OFFICE OF WATER MANAGEMENT IDEM
JUL 30 34 PM '01

HELMSBURG REGIONAL SEWER DISTRICT
BROWN COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT
FOR
BEANBLOSSOM AND WOODLAND LAKE WASTEWATER COLLECTION SYSTEM

TABLE OF CONTENTS

		PAGE
PREFACE		1
CHAPTER 1	**PROJECT LOCATION**	2
A.	LOCATION	2
B.	ENVIRONMENTAL RESOURCES PRESENT	2
C.	GROWTH AREAS AND POPULATION TRENDS	2
CHAPTER 2	**CURRENT SITUATION**	3
A.	CURRENT POPULATION DATA	3
B.	PLANNING AREA CONDITIONS	3
C.	EXISTING SANITARY SEWER FACILITIES	4
D.	EXISTING HELMSBURG RSD WASTEWATER TREATMENT PLANT	4
E.	EXISTING NPDES PERMIT LIMITATIONS	5
CHAPTER 3	**FUTURE SITUATION**	6
A.	CURRENT POPULATION AND ANTICIPATED FLOWS	6
B.	POTENTIAL FUTURE SERVICE AREA	7
C.	PRELIMINARY FLOW AND WASTELOAD ANALYSIS	7
	Table 1 – Design Wastewater Flow and Wasteloads (Bean Blossom Area)	9
	Table 2 – Design Wastewater Flow and Wasteloads (Woodland Lake Area)	10
CHAPTER 4	**EVALUATION OF ALTERNATIVES**	11
A.	DEVELOPMENT OF FEASIBLE ALTERNATIVES	11
	1. NO ACTION	11
	2. OPTIMUM OPERATION OF EXISTING FACILITIES	11
	3. COLLECTION SYSTEM ALTERNATIVE	11
	a. GRAVITY SEWERS – 8" AND LARGER SIZE	12
	b. LOW-PRESSURE SEWERS WITH GRINDER PUMPS	12
	c. VACUUM SEWER SYSTEMS	13
	d. COMBINATION GRAVITY AND LOW-PRESSURE SEWERS	14
	4. DISCRIPTION OF WASTEWATER TREATMENT ALTERNATIVES	14
	a. NEW WASTEWATER TREATMENT PLANT AND ALTERNATE SITES	14
	b. REGIONALIZATION	14
B.	EVALUATION OF PRINCIPAL ALTERNATIVES	15
	1. ENVIRONMENTAL EVALUATION	15
	2. EVALUATION OF RELIABILITY	15
	3. EVALUATION OF IMPLEMENTATION	15
C.	RECOMMENDED ALTERNATIVE	16
	1. PIPE SIZING FOR RECOMMENDED ALTERNATIVE	16
CHAPTER 5	**ENVIRONMENTAL IMPACTS**	17
A.	GENERAL	17
B.	COMMUNITY IMPACTS AND MITIGATING MEASURES	17

C. LOCAL TRAFFIC IMPACTS 17
D. COMMUNITY IMPACTS 17
E. OPEN SPACE AND RECREATIONAL OPPORTUNITIES 17
F. AIR QUALITY 18
G. GROUNDWATER/SOLE SOURCE AQUIFERS/DRINKING WATER 18
H. HISTORICAL, ARCHAEOLOGICAL AND ARCHITECTURAL SITES 18
I. NATIONAL NATURAL LANDMARKS 18
J. PLANTS AND ANIMALS 18
K. FARMLAND 19
L. FLOODPLAINS 19
M. WETLANDS AND SOIL EROSION CONTROL 19
N. INDUCED IMPACTS 19

CHAPTER 6 SELECTED PLAN 20
A. DESCRIPTION 20
1. PROJECT PHASING 20
B. PRELIMINARY DESIGN SUMMARY 21
C. PROJECT COST SUMMARY 21
1. COMBINATION OF GRAVITY AND LOW-PRESSURE GRINDER PUMP 21
2. LOW-PRESSURE GRINDER PUMP SYSTEM FOR WOODLAND LAKE 21
D. PROJECT FINANCING AND USER RATES 22
E. PROJECT SCHEDULE 22
Table No. 3 – Project Schedule 23

CHAPTER 7 LEGAL, FINANCIAL AND MANAGERIAL CAPABILITIES 24
A. LEGAL CAPABILITIES 24
B. FINANCIAL CAPABILITIES 24
C. MANAGERIAL CAPABILITIES 24

CHAPTER 8 PUBLIC PARTICIPATION 25
A. PUBLIC HEARINGS 25

APPENDIX A PLATES
PLATE 1 – PLANNING AREA MAP
PLATE 2 – WETLANDS MAP
PLATE 3 – FLOODWAY MAP
PLATE 4 – FIRM MAP
PLATE 5 – SOILS MAP
PLATE 6 – PRIME FARMLANS MAP
PLATE 7 – HISTORICAL IMPACT MAP
PLATE 8 – BEAN BLOSSOM SCATTERED HISTORICAL SITES
PLATE 9 – SELECTED PLAN – ENLARGED VIEW

APPENDIX B ENVIRONMENTAL REPORT
FORMAT II ENVIRONMENTAL REVIEW RECORD B-1 to B-9
IDNR-HISTORIC PRESERVATION & ARCHAEOLOGY, 11/21/00 B-10
ARCHAEOLOGICAL CONSULTANTS OF OSSIAN RECORDS CHECK B-11 to B-34
INDIANA DEPARTMENT OF HEALTH B-35
INDIANA GEOLOGICAL SURVEY B-36
US DEPT. OF INTERIOR, FISH & WILDLIFE SERVICE B-37 to B-39
US DEPT. OF AGRICULTURE
US ARMY CORPS OF ENGINEERS
INDIANA DEPARTMENT OF NATURAL RESOURCES – DIV. OF FISH & WILDLIFE
INDIANA DEPARTMENT OF NATURAL RESOURCES – DIV. OF WATER

APPENDIX C INCOME SURVEY

APPENDIX D COST ESTIMATE TABLES
TABLE I – ESTIMATED CONSTRUCTION COST OF SELECTED ALTERNATIVE
TABLE II – SELECTED PLAN COST SUMMARY
TABLE III - WOODLAND LAKE PROJECT COST ESTIMATE
TABLE IV - SRF PROJECT FINANCING INFORMATION FORM

APPENDIX E PUBLIC HEARING FOR PLANNING GRANT APPLICATION

APPENDIX F PUBLIC HEARING ON PRELIMINARY ENGINEERING REPORT

APPENDIX G BROWN COUNTY WATER COMPANY & TOWN OF NASHVILLE WATER UTILITY – WATER USAGE RECORDS

APPENDIX H USDA SOIL CONSERVATION SERVICE – SOIL SURVEY REPORT

APPENDIX I IDEM/HELMSBURG RSD – CORRESPONDENCE REGARDING WARNING OF NONCOMPLIANCE, DMR/MRO (JUNE 1999 TO JUNE 2000)

APPENDIX J HELMSBURG RSD WASTEWATER TREATMENT PLANT – IDEM NPDES PERMIT

APPENDIX K HELMSBURG RSD WASTEWATER TREATMENT PLANT – DESIGN SUMMARY

APPENDIX L LETTERS FROM INDIVIDUALS SUPPORTING PROJECT

APPENDIX M PROJECT PRELIMINARY DESIGN SUMMARY

APPENDIX N BROWN COUNTY HEALTH DEPARTMENT

APPENDIX O PRELIMINARY RATE ANALYSIS (LOPSHIRE & COMPANY)

APPENDIX P LETTERS OF INTENT TO SELL PROPERTY FOR PUMPING STATION SITES

APPENDIX Q SRF RESOLUTIONS

PREFACE

The communities of Bean Blossom and Woodland Lake are small-unincorporated communities located in northern Brown County. Currently, the community's water supplies are provided by Brown County Water and the Town of Nashville, although their wastewater needs are met with private septic tank absorption field systems. It is the desire of these communities to attract reasonable growth and economic development. However, this is difficult due to the restrictions on new absorption fields and failed septic systems. The communities have decided that a reasonable plan for growth must include community-wide wastewater collection systems. The collection system would be operated and maintained by the Helmsburg Regional Sewage District. Wastewater treatment would also be provide by the wastewater treatment plant located in Helmsburg, owned and operated by the Helmsburg Regional Sewage District.

The majority of the residents of the Bean Blossom and Woodland Lake areas have been trying to solve their wastewater problems since 1997. In December 1997, a representative of these communities submitted a request to the Helmsburg Regional Sewage District Board of Directors to consider extending their sewer system to the communities of Bean Blossom and Woodland Lake Subdivision. In January 1998, a notice of a Public Meeting scheduled for February 10, 1998 was delivered to all of the residents in the Bean Blossom and Woodland Lakes areas. Approximately 75% of these communities attended the February 10, 1998 meeting, and all of the attendees voted for the proposed extension of sewers.

On behalf of the Helmsburg Regional Sewage District, the Brown County Council and its Board of Commissioners applied for a Community Focus Fund Planning Grant, in the amount of $50,000, to the Indiana Department Of Commerce. Brown County was successful in obtaining the grant and as a result, financed the preparation of the report.

