was not geographically referenced and cannot be selected based upon the boundaries of the GEI area. Therefore, data on administrative orders prior to FY 1992 is not included.

Table 3.6.5  
Administrative Enforcement Actions  
FY 1992

Program	Number
RCRA	2
Clean Air Act	2
Clean Water Act	7
TSCA/EPCRA	6
FIFRA	2
Total	19

## **4 Conclusions and Recommendations**

### **Activity Measures**

Although activity measures do not directly reflect biological or ecological well being, they are nevertheless important elements for measuring the success of effective pollution control programs. This report addresses six activity measures ranging from numbers of inspections per year to numbers of spill responses per year. The report amply documents increased enforcement activity undertaken in large part due to the work of the GEI. As further experience is available for other geographic enforcement initiatives, additional analysis of the NW Indiana/SE Cook Co. results may be accomplished.

### **Indirect Environmental Indicators**

All of the indirect indicators are pollutant load related. Almost without exception, the toxic chemical releases reflected in the 33/50 program declined substantially, showing a 26% overall reduction since the 1988 base year. This is probably attributable to a number of factors, including more accurate reporting, increased public awareness, voluntary reductions, pollution prevention initiatives, and aggressive enforcement practices.

### **Direct Environmental Indicators**

As discussed above, direct indicators are actual or estimated measures of human or ecological health. As improvements are reflected in the indirect indicators, the results of those improvements should begin to be reflected in improvements as measured by the direct environmental indicators. At this time, the number of direct indicators that have been reliably tested and generally accepted are few but should increase as the Agency gains experience. The only direct indicator reported in this document was the Index of Biotic Integrity. The results reported in Section 3.3 above are consistent with a number of historical observations and reflect very stressed conditions in the East Branch Grand Calumet River and the Indiana Harbor and Ship Canal. It is not likely that the biology will improve until significant quantities of contaminated sediment are removed from these waterways.

### **Recommendations:**

1. The Task Force should focus more attention on bringing enforcement actions in Southeast Cook County, as almost all of the enforcement activities to date have focused on Northwest Indiana. In particular, the GEI should increasingly address violators of air and land pollution laws and regulations in Southeast Cook County. Although the pattern, distribution and mix of enforcement actions within the GEI area was not explicitly reflected in any of the reported measures and indicators, it is recommended that this aspect be examined in future progress reports.
2. Continued emphasis needs to be placed on the 33/50 program within the GEI area. Although the area is making good progress toward achieving the 33% reduction goal, achieving the 50% reduction goal may require greater pollution prevention initiatives than have been undertaken by EPA and the concerned States.
3. The GEI Task Force needs to help devise creative solutions, including enforcement settlements, for the siting, financing, building, and maintenance of a combined disposal facility for the dredge spill from the bottom of the Grand Calumet River. Sediment quality is a key link in overall water quality for the Indiana portion of the GEI area.
4. The GEI Task Force should evaluate enforcement targeting software developed by Region 10 and consider a pilot project employing the software. Results should be addressed in the next progress report.
5. The next GEI progress report should also include equity indicators. Based on a review of work by other U.S. EPA Regions, at least two equity indicators are proposed, one would map the percent of minority population vs. a pollutant exposure parameter such as TRI releases. The other would map the location of low income and poverty households vs. the location of remediation projects. Each type of indicator could be evaluated out to a distance of about one-mile from the pollutant source or remediation project.