Wildcat Creek Watershed Restoration Action Strategy

Part I: Characterization and Responsibilities

NEW INFORMATION: SEE ATTACHMENTS

March 2000
November 1999; Second Draft
June 1999; First Draft

Prepared by
Indiana Department of Environmental Management
Office of Water Management

FOREWORD

The First Draft (June 1999) of the Watershed Restoration Action Strategy (WRAS) was reviewed internally by IDEM and revised accordingly. The Second Draft (November 1999) was reviewed by stakeholders and revised accordingly. This Third Draft (March 2000) is intended to be a living document to assist restoration and protection efforts of stakeholders in their sub-watersheds. As a "living document" information contained within the WRAS will need to be revised and updated periodically. One of the most significant revisions made after the second review was the addition of the Waterbody Assessments from the 1998 data (Attachment 2) and the Cyanide Factsheet (Attachment 3).

The Wildcat Creek WRAS is divided into two parts: Part I, Characterization and Responsibilities and Part II, Concerns and Recommendations.

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EXECUTIVE SUMMARY

The overall goal and purpose of Part I of the Watershed Restoration Action Strategy (WRAS) is to provide a reference point and map to assist with improving water quality. The major water quality concerns and recommended management strategies will be addressed in Part II of the WRAS.

This Strategy broadly covers the entire watershed; therefore, it is intended to be an overall strategy and does not dictate management and activities at the stream site or segment level. Water quality management decisions and activities for individual portions of the watershed are most effective and efficient when managed through subwatershed plans. However, these subwatershed plans must also consider the impact on the watershed as a whole.

Finally, this Strategy is intended to be a fluid, living document in order to respond to the temporally dynamic quality of our environment. Therefore, this Strategy will require revision when new or different information becomes available.

Overview of the Wildcat Creek Watershed

The Wildcat Creek watershed is located in north-central Indiana. The watershed encompasses 804 square miles in seven different counties and approximately 425 miles of perennial streams. The Wildcat Creek watershed system is comprised of three forks: North, Middle, and South.

The land use in the watershed is predominantly agriculture, which represents approximately 93 percent of the land cover. Corn and soybeans comprise the majority of crops produced in the Wildcat Creek watershed. Other land uses include forest, wetlands, and urban areas.

Kokomo, Frankfort, and Lafayette are the three major urban areas within the watershed. Kokomo, located on the North Fork of Wildcat Creek is the largest urban area located wholly within the watershed boundary.

The North Fork, from S.R. 29 in Carroll County to Peter's Mill Bridge in Tippecanoe County, and the South Fork, from S.R. 38 in Tippecanoe County to its confluence with the North Fork, are designated as "Scenic," under the Indiana Natural, Scenic, and Recreational Stream System.

Current Status of Water Quality in the Wildcat Creek Watershed

Section 303(d) of the Clean Water Act requires states to identify waters that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. The Clean Water Act Section 303(d) list for Indiana provides a basis of understanding the current status of water quality in the Wildcat Creek watershed. The following Wildcat Creek

watershed waterbodies are on Indiana's 1998 Clean Water Act Section 303(d) list submitted to and approved by EPA:

- **South Fork Wildcat Creek** for cyanide violations (see Attachment 3)
- **Little Wildcat Creek/Kelly West Ditch** for dissolved oxygen violations
- **Wildcat Creek - North Fork** for PCB fish consumption advisory and ammonia, dissolved oxygen, cyanide, lead, and nitrate violations
- **Prairie Creek Ditch** for dissolved oxygen violations
- **Kokomo Creek** for PCB fish consumption advisory, and ammonia and dissolved oxygen violations
- **Kokomo Reservoir #2** for mercury fish consumption advisory

In addition, various local, state, and federal stakeholders have expressed concern over land use practices that may be impacting water quality.

Water Quality Goal

The overall water quality goal for the Wildcat Creek watershed is that all waterbodies meet the applicable water quality standards for their designated uses.

Wildcat Creek Watershed Restoration Action Strategy Part I: Characterization and Responsibilities

1.0 Introduction

In December 1997, IDEM began a pilot watershed initiative in the Wildcat Creek watershed. IDEM selected the Wildcat Creek watershed for the pilot project because it:

- Θ contains diverse land use (several urban centers and extensive agriculture);
- Θ contains streams that do not meet their designated use;
- Θ is one of the smaller 8-digit HUC watershed in the State;
- Θ is totally contained within State borders; and
- Θ contains headwaters and larger streams.

The purpose of the initiative was to determine how IDEM as an agency could find ways to be more effective in working with a diverse public while addressing water quality concerns in a watershed framework. This initiative is based on partnerships between federal, state, and local government groups and local businesses, industry, and citizen groups to build consensus on long term management within the watershed. Goals of the initiative include:

Steer financial and technical resources toward improving water quality in the watershed.
Develop a cooperative plan for long term health of the watershed.
Provide a laboratory for the Agency to develop a process for carrying out Total Maximum Daily Loads (TMDL) that will involve local citizens and interest groups.
Encourage good avenues of communication among the disparate structures of IDEM.

One of the tangible products of this Initiative is the two part Wildcat Creek Watershed Restoration Action Strategy generated by IDEM's Office of Water Management. This document, Part I, provides a characterization of water quality in the watershed. Part II of the Strategy provides a discussion of resource concerns and recommended management strategies.

1.1 Goal and Purpose of This Document

The overall goal and purpose of the Watershed Restoration Action Strategy Part I is to provide a reference point and map to assist with improving water quality. The overall water quality goal for the Wildcat Creek watershed is that all waterbodies meet the applicable water quality standards for their designated uses.

Part I of the Strategy is intended to be a fluid, living document in order to respond to the temporally dynamic quality of our environment. Therefore, Part I of the Strategy will require revision when new or different information becomes available.

1.2 Guide to the Use of This Document

Chapter 1: Introduction - This Chapter provides a non-technical description of the purpose of Part 1 of the Strategy. This Chapter also provides an overview of stakeholder groups in the Wildcat Creek watershed.

Chapter 2: General Watershed Description- Some of the specific topics covered in this chapter include:

- an overview of the watershed
- hydrology of the watershed
- a summary of land use within the watershed
- natural resources in the watershed
- population statistics
- major water uses in the watershed
- water quality classifications and standards.

Chapter 3: Causes and Sources of Water Pollution - This Chapter describes a number of important causes of water quality impacts including biochemical oxygen demand (BOD), toxic substances, nutrients, E. coli bacteria and others. This Chapter also describes both point and nonpoint sources of pollution.

Chapter 4: Water Quality and Use Support Ratings - This Chapter describes the various types of water quality monitoring conducted by IDEM, summarizes water quality in the watershed based on Office of Water Management data and presents a summary of use support ratings for those surface waters that have been monitored or evaluated.

Chapter 5: State and Federal Water Quality Programs - Chapter 5 summarizes the existing State and Federal point and nonpoint source pollution control programs available to address water quality problems. These programs are management tools available for addressing the priority water quality concerns and issues that are discussed in Part II of the Strategy. Chapter 5 also describes the concept of Total Maximum Daily Loads (TMDLs). TMDLs represent management strategies aimed at controlling point and nonpoint source pollutants. IDEM's TMDL Strategy will also be discussed.

1.3 Stakeholder Groups in the Watershed

The Wildcat Creek watershed contains many stakeholder groups that have different missions (Appendix D). Many of these groups have a long history of working with Wildcat Creek and its watershed. The following discussions briefly describe some of the watershed groups.

Wildcat Creek Watershed Network Board

Since the beginning of IDEM's Wildcat Creek Watershed Initiative, there has been a concerted effort to collect information on the water quality concerns and priorities held by the various watershed stakeholder groups. To further this effort, the Office of Water Management initiated meetings to bring watershed stakeholder groups together in order to learn more about the watershed. These meetings, called the Wildcat Creek Watershed Network Board, are designed to increase information sharing between the various stakeholder groups and geographic regions of the watershed. After two meetings, the participants in the Board identified failing septic systems and straight septic discharge as a major water quality concern and priority. This led to the organization and presentation of the "Wildcat Creek Watershed Failed/Improper Septic System Workshop" that was held on May 19, 1999 in Kokomo, Indiana. The stakeholder efforts to address the septic issues are continuing with counties organizing septic demonstration projects to educate residents.

Wildcat Creek Foundation

Since 1974, the Wildcat Creek Foundation has been actively striving to maintain the scenic and natural qualities of Wildcat Creek. Specifically, the Wildcat Creek Foundation focuses on portion of Wildcat Creek designated as Natural and Scenic by the State of Indiana. The Wildcat Creek Foundation acts as a land trust; enlists voluntary preservation; manages public access sites; employs conservation easements; works to reduce recreational abuse; and monitors local and state regulations.

Wildcat Guardians

The Wildcat Guardians were formed in 1990 by a group of watershed residents that were dedicated toward improving the health and beauty of Wildcat Creek. To accomplish this task, they maintain a year-round program of guardianship and stewardship for Wildcat Creek that includes stream clean-ups, reporting illegal dumping, and monitoring.

Wildcat Creek Advisory Group

The Wildcat Creek Advisory Group was formed as part of designating a portion of Wildcat Creek as a state Scenic and Natural Stream in 1980. The Advisory Group was and is focused on the scenic and natural portion of Wildcat Creek discussed in Section 2.6. The Advisory Group was originally comprised of riparian landowners, Indiana Farm Bureau, Carroll County Area Plan Commission, Tippecanoe County Area Plan Commission, Wildcat Canoe Club, Wildcat Park Foundation, U.S. Canoe Association, Wildcat Creek Federation, League of Women Voters of Greater Lafayette, Girl Scouts of America, and Wildcat Group-Sierra Club. The current Advisory Group was the result of a recommendation by the Indiana Department of Natural Resources (IDNR) and the original Advisory Group. The composition of the Advisory Group includes many of the original groups; however, many have gone through name changes and reorganization. The Advisory Group is led by IDNR Division of Outdoor Recreation which produced "A Plan for the Preservation and Management of Wildcat Creek, January 1980."

Clinton County Wildcat Creek Watershed Group

The Clinton County Wildcat Creek Watershed Group grew out of the Clinton County SWCD's locally-led process during the spring of 1998. Throughout 1998, the stakeholders in this group met regularly to discuss issues and perceived problems.

Tippecanoe County Wildcat Creek Watershed Group

The Tippecanoe County Wildcat Creek Watershed Group grew out of the Tippecanoe County SWCD's locally-led process in late spring of 1998. Through the summer of 1998, the stakeholders in this group met regularly to discuss issues and refine a list of the top ten Wildcat Creek concerns.

Carroll County Locally Led Conservation

At the beginning of 1997, the Carroll County SWCD convened a meeting of Carroll County stakeholders as a part of their locally led conservation program. This meeting produced four main areas for concern for Carroll County: 1) Nutrient management; 2) Soil erosion; 3) Water quality; and 4) Public education about natural resources.

2 General Watershed Description

This Chapter provides a general description of Wildcat Creek and its watershed and includes the following:

Section 2.1 Wildcat Watershed Overview
Section 2.2 Land Cover, Population, and Growth Trends
Section 2.3 Agricultural Activities in the Wildcat Watershed
Section 2.4 Areas of Special Concern
Section 2.5 Significant Natural Areas in the Wildcat Watershed
Section 2.6 Surface Water Use Designations and Classifications
Section 2.7 US Geological Survey Water Use Information for the Wildcat Watershed

2.1 Wildcat Watershed Overview

The Wildcat Creek watershed is an 8 digit (05120107) hydrologic unit code (HUC) watershed located in north-central Indiana (Figure 2-1). The watershed encompasses 804 square miles in seven different counties and approximately 425 miles of perennial streams. It is subdivided into 44 subbasins represented on the map by 14 digit HUCs (figure 2-2). The entire Wildcat Creek watershed is located in the Eastern Corn Belt plains ecoregion, which is characterized by smooth plains, with beech/maple vegetation, and soils that are good for cropland (Tetra Tech 1999). The meandering drainage system of the Wildcat Creek watershed is comprised of three forks: North, Middle, and South. The North Fork Wildcat Creek is often referred to as the main stem. The floodplain of the three forks ranges from approximately a quarter of a mile to almost one mile in width (IDNR 1980).

Geology/Soils

The Wildcat Creek basin is a post-glacial stream basin that follows the basic bedrock valley of a pre-glacial river (IDNR 1980). Extensive glaciation has had a major impact on the geology and soil types/locations in the watershed. Unsorted glacial debris from melting of the basal ice load comprise the eight or nine distinct, but discontinuous, till sheets that may be found in the watershed. New Albany Shale and Rockford Limestone are the dominant bedrock materials, and surface geology represents east to west fluted ground moraine of an uppermost tongue of the Trafalgar formation, the latest known advance of the East White glacial sublobe (IDNR 1980).

Indiana, particularly in the central region, has some of the most productive soils in the United States. These soils, good management, and climate contribute to consistently increasing crop-yield levels. Soil types in the Wildcat Creek Watershed are derived from two general groups: alluvial and gray-brown podzolics. The podzols are located on the uplands and slopes and are good agricultural soils. The alluvial soil types, generally located in the bottomlands, create special stabilization and conservation concerns (IDNR 1980).

Climate

Climate in the Wildcat Creek watershed region is generally categorized as humid-continental, influenced in the winter by eastward-moving, northerly, polar air masses, and by warm gulf air during the summer (IDNR 1980). Average yearly precipitation for the watershed is approximately 40 inches and average yearly snowfall is approximately 25 inches (NOAA 1996). January normal maximum and minimum temperatures are 34E F and 17E F, respectively, while July normal maximum and minimum temperatures are 86E F and 65E F, respectively (NOAA 1996).

Wildcat Creek North Fork

The North Fork of the Wildcat Creek originates in Grant, Madison, and Tipton Counties and flows westward through Howard and Carroll County before joining the Middle and South Forks in Tippecanoe County (Figure 2-1). Wildcat Creek eventually flows into the Wabash River, near the city of Lafayette in Tippecanoe County. The North Fork also flows through the city of Kokomo with a 1996 population of 45,785 people, in Howard County. Kokomo Reservoir, located on the North Fork east of Kokomo, is the largest impoundment in the watershed and serves as a drinking water source for the city of Kokomo. Major tributaries to the North Fork include Mud Creek, Turkey Creek, Kokomo Creek, Little Wildcat Creek, and Honey Creek.

Wildcat Creek Middle Fork

The Middle Fork of the Wildcat Creek originates in Clinton County and flows westward through Clinton and Carroll Counties before joining the South Fork in Tippecanoe County. Of the three forks of Wildcat Creek, the Middle Fork is the smallest in terms of flow and drainage area. The largest town located in the Middle Fork watershed is Rossville. Major tributaries to the Middle Fork include Campbell's Run, Cripe Run, Hog Run, and Dunk Creek.

Wildcat Creek South Fork

The South Fork of the Wildcat Creek originates in Clinton and Tipton Counties and flows westward through Clinton County before joining the Middle Fork in Tippecanoe County. Much of the South Fork flows through relatively level farmland, although glacial mounds (kames) may be seen in the creek valley and there are some high banks along the creek. The largest city on the South Fork is Frankfort, located in Clinton County. A major tributary to the South Fork is Kilmore Creek which originates in Tipton County and joins the South Fork in Clinton County. Other tributaries to the South Fork include Swamp Creek, Prairie Creek, Spring Creek, and Lauramie Creek.

2.2 Land Cover, Population, and Growth Trends

2.2.1 General Land Cover

Native vegetation in the Wildcat watershed is an upland mixed hardwood forest in varied stages of succession. The U.S. Geological Survey - Biological Resources Division and the U.S. Fish and Wildlife Service are overseeing the National Gap Analysis Program. In Indiana, Indiana State University and Indiana University are carrying out the Indiana GAP Project which involves an analysis of current vegetative land cover through remote sensing (ISU 1999). This analysis provided vegetative land cover data in 30 x 30 meter grids (Figure 2-3). The following is a summary of vegetative cover in the watershed determined from the GAP image:

2.32%	Urban (impervious, low and high density)
92.29%	Agricultural vegetation (row crop and pasture)
2.01%	Forest vegetation (shrubland, woodland, forest)
3.18%	Wetland vegetation (Palustrine: forest, shrubland, herbaceous)
0.21%	Open Water

The flood plain forest found in the Wildcat Creek watershed is a silver maple and American elm forest, including additional species such as willows, basswood, sycamore, and ash. In clearings or thinned woods, hawthorne, milkweed, and various sedges, grasses, and ferns are found. The upland forest is a sugar maple-beech and oak-hickory forest with associations of numerous additional tree and shrub species (IDNR 1980).

2.2.2 Population

The 1990 total population in the seven counties that have land portions in the watershed was 482,185 (Tetra Tech 1999). Table 2-1 shows a break down of population by county and estimated population projections. It should be noted that these numbers do not reflect the actual population living in the Wildcat Creek watershed. For example, Tippecanoe County and Madison County have a greater population than any of the other seven counties; however, Tippecanoe County and Madison County only have a small portion of the land area in the Wildcat Creek watershed area (Figure 2-1). A better estimate of the population within the Wildcat Creek watershed may be the 1990 and 1995 US Geological Survey Water Use Reports which show a total population in the watershed of 114,010 in 1990 and 134,020 in 1995 (Table 2-6). These reports indicate that the population in the watershed appears to have grown by about 17.6% between 1990 and 1995.

The US Census and the Indiana Business Research Center also provide information about the population in cities and towns. Table 2-2 contains population estimates for various cities and towns located wholly within the watershed. Kokomo is the largest city located in the watershed and in terms of population, was the 11th largest city in Indiana for 1996. Although not located wholly within the Wildcat Creek watershed, the City of Lafayette overlaps the watershed near its confluence with the Wabash River. The 1996 population estimate for Lafayette was 44,344 (the 13th largest city in Indiana in 1996).

TABLE 2-1
WILDCAT CREEK COUNTY POPULATION PROJECTIONS 1990-2020*

County	1990	2000	2010	2020	Percent Change (1990 to 2020)
Carroll	18,800	18,900	19,200	19,400	+3.2
Clinton	31,000	31,300	31,900	32,600	+5.2
Grant	74,200	71,700	69,500	66,800	-9.9
Howard	80,800	80,500	81,200	81,200	+0.5
Madison	130,700	128,200	126,700	124,400	-4.8
Tippecanoe	130,600	140,400	148,400	152,400	+16.7
Tipton	16,100	16,000	16,000	15,900	-1.2

* IBRC 1993

TABLE 2-2
WILDCAT CREEK CITY AND TOWN POPULATION ESTIMATES*

City/Town	Census 1990	Estimate 1996	Percent Change (1990 to 1996)
Burlington	568	591	4
Dayton	996	1,106	11
Frankfort	14,754	15,231	3.2
Greentown	2,172	2,301	5.9
Kempton	362	343	-5.2
Kokomo	44,996	45,785	1.8
Michigantown	472	510	8.1
Mulberry	1,262	1,354	7.3
Rossville	1,175	1,441	22.6
Russiaville	988	1,028	4
Sharpsville	769	793	3.1
Windfall	779	795	2.1

* IBRC 1997

2.3 Agricultural Activities in the Wildcat Watershed

Agriculture is the dominant land use in the Wildcat Creek watershed. Section 2.2.1 shows that 92.29 percent of land cover in the watershed is agricultural vegetation. This section provides an overview of the agricultural activities in the watershed. Specifically, Section 2.3.1 describes livestock operations and Section 2.3.2 describes crop production activities.

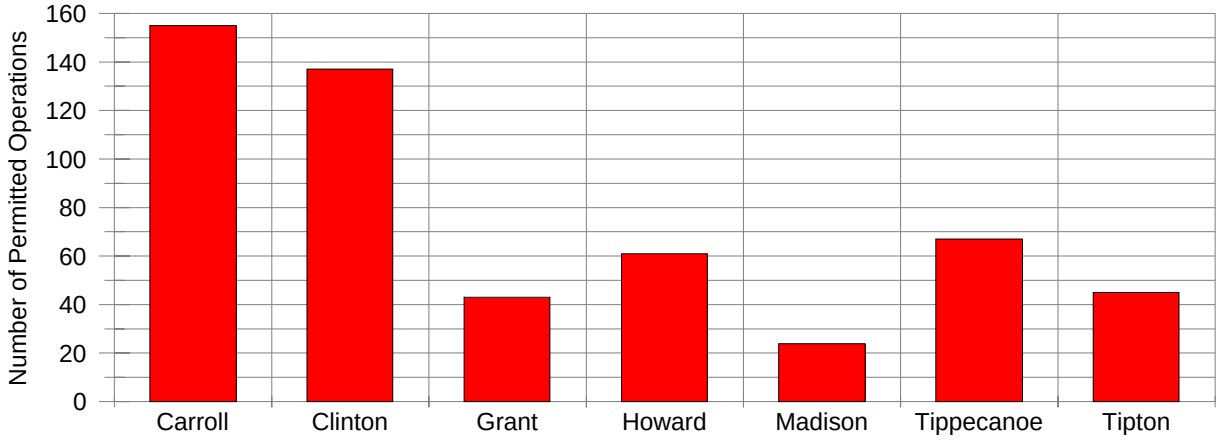
2.3.1 Livestock Operations

Confined feeding is the raising of animals for food, fur or recreation in lots, pens, ponds, sheds or buildings, where they are confined, fed and maintained for at least 45 days during any year, and where there is no ground cover or vegetation present over at least half of the animals' confinement area. Livestock markets and sale barns are generally excluded (IDEM 1999).

Indiana law defines a confined feeding operation as any livestock operation engaged in the confined feeding of at least 300 cattle, or 600 swine or sheep, or 30,000 fowl, such as chickens, ducks and other poultry. The IDEM regulates these confined feeding operations, as well as smaller livestock operations which have violated water pollution rules or laws, under IC 13-18-10.

As of Spring 1999, there were 532 permitted livestock operations in the seven counties of the watershed. The following chart shows the permitted farms by county:

Smaller livestock operations do not require a permit from IDEM. Therefore, the actual number of livestock operations in the Wildcat Creek watershed is larger than the number of permitted



operations. Table 2-3 lists the 1997 distribution of livestock throughout the seven counties in the watershed. Hogs and pigs make up the largest number of domestic animals raised in the Wildcat Creek watershed. In fact, Carroll County and Clinton County are the number one and two pork producers in Indiana.

2.3.2 Crop Production

As discussed previously, the soils of the Wildcat Creek watershed are very good for crop production. Table 2-4 lists the 1997 acres of the major crops produced in 1997 throughout the seven counties in the watershed. For 1997, total acres of soybeans in the seven counties edged out total acres of corn for grain as the number one crop produced. Soybeans and corn for grain are clearly the primary crops produced in the watershed on basis of total acres.

TABLE 2-3

LIVESTOCK IN THE WILDCAT CREEK WATERSHED

	1997 Livestock Inventory*							
	Hogs and pigs		Cattle and calves		Sheep and lamb		Horse and pony	
County	Number	State Rank**	Number	State Rank**	Number	State Rank**	Number	State Rank**
Carroll	255,176	1	6,084	65	751	31	218	75
Clinton	181,579	2	2,484	86	860	24	--	--
Grant	27,858	45	4,728	70	390	53	--	--
Howard	73,259	17	5,000	67	--	--	294	65
Madison	26,111	48	6,485	60	785	28	594	25
Tippecanoe	90,874	15	7,761	53	1,941	2	--	--
Tipton	56,821	25	2,004	88	445	50	200	78

* USDA 1997

** State Rank is out of a total of 92 counties in Indiana

TABLE 2-4

CROPS PRODUCED IN THE WILDCAT CREEK WATERSHED

	1997 Crop Area*							
	Corn for grain		Soybeans for beans		Wheat		Hay crops	
County	Acres	State Rank**	Acres	State Rank**	Acres	State Rank**	Acres	State Rank**
Carroll	103,130	11	73,613	27	4,185	50	2,787	82
Clinton	108,819	7	102,392	6	4,732	40	1,849	87
Grant	71,940	29	91,265	12	4,218	48	3,459	73
Howard	64,341	44	64,600	36	2,835	70	3,061	80
Madison	95,169	15	97,000	9	5,232	34	3,884	66
Tippecanoe	104,188	10	95,325	11	6,350	26	5,516	49
Tipton	70,977	31	70,257	31	3,246	65	1,029	92

* USDA 1997

** State Rank is out of a total of 92 counties in Indiana

2.4 Areas of Special Concern

There are three Superfund (CERCLA) sites located in the Wildcat Creek watershed: CHDD Incorporated, Continental Steel Corporation, and Midwest Plating Corporation. All three of these Superfund sites are located in Kokomo, Indiana. The most significant site in terms of impact to Wildcat Creek is Continental Steel Corporation. The Continental Steel Corporation site released PCBs to Wildcat Creek, which has led to contaminated sediments in Wildcat Creek and Kokomo Creek near the site. In addition, this PCB contamination has contributed to the fish consumption advisories for Wildcat Creek and Kokomo Creek. The IDEM is currently working through remediation plans for the Continental Steel Corporation site and it appears that remediation will include dredging impacted areas of Wildcat Creek and Kokomo Creek. A fact sheet discussing this site and proposed plans is in Appendix A.

2.5 Significant Natural Areas in the Wildcat Watershed

In June 1979, the Indiana Department of Natural Resources (IDNR) evaluated Wildcat Creek for inclusion in the Indiana Natural, Scenic, and Recreational Stream System. IDNR found that the North Fork, from S.R. 29 in Carroll County to Peter's Mill Bridge in Tippecanoe County, and the South Fork, from S.R. 38 in Tippecanoe County to its confluence with the North Fork, qualified for the Indiana Natural, Scenic, and Recreational Stream System under a designation of "Scenic." This designation means the portions of Wildcat Creek, named above, are protected from detrimental impact from publicly funded or regulated projects such as dams, dredging operations, and public utility developments. This designation also places responsibility on IDNR for monitoring fill and construction in the floodway (1945 Indiana Flood Control Act IC 13-2-22) in terms of the impact on the fish, wildlife, and botanical resources of the creek and its banks. This designation does not affect private development above the 100-year floodplain and does not prevent clear-cutting of vegetation (IDNR 1980).

A product of this 1979 IDNR evaluation was the document titled "A Plan for Preservation and Management of Wildcat Creek," published in January of 1980. This Plan documents the evaluation and designation process and provides recommendations for preserving and managing the Scenic portions of Wildcat Creek. A recommendation of this designation was the formation of the Wildcat Creek Advisory Group.

In 1993, the Indiana Natural Resources Commission (NRC) adopted its "Outstanding Rivers List for Indiana." This listing is referenced in the standards for utility line crossings within floodways, formerly governed by IC 14-28-2 and now controlled by 310 IAC 6-1-16 through 310 IAC 6-1-18. Except where incorporated into a statute or rule, the listing is intended to provide guidance rather than to have regulatory application (NRC 1997). To help identify the rivers and streams which have particular environmental or aesthetic interest, a special listing has been prepared by IDNR's Division of Outdoor Recreation. The listing is a corrected and condensed version of a listing compiled by American Rivers and dated October 1990. The NRC has adopted the listing as an official recognition of the resource values of these waters. A river included in the listing qualifies under one or more of 22 categories. Table 2-5 presents the rivers in the Wildcat Creek watershed that are on the list and their significance.

TABLE 2-5
WATERS OF THE WILDCAT CREEK WATERSHED ON THE OUTSTANDING RIVERS LIST FOR INDIANA*

River Segment	County	Significance
Kilmore Creek: US 421 to confluence with South Fork Wildcat Creek	Clinton	Rivers identified as having outstanding ecological, recreational, or scenic importance.
Wildcat Creek: SR 29 to confluence with Wabash River	Carroll, Tippecanoe	State designated Scenic Rivers. Identified as having statewide or greater significance. State designated canoe route. State designated "Outstanding Resource Water."
Middle Fork Wildcat Creek: SR 26 to confluence with South Fork Wildcat Creek	Clinton, Tippecanoe	Rivers identified as having outstanding ecological, recreational, or scenic importance.
South Fork Wildcat Creek: US 421 to confluence with North Fork Wildcat Creek	Clinton, Tippecanoe	State designated Scenic Rivers. Identified as having statewide or greater significance. State designated canoe route. State designated "Outstanding Resource Water."

*NRC 1997

2.6 Surface Water Use Designations and Classifications

The following uses are designated by the Indiana Water Pollution Control Board (327 IAC 2-1-3):

- Surface waters of the state are designated for full-body contact recreation during the recreational season (April through October).
- All waters, except limited use waters, will be capable of supporting a well-balanced, warm water aquatic community.
- All waters which are used for public or industrial water supply must meet the standards for those uses at the point where water is withdrawn.
- All waters which are used for agricultural purposes must, as a minimum, meet the minimum surface water quality standards.
- All waters in which naturally poor physical characteristics (including lack of sufficient flow), naturally poor or reversible man-induced conditions, which came into existence prior to January 1, 1983, and having been established by use attainability analysis, public comment period, and hearing may qualify to be classified for limited use and must be evaluated for restoration and upgrading at each triennial review of this rule.
- All waters which provide unusual aquatic habitat, which are an integral feature of an area of exceptional natural beauty or character, or which support unique assemblages of aquatic organisms may be classified for exceptional use.

All waters of the state, at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil, or scum attributable to municipal, industrial, agricultural, and other land use practices, or other discharges:

- that will settle to form putrescent or otherwise objectionable deposits;
- that are in amounts sufficient to be unsightly or deleterious;
- that produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;
- which are in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life, other animals, plants, or humans.
- which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such degree as to create a nuisance, be unsightly, or otherwise impair designated uses.

2.6.1 Surface Water Classifications in the Wildcat Watershed

The statewide classifications discussed in Section 2.6 apply to all three forks of Wildcat Creek, with the following exceptions. The North Fork Wildcat Creek in Carroll and Tippecanoe Counties (river mile 43.11 to river mile 11.5) and the South Fork Wildcat Creek in Tippecanoe County (river mile 10.21 to river mile 0.00) are also designated to be an outstanding state resource and shall be maintained in their present high quality without degradation. In contrast, the Silverthorn Branch of Wildcat Creek in Clinton County is designated as a limited use water from the Rossville Sewage Treatment Plant to its confluence with the Middle Fork Wildcat Creek.

2.7 US Geological Survey Water Use Information for the Wildcat Watershed

The U.S. Geological Survey's (USGS) National Water-Use Information Program is responsible for compiling and disseminating the nation's water-use data. The USGS works in cooperation with local, State, and Federal environmental agencies to collect water-use information at a site-specific level. USGS also compiles the data from hundreds of thousands of these sites to produce water-use information aggregated up to the county, state, and national levels. Every five years, data at the state and hydrologic region level are compiled into a national water-use data system. Table 2-6 shows the USGS Water-Use information for the Wildcat Creek Watershed for 1990 and 1995.

TABLE 2-6
1990 AND 1995 WATER-USE INFORMATION FOR THE WILDCAT CREEK WATERSHED*
(HUC 5120107)

Population and Water Use totals	1990	1995
Total population in the watershed (thousands)	114.01	134.02
Public Water Supply	**1990**	**1995**
Population served by public groundwater supply (thousands)	44.35	59.33
Population served by surface water supply (thousands)	34.64	33.43
Total population served by public water supply (thousands)	78.99	92.73
Total groundwater withdrawals (mgd)	13.79	17.69
Total surface water withdrawals (mgd)	11.53	14.94
Total water withdrawals (mgd)	25.32	32.63
Total per capita withdrawal (gal/day)	199.9	191.25
Population self-supplied with water (thousands)	35.02	41.26
Commercial Water Use	**1990**	**1995**
Groundwater withdrawal for commercial use (mgd)	0.18	0.39
Surface water withdrawal for commercial use (mgd)	0.1	0.13
Deliveries from public water supplies for commercial use (mgd)	2.07	2.65
Total commercial water use (mgd)	2.35	3.17
Industrial Water Use	**1990**	**1995**
Groundwater withdrawal for industrial use (mgd)	2.77	2.96
Surface water withdrawals for industrial use (mgd)	2.26	0
Deliveries from public water suppliers for industrial use (mgd)	4.51	6.07
Total industrial water use (mgd)	9.54	9.03
Agricultural Water Use	**1990**	**1995**
Groundwater withdrawals for livestock use (mgd)	1.33	1.35
Surface water withdrawals for livestock use (mgd)	0.23	0.21
Total livestock water use (mgd)	1.56	1.56
Groundwater withdrawals for irrigation (mgd)	0	0.02
Surface water withdrawals for irrigation (mgd)	0	0
Total irrigation water use (mgd)	0	0

Notes:

mgd million gallon per day

gal/day gallon per day

* The water-use information presented in this table was compiled from information provided in the U.S. Geological Survey's National Water-Use Information Program data system for 1990 and 1995. The National Water-Use Information Program is responsible for compiling and disseminating the nation's water-use data. The U.S. Geological Survey works in cooperation with local, State, and Federal environmental agencies to collect water-use information at a site-specific level. Every five years, the U.S. Geological Survey compiles data at the state and hydrologic region level into a national water-use data system and are published in a national circular.