CHAPTER 1
PROJECT LOCATION

A. LOCATION

The Bean Blossom and Woodland Lake areas are unincorporated communities that are part of Jackson and Hamblen Townships, located in the northern part of Brown County, east of Helmsburg. The Planning Area includes portions of Sections 25 and 36, Township 10 North, Range 2 East, of Jackson Township, and portions of Sections 30 and 31, Township 10 North, Range 3 East, of Hamblen Township, of the Second Principal Meridian, as shown on the Bean Blossom and Morgantown Quadrangles, State of Indiana, United States Geological Survey map. A map showing the Planning Area is included as Plate 1 of Appendix A.

B. ENVIRONMENTAL RESOURCES PRESENT

An Environmental Report detailing the environmental resources within the planning area is provided as Appendix B to this document.

C. GROWTH AREAS AND POPULATION TRENDS

The proximity of this Planning Area to the Nashville, Columbus and Bloomington metropolitan areas with reliable access routes promotes the growth of this area for residential and commercial use. Currently, in the Bean Blossom portion of the Planning Area, approximately 90% of the land area has been developed into residential, single family homes. A number of small commercial type businesses, a large music park and campground facility, a 31-lot mobile home park, and four churches also exist within this area. The Woodland Lake portion of the Planning Area is strictly a residential lake community. Currently, approximately 90% of the lots within this development have been developed. It is reasonable to believe that the presence of sanitary sewers in these areas will result in undeveloped land being built-up with single and multi-family residential and minor commercial developments within the 20-year planning period.

CHAPTER 2
CURRENT SITUATION

A. CURRENT POPULATION DATA

An income survey conducted by Ball State University demonstrated that the population in the Bean Blossom and Woodland Lake Planning Area was 471 persons. There has not been any population increase in either of these areas since the completion of the Income Survey. A copy of the certified Ball State Income Survey is presented in Appendix C.

There are approximately 9 undeveloped residential lots in the Bean Blossom Area, and approximately 7 undeveloped residential lots in the Woodland Lake area. Assuming a family of four (4) persons per lot, it is estimated that the 20-year design population in the Bean Blossom area will increase by approximately 36 persons and approximately 28 persons in the Woodland Lake area.

B. PLANNING AREA CONDITIONS

The Bean Blossom and Woodland Lake areas currently utilize individual septic tank and absorption field systems as its method of wastewater treatment. The Brown County Health Department has reported numerous problems with these systems over the last 20 years. The soils within the area are not conducive to installation of septic tank and absorption field systems. Problems range from too small of lot size, to soil impermeability or permeability. Pollution of surface water and ground water resources has been a major health issue and concern throughout this area.

The Bean Blossom business area has been in a state of decline since most all of the businesses do not have the necessary land available to either upgrade or even repair their septic systems. The Woodland Lake subdivision has many homes with grossly undersized septic systems on lots with no more space available for either expansion or needed absorption field repairs.

The Brown County Health Department has cited several homeowners within the planning area for septic tank and absorption field system failures. That office has denied issuing septic permits to several potential businesses and residences because of inadequate space, poor soil structure or seasonal high water tables that cannot be successfully lowered for a septic system. In some cases, expensive mound type systems have been the only type of systems that could be approvable. Because many septic tank and absorption field systems are more than 50 years old, future failures are anticipated.

The Brown County Health Department has also conducted steam analysis test at several locations throughout the Bean Blossom area. These tests revealed E Coli counts of 2,400 parts per million at a location down stream of the 31-lot mobile home park, and 690 parts per million at a roadside ditch located on the north side of Covered Bridge Road.

A copy of a letter from the Brown County Heath Department that discuss the health problems in the planning area, along with copies of the stream analysis results, are included in Appendix N.

Copies of "Letters of Support" for the project from individuals who have problems with their septic tank absorption field systems are included in Appendix L

The U.S. Department of Agriculture Soil Conservation Service Soil Survey Report indicates that much of the soils within the area are moderately or highly difficult to provide working septic tank and absorption fields. The Cincinnati Silt Loam, Hickory Silt Loam, Pekin Silt Loam, Bean Blossom Silt Loam soils found in the area are all rated as "Severe" for installation of septic and absorption fields. The "Severe" rating is defined as site or soil conditions so unfavorable as to require special design, soil reclamation or intensive maintenance needed to install a functioning septic tank and absorption field. The "Moderate" rating is defined as soil or site features are unfavorable to septic/absorption use, but can be overcome with special design and planning. A "Slight" rating is defined as soils generally favorable for use in septic/absorption fields with only minor limitations. A review of the soils map indicates that the majority of the Planning Area is considered "Severe" rated for septic tanks with absorption fields. A copy of the soils map is presented as Plate 4 of Appendix A. A copy of the sections from the USDA Soil Conservation Service Soil Survey Report that indicate the problems with these soil types for septic tank absorption field systems, is presented in Appendix H.

C. EXISTING SANITARY SEWER FACILITIES

The community of Helmsburg is the closest town to the Planning Area that has an existing sanitary sewer system and treatment facility. The system is owned and operated by the Helmsburg Regional Sewage District. The collection system is a low-pressure/grinder pumping system, which flows to a 25,000 gpd extended aeration packaged-type treatment system. The collection system and treatment facilities were constructed in 1995, and were funded, in part, by a Community Focus Fund Grant from the Indiana Department of Commerce, and local Brown County EDIT funds.

The Helmsburg collection system was designed to handle only those existing and future residences within the (then defined) planning area boundaries of the Helmsburg Regional Sewage District. Any additional flows from outside the existing service area would have to be connected directly to the existing treatment facility.

D. EXISTING HELMSBURG REGIONAL SEWAGE DISTRICT WASTEWATER TREATMENT PLANT

It is recommended that the wastewater flows from the Bean Blossom and Woodland Lake Planning Area be transported via a 6" force main to the existing 25,000 gpd extended aeration package-type treatment plant located in the Community of Helmsburg, Indiana. Recently, a Warning of Noncompliance was issued to the Helmsburg Regional Sewage District by IDEM, citing NPDES permit violations at the

treatment facility. The District responded by developing a plan for correcting these problems, which have since been corrected. The treatment plant has been operating within its permit limits for the last several months. Copies of the correspondence with the Helmsburg Regional Sewage District and IDEM regarding the Warning of Noncompliance, along with copies of Discharge Monitoring Reports and Monthly Report of Operations for the Helmsburg Wastewater Treatment Plant, are included in Appendix I.

The existing Helmsburg Wastewater Treatment Plant is a conventional extended aeration package plant consisting of a flow equalization tank, aeration tank with a diffused aeration system, clarification facilities, chlorination/dechlorination facilities, surge control facilities and a tertiary filter to provide nitrification and a good quality effluent.

The dechlorination facilities consist of a dechlorination tablet-type feeder, which feeds solid sodium dioxide tablets. The sodium dioxide is fed into the treatment stream at the effluent end of the chlorine contact tank.

Post aeration is provided in a 120-gallon chamber using air from the filter air scour blower. Post aeration occurs after the dechlorination process.

A 2,500 gallon aerated sludge holding tank is also provided as part of the package plant. Sludge is stored in this tank and then hauled for treatment at other wastewater treatment facilities. The design summary for the existing Helmsburg Wastewater Treatment Plant is located in Appendix K.

E. EXISTING NPDES PERMIT LIMITATIONS

The existing Helmsburg Wastewater Treatment Plant effluent is discharged to Bean Blossom Creek. The existing NPDES Permit was recently renewed. The NPDES Permit No. is IN 0058416, and expires in August 31, 2005. A copy of the IDEM NPDES permit is presented in Appendix J.

CHAPTER 3
FUTURE SITUATION

A. CURRENT POPULATION AND ANTICIPATED FLOWS

For the purpose of establishing the effects the wastewater flows from the Bean Blossom and Woodland Lake Planning Area will have on the existing capacity at the Helmsburg treatment plant, we have analyzed the flows from these two areas separately.

The Brown County Water Company serves a total of seventy-six (76) customers located within the Bean Blossom area of the planning area. These customers consist of:

- One (1) thirty-one lot mobile home park with two (2) homes
- One (1) restaurant with a 25 seat capacity
- One (1) church
- One (1) campground and music festival park
- One (1) small commercial business
- Thirty-nine (39) residential homes

A summary of the Brown County Water Company water usage for this area is presented in Appendix G, along with a copy of the water utilities records.

The Town of Nashville Water Utility serves a total of 34 customers located in the Bean Blossom area of the Planning Area. These customers consist of:

- One (1) eight unit motel
- One (1) hair salon
- Two (2) churches
- Eight (8) small commercial businesses
- Twenty-two (22) residential homes

The average monthly water pumpage to these 34 customers is approximately 2,936 gallons per day (gpd). A summary of the Town of Nashville Water Utility water usage for this area is presented in Appendix G, along with a copy of the water utilities records. The Town of Nashville Water Utility would not provide the water usage of each individual customer, therefore, the average water pumped to these 34 customers was used.