3 Causes and Sources of Water Pollution

A number of substances including nutrients, bacteria, oxygen-demanding wastes, metals, and toxic substances, cause water pollution. Sources of these pollution-causing substances are divided into two broad categories: point sources and nonpoint sources. Point sources are typically piped discharges from wastewater treatment plants, large urban and industrial stormwater systems, and other facilities. Nonpoint sources can include atmospheric deposition, groundwater inputs, and runoff from urban areas, agricultural lands and others. Chapter 3 includes the following:

Section 3.1 Causes of Pollution
Section 3.2 Point Sources of Pollution
Section 3.3 Nonpoint Sources of Pollution

3.1 Causes of Pollution

"Causes of pollution" refer to the substances which enter surface waters from point and nonpoint sources and result in water quality degradation and impairment. Major causes of water quality impairment include biochemical oxygen demand (BOD), nutrients, toxicants (such as heavy metals, polychlorinated biphenyls [PCBs], chlorine, pH and ammonia) and E. coli bacteria. Table 3-1 provides a general overview of causes of impairment and the activities that may lead to their introduction into surface waters. Each of these causes is discussed in the following sections.

TABLE 3-1
CAUSES OF WATER POLLUTION AND CONTRIBUTING ACTIVITIES

Cause	Activity associated with cause
Nutrients	Fertilizer on agricultural crops and residential/ commercial lawns, animal wastes, leaky sewers and septic tanks, direct septic discharge, atmospheric deposition, wastewater treatment plants
Toxic Chemicals	Pesticide applications, disinfectants, automobile fluids, accidental spills, illegal dumping, urban stormwater runoff, direct septic discharge, industrial effluent
Oxygen-Consuming Substances	Wastewater effluent, leaking sewers and septic tanks, direct septic discharge, animal waste
E. coli	Failing septic systems, direct septic discharge, animal waste (including runoff from livestock operations and impacts from wildlife), improperly disinfected wastewater treatment plant effluent

3.1.1 E. coli Bacteria

E. coli bacteria are associated with the intestinal tract of warm-blooded animals. They are widely used as an indicator of the potential presence of waterborne disease-causing (pathogenic) bacteria, protozoa, and viruses because they are easier and less costly to detect than the actual pathogenic organisms. The presence of waterborne disease-causing organisms can lead to outbreaks of such diseases as typhoid fever, dysentery, cholera, and cryptosporidiosis. The detection and identification of specific bacteria, viruses, and protozoa, (such as Giardia, Cryptosporidium, and Shigella) require special sampling protocols and very sophisticated laboratory techniques which are not commonly available.

E. coli water quality standards have been established in order to ensure safe use of waters for water supplies and recreation. 327 IAC 2-1-6 Section 6(d) states that E. coli bacteria, using membrane filter count (MF), shall not exceed 125 per 100 milliliters as a geometric mean based on not less than five samples equally spaced over a 30 day period nor exceed 235 per 100 milliliters in any one sample in a 30 day period.

E. coli bacteria may enter surface waters from nonpoint source runoff, but they also come from improperly treated discharges of domestic wastewater. Common potential sources of E. coli bacteria include leaking or failing septic systems, direct septic discharge, leaking sewer lines or pump station overflows, runoff from livestock operations, urban stormwater and wildlife. E. coli bacteria in treatment plant effluent are controlled through disinfection methods including chlorination (often followed by dechlorination), ozonation or ultraviolet light radiation.

3.1.2 Toxic Substances

327 IAC 2-1-9(45) defines toxic substances as substances which are or may become harmful to plant or animal life, or to food chains when present in sufficient concentrations or combinations. Toxic substances include, but are not limited to, those pollutants identified as toxic under Section 307 (a)(1) of the Clean Water Act. Standards for individual toxic substances are listed 327 IAC 2-1-6. Toxic substances frequently encountered include chlorine, ammonia, organics (hydrocarbons and pesticides) heavy metals and pH. These materials are toxic to different organisms in varying amounts, and the effects may be evident immediately or may only be manifested after long-term exposure or accumulation in living tissue.

Whole effluent toxicity testing is required for major NPDES dischargers (discharge over 1 million gallons per day or population greater than 10,000). This test shows whether the effluent from a treatment plant is toxic, but it does not identify the specific cause of toxicity. If the effluent is found to be toxic, further testing is done to determine the specific cause. This follow-up testing is called a toxicity reduction evaluation. Other testing, or monitoring, done to detect aquatic toxicity problems include fish tissue analyses, chemical water quality sampling and assessment of fish community and bottom-dwelling organisms such as aquatic insect larvae. These monitoring programs are discussed in Chapter 4.

Each of the substances below can be toxic in sufficient quantity or concentration.

Metals

Municipal and industrial dischargers and urban runoff are the main sources of metal contamination in surface water. Indiana has stream standards for many heavy metals, but the most common ones in municipal permits are cadmium, chromium, copper, nickel, lead, mercury, and zinc. Standards are listed in 327 IAC 2-1-6. Point source discharges of metals are controlled through the National Pollution Discharge Elimination System (NPDES) permit process. Mass balance models are employed to determine allowable concentrations for a permit limit. Municipalities with significant industrial users discharging wastes to their treatment facilities limit the heavy metals from these industries through a pretreatment program. Source reduction and wastewater recycling at waste water treatment plants (WWTP) also reduces the amount of metals being discharged to a stream. Nonpoint sources of pollution are controlled through best management practices.

In Indiana, as well as many other areas of the country, mercury contamination in fish has caused the need to post widespread fish consumption advisories. The source of the mercury is unclear; however, atmospheric sources are suspected and are currently being studied.

Polychlorinated biphenyls (PCBs)

Polychlorinated biphenyls (PCBs) were first created in 1881 and subsequently began to be commercially manufactured around 1929 (Bunce 1994). Because of their fire-resistant and insulating properties, PCBs were widely used in transformers, capacitors, and in hydraulic and heat transfer systems. In addition, PCBs were used in products such as plasticizers, rubber, ink, and wax. In 1966, PCBs were first detected in wildlife, and were soon found to be ubiquitous in the environment (Bunce 1994). PCBs entered the environment through unregulated disposal of products such as waste oils, transformers, capacitors, sealants, paints, and carbonless copy paper. In 1977, production of PCBs in North America was halted. Subsequently, the PCB contamination present in our surface waters and environment today is the result of historical waste disposal practices. In the Wildcat Creek watershed, the most significant source of PCB contamination is the Continental Steel Corporation Superfund site (Appendix A).

Ammonia (NH_3)

Point source dischargers are one of the major sources of ammonia. In addition, discharge of untreated septic effluent, decaying organisms which may come from nonpoint source runoff and bacterial decomposition of animal waste also contribute to the level of ammonia in a waterbody. Standards for ammonia are listed in 327 IAC 2-1-6.

3.1.3 Oxygen-Consuming Wastes

Oxygen-consuming wastes include decomposing organic matter or chemicals which reduce dissolved oxygen in water through chemical reactions. Raw domestic wastewater contains high

concentrations of oxygen-consuming wastes that need to be removed from the wastewater before it can be discharged into a waterway. Maintaining a sufficient level of dissolved oxygen in the water is critical to most forms of aquatic life.

The concentration of dissolved oxygen in a water body is one indicator of the general health of an aquatic ecosystem. 327 IAC Section 6 (b)(3) states that concentrations of dissolved oxygen shall average at least five milligrams per liter per calendar day and shall not be less than four milligrams per liter at any time. Dissolved oxygen concentrations are affected by a number of factors. Higher dissolved oxygen is produced by turbulent actions, such as waves, which mix air and water. Lower water temperatures also generally allows for retention of higher dissolved oxygen concentrations. Low dissolved oxygen levels tend to occur more often in warmer, slow-moving waters. In general, the lowest dissolved oxygen concentrations occur during the warmest summer months and particularly during low flow periods.

Sources of dissolved oxygen depletion include wastewater treatment plant effluent, the decomposition of organic matter (such as leaves, dead plants and animals) and organic waste matter that is washed or discharged into the water. Sewage from human and household wastes is high in organic waste matter. Bacterial decomposition can rapidly deplete dissolved oxygen levels unless these wastes are adequately treated at a wastewater treatment plant. In addition, excess nutrients in a water body may lead to an over-abundance of algae and reduce dissolved oxygen in the water through algal respiration and decomposition of dead algae. Also, some chemicals may react with and bind up dissolved oxygen. Industrial discharges with oxygen consuming wasteflow may be resilient instream and continue to use oxygen for a long distance downstream.

3.1.4 Nutrients

The term nutrients in this Strategy refers to two major plant nutrients, phosphorus and nitrogen. These are common components of fertilizers, animal and human wastes, vegetation, and some industrial processes. Nutrients in surface waters come from both point and nonpoint sources. Nutrients are beneficial to aquatic life in small amounts. However, in over-abundance and under favorable conditions, they can stimulate the occurrence of algal blooms and excessive plant growth in quiet waters or low flow conditions. The algal blooms and excessive plant growth often reduce the dissolved oxygen content of surface waters through plant respiration and decomposition of dead algae and other plants. This is accentuated in hot weather and low flow conditions because of the reduced capacity of the water to retain dissolved oxygen.

3.2 Point Sources of Pollution

As discussed previously, sources of these pollution-causing substances are divided into two broad categories: point sources and nonpoint sources. This section focuses on point sources. Section 3.2.1 defines point sources and Section 3.2.2 discusses point sources in the Wildcat Creek watershed.

3.2.1 Defining Point Sources

Point sources refer to discharges that enter surface waters through a pipe, ditch or other well-defined point of discharge. The term applies to wastewater and stormwater discharges from a variety of sources. Wastewater point source discharges include municipal (city and county) and industrial wastewater treatment plants and small domestic wastewater treatment systems that may serve schools, commercial offices, residential subdivisions and individual homes. Stormwater point source discharges include stormwater collection systems for medium and large municipalities which serve populations greater than 100,000 and stormwater discharges associated with industrial activity as defined in the Code of Federal Regulations [40 CFR 122.26(a)(14)]. The primary pollutants associated with point source discharges are oxygen-demanding wastes, nutrients, sediment, color and toxic substances including chlorine, ammonia and metals.

Point source dischargers in Indiana must apply for and obtain a National Pollutant Discharge Elimination System (NPDES) permit from the state. Discharge permits are issued under the NPDES program which is delegated to Indiana by the US Environmental Protection Agency (EPA). See Chapter 5 for a description of the NPDES program and permitting strategies.

3.2.2 Point Source Discharges in the Wildcat Watershed

As of June 1999, there were 41 NPDES permits within the Wildcat Creek watershed (Table 3-2, Figure 3-1). Of the 41 NPDES permits, two (2) were considered major discharges (discharge over 1 million gallons per day or population greater than 10,000), while the remaining 39 were considered minor dischargers.

Another point source covered by NPDES permits are combined sewer overflows (CSO). A combined sewer system is a wastewater collection system that conveys sanitary wastewater (domestic, commercial and industrial wastewaters) and storm water through a single-pipe system to a Publicly Owned Treatment Works. A CSO is the discharge from a combined sewer system at a point prior to the Publicly Owned Treatment Works. CSOs are point sources subject to NPDES permit requirements including both technology-based and water quality-based requirements of the Clean Water Act. There are numerous CSOs that discharge into the watershed:

- Frankfort 2
- Kokomo 30
- Rossville 5

In addition to the NPDES permitted dischargers in the watershed, there are many unpermitted, illegal discharges to the Wildcat Creek system. Illegal discharge of residential wastewater (septic tank effluent) to streams and ditches in the watershed is a problem throughout the watershed. Figure 3-2 shows the confirmed septic effluent discharge locations for several residential areas in Howard County.

TABLE 3-2
NPDES PERMITTED FACILITIES - WILDCAT CREEK WATERSHED

NPDES ID	Facility Name	Major or Minor	City	County	Status
IN0047538	A. E. Staley Manufacturing Co.	Minor	Lafayette	Tippecanoe	Active
INU000309	ADM Trucking/Frito Lay Plant	Minor	Frankfort	Clinton	Active
INP000151	All American Awards	Minor	Mulberry	Clinton	Active
IN0056138	Amoco Oil Company, St. #20152	Minor	Kokomo	Howard	Inactive
ING080075	Amoco Station #20152	Minor	Kokomo	Howard	Active
INU000205	B & R Oil Co Sharpsville Store	Minor	Sharpsville	Tipton	Active
IN0032786	Bausback Corporation	Minor	Frankfort	Clinton	Inactive
IN0045128	Beard Industries	Minor	Frankfort	Clinton	Inactive
IN0055921	Billy Bob Mobile Home Park	Minor	Kokomo	Howard	Active
IN0039799	Burlington Municipal STP	Minor	Burlington	Carroll	Active
IN0044245	C.F. Industries, Inc.	Minor	Frankfort	Clinton	Active
IN0053287	Center Meadows Apartments	Minor	Kokomo	Howard	Inactive
IN0001422	Chrysler Transmission Plant	Minor	Kokomo	Howard	Inactive
IN0039853	Clark's Hill Municipal STP	Minor	Clarks Hill	Tippecanoe	Active
IN0031780	Clinton Central School Corp.	Minor	Michigantown	Clinton	Inactive
IN0030970	Congleton And Congleton	Minor	Frankfort	Clinton	Inactive
IN0002909	Continental Steel Corporation	Minor	Kokomo	Howard	Active
IN0039489	Country Estates M.H.P.	Minor	Frankfort	Clinton	Inactive
IN0039918	Dayton Municipal STP	Minor	Dayton	Tippecanoe	Inactive
IN0032379	Delmonte Corporation	Minor	Frankfort	Clinton	Inactive
IN0001830	Delphi Delco Electronics Sys.	Minor	Kokomo	Howard	Active
IN0044652	Devon Woods Subdivision	Minor	Kokomo	Howard	Active
IN0029912	Diversified Equity Corp-Seldom	Minor	Kokomo	Howard	Inactive
IN0043648	Fettig Canning Corp	Minor	Point Isabel	Grant	Inactive
IN0036935	Forest Lodge Mobile Home Park	Minor	Kokomo	Howard	Active
IN0023353	Four Mile Hill STP	Minor	Kokomo	Howard	Active
IN0053040	Frankfort City Of-west	Minor	Frankfort	Clinton	Inactive
IN0022934	Frankfort Municipal STP	Major	Frankfort	Clinton	Active
ING250034	Frankfort Old Stoney Building	Minor	Frankfort	Clinton	Active
IN0029611	Frankfort Pwr & Light	Minor	Frankfort	Clinton	Inactive
IN0036676	Frankfort Wtr Trmt Plt West	Minor	Frankfort	Clinton	Inactive
IN0051624	Frito-lay, Inc.	Minor	Frankfort	Clinton	Active
IN0038768	Green Acres Golf Course & Subd	Minor	Kokomo	Howard	Active

TABLE 3-2 (Continued)
NPDES PERMITTED FACILITIES - WILDCAT CREEK WATERSHED

NPDES ID	Facility Name	Major or Minor	City	County	Status
IN0021091	Greentown Municipal STP	Minor	Greentown	Howard	Active
IN0002607	Haynes International, Inc.	Minor	Kokomo	Howard	Inactive
IN0037214	Hershey Elementary School	Minor	Lafayette	Tippecanoe	Active
IN0001597	Ingram Richardson Inc	Minor	Frankfort	Clinton	Inactive
IN0032875	Kokomo Municipal STP	Major	Kokomo	Howard	Active
IN0031844	Kokomo Regency M.H.P.	Minor	Kokomo	Howard	Active
IN0001538	Kokomo Water Works Co	Minor	Kokomo	Howard	Inactive
IN0058793	Mallory Controls	Minor	Frankfort	Clinton	Active
IN0002275	Mallory Controls, Emerson Elec	Minor	Frankfort	Clinton	Inactive
IN0048381	Martin Marietta Agg, Alto Sand	Minor	Kokomo	Howard	Inactive
IN0044679	Martin Marietta Agg, Kokomo Qu	Minor	Kokomo	Howard	Inactive
IN0002917	Martin Marietta Agg, Winfall Q	Minor	Windfall City	Tipton	Inactive
ING490027	Martin Marietta, Kokomo Sand	Minor	Kokomo	Howard	Active
ING490022	Martin Marietta, Kokomo Stone	Minor	Kokomo	Howard	Active
IN0040355	Michigantown Municipal STP	Minor	Michigantown	Clinton	Active
IN0031976	Mulberry Municipal STP	Minor	Mulberry	Clinton	Active
IN0058173	New London C.d.	Minor		Howard	Active
IN0002003	Norfolk & Western Rr, Frankfor	Minor	Frankfort	Clinton	Inactive
IN0109550	Peter Paul Inc	Minor	Frankfort	Clinton	Inactive
IN0041866	Prairie Utilities	Minor	Sharpsville	Tipton	Active
IN0020907	Rossville Municipal STP	Minor	Rossville	Clinton	Active
IN0020532	Russiaville Municipal STP	Minor	Russiaville	Howard	Active
IN0040614	Sharpsville Municipal STP	Minor	Sharpsville	Tipton	Inactive
IN0036307	Sharpsville-Prairie Elem & Mid	Minor	Sharpsville	Tipton	Inactive
ING080011	Speedway Station #7675	Minor	Lafayette	Tippecanoe	Active
ING080061	Speedway Store #5162	Minor	Kokomo	Howard	Active
IN0053996	Subaru-Isuzu Automotive, Inc.	Minor	Lafayette	Tippecanoe	Inactive
IN0003689	Swift & Co-Swift Edible Oil	Minor	Frankfort	Clinton	Inactive
IN0051021	Syndicate Sales, Inc.	Minor	Kokomo	Howard	Inactive
IN0041131	Taylor Elem. And High School	Minor	Kokomo	Howard	Active
IN0041912	Timbernest Apts	Minor	Kokomo	Howard	Active
IN0041149	Tri Central Elem & High School	Minor	Sharpsville	Tipton	Inactive
IN0036315	Tri-central High School	Minor	Sharpsville	Tipton	Inactive

TABLE 3-2 (Continued)
NPDES PERMITTED FACILITIES - WILDCAT CREEK WATERSHED

NPDES ID	Facility Name	Major or Minor	City	County	Status
IN0037231	Unr-rohn, Inc.	Minor	Frankfort	Clinton	Inactive
IN0039497	Village Green Mobile Home Park	Minor	Kokomo	Howard	Active
INu000170	Voris Seeds, Inc.	Minor	Windfall City	Tipton	Active
IN0055697	Wainwright Middle School	Minor	Lafayette	Tippecanoe	Active
IN0031801	Western Elem. & High School	Minor	Russiaville	Howard	Active
IN0040762	Windfall City Municipal STP	Minor	Windfall City	Tipton	Active
IN0036293	Windfall Elem & Middle School	Minor	Windfall City	Tipton	Inactive
IN0038784	Woodland Estates Mobile Home P	Minor	Kokomo	Howard	Active
IN0037974	Yeoman Stone & Sand Company	Minor	Kokomo	Howard	Inactive

3.3 Nonpoint Sources of Pollution

Nonpoint source pollution refers to runoff that enters surface waters through stormwater runoff, contaminated ground water, snowmelt or atmospheric deposition. There are many types of land use activities that can serve as sources of nonpoint source pollution including land development, construction, mining operations, crop production, animal feeding lots, timber harvesting, failing septic systems, landfills, roads and paved areas. Stormwater from large urban areas (>100,000 people) and from certain industrial sites is technically considered a point source since NPDES permits are required for piped discharges of stormwater from these areas.

Sediment and nutrients are major pollution-causing substances associated with nonpoint source pollution. Others include E. coli bacteria, heavy metals, pesticides, oil and grease, and any other substance that may be washed off the ground or removed from the atmosphere and carried into surface waters. Unlike point source pollution, nonpoint pollution sources are diffuse in nature and occur at random time intervals depending on rainfall events. Below is a brief description of major areas of nonpoint sources of pollution in the Wildcat Creek watershed.

3.3.1 Agriculture

There are a number of activities associated with agriculture that can serve as potential sources of water pollution. Land clearing and plowing make soils susceptible to erosion, which can then cause stream sedimentation. Pesticides and fertilizers (including chemical fertilizers and animal wastes) can be washed from fields, or improperly designed storage or disposal sites. Construction of drainage ditches on poorly drained soils enhances the movement of oxygen-consuming wastes, sediment and soluble nutrients into groundwaters and surface waters.

Concentrated animal operations can be a significant source of nutrients, biochemical oxygen demand and E. coli bacteria if wastes are not properly managed. Impacts can result from over-application of wastes to fields, from leaking lagoons and from flows of lagoon liquids to surface waters due to improper waste lagoon management. Also there are potential concerns associated with nitrate-nitrogen movement through the soil from poorly constructed lagoons and from wastes applied to the soil surface.

Grassed waterways, conservation tillage, and no-till practices are several common practices used by many farmers to minimize soil loss. Maintaining a vegetated buffer between fields and streams is another excellent way to minimize soil loss to streams.

3.3.2 Urban/Residential

Runoff from urbanized areas, as a rule, is more localized and can often be more severe in magnitude than agricultural runoff. Any type of land-disturbing activity such as land clearing or excavation can result in soil loss and sedimentation. The rate and volume of runoff in urban areas is much greater due both to the high concentration of impervious surface areas and to

storm drainage systems that rapidly transport stormwater to nearby surface waters. This increase in volume and rate of runoff can result in streambank erosion and sedimentation in surface waters.

Urban drainage systems, including curb and guttered roadways, also allow urban pollutants to reach surface waters quickly and with little or no filtering. Pollutants include lawn care pesticides and fertilizers; automobile-related pollutants; lawn and household wastes; road salts, and E. coli bacteria (from animals and failing septic systems). The diversity of these pollutants makes it very challenging to attribute water quality degradation to any one pollutant.

Replacement of natural vegetation with pavement and removal of buffers reduces the ability of the watershed to filter pollutants before they enter surface waters. The chronic introduction of these pollutants and increased flow and velocity into a stream results in degraded waters. Many waters adjacent to urban areas are rated as biologically poor.

The population figures discussed in Section 2.3.2 are good indicators of where urban development and potential urban water quality impacts are likely to occur. Concentrated areas where urban development is thought to be impairing water quality include Kokomo, Lafayette, and Frankfort. The high growth of these areas may lead to further water quality problems associated with the addition of impervious surfaces next to surface waters.

3.3.3 Onsite Wastewater Disposal

Septic systems contain all of the wastewater from a household or business. A complete septic system consists of a septic tank and an absorption field to receive effluent from the septic tank. The septic tank removes some wastes, but the soil absorption field provides further absorption and treatment. Septic systems can be a safe and effective method for treating wastewater if they are sized, sited, and maintained properly. However, if the tank or absorption field malfunction or are improperly placed, constructed or maintained, nearby wells and surface waters may become contaminated.

Some of the potential problems from malfunctioning septic systems include:

Polluted groundwater: Pollutants in septic effluent include bacteria, nutrients, toxic substances, and oxygen-consuming wastes. Nearby wells can become contaminated by failing septic systems.

Polluted surface water: Groundwater often carries the pollutants mentioned above into surface waters, where they can cause serious harm to aquatic ecosystems. Leaking septic tanks can also leak into surface waters both through or over the soil. In addition, some septic tanks may directly discharge to surface waters.

Risks to human health: Septic system malfunctions can endanger human health when they contaminate nearby wells, drinking water supplies, and fishing and swimming areas.

Pollutants associated with onsite wastewater disposal may also be discharged directly to surface waters through direct pipe connections between the septic system and surface waters (straight pipe discharge). However, 327 IAC 5-1-1.5 specifically states that "point source discharge of sewage treated or untreated, from a dwelling or its associated residential sewage disposal system, to the waters of the state is prohibited." For a historical perspective of the rules governing on-site sewage disposal please see Attachment 4.

3.3.4 Construction

Construction activities that involve excavation, grading or filling can produce significant sedimentation if not properly controlled. Sedimentation from developing urban areas can be a major source of pollution due to the cumulative number of acres disturbed in a watershed. Construction of single family homes in rural areas can also be a source of sedimentation when homes are placed in or near stream corridors.

As a pollution source, construction activities are typically temporary, but the impacts on water quality can be severe and long lasting. Construction activities tend to be concentrated in the more rapidly developing areas of the watershed. However, road construction is widespread and often involves stream crossings in remote or undeveloped areas of the basin.

4.0 Water Quality and Use Support Ratings in the Wildcat Watershed

This section provides a detailed overview of water quality monitoring, water quality, and use support ratings in the Wildcat Creek watershed and includes the following:

Section 4.1 Water Quality Monitoring Programs
Section 4.2 Summary of Ambient Monitoring Data for the Wildcat Watershed
Section 4.3 Fish Consumption Advisories
Section 4.4 Clean Water Act Section 305(b) Report
Section 4.5 Clean Water Act Section 305(b) Assessment and Use-Support: Methodology
Section 4.6 1998 Intensive Water Quality Monitoring of Wildcat Creek

4.1 Water Quality Monitoring Programs

This section discusses water quality monitoring programs. Specifically, Section 4.1.1 describes Office of Water Management monitoring programs and Section 4.1.2 discusses local monitoring programs, including volunteer monitoring.

4.1.1 Office of Water Management Programs

The Water Quality Assessment Branch of the Office of Water Management is responsible for assessing the quality of water in Indiana's lakes, rivers and streams. This assessment is performed by field staff from the Survey Section and the Biological Studies Section. Virtually every element of IDEM's surface water quality management program of IDEM is directly or indirectly related to activities currently carried out by this Branch. The biological and surface water monitoring activities identify stream reaches, watersheds or segments where physical, chemical and/or biological quality has been or would be impaired by either point or nonpoint sources. This information is used to help allocate waste loads equitably among various sources in a way that would ensure that water quality standards are met along stream reaches in each of the nearly 100 stream segments in Indiana.

The purpose of the Surveys Section is to provide the water quality and hydrological data required for the assessment of Indiana's waters by conducting Watershed/Basin Surveys and Stream Reach Surveys. In 1996, the Section began a five year synoptic study (Basin Monitoring Strategy) of the State's ten major watersheds. Information from these studies will be integrated with data from biological and nonpoint source studies as well as the Fixed Station Monitoring Program to make a major assessment of the State's waters. Such surveys determine the extent to which water quality standards are being met and whether the fishable, swimmable and water supply uses are being maintained.

Information derived from this strategy will contribute significantly to improved planning processes throughout the Office of Water Management. This plan should initiate the

development of interrelated action plans which encompass the wide range of responsibilities, such as rule making, permitting, compliance, nonpoint source issues, and wastewater treatment facility oversight.

The Biological Studies Section conducts studies of fish and macroinvertebrate communities as well as stream habitats to establish biological conditions to which other streams may be compared in order to identify impaired streams or watersheds. The Biological Studies Section also conducts fish tissue and sediment sampling to pinpoint sources of toxic and bioconcentrating substances. Fish tissue data serve as the basis for fish consumption advisories which are issued, through the Indiana State Department of Health, to protect the health of Indiana citizens. This Section also participates in the development of site-specific water quality standards.

The Biological Studies Section relies on the Volunteer Water Quality Monitoring Programs to provide additional data on lakes and wetlands that may not be sampling sites in the Monitoring Strategy. Volunteer collected data provides IDEM scientists with an overall view of water quality trends and early warning of problems that may be occurring in a lake or wetland. If volunteers detect that a lake or wetland is severely degraded, professional IDEM scientists will conduct follow up investigation.

4.1.2 Local Volunteer Monitoring Programs

There are numerous local volunteer monitoring programs actively working throughout the Wildcat Creek watershed. Almost all of these volunteer monitoring programs are conducted through schools and county Soil and Water Conservation Districts. The individual volunteer monitoring programs in the watershed receive support and guidance from Indiana WaterWatchers, IDNR's Hoosier Riverwatch, and various other groups. The main focus of the various watershed volunteer monitoring programs is education.

In the past, there has been little coordination between the individual volunteer monitoring programs in the watershed. Hence, a database that would hold the volunteer monitoring data for the Wildcat Creek watershed does not exist. In addition, the data collected by the various volunteer monitoring groups are for educational purposes and may not have a consistent level of quality. Therefore, the data and information collected by the volunteer monitoring groups are not readily accessible or usable by the Office of Water Management. However, IDNR's Hoosier Riverwatch is initiating a new, higher level of volunteer monitoring training. Volunteer monitors receiving Hoosier Riverwatch's Level II training will be certified and be able to collect and produce data at a consistent, higher level of quality. In addition, Hoosier Riverwatch and IDEM's Office of Water Management are working toward creating a volunteer monitoring database that would make volunteer monitoring data readily accessible.

4.2 Summary of Ambient Monitoring Data for the Wildcat Watershed

The fixed station monitoring program managed by IDEM's Office of Water Management has been monitoring surface water chemistry throughout the state since 1957. The data set from

1986 to 1995 was analyzed using the Seasonal Kendall test. This test deduces if a statistical change in the surface water chemistry occurred over a time period. The results of the Seasonal Kendall analysis for stations located in the Wildcat Creek watershed are provided in Table 4-1. The data collected from 1991 to 1997 from this monitoring program was also analyzed to determine benchmark characteristics. The results of the benchmark characteristic analysis for stations located in the Wildcat Creek watershed are provided in Appendix B. For a more in depth discussion of this analysis, please refer to the Indiana Fixed Station Statistical Analysis 1997 (IDEM 32/02/005/1998), published in May 1998 by the Assessment Branch of the Office of Water Management - IDEM.

TABLE 4-1
RESULTS OF SEASONAL KENDALL ANALYSIS FOR STATIONS LOCATED IN THE WILDCAT CREEK WATERSHED 1986 TO 1995

Parameter	WC3 Main stem of Wildcat Creek at State Road 25	WC60 North fork of Wildcat Creek west of Kokomo at County Road 300 West	WC66 North Fork of Wildcat Creek east of Kokomo at US Highway 31	WCS34 South Fork of Wildcat Creek north of Frankfort at State Road 39
Biological Oxygen Demand			⟩	⟩
Chemical Oxygen Demand			⟩	⟩
Dissolved Oxygen	⟩	⟩	⟩	
E. coli	⟩	⟩		⟩
Ammonia	⟩		⟩	⟩
Nitrite + Nitrate	⟩	⟩	⟩	⟩
Total phosphorus	⟩		⟩	⟩
Total Residue	⟩	|	|	|
Total Residue, Filterable	?	?	|	?
Total Residue, Nonfilterable	⟩		⟩	⟩
Copper	⟩	⟩	?	⟩
Cyanide (total)	⟩	⟩	⟩	⟩

Notes

⟩ No Statistical Change; significance < 80% or reported slope = 0.00000

Statistically Decreasing; significance >95% with a negative slope

\| Potentially Decreasing; significance >80% with a negative slope

Potentially Increasing; significance >80% with a positive slope

Statistically Increasing; significance >95 % with a positive slope

? Insufficient Data for analysis

4.3 Fish Consumption Advisories

Since 1972, the Indiana Department of Natural Resources, the IDEM, and the Indiana State Department of Health (ISDH) have worked together to create the Indiana Fish Consumption Advisory. Each year members from these three agencies meet to discuss the findings of recent fish monitoring data and to develop the new statewide fish consumption advisory.

The 1998 advisory is based on levels of PCBs and mercury found in fish tissue. Fish are tested regularly only in areas where there is suspected contamination. In each area, samples were taken of bottom-feeding fish, top-feeding fish, and fish feeding in between. Over 1,600 fish tissue samples collected throughout the state were analyzed for PCBs, pesticides, and heavy metals. Of those samples, 99% contained mercury. Criteria for placing fish on the 1996 Indiana Fish Consumption Advisory have changed from using the Food and Drug Administration guidelines to using the Great Lakes Task Force risk-based approach.

The ISDH defines the Advisory Groups as follows:

- Group 1 - Unrestricted consumption

- Group 2 - One meal per week (52 meals per year) for adult males and females. One meal per month for women who are pregnant or breastfeeding, women who plan to have children, and children under the age of 15.

- Group 3 - One meal per month (12 meals per year) for adult males and females. Women who are pregnant or breastfeeding, women who plan to have children, and children under the age of 15 do not eat.

- Group 4 - One meal every 2 months (6 meals per year) for adult males and females. Women who are pregnant or breastfeeding, women who plan to have children, and children under the age of 15 do not eat.

- Group 5 - No consumption (DO NOT EAT)

Carp generally are contaminated with both PCBs and mercury. Except as otherwise noted, carp in all Indiana rivers and streams fall under the following risk groups:

Carp, 15-20 inches - Group 3
Carp, 20-25 inches - Group 4
Carp over 25 inches - Group 5

In the Wildcat Creek watershed, the following waterbodies are under the 1999 fish consumption advisory:

Waterbody/County	Species	Size	Contaminant	Group
Kokomo Creek/Howard	All	All	PCBs	5
Wildcat Creek/Howard	All	All	PCBs	5
Wildcat Creek/Carroll	All	All	PCBs	5
Wildcat Creek/ Tippecanoe	Channel catfish	10-16"	PCBs	3
		>16"	PCBs	4
	Spotted Bass	>8"	PCBs	3
Kokomo Reservoir #2/ Howard	Largemouth Bass	9-15"	Mercury	2
		>17"	Mercury	3

4.4 Clean Water Act Section 305(b) Report

Section 305(b) of the Clean Water Act requires states to prepare and submit to the EPA a water quality assessment report of state water resources. A new surface water monitoring strategy for the Office of Water Management was implemented in 1996 with the goal of monitoring all waters of the state by 2001 and reporting the assessments by 2003. Each year approximately 20 percent of the waterbodies in the state will be assessed and reported the following year. "Indiana 305(b) Report 1994-95" provides the most recent comprehensive report on Indiana water quality and is the baseline report for areas of the state for which water quality assessments have not yet been updated (IDEM 1994-95). The methodology of the Clean Water Act Section 305(b) assessment and use support ratings are discussed in Section 4.5.

Appendix C contains the listing of the Wildcat Creek watershed waterbodies assessed, status of designated use support, probable causes of impairment, and stream miles affected. This assessment was largely based on data collected during the summer of 1994. From examination of Appendix C, it is readily apparent that the majority of water quality impairments are because of E. coli water quality standard violations. However, the Office of Water Management later reviewed the E. coli data and determined that the E.coli samples collected during the summer of 1994 did not meet quality control criteria in terms of sample holding times. Therefore, the Office of Water Management contracted the U.S. Geological Survey to do an E. coli study of the Upper Wabash Basin (including the Wildcat Creek watershed) in order to better characterize the magnitude and extent of E. coli problems in waterbodies. In addition, the Office of Water Management altered their sampling protocols for the summer 1998 intensive sampling of waters in the Wildcat Creek watershed in order to ensure E. coli samples would meet quality control criteria.

4.5 Clean Water Act Section 305(b) Assessment and Use-Support: Methodology

The Office of Water Management determines use support status for each stream and waterbody in accordance with the assessment guidelines provided by EPA (1997). Results from four monitoring programs are integrated to provide an assessment for each stream and waterbody:

- Physical/chemical water column results;
- Benthic aquatic macroinvertebrate community assessments;
- Fish tissue and surficial aquatic sediment contaminant results;
- E. coli monitoring results.

The assessment process was applied to each data sampling program. Then the individual assessments were integrated into an overall assessment for each waterbody by use designation: aquatic life support, fish consumption, recreational use. River miles in a watershed appear as one waterbody while each lake in a watershed is reported as a separate waterbody.

Physical/chemical data for toxicants (total recoverable metals), conventional water chemistry parameters (dissolved oxygen, pH, and temperature), and bacteria (E. coli) were evaluated for exceedance of the Indiana Water Quality Standards (327 IAC 2-1-6). U.S. EPA 305(b) Guidelines were applied to sample results as indicated in Table 4-3 (U.S. EPA 1997b).

TABLE 4-2
CRITERIA FOR USE SUPPORT ASSESSMENT*

Parameter	Fully Supporting	Partially Supporting	Not Supporting
Aquatic Life Use Support			
Toxicants	Metals were evaluated on a site by site basis and judged according to magnitude of exceedance and the number of times exceedances occurred.		
Conventional inorganics	There were very few water quality violations, almost all of which were due to natural conditions.		
Benthic aquatic macroinvertebrate Index of Biotic Integrity (mIBI)	mIBI $\geq$ 4.	mIBI < 4 and $\geq$ 2.	mIBI < 2.
Qualitative habitat use evaluation (QHEI)	QHEI $\geq$ 64.	QHEI < 64 and $\geq$ 51.	QHEI < 51.
Fish community (fIBI) (Lower White River only)	IBI $\geq$ 44.	IBI < 44 and $\geq$ 22	IBI < 22.
Sediment (PAHs = polynuclear aromatic hydrocarbons. AVS/SEM = acid volatile sulfide/ simultaneously extracted metals.)	All PAHs $\leq$ 75th percentile. All AVS/SEMs $\leq$ 75th percentile. All other parameters $\leq$ 95th percentile.	PAHs or AVS/SEMs > 75th percentile. (Includes Grand Calumet River and Indiana Harbor Canal sediment results, and so is a conservative number.)	Parameters > 95thpercentile as derived from IDEM Sediment Contaminants Database.
Indiana Trophic State Index (lakes only)	Nutrients, dissolved oxygen, turbidity, algal growth, and sometimes pH were evaluated on a lake-by-lake basis. Each parameter judged according to magnitude.		
Fish Consumption			
Fish tissue	No specific Advisory*	Limited Group 2 - 4 Advisory*	Group 5 Advisory*
* Indiana Fish Consumption Advisory, 1997, includes a state wide advisory for carp consumption. This was not included in individual waterbody reports because it obscures the magnitude of impairment caused by other parameters.			
Recreational Use Support (Swimmable)			
Bacteria (cfu = colony forming units.)	No more than one grab sample slightly > 235 cfu/100ml, and geometric mean not exceeded.	No samples in this classification.	One or more grab sample exceeded 235 cfu/100ml, and geometric mean exceeded.

*From Indiana Water Quality Report for 1998

4.6 1998 Intensive Water Quality Monitoring of Wildcat Creek

During the 1998 sampling season, the Assessment Branch of the Office of Water Management intensively sampled Wildcat Creek and its tributaries. The purpose of this effort was to support the TMDL work that will be done on the 303(d) listed waterbodies in the Wildcat Creek watershed. The extensive sampling efforts provided immediate returns in improving water quality. Sampling staff encountered several improperly operating point source dischargers and were able to address the problems on-site. **The draft assessment from the 1998 data has been completed and is included in this Watershed Restoration Action Strategy as Attachment 2.**

5.0 State and Federal Water Programs

This Chapter summarizes the existing point and nonpoint source pollution control programs available for addressing water quality problems in the Wildcat Creek watershed. Chapter 5 includes:

Section 5.1 Indiana Department of Environmental Management Water Quality Programs
Section 5.2 Indiana Department of Natural Resources Water Programs
Section 5.3 USDA/Natural Resources Conservation Service Water Programs

5.1 Indiana Department of Environmental Management Water Quality Programs

This Section describes the water quality programs managed by the Office of Water Management within IDEM and includes:

Section 5.1.1 State and Federal Legislative Authorities for Indiana's Water Quality Program
Section 5.1.2 Indiana's Point Source Control Program
Section 5.1.3 Indiana's Nonpoint Source Control Programs
Section 5.1.4 Integrating Point and Nonpoint Source Pollution Control Strategies
Section 5.1.5 Potential Sources of Funding for Water Quality Projects

5.1.1 State and Federal Legislative Authorities for Indiana's Water Quality Program

Authorities for some of the programs and responsibilities carried out by the Office of Water Management are derived from a number of federal and state legislative mandates outlined below. The major federal authorities for the state's water quality program are found in sections of the Clean Water Act. State authorities are from state statutes.

Federal Authorities for Indiana's Water Quality Program

- The Clean Water Act Section 301 - Prohibits the discharge of pollutants into surface waters unless permitted by EPA.

- The Clean Water Act Section 303(c) - States are responsible for reviewing, establishing and revising water quality standards for all surface waters.

- The Clean Water Act Section 303(d) - Each state shall identify waters within its boundaries for which the effluent limits required by 301(b)(1) A and B are not stringent enough to protect any water quality standards applicable to such waters.

- The Clean Water Act Section 305(b) - Each state is required to submit a biennial report to the EPA describing the status of surface waters in that state.

- The Clean Water Act Section 319 - Each state is required to develop and implement a nonpoint source pollution management program.

- The Clean Water Act Section 402 - Establishes the National Pollutant Discharge Elimination System (NPDES) permitting program. Allows for delegation of permitting authority to qualifying states (which Indiana has received).

- The Clean Water Act Section 404/401 - Section 404 regulates the discharge of dredge and fill materials into navigable waters and adjoining wetlands. Section 401 requires the U.S. Army Corps of Engineers to receive a state Water Quality Certification prior to issuance a 404 permit.

State Authorities for Indiana's Water Quality Program

IC 13-13-5 Designation of Department for Purposes of Federal Law: Designates the Indiana Department of Environmental Management as the water pollution agency for Indiana for all purposes of the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) effective January 1, 1988, and the federal Safe Drinking Water Act (42 U.S.C. 300f through 300j) effective January 1, 1988.

5.1.2 Indiana's Point Source Control Program

The State of Indiana's efforts to control the direct discharge of pollutants to waters of the State were inaugurated by the passage of the Stream Pollution Control Law of 1943. The vehicle currently used to control direct discharges to waters of the State is the NPDES (National Pollutant Discharge Elimination System) permit program. This was made possible by the passage of the Federal Water Pollution Control Act Amendments of 1972 (also referred to as the Clean Water Act). These permits place limits on the amount of pollutants that may be discharged to waters of the State by each discharger. These limits are set at levels protective of both the aquatic life in the waters which receive the discharge and human health.

The State of Indiana was granted primacy from U.S. EPA to issue NPDES permits on January 1, 1975 through a Memorandum of Agreement.

U.S. EPA, Region V, has oversight authority for the NPDES permits program. Under terms of the Memorandum of Agreement, Region V has the right to comment on all draft Major discharger permits. In addition to NPDES, the Office of Water Management Permits Section has a pretreatment group which regulates municipalities in their development of municipal pretreatment programs and indirect discharges, or those discharges of process wastewater to municipal sewage treatment plants through Industrial Waste Pretreatment permits and regulation of Stormwater, CSO's, and variance requests through a special projects group currently known as the Urban Wet Weather Group. Land Application of waste treatment plant sludge is no longer a part of the Office of Water Management but is now a part of the Office of Land Quality (formerly, Office of Solid and Hazardous Waste).

The purpose of the NPDES permit is to control the point source discharge of pollutants into the waters of the State such that the quality of the water of the State is maintained in accordance with the standards contained in 327 IAC 2. The NPDES permit requirements must ensure that the minimum amount of control is imposed upon any new or existing point source through the application of technology-based treatment requirement contained in 327 IAC 5-5-2. According to 327 IAC 5-2-2, "Any discharge of pollutants into waters of the State as a point source discharge, except for exclusions made in 327 IAC 5-2-4 is prohibited unless in conformity with a valid

NPDES permit obtained prior to discharge." This is the most basic principal of the NPDES permit program.

The majority of NPDES permits have existed since 1974. This means that most of the permit writing is for permit renewals. Approximately 10 percent of each year's workload is attributed to new permits, modifications and requests for estimated limits. NPDES permits are designed to be re-issued every five years but are administratively extended in full force and effect indefinitely if the permittee applied for a renewal before the current permit expires.

There are several different types of permits that are issued in the NPDES permitting program. Table 5-1 lists and describes the various permits.

TABLE 5-1
TYPES OF PERMITS ISSUED UNDER THE NPDES PROGRAM

Type of Permit	Subtype	Comment
Municipal, Semi-Public or State (sanitary discharger)	Major	A facility owned by a municipality with a design flow Municipal of 1 MGD or greater (Cities, Towns, Regional Sewer Districts)
	Minor	Any municipally owned facility with a design flow of less than 1 MGD (Cities, Towns, Regional Sewer Districts)
	Semipublic	Any facility not municipally, State or Federally owned (i.e.- mobile home parks, schools, restaurants, etc.)
	State Owned	A facility owned or managed by a State agency (State parks, prisons, etc.)
	Federally Owned	A facility owned by a federal agency (military Owned installation, national park, federal penitentiary, etc.)
Industrial (Wastewater generated in the process of producing a product)	Major	Any point source discharger designated annually by agreement between the commissioner and EPA. Classification of discharger as a major involves consideration of factors relating to significance of impact on the environment, such as: Nature and quantity of pollutants discharged; Character and assimilative capacity of receiving waters; Presence of toxic pollutants in discharge; Compliance history of discharger.
	Minor	All dischargers which are not designated as major dischargers.
	General	General permit rule provides streamlined NPDES permitting process for certain categories of industrial point source discharges under requirements of the applicable general permit rule, rather than requirements of an individual permit specific to a single discharge. General permit rules: 327 IAC 15-7 Coal mining, coal processing, and reclamation activities; 327 IAC 15-8 Non-contact cooling water; 327 IAC 15-9 Petroleum product terminals; 327 IAC 15-10 Groundwater petroleum remediation systems; 327 IAC 15-11 Hydrostatic testing of commercial pipelines; 327 IAC 15-12 Sand, gravel, dimension stone or crushed stone operations.
	Cooling Water	Water which is used to remove heat from a product or process; the water may or may not come in contact with the product.
	Public Water Supply	Wastewater generated from the process of removing pollutants from ground or surface water for the purpose of producing drinking water.
Pretreatment Urban Wet Weather Group (Associated with NPDES but do not fall under same rule.)	Stormwater-related	Wastewater resulting from precipitation coming in contact with a substance which is dissolved or suspended in the water.
	Industrial Wastewater Pre-treatment	Processed wastewater generated by Industries that contribute to the overall wastewater received by the wastewater treatment plant.
	Combined Sewer Overflow (CSO)	Wastewater discharged from combined storm and sanitary sewers due to precipitation events. Municipal and Industrial Urban Wet Weather Programs

5.1.3 Nonpoint Source Control Programs

Nonpoint source (NPS) pollution is so named because the pollutants do not originate at single point sources, such as industrial and municipal waste discharge pipes. Instead, NPS pollutants are carried over fields, lawns, and streets by rainwater, wind, or snowmelt. This runoff may carry with it such things as fertilizer, road salt, sediment, motor oil, or pesticides. These pollutants either enter lakes and streams or seep into groundwater. While some NPS pollution is naturally occurring, most of it is a result of human activities.

Reducing NPS pollution requires careful attention to land use management and local geographic and economic conditions. The NPS Program was established to fully integrate methods for coping with the state's varied NPS water pollution problems. While a number of agencies and organizations currently have their own programs for addressing specific NPS issues, overall NPS coordination is being aided through the consolidated NPS Management Plan that was developed in the early stages of the Program's formation. Approximately, over 180 NPS-related projects have been funded and managed by the NPS Program since 1990. The NPS Management Plan was prepared in 1989, partially based on findings from the NPS Assessment Report, which was also completed that year. The NPS Management Plan was updated and received EPA approval in 1999. Some of the objectives of the Management Plan included the education of land users, the reduction and remediation of NPS pollution caused by erosion and sedimentation of forested and agricultural lands, and urban runoff. Other objectives addressed pesticide and fertilizer use, land application of sludge, animal waste practices, past and present mining practices, on-site sewage disposal, and atmospheric deposition.

The state's NPS Program, administered by the IDEM Office of Water Management's Watershed Management Section, focuses on the assessment and prevention of NPS water pollution. The program also provides for the exchange of education and information in order to improve the way land is managed. Through the use of federal funding for the installation of best management practices (BMPs), the NPS Program effectively reaches out to citizens and assists in the development of BMPs to manage land in such a way that less pollution is generated. The NPS program promotes a non-regulatory, voluntary approach to solving water quality problems.

The many nonpoint source projects funded through the Office of Water Management are a combination of local, regional, and statewide efforts sponsored by various public and not-for-profit organizations. The emphasis of these projects has been on the local, voluntary implementation of NPS water pollution controls. Since the inception of the program in the late 1980s, it has utilized over $12 million of federal funds for the development of over 180 projects.

The federal Clean Water Act contains nonpoint source provisions in several sections of the Act including the Section 319 Nonpoint Source Program, the Section 314 Clean Lakes Program (no longer funded), the Section 104(b)(3) Watershed Management Program, and the Section 205(j) Water Quality Planning Program. The Section 319 program provides for various voluntary projects throughout the state to prevent water pollution and also provides for assessment and management plans related to water bodies in Indiana impacted by NPS pollution. Section 314 has assessment provisions that assist in determining the nonpoint and point source water quality impacts on lakes and provides recommendations for improvements, but no longer receives funding. Section 104(b)(3) provides assistance in the development of watershed management planning efforts and education/information and implementation projects. Section 604(b) provides for planning activities relating to the improvement of water quality from nonpoint and point sources. The Watershed Management Section within the Planning Branch of the Office of

Water Management provides for the administration of the Section 319 funding source for the NPS-related projects. The Financial Management Services Branch of the Office of Water Management administers the Section 104(b)(3) and Section 604(b) grants.

Clean Water Act Section 319(h) grant monies are made available to the states on an annual basis by EPA. Agencies and organizations in the state that deal with NPS problems submit proposals to the Office of Water Management each year for use of these funds in various projects.

One of the most important aspects of all NPS pollution prevention programs is the emphasis on the watershed approach to these programs. This calls for users in the watershed to become involved in the planning and implementation of practices, which are designed to prevent pollution. By looking at the watershed as a whole, all situations causing the degradation of water quality will be addressed, not just a few. Appendix C lists the conservation partners and local stakeholders located in the Wildcat Creek watershed.

5.1.4 Integrating Point and Nonpoint Source Pollution Control Strategies

Integrating point and nonpoint source pollution controls and determining the amount and location of the remaining assimilative capacity in a watershed are key long-term objectives of watershed management. The information is used for a number of purposes including: determining if and where new or expanded municipal or industrial wastewater treatment facilities can be allowed; setting the recommended treatment level at these facilities; and identifying where point and nonpoint source pollution controls must be implemented to restore capacity and maintain water quality standards.

Total Maximum Daily Loads

The Clean Water Act mandates an integrated point and nonpoint source pollution control approach. This approach, called a total maximum daily load (TMDL), uses the concept of determining the total pollutant loading from point and nonpoint sources that a waterbody can assimilate while still maintaining its designated use (maintaining water quality standards). EPA is responsible for ensuring that TMDLs are completed by States and for approving the completed TMDLs.

Under the TMDL approach, waterbodies that do not meet water quality standards are identified. States establish priorities for action, and then determine reductions in pollutant loads or other actions needed to meet water quality goals. The approach is flexible and promotes a watershed approach driven by local needs and directed by the State's list of priority waterbodies. The overall goal in establishing the TMDL is to establish the management actions on point and nonpoint sources of pollution necessary for a waterbody to meet water quality standards.

The Office of Water Management at IDEM is in the process of reorganizing its work activities around a five year rotating basin schedule. The waters of the state have been grouped geographically into major river basins, and water quality data and other information will be collected and analyzed from each basin, or group of basins, once every five years. The schedule for implementing the TMDL Strategy is proposed to follow this rotating basin plan to the extent possible. The TMDL Strategy discusses activities to be accomplished in three phases. Phase One involves planning, sampling and data collection and would take place the first year. Phase Two involves TMDL development and would occur in the second year, and Phase Three is the TMDL implementation and would occur the third year. It is expected that some phases,

especially implementation of TMDLs (Phase Three) in the basin(s), may take more than one year to fully accomplish.

Initially, as part of the TMDL Strategy in a watershed, the IDEM TMDL Program Manager, in coordination with the IDEM Basin Coordinator of the target basin, will develop an activity reference guide for each TMDL. This activity reference guide will provide: (1) a list of the necessary activities and tasks, (2) a schedule for completing activities and tasks associated with an individual TMDL, and (3) a roster that indicates which Section, staff, and /or contractor are responsible for completion of each activity/task.

In Phase Three, the TMDL scenario chosen in conjunction with watershed stakeholders during Phase Two will be used to develop a plan to implement the TMDL. During this process, stakeholder participation will be essential. The Basin Coordinator, in conjunction with the stakeholder groups, will develop a plan to implement the TMDL. Once the draft plan has been finalized through comments from stakeholder groups and IDEM, the plan becomes "draft-final" and open public review. Public meetings will be held in areas affected to solicit comments.

5.1.5 Potential Sources of Funding for Water Quality Projects

There are numerous sources of funding for all types of water quality projects. The sources of funding include federal and state agencies, nonprofits, and private funding. Funds may be loans, cost-share projects, or grants. Section 319(h) grants and other funding sources are discussed below.

If a local government, environmental group, university researcher, or other individual or agency wants to find funding to address a local water quality problem, it is well worth the time to prepare a thorough but concise proposal and submit it to applicable funding agencies. Even if a project is not funded, follow-up should be done to determine what changes may be needed in order to make the application more competitive.

Section 319(h) Grants

EPA offers to the state Clean Water Act Section 319(h) grant moneys on an annual basis. These grants must be used to fund projects that address nonpoint source pollution issues. Some projects which the Office of Water Management has funded with this money in the past include best management practice (BMP) demonstrations, watershed water quality improvements, data management, educational programs, modeling, stream restoration, and riparian buffer establishment. Units of government, nonprofit groups, and universities in the state that have expertise in nonpoint source pollution problems are invited to submit Section 319(h) proposals to the Office of Water Management.

Office of Water Management staff review proposals for minimum 319 eligibility criteria such as:

- Does it support the state NPS Management Program milestones?
- Does the project address targeted, high priority watersheds?
- Is there sufficient non-federal cost-share match available (25% of project costs)?
- Are measurable outputs identified?
- Is monitoring required? Is there a Quality Assurance/Quality Control plan for monitoring?
- If a Geographical Information System is used, is it compatible with that of the state?
- Is there a commitment for educational activities and a final report?

- Are upstream sources of NPS pollution addressed?
- Are stakeholders involved in the project?

Office of Water Management staff separately review and rank each proposal which meets the minimum 319 eligibility criteria. In their review, members consider such factors as: technical soundness; likelihood of achieving water quality results; degree of balance lent to the statewide NPS Program in terms of project type; and competence/reliability of contracting agency. They then convene to discuss individual project merits, to pool all rankings and to arrive at final rankings for the projects. Comments are also sought from outside experts in other governmental agencies, nonprofit groups, and universities. The Office of Water Management seeks a balance between geographic regions of the state and types of projects. All proposals that rank above the funding target are included in the annual grant application to EPA, with EPA reserving the right to make final changes to the list. Actual funding depends on approval from EPA and yearly congressional appropriations.

To obtain more information about applying for a Section 319(h) grant, contact:

Watershed Management Section Chief
IDEM Office of Water Management
100 N. Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015
(317) 232-0019

Other Sources of Funding

Besides Section 319(h) funding, there are numerous sources of funding for all types of water quality projects. The sources of funding include federal and state agencies, nonprofit, and private funding. Funds may be loans, cost-shares, or grants. Appendix D provides a summary list of agencies and funding opportunities.

5.2 Indiana Department of Natural Resources Water Programs

5.2.1 Division of Soil Conservation

The Division of Soil Conservation's mission is to ensure the protection, wise use, and enhancement of Indiana's soil and water resources. The Division's employees are part of Indiana's Conservation Partnership, which includes the 92 soil and water conservation districts (SWCDs), the USDA Natural Resources Conservation Service, and the Purdue University Cooperative Extension Service. Working together, the partnership provides technical, educational, and financial assistance to citizens to solve erosion and sediment-related problems occurring on the land or impacting public waters.

The Division administers the Clean Water Indiana soil conservation and water quality program under guidelines established by the State Soil Conservation Board, primarily through the SWCDs in direct service to landusers. The Division staff includes field-based resource specialists who work closely with landusers, assisting in the selection, design, and installation of practices to reduce soil erosion on their land. Regional Urban Conservation Specialists work primarily with developers, contractors, and others to address erosion and sediment concerns in urban settings,

developments under construction, and in landfills. The Lake and River Enhancement staff (LARE) oversee all administrative, operational, and technical aspects of the LARE program, which provides financial assistance to local entities concerned with improving and maintaining water quality in public-access lakes, rivers, and streams.

5.2.2 Division of Water

The IDNR, Division of Water (DOW) is charged by the State of Indiana to maintain, regulate, collect data, and evaluate Indiana's surface and ground water resources.

The Engineering Branch of the DOW includes Dam and Levee Safety, Project Development, Surveying, Drafting, and Computer Services. The Dam and Levee Safety Section performs geotechnical and hydraulic evaluation on existing and proposed dams and levees throughout the State. The Project Development Section provides technical support to locally funded water resource projects along with engineering leadership and construction management to State funded water resource projects. The remaining sections provide support services to all Sections within the DOW such as reservoir depth mapping, topographic mapping, highwater marks, design of publications and brochures, and computer procurement and maintenance.

The Planning Branch of the DOW consists of Basin Studies, Coastal Coordination, Floodplain Management, Ground Water, Hydrology and Hydraulics, and Water Rights. Basin Studies are comprehensive reports on surface-and ground-water availability and use. Coastal Coordination is a communication vehicle to address Lake Michigan's diverse shoreline issues. Floodplain Management involves various floodplain management aspects including coordination with the National Flood Insurance Program and with State and Federal Emergency Management agencies during major flooding events. The Ground Water Section maintains the water-well record computer database and publishes reports and maps on the ground-water resource for the State. Hydrology and Hydraulics Section develops and reviews floodplain mapping and performs hydrologic studies and modeling. The Water Rights Section investigates and mediates groundwater/surface water rights issues, licenses water-well drillers, and develops well construction and abandonment procedures.

The Regulations Branch of DOW is made up of Stream Permits, Lake Permits, Permit Administration, Public Assistance, and Legal Counsel. The Stream Permits Section is responsible for reviewing permit applications for construction activity in the 100-year regulatory floodway along Indiana's waterways. The Lake Permits Section reviews construction projects at or below the legal lake level for all of Indiana's public freshwater lakes. Permit Administration Section provides administrative support to Branch staff, maintains the application database, and coordinates the application review process with other Divisions. The Public Assistance Section provides technical assistance on possible permit applications on proposed construction projects, investigates and mediates unpermitted construction activities and in some cases with the support of Legal Counsel pursues legal action for violation of State laws.

5.3 USDA/Natural Resources Conservation Service Water Quality Programs

While there are a variety of USDA programs available to assist people with their conservation needs. The following assistance programs are the principal programs available.

Conservation Technical Assistance (CTA)

The purpose of the program is to assist landusers, communities, units of state and local government, and other Federal agencies in planning and implementing conservation systems. The purpose of the conservation systems are to reduce erosion, improve soil and water quality, improve and conserve wetlands, enhance fish and wildlife habitat, improve air quality, improve pasture and range condition, reduce upstream flooding, and improve woodlands.

The objective of the program is to: Assist individual landusers, communities, conservation districts, and other units of State and local government and Federal agencies to meet their goals for resource stewardship and assist individuals to comply with State and local requirements. NRCS assistance to individuals is provided through conservation districts in accordance with the Memorandum of Understanding signed by the Secretary of Agriculture, the Governor of the State, and the conservation district. Assistance is provided to landusers voluntarily applying conservation and to those who must comply with local or State laws and regulations. Assistance is also provided to agricultural producers to comply with the highly erodible land (HEL) and wetland (Swampbuster) provisions of the 1985 Food Security Act as amended by the Food, Agriculture, Conservation and Trade Act of 1990 (16 U.S.C. 3801 et. seq.); the Federal Agriculture Improvement and Reform Act of 1996, and wetlands requirements of Section 404 of the Clean Water Act. NRCS makes HEL and wetland determinations and helps land users develop and implement conservation plans to comply with the law. They also provide technical assistance to participants in USDA cost-share and conservation incentive programs. NRCS collects, analyzes, interprets, displays, and disseminates information about the condition and trends of the Nation's soil and other natural resources so that people can make good decisions about resource use and about public policies for resource conservation. They also develop effective science-based technologies for natural resource assessment, management, and conservation.

Conservation of Private Grazing Land Initiative (CPGL)

The Conservation of Private Grazing Land initiative will ensure that technical, educational, and related assistance is provided to those who own private grazing lands. It is not a cost-share program. This technical assistance will offer opportunities for: better grazing land management; protecting soil from erosive wind and water; using more energy-efficient ways to produce food and fiber; conserving water; providing habitat for wildlife; sustaining forage and grazing plants; using plants to sequester greenhouse gases and increase soil organic matter; and using grazing lands as a source of biomass energy and raw materials for industrial products.

Conservation Reserve Program (CRP)

NRCS provides technical assistance to landowners interested in participating in the Conservation Reserve Program administered by the USDA Farm Service Agency. The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filterstrips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost-share funding is provided to establish the vegetative cover practices.

Environmental Quality Incentives Program (EQIP)

The Environmental Quality Incentives Program provides technical, educational, and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost effective manner. The program provides assistance to farmers and ranchers in complying with Federal, State, and tribal environmental laws, and encourages environmental enhancement. The program is funded through the Commodity Credit Corporation. The purposes of the program are achieved through the implementation of a conservation plan, which includes structural, vegetative, and land management practices on eligible land. Five to ten year contracts are made with eligible producers. Cost-share payments may be made to implement one or more eligible structural or vegetative practices, such as animal waste management facilities, terraces, filter strips, tree planting, and permanent wildlife habitat. Incentive payments can be made to implement one or more land management practices, such as nutrient management, pest management, and grazing land management.

Fifty percent of the funding available for the program is targeted at natural resource concerns relating to livestock production. The program is carried out primarily in priority areas that may be watersheds, regions, or multi-state areas, and for significant statewide natural resource concerns that are outside of geographic priority areas.

Watershed Surveys and Planning

The Watershed and Flood Prevention Act, P.L. 83-566, August 4, 1954, (16 U.S.C. 1001-1008) authorized this program. Prior to fiscal year 1996, small watershed planning activities and the cooperative river basin surveys and investigations authorized by Section 6 of the Act were operated as separate programs. The 1996 appropriations act combined the activities into a single program entitled the Watershed Surveys and Planning program. Activities under both programs are continuing under this authority.

The purpose of the program is to assist Federal, State, and local agencies and tribal governments to protect watersheds from damage caused by erosion, floodwater, and sediment and to conserve and develop water and land resources. Resource concerns addressed by the program include water quality, opportunities for water conservation, wetland and water storage capacity, agricultural drought problems, rural development, municipal and industrial water needs, upstream flood damages, and water needs for fish, wildlife, and forest-based industries.

Types of surveys and plans include watershed plans, river basin surveys and studies, flood hazard analyses, and flood plain management assistance. The focus of these plans is to identify solutions that use land treatment and non-structural measures to solve resource problems.

Watershed Program and Flood Prevention Program (WF 08 or FP 03)

The Small Watershed Program works through local government sponsors and helps participants solve natural resource and related economic problems on a watershed basis. Projects include watershed protection, flood prevention, erosion and sediment control, water supply, water quality, fish and wildlife habitat enhancement, wetlands creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance are available.

Wetlands Reserve Program (WRP)

The Wetlands Reserve Program is a voluntary program to restore wetlands. Participating landowners can establish conservation easements of either permanent or 30 year duration, or can enter into restoration cost-share agreements where no easement is involved. In exchange for establishing a permanent easement, the landowner receives payment up to the agricultural value of the land and 100 percent of the restoration costs for restoring the wetlands. The 30 year easement payment is 75 percent of what would be provided for a permanent easement on the same site and 75 percent of the restoration cost. The voluntary agreements are for a minimum 10 year duration and provide for 75 percent of the cost of restoring the involved wetlands. Easements and restoration cost-share agreements establish wetland protection and restoration as the primary land use for the duration of the easement or agreement. In all instances, landowners continue to control access to their land.

Wildlife Habitat Incentives Program (WHIP)

The Wildlife Habitat Incentives Program provides financial incentives to develop habitat for fish and wildlife on private lands. Participants agree to implement a wildlife habitat development plan and USDA agrees to provide cost-share assistance for the initial implementation of wildlife habitat development practices. USDA and program participants enter into a cost-share agreement for wildlife habitat development. This agreement generally lasts a minimum of 10 years from the date that the contract is signed.

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Wildcat Creek Watershed Restoration Action Strategy

Part II: Concerns and Recommendations

March 2000
November 1999; Second Draft
June 1999; First Draft

Prepared by
Indiana Department of Environmental Management
Office of Water Management

Foreword

The First Draft (June 1999) of the Watershed Restoration Action Strategy (WRAS) was reviewed internally by IDEM and revised accordingly. The Second Draft (November 1999) was reviewed by stakeholders and revised accordingly. This Third Draft (March 2000) is intended to be a living document to assist restoration and protection efforts of stakeholders in their sub-watersheds. As a "living document" information contained within the WRAS will need to be revised and updated periodically. One of the most significant revisions made after the second review was the addition of the Waterbody Assessments from the 1998 data (Attachment 2) and the Cyanide Factsheet (Attachment 3).

The Wildcat Creek WRAS is divided into two parts: Part I, Characterization and Responsibilities and Part II, Concerns and Recommendations.

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Wildcat Creek Watershed Restoration Action Strategy Part II: Concerns and Recommendations

Part II of the Watershed Restoration Action Strategy discusses the water quality concerns identified for the Wildcat Creek watershed and lists recommended management strategies to address these concerns.

Part II includes:

1 Water Quality Concerns and Priority Issues Identified by Stakeholder Groups

The Wildcat Creek watershed contains many stakeholder groups that have different missions. Many of these groups have a long history of working with Wildcat Creek and its watershed. The following discussions briefly describe some of the watershed groups and lists their priorities and concerns.

Wildcat Creek Watershed Network Board

Since the beginning of IDEM's Wildcat Creek Watershed Initiative, there has been a concerted effort to collect information on the water quality concerns and priorities held by the various watershed stakeholder groups. To further this effort, the Office of Water Management initiated meetings to bring watershed stakeholder groups together in order to learn more about the watershed. These meetings, called the Wildcat Creek Watershed Network Board, are designed to increase information sharing between the various stakeholder groups and geographic regions of the watershed. After two meetings, the participants in the Board identified failing septic systems and straight septic discharge as a major water quality concern and priority. This led to the organization and presentation of the "Wildcat Creek Watershed Failed/Improper Septic System Workshop" that was held on May 19, 1999 in Kokomo, Indiana. The stakeholder efforts to address the septic issues are continuing with counties organizing septic demonstration projects to educate residents. Other water quality concerns and priority issues identified by the Wildcat Creek Watershed Network Board include:

- Lack of current and relevant data/information about the water quality of Wildcat Creek
- Streambank erosion and stabilization
- Water quality and land use education for agricultural and urban areas
- Maintaining the recreational value
- Illegal dumping of tires, appliances, and general garbage
- Log jams or obstructions contributing to flooding and streambank erosion

- Noncompliance of point source dischargers
- Pesticides from agricultural runoff
- Drainage
- Nutrient management (crop and animal waste)
- Protection of Kokomo's drinking water reservoir
- Maintaining the scenic and natural qualities of Wildcat Creek
- Flooding
- Urban development
- "Creek Abuse"
- Filling of floodplain
- Illegal clear cutting
- Greenways

Wildcat Creek Foundation

Since 1974, the Wildcat Creek Foundation has been actively striving to maintain the scenic and natural qualities of Wildcat Creek. Specifically, the Wildcat Creek Foundation focuses on portion of Wildcat Creek designated as Natural and Scenic by the State of Indiana. The Wildcat Creek Foundation acts as a land trust; enlists voluntary preservation; manages public access sites; employs conservation easements; works to reduce recreational abuse; and monitors local and state regulations. Specific water quality concerns and priorities of the Wildcat Creek Foundation include:

- Urban sprawl
- Soil/streambank erosion
- Water pollution
- Poor land management
- Recreational abuse

Wildcat Guardians

The Wildcat Guardians were formed in 1990 by a group of watershed residents that were dedicated toward improving the health and beauty of Wildcat Creek. To accomplish this task, they maintain a year-round program of guardianship and stewardship for Wildcat Creek. The water quality concerns and priorities of the Wildcat Guardians include:

- Trash dumping on the banks and in the creek
- Illegal pollutant discharges into the creek
- Streambank erosion
- Channel obstructions (log jams)
- Habitat degradation
- Maintaining recreational value of Wildcat Creek

Wildcat Creek Advisory Group

The Wildcat Creek Advisory Group was formed as part of designating a portion of Wildcat Creek as a state Scenic and Natural Stream in 1980. The Advisory Group was and is focused on the

scenic and natural portion of Wildcat Creek discussed in Section 2.6. The Advisory Group was originally comprised of riparian landowners, Indiana Farm Bureau, Carroll County Area Plan Commission, Tippecanoe County Area Plan Commission, Wildcat Canoe Club, Wildcat Park Foundation, U.S. Canoe Association, Wildcat Creek Federation, League of Women Voters of Greater Lafayette, Girl Scouts of America, and Wildcat Group-Sierra Club. The current Advisory Group was the result of a recommendation by Indiana Department of Natural Resources (IDNR) and the original Advisory Group. The composition of the Advisory Group includes many of the original groups; however, many have gone through name changes and reorganization. The Advisory Group is led by IDNR Division of Outdoor Recreation which produced "A Plan for the Preservation and Management of Wildcat Creek, January 1980." IDNR and the Advisory Group identified the following recommendations in the January 1980 document:

- Protect the Wildcat Creek corridor from inappropriate development.
- Provide better management of the public use of Wildcat Creek.
- IDNR assistance with streambank stabilization and forest management
- Provide periodic IDNR Division of Enforcement patrols on Wildcat Creek
- Provide a Seasonal Stream Specialist to IDNR for the Wildcat Creek
- Monitor recreational use
- Minimize the impact of utility crossings of Wildcat Creek

Clinton County Wildcat Creek Watershed Group

The Clinton County Wildcat Creek Watershed Group grew out of the Clinton County SWCD's locally-led process during the spring of 1998. Throughout 1998, the stakeholders in this group met regularly to discuss issues and perceived problems. Their current list of issues and perceived problems include:

- Lack of current and relevant data/information about the water quality of Wildcat Creek
- Disposal of household oils, paints, and toxics
- Pollution from residential lawn care
- Industrial pollution and NPDES noncompliance
- Air pollution from Tippecanoe County
- Failing or non-existent septic systems
- Unregulated dumping
- Failing or noncompliant sewage waste treatment systems
- Streambank and gully erosion
- Wetland destruction
- Agricultural runoff (pesticides, fertilizer, and manure)
- Confined animal feeding operations
- Topsoil erosion
- Landuse changes

Tippecanoe County Wildcat Creek Watershed Group

The Tippecanoe County Wildcat Creek Watershed Group grew out of the Tippecanoe County SWCD's locally-led process in late spring of 1998. Through the summer of 1998, the stakeholders in this group met regularly to discuss issues and refine a list of the top ten Wildcat

Creek concerns. The final top ten list of Wildcat Creek concerns, listed in order of importance, include:

- Increased runoff and subsequent erosion/siltation: conservation practices of rental farmer operations; agricultural soil erosion; sediment from all sources; and streambank erosion
- Preservation and enhancement of greenways: lack of riparian buffer; and lack of enhancement and maintenance for recreational and scenic qualities of the creek
- Lack of public and grass roots education
- Lack of coordinated resource management and Lack of a holistic approach to watershed
- Identify and reach a consensus on industrial pollution: industrial impact from Kokomo and Frankfort; mercury, PCBs, and heavy metals; and petroleum chemical runoff from asphalt based products
- Need more stringent regulations: lack of enforcement of existing regulations and need for a balance of public and private property land owner rights
- Lack of a single source for multi-information
- Farm animal impact
- Subdivision development
- Community consensus of conservation ethics

Carroll County Locally Led Conservation

At the beginning of 1997, the Carroll County SWCD convened a meeting of Carroll County stakeholders as a part of their locally led conservation program. This meeting produced four main areas for concern and for Carroll County: 1) Nutrient management; 2) Soil erosion; 3) Water quality; and 4) Public education about natural resources. These four areas came from the following list of specific concerns:

- Nutrient management
- Soil erosion
- Surface water
- Water quality and public perception
- Hogs and their impact on water quality
- Well water
- Dug well contamination
- Hoosier Heartland Corridor
- Ag public relations
- Septic systems
- Offsite sedimentation
- Natural resource education
- Stream flow blockage
- Toxic overloads
- Groundwater depletion
- Air quality
- Agricultural and residential pest management
- Sustainable agriculture

2 Water Quality Concerns and Priority Issues Identified by State and Federal Agencies

This section presents the combined efforts of state and federal agencies, and universities, such as IDEM, IDNR, USDA-Natural Resources Conservation Service, Ohio River Valley Water Sanitation Commission, Purdue University, Indiana University, Indiana Geologic Survey, and US Geological Survey, to assess water quality concerns and priority issues in the Wildcat Creek watershed. This multi-organization effort formed the basis of the Unified Watershed Assessment for Indiana.

Indiana's Unified Watershed Assessment (UWA)

The UWA workgroup gathered a wide range of water quality data that could be used to characterize Indiana's water resources. These data were used in "layers" in order to sort the 8-digit HUC watersheds according to the present condition of the water in lakes, rivers, and streams. The workgroup used only those data which concerned the water column, organisms living in the water, or the suitability of the water for supporting aquatic ecosystems. Each "layer" of information/data was partitioned by percentiles into scores. The scores ranged between 1 and 5, with a score of 1 indicative of good water quality or minimum impairment, and a score of 5 indicating heavily impacted or degraded water quality. The scoring derived through the UWA process is presented in Table 2-1.

The data layers listed in Table 2-1 can be defined as:

- Lake Fishery: Large mouth bass community information for lakes
- Stream Fishery: Small mouth bass community information for streams
- Aquatic Life Use Support: The 'livability' of the water column for aquatic life, determined from evaluation of chemical and physical water data, and assessment of aquatic life
- Fish Consumption Advisories: Site specific advisories based on current data
- Fish Index of Biotic Integrity: Based on fish community diversity and fish health
- Qualitative Habitat Evaluation Index: Measure of whether the aquatic habitat is suitable for diverse communities, based on visual observations
- Lake Trophic Scores: Indicator for the rate at which a lake is 'aging' due to inputs of nutrients and other factors
- Sediment Yield Potential: Indicator of potential sediment input to waterbodies in the watershed

The sources and additional information for these data layers include:

- Lake Fishery: From IDNR fisheries surveys of lakes and reservoirs from 1972 to 1994. Raw scores were averaged for all lakes in the watershed.
- Stream Fishery: From IDNR fisheries surveys of streams from 1970 to 1994. Raw scores were averaged for all streams in the watershed.
- Aquatic Life Use Support: IDEM, Office of Water Management, Assessment Branch
- Fish Consumption Advisories: ISDH and IDEM, Office of Water Management, Assessment Branch
- Fish Index of Biotic Integrity: IDEM, Office of Water Management, Assessment Branch

- Qualitative Habitat Evaluation Index: IDEM, Office of Water Management, Assessment Branch
- Lake Trophic Scores: Indiana Clean Lakes Program through IDEM, Office of Water Management, Assessment Branch. This score was based on information gathered from sampling conducted in the 1970's and 1980's.
- Sediment Yield Potential: U.S. Geological Survey scored the population rate of change and the 1996 Conservation Tillage Transect data. The scores were then added and normalized to produce a sediment yield indicator for each watershed.

From this scoring, it is evident that sediment yield potential and the fish consumption advisories on Wildcat Creek are key areas of concern. However, lake fishery, aquatic life support, fish index of biotic integrity, and lake trophic scores are also concerns within the Wildcat Creek watershed.

TABLE 2-1
RESULTS OF THE UNIFIED WATERSHED ASSESSMENT FOR WILDCAT CREEK

Data/Information Layer	Wildcat Creek (05120107) Score
Lake Fishery	3
Stream Fishery	2
Aquatic Life Use Support	3
Fish Consumption Advisories	4
Fish Index of Biotic Integrity	3
Qualitative Habitat Evaluation Index	1
Lake Trophic Scores	3
Sediment Yield Potential	5

Note:
The UWA scores range from 1 to 5, with a score of 1 indicating good water quality and a score of 5 indicating severe impairment.

3 Identification of Impaired Waters

Section 303(d) of the Clean Water Act requires states to identify waters that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Indiana's 303(d) list was approved by EPA on February 16, 1999.

Once the Section 303(d) list and ranking of waters is completed, the states are required to develop Total Maximum Daily Loads (TMDLs) for these waters in order to achieve compliance with the water quality standards. The TMDL is an allocation that determines the point and nonpoint source (plus margin of safety) load reductions required in order for the waterbody to meet water quality standards. IDEM's Office of Water Management has and continues to perform point source waste load allocations for receiving waters. However, during the summer of 1998, extensive data were collected in the Wildcat Creek watershed in order to specifically address Section 303(d) listed streams and TMDLs in the watershed. Currently, the data from this sampling are being evaluated to determine how to address the Section 303(d) listed waterbodies. Part I of the WRAS briefly outlines IDEM's strategy for developing TMDLs.

The following Wildcat Creek watershed waterbodies are on Indiana's 1998 Clean Water Act Section 303(d) list submitted and approved by EPA 303(d) list (Figure 3-1):

- **South Fork Wildcat Creek** for cyanide violations (see Part I, Attachment 3)
- **Little Wildcat Creek/Kelly West Ditch** for dissolved oxygen violations
- **Wildcat Creek - North Fork** for PCB fish consumption advisory and ammonia, dissolved oxygen, cyanide, lead, and nitrate violations
- **Prairie Creek Ditch** for dissolved oxygen violations
- **Kokomo Creek** for PCB fish consumption advisory, and ammonia and dissolved oxygen violations
- **Kokomo Reservoir #2** for mercury fish consumption advisory

4 Priority Issues and Recommended Management Strategies

Part I provided the existing water quality information for the Wildcat Creek watershed and Part II lists priority issues and concerns from local, state, and federal stakeholders in the watershed. This section pulls together the priority issues and concerns held by all stakeholders and recommends management strategies. Underlying all discussions of priority issues and concerns is the fact that improving water quality in the Wildcat Creek watershed will also enhance the natural and recreational values of Wildcat Creek. Each subsection below focuses on a single priority issue. A summary of the recommended management strategies is provided in Appendix A of Part II.

4.1 Data\Information and Targeting

Stakeholder groups identified a need for more water quality data and information in order to prioritize and target specific areas of the Wildcat Creek watershed. In addition to targeting areas, stakeholders identified the need for more data and information about the actual impact on water quality from nonpoint sources. Success in restoring water quality in the Wildcat Creek watershed is fundamentally based on identifying the specific geographic problem areas; identifying all sources contributing to the impairment of the waterbody; and quantifying the contribution of a pollutant by each source.

Recommended Management Strategy 1: By Spring 2000, the data and assessment from the 1998 Intensive Sampling performed by the Office of Water Management will be complete. This information will be used to revise this Watershed Restoration Action Strategy in order to better prioritize and target specific areas in the Wildcat Creek watershed. In addition, the assessments will be distributed through the Wildcat Creek Watershed Network Board. The generation of the Section 303(d) list for 2000 will provide one basis for prioritization and targeting. However, prioritization and targeting by local watershed groups should also include perceived impaired locally-based beneficial uses of waterbodies. The scale at which targeting and prioritization will occur will be at the 14 digit HUC watershed area (Figure 2-2 of Part I). The targeting and prioritization will require input from stakeholders living in those geographic areas. The purpose of this prioritization and targeting is to enhance allocation of resources in the effort of improving water quality.

Recommended Management Strategy 2: Through the development of Total Maximum Daily Loads (TMDLs) for impaired waterbodies in the Wildcat Creek watershed, all sources contributing to the impairment of a waterbody will be identified and quantified in terms of their contribution to the waterbody. This includes gathering more data and information on nonpoint sources of water pollution. Throughout the TMDL process, information and feedback from watershed stakeholders will be required in order to generate appropriate allocation scenarios. The result of developing TMDLs will be an understanding of the impact of nonpoint sources on water quality in the watershed.

Recommended Management Strategy 3: As discussed in Part I, there has been little coordination between individual volunteer water quality monitoring groups within the Wildcat Creek watershed. In addition, a database that would hold the volunteer water quality monitoring data for the Wildcat Creek watershed does not exist. However, Hoosier Riverwatch and IDEM are currently working on a partnership to develop a statewide volunteer monitoring database.

4.2 Streambank Erosion and Stabilization

The cutting and erosion of streambanks within the Wildcat Creek watershed was identified by many local, state, and federal stakeholders as a major concern. This cutting and erosion increases the sediment load in waterbodies and directly impacts the scenic and recreational values of waterbodies in the Wildcat Creek watershed. Streambank cutting and erosion is often a function of many factors that include: stream energy and velocity, flooding, and land management. Increased drainage in headwater streams and ditches increases stream energies during rain fall events and often leads to increased streambank cutting and erosion downstream. Hence, this problem is not easily solved.

Recommended Management Strategy: IDEM's Office of Water Management offers their active support to the primary agency that has jurisdiction over this problem in order to facilitate the development of solutions.

Structural stabilization of specific streambank areas in the Wildcat Creek watershed may solve problems on a temporary basis. However, a comprehensive understanding of drainage, stream flows and energies, and land management practices is required to adequately approach this problem. Conservation partners (local, state, and federal) are actively working within their specific geographic areas (typically at the county level); however, this may not facilitate solving the streambank cutting and erosion problems because efforts may not be coordinated between headwater and downstream areas. For example, work in Tipton County, which contains many of the headwaters of Wildcat Creek, to increase drainage should take into account the work and efforts of downstream partners to reduce flooding and streambank cutting. Conservation efforts should be in the context of watersheds and span county boundaries in order to account for downstream impacts.

4.3 Failing Septic Systems and Straight Pipe Discharges

Local county health departments and other stakeholders have identified failing septic systems and straight pipe discharge from septic tanks as significant sources of water pollution in the Wildcat Creek watershed. Straight pipe discharges from septic tanks and septic tanks connected to drainage tiles are illegal (327 IAC 5-1-1.5; see Part I Attachment 4); however, these practices are ongoing in the Wildcat Creek watershed.

Recommended Management Strategy: On May 19, 1999, a workshop was held in Kokomo to provide information on the impacts of failed septic systems, regulations, alternative treatment systems, and financial assistance. In June 1999, a demonstration of proper septic system installation, sponsored by local stakeholders, was held in Clinton County. To further these educational efforts, the direct impact of communities discharging their septic tank effluent to waterbodies needs to be adequately characterized. This will involve coordination between the Office of Water Management, local health departments, Indiana State Department of Health, and other stakeholders. During generation of the Clean Water Act Section 303(d) list for 2000 and completion of subsequent TMDLs, illegal straight pipe discharges will be targeted for characterization and elimination. The option of choice to eliminate the illegal discharges will be a cooperative effort between homeowners and local, state, and federal stakeholders.

4.4 Water Quality - General

The Clean Water Act Section 303(d) list presented in Section 3 lists water quality limited waterbodies for the Wildcat Creek watershed. This list will be revised in 2000 to include information derived from the 1998 Intensive Sampling.

Recommended Management Strategy: The Clean Water Act requires states to complete TMDLs for waterbodies listed on the Section 303(d) list. The Office of Water Management is currently evaluating and exploring the modeling process and data needs required to complete TMDLs for the Section 303(d) listed waterbodies in the Wildcat Creek watershed. Completion of a TMDL will involve loading allocations of a pollutant to both point and nonpoint sources and the

incorporation of a "margin of safety." The Office of Water Management is currently drafting a TMDL strategy that involves stakeholder input throughout the process. The TMDL development process is in its early stages for the Wildcat Creek watershed. Contingent on IDEM's adoption and support of a TMDL strategy, implementation of the TMDL strategy in the Wildcat Creek watershed will begin by the end of 1999. This will involve meetings with stakeholder groups linked to the Section 303(d) waterbodies. As TMDLs are developed, this Watershed Restoration Action Strategy will be amended to incorporate the final TMDLs.

4.5 Fish Consumption Advisories

As noted in Part I and Part II, fish consumption advisories are clearly major concerns and priority issues within the Wildcat Creek watershed.

Recommended Management Strategy 1: The primary source of the Wildcat Creek fish consumption advisories related to PCB contamination is the geographic area impacted by the Continental Steel Corporation Superfund site. IDEM and EPA are currently carrying out plans for remediation of this site and the sediments of Wildcat Creek. Appendix A contains more information about current remediation plans and past actions.

In addition to the Continental Steel Corporation Superfund site, IDEM is also investigating areas upstream of this site to identify other possible contributions of PCBs to Wildcat Creek and Kokomo Creek.

4.6 Nonpoint Source Pollution - General

Nonpoint source pollution contributions are often difficult to assess or quantify. Currently, loadings of nonpoint source pollutants to water are often inferred by examination of land use practices, without actual measurements. In addition, the actual water quality impairments related to nonpoint source pollutants have not been well characterized in the Wildcat Creek watershed. Finally, very few regulatory control mechanisms exist to control nonpoint source pollution.

Recommended Management Strategy 1: Through the TMDL development process, the Office of Water Management will identify, assess, and quantify nonpoint source pollutant loadings to impaired waterbodies. In order to accomplish this task, the Office of Water Management will work closely with local, state, and federal stakeholders at the watershed and subwatershed level. Loading scenarios for nonpoint source pollutants will be developed by the Office of Water Management and reviewed by local, state, and federal stakeholders. Implementation of nonpoint source controls will involve a blend of funding assistance and regulatory processes, where applicable.

Recommended Management Strategy 2: Numerous funding mechanisms, such as Conservation Reserve Program, Environmental Quality Incentive Program, Lake and River Enhancement program, and 319(h) grants, exist to promote practices to reduce nonpoint source pollution in the watershed. In fact, between 1999 and 2000, there will be six active 319(h) grant projects, totaling $443,353, working in the Wildcat Creek watershed. In addition, LARE projects have been approved for Middle Fork Wildcat Creek and Kokomo Creek. To more efficiently and effectively address nonpoint source pollution in the watershed, the prioritization

and targeting discussed previously in Part II should be used to allocate further application of resources.

4.7 Point Sources - General

During the 1998 Intensive Sampling by the Office of Water Management, several permitted dischargers were found to be discharging in excess of their permit limits. In addition, illegal point source discharges, such as tiles discharging septic tank effluent, exist in the watershed.

Recommended Management Strategy: The Permitting and Compliance Branch of the Office of Water Management is responsible for issuing and monitoring compliance of NPDES permit holders. Clearly, more emphasis and resources are needed to identify and correct illegal point sources and noncomplying point sources. Improving compliance of NPDES dischargers and identifying illegal dischargers will involve fostering a working relationship with other local, state, and federal stakeholders to monitor compliance and report unusual discharges or stream appearance. In regards to illegal discharges, the Office of Water Management will work with local, state, and federal stakeholders to identify and eliminate these sources of water pollution.

5 Future Expectations and Actions

As discussed in Part I, this Watershed Restoration Action Strategy is intended to be fluid, living document that will be revised or amended as new information becomes available. Section 5.1 discusses expectations derived from the Strategy and how progress will be measured. Specific revisions and amendments to the Watershed Restoration Action Strategy are discussed in Section 5.2.

5.1 Expectations and Measuring Progress

The Wildcat Creek Strategy provides a starting point to address water quality concerns held by local, state, and federal stakeholders. Part II provides recommended management strategies to address these concerns.

Measurement of progress is critical to the success of any plan. Water quality improvements will not take place overnight. Measuring of progress in terms of water quality will be provided through the Office of Water Management Assessment Branch's rotating basin monitoring strategy. Specifically, they will be conducting sampling again in the Upper Wabash basin, which includes the Wildcat Creek watershed, in the year 2003. This will allow an assessment of progress in improving water quality.

Appendix A contains a listing of the strategies, suggested milestones, and suggested time-frames for completion.

5.2 Expected Revisions and Amendments

This Watershed Restoration Action Strategy is intended to provide a starting point to improve water quality and measure the improvement. Hence, this document will require revisions and amendments, as new information becomes available. The future revisions and amendments have been divided into those that are expected within the next year (Section 5.2.1) and those that will occur over a long-term basis (Section 5.2.2).

5.2.1 Revisions and Amendments 1999 to 2000

The most significant revisions and amendments during 1999 and 2000 will be the addition of the water quality reports from the 1998 Intensive Sampling and the Clean Water Act Section 305(b) water quality assessment for the Wildcat Creek watershed (see Part I, Attachment 2). Local, state, and federal stakeholder comments regarding the Watershed Restoration Action Strategy will be addressed in future revisions of the document (see Part I, Attachment 1).

5.2.2 Long-Term Revisions and Amendments

The Office of Water Management is moving toward adopting a watershed management approach to solve water quality problems. Part of the watershed approach is the use of a rotating basin management cycle. The Assessment Branch of the Office of Water Management has already adopted this rotating basin cycle in its intensive monitoring and assessment of Indiana waterbodies (this is in addition to the already established fixed monitoring station monitoring which occurs on a monthly basis). Based on the cycle the Assessment Branch is using, the next intensive monitoring of the Wildcat Creek watershed will occur during the sampling season of 2003. The information from the 2003 monitoring effort will be incorporated into the Watershed Restoration Action Strategy.

In addition, the Watershed Restoration Action Strategy may be revised or amended prior to 2003, if sufficient information becomes available.

PART I
APPENDIX A

CONTINENTAL STEEL CORPORATION

SUPERFUND SITE

FACT SHEET

CONTINENTAL STEEL SUPERFUND SITE
Source Control and Management of Migration
Kokomo, Howard County, Indiana

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PUBLIC MEETING

The Indiana Department of Environmental Management (IDEM) invites the public to attend a meeting and to submit comments on the proposed Remedial Action for the Continental Steel Superfund Site (CSSS). Oral and written comments will be taken at the public meeting. Oral comments can also be submitted through a special IDEM CSSS toll-free number at (888) 272-1080. Written comments can also be mailed to IDEM before the end of the public comment period. The comment period begins on February 23, 1998 and ends on March 24, 1998.

DATE:
Thursday, March 5, 1998
TIME:
7:00 - 9:00 p.m.
PLACE:
Kokomo City Hall
Ralph W. Neal Council Chambers
Kokomo, Indiana
AGENDA:
IDEM representatives will discuss:
Site background
Proposed Actions
Planned site activities

Introduction

The Proposed Plan Summary presented in this fact sheet outlines the cleanup alternatives considered by IDEM and the U.S. Environmental Protection Agency (EPA) for reducing risks to human health and the environment at the Continental Steel Superfund Site in Kokomo, Howard County, Indiana. This Summary presents a brief explanation of the recommended Source Control and Management of Migration alternatives for the CSSS. The cleanup alternative objectives for each source area at the CSSS are based on exposure levels and associated risks posed by contamination within a source area and by contamination that may migrate from the source areas via groundwater. There are six separate and distinct components or areas associated with the Source Control and Management of Migration alternatives for CSSS. **These separate components in Superfund are called Operable Units (OUs) and are shown on the site location map in Figure A.**

There are six separate operable units associated with CSSS. Each OU's alternative is presented

and explained separately within this fact sheet.
The evaluation criteria used by IDEM and EPA in making their recommendations have been included in this fact sheet. For more detailed information, consult the Remedial Investigation and Feasibility Study Reports, the Proposed Plan, and other related material located in the public information repository (Repository) at the Kokomo/Howard County Public Library (Public Library).
Based on new information or public comments, IDEM and EPA may modify the recommended alternatives or select other alternatives presented in the Proposed Plan. Citizens are encouraged to review and comment on all technical reports and alternatives considered for this Remedial Action.

Site Location and Features

The Continental Steel Superfund Site is located on West Markland Avenue in Kokomo, Indiana. The total site encompasses approximately 183 acres and consists of an abandoned steel manufacturing facility (Main Plant), pickling liquor treatment lagoons (Lagoon Area), a former waste disposal area (Markland Avenue Quarry), and a former waste disposal and slag processing area (Slag Processing Area).
In addition, the Wildcat and Kokomo creeks extend some 20,000 feet within the CSSS. They have been impacted by direct discharge of material, runoff from the source areas, and upstream sources. These creeks are designated for recreational use.
Groundwater throughout the area has been affected by the CSSS operations. The groundwater is included in the CSSS cleanup as a management of migration of contamination component or Site-wide Groundwater.
The four operation-related source areas, the creeks, and groundwater were designated as operable units. The term "source area" is used interchangeably with "operable unit." A total of six (6) source areas make up the CSSS. The source areas of the site are listed below by operable unit (OU):

OU1	Side-wide Groundwater
OU2	Lagoon Area
OU3	Wildcat & Kokomo creeks
OU4	Markland Avenue Quarry
OU5	Main Plant Property
OU6	Slag Processing Area

The site is located in a mixed residential, commercial, and industrial area and is mainly zoned for general use. Residential properties lie mostly to the east and southeast of the site. Mixed residential and industrial areas lie to the north and west.

Site Description and History

Continental Steel was built in 1914. Throughout its 72-year history, the plant produced nails, wire, and wire fence from scrap metal. Operations included reheating, casting, rolling, drawing, pickling, annealing, hot-dip galvanizing, tinning, and oil tempering. The steel manufacturing operations at the plant included the use, handling, treatment, storage, and disposal of hazardous materials.
CSSS was operated by Continental Steel and its predecessors from approximately 1914 to 1986, when the company entered into bankruptcy. The Main Plant has a covenant on the deed which

restricts development to industrial use only.

U.S. EPA Removal Actions

During the Remedial Investigation, IDEM and EPA completed several response actions to remove hazardous substances that potentially posed an immediate threat to human health and the environment. A summary of the removal actions follows:

February 1990: EPA began removal actions at the Main Plant and Markland Avenue Quarry. During 1990, drums at the quarry and Main Plant were collected, staged, analyzed, and disposed. Capacitors and transformers were removed. Some tank liquids were analyzed and disposed, and seven underground storage tanks were removed. Various chemicals were also removed from a laboratory facility at the Main Plant. PCB-contaminated surface soils were removed from the former drum staging area at the quarry. Surface drums were over-packed, sampled, and disposed. A berm was also constructed.

May 1990: EPA staged and sampled many drums at the Main Plant. Tank content samples were collected and the liquids removed and disposed. Capacitor and transformer oils were analyzed, drained, and disposed.

August 1993: The Main Plant area was sampled for PCBs, polycyclic aromatic hydrocarbons (PAHs), asbestos, and lead. Approximately 90 cubic yards of lead-contaminated dust were consolidated, containerized, and stored on-site. Lead-contaminated debris was separated, stockpiled and covered for future disposal. Lead was removed from several of the buildings. Asbestos presence was confirmed in the buildings. EPA sampled sewers and drained the acid from tank T-18. The acid was disposed off-site.

October 1993: One cubic yard of PCB-contaminated soil was excavated from the western portion of the Main Plant and disposed off-site. Various drums collected throughout the site from previous removal efforts were disposed off-site.

Fall 1994: EPA removed contents and cleaned above ground storage tanks numbered T-l, T-2, T-20, and T-21. Tanks T-14 and T-15 were emptied but not cleaned.

Remedial Investigation Activities

The Remedial Investigation (RI) field program was completed at the CSSS in two phases. Phase I was conducted in 1993. This investigation addressed the Lagoon Area, the Wildcat and Kokomo Creeks, and much of site-wide groundwater.

Phase II of the RI was conducted in 1995. This phase addressed Markland Avenue Quarry, the Main Plant, the Slag Processing Area and data gaps identified from the Phase I source areas. These data gaps included site-wide groundwater, the Lagoon Area, and the Creeks.

Additional data is also available from 1993-94 EPA emergency response actions and from other sources on file at IDEM and the public information repository.

In June 1996, the Indiana State Department of Health (ISDH) performed environmental radiation surveys in the Slag Processing Area, Lagoon Area, and the former laboratory area in the Main Plant. They concluded that there is no evidence of widespread radiological contamination in the areas surveyed. However, ISDH recommended that radiation monitoring be performed on all CSSS materials removed from the site, prior to disposal, as a precautionary health and safety measure.

Site Risks

The analytical data compiled in Phases I and II of the RI were reviewed, and contaminants of potential concern (COPCs) were selected for human health risk evaluation. COPCs were selected for each source area based on frequency of detection, maximum concentration detected,

background concentration, potential toxicity, Applicable Relevant and Appropriate Requirements (ARARs), and the potential future use of the groundwater or property.
All COPCs are addressed in detail in the Feasibility Study (FS), which is available in the information repository at the Public Library.

Evaluation Criteria of Alternatives

In order to minimize the potential or prevent the exposure to hazardous materials, IDEM and EPA are proposing to cleanup the source areas associated with the CSSS. In addition, the groundwater underlying the CSSS has been identified as a threat to human health. The recommended alternative for each source area and the site-wide groundwater is described in separate sections within this Proposed Plan Summary. The Proposed Plan (available in the repository) contains a complete description and evaluation of all alternatives considered. The purpose of the detailed evaluation of alternatives is to provide enough relevant information for each alternative so that each may be evaluated against the nine criteria listed below. The alternatives are then compared against each other to identify the advantages and disadvantages. IDEM used the nine criteria described below to evaluate the cleanup alternatives. An evaluation table comparing each alternative against these criteria is provided in the section describing each proposed alternative. The evaluation criteria are listed in bold print and summarized below:
Overall Protection of Human Health and the Environment addresses whether a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of Federal and State environmental statutes and/or provides grounds for invoking a waiver.
Long-Term Effectiveness and Permanence refers to the amount of risk remaining at a site and the ability of a new remedy to maintain reliable protection of human health and the environment, over time, once cleanup goals have been met.
Reduction of Toxicity, Mobility, or Volume through Treatment is the anticipated performance of the treatment technologies that may be employed in a remedy.
Short-Term Effectiveness refers to the speed with which the remedy achieves protection, as well as the remedy's potential to create adverse impacts on human health and the environment that may result during the construction and implementation period.
Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.
Cost addresses the estimated capital and operation and maintenance costs, as well as a present worth cost. Present worth is the total cost of an alternative in terms of today's dollars.
Support Agency Acceptance indicates whether, based on its review of the Removal Action plan, the support agency (in this case, the U.S. EPA) concurs with, opposes, or has no comment on the recommended alternative.
Community Acceptance will be assessed in the **Record of Decision (ROD)** (the document that describes the selected cleanup plan) following a review of the public comments received on the FS and the Proposed Plan during the public meeting and the 30-day comment period.

Recommended Cleanup Alternatives

IDEM and EPA believe that the recommended alternatives presented in this Proposed Plan Summary (and in detail in the Proposed Plan) provide the best balance of the nine criteria. IDEM

and EPA also believe the recommended alternatives will be protective of human health and the environment in both the short and long-term. A more detailed comparison of the alternatives is presented in the Proposed Plan and the Feasibility Study.
These documents are available in the Repository at the Public Library.

The Next Step

IDEM will accept comments from the community during a public comment period from February 23 to March 24, 1998. Written comments can be sent directly to IDEM at the address listed below. Verbal and written comments can also be made at the public meeting to be held on Thursday, March 5, 1998 at the Kokomo City Hall - Ralph W. Neal Council Chambers. IDEM, in consultation with EPA, will consider public comments received during the comment period before choosing final actions for the site. The final actions will be developed and presented in a ROD. A summary of all comments received and IDEM responses will be transcribed in a Responsiveness Summary and attached to the ROD. These documents will be available at the information repository when finalized. Federal and State dollars will be used to pay for the remedial action.
Public comments are an important part of the selection process. Proposed cleanup decisions have been changed in the past because of public comment and input. This document serves to describe the remedial action proposed for selection by IDEM for the six operable units associated with the Continental Steel Superfund Site.

Additional Information

Anyone interested in learning more about the Superfund process, the Remedial Investigation, the Feasibility Study, the Main Plant Building Decontamination & Demolition, or the Residential Contaminated Soil Removal Action is encouraged to review these documents related to the site. An administrative record, including the information IDEM relied upon to choose the recommended alternative, is available in the Information Repository located at:
Kokomo/Howard County Public Library
Reference Section
220 North Union Street
Kokomo, IN
A copy of this information is also kept in the IDEM public file room which is located at:
Western Select Properties
Indiana Department of Environmental Management
2525 North Shadeland Avenue
Indianapolis, IN 46219
For further information, please contact:
Kevin Herron, CSSS Project Manager
Office of Environmental Response
P.O. Box 6015
Indianapolis, IN 46206-6015
(317) 308-3115
kherron@dem.state.in.us
Media inquires should be directed to:
Susan Gross, Coordinator
Office of Media and State-Federal Relations

P.O. Box 6015
Indianapolis, IN 46206-6015
(317) 308-3112
sgross@dem.state.in.us
ADA Information
Individuals requiring reasonable accommodations for participation at the public meeting should contact the IDEM Americans with Disabilities Act coordinator at:
Sandie Meanor, ADA Coordinator
Indiana Department of Environmental Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, IN 46206-6015
Or call (317) 233-1785(V) or (317) 233-6087(TT).
Please provide a minimum of 72 hours notification.
IDEM's toll-free number is: 1-800-451-6027
CSSS toll-free number is: 1-888-272-1080

Glossary

Administrative Record (AR) - A compilation of documents that IDEM either considered or relied upon in selecting remedial or removal actions to be taken at a Superfund site.
Information Repository (Repository) - A file containing current information such as technical reports, reference documents, and public involvement information on a State Cleanup site.
Operable Units (OUs) - The management units that a site may be divided into for investigation/or cleanup. Operable units may be defined by location, media or other commonalities.
ARARs (Applicable or Relevant and Appropriate Requirements) - Those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, or that address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site.
Hazardous Waste - Any material that poses a threat to human health and the environment.
PCBs (Poly Chlorinated Biphenyls) - A group of toxic, persistent chemicals used in transformers and capacitors for insulating purposes and in gas pipeline systems as a lubricant. Further sale or new use was banned by law in 1979.
PAHs (Polycyclic Aromatic Hydrocarbons) - A group of persistent chemicals formed during the incomplete burning of coal, oil, gas, refuse, or other organic substances.
RI/FS (Remedial Investigation/Feasibility Study) - Two distinct but related studies of the site. They are usually performed concurrently. They are intended to: (1) Gather the data necessary to determine the type and extent of a problem at a Superfund site; (2) Establish criteria for cleaning up the site; (3) Identify and screen cleanup alternatives for remedial action; and (4) Analyze in detail the technology and costs of the alternatives.
Risk Assessment (RA) - An evaluation of the extent of contamination and the current and potential risk to human health and the environment.
ROD (Record of Decision) - A legal document that explains which cleanup alternative(s) will be

used to cleanup Superfund remedial sites. The Record of Decision is based on information and technical analysis generated during the remedial investigation/feasibility study (RI/FS) and consideration of public comments and community concerns.

Superfund - The common name used for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Re-authorization Act (SARA) of 1986. Superfund authorizes the federal government to respond directly to releases, or threatened releases of hazardous substances that may endanger public health and welfare, or the environment.

Organic Substances - Chemical substances containing the elements carbon and hydrogen.

Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs) - Compounds of primarily carbon, oxygen, and hydrogen characterized by their tendency to evaporate easily and quickly, especially when exposed to the air and sunlight. Examples of VOCs are trichloroethene, tetrachloroethene, toluene, benzene, methylene chloride, and vinyl chloride which may be chemicals that are in dry cleaning fluid, lighter fluid, paint thinners, degreasers, and components of gasoline.

DNAPL (Dense Non-Aqueous Phased Liquid) - DNAPL can be made up of either a single chemical or several chemical compounds. These compounds are heavier than water in their pure form and sink when introduce to water. The largest group of these compounds consists of chlorinated solvents (such as trichloroethene - TCE).

PART I
APPENDIX B

BENCHMARK CHARASTERISTIC ANALYSIS

OF DATA FROM FIXED STATIONS IN THE

WILDCAT CREEK WATERSHED

1991 TO 1997

Station WC-3

	Valid N	Mean	Confid. -95.000%	Confid. +95.000%	Median	Sum	Minimum	Maximum	Lower Quartile	Upper Quartile	Range	Quartile Range	Variance	Std.Dev.	Standard Error	Skewness	Std.Err. Skewness	Kurtosis	Std.Err. Kurtosis
Alkalinity (mg/l)	21	230.619	216.3413	244.8968	230	4843	155	289	219	246	134	27	983.8476	31.36635	6.844698	-0.46638	0.501195	0.950095	0.971941
Ammonia (mg/l as N)	21	0.057143	0.048982	0.065304	0.05	1.2	0.05	0.1	0.05	0.05	0.05	0	0.000321	0.017928	0.003912	2.201737	0.501195	3.138402	0.971941
BOD (mg/l)	19	1.521053	0.93215	2.109955	1.4	28.9	0.5	5.6	0.5	2.2	5.1	1.7	1.492865	1.221829	0.280307	2.206214	0.523767	6.425801	1.01427
COD (mg/l)	21	14.57619	11.90602	17.24636	14.3	306.1	2.5	29	11	17.1	26.5	6.1	34.4099	5.865996	1.280065	0.597737	0.501195	1.133041	0.971941
Cyanide (mg/l)	21	0.006238	0.004254	0.008222	0.005	0.131	0.005	0.025	0.005	0.005	0.02	0	1.9E-05	0.004358	0.000951	4.393593	0.501195	19.70723	0.971941
Nitrate (mg/l as N)	21	4.595238	3.226739	5.963738	4.4	96.5	0.5	10	2.6	6.4	9.5	3.8	9.038476	3.006406	0.656052	0.3604	0.501195	-1.10461	0.971941
Total Phosphorus (mg/l as P)	21	0.139524	0.103958	0.17509	0.14	2.93	0.03	0.3	0.08	0.17	0.27	0.09	0.006105	0.078133	0.01705	0.418419	0.501195	-0.58997	0.971941
Total Solids (mg/l)	21	459.6667	441.0102	478.3232	451	9653	396	560	438	475	164	37	1679.833	40.98577	8.943828	0.963229	0.501195	0.83678	0.971941
Suspended Solids (mg/l)	21	28.80952	13.1224	44.49665	15	605	2	130	8	35	128	27	1187.662	34.46247	7.520328	2.005247	0.501195	3.653708	0.971941
Dissolved Solids (mg/l)	0																		
Sulfate (mg/l)	0																		
TKN (mg/l as N)	0																		
E. coli (CFU/100ml)	19	319.7368	94.562	544.9117	140	6075	5	1900	20	390	1895	370	218259.6	467.1827	107.1791	2.456301	0.523767	6.928514	1.01427
TOC (mg/l)	0																		
Hardness (mg/l)	21	309.5238	292.7744	326.2732	314	6500	200	359	294	336	159	42	1353.962	36.79622	8.029594	-1.27769	0.501195	2.656049	0.971941
Chloride (mg/l)	0																		
Dissolved Oxygen (mg/l)	17	10.30353	9.266481	11.34058	9.8	175.16	7.24	14.47	9.08	10.68	7.23	1.6	4.068312	2.017006	0.489196	0.931513	0.549747	0.133565	1.063198
pH	17	8.076471	7.920193	8.232748	8.12	137.3	7.3	8.54	8.06	8.3	1.24	0.24	0.092387	0.303952	0.073719	-1.30948	0.549747	2.060675	1.063198
Copper (ug/l)	7	4.457143	1.852832	7.061454	4	31.2	2	9.2	2	7	7.2	5	7.929524	2.815941	1.064326	0.822298	0.793725	-0.52155	1.587451
Iron (ug/l)	3	226.3333	-320.009	772.6761	110	679	89	480			391		48370.33	219.9326	126.9781	1.714302	1.224745		
Zinc (ug/l)	7	11.27143	6.320634	16.22222	10	78.9	5.1	20	6.8	17	14.9	10.2	28.65571	5.353103	2.023283	0.79461	0.793725	-0.43315	1.587451

Station: WC-60

	Valid N	Mean	Confid. -95.000%	Confid. +95.000%	Median	Sum	Minimum	Maximum	Lower Quartile	Upper Quartile	Range	Quartile Range	Variance	Std.Dev.	Standard Error	Skewness	Std.Err. Skewness	Kurtosis	Std.Err. Kurtosis
Alkalinity (mg/l)	83	200.1205	192.7343	207.5067	202	16610	123	278	181	222	155	41	1144.229	33.82646	3.712936	-0.25153	0.264174	-0.07255	0.522613
Ammonia (mg/l as N)	83	0.098193	0.0777	0.118685	0.05	8.15	0.05	0.6	0.05	0.1	0.55	0.05	0.008808	0.093849	0.010301	2.876778	0.264174	10.34935	0.522613
BOD (mg/l)	37	2.027027	1.60766	2.446394	1.7	75	0.5	5.8	1.3	2.3	5.3	1	1.582027	1.257787	0.206779	1.712177	0.387589	2.987091	0.758719
COD (mg/l)	83	22.24458	20.22523	24.26392	19.4	1846.3	8	48.6	16	27	40.6	11	85.52445	9.247943	1.015094	0.994536	0.264174	0.396931	0.522613
Cyanide (mg/l)	82	0.005634	0.005161	0.006107	0.005	0.462	0.005	0.018	0.005	0.005	0.013	0	4.6E-06	0.002152	0.000238	4.445278	0.265724	20.64767	0.525618
Nitrate (mg/l as N)	82	6.001463	5.325916	6.677011	5.65	492.12	0.2	15	4	7.6	14.8	3.6	9.452719	3.074527	0.339525	0.668075	0.265724	0.683223	0.525618
Total Phosphorus (mg/l as P)	83	0.330361	0.257252	0.403471	0.18	27.42	0.04	1.33	0.11	0.37	1.29	0.26	0.112104	0.334819	0.036751	1.553165	0.264174	1.244718	0.522613
Total Solids (mg/l)	83	528.2169	494.6881	561.7456	498	43842	287	1036	427	591	749	164	23577.88	153.5509	16.8544	1.032268	0.264174	0.792831	0.522613
Suspended Solids (mg/l)	83	19.63855	15.42339	23.85372	15	1630	2	166	10	26	164	16	372.6483	19.3041	2.1189	5.491741	0.264174	40.5	0.522613
Dissolved Solids (mg/l)	0																		
Sulfate (mg/l)	0																		
TKN (mg/l as N)	1	0.05				0.05	0.05	0.05											
E. coli (CFU/100ml)	80	2943.562	577.4691	5309.656	300	235485	5	90000	85	1350	89995	1265	1.1E+08	10632.26	1188.723	7.258717	0.268909	58.51186	0.531786
TOC (mg/l)	0																		
Hardness (mg/l)	83	294.8795	283.9811	305.7779	301	24475	140	396	262	334	256	72	2491.132	49.91124	5.47847	-0.57675	0.264174	0.159975	0.522613
Chloride (mg/l)	0																		
Dissolved Oxygen (mg/l)	59	9.652203	8.94944	10.35497	8.94	569.48	6.37	18.3	7.7	11.19	11.93	3.49	7.27218	2.696698	0.35108	1.220328	0.311176	1.310705	0.613257
pH	60	7.8905	7.794846	7.986154	7.92	473.43	6.97	8.83	7.68	8.135	1.86	0.455	0.13711	0.370284	0.047803	-0.04692	0.308694	0.5029	0.608492
Copper (ug/l)	20	7.115	5.561118	8.668882	7.05	142.3	2	14	4.75	8.5	12	3.75	11.02345	3.320158	0.74241	0.173136	0.512103	-0.26678	0.992384
Iron (ug/l)	8	421.25	222.0815	620.4185	360	3370	260	1000	310	385	740	75	56755.36	238.2338	84.22838	2.620242	0.752101	7.156787	1.48088
Zinc (ug/l)	20	27.1	21.32813	32.87187	20	542	10	46	19	40	36	21	152.0947	12.33267	2.757669	0.26859	0.512103	-1.5009	0.992384

Station: WC-60

	Valid N	Mean	Confid -95.000%	Confid +95.000%	Median	Sum	Minimum	Maximum	Lower Quartile	Upper Quartile	Range	Quartile Range	Variance	Std Dev	Standard Error	Std Err. Skewness	Skewness	Kurtosis	Std Err Kurtosis
Alkalinity (mg/l)	83	200.1205	192.7343	207.5067	202	16610	123	278	181	222	155	41	1144.229	33.82646	3.712936	-0.25153	0.264174	-0.07255	0.522613
Ammonia (mg/l as N)	83	0.098193	0.0777	0.118685	0.05	8.15	0.05	0.6	0.05	0.1	0.55	0.05	0.008808	0.093849	0.010301	2.876778	0.264174	10.34935	0.522613
BOD (mg/l)	37	2.027027	1.60766	2.446394	1.7	75	0.5	5.8	1.3	2.3	5.3	1	1.582027	1.257787	0.206779	1.712177	0.387589	2.987091	0.758719
COD (mg/l)	83	22.24458	20.22523	24.26392	19.4	1846.3	8	48.6	16	27	40.6	11	85.52445	9.247943	1.015094	0.994536	0.264174	0.396931	0.522613
Cyanide (mg/l)	82	0.005634	0.005161	0.006107	0.005	0.462	0.005	0.018	0.005	0.005	0.013	0	4.6E-06	0.002152	0.000238	4.445278	0.265724	20.64767	0.525618
Nitrate (mg/l as N)	82	6.001463	5.325916	6.677011	5.65	492.12	0.2	15	4	7.6	14.8	3.6	9.452719	3.074527	0.339525	0.668075	0.265724	0.683223	0.525618
Total Phosphorus (mg/l as P)	83	0.330361	0.257252	0.403471	0.18	27.42	0.04	1.33	0.11	0.37	1.29	0.26	0.112104	0.334819	0.036751	1.553165	0.264174	1.244718	0.522613
Total Solids (mg/l)	83	528.2169	494.6881	561.7456	498	43842	287	1036	427	591	749	164	23577.88	153.5509	16.8544	1.032268	0.264174	0.792831	0.522613
Suspended Solids (mg/l)	83	19.63855	15.42339	23.85372	15	1630	2	166	10	26	164	16	372.6483	19.3041	2.1189	5.491741	0.264174	40.5	0.522613
Dissolved Solids (mg/l)	0																		
Sulfate (mg/l)	0																		
TKN (mg/l as N)	1	0.05				0.05	0.05	0.05											
E. coli (CFU/100ml)	80	2943.562	577.4691	5309.656	300	235485	5	90000	85	1350	89995	1265	1.1E+08	10632.26	1188.723	7.258717	0.268909	58.51186	0.531786
TOC (mg/l)	0																		
Hardness (mg/l)	83	294.8795	283.9811	305.7779	301	24475	140	396	262	334	256	72	2491.132	49.91124	5.47847	-0.57675	0.264174	0.159975	0.522613
Chloride (mg/l)	0																		
Dissolved Oxygen (mg/l)	59	9.652203	8.94944	10.35497	8.94	569.48	6.37	18.3	7.7	11.19	11.93	3.49	7.27218	2.696698	0.35108	1.220328	0.311176	1.310705	0.613257
pH	60	7.8905	7.794846	7.986154	7.92	473.43	6.97	8.83	7.68	8.135	1.86	0.455	0.13711	0.370284	0.047803	-0.04692	0.308694	0.5029	0.608492
Copper (ug/l)	20	7.115	5.561118	8.668882	7.05	142.3	2	14	4.75	8.5	12	3.75	11.02345	3.320158	0.74241	0.173136	0.512103	-0.26678	0.992384
Iron (ug/l)	8	421.25	222.0815	620.4185	360	3370	260	1000	310	385	740	75	56755.36	238.2338	84.22838	2.620242	0.752101	7.156787	1.48088
Zinc (ug/l)	20	27.1	21.32813	32.87187	20	542	10	46	19	40	36	21	152.0947	12.33267	2.757669	0.26859	0.512103	-1.5009	0.992384

PART I
APPENDIX C

WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT 1994-95

APPENDIX C
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT 1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Mud Creek	Sharpsville	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	21.9	E. coli> 235/100 ml
North Creek and Tributaries	Sharpsville	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	2.5	E. coli> 235/100 ml
Irwin Creek	Sharpsville	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	5.3	--
Turkey Creek	Windfall	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	15.1	E. coli> 235/100 ml
Askren Ditch	Windfall	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	1.9	E. coli> 235/100 ml
Cottingham Ditch	Windfall	FS (Aquatic Life) FS (Recreational)	Monitored (c)	--	2.9	--

APPENDIX C (Continued)
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT 1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Round Prairie Ditch	Windfall	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	3.8	E. coli> 235/100 ml
Middle Fork River	West Liberty	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	7.6	E. coli> 235/100 ml
Waters Ditch	West Liberty	FS (Aquatic Life) FS (Recreational)	Monitored (c)	--	1.5	--
Paley Walk	West Liberty	FS (Aquatic Life) NS (Recreational)	Monitored (c)	--	4.7	E. coli> 235/100 ml
Hutchertson Ditch	Point Isabel	FS (Aquatic Life) FS (Recreational)	Monitored (c)	--	3.2	--
Grass Fork	Point Isabel	FS (Aquatic Life) NS (Recreational)	Monitored(c)	E. coli	9.4	E. coli> 235/100 ml
Prairie Run	Point Isabel	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	2.8	E. coli> 235/100 ml

APPENDIX C (Continued)
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT 1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Wildcat Creek	Kokomo	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	6.2	E. coli> 235/100 ml. PCBs in fish tissue. Fish Consumption Advisory. No fish should be eaten.
Wildcat Creek	Kokomo	FS (Aquatic Life) FS (Recreational)	Monitored (c)	E. coli	5.3	PCBs in fish tissue. Fish Consumption Advisory. No fish should be eaten.
Wildcat Creek	Kokomo	NS (Aquatic Lire) NS (Recreational)	Monitored(c)(b)	E. coli D. O. CN Lead	2.9	E. coli> 235/100 ml. D.O. < 4.0 mg/l CN > CAC of 0.0052 mg/l Lead > CAC of 8.9 mg/l Fish Consumption Advisory. No fish should be eaten.
Wildcat Creek	Kokomo	NS (Aquatic Life) NS (Recreational)	Monitored (c) (b)	E. coli CN NH3	5.4	E. coli> 235/100 ml. CN > CAC of 0.0052 mg/l NH3 > CCC of 0.5 mg/l Fish Consumption Advisory. No fish should be eaten.

APPENDIX C (Continued)
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT 1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Wildcat Creek	Kokomo	FS (Aquatic Lire) NS (Recreational)	Monitored (c)	E. coli	14.9	E. coli> 235/100 ml. Fish Consumption Advisory, PCBs in fish tissue. No fish should be eaten.
Wildcat Creek	Burlington	FS (Aquatic Life) FS (Recreational)	Monitored (c)	B	35.5	Fish Consumption Advisory. PCBs in fish tissue. No fish should be eaten.
Roberts Ditch/Moon - Barclay Ditch	Burlington	FS (Aquatic Life) FS (Recreational)	Evaluated	--	5.5 --	
Shambaugh Run	Burlington	FS (Aquatic Life) NS (Recreational)	--	E. coli	0.5	Sewage from Kokomo STP
Edwards Ditch	Burlington	FS (Aquatic Life) FS (Recreational)	Evaluated	--	0.5 --	
Kokomo Reservoir	Greentown	FS (Aquatic Life) FS (Recreational)	Monitored (c)	--	390 Acres	--

APPENDIX C (Continued)
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT
1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Prairie Creek Ditch	Kokomo	NS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli D.O.	2.3	E. coli> 235/100 ml. D.O. of 1.5 mg./l
Connon - Goyer Ditch	Kokomo	NS (Aquatic Life) NS (Recreational)	Monitored (c)	--	1.5	E. coli> 235/100 ml. D. O. <4.0 mg/l
Kokomo Creek	Kokomo	NS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli D.O. PCBs	5.2	E. coli> 235/100 ml. D.O. < 4.0 mg/l No fish should be eaten. Fish Consumption Advisory
Kokomo Creek	Kokomo	NS (Aquafle Life) NS (Recreational)	Monitored (c)	E. coli D.O. Ammonia PCBs	4.2	E. coli> 235/100 ml. D.O. <4.0 mg/l NH3 high No fish should be eaten. Fish Consumption Advisory
Zauss/Finn Ditch	Kokomo	FS (Aquatic Life) NS (Recreational)	Evaluated	E. coli	3.5	--

APPENDIX C (Continued)
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE
CLEAN WATER ACT SECTION 305(b) REPORT
1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Tolle Dtich	Kokomo	FS (Aquatic Life) FS (Recreational)	Evaluated	B	1.2 --	
Pickering Dtich	Kokomo	FS (Aquatic Life) NS (Recreational)	Evaluated	E. coli	1.2 --	
Muggs - Ingels Ditch	Kokomo	FS (Aquatic Life) FS (Recreational)	Evaluated	B	2.4 --	
Martin - Youngman Scott - Youngman	Kokomo	FS (Aquatic Life) FS (Recreational)	Evalauted	B	2.7 --	
Little Wildcat Creek East Fork/Kelly West Ditch	Kokomo	NS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli CBOD D.O.	6	E. coli> 235/100 ml. D. O. < 4.0 mg/l CBOD, from facility discharging to Kelly West Ditch
Little Wildcat Creek West Fork	Kokomo	FS (Aquatic Life) NS (Recreational)	Monitored(c)	E. coli	5.7	E. coli> 235/100 ml.

APPENDIX C (Continued)
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT 1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Little Wildcat Creek	Kokomo	NS(Aquatic Life) NS (Recreational)	Monitored (c)	E. coli D.O.	6.1	E. coli> 235/100 ml.
Claus Creek	Kokomo	FS (Aquatic Life) FS (Recreational)	Evaluated	B	0.5 --	
William Vogus Ditch	Kokomo	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	2.9	E. coli> 235/100 ml.
Butler Dtich	Kokomo	FS (Aquatic Life) FS (Recreational)	Evaluated	B	1.3 --	
Honey Creek	Kokomo	NS (Aquatic Life) NS (Recreational)	Monitored (c) I	E. coli D.O.	7.4	D.O. of 3.0 mg/l
West Honey Creek	Russiaville	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	4.1	E. coli> 235/100 ml.
Walnut Fork	Russiaville	FS (Aquatic Life)	Evaluated	B	1.7 --	

APPENDIX C (Continued)
WILDCAT CREEK WATERSHED WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(b) REPORT 1994-95

Waterbody	Nearest Town(s)	Status of Designated Use Support	Method of Assessments	Probable Cause of Impairment	Miles Affected	Comments
Petes Run/Burchard Division Ditch	Burlington	FS (Aquatic Life) NS (Recreational)	Monitored (c)	B	5.8	E. coli> 235/100 ml.
Hurricane Creek/ Unnamed Tributary	Burlington	FS (Aquatic Life) NS (Recreational)	Evaluated	E. coli	3.3	--
South Fork Wildcat Creek	Entire Length	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	41	--
Middle Fork Wildcat Creek	Hillsburg	FS (Aquatic Life) NS (RecrCational)	Monitored (c)	E. coli	33	Agricultural activity.
Silverthorn Tributary	Rossville	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	2.6	Agricultural activity. Limited use Stream.
Cambells Run	Rossville	FS (Aquatic Life) NS (Recreational)	Monitored (c)	E. coli	14	Agricultural activity.

Notes:

PS: Partial Support
NS: Non Support
FS: Full Support

b: Biological
c: Chemical

PART I
APPENDIX D

LOCAL, STATE, AND FEDERAL

WATERSHED STAKEHOLDERS

WILDCAT CREEK WATERSHED

LOCAL WILDCAT CREEK WATERSHED STAKEHOLDERS

Carroll County

Carroll County Health Department
Courthouse, 101 W Main
Delphi, IN 46923-1566
(765) 564-3420

Carroll County SWCD
1523 N. US Hwy. 421, Suite #2
Delphi, IN 46923-9396
(765) 564-4480

Purdue University Cooperative Extension Service - Carroll County
1523 N. U.S. Highway 421, Suite 3
Delphi, IN 46923-0317
(765) 564-3169

Carroll County Plan Comm
101 W Main St
Delphi, IN
(765) 564-4468

Carroll County Surveyor
101 W Main St
Delphi, IN
(765) 564-3310

US Consolidated Farm Svc Agcy
1523 N US Highway 421
Delphi, IN
(765) 564-2849

Clinton County

Clinton County Health Department
211 North Jackson Street
Frankfort, IN 46041-1936
(765) 659-6385

Community Planner
Clinton County
185 Courthouse Square
Frankfort, IN 40041
(765) 659-0200

Purdue University Cooperative Extension Service - Clinton County
1701 South Jackson
Frankfort, IN 46041
(765) 659-6380
Frankfort, IN
(765) 659-1223

Frito-Lay, Inc.
323 South County Road 300 West
Frankfort, IN 46041
(765) 659-6575

Precision Power
7701 North County Road 500 West
Rossville, IN 46065-9506

Clinton County SWCD
Locally-Led Watershed Group
860 S. Prairie Ave, Suite 1
Frankfort, IN 46041-7439
(765) 659-3971

City of Frankfort
Mayor Harold Woodruff
301 E Clinton St
Frankfort, IN 46041

Clinton County Chamber of Commerce
52 West Clinton Street
Frankfort, IN 46041

Clinton Area Planning Comm
180 Courthouse Sq
Frankfort, IN
(765) 659-6302

Clinton County Commissioners
125 Courthouse Sq
Frankfort, IN
(765) 659-6309

Clinton County Surveyor
165 Courthouse Sq
Frankfort, IN
(765) 659-6300

Frankfort Mayor's Office
301 E Clinton St
Frankfort, IN
(765) 654-7332

Frankfort Wastewater Treatment
45 W County Road 100 N
Frankfort, IN
(765) 659-4741

Farm Svc Agcy
860 S Prairie Ave # 2

Grant County

Grant County Health Department

LOCAL WILDCAT CREEK WATERSHED STAKEHOLDERS

Courthouse Complex, 401 S Adams St
Marion, IN 46953-2031
(765) 651-2404

Grant County SWCD
1113 East 4th Street
Marion, IN 46952-4211
(765) 668-8985

Purdue University Cooperative Extension Service - Grant County
401 S. Adams Street
Marion, IN 46953-2035
(765) 651-2413

Grant County Commissioners Ofc
401 S Adams St
Marion, IN
(765) 668-8871

Grant County Surveyors Office
401 S Adams St
Marion, IN
(765) 668-8871

US Consolidated Farm Svc Agcy
1111 E 4th St
Marion, IN
(765) 668-8983

Howard County

Howard County Health Department
Division of Environmental Health
120 E. Mulberry Street Room 210
Kokomo, IN 46901-4657
(765) 456-22408

Kokomo - Howard County Plan Commission
120 E. Mulberry Suite #114
Kokomo, IN 46901
(765) 456-2330

Howard County Solid Waste District
120 E. Mulberry Street
Kokomo, IN 46901

Indiana American Water Co.
P.O. Box 740
Kokomo, IN 46903
(765) 457-5563
Anderson, IN 46016-1582
(765) 641-9524

Madison County SWCD

Howard County SWCD
1103 S. Goyer Road
Kokomo, IN 46902-2777
(765) 452-3865

Purdue University Cooperative Extension Service - Howard County
Howard County Government Building
Suite 105, 120 E. Mulberry
Kokomo, IN 46901-4660

City of Kokomo
Mayor=s Office
100 S. Union Street
Kokomo, IN 46901

Kokomo Chamber of Commerce
106 N Washington St
Kokomo, IN 46901

Howard County Commissioners
117 N Main St
Kokomo, IN
(765) 456-2234

Howard County Surveyor
104 N Buckeye St
Kokomo, IN
(765) 456-2217

Kokomo Municipal Sanitation
100 S Union St
Kokomo, IN
(765) 456-7360

Kokomo Wastewater Treatment
1501 W Markland Ave
Kokomo, IN
(765) 457-5509

US Consolidated Farm Svc Agcy
1103 S Goyer Rd
Kokomo, IN
(765) 457-2114

Madison County

Madison County Health Department
County Gov't Center, 16 E 9th St

2200 Madison Square Suite D
Anderson, IN 46011-9548
(765) 644-8530

LOCAL WILDCAT CREEK WATERSHED STAKEHOLDERS

Purdue University Cooperative Extension Service -
Madison County
Madison County Gov=t Center, 16 E 9th St.
Anderson, IN 46016-1538
(765) 641-9517

Madison County Commissioner
16 E 9th St
Anderson, IN
(765) 641-9474

Madison County Drainage Board
16 E 9th St
Anderson, IN
(765) 641-9687

Madison County Surveyor
16 E 9th St
Anderson, IN
(765) 641-9638

Madison Planning Commission
16 E 9th St
Anderson, IN
(765) 641-9541

US Consolidated Farm Svc Agcy
2200 Madison Sq #C
Anderson, IN
(765) 644-4249

Tippecanoe County

Tippecanoe County Health Department
20 N 3rd St
Lafayette, IN 47901-1211
(765) 423-9221

Tippecanoe County Parks Dept.
4449 St. Rd. 43 N
W. Lafayette, IN 46923

Greater Lafayette Chamber of Commerce
Purdue University
1665 L.J. Freehafer Hall
401 South Grant Street
West Lafayette, IN 47907-1665
(765) 494-4637

Tippecanoe County SWCD
1000 S Main St
Tipton, IN 46072-1901
(765) 675-8741

Tipton County SWCD
243 Ash Street

Locally-Led Watershed Group
184 Professional Court
Lafayette, IN 47905-5153
(765) 448-1810

City of Lafayette
Mayor David Heath
City Hall
20 North 6th Street
Lafayette, IN 47901

Purdue University Cooperative Extension Service -
Tippecanoe County
3150 Sagamore Parkway South
Lafayette, IN 47905-5156
(765) 474-0793

Lafayette Water Pollution Cntl
1700 Wabash Ave
Lafayette, IN
(765) 742-1424

Tippecanoe Area Planning
20 N 3rd St
Lafayette, IN
(765) 423-9242

Tippecanoe Cnty Commissioners
20 N 3rd St
Lafayette, IN
(765) 423-9215

Tippecanoe County Drainage Brd
20 N 3rd St
Lafayette, IN
(765) 423-9228

Tippecanoe County Surveyor
20 N 3rd St
Lafayette, IN
(765) 423-9228

US Consolidated Farm Svc Agcy
180 Professional Ct
Lafayette, IN
(765) 448-1805

Tipton County

Tipton County Health Department
Box 303A
Tipton, IN 46072-1927
(765) 675-7836

Purdue University Cooperative Extension Service - Tipton County

LOCAL WILDCAT CREEK WATERSHED STAKEHOLDERS

101 E. Jeferson Street
P.O. Box 70
Tipton, IN 46072-0070
(765) 675-2694

(317) 685-8800

Tipton County Solid Waste Mgmt
957 E Jefferson St
Tipton, IN
(765) 675-9006

Tipton County Commissioners
101 E Jefferson St
Tipton, IN
(765) 675-7921

Tipton County Farm Svc Agency
243 Ash St
Tipton, IN
(765) 675-2316

Tipton County Planning Comm
101 E Jefferson St #111
Tipton, IN
(765) 675-6063

Watershed-wide

Wildcat Creek Solid Waste District
2780 N 9th Street Rd
Lafayette, IN
(765) 423-2858

Indiana Rivers, Inc.
2509 Kickapoo Dr.
Lafayette, IN 47905
(765) 477-7948

Wildcat Creek Foundation
4050 Sylvan Trail
W. Lafayette, IN 47906

Wildcat Guardians
P.O. Box 6421
Kokomo, IN 46904-6421
(765) 628-3155

Wildcat Creek Advisory Group
Indiana Department of Natural Resources
402 W. Washington Street, W271
Indianapolis, IN 46204
(317) 232-4070

Hoosier Environmental Council
1002 E. Washington
Suite 300
Indianapolis, IN 46202

STATE WILDCAT CREEK WATERSHED STAKEHOLDERS

Indiana Farm Bureau
225 S East St
Indianapolis, IN 46202

Indiana Department of Environmental Management
100 N. Senate Ave
P.O. Box 6015
Indianapolis, IN 46206-6015

IDEM Switchboard
(317) 232-8603 or (800) 451-6027

Agricultural Liaison	(317) 232-8587
Air Management	(317) 233-0178
Community Relations	(317) 233-6648
Compliance and Technical Assistance	(317) 232-8172
Criminal Investigations	(317) 232-8128
Enforcement	(317) 233-5529
Environmental Response	(317) 308-3017
Legal Counsel	(317) 232-8493
Media and Communication Services	(317) 232-8560
Pollution Prevention and Technical Assistance	(317) 232-8172
Solid and Hazardous Waste Management	(317) 233-3656
Water Management	(317) 232-8670

Indiana Department of Natural Resources
402 West Washington Street
Indianapolis, IN 46204-2748

IDNR Field Representatives are located in the individual County SWCDs.

Division of Engineering	(317) 232-4150
Division of Entomology and Plant Pathology	(317) 232-4120
Division of Fish & Wildlife	(317) 232-4080
Division of Forestry	(317)-232-4105
Division of Historic Preservation & Archaeology	(317) 232-1646
Division of Law Enforcement	(317) 232-4010
Division of Nature Preserves	(317)-232-4052
Division of Oil and Gas	(317) 232-4055
Division of Outdoor Recreation	(317)-232-4070
Division of Public Information and Education	(317) 232-4200
Division of Reclamation	(317)-232-1547
Division of Safety and Training	(317) 232-4145
Division of Soil Conservation	(317)-233-3870
Division of State Parks and Reservoirs	(317)-232-4124
Division of Water	(317)-232-4160

Indiana State Department of Health
2 North Meridian St.
Indianapolis, IN 46204
(317) 233-1325

FEDERAL WILDCAT CREEK WATERSHED STAKEHOLDERS

Natural Resources Conservation Service
6013 Lakeside Blvd
Indianapolis, In 46278
(317) 290-3200

NRCS Field Representatives are located in the individual Counties.

U.S. EPA Region 5
77 West Jackson Blvd
Chicago, IL 60604
(312) 353-2000
(800) 632-8431

U.S. Army Corps of Engineers
Louisville District
Dr. Martin Luther King Jr. Place
Louisville, KY 40202

PART I
APPENDIX E

FUNDING SOURCES

This listing of funding sources was derived from the November 1998 *Watershed Action Guide for Indiana*, which is available from the Watershed Management Section of IDEM.

FEDERAL CONSERVATION AND WATERSHED PROGRAMS

Environmental Protection Agency

Section 319, 604(b), and 104(b)3 Grants
grants for conservation practices, water body assessment, watershed planning, and watershed projects. Available to non-profit or governmental entities. These monies, enabled by the clean water act, are funneled through the indiana department of environmental management. *See IDEM for details.*

U.S. Department of Agriculture *(See county listings for local federal agency contacts.)*

EQIP: Environmental Quality Incentive Program. Administered by the Natural Resources Conservation Service. Conservation cost-share program for implementing Best Management Practices, available to agricultural producers who agree to implement a whole-farm plan that addresses major resource concerns. Up to $50,000 over a 5- to 10-year period. Some parts of the state are designated Conservation Priority Areas and receive a larger funding allotments.

WRP: Wetland Reserve Program. Administered by the Natural Resources Conservation Service. Easement and restoration program to restore agricultural production land to wetland. Easements may be for 10 years, 30 years, or permanent. Longer easements are preferred. Partnerships with other acquisition programs are encouraged. Restoration and legal costs are paid by NRCS. Landowner retains ownership of the property and may use the land in ways that do not interfere with wetland function and habitat, such as hunting, recreational development, and timber harvesting.

CRP: Conservation Reserve Program. Administered by the Farm Service Agency with technical assistance from NRCS. Conservation easements in certain critical areas on private property. Agricultural producers are eligible. Easements are for 10 or 15 years, depending on vegetative cover, and compensation payments are made yearly to replace income lost through not farming the land. Cost share is available for planting vegetative cover on restored areas.

WHIP: Wildlife Habitat Incentive Program. Administered by the Natural Resources Conservation Service. Cost share to restore habitat on previously farmed land. Private landowners who are agricultural producers are eligible. Cost share up to 75%, and contracts are for 10 years.

FIP: Forestry Incentive Program. Administered by the Natural Resources Conservation Service. Cost-share to assist forest management on private lands. Funds may be limited.

U.S. Fish & Wildlife Service

Partners for Wildlife: assistance for habitat restoration.

STATE CONSERVATION AND WATERSHED PROGRAMS

IDNR Division of Soil Conservation

LARE: Lake & River Enhancement Program. Funds diagnostic and feasibility studies in selected watersheds and cost-share programs through local Soil & Water Conservation Districts. Project oversight provided through county-based Resource Specialists and Lake & River Enhancement Watershed Coordinators. Funding requests for Watershed Land Treatment projects must come from Soil & Water Conservation Districts. If a proposed project area includes more than one district, the affected SWCDs should work together to develop an implementation plan. The SWCDs should then apply for the funding necessary to administer the watershed project. Before applying for funding, the SWCDs should contact the Lake & River Enhancement Coordinators to determine (1) the appropriate watershed to include in the project, (2) if the proposed project meets the eligibility criteria, and (3) if funding is available.

IDNR Division of Fish & Wildlife

Classified Wildlife Habitat Program: Incentive program to foster private wildlife habitat management through tax reduction and technical assistance. Landowners need 15 or more acres of habitat to be eligible. IDNR provides management plans and assistance through District Wildlife Managers. See county listings.

Wildlife Habitat Cost-share Program: Similar to above.

IDNR Division of Forestry

Classified Forest Program: Incentive program to foster private forest management through tax reduction and technical assistance. Landowners need 10 or more acres of woods to be eligible. IDNR provides management plans and assistance through District Foresters. (See county listings.)

Classified Windbreak Act: Establishment of windbreaks at least 450 feet long adjacent to tillable land. Provides tax incentive, technical assistance through IDNR District Foresters.

Forest Stewardship Program & Stewardship Incentives Program: Cost share and technical assistance to encourage responsibly managed and productive private forests.

IDNR Division of Reclamation

Appalachian Clean Streams Initiative: Funds for acid mine drainage abatement.

IDNR Division of Nature Preserves

State Nature Preserve Dedication: Acquisition and management of threatened habitat.

IDEM Office of Water Management

State Revolving Fund: Available to municipalities and counties for facilities development. Will be available in 1999 for nonpoint source projects as well. Funding is through very low-interest loans.

Section 319 Grants: Available to nonprofit groups, municipalities, counties, and institutions for implementing water quality improvement projects that address nonpoint source pollution concerns. Twenty-five % match is required, which may be cash or in-kind. Maximum grant amount is $112,500. Projects are allowed two years for completion. Projects may be for land treatment through implementing Best Management Practices, for education, and for developing tools and applications for state-wide use.

Section 205(j) Grants, formerly called 604(b) Grants: Available to municipalities, counties, conservation districts, drainage districts. These are for water quality management projects such as studies of nonpoint pollution impacts, nonagricultural NPS mapping, and watershed management projects targeted to Northwest Indiana (including BMPs, wetland restoration, etc.)

Section 104(b)(3) Grants: These are watershed project grants for innovative demonstration projects to promote statewide watershed approaches for permitted discharges, development of storm water management plans by small municipalities, projects involving a watershed approach to municipal separate sewer systems, and projects that directly promote community based environmental protection. NOTE: the application time frame for IDEM=S grants programs is annually, by March 31st.

PRIVATE FUNDING SOURCES

National Fish and Wildlife Foundation

1120 Connecticut Avenue, NW Suite 900, Washington DC 20036. Nonprofit, established by Congress 1984, awards challenge grants for natural resource conservation. Federally appropriated funds are used to match private sector funds. Six program areas include wetland conservation, conservation education, fisheries, migratory bird conservation, conservation policy, and wildlife habitat.

Individual Utilities

Check local utilities such as IPALCO, CINergy, REMC, NIPSCO. Many have grants for educational and environmental purposes.

Indiana Hardwood Lumbermen=s Association

Indiana Tree Farm Program

The Nature Conservancy

Land acquisition and restoration.

Southern Lake Michigan Conservation Initiative
Blue River Focus Area
Fish Creek Focus Area
Natural Areas Registry
Hoosier Landscapes Capitol Campaign

Conservation Technology Information Center (CTIC)

>*Know Your Watershed*= educational materials are available

Indiana Heritage Trust

Land acquisition programs

Ducks Unlimited

Land acquisition and habitat restoration assistance

Quail Unlimited

Pheasants Forever

Sycamore Land Trust

Acres Inc.

Land trust

Oxbow, Inc.

Land trust

SOURCES OF ADDITIONAL FUNDING OPPORTUNITIES

Catalog of Federal Funding Sources for Watershed Protection

EPA Office of Water (EPA841-B-97-008) September 1997

GrantsWeb: http://web.fie.com/cws/sra/resource.htm

ATTACHMENT 1

Stakeholder Comments

Stakeholder Comments

The stakeholder review period for the Wildcat Creek Watershed Restoration Action Strategy (WRAS) ended February 18, 2000. Well over 40 copies of the WRAS were distributed to stakeholders. However, only four individuals provided written comments on the WRAS. The WRAS is intended to be a living document; therefore, as new information or comments are available, they will be attached to the current version of the WRAS.

The Wildcat Creek WRAS has been revised to incorporate stakeholder comments, where appropriate. The following is a reproduction of the stakeholder comments:

General Comments

- I have read the draft completely and it sounds like a very thorough plan. I think the strategy seems to cover all bases. You have made it a "living" document, if we later find something that needs to be addressed. I think the Network Board is bringing together several of the groups that can have a definite impact on improving water quality. I particularly like the fact that you have incorporated local citizen groups (ie. Guardians and Wildcat Creek Foundation) as stakeholders. I view groups such as the Guardians as being purists in our views answering to no higher power, so to speak.. we just want the Wildcat to be the best it can be. Because these groups are included, you have brought together the "on the creek" people and the "clout" people - a winning combination. Overall, I think the "information sharing " is a powerful tool. I do think our overall task would be easier if we included landowners in the watershed. I realize we are talking about a lot of people, but perhaps we could have meetings and invite the public (education tool). These are the people who ultimately either protect or pollute the stream. Maybe this comes later in the plan.
- The Guardians have Section Coordinators, water quality monitoring people and some landowners who are in "direct" contact with the creek on a regular basis. I think we could act as the eyes and ears of the creek. We can further educate these Guardians to look beyond the trash and look for signs of other types of pollution during their monitoring. We then could bring that information back to the Network Board to figure our how to correct it. Is this how you envision the Guardians assisting in this endeavor? If I am off-base on this, please let me know.
- Individual homeowners who have direct sewage tiles into a stream or ditch. Has this been addressed by IDEM? Is this considered to be a problem? If there are a substantial number of these cases on a particular waterway, it seems it could have an impact on water quality, especially if we are talking about a small stream or ditch with minimum flow a good part of the year.
- If we correct a violation (ie. STP, industries, etc.) and improve the water quality in the creek, how are we assured that the violator does not violate again? I do not know the procedures in place for monitoring the creek. Does IDEM have the manpower and funds available to monitor the violators consistantly? Are these violators responsible for monitoring themselves? If so, does this work?
- Are the IDEM people who are working on this Wildcat Creek Watershed Initiative dedicated exclusively to this project or are they working on other projects as well? I think that, if we take a "watershed approach", that there should be dedicated IDEM staff to monitor that watershed with that as their only responsibility. Perhaps, I am living in a fairyland...perhaps funds and staff are not available for this to be possible. Just wondering.

- I realize that I have a lot to learn and some of my questions and comments may be common knowledge for most of the people concerned. However, I do find all of this to be very interesting and I'm attempting to be a "sponge" for information.
- I think all of the IDEM , SWCD, IDNR people I have met seem to be very dedicated in their tasks. I very much appreciate this not only as a Guardian but as a citizen.
- Other points of concern – despite repeated requests for information, I still remain outside the “loop”. The Tissue and Sediment studies from 12 years ago were appreciated, however roundabout the source. I would really appreciate seeing the Macroinvertebrate survey information, including sampling protocol.

Specific Comments

Part I:

- Executive Summary,Water Quality Goal, page ii - Would you reference the WRAS section with the actual goals?
- Table 2-1, Wildcat Creek Population Projections 1990-2020, page 2-5 -The Howard County Percent Change is incorrect. It should be +.5.
- Table 3-2, NPDES Permitted Facilities - ID IN0037974 (on page 3-10) This facility was purchased by Martin Marietta.
- Section 3.3.1 Agriculture - Please add a map of regulated confinement feeding facilities. Everything else is mapped. They are important sources of pollution.
- Page ii: South Fork of the Wildcat for Cyanide
- ii - South Fork of the Wildcat for Cyanide violations – not supported by chemical analysis. Why not address the Heavilon Ditch, swamp Creek, Campbell’s Run, and Kilmore Creek violations(D.O., NH3, E.coli, etc.) ?
- ii - Prairie Creek Ditch – Can’t find the data to support this.
- Carroll County took the lead?
- 2-11- Item 2.4 Areas of special concern – the former ING – RICH and AUGSTUS HOOK sites are (were) present within the Wildcat Creek watershed (Blynn Ditch). Both were (are) superfund sites.
- 3-6 - Defining point sources – tabbing septage as a point source.
- 3-11 – Nonpoint Sources – tabbing septage as a non-point sources.
- See attached information sheets from I. S.D. H., ; historical review of Applicable State and Federal Laws.
- Who is supposed to be enforcing Rule 5 compliance anyway?
- 4-4 – Old Data! Cyanide levels don’t support item #1 (page II).

- 4-6- Fish Consumption Advisories- 1999 Advisory was available for use. Additionally, the data that I finally received on 2/1/00, is old (Contaminant Monitoring Analytical Results of Fish Tissue and Surficial Aquatic Sediments From Sites In The Wildcat Creek Watershed – samples dated 1987 – 1994). Technological advances and subsequent sampling should be able to provide a better picture. What standards are being used for this? What standards are being used for the sediment samples? Not trying to be anymore cute than necessary, just what kind of bird is illustrated flying across the cover of this document?

- 4-8 – Item 4.5 – I have yet to see any Benthic Aquatic Macroinvertebrate Community Assessments. Fish and Sediment testing as per above (page 4-6).

- 5-18 - How large of a watershed? The wildcat creek drainage, by my calculations, is 514560 acres. Is this something that is to be used at smaller subunits? (ex : Heavilon Ditch, Spring Creek, Swamp Creek, etc.)

- R-1 – Stylistics within the references – consistency.

- Figure 2-2 14 Digit Hydrologic Unit Code Watersheds Within the Wildcat Creek Watershed- C. Hillis Watershed is labeled as the Talbert Ditch. Other watersheds are not identified. Might want to include the County Lines in this figure too.

- C-3 Typo – Third line – Aquatic LIRE ? , need spaces between monitored, items (c) and (d)

- C-8 – Fourth line – Middle Fork Wildcat – the nearest town should be either Burlington or possibly Forest. Additionally, note the typo – RecreCational.

- D- 1 – The new Mayor of Frankfort is The Honorable Roy Scott

Part II

- Recommended Management Strategies - The strategies need summarization. They are too wordy. They contain too much background material. Leave them as explanatory material, and replace them with one sentence summaries. Think about what you will use on your presentation overheads. For example:

  Recommended Management Strategies

  1 - Obtain targeting and priorities of watershed stake holders for allocation of water quality improvement resources.

  2 - Develop Total Maximum Daily loads for watershed and allocate to sources.

- 7 - As noted before, provided data does not support cyanide violations or the dissolved oxygen violations.

- 9 - Item 4.3 – Midght consider the I.S.D.H. definition of a failed septic system. Addionally, review the historical perspective provided in PART I.

- 11 - Item 4.7 – Point Vs. Non- point.

ATTACHMENT 2

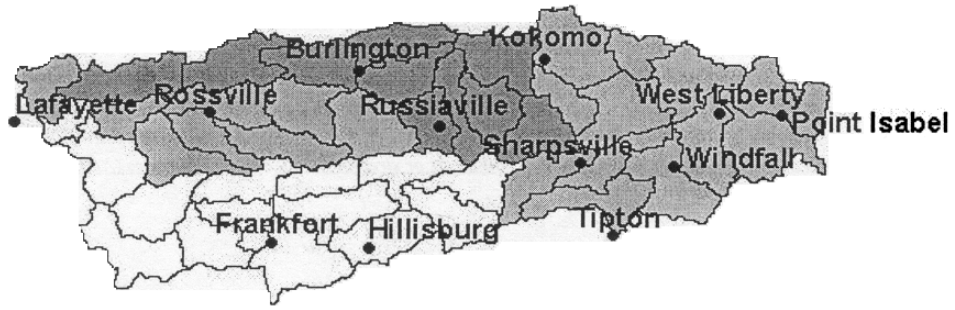
Wildcat Creek
Draft Waterbody Assessments
March 2000

WATERBODY ASSESSMENTS

Wildcat Watershed

05120107

DRAFT



Planning and Restoration Branch
Office of Water Management
Indiana Department of Environmental Managenment
Indianapolis, Indiana

Direct comments or questions about this report to:
Linda Schmidt
Email: lschmidt @dem.state.in.us
(317) 233-1432

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0711 **GRASSY FORK DITCH - HARPER DITCH** *14-digit HUA* 05120107010010

SEGMENT 00 GRASSY FORK DITCH - HARPER DITCH 13.63 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-026, 23-027, 23-028, 23-029, 23-030 Ref 72. Source agriculture - workgroup. Source septic and possible straight pipe from Port Isabel - W. Stone. *Sampled between* 19980819 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)		Sources (Activities)	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Livestock	S
		Pathogens	S	Illicit connections/illegal hook-ups/dry weather flows	S
		Pathogens	S	Onsite Wastewater Systems (Septic Tanks)	S

Assessment Method *Assessment ID* 559

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0712 **MIDDLE FORK DITCH** *14-digit HUA* 05120107010020

SEGMENT 00 MIDDLE FORK DITCH 12.98 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-023, 23-024, 23-025 Ref 72. *Sampled between* 19980814 and 19980814

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 560

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0713 **MUD CREEK - HEADWATERS (TIPTON)** *14-digit HUA* 05120107010030

SEGMENT 00 MUD CREEK - HEADWATERS (TIPTON) 12.69 miles *303(d) list* No

Location *Discharge* TIPTON CO *Assessment Date* 19991108

Assessment notes Site 23-001, 23-002, 23-003, 23-004 Ref 72. Survey Section field note: House subdivision and field tiles upstream (illicit connections), livestock, algae, field tiles flowing (crop related), dredging. *Sampled between* 19980814 and 19980814

Designated Use	Support	Causes (Pollutants or stressors)		Sources (Activities)	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Crop-related Sources	S
		Pathogens	S	Livestock	S
		Pathogens	S	Illicit connections/illegal hook-ups/dry weather flows	S

Assessment Method *Assessment ID* 561

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0714 **MUD CREEK - NORTH CREEK** *14-digit HUA* 05120107010040

SEGMENT 00 MUD CREEK - NORTH CREEK 14.06 miles *303(d) list* No

Location **Discharge** TIPTON CO **Assessment Date** 19991108

Assessment notes Site 230995, 23-006, 23-007, 23-008, 169-045, 23-009 Ref 72, 73. Habitat- channelized; unsightly nuisance algae - BSS file notes. Two discharge pipes; pasture with access to stream - Surceys field notes. Possible septics or str pipe frm Nevada - W Stone. **Sampled between** 19980701 and 19981030

Designated Use	Support	Causes (Pollutants or stressors)		Sources (Activities)		562
Aquatic Life Support	Not supporting					
		Biotic community status	S	Channelization		S
Fish Consumption	Not assessed					
Primary Contact (Recr)	Not supporting					
		Pathogens	H	Livestock		H
		Pathogens	H	Illicit connections/illegal hook-ups/dry weather flows		H

Assessment Method *Assessment ID* 562

240 Non-fixed station physical/chemical (conventional + toxicants)
332 Fish community assessment, IBI
422 Water column/ E. coli grab samples

WATERBODY INB0715 **TURKEY CREEK (TIPTON)** *14-digit HUA* 05120107010050

SEGMENT 00 TURKEY CREEK (TIPTON) 14.06 miles *303(d) list* No

Location **Discharge** TIPTON CO **Assessment Date** 19991108

Assessment notes Site 169-035, 23-010 - Ref 72, 73. Buffer strips, BSS field notes. 11/8/99. **Sampled between** 19980701 and 19981030

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 563

240 Non-fixed station physical/chemical (conventional + toxicants)
332 Fish community assessment, IBI
422 Water column/ E. coli grab samples

WATERBODY INB0716 **TURKEY CREEK - ASKREN/ ROUND PRAIRIE DITCHES** *14-digit HUA* 05120107010060

SEGMENT 00 TURKEY CREEK - ASKREN/ROUND PRAIRIE DITCHES 14.36 miles *303(d) list* No

Location Above and including Round Prairie Creek. **Discharge** TIPTON CO **Assessment Date** 19991108

Assessment notes Site 23-011, 23-012, 23-013, 23-014 - Ref 72. **Sampled between** 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 564

240 Non-fixed station physical/chemical (conventional + toxicants)
422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0716 **TURKEY CREEK - ASKREN/ ROUND PRAIRIE DITCHES** *14-digit HUA* 05120107010060

SEGMENT T1030 Turkey Creek 3.17 miles *303(d) list* No

Location *Discharge* TIPTON CO *Assessment Date* 19991108

Assessment notes site 23-015, 23-016 Ref 72. Possible str pipe or septics from Windfall - W Stone. 11/30/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting	Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method *Assessment ID* 565

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0717 **WILDCAT CREEK - MUD CREEK - IRWIN CREEK** *14-digit HUA* 05120107010070

SEGMENT 00 Mud Creek 4.13 miles *303(d) list* No

Location Below Irwin Creek to mouth at Wildcat Creek. *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-019, 23-020 Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 567

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1001 Wildcat Creek - mainstem 1.39 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19980301

Assessment notes Number 97 on 1998 303d list - Ref 31 3/1/98. Fish consumption - Ref 35. ALUS revised site 23-031 Ref 72; 11/8/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not supporting	PCBs	H	Source Unknown	H
Primary Contact (Recr)	Fully				

Assessment Method *Assessment ID* 370

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY **INB0717** **WILDCAT CREEK - MUD CREEK - IRWIN CREEK** ***14-digit HUA*** **05120107010070**

SEGMENT T1031 Mud Creek - Irwin Creek 8.08 miles ***303(d) list*** No

Location Mud Creek from Turkey Creek confluence to below and including Irwin Creek. ***Discharge*** HOWARD CO ***Assessment Date*** 19991108

Assessment notes Site 23-017, 23-018 Ref 72; 11/8/99. Source possibly failing septics; W Stone 11/30/99. ***Sampled between*** 19980814 and 19981022

Designated Use	***Support***	***Causes (Pollutants or stressors)***		***Sources (Activities)***	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Onsite Wastewater Systems (Septic Tanks)	M

Assessment Method ***Assessment ID*** 568

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY **INB0718** **WILDCAT CREEK - JEROME** ***14-digit HUA*** **05120107010080**

SEGMENT T1002 WILDCAT CREEK - JEROME 5.61 miles ***303(d) list*** Listed 1996

Location Includes part of Kokomo Reservoir No 2 that is upstream of US35/SR22. ***Discharge*** HOWARD CO ***Assessment Date*** 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 3/1/98. Fish consumption - Ref 35. Site 23-032, 23-01, 23-033, 23-034, 23-035 Ref 72. ALUS revised 11/8/99. Source Ref R Paulus, Howard Co Health Dept presentation 5/99. ***Sampled between*** 19980805 and 19981022

Designated Use	***Support***	***Causes (Pollutants or stressors)***		***Sources (Activities)***	
Aquatic Life Support	Fully				
Fish Consumption	Not supporting				
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Illicit connections/illegal hook-ups/dry weather flows	M

Assessment Method ***Assessment ID*** 371

240 Non-fixed station physical/chemical (conventional + toxicants)

421 Water column/ five E. coli samples in 30 days

422 Water column/ E. coli grab samples

WATERBODY **INB0719** **WILDCAT CREEK - KOKOMO RESERVOIR NO 2** ***14-digit HUA*** **05120107010090**

SEGMENT 00 Smith Ditch 0.5 miles ***303(d) list*** No

Location ***Discharge*** HOWARD CO ***Assessment Date*** 19991108

Assessment notes Site 23-036, 23-036A, 23-036B, 23-037 Ref 72. ***Sampled between*** 19980814 and 19981022

Designated Use	***Support***	***Causes (Pollutants or stressors)***	***Sources (Activities)***
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method ***Assessment ID*** 569

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0719 **WILDCAT CREEK - KOKOMO RESERVOIR NO 2** *14-digit HUA* 05120107010090

SEGMENT P1003 Kokomo Reservoir No 2 4.79 miles *303(d) list* Listed 1998

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 73 on 1998 303d list - Ref 31 3/1/98. Fish consumption - Ref 35. ALUS and RECR assessed Site 23-036, 23-036A, 23-036B, 23-037 Ref 72; 11/8/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Partial				
		Metals	S		
		Mercury	S	Source Unknown	S
Primary Contact (Recr)					

Assessment Method *Assessment ID* 372

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT P1004 Kokomo Reservoir No 1 0.24 miles *303(d) list* No

Location Mileage measured north to south at approximate east - west midpoint. There is no surface hydrologic connection with Reservoir No 2 on Raster topographic map. *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-036, 23-036A, 23-036B, 23-037 Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)			

Assessment Method *Assessment ID* 570

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB071A **WILDCAT CREEK - STAHL/ CANNON GOYER DITCHES** *14-digit HUA* 05120107010100

SEGMENT 00 Stahl Ditch 3.97 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB071A **WILDCAT CREEK - STAHL/ CANNON GOYER DITCHES** *14-digit HUA* 05120107010100

SEGMENT T1005 Prairie Creek Ditch - upper 1.25 miles *303(d) list* Listed 1998

Location *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes Number 83 on 1998 303d list - Ref 31 3/1/98. Site 23-40, 23-42 Ref 72. Scum, floating dead algae observed - Surveys field notes. 11/8/99. ALUS revised. Source rural nonpoint W Stone. 11/30/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Nonpoint source/ unknown origin	M

Assessment Method *Assessment ID* 572

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1006 Wildcat Creek - mainstem 2.95 miles *303(d) list* Listed 1996

Location Below Kokomo water intake to Kokomo Creek. Does not include 0.23 miles from confluence with Cannon - Goyer Ditch to Kokomo water intake. *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes 97 on 1998 303d list,Ref 31. FISH- Ref 35. Site WC-66,23-045 to 23-053, 169-065,- Ref 72,73,77. High DELTs- BSS field notes 11/8/99. ALUS non supp to part supp. Str pipe Hillsdale- Ref 78, W Stone 11/30/99. Possible lead cause; more information needed. *Sampled between* 19960101 and 19981231

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*		574
Aquatic Life Support	Partial					
		Metals	T			
		Lead	T	Combined Sewer Overflow		T
		Cyanide	M	Industrial Point Sources		M
Fish Consumption	Not supporting					
		PCBs	H	Source Unknown		H
Primary Contact (Recr)	Not supporting					
		Pathogens	M			

Assessment Method *Assessment ID* 574

230 Fixed station physical/chemical (conventional plus toxic pollutants)

240 Non-fixed station physical/chemical (conventional + toxicants)

250 Chemical monitoring of sediments

332 Fish community assessment, IBI

376 Qualitative Habitat Evaluation Index, QHEI; by professional

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB071A **WILDCAT CREEK - STAHL/ CANNON GOYER DITCHES** *14-digit HUA* 05120107010100

SEGMENT T1025 Wildcat Creek - upstream of water intake 0.23 miles *303(d) list* Listed 1996

Location Below Cannon Goyer Ditch to Kokomo water intake. *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes 97 on 1998 303d list,Ref 31. FISH- Ref 35. Site WC-66,23-045 to 23-053, 169-065,- Ref 72,73,77. High DELTs- BSS field notes 11/8/99. ALUS non supp to part supp. Str pipe Hillsdale- Ref 78, W Stone 11/30/99. Possible lead cause; more information needed. *Sampled between* 19960101 and 19981231

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	375
Aquatic Life Support	Partial				
		Metals	T		
		Lead	T		
		Cyanide	S	Industrial Point Sources	M
		Cyanide	S	Source Unknown	H
Drinking Water Supply	Not assessed				
Fish Consumption	Not supporting				
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Combined Sewer Overflow	M

Assessment Method *Assessment ID* 375

230 Fixed station physical/chemical (conventional plus toxic pollutants)
240 Non-fixed station physical/chemical (conventional + toxicants)
332 Fish community assessment, IBI
376 Qualitative Habitat Evaluation Index, QHEI; by professional

SEGMENT T1032 Prairie Creek Ditch - lower 1.34 miles *303(d) list* Listed 1998

Location *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes Number 83 on 1998 303d list - Ref 31 3/1/98. Site 23-043 Ref 72. ALUS revised. 11/8/99. Source urban and rural nonpoint - 11/30/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Nonpoint source/ unknown origin	M

Assessment Method *Assessment ID* 573

240 Non-fixed station physical/chemical (conventional + toxicants)
422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY **INB071A** **WILDCAT CREEK - STAHL/ CANNON GOYER DITCHES** *14-digit HUA* **05120107010100**

SEGMENT T1033 Cannon - Goyer Ditch 3.32 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-044 Ref 72. Drain pipes observed, possibly urban nonpoint - JL McFall 11/8/99. Source urban nonpoint - W Stone 11/30/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Urban Runoff/Storm Sewers	S
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method *Assessment ID* 571

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1034 Wildcat Creek - mainstem 4.17 miles *303(d) list* Listed 1996

Location Below Kokomo Reservoir Number 2 to confluence with Cannon - Goyer Ditch. *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list- Ref 31 3/1/98. Fish consumption- Ref 35. Site 23-038, 23-039 - Ref 72,73,77. Stream is flow- limited at times - BSS field notes 11/8/99. ALUS revised non supp to full supp 11/30/99. *Sampled between* 19980701 and 19981030

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not supporting				
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Fully				

Assessment Method *Assessment ID* 575

240 Non-fixed station physical/chemical (conventional + toxicants)

250 Chemical monitoring of sediments

323 Macroinvertebrate community assessment, mIBI family level

376 Qualitative Habitat Evaluation Index, QHEI; by professional

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB071B **KOKOMO CREEK - HEADWATERS** *14-digit HUA* 05120107010110

SEGMENT 00 Finn Ditch and other tributaries 8.35 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes Site 23-054 through 23-059A - Ref 72. Str pipes from Hemlock into Taylor Run Ditch - Ref 78. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Partial				
		Pathogens	S	Illicit connections/illegal hook-ups/dry weather flows	S
		Pathogens	S	Onsite Wastewater Systems (Septic Tanks)	S
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Assessment ID 576

SEGMENT T1007 Kokomo Creek - mainstem headwaters 12.04 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes Number 72 on 1998 303d list - Ref 31 3/1/98. Fish consumption - Ref 35. Site 23-054 through 23-059A - Ref 72. Str pipes from Center - Ref 78. Source illicit connections, package plants - W Stone. ALUS updated non supp to full supp 11/30/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not supporting				
		PCBs	H	Industrial Point Sources	H
Primary Contact (Recr)	Partial				
		Pathogens	S	Package Plants (Small Flows)	S
		Pathogens	S	Illicit connections/illegal hook-ups/dry weather flows	S
		Pathogens	S	Onsite Wastewater Systems (Septic Tanks)	S
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Assessment ID 368

WATERBODY INB071C **KOKOMO CREEK - LOWER** *14-digit HUA* 05120107010120

SEGMENT 00 Martin - Youngman Ditch basin 6.96 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Str pipes from Oakford - Ref 78. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Not assessed				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Illicit connections/illegal hook-ups/dry weather flows	M

Assessment Method

175 Occurrence of conditions judged to cause impairment

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Assessment ID 577

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY **INB071C** **KOKOMO CREEK - LOWER** *14-digit HUA* **05120107010120**

SEGMENT T1026 Kokomo Creek - lower 4.29 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 72 on 1998 303d list - Ref 31 03/01/1998. Fish consumption - Ref 35. Site 23-060 through 23-064 - Ref 72. Site 567-98 cause priority organic is PAHs; pesticide is chlordane- Ref 77. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	369
Aquatic Life Support	Not supporting				
		Pesticides	S	Contaminated Sediments	H
		Priority organics	S	Contaminated Sediments	H
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
Fish Consumption	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Package Plants (Small Flows)	M
		Pathogens	M	Onsite Wastewater Systems (Septic Tanks)	M
		Pathogens	M	Nonpoint source/ unknown origin	M

Assessment Method *Assessment ID* 369

240 Non-fixed station physical/chemical (conventional + toxicants)

250 Chemical monitoring of sediments

422 Water column/ E. coli grab samples

WATERBODY **INB0721** **WILDCAT CREEK - KITTY RUN/ EDWARDS DITCH** *14-digit HUA* **05120107020010**

SEGMENT 00 Kitty Run and other tributaries 3.37 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes Site 23-066 - Ref 72. *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Partial				
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method *Assessment ID* 578

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0721 **WILDCAT CREEK - KITTY RUN/ EDWARDS DITCH** *14-digit HUA* 05120107020010

SEGMENT T1008 Wildcat Creek - mainstem 8.14 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-065 sediment, 23-067 through 23-069, WC-60 - Ref 72. Str pipe from Devon Woods - Ref 78. Sources industrial, muni pt, CSO, urban nonpt, super fund site - JL McFall. Cause Priority organic, PAHs - 77. Possible lead cause; more information needed. *Sampled between* 19960101 and 19981231

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	579
Aquatic Life Support	Not supporting				
		Priority organics	S	Industrial Point Sources	H
		Priority organics	S	Contaminated Sediments	H
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
		Metals	T		
		Lead	T		
		Cyanide	S		
Fish Consumption	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Combined Sewer Overflow	S

Assessment Method *Assessment ID* 579

175 Occurrence of conditions judged to cause impairment
240 Non-fixed station physical/chemical (conventional + toxicants)
250 Chemical monitoring of sediments
422 Water column/ E. coli grab samples

WATERBODY INB0722 **LITTLE WILDCAT CREEK - EAST AND WEST FORKS** *14-digit HUA* 05120107020020

SEGMENT 00 Little Wildcat Creek - east fork 7.21 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-071 through 23-075 ref 72. Str pipes from Ivy hills, Alto, West Midddleton - Ref 78. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	580
Aquatic Life Support	Fully				
		Pathogens	S	Package Plants (Small Flows)	S
		Pathogens	S	Combined Sewer Overflow	S
		Pathogens	S	Illicit connections/illegal hook-ups/dry weather flows	S
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				

Assessment Method *Assessment ID* 580

240 Non-fixed station physical/chemical (conventional + toxicants)
422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY **INB0722** **LITTLE WILDCAT CREEK - EAST AND WEST FORKS** ***14-digit HUA*** **05120107020020**

SEGMENT T1009 Kelly West Ditch 1.83 miles ***303(d) list*** Listed 1996

Location ***Discharge*** TIPTON CO ***Assessment Date*** 19991108

Assessment notes Number 78 on 1998 303d list - Ref 31 03/01/1998. ***Sampled between*** 19980814 and 19981022

Designated Use	***Support***	***Causes (Pollutants or stressors)***	***Sources (Activities)***
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)			

Assessment Method ***Assessment ID*** 581

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1035 Unnamed tributary 0.3 miles ***303(d) list*** No

Location Runs along south side of CR 600S to confluence with Kelly West Ditch about 3/8 mile east of US 31 in NW Tipton County. Mileage estimated from RF3 overlay on Raster map in ArcView. Not in RF3. ***Discharge*** TIPTON CO ***Assessment Date*** 19991108

Assessment notes Site 23-70A, 23-70B; chloride and total dissolved solids were both higher than expected - Ref 72. Ditch appears to be in depression - Raster maps. ***Sampled between*** 19980814 and 19981022

Designated Use	***Support***	***Causes (Pollutants or stressors)***		***Sources (Activities)***	
Aquatic Life Support	Not supporting				
		Organic enrichment/Low DO	S	Package Plants (Small Flows)	S
		Organic enrichment/Low DO	S	Livestock	S
		Salinity/TDS/chlorides	S	Package Plants (Small Flows)	S
		Salinity/TDS/chlorides	S	Livestock	S
		Salinity/TDS/chlorides	S	Channelization	S
		Salinity/TDS/chlorides	S	Natural Sources	S
Fish Consumption	Not assessed				
Primary Contact (Recr)					
		Pathogens	S	Package Plants (Small Flows)	S
		Pathogens	S	Livestock	S

Assessment Method ***Assessment ID*** 582

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1036 Little Wildcat Creek - west fork 7.66 miles ***303(d) list*** No

Location ***Discharge*** HOWARD CO ***Assessment Date*** 19991108

Assessment notes Site 23-076, 23-077 - Ref 72. ***Sampled between*** 49980814 and 19981022

Designated Use	***Support***	***Causes (Pollutants or stressors)***	***Sources (Activities)***
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)			

Assessment Method ***Assessment ID*** 583

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0723 **LITTLE WILDCAT CREEK - LOWER** *14-digit HUA* 05120107020030

SEGMENT 00 William Vogus Ditch basin 9.75 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site Site 23-082, 23-082A - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 584

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1010 Little Wildcat Creek - mainstem 6.77 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 78 on 1998 303d list - Ref 31 03/01/1998. Site 23-078, 23-079, 23-083, 23-084 - Ref 72. Str pipes from West Middleton and Alto into Little Wildcat Creek, methods 130, 175 - Ref 78, W Stone. *Sampled between* 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not supporting	Pathogens S	Illicit connections/illegal hook-ups/dry weather flows S

Assessment Method *Assessment ID* 377

130 Land use information and location of sources

175 Occurrence of conditions judged to cause impairment

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0724 **WEST HONEY CREEK - WALNUT FORK** *14-digit HUA* 05120107020040

SEGMENT 00 West Honey Creek 6.75 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 23-090 through 23-094 - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not supporting	Pathogens S	Nonpoint source/ unknown origin S

Assessment Method *Assessment ID* 585

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0724 WEST HONEY CREEK - WALNUT FORK *14-digit HUA* 05120107020040

SEGMENT T1037 Walnut Fork 4.26 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

WATERBODY INB0725 WILDCAT CREEK - HONEY CREEK *14-digit HUA* 05120107020050

SEGMENT 00 Honey Creek 9.81 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes Site 23-086 through 23-089, 23-095 - Ref 72. *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)			

Assessment Method *Assessment ID* 586

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1011 Wildcat Creek - mainstem 3.06 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. ALUS and FISH source updated from U/S and D/S stream segments - ref 77; RECR updated ref 72; 11/8/99. *Sampled between* 19980701 and 19981030

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*		378
Aquatic Life Support	Not supporting					
		PCBs	H	Industrial Point Sources		H
		PCBs	H	Contaminated Sediments		H
Fish Consumption	Not supporting					
		PCBs	H	Industrial Point Sources		H
		PCBs	H	Contaminated Sediments		
Primary Contact (Recr)						

Assessment Method *Assessment ID* 378

191 Physical/chemical data extrapolated from upstream or downstream waterbody

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0726 **WILDCAT CREEK - DEARINGER DITCH - SHANGHAI** *14-digit HUA* 05120107020060

SEGMENT 00 Dearinger Ditch and other tributaries 13.79 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Site 169-085 - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 587

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1012 Wildcat Creek - mainstem 5.72 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; ALUS non supp, FISH non supp, RECR not assess 03/01/1998; 1998 cycle. Fish consumption - Ref 35. Site 23-096, 23-097 Ref 72; Sediment site 568-98 U/S; 11/8/99. *Sampled between* 19980701 and 19981030

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	379
Aquatic Life Support	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Fish Consumption	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Fully				

Assessment Method *Assessment ID* 379

191 Physical/chemical data extrapolated from upstream or downstream waterbody

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0727 **WILDCAT CREEK - PETES RUN** *14-digit HUA* 05120107020070

SEGMENT 00 Petes Run and other tributaries 11.89 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date* 19991130

Assessment notes Site 23-098 - Ref 72. *Sampled between* 19980803 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 588

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0727 **WILDCAT CREEK - PETES RUN** *14-digit HUA* 05120107020070

SEGMENT T1013 Wildcat - mainstem 1.73 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. Site 23-03, 23-099 Ref 72. PCBs in upstream sediments Ref 76. ALUS causes revised 11/8/99. *Sampled between* 19980803 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)		Sources (Activities)	589
Aquatic Life Support	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Fish Consumption	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method	Assessment ID 589
191	Physical/chemical data extrapolated from upstream or downstream waterbody
240	Non-fixed station physical/chemical (conventional + toxicants)
421	Water column/ five E. coli samples in 30 days
422	Water column/ E. coli grab samples

SEGMENT T1039 Unnamed tributaries 3.26 miles *303(d) list* No

Location *Discharge* CARROLL CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0727 **WILDCAT CREEK - PETES RUN** *14-digit HUA* 05120107020070

SEGMENT T1040 Wildcat Creek - mainstem 1.57 miles *303(d) list* Listed 1996

Location *Discharge* CARROLL CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. Site 23-100 Ref 72. PCBs in upstream sediments Ref 76. ALUS causes revised 11/8/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	590
Aquatic Life Support	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Fish Consumption	Not supporting				
		PCBs	H	Industrial Point Sources	H
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Fully				

Assessment Method *Assessment ID* 590

191 Physical/chemical data extrapolated from upstream or downstream waterbody

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0728 **WILDCAT CREEK - HURRICANE CREEK** *14-digit HUA* 05120107020080

SEGMENT 00 WILDCAT CREEK - HURRICANE CREEK 9.43 miles *303(d) list* No

Location *Discharge* HOWARD CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0728 **WILDCAT CREEK - HURRICANE CREEK** *14-digit HUA* 05120107020080

SEGMENT E1014 Wildcat Creek - mainstem 11 miles *303(d) list* Listed 1996

Location *Discharge* HOWARD CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. Site 23-101 through 23-104, 169-017, WC-32, 980825101, sediment at 23-103 - Ref 72, 73, 74, 76; ALUS causes revised ;11/8/99. *Sampled between* 19960101 and 19981231

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Not supporting				381
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Fish Consumption	Not supporting				
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Fully				

Assessment Method *Assessment ID* 381

240 Non-fixed station physical/chemical (conventional + toxicants)
322 RBP I or II or equivalent benthos surveys
323 Macroinvertebrate community assessment, mIBI family level
376 Qualitative Habitat Evaluation Index, QHEI; by professional
422 Water column/ E. coli grab samples
730 Rotating basin probabilistic water chemistry, fish IBI, QHEI, mIBI

WATERBODY INB0729 **WILDCAT CREEK - CUTLER TO OWASCO** *14-digit HUA* 05120107020090

SEGMENT 00 Unnamed tributaries 8.58 miles *303(d) list* No

Location *Discharge* CARROLL CO *Assessment Date* 19991130

Assessment notes Site 23-105A; RECR not enough data; - ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

Assessment Method *Assessment ID* 591

240 Non-fixed station physical/chemical (conventional + toxicants)
422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0729 **WILDCAT CREEK - CUTLER TO OWASCO** *14-digit HUA* 05120107020090

SEGMENT E1015 Wildcat Creek - mainstem 8.92 miles *303(d) list* Listed 1996

Location *Discharge* CARROLL CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. Site 23-04, 23-105, 23-106; ALUS causes revised; 11/8/99. Source - W Stone 11/30/99. *Sampled between* 19980803 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	382
Aquatic Life Support	Not supporting				
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Fish Consumption	Not supporting				
		PCBs	H	Contaminated Sediments	H
		PCBs	H	Source Unknown	H
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Onsite Wastewater Systems (Septic Tanks)	S
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method *Assessment ID* 382

240 Non-fixed station physical/chemical (conventional + toxicants)

421 Water column/ five E. coli samples in 30 days

422 Water column/ E. coli grab samples

WATERBODY INB072A **WILDCAT CREEK - PYRMONT** *14-digit HUA* 05120207020100

SEGMENT 00 Tributaries of Wildcat Creek 16.67 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991130

Assessment notes Site 23-107 through 23-110 on Wildcat Cr; 0/4 bacteria samples substantially above single sample maximum - Ref 72; 11/8/99. *Sampled between* 19980814 and 19980814

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 592

191 Physical/chemical data extrapolated from upstream or downstream waterbody

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB072A **WILDCAT CREEK - PYRMONT** *14-digit HUA* 05120207020100

SEGMENT E1016 Wildcat Creek - mainstem 15.38 miles *303(d) list* Listed 1996

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. Site 23-107 through 23-110; sites 23-108 and 23-110 with sediment; ALUS causes revised; Ref 72; 11/8/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Not supporting				383
		PCBs	M	Contaminated Sediments	H
		PCBs	M	Source Unknown	M
Fish Consumption					
		PCBs	M	Contaminated Sediments	H
		PCBs	M	Source Unknown	M
Primary Contact (Recr)	Fully				

Assessment Method *Assessment ID* 383

240 Non-fixed station physical/chemical (conventional + toxicants)

250 Chemical monitoring of sediments

422 Water column/ E. coli grab samples

WATERBODY INB0731 **MIDDLE FORK WILDCAT CREEK - HARNESS DITCH** *14-digit HUA* 05120207030010

SEGMENT 00 Whiteman Ditch - Harness Ditch 9.51 miles *303(d) list* No

Location Also Carroll and Howard Counties. *Discharge* CLINTON CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

SEGMENT T1041 Wildcat Creek, Middle Fork and other tributaries 10.52 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991130

Assessment notes Site 42-163, 42-164, 43-165; RECR no more than 1/3 slightly above std; Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)			

Assessment Method *Assessment ID* 593

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0732 MIDDLE FORK WILDCAT CREEK - ROBERTSON BRANCH *14-digit HUA* 05120207030020

SEGMENT 00 Wildcat Creek Middle Fork - Robertson Br - unnamed tributary 11.77 miles *303(d) list* No

Location Middle Fork Wildcat Creek below Harness ditch to fourth tributary (on left bank U/S of CR 200E), Robertson Ditch, and second unnamed tributary (on left bank with confluence just U/S of CR 300E). Located on RF3 overlay of Raster maps using ArcView 3.1. *Discharge* CARROLL CO *Assessment Date* 19991108

Assessment notes Site 42-166, 42-167 Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 597

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1042 Wildcat Creek, Middle Fork - mainstem 2.46 miles *303(d) list* No

Location Middle Fork Wildcat Creek from fourth tributary (on left bank U/S of CR 200E) to confluence with Robertson Branch. Located on RF3 overlay of Raster maps using ArcView 3.1. *Discharge* CARROLL CO *Assessment Date* 19991130

Assessment notes Site 42-168 Ref 72. RECR revised - one sample 11/30/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Partial		
		Pathogens M	Nonpoint source/ unknown origin M

Assessment Method *Assessment ID* 596

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1043 Scofield Ditch and unnamed tributaries 8.23 miles *303(d) list* No

Location Scofield Ditch and three unamed tributaries. Located on RF3 overlay of Raster maps using ArcView 3.1. *Discharge* CARROLL CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0733 **MIDDLE FORK WILDCAT CREEK - ROSSVILLE** *14-digit HUA* 05120207030030

SEGMENT 00 Middle Fork Willdcat Creek and other tributaries 13.01 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 42-170 through 42-172 and 42-174 through 42-175 - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Fully				

Assessment Method *Assessment ID* 599

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1027 Silverthorn Branch downstream of Rossville STP 0.67 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19990830

Assessment notes Identify as limited use 08/30/1999. Site 42-173- Ref 72; ALUS - partial support 11/8/99. Limited use waters must meet RECR standards. Segment does not support RECR; therefore, segement does not support LMTD use. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	384
Aquatic Life Support	Not attainable				
		Salinity/TDS/chlorides	S	Municipal Point Sources	M
Fish Consumption	Not assessed				
imited Use	Not supporting				
		Pathogens	M	Municipal Point Sources	M
		Pathogens	M	Combined Sewer Overflow	M
Primary Contact (Recr)	Not supporting				
		Pathogens	M	Municipal Point Sources	M
		Pathogens	M	Combined Sewer Overflow	M

Assessment Method *Assessment ID* 384

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1044 Unnamed tributary - Deiter Ditch 1.05 miles *303(d) list* No

Location Unnamed tributary on rt bank between Weil ditch and Campbells Run. Deiter ditch is a tributary of unnamed tributary. *Discharge* CLINTON CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0734 **CAMPBELLS RUN - HEADWATERS** *14-digit HUA* 05120207030040

SEGMENT 00 Campbells Run and tributaries 17.27 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 42-177, 42-178 Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 600

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1045 Campbells Run - mainstem 2.5 miles *303(d) list* No

Location Campbells Run from unnamed tributary confluence on right bank in SW 1/4 of Section 29, Owen Township, to HUA discharge. *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 42-179, 169-086, 42-180; RECR: 1/3 bacteria samples > WQS; Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Partial	Pathogens S	Nonpoint source/ unknown origin S

Assessment Method *Assessment ID* 601

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0735 **CAMPBELLS RUN - CRIPE RUN** *14-digit HUA* 05120207030050

SEGMENT 00 CAMPBELLS RUN - CRIPE RUN 10.72 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 42-182, 42-183 Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 603

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY **INB0735** **CAMPBELLS RUN - CRIPE RUN** *14-digit HUA* **05120207030050**

SEGMENT T1046 Campbells Run - mainstem 1.94 miles *303(d) list* No

Location Campbells Run from HUA inlet to first unnamed tributary confluence (on left bank) in SE 1/4 of Section 22, T23N, R2W, N of SR26. *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 42-181 Ref 72; Rossville lift station malfunction - Surveys field notes. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*		604
Aquatic Life Support	Partial					
		Organic enrichment/Low DO	S	Collection System Failure		S
Fish Consumption	Not assessed					
Primary Contact (Recr)	Partial					
		Pathogens	S	Collection System Failure		S

Assessment Method *Assessment ID* 604

175 Occurrence of conditions judged to cause impairment

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY **INB0736** **MIDDLE FORK WILDCAT CREEK - HOG RUN** *14-digit HUA* **05120207030060**

SEGMENT 00 MIDDLE FORK WILDCAT CREEK - HOG RUN 21.11 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Site 42-184 through 42-186, WCM-7 - Ref 72. *Sampled between* 19980301 and 19981231

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 605

230 Fixed station physical/chemical (conventional plus toxic pollutants)

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY **INB0737** **MIDDLE FORK WILDCAT CREEK - PETTIT** *14-digit HUA* **05120207030070**

SEGMENT 00 MIDDLE FORK WILDCAT CREEK - PETTIT 13.22 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Site 42-187, 42-188, 42-01 Ref 72. *Sampled between* 19980803 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method *Assessment ID* 606

240 Non-fixed station physical/chemical (conventional + toxicants)

421 Water column/ five E. coli samples in 30 days

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0741 SOUTH FORK WILDCAT CREEK - TALBERT DITCH *14-digit HUA* 05120107040010

SEGMENT 00 SOUTH FORK WILDCAT CREEK - TALBERT DITCH 9.69 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

SEGMENT T1017 South Fork Wildcat Creek - mainstem 4.94 miles *303(d) list* Listed 1992

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes **Number 84 on** 1998 303d list - Ref 31; 03/01/1998. ALUS revised; cyanide was from downstream of Prairie Creek at WCS-34; does not apply to this HUA - JL McFall 11/8/99 *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

WATERBODY INB0742 SOUTH FORK WILDCAT CREEK - MICHIGANTOWN *14-digit HUA* 05120107040020

SEGMENT 00 Jenkins Ditch 2.15 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0742 **SOUTH FORK WILDCAT CREEK - MICHIGANTOWN** *14-digit HUA* 05120107040020

SEGMENT T1018 South fork Wildcat Creek - mainstem 9.28 miles *303(d) list* Listed 1992

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Number 84 on 1998 303d list - Ref 31; 3/1/98. Site 23-113 through 23-116; 23-116 with sediment - Ref 72; ALUS revised; cyanide is from Prairie Creek downstream, not here; 11/8/99. *Sampled between* 19980701 and 19981030

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 386

240 Non-fixed station physical/chemical (conventional + toxicants)
250 Chemical monitoring of sediments
422 Water column/ E. coli grab samples

SEGMENT T1047 Unnamed tributary basin 4.47 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 169-047 - Ref 72, 73; DELTs: tumors noted - BSS field notes. *Sampled between* 19980701 and 19981030

Designated Use	Support	Causes (Pollutants or stressors)		Sources (Activities)		607
Aquatic Life Support	Not supporting	Biotic community status	H	Nonpoint source/ unknown origin		H
Fish Consumption	Not assessed					
Primary Contact (Recr)	Not assessed					

Assessment Method *Assessment ID* 607

240 Non-fixed station physical/chemical (conventional + toxicants)
332 Fish community assessment, IBI
376 Qualitative Habitat Evaluation Index, QHEI; by professional
422 Water column/ E. coli grab samples

WATERBODY INB0743 **PRAIRIE CREEK (CLINTON)** *14-digit HUA* 05120107040030

SEGMENT 00 PRAIRIE CREEK (CLINTON) 21.14 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 23-117 through 23-126; no site 23-118; sediment at site 23-126 - Ref 72. RECR: 2/9 not substantially above standard - Ref 44. *Sampled between* 11980701 and 19981030

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 608

240 Non-fixed station physical/chemical (conventional + toxicants)
250 Chemical monitoring of sediments
422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB0744 **SOUTH FORK WILDCAT CREEK - BLINN DITCH** *14-digit HUA* 05120107040040

SEGMENT T1019 South Fork Wildcat Creek - mainstem 8.57 miles *303(d) list* Listed 1992

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Number 84 on 1998 303d list - Ref 31; 3/1/98. Site 23-127 through 23-135, WCS-34, 23-06; sediment at 23-127 and 23-133 - Ref 72; 11/8/99. *Sampled between* 19960101 and 19981231

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*		387
Aquatic Life Support	Not supporting					
		Cyanide	S	Nonpoint source/ unknown origin		S
		Cyanide	S	Source Unknown		S
Fish Consumption	Not assessed					
Primary Contact (Recr)	Not supporting					
		Pathogens	S	Nonpoint source/ unknown origin		S

Assessment Method *Assessment ID* 387

230 Fixed station physical/chemical (conventional plus toxic pollutants)

240 Non-fixed station physical/chemical (conventional + toxicants)

250 Chemical monitoring of sediments

421 Water column/ five E. coli samples in 30 days

422 Water column/ E. coli grab samples

WATERBODY INB0745 **KILMORE CREEK - SHANTY CREEK** *14-digit HUA* 05120107040050

SEGMENT 00 KILMORE CREEK - Shanty Creek 11.48 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 23-137 - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 609

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0746 **SWAMP CREEK** *14-digit HUA* 05120107040060

SEGMENT 00 SWAMP CREEK 14.12 miles *303(d) list* No

Location *Discharge* CLINTON CO *Assessment Date* 19991130

Assessment notes Site 23-136 - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 610

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY **INB0747** **KILMORE CREEK - STUMP DITCH** ***14-digit HUA*** **05120107040070**

SEGMENT 00 KILMORE CREEK - STUMP DITCH 11.67 miles ***303(d) list*** No

Location ***Discharge*** CLINTON CO ***Assessment Date*** 19991108

Assessment notes Site 23-138 and 23-140 - Ref 72. ***Sampled between*** 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method	*Assessment ID*
240 Non-fixed station physical/chemical (conventional + toxicants)	
422 Water column/ E. coli grab samples	

WATERBODY **INB0748** **KILMORE CREEK - SR 29 TO KILMORE** ***14-digit HUA*** **05120107040080**

SEGMENT 00 KILMORE CREEK - SR 29 TO KILMORE 7.18 miles ***303(d) list*** No

Location ***Discharge*** CLINTON CO ***Assessment Date*** 19991108

Assessment notes Site 23-142 - Ref 72. ***Sampled between*** 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method	*Assessment ID*
240 Non-fixed station physical/chemical (conventional + toxicants)	612
422 Water column/ E. coli grab samples	

WATERBODY **INB0749** **KILMORE CREEK - BOYLES DITCH** ***14-digit HUA*** **05120107040090**

SEGMENT 00 KILMORE CREEK - BOYLES DITCH 14.37 miles ***303(d) list*** No

Location ***Discharge*** CLINTON CO ***Assessment Date*** 19991108

Assessment notes Site 23-143, 23-05 - Ref 72. ***Sampled between*** 19980803 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not supporting	Pathogens S	Nonpoint source/ unknown origin S

Assessment Method	*Assessment ID*
240 Non-fixed station physical/chemical (conventional + toxicants)	
421 Water column/ five E. coli samples in 30 days	
422 Water column/ E. coli grab samples	

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB074A — SOUTH FORK WILDCAT CREEK - SPRING CREEK - LICK RUN — *14-digit HUA* 05120107040100

SEGMENT 00 — Spring Creek - Lick Run — 12.48 miles — *303(d) list* No

Location Includes Heavilon Ditch D/S of CR 450W. — *Discharge* CLINTON CO — *Assessment Date* 19991130

Assessment notes Site 23-145, 23-146, 23-14A, 23-148, 23-149 - Ref 72; 980821101 on Spring Creek - Ref 74; 11/8/99. — *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method — *Assessment ID* 614

240 Non-fixed station physical/chemical (conventional + toxicants)
323 Macroinvertebrate community assessment, mIBI family level
422 Water column/ E. coli grab samples

SEGMENT T1020 — South Fork Wildcat Creek - mainstem — 1.04 miles — *303(d) list* Listed 1992

Location — *Discharge* CLINTON CO — *Assessment Date* 19991130

Assessment notes Number 84 on 1998 303d list - Ref 31; 03/01/1998. Site 23-135 U/S, 23-150 D/S - Ref 72. ALUS updated; cyanide impairment is upstream; 11/8/99. — *Sampled between* 19980803 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Fully				
Fish Consumption	Not assessed				
Primary Contact (Recr)	Not supporting				
		Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method — *Assessment ID* 388

191 Physical/chemical data extrapolated from upstream or downstream waterbody
240 Non-fixed station physical/chemical (conventional + toxicants)
421 Water column/ five E. coli samples in 30 days
422 Water column/ E. coli grab samples

SEGMENT T1048 — Heavilon Ditch - headwater — 3.14 miles — *303(d) list* No

Location Heavilon Ditch U/S of CR 450W, in Section 1, approximately 0.9 miles north of Jefferson. — *Discharge* CLINTON CO — *Assessment Date* 19991130

Assessment notes Site 23-147 - Ref 72; 11/8/99. Str pipe from Jefferson - W Stone 11/30/99. — *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*	
Aquatic Life Support	Not supporting				615
		Unionized Ammonia	M	Illicit connections/illegal hook-ups/dry weather flows	M
		Organic enrichment/Low DO	S	Illicit connections/illegal hook-ups/dry weather flows	M
Fish Consumption	Not assessed				
Primary Contact (Recr)	Partial				
		Pathogens	S	Illicit connections/illegal hook-ups/dry weather flows	M

Assessment Method — *Assessment ID* 615

175 Occurrence of conditions judged to cause impairment
240 Non-fixed station physical/chemical (conventional + toxicants)
422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB074B SOUTH FORK WILDCAT CREEK - MULBERRY *14-digit HUA* 05120107040110

SEGMENT 00 Unnamed tributaries near Mulberry 4.6 miles *303(d) list* No

Location Three tributaries below tributary confluence with South Fork Wildcat Creek about 1/4 mile U/S of CR 9B East in NW 1/4 of NW 1/4 of Section 25, Seffield Twp, Tippecanoe County. *Discharge* TIPPECANOE CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

SEGMENT T1021 South Fork Wildcat Creek - mainstem 9.84 miles *303(d) list* Listed 1992

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Number 84 on 1998 303d list - Ref 31; 3/1/98. Site 23-150 to 23-152; ALUS revised NS to SUPP; Cause cyanide less than WQS - Ref 72; 11/8/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method	*Assessment ID* 389
240 Non-fixed station physical/chemical (conventional + toxicants)	
422 Water column/ E. coli grab samples	

SEGMENT T1049 Unnamed tributaries - upper reaches 5.89 miles *303(d) list* No

Location Four tributaries above and including tributary confluence with South Fork Wildcat Creek about 1/4 mile U/S of CR 9B East in NW 1/4 of NW 1/4 of Section 25, Seffield Twp, Tippecanoe County. *Discharge* CLINTON CO *Assessment Date* 19991108

Assessment notes Site 23-150 to 23-152 on SF Wildcat Creek - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method	*Assessment ID* 616
191 Physical/chemical data extrapolated from upstream or downstream waterbody	

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB074C LAURAMIE CREEK — *14-digit HUA* 05120107040120

SEGMENT 00 LAURAMIE CREEK — 18.08 miles — *303(d) list* No

Location — *Discharge* TIPPECANOE CO — *Assessment Date* 19991108

Assessment notes Site 23-154 to 23-157 - Ref 72. — *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not supporting	Pathogens M	Nonpoint source/ unknown origin M

Assessment Method — *Assessment ID*

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB074D SOUTH FORK WILDCAT CREEK DAYTON — *14-digit HUA* 05120107040130

SEGMENT 00 Tributaries of SF Wildcat Creek near Dayton — 12.77 miles — *303(d) list* No

Location — *Discharge* TIPPECANOE CO — *Assessment Date*

Assessment notes — *Sampled between* and

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

SEGMENT E1022 South Fork Wildcat Creek - mainstem — 6.45 miles — *303(d) list* No

Location Outstanding state resource beginning in N1/2 of NW1/4 of Section 10; approximately 0.74 miles downstream of unnamed tributary on right to HUA outlet. Approximate UTMs 521,495.82 4,469,044.83 — *Discharge* TIPPECANOE CO — *Assessment Date* 19991108

Assessment notes Number 84 on 1998 303d list - Ref 31; 03/01/1998. Site 23-160, 169-056, 23-07 - Ref 72, 73, 74. 11/8/99. — *Sampled between* 19980803 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not supporting	Pathogens S	Nonpoint source/ unknown origin S

Assessment Method — *Assessment ID* 393

240 Non-fixed station physical/chemical (conventional + toxicants)

323 Macroinvertebrate community assessment, mIBI family level

332 Fish community assessment, IBI

376 Qualitative Habitat Evaluation Index, QHEI; by professional

421 Water column/ five E. coli samples in 30 days

422 Water column/ E. coli grab samples

730 Rotating basin probabilistic water chemistry, fish IBI, QHEI, mIBI

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

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BASIN Wabash River

WATERBODY INB074D **SOUTH FORK WILDCAT CREEK - DAYTON** *14-digit HUA* 05120107040130

SEGMENT T1029 South Fork Wildcat Creek - mainstem 3.35 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Number 84 on 1998 303d list - Ref 31; 03/01/1998. Site 23-158, 23-159, - Ref 72. 11/8/99. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 394

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

SEGMENT T1050 Unnamed tributary basin 3.94 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Site 169-066 - Ref 72, 73, 74. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Not supporting		
		Biotic community status M	Nonpoint source/ unknown origin
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

Assessment Method *Assessment ID* 618

240 Non-fixed station physical/chemical (conventional + toxicants)

323 Macroinvertebrate community assessment, mIBI family level

332 Fish community assessment, IBI

376 Qualitative Habitat Evaluation Index, QHEI; by professional

730 Rotating basin probabilistic water chemistry, fish IBI, QHEI, mIBI

WATERBODY INB074E **SOUTH FORK WILDCAT CREEK - CARY CAMP** *14-digit HUA* 05120107040140

SEGMENT 00 SOUTH FORK WILDCAT CREEK - CARY CAMP 1.47 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Site 23-162 - Ref 72. *Sampled between* 19980814 and 19981022

Designated Use	*Support*	*Causes (Pollutants or stressors)*	*Sources (Activities)*
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Fully		

Assessment Method *Assessment ID* 619

191 Physical/chemical data extrapolated from upstream or downstream waterbody

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

The contents of this report are subject to revision and update. Check for Indiana water quality updates at www.state.in.us/idem/owm/planbr/wqs/quality/

BASIN Wabash River

WATERBODY INB074E **SOUTH FORK WILDCAT CREEK - CARY CAMP** *14-digit HUA* 05120107040140

SEGMENT E1023 South Fork Wildcat Creek - mainstem 3.76 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Number 84 on 1998 303d list - Ref 31; 03/01/1998. Cyanide results meet standard 11/8/99. *Sampled between* 19980814 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Fully		
Fish Consumption	Not assessed		
Primary Contact (Recr)			

Assessment Method *Assessment ID* 392

240 Non-fixed station physical/chemical (conventional + toxicants)

422 Water column/ E. coli grab samples

WATERBODY INB0751 WILDCAT CREEK - DRY RUN *14-digit HUA* 05120107050010

SEGMENT 00 Dry Run and other tributaries 10.31 miles *303(d) list* No

Location *Discharge* TIPPECANOE CO *Assessment Date*

Assessment notes *Sampled between* and

Designated Use	Support	Causes (Pollutants or stressors)	Sources (Activities)
Aquatic Life Support	Not assessed		
Fish Consumption	Not assessed		
Primary Contact (Recr)	Not assessed		

SEGMENT E1024 Wildcat Creek - mainstem - OSRW 2.88 miles *303(d) list* Listed 1996

Location Upstream of USGS gaging station 03335000 near Lafayette. *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes Number 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. Site 23-111, 23-08 - Ref 72. ALUS revised; lead, ammonia, nutrients, dissolved oxygen meet standard 11/8/99. *Sampled between* 19980803 and 19981022

Designated Use	Support	Causes (Pollutants or stressors)		Sources (Activities)	
Aquatic Life Support	Fully				
Fish Consumption		PCBs	M	Source Unknown	M
Primary Contact (Recr)	Not supporting	Pathogens	S	Nonpoint source/ unknown origin	S

Assessment Method *Assessment ID* 390

240 Non-fixed station physical/chemical (conventional + toxicants)

421 Water column/ five E. coli samples in 30 days

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

WATERBODY ASSESSMENTS

The contents of this report are subject to revision and update. Check for Indiana water quality updates at www.state.in.us/idem/owm/planbr/wqs/quality/

BASIN Wabash River

WATERBODY INB0751 WILDCAT CREEK - DRY RUN *14-digit HUA* 05120107050010

SEGMENT T1028 Wildcat Creek - mainstem 4.82 miles *303(d) list* Listed 1996

Location Downstream on USGS gage 03335000 near Lafayette. *Discharge* TIPPECANOE CO *Assessment Date* 19991108

Assessment notes 97 on 1998 303d list - Ref 31; 03/01/1998. Fish consumption - Ref 35. Site 23-112 sediment, WC-3 - Ref 72. ALUS revised: ammonia, nutrients, dissolved oxygen supp 11/8/99. Possible lead cause; more information needed. *Sampled between* 19960101 and 19981231

Designated Use	*Support*	*Causes (Pollutants or stressors)*		*Sources (Activities)*		391
Aquatic Life Support	Fully					
		Metals	T			
		Lead	T			
Fish Consumption	Partial					
		PCBs	M	Source Unknown		M
Primary Contact (Recr)	Fully					

Assessment Method *Assessment ID* 391

240 Non-fixed station physical/chemical (conventional + toxicants)

250 Chemical monitoring of sediments

422 Water column/ E. coli grab samples

Abreviations: ALUS-aquatic life use support. BSS-Biological Studies Section. DELT-deformities, lesions, and tumors. D/S-downstream. FISH-fish consumption use support. HUA-hydrologic unit area. IBI-Index of biotic integrity (fish). LMTD-limited use support. mIBI-Macroinvertebrate index of biotic integrity. QHEI-Qualitative habitat evaluation index. RCRA-Resource Conservation and Recovery Act. RECR-recreational use support. RF3-USEPA Reach File 3. Str pipe-raw sewage discharge pipe. U/S-upstream. UTM-global positioning coordinates.
Cause and source rating codes: H-high, M-moderate, S-slight, T-more information needed to decide.

ATTACHMENT 3

South Fork Wildcat Creek
Cyanide Factsheet

Indiana Department of Environmental Management
Office of Water Management
Assessment Branch

FACT SHEET
IDEM/100/29/496/027/2000
February 2000

WILDCAT CREEK WATERSHED

Cyanide And The South Fork Of Wildcat Creek

Introduction

The Fixed Station (Ambient) Monitoring Program, part of IDEM's Surface Water Quality Assessment Program, monitors the water quality at 160 Fixed Stations (sites) located on various waterbodies throughout the State every month. This program relies upon the sampling efforts of the Surveys Section of the IDEM Office of Water Management's Assessment Branch and laboratory analyses performed by the Indiana State Department of Health (ISDH). One of the Fixed Stations, WCS 34, is located on the South Fork of Wildcat Creek at State Road 39 just northwest of Frankfort. In recent years, cyanide has been detected in water samples at WCS 34. As a result, the South Fork of Wildcat Creek was considered impaired due to cyanide and was subsequently placed on Indiana's 303(d) list of impaired waterbodies. IDEM has targeted the South Fork of Wildcat Creek for TMDL development because of the 303(d) listing. Recently, an IDEM chemist uncovered a possible problem in the cyanide measurements from WCS 34.

Problem

The cyanide analysis being performed by ISDH is known to be very susceptible to interference from various chemicals. Nitrate and nitrite, which are routinely generated in wastewater treatments plants, are two such chemicals. EPA Method 335.4, the analytical method for total cyanide in water samples currently being utilized by ISDH, notes the following:

> High results may be obtained for samples that contain nitrate and/or nitrite. During the distillation nitrate and nitrite will form nitrous acid that will react with some organic compounds compounds to form oximes. These oximes will decompose under test conditions to generate HCN.[1]

Since WCS 34 is situated downstream and in close proximity to the City of Frankfort Wastewater Treatment Plant, nitrate is always present at levels which could cause interference. Consequently, the cyanide results from WCS 34 cannot be considered reliable and need further investigation. The City of Hollywood Wastewater Treatment Plant in Hollywood, Florida noticed a similar nitrate interference problem in their cyanide measurements.

Solution

EPA Method 335.4 recommends the addition of sulfamic acid to water samples containing nitrate. "The interference of nitrate and nitrite is eliminated by pretreatment with sulfamic acid."[1] At the recommendation of IDEM, ISDH has started to pretreat Fixed Station water samples submitted for cyanide analysis with sulfamic acid.

Conclusion

Fixed Station cyanide data generated by ISDH will be scrutinized very carefully over the next year. If cyanide at WCS 34 is no longer present at or above the Water Quality Standard as a result of the method modification, then past detectable cyanide results will be neglected.

[1] Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993, Method 335.4.

ATTACHMENT 4

Indiana State Department of Health
Residential On-Site Sewage Disposal:
A historical Perspective

Indiana State Department of Health
Residential On-Site Sewage Disposal:
A historical Perspective

(submitted by Dan Bloodgood, Clinton County)

1899

33 USC 407
Rivers and Harbours Act
Referred to as "the Refuse Act of 1899"
This was not intended as a "pollution" statute, it was intended to protect and improve the quality of the navigable waterways. It was used by the Federal Government to control water pollution.

1930's - 1978

Bulletin S.E. 8
Developed by Purdue University and the ISBH to guide development in the post-war rural and urban sprawl. The new building outside the reaches of municipal sewers utilized in-door plumbing. The new technology and regulations could not keep up with demand; consequently, several iterations were produced.

1943

IC 13-1-3
Stream Pollution Control Law
A State regulation which prohibits discharge into the waters of the State without a permit.

1949

IC 16-20-1-19
Powers and Duties
Local health officers shall enforce the "laws" of their own and superior boards of health.

1949

IC 16-20-1-23
Inspection of private property
The health officer (designee) can enter onto property, at proper times after due notice, to protect public health.

1949

IC 16-20-1-25
Order to abate unlawful conditions
A person shall not maintain an unhealthy condition, if they do, the health officer shall order abatement.

1977/1978

HSE 25/HSE 25R
Residential On-Site Wastewater Disposal

Needed because: counties were adopting different copies of SE 8; SE 8 did not have the force of law; and lack of consistency needed between counties. Provisions: allowed newer types of technology and soil evaluation (permeability) instead of perc tests (percolation).

1978

Rule 410 IAC 6-8
Residential On-Site Sewage Disposal Systems
Recodified HSE 25R

1980

IC 36-1-3
Home Rule
State generates broad statutes; Counties regulates local affairs/situations.

1990

Rule 410 IAC 6-8.1
Residential On-Site Sewage Disposal Systems
New provisions: site evaluation; more specific with technical information; and addressed drainage.

1996

Rule 327 IAC 5-1-1.5
Water Pollution Control Board
IDEM enforces, this replaces a policy. A residential dwelling cannot discharge (treated or untreated) waste to the waters of the State.

1999

Rule 410 IAC 6-8.2
Residential On-Site Sewage Disposal
New provisions: commercial and residential combined; corrects vague issues and provides clarification.

FIGURE 2-1
WILCAT CREEK WATERSHED

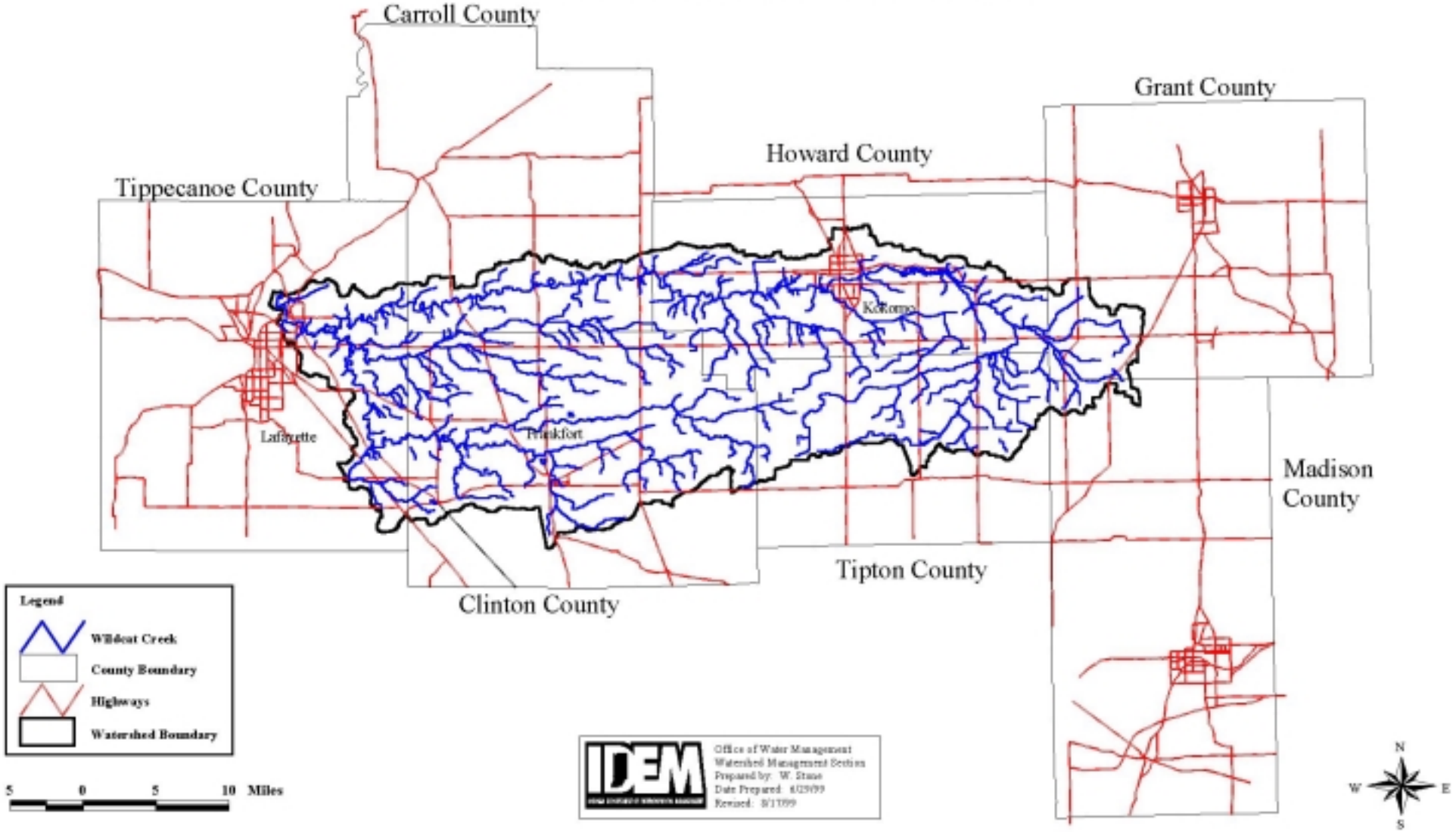


FIGURE 2-2
14-DIGIT HYDROLOGIC UNIT CODE WATERSHEDS
WILDCAT CREEK WATERSHED

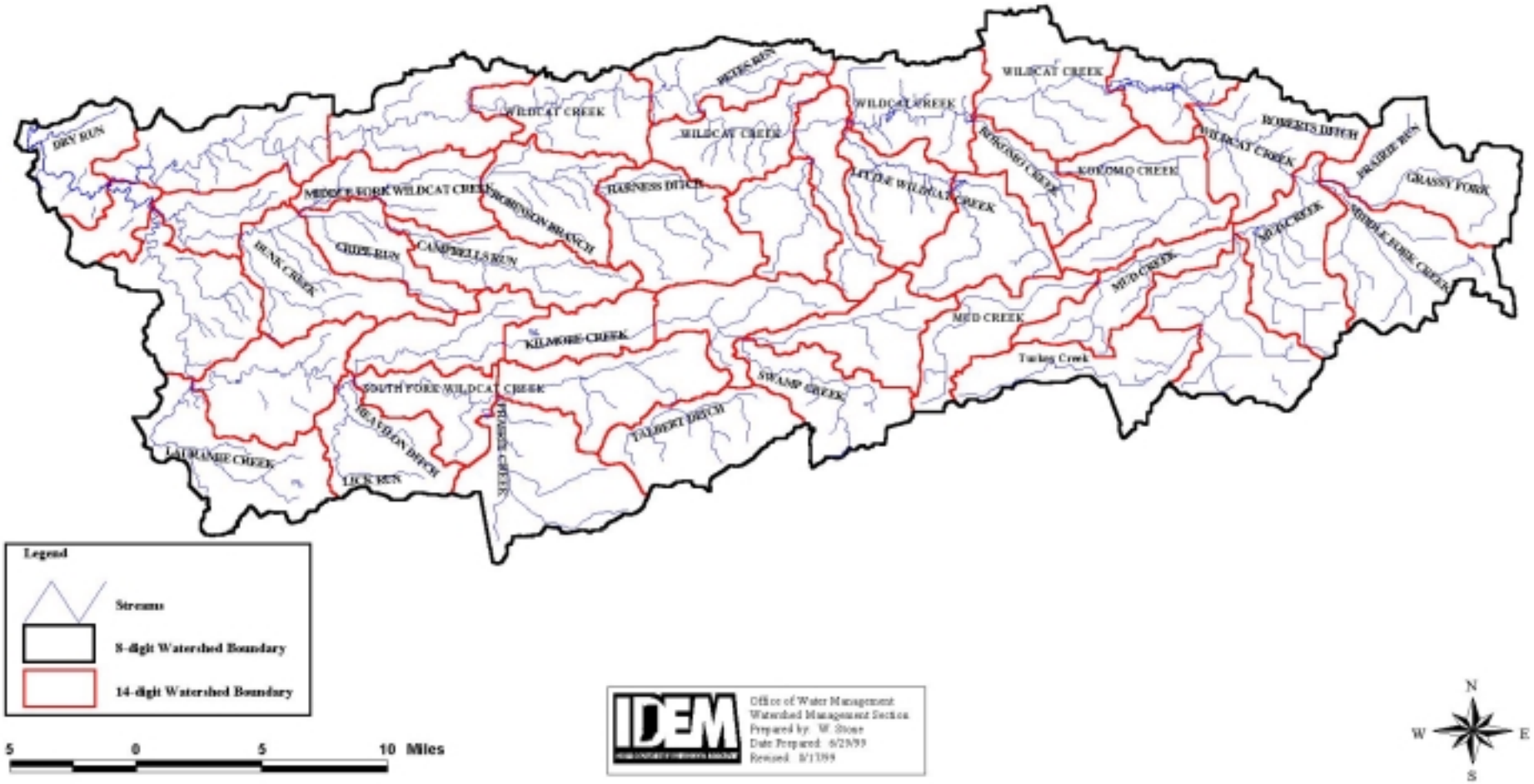


FIGURE 2-3
VEGETATIVE LAND COVER
WILDCAT CREEK WATERSHED

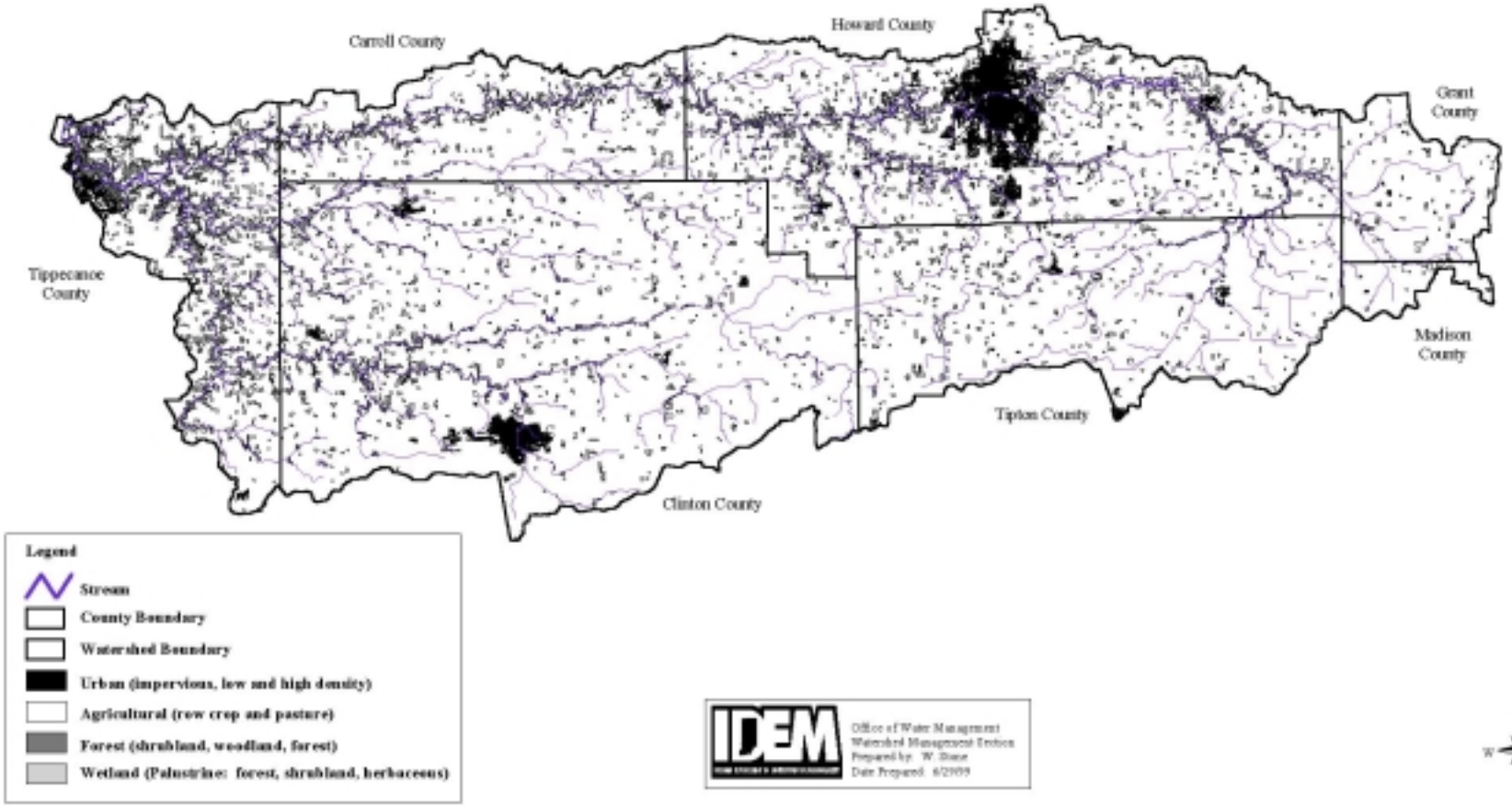
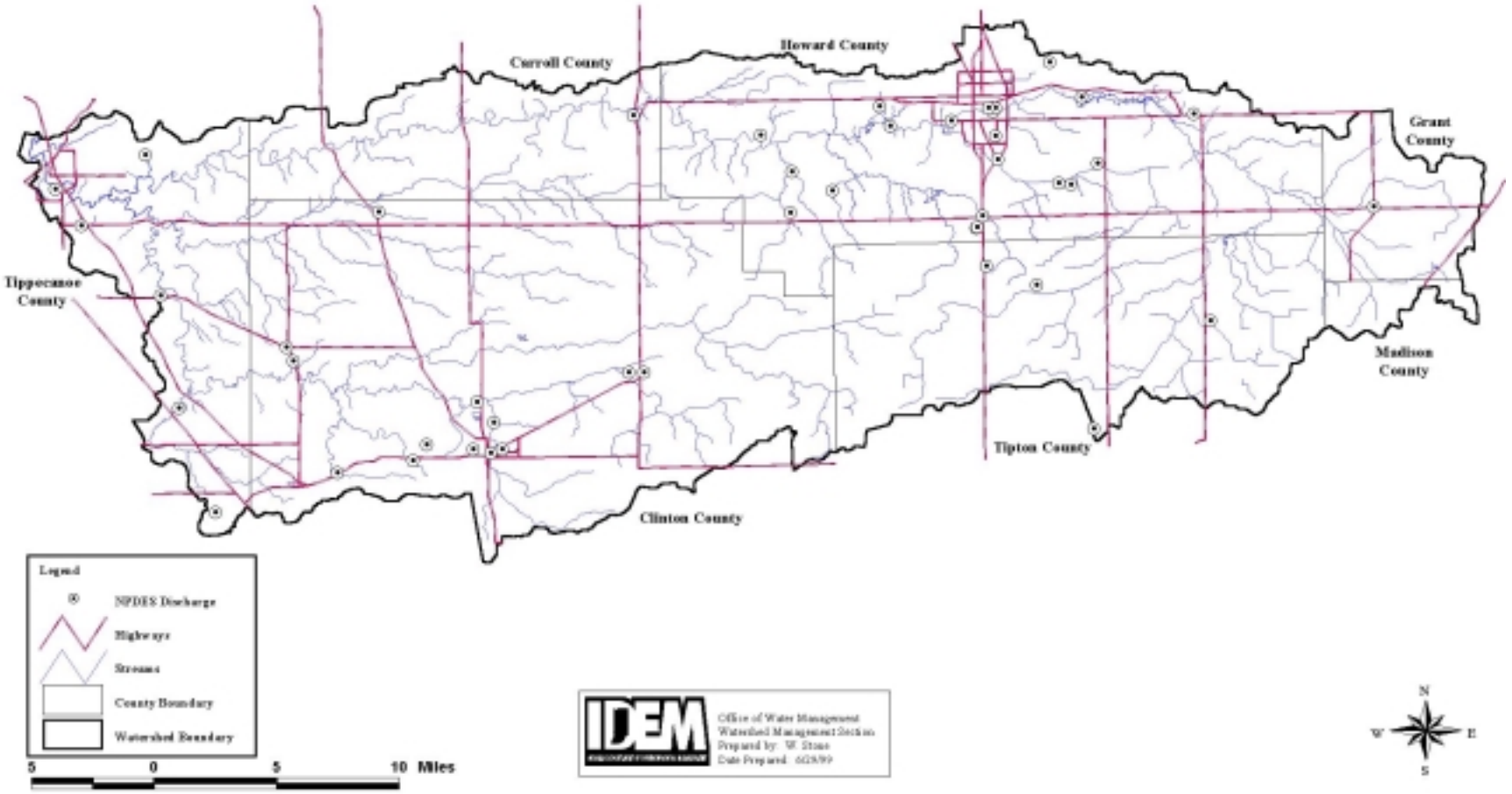


FIGURE 3-1
NPDES DISCHARGES
WILDCAT CREEK WATERSHED



CONFIRMED RESIDENTIAL WASTEWATER DISCHARGE LOCATIONS IN HOWARD COUNTY

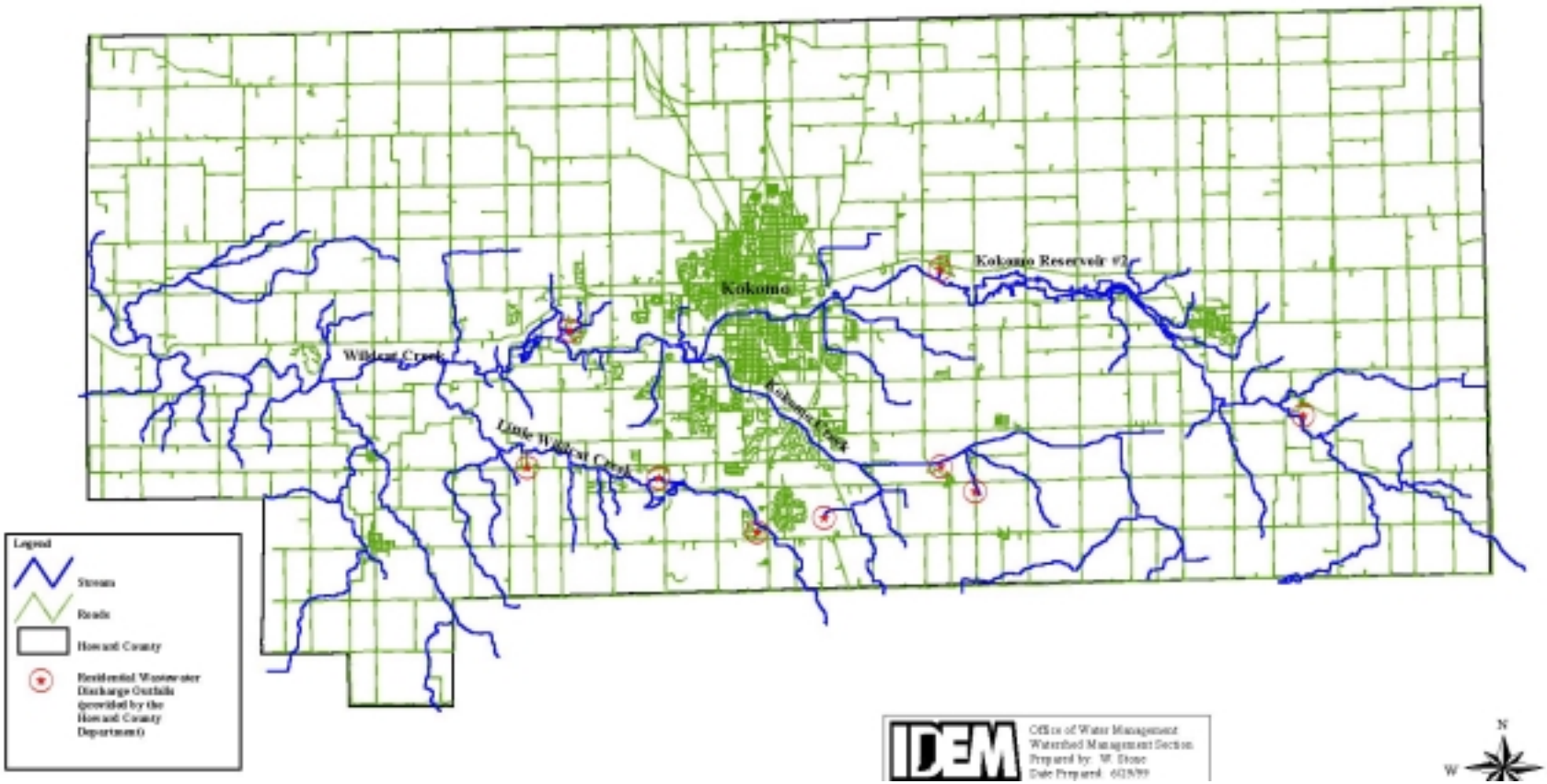


FIGURE 3-1
CLEAN WATER ACT SECTION 303(d) LISTED STREAMS
WILDCAT CREEK WATERSHED