In the Woodland Lake area, the Brown County Water Utility serves a total of 63 residential customers. The total average daily water usage of the 63 customers is approximately 4,670 gpd, or 73 gpd per customer.

In addition, the water supply to approximately 16 residential homes in the Bean Blossom area is provided from private wells. It is estimated that the present water usage of these 16 residential homes is approximately 1,947 gpd. This estimate is

based on the existing water usage of the (39) residential customers served by the Brown County Water Company in the Bean Blossom area. By using 4,745 gpd of water usage, and dividing by (39) residence, it is equivalent to 121.69 gpd per customer.

These Bean Blossom and Woodland Lake estimates are based on the existing water usage of the residential and commercial customers served by the Brown County and Nashville Water Utilities. It is anticipated that when adequate wastewater facilities replace the existing septic tank absorption field systems, the water usage of the existing customers will increase by approximately 20 percent.

A comprehensive analysis of the existing and projected domestic, commercial, institutional wastewater flows and wasteloads of the Bean Blossom and Woodland Lake Planning Area, is presented in Table No. 1 and Table No. 2, located on the following pages.

There are no industrial users (current or projected) located within the planning area.

B. POTENTIAL FUTURE SERVICE AREA

When adequate wastewater facilities are provided, it is anticipated that the existing undeveloped properties within the service area will be developed. In the Bean Blossom area, there are (9) lots available for residential use and (3) lots available for light commercial use. In Woodland Lakes, there are (7) lots available for residential use.

C. PRELIMINARY FLOW AND WASTELOAD ANALYSIS

1. Design Year Projected Flow and Wasteload

   a. Domestic Flow Estimate

      The 20-year design domestic flow is calculated based on the Brown County and Town of Nashville water usage records with the assumption that the water usage per customer will increase approximately 20% over current levels when adequate wastewater facilities are provided.

   b. Domestic Wasteload

      It is assumed that the wasteload concentrations from all existing and projected residential/commercial/industrial/institutional users will be as follows:

      BOD_5 = 220 mg/l
      CBOD = 182.6 mg/l
      TSS = 220 mg/l
      NH^3-N = 10 mg/l

The above noted estimated wasteload strengths are based on IDEM recommendations.

2. Industrial Flows and Wasteloads

Presently there are no Industrial users located within the service area. It is not anticipated that any industries with industrial type wastewater will be developed in the planning area within the 20-year planning period.

3. Other Flow Component

It is not anticipated that there will be any additional flows such as infiltration/inflow in the wastewater collection system.

A summary of the design year flows and wasteload is presented in Table No. 1 and Table No. 2, located on the following pages.

Table 1

Design Wastewater Flow and Wasteloads
Bean Blossom Service Area

A. Projected Flow from Existing Facilities

1. Domestic/Commercial/Institutional

a. Town of Nashville Water Utility Customers

34 Customers	= 2,936 gpd

b. Brown County Water Company Customers

1 - Mobile Home Park	= 3,517 gpd
1 - Restaurant	= 249 gpd
1 - Church	= 95 gpd
1 - Campground and Music Park	= 1,252 gpd
1 - Small Commercial Business	= 33 gpd
39 - Residential Homes	= 4,745 gpd

c. Private Well Water Supplies

16 Residential Homes (121.69 gpd x 16)	= 1,947 gpd
Total DCI Flow From Existing Facilities	**= 14,774 gpd**

B. Projected Flow From Future Development

1. Domestic/Commercial/Institutional

9 - Residential lots (121.69 x 9)	= 1,095 gpd
3 - Light Commercial Lots	= 100 gpd
Total Future DCI Flow	**= 1,195 gpd**
Total DCI Flow From Existing and Future Facilities	**= 15,969 gpd**
Total Projected DCI Flow (15,969 x 1.2)	**= 19,163 gpd**

Projected DCI Wasteloads From Existing and Future Facilities

$CBOD_5$ = 0.018660 x 182.6 x 8.34 = 28.4 lbs.
TSS = 0.018660 x 220 x 8.34 = 34.2 lbs.
Ammonia = 0.018660 x 10 x 8.34 = 1.6 lbs.

Table 2

Design Wastewater Flow and Wasteloads
Woodland Lake Service Area

A. Projected Flow from Existing Facilities

1. Domestic/Commercial/Institutional

a. Brown County Water Company Customers

63 - Residential Homes	= 4,670 gpd
Total DCI Flow From Existing Facilities	**= 4,670 gpd**

B. Projected Flow From Future Development

1. Domestic/Commercial/Institutional

7 - Residential lots (121.69 x 7)	= 852 gpd
Total Future DCI Flow	**= 852 gpd**
Total DCI Flow From Existing and Future Facilities	**= 5,522 gpd**
Total Projected DCI Flow (5,522 x 1.2)	**= 6,626 gpd**

Projected DCI Wasteloads From Existing and Future Facilities

$CBOD_5$ = 0.01220 x 182.6 x 8.34 = 18.6 lbs.
TSS = 0.01220 x 220 x 8.34 = 22.4 lbs.
Ammonia = 0.01220 x 10 x 8.34 = 1.0 lbs.

CHAPTER 4
EVALUATION OF ALTERNATIVES

A. DEVELOPMENT OF FEASIBLE ALTERNATIVES

1. NO ACTION

The current wastewater treatment systems serving the Bean Blossom/Woodland Lake Areas consist of individual septic tank systems and outdoor port-o-lets. Many of the existing septic tank systems are more than 50 years old and are experiencing frequent failures. Adequate repairs to these systems to comply with County and State requirements cannot be made due to small lot sizes and poor soil conditions. Adverse environmental impact would continue to restrict and potentially reduce the utilization of the watershed by both man and wildlife. This is especially true as it relates to the degradation of area streams and Bean Blossom Creek, which is a tributary to Lake Lemon. Inadequate wastewater collection and treatment facilities presently limit economic growth of the Communities. Copies of letters by local residents and businesses concerning their inability to expand are included in Appendix I.

The No Action Alternative would provide the Bean Blossom/Woodland Lake Areas with neither short nor long term benefits.

2. OPTIMUM OPERATION OF EXISTING FACILITIES

As previously discussed, the existing collection and treatment systems consist of onsite septic tank with soil absorption systems. Optimum operation of these systems would be expected to somewhat enhance the general health conditions within the Bean Blossom and Woodland Lake Planning Area for a short-term benefit. Optimum operation would be provided by complying with the existing Brown County Health Department requirements.

Long-term benefit cannot be expected from optimum operation of existing facilities since the existing soils are unsuitable for onsite wastewater treatment. The reported failure of systems built in accordance with Brown County requirements indicates the inadequacy of this method for solving the Bean Blossom and Woodland Lake problems.

3. COLLECTION SYSTEM ALTERNATIVES

Various types of collection systems appear feasible for collecting wastewater within the Bean Blossom and Woodland Lake Planning Area. The collection system alternatives selected for evaluation for this project are Gravity Sewers – 8" and Larger Size, Low-Pressure Sewers with Grinder Pumps, and Vacuum Sewers. Characteristics of each of these wastewater collection systems are discussed below. Under all alternatives the wastewater from the Bean Blossom and Woodland Lake Planning Area would be collected at a common point, which

would be a pump station with dual submersible pumps, located along State Road 45 immediately west of Bean Blossom. From the pump station, a 6-inch PVC force main would extend west, located primarily within the right-of-way of State Road 45, to the community of Helmsburg, Indiana. The force main would then discharge into the Helmsburg Regional Sewage District Wastewater Treatment Facility. A stand-by power source would be required for the common point pump station. Also, under these alternatives, the existing septic tank and absorption field systems would be abandoned.

a. GRAVITY SEWERS – 8" AND LARGER SIZE

The traditional wastewater collection system consists of 8" and larger size gravity sanitary sewers constructed of PVC, vitrified clay, concrete or other types of watertight pipes. With this alternative, raw wastewater from the house or place of business normally flows through a watertight 6-inch service connection to the gravity sewer main located in either the street in front of the house or an alley behind the house. Gravity sanitary sewers are normally installed at least 6-feet deep and have sufficient line slope to convey the solids within the wastewater without their settlement within the piping. A minimum flow velocity of 2-feet per second is required for this function.

As with all different types of collection system alternatives, there will be advantages as well as disadvantages when comparing these alternatives. The major advantage with gravity sewers, in comparison with pressure and vacuum sewers, are the lower operation and maintenance cost. Fewer personnel are required to maintain a gravity system, with the lack of individual pumping units and vacuum valve pits. Some of the major disadvantages with gravity systems are the installation cost. Larger excavation equipment is used due to the wider and deeper trenches required to install the lines. Deeper trench excavations are common; especially in hilly terrain, because gravity sewers need to be installed in a consistent line and grade to facilitate cleaning and solids build up.

b. LOW-PRESSURE SEWERS WITH GRINDER PUMPS

Low-Pressure Grinder Pumping Systems is another alternative for collecting and transporting raw wastewater. Under this alternative, a new wastewater receiving tank, with a submersible "grinder-type" pump, is located immediately outside of the structure. The discharge piping from the grinder is routinely 1 ¼" for normal residences, and the receiving pressure sewer main is 2-inches or larger in size depending upon hydraulic requirements. Power is provided to each pumping unit from the electrical service at each building. The pressure sewer must be buried below the frost level. Special precautions are needed to avoid contamination of waterlines in case of line breakage. For the purposes of this report, it is assumed that the pressure sewers will be installed at 6 feet minimum depth.

Pipe sizing within this system must be designed to provide two (2) feet per second velocity to avoid solids deposition within the pipe. An isolation valve would be installed on each service connection next to the pressure sewer main. Valved cleanouts would be installed at regular intervals in the pressure sewer to allow cleaning when necessary. Septic tanks are disconnected, abandoned and filled with sand, which is a cost normally paid by the property owner.

The major advantages of the pressure sewer in comparison to the gravity sewer is its capability to pump uphill through small diameter plastic pipe, the virtual elimination of infiltration and inflow of ground and storm water, plus the avoided capital costs. Disadvantages of the pressure sewer would be the higher operation and maintenance cost associated with the number of individual pumping units required at each residence. These individual pumping units typically experience failures from time to time requiring the sewer authority to maintain full or part-time personnel to provide maintenance on these pumps.

c. VACUUM SEWER SYSTEMS

Another alternative raw wastewater collection system is the vacuum sewers system whereby each wastewater source is connected to a common vacuum collection system. A collection tank with gravity vacuum interface valve and shut off valve would be located in each 3-inch service line to the vacuum collection system. A shutoff valve would also be located at the connection point to the vacuum collection system main.

Upon accumulation of wastewater behind the interface valve, this valve would open to pull the collected wastewater into vacuum system. After a pre-set interval, this valve would again close. This slug of wastewater, propelled into the collection system during the time the interface valve was open, would then pass toward the common collection point being propelled by vacuum within the common collection system. Air would enter the collection system along with wastewater at each opening of an interface valve. The air and wastewater would separate during the conveyance process. Flow in the vacuum system would be downhill toward the next transport pocket and wait being lifted through the pocket by the vacuum within the system upon the opening of an upstream interface valve. The transport pockets would be located at maximum distance of 400 feet within the system. Valved cleanout would be included with each transport pocket. Minimum flow velocity within the system would be 2-feet per second.

With this type of system, a central collection tank is installed at the common junction point of the collection system. Vacuum pumps are connected to the collection tank and provided with controls so that one vacuum pump is operational to maintain vacuum within the system at all times. Wastewater pumps are also located adjacent to the tank to take suction from the tank and convey the collected wastewater to the wastewater treatment plant.

The major advantage of a vacuum sewer in comparison with a gravity sewer system is the installation cost of the sewer mains. They typically require smaller pipe sizes, 4-inch and 6-inch, and trench excavations are not as wide or deep. However, this type of system is more suitable for service areas having flat terrain. Disadvantages are that operation and maintenance cost for this type of system are necessarily high. A yearly inspection is required for each interface valve. Major maintenance should be scheduled for these valves every 6 years, and unscheduled repairs can be anticipated every 4 to 8 years. The vacuum and discharge pumps can be anticipated to require major repair or replacement every 10 years.

d. COMBINATION OF GRAVITY AND LOW-PRESSURE SEWERS WITH GRINDER PUMPS

With the majority of the Bean Blossom area being located on top of a hill, the lay of the land affords another alternative for wastewater collection. This alternative would require the installation of a gravity sewer system throughout the areas were it is economically and technically feasible, and install a low-pressure system with grinder pumps in the outlying areas, that are downhill from the gravity system. The combination of these two types of collection systems allows a greater degree of flexibility in the design while keeping project cost down.

4. DESCRIPTION OF WASTEWATER TREATMENT ALTERNATIVES

a. NEW WASTEWATER TREATMENT PLANT AND ALTERNATE SITES

Several areas, such as the property at the mobile home park and the Bill Monroe Campground and Music Park, were considered as possible locations for a treatment plant to serve the Bean Blossom and Woodland Lake Planning Area. Due to the County restrictions that a wastewater treatment plant be located a minimum of 300 feet from any property line, it was determined that it wasn't possible to construct a treatment plant in the Bean Blossom area. In addition, the property owners in the area were not acceptable to a wastewater treatment plant being located on or adjacent to their property.

b. REGIONALIZATION

Greater economy can often be realized by collecting the wastewater from multiple communities for treatment and disposal at a common site. The Town of Helmsburg is located approximately 2.5 miles west of the Bean Blossom and Woodland Lake Planning Area, and has a wastewater treatment plant located on the south side of town. The wastewater treatment plant is a conventional extended aeration package plant consisting of an aeration tank with a diffused aeration system, clarification facilities, chlorination/dechlorination facilities, surge control facilities and a tertiary filter

to provide nitrification and a good quality effluent. The current capacity of the existing treatment plant is sufficient to receive the wastewater from the Bean Blossom portion of the planning area. An extension of the wastewater collection system to the Woodland Lake portion of the Planning Area would require an expansion of the treatment plant.

The system required to transport the wastewater from the Bean Blossom and Woodland Lake Planning Area to the Helmsburg treatment plant would consist of a duplex submersible type pumping station, a standby power generator, approximately 14,000 lineal feet of 6-inch PVC force main piping installed along the right-of-way of State Road 45, and adjacent to the right-of-way of the Indiana Railroad.

B. EVALUATION OF PRINCIPAL ALTERNATIVES

1. ENVIRONMENTAL EVALUATION

The environmental impact of all of the feasible alternatives would be very similar. No one alternative would provide a significantly different impact on any of the environmental considerations. Refer to Chapter 5 for comments regarding the project impact on environmental considerations.

2. EVALUATION OF RELIABILITY

Maximum reliability of systems operation is provided by the use of a gravity collection system. The recommended alternative calls for a gravity sewer system throughout the majority of the Town of Bean Blossom, combined with a low-pressure sewer system to serve the remaining areas in Bean Blossom that could not be feasibly served by a gravity sewer. Minimum operation and maintenance will result from the use of gravity sewers; however, the individual grinder pumping stations utilized with the low-pressure system will require additional maintenance. With this and any of the alternatives, wastewater pumping at the lift stations is routinely required as a mechanical operating procedure.

3. EVALUATION OF IMPLEMENTABILITY

Implementation of any of the evaluated alternatives should be reasonably achieved. However, wastewater treatment by the Town of Helmsburg would be easier to implement than a separate wastewater treatment system located within the Bean Blossom and Woodland Lake Planning Area. The use of the Helmsburg Wastewater Treatment Plant will increase the capacity at the facility to a level that will provide better operating conditions, and improve the quality of the plants effluent into Bean Blossom Creek.

Implementation of construction of a collection system, pumping stations and force mains, should be of minor consequence. Acquisition of easements allowing construction work, and subsequent maintenance work on individual user property will take some time, but should not cause any greater delay that would be experienced with any of the other collection system alternative.

C. RECOMMENDED ALTERNATIVE

The recommended alternative is to install a gravity sewer system throughout the majority of the Town of Bean Blossom, combined with a low-pressure sewer system to serve the remaining areas in Bean Blossom that could not be feasibly served by a gravity sewer. The recommended alternative also includes the installation of a regional pumping station to pump the wastewater to the existing Helmsburg Wastewater Treatment Plant, and a second smaller pumping station required to pump the wastewater from the Old Settlers Road area to Bean Blossom.

In the Woodland Lake area, gravity sewers are not considered a viable collection system alternative. This is primarily due to the elevation of the homes in relationship to the lake and the perimeter road around the lake. The most cost effective location for a gravity sewer main would be adjacent to the perimeter road that surrounds the lake. Deep excavations would be required with this routing so as to provide adequate fall in the service laterals from the house to the sewer main. In addition, service lateral installation cost, paid by the homeowner, would be expensive due to the length and depth that would be required to connect to the main, as well as the expense of tree removal that would be required in most cases. The only other option for a gravity main location would be around the shoreline of the lake to serve the lots adjacent to the lake and a parallel main along the service road to service the lots not on the lake. This dual main doubles the construction cost and is not considered viable. Other types of collection systems, such as a low-pressure grinder pump system, or possibly vacuum systems, are commonly used and better suited for a lake development such as Woodland Lake.

We have ruled out the vacuum sewer system as a viable alternative for use in Bean Blossom and Woodland Lake due to the topography of the area. The significant elevation differences throughout the area would create vacuum system operational problems as well as the cost of multiple vacuum stations to convey wastewater to the common collection point lift station.

1. PIPE SIZING FOR RECOMMENDED ALTERNATIVE

The pipe sizes for the recommended alternative were analyzed to transport the wastewater flow from the existing facilities within the service area. The pipe sizes are also sufficient to serve the additional flows from the potential expansion areas.

CHAPTER 5
EVALUATION OF ENVIRONMENTAL IMPACTS

A. GENERAL

The recommended wastewater collection system project may have some short-term environmental impacts, but the long-term environmental benefits are elimination of water pollution problems, health hazards, and safety concerns. Letters requesting an environmental impact review were sent to the various County, State, and Federal governmental agencies for their comments. A description and a preliminary map of the recommended project were included. Responses from the various agencies have implied that there will not be any long-term environmental impacts from the recommended projects. Copies of the responses from these various agencies have been included in the Environment Report located in Appendix B.

B. COMMUNITY IMPACTS AND MITIGATING MEASURES

The recommended project will have minimal short-term impacts on the environment such as erosion, dust, noise, and traffic hazards.

C. LOCAL TRAFFIC IMPACTS

The recommended project is proposed to be installed along street rights-of-way and in easements located on private property. Those areas adjacent to or within existing road rights-of-way will require approved traffic maintenance plans and permits from the appropriate county and state agencies.

D. COMMUNITY IMPACTS

Bean Blossom and Woodland Lake Areas are small communities adjacent to a highway with easy access to the metropolitan centers of Indianapolis, Bloomington and Columbus. Currently, it is predominantly a bedroom community with some small commercial establishments. The proximity to these areas will eventually lead to further residential and light commercial growth. However, the proposed additions of a wastewater collection system will not hasten or delay this anticipated growth. Therefore, the project is expected to have minimal impacts due to changes in traffic volume or flow patterns, increase/decrease in employment opportunities, or degradation/destruction of any existing archaeologically significant or historically significant sites.

E. OPEN SPACE AND RECREATIONAL OPPORTUNITIES

The improvements proposed in this project will generally have no impact on the open space or recreational activities in the planning area.

F. AIR QUALITY

The only impact on air quality that may be caused by the implementation of the project is short term and the result of construction activities (dust, exhaust fumes, etc.). This potential impact can be mitigated by the implementation of a dust control program and by requiring the Contractor to use well-maintained equipment. There is no anticipated long-term air quality degradation associated with the proposed project. The project will be in compliance with the Clean Air Act of 1977.

G. GROUNDWATER / SOLE-SOURCE AQUIFERS / DRINKING WATER

The recommended project may require that for short-term construction work, dewatering may be necessary. The effect on the groundwater table will be localized and will lower the groundwater only for a short period. No long-term effects on the groundwater are anticipated. After construction, the groundwater table should return to normal.

The Planning Area currently receives water supply from the Brown County Water Company and the Town of Nashville Water Utility. The effect of installation of sanitary sewers within the community would be negligible on the water supply.

H. HISTORIC/ARCHITECTURAL/ARCHAEOLOGICAL SITES

The Historical Maps as shown on Plate 7 & 8 of Appendix A, identify 6 locations within the planning area that could be affected. No sewer lines will be laid near these historical sites. The surrounding area adjacent to the planning area has proven to be archaeologically significant. The Glenn A. Black Archaeological Laboratory of Indiana University conducted a records search of archaeological studies within the planning area. The findings of this research are included in the Environmental Report located in Appendix B. Before a final design is completed, a further archaeological investigation must be completed with approval of the State Historic Preservation Office to assure that any impacts on archaeologically significant sites are avoided.

I. NATIONAL NATURAL LANDMARKS

There are no known national natural landmarks in the area of proposed construction.

J. PLANTS AND ANIMALS

The recommended project will cause no impacts on either endangered or non-endangered plants and animals. The project should be considered in compliance with the Endangered Species Act of 1973 and the Fish and Wildlife Coordination Act of 1934.

K. FARMLAND

The undeveloped acres of the Planning area contain mostly wooded hills and ravines, pastureland, and minimal farmland. The initial impact of the proposed project would not affect these acres. However, projecting from the current levels of growth in Brown County, these acres will see residential and commercial development within the next 20 years. Routing of the proposed sewers will not directly impact any existing farmland. A copy of a Prime Farmlands Map is presented on Plate 6 of Appendix A.

L. FLOODPLAINS

As shown on Plate 3 of Appendix A, the floodplain information of Bean Blossom Creek will impact the facilities by requiring the installation of the sewer lines to include a Construction in a Floodway Permit from the Indiana Department of Natural Resources, Division of Water. This permit will require that the top of all proposed manholes be designed at a minimum of two feet above the 100-year flood elevation. A copy of the Flood Insurance Rate Map (FIRM) is presented on Plate 4 of Appendix A.

M. WETLANDS AND SOIL EROSION CONTROL

As shown on Plate 2 of Appendix A, the wetlands that are impacted by the proposed project, are the streams. Crossing of these streams will be accomplished in a manner to restore the stream to original conditions. Care must be taken to avoid erosion problems during the construction project. Because the area impacted by this project will encompass greater then five acres of disturbed land, a Rule 5 NPDES Permit will be required before construction can commence. The contractor must obtain this permit, and an Erosion Control Plan must be submitted with the application. This Erosion Control Plan must address the reduction or elimination of erosion and siltation that could be caused by construction activities. Sewer construction will fall under the Nationwide Permit No. 12.

N. INDUCED IMPACTS

Growth that may occur due to the construction of these facilities is not anticipated to affect any areas that are identified as being environmentally sensitive or of historic or archaeological significance. Brown County's Zoning Ordinance provides the guidelines that will prevent construction within a floodplain, wetland or waterway.

CHAPTER 6
SELECTED PLAN

A. DESCRIPTION

The selected plan consist of a gravity sanitary sewer system consisting of a 12" main interceptor sewer and 8" collector sewers, installed throughout the majority of the Community of Bean Blossom. The plan also includes an 8" gravity sewer system to serve the residence on Old Settlers Road, located on the north end of Bean Blossom. This system will drain to a pump station located at the intersection of Old Settlers Road and State Road 135. A 6-inch PVC force main from this pump station will transport wastewater along State Road 135, up hill, to the main 12" interceptor sewer. This interceptor sewer will flow to a main regional pump station located on State Road 45 near the western edge of Bean Blossom. A 6-inch PVC force main will transport the wastewater from the Bean Blossom and Woodland Lakes Planning Area, west, along State Road 45 to the Community of Helmsburg, where it will discharge into the existing wastewater treatment plant owned and operated by the Helmsburg Regional Sewage District.

The selected plan also calls for a portion of the Bean Blossom area that cannot be feasibly served by a gravity sewer, to be served by a low-pressure sewer with individual grinder pumping units. The roads served by the low-pressure sewer system include Covered Bridge Road, a portion of State Road 135 at the southern end of Bean Blossom, and Gatesville Road.

A enlarged map of the selected plan showing the Bean Blossom portion of the project is included as Plate No. 9 of Appendix A.

The selected plan also consist of providing a low-pressure sewer system with grinder pumps for the Woodland Lake Subdivision. This would include a pump station located at the southern end of the subdivision, with a 6-inch PVC force main to transport the wastewater from Woodland Lake to the Bean Blossom gravity sewer system. This force main would run across county within an existing power line easement owned by Cinergy.

1. PROJECT PHASING

It is recommended that this project be designed, bid and constructed in two (2) phases. Phase One of the project would include installing the recommended collection system for the Bean Blossom portion of the Planning Area. This would include all components of the Selected Plan except the Woodland Lake collection system, pumping station and force main. The installation of the regional pumping station and force main to transport the wastewater from the Bean Blossom area to the Helmsburg Wastewater Treatment Facility would also be required. Sufficient capacity is available at this treatment facility to handle the additional flows from only the Bean Blossom area at this time.

Phase Two of the project would consist of installing the recommended collection system, pumping station and force main for the Woodland Lake Area and expanding the capacity of the Helmsburg Wastewater Treatment Plant to accept the additional flows from Woodland Lake. This phased approach will better serve the majority of the customers within the Planning Area, allowing for a much lower monthly sewer rate. Phase Two (Woodland Lake) would need to be scheduled in the future.

B. PRELIMINARY DESIGN SUMMARY

A Preliminary Design Summary for the selected plan is included as Appendix M. Basis of design flows for the area are based on existing water usage records from the Brown County and Town of Nashville water utilities.

C. PROJECT COST SUMMARY

1. COMBINATION OF GRAVITY SEWERS AND LOW-PRESSURE GRINDER PUMP SYSTEM (PHASE ONE)

Construction costs associated with installation of a 12-inch interceptor sewer and 8-inch collector sewers combined with a low-pressure grinder pump system, and pumping stations, for the Bean Blossom Area are detailed in Table I of Appendix D. The estimated construction cost for this project is $ 1,353,672.

The above cost does not include cost to be incurred by the property owners. Cost incurred by the property owners who would be connecting to the gravity sewer system would include the installation of the 6" PVC gravity service lateral from the building to the service connection stub located at the edge of the right-of-way or easement. Cost incurred by the property owners who would be connecting to the low-pressure sewer system would include running electrical power from the building to the grinder pumping station, and any upgrade of electrical service that might be required to run the pump station. The minimum electrical service required to run most grinder pumping stations is 200 amps. Property owners would also be required to pump out and dispose of their septic tank waste and fill the empty septic tank with sand.

2. LOW-PRESSURE GRINDER PUMP SYSTEM FOR WOODLAND LAKE (PHASE TWO)

Project cost associated with installation of a low-pressure grinder pump system, pump station and force main, for the Woodland Lake Area are detailed in Table No. III of Appendix D. The estimated total project cost for this area is $1,305,011. Inclusion of the Woodland Lake area would require expansion of the existing Helmsburg Wastewater Treatment Plant.

D. PROJECT FINANCING AND USER RATES

Financing for the selected plan is anticipated to be as follows:

IDOC/CFF Grant	$	450,000
Brown County EDIT		126,000
Hook On Fees		128,000
IDEM SRF Loan		1,069,000
Total Anticipated Funds	**$**	**1,773,489**

A cost summary for the selected plan is detailed on Table No. II of Appendix D.

A sewer user rate analysis demonstrated that the sewer rate for the 128 customers in the Bean Blossom area would be $70 per month, with a tap on fee of $1,000. This proposed budget rates includes the IDEM requirements to accumulate a reserve fund for one (1) year on expenses within a five (5) year period. The detailed rated analysis is presented in Appendix O.

E. PROJECT SCHEDULE

The suggested schedule for completing various major task required for implementing this project are shown on the following Table No. 3

Table No. 3
Project Schedule

Major Task	Date
Complete Preliminary Engineering Report	01-12-01
Advertise Public Hearing to present Preliminary Engineering Report	01-24-01
Hold Public Hearing to present Preliminary Engineering Report	02-07-01
Submit Preliminary Engineering Report to County	02-19-01
Submit Preliminary Engineering Report to IDOC & IDEM	03-05-01
HRSD Procures Legal and Bond Council and Submits SRF Application	04-02-01
Receive IDOC Approval of Engineering Report	04-02-01
Receive IDEM Approval of Engineering Report	06-19-01
Hold Public Hearing Prior to Submitting Grant Proposal	05-15-01
Receive IDEM Approval of SRF Loan	06-19-01
Submit Grant Proposal to IDOC (Round II)	07-13-01
IDOC Approval to Submit CFF Grant Application	08-13-98
Submit CFF Grant Application to IDOC	09-07-01
CFF grant award	11-07-01
Community Receives Contract and Authority to Begin Incurring Costs for Grant Administration and Engineering Services	11-14-01
Procure Professional Services	11-21-01
Select Professional for Grant Administration and Engineering Services	12-21-01
County Authorizes Design of Plans and Specifications	12-31-01
County Submits Plans and Specifications to IDEM/IDOC	04-01-02
Release of IDOC Funds	05-22-02
IDEM Approves Plans and Specs and Issues Construction Permit	06-03-02
County Receives Bid Authorization from IDEM	06-10-02
County Advertises for Construction Bids	06-14-02
County Receives Construction Bids	07-15-02
County Awards Contracts/Commences Construction	08-05-02
Completion of Construction	04-07-03
Administratively Complete CFF Grant	05-07-03
One-year Project Certification Date	05-07-04

CHAPTER 7
LEGAL, FINANCIAL AND MANAGERIAL CAPABILITIES

A. LEGAL CAPABILITIES

The proposed Bean Blossom and Woodland Lake Planning Area is outside of the boundaries of the Helmsburg Regional Sewage District. The Helmsburg Regional Sewage District will accept the legal responsibility to maintain and operate the proposed sanitary sewers system.

The sewage lines for the project are proposed to be in new easements and existing public right-of-way. This study assumes that these easements would be donated by the property owners and jurisdictional agencies affected in order to minimize the costs of the project. Property for the location of the (2) pumping stations proposed for the project will also have to be acquired. These sites will be relatively small areas of approximately 800 to 1,000 square feet. Letters of Intent to sell the land needed for these pumping station sites, from two different property owners, are included in Appendix P.

Copies of the Resolutions required by SRF are included in Appendix Q.

B. FINANCIAL CAPABILITIES

Bean Blossom residents will be responsible for payment of the proposed project as needed to serve the Planning Area through the calculated surcharge. Lopshire & Company, an accountant of the Helmsburg Regional Sewage District, prepared a preliminary rate analysis to determine the affordability of the project. A copy of this rate analysis is included in Appendix O.

As previously stated, 61.5% of the residents of the Bean Blossom and Woodland Lake Planning Area are considered low-to-moderate income. In order for many of the residents to be able to afford the anticipated combined monthly sewer bill and surcharge fee, any eligible grant funding must be pursued. A copy of the SRF Project Financing Information is detailed on Table No. IV of Appendix D.

C. MANAGERIAL CAPABILITIES

The Helmsburg Regional Sewage District has agreed to operate and maintain the proposed facilities. The District currently is staffed with one (1) part-time employee, whose duties include operation and maintenance of the existing Helmsburg low-pressure sewer system with individual grinder pumping units, and assisting in the day-to-day operation of the wastewater treatment plant. The District has also contracted out the operation and maintenance of the wastewater treatment plant to a private individual. It is anticipated that the Helmsburg Regional Sewage District will need to hire additional full-time employee to assist in the operation and maintenance duties, once this project comes on line.

CHAPTER 8
PUBLIC PARTICIPATION

A. PUBLIC HEARINGS

The Helmsburg Regional Sewage District, and the Bean Blossom and Woodland Lake Planning Area residents started the process for this Preliminary Engineering Report through an application to the Indiana Department of Commerce for a Planning Grant. The Brown County Council and Board of Commissioners submitted the application for the Planning Grant on behalf of the Helmsburg Regional Sewage District. The Helmsburg Regional Sewage District has held three public hearings to determine the interest of the communities in resolving the pollution problems from failing septic systems. The District held a Public Hearing on March 17, 1998 for the Planning Grant application prior to submittal. A Publisher's Affidavit of the advertisement, sign-in sheet, and transcript of this Public Hearing are included as Appendix E.

A Public Hearing to present the findings of this Preliminary Engineering Report was held on_____, prior to final approval. A Publisher's Affidavit of the advertisement, sign-in sheet, and transcript of this Public Hearing are included as Appendix F.

APPENDIX A

PLATES

65-42

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

February 10, 1995

Mr. Robert E. Stinchcomb, P.E.
SANCO Engineering and Associates
410 North U.S. 31
Whiteland, Indiana 46184

Dear Mr. Stinchcomb:

Re: Results of a Wasteload Allocation For The Town of Helmsburg's proposed WWTP

This letter is in response to your request for proposed effluent limitations for a proposed discharge from a municipal wastewater treatment plant (WWTP). The proposed WWTP is a Class I, 0.025 mgd bio-mechanical treatment facility with continuous discharge to Bean Blossom Creek (which has a $Q_{7,10}$ low-flow of 0.0 cfs) via Outfall 001.

The following effluent limits are appropriate for the aforementioned Class I, 0.025 mgd bio-mechanical treatment plant with continuous discharge to Bean Blossom Creek:

Parameter	Summer Monthly Average	Summer Weekly Average	Winter Monthly Average	Winter Weekly Average	Units
$CBOD_5$	15.0	22.5	25.0	40.0	mg/l
TSS	18.0	27.0	30.0	45.0	mg/l
NH_3-N	1.3	1.9	1.9	2.9	mg/l

Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units
pH	6.0	9.0	--	s.u.
Dissolved Oxygen				
Summer	6.0	--	--	mg/l
Winter	5.0	--	--	mg/l

Flow must be measured. The mass limits for $CBOD_5$, NH_3-N, and TSS are calculated by multiplying the design flow (in mgd) by the concentration value and by 8.345. Summer effluent limits apply from May 1 through November 30 of each year. Winter effluent limits apply December 1 through April 30 of each year.

Phosphorus monitoring and reporting will be required since the proposed outfall is located 4.1 miles upstream of Lake Lemon. In accordance with 327 IAC 5-10-2, phosphorus limitations will be included in the permit when the total phosphorus in the discharge reaches ten pounds or more as a daily discharge.

Disinfection of the effluent will be required from April 1 through October 31, annually. If chlorination is used as the method of disinfection, the residual chlorine at the chlorine contact tank must be no less than 0.5 mg/l and no greater than 1.0 mg/l to ensure disinfection. In addition, the effluent must then be dechlorinated to the lowest detectable level. (Compliance value is less than 0.05 mg/l) If an alternate method of disinfection is used, such as ultraviolet light disinfection, then E. coli limits would apply. E. coli is limited to 125 count/100 ml monthly average calculated as a geometric mean and 235 count/100 ml daily maximum. Installation of a UV intensity meter may decrease the required monitoring frequency for E. coli.

The design of the facility may proceed based on the foregoing effluent limits. Before construction begins, a construction permit will be required. If you have any questions regarding design requirements of the construction permit, please contact Ms. Robin Feller at (317) 232-8645.

Please provide this office with documentation that there are no objections to this project by the Brown County Commissioners and the Brown County Health Department.

The NPDES permit will not be issued until the construction permit is finalized.

The facility must be under control of a certified operator.

If there are any questions regarding the NPDES permit requirements, please feel free to contact Mr. Gale Ferris at (317) 232-8739.

Sincerely,

Catherine Hess

Catherine Hess
NPDES Supervisor
Permits Section
Office of Water Management

GHF/ghf
cc: Brown County Health Department

Form Approved
OMB No. 158-R0096

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM APPLICATION FOR PERMIT TO DISCHARGE - SHORT FORM A

FOR AGENCY USE

APPLICATION NUMBER								
DATE RECEIVED								
YEAR		MO.		DAY				

To be filed only by municipal wastewater dischargers

Do not attempt to complete this form before reading the accompanying instructions
Please print or type

1. Name of organization responsible for facility HELMSBURG REGIONAL SEWER DISTRICT C/O BROWN CO. COMMISSIONERS

2. Address, location and telephone number of facility producing discharge:

A. Name HELMSBURG REGIONAL SEWER DISTRICT WASTEWATER TREATMENT PLANT

B. Mailing address:

1. Street address P.O. Box 37
2. City NASHVILLE
3. County BROWN
4. State INDIANA
5. Zip 47448

C. Location:

1. Street address HELMSBURG ROAD
2. City HELMSBURG
3. County BROWN
4. State INDIANA
5. Zip 47345

D. Telephone No. __ _____
Area Code

If all your waste is discharged into a publicly owned waste treatment facility and to the best of your knowledge you are not required to obtain a discharge permit, proceed to item 3. Otherwise proceed directly to item 4.

3. If you meet the condition stated above, check here _ and supply the information asked for below. After completing these items, please complete the date, title and signature blocks below and return this form to the proper reviewing office without completing the remainder of the form.

A. Name of organization responsible for receiving waste _____

B. Facility receiving waste:

1. Name _____
2. Street address _____
3. City _____
4. County _____
5. State _____
6. Zip _____

4. Type of treatment: (See attached narrative description of plant)

A. [] None B. [] Primary C. [] Intermediate D. [X] Secondary E. [] Advanced

5. Design flow (average daily) of facility 0.025 mgd.

6. Percent BOD removal (actual):

A. [] 0-29.9 B. [] 30-64.9 C. [] 65-84.9 D. [X] 85-94.9 E. [] 95 or more

7. Population served:

A. [X] 1-199 B. [] 200-499 C. [] 500-999 D. [] 1,000-4,999 E. [] 5,000-9,999 F. [] 10,000 or more

8. Number of separate discharge points:

A. [X] 1 B. [] 2 C. [] 3 D. [] 4 E. [] 5 F. [] 6 or more

9. Description of waste water discharged to surface waters only (check as applicable).

Discharge per operating day	Flow, MGD (million gallons per operating day)							Volume treated before discharging (percent)				
	0-0.0099 (1)	0.01-0.049 (2)	0.05-0.099 (3)	0.1-0.49 (4)	0.5-0.99 (5)	1.0-4.9 (6)	5 or more (7)	None (8)	0.1-34.9 (9)	35-64.9 (10)	65-94.9 (11)	95-100 (12)
A. Average		0.25										
B. Maximum		.11										

10. If any waste water, treated or untreated, is discharged to places other than surface waters, check below as applicable.

Waste water is discharged to	Flow, MGD (million gallons per operating day)						
	0-0.0099 (1)	0.01-0.049 (2)	0.05-0.099 (3)	0.1-0.49 (4)	0.5-0.99 (5)	1.0-4.9 (6)	5 or more (7)
A. Deep well							
B. Evaporation lagoon							
C. Subsurface percolation system							
D. Other, specify:							

11. Is any sludge ultimately returned to a waterway?

A. [ ] yes B. [X] no

12. a. Do you received industrial waste?

A. [ ] yes B. [X] no

b. If yes, enter approximate number of industrial dischargers into system _____

13. Type of collection system: Low Pressure/Grinder Pumps

A. [X] Separate sanitary
B. [ ] Combined sanitary and storm
C. [ ] Both separate and combined sewer systems

14. Name of receiving water or waters Bean Blossom Creek

15. Does your discharge contain or is it possible for your discharge to contain one or more of the following substances: ammonia, cyanide, aluminum, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols.

A. [ ] yes B. [X] no

I certify that I am familiar with the information contained in the application and that to the best of my knowledge and belief such information is true, complete and accurate.

Jerry Floyd
Printed Name of Person Signing

President - Brown County Commissioners
Title

_____
Date Application Signed

_____
Signature of Applicant

18 U.S.C. Section 1001 provides that:
Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals, or covers up by any trick, scheme or device a material fact, or makes any false, fictitious, or fraudulent statements or representations; or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than 5 years, or both.

PERMIT APPLICATION FOR CONSTRUCTION IN A FLOODWAY
State Form 42946 (R/4-91)
Approved by the State Board of Accounts, 1989

Mail To: Division of Water
Department of Natural Resources
402 West Washington Street, Room W264
Indianapolis, Indiana 46204
Telephone: (317) 232-5660

REQUIREMENT FOR ADDITIONAL INFORMATION AND PERMITS

Application made to and approval granted by the Department of Natural Resources does not in any way relieve the applicant of the necessity of securing easements or other property rights, permits and approvals from affected property owners and other local, state, and federal agencies.

1. APPLICANT INFORMATION		2. AGENT OR ENGINEER INFORMATION	
Name of Applicant HELMSBURG REGIONAL SEWER DISTRICT		Name of Agent or Engineer ROBERT C. STINCHCOMB P.E.	
Address *(Street, P.O. Box or Rural Route)* C?O BROWN COUNTY COMMISSIONERS, P.O. BOX 37		Address *(Street, P.O. Box or Rural Route)* 410 N. U.S. 31	
City, state and ZIP code NASHVILLE, INDIANA 47448		City, state and ZIP code WHITELAND, INDIANA 46184	
Home Telephone Number (812) 988-7434	Work Telephone Number 812) 988-5485	Work Telephone Number 317) 535-9022	SANCO ENGINEERING

3. LOCATION OF THE PROPOSED PROJECT

Body of Water BEAN BLOSSOM CREEK	U.S.G.S. Quadrangle Map MORGANTOWN	
County BROWN	Quarter Section *(Check one)* ☒ NE ☐ NW ☐ SE ☐ SW	Section or Grant 34
Civil Township JACKSON	Township *(Check direction)* 10 ☒ N or ☐ S	Range *(Check direction)* 2 ☒ E or ☐ W
Nearest City or Town HELMSBURG		

Additional location information *(distance from major roadways, bridges, landmarks, etc.)*
APPROXIMATELY 1200 FEET DOWNSTREAM OF HELMSBURG ROAD BRIDGE OVER BEAN BLOSSOM CREEK, NORTH BANK

4. NATURE OF THE PROPOSED PROJECT

- ☐ Access Channel
- ☐ Bridge or Culvert
- ☐ Building
- ☐ Dam or Impoundment
- ☐ Excavation
- ☐ Fill
- ☐ Flood Control
- ☐ Levee
- ☐ Mining
- ☒ Outfall Structure
- ☐ Residence Addition
- ☐ Seawall or Bank Protection
- ☐ Utility

☐ Other, please specify:

Construction of a concrete outfall headwall and a 8" pvc outfall sewer from the proposed Helmsburg Regional Sewer District wastewater treatment plant and removal of 100' L.F of a sand bar adjacent to the proposed headwall.

5. PURPOSE OF THE PROPOSED PROJECT

State the purpose, necessity, and description of the proposed activity.

6. NAMES AND ADDRESSES OF THE PROPERTY OWNER AND ADJOINING LANDOWNERS

Provide the name and address of the property owner where the proposed activity will be conducted and list adjoining landowners which may be affected by the proposed project. Use additional sheets if necessary. Failure to list the property owner(s) and each adjoining landowner may cause a permit issued by the Department to later become voided.

Property Owner(s) Robert Milton Runo c/o Hubert Runo	Adjoining Landowner #1 Thomas D. Lochjovic
Address (Street, P.O. Box or Rural Route) Box 379	Address (Street, P.O. Box or Rural Route) 780 South State Road 421
City, state and ZIP code Nashville, IN 47448	City, state and ZIP code Zionsville, IN 46077
Adjoining Landowner #2 Thomas B. Bauer II & Linda S. Bauer	Adjoining Landowner #3 Shirley Fleenor
Address (Street, P.O. Box or Rural Route) Box 472	Address (Street, P.O. Box or Rural Route) Box 15
City, state and ZIP code Nashville, IN 47448	City, state and ZIP code Helmsburg, IN 47435
Adjoining Landowner #4 Sharon Rivenbark	Adjoining Landowner #5 Roy R. & Geneva Terhune
Address (Street, P.O. Box or Rural Route) 7740 Lakeview Drive	Address (Street, P.O. Box or Rural Route) 4300 East Minnesota
City, state and ZIP code Unionville, IN 47468	City, state and ZIP code Indianapolis, IN 46204
Adjoining Landowner #6 Robert Leroy II & Elizabeth Roudebush	Adjoining Landowner #7 Richard & Peggy Sue Scrougham
Address (Street, P.O. Box or Rural Route)	Address (Street, P.O. Box or Rural Route) 4406 North Helmsburg Road
City, state and ZIP code Morgantown, IN 46160	City, state and ZIP code Nashville, IN 47448
Adjoining Landowner #8 Paul M. & Adeara S. Colvin	Adjoining Landowner #9 Paul & Juanita Bay c/o David Weddle
Address (Street, P.O. Box or Rural Route) 4545 North Helmsburg Road	Address (Street, P.O. Box or Rural Route) Box 100
City, state and ZIP code Nashville, IN 47448	City, state and ZIP code Helmsburg, IN 47435
Adjoining Landowner #10 Michael B. & Elizabeth L. McGinley	Adjoining Landowner #11 Anthony & Margaret Bauer
Address (Street, P.O. Box or Rural Route) Box 386	Address (Street, P.O. Box or Rural Route) 5860 Indianola Avenue
City, state and ZIP code Nashville, IN 47448	City, state and ZIP code Indianapolis, IN 46208

7. ADDITIONAL INFORMATION

Corps Public Notice #_____, IDNR Early Coordination #_____

8. STATEMENT OF AFFIRMATION

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is to the best of my knowledge and belief, true, accurate and complete, and that the property owner(s), and adjoining landowners have been notified of the project.

Signature of Applicant or Authorized Representative	Date

6. NAMES AND ADDRESSES OF THE PROPERTY OWNER AND ADJOINING LANDOWNERS

Provide the name and address of the property owner where the proposed activity will be conducted and list adjoining landowners which may be affected by the proposed project. Use additional sheets if necessary. Failure to list the property owner(s) and each adjoining landowner may cause a permit issued by the Department to later become voided.

Property Owner(s) Lake Leomon Realty Corporation	Adjoining Landowner #1 Kim E. & Martha Plank Sechler
Address (Street, P.O. Box or Rural Route) Goodman & Goodman, 123 East 4th Street	Address (Street, P.O. Box or Rural Route) Rural Route 3, Box 319
City, state and ZIP code Cincinnati, OH 45202	City, state and ZIP code Nashville, IN 47448
Adjoining Landowner #2 Janet M. Hutchison	Adjoining Landowner #3 Haldon M. & Margel Graves
Address (Street, P.O. Box or Rural Route) Rural Route 3 Box 317	Address (Street, P.O. Box or Rural Route) 2819 Cassell Drive
City, state and ZIP code Nashville, IN 47448	City, state and ZIP code Anderson, IN 46012
Adjoining Landowner #4 Edgar G. Freese	Adjoining Landowner #5 David W. Stackhouse Jr.
Address (Street, P.O. Box or Rural Route) 1600 North Lower Jackson Branch Ranch	Address (Street, P.O. Box or Rural Route) Box 324
City, state and ZIP code Nashville, IN 47448	City, state and ZIP code Nashville, IN 47448
Adjoining Landowner #6 Catherine Rogers	Adjoining Landowner #7 Carol Sue Hale
Address (Street, P.O. Box or Rural Route) Box 103	Address (Street, P.O. Box or Rural Route) 2301 South 8th Street Circle
City, state and ZIP code Helmsburg, IN 47435	City, state and ZIP code Nashville, IN 47448
Adjoining Landowner #8 Betty Carroll	Adjoining Landowner #9 Earl L. & Julia Beitenhaus
Address (Street, P.O. Box or Rural Route) Rural Route 3, Box 322	Address (Street, P.O. Box or Rural Route) 1236 North 500 West
City, state and ZIP code Nashville, IN 47448	City, state and ZIP code Bluffton, IN 46714
Adjoining Landowner #10	Adjoining Landowner #11
Address (Street, P.O. Box or Rural Route)	Address (Street, P.O. Box or Rural Route)
City, state and ZIP code	City, state and ZIP code

7. ADDITIONAL INFORMATION

Corps Public Notice #_____, IDNR Early Coordination #_____

8. STATEMENT OF AFFIRMATION

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is to the best of my knowledge and belief, true, accurate and complete, and that the property owner(s), and adjoining landowners have been notified of the project.

Signature of Applicant or Authorized Representative

Robert Stinchcomb

Date

April 10, 1995

APPLICATION FOR A ROAD CUT PERMIT
OR A PERMIT TO ATTACH OR REMOVE WIRES, PIPES OR CONDUITS
FROM BRIDGES, OVERPASSES OR UNDERPASSES OR INSTALL POLES

NASHVILLE, IN, APRIL 12, , 1995 PERMIT # _____

I[1] hereby make application for a Permit to perform work covered by the Brown County Road Cut Ordinance.

Start date: SPRING, 1996 Completion date: SUMMER 1996

List each location separately. For each location, state: (1) the type of surface; (2) the nature of the opening, bore or punch to the surface stating at least the surface length and width in feet; (3) the purpose of the opening; and (4) all other information required by the Ordinance. For each location, attach a sketch showing the exact location, dimensions, depth of opening, etc., or submit a blueprint. Attach additional pages if necessary.

CHARGES: Attached please find my certified check, made payable to the Brown County Highway Department, for $_____ covering all charges for all work for which this application is being made. The charge per each cut is $20.00 for a cut no wider than 24". For cuts wider than 24", the additional charge for each such cut will be proportional to the charge for a 24" cut. The charge for attaching wires to or removing wires from a bridge is $10.00 per bridge.

If, in completing the work, additional cuts are made in the surface, or if one or more cuts are wider than specified in this application, or if work is done that affects additional bridges, I will remit to the Brown County Highway Department the additional fee based on the charges stated above.

---

[1] When used in this application, the word "I" shall mean the person completing the application and the organization for whom he works or otherwise is affiliated, including its officers, directors, owners, agents, successors and assigns. This permit may not be assigned without the express written consent of the Board of Commissioners of Brown County.

RESPONSIBILITY: If this application is granted for road cuts, I hereby agree to place a sleeve designated by the Brown County Highway Department for the specific work. The sleeve shall extend three (3) feet beyond the edge of the road surface unless otherwise specified by the Highway Department. I further agree to backfill the trench of the opening using controlled density fill ("CDF") as follows:

Cement	50 lbs.	100 lbs.	50 lbs.
Flyash	250 lbs.	250 lbs.	----
Sand	2910 lbs.	2850 lbs.	3160 lbs.
Water (max)	500 lbs.	500 lbs.	500 lbs.

On paved roads, the CDF shall be placed from the bottom of the trench to 5" below the road surface, with the remainder filled with hot mix surface material. On gravel roads, the CDF shall be placed from the bottom of the trench to 8" to 10" below the road surface, with the remainder filled with #73 stone compacted. I further agree to restore the road surface to at least as good or better condition as existed before work began and to maintain the road surface in a smooth and uniform condition for a period of one (1) year after traffic is again permitted to pass over the filled trench.

I further agree to notify the Board of Commissioners through the Highway Department in writing three days in advance of the time of beginning the work. I will notify the Highway Supervisor either by telephone or telegram the day preceding the beginning of the work. I will also notify the Highway Department the day preceding any needed inspection.

I further agree to erect and maintain all necessary barricades, detour signs and warning lights required to direct traffic safely over or around that part of the road where the work is to be done so long as the work in any way interferes with or creates a potential danger for traffic.

I further agree to move or remove any structures installed under this permit should future traffic conditions or improvements necessitate and when requested to do so by the Highway Department.

I further agree to assume all responsibility for, hold Brown County and its personnel or other representatives harmless from, and indemnify them for, any loss, injury or damage to persons or property, including any loss, injury or damage suffered by Brown County or its personnel or other representatives, that results directly or indirectly from, or that is connected in any way with, the work contemplated by or related to this application.

Nationwide Permit Conditions

General Conditions: The following general conditions must be followed in order for any authorization by a nationwide permit to be valid:

1. *Navigation.* No activity may cause more than a minimal adverse effect on navigation.

2. *Proper maintenance.* Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.

3. *Erosion and siltation controls.* Appropriate erosion and siltation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills must be permanently stabilized at the earliest practicable date.

4. *Aquatic life movements.* No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's primary purpose is to impound water.

5. *Equipment.* Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance.

6. *Regional and case-by-case conditions.* The activity must comply with any regional conditions which may have been added by the division engineer (see 33 CFR 330.4(e)) and any case specific conditions added by the Corps.

7. *Wild and Scenic Rivers.* No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the National Park Service and the U.S. Forest Service.

8. *Tribal rights.* No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

9. *Water quality certification.* In certain states, an individual state water quality certification must be obtained or waived (see 33 CFR 330.4(c)).

10. *Endangered Species.* No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the district engineer if any listed species or critical habitat might be affected or is in the vicinity of the project and shall not begin work on the activity until notified by the district engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the U.S. Fish and Wildlife Service and National Marine Fisheries Service. (see 33 CFR 330.4(f))

11. *Historic properties.* No activity which may affect Historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the DE has complied with the provisions of 33 CFR 325, Appendix C. The prospective permittee must notify the district engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)).

f. Any exposed slopes and streambanks must be stabilized immediately upon completion of the utility line/outfall structure.

This decision is valid for 2 years from the date of this letter. If your project is not completed within this 2-year period or if your plans change, you should contact us for another determination.

If we can be of any further assistance, please contact us at the above address, ATTN: CEORL-OR-FN, or you may call me at (502) 582-5607. Any correspondence on this matter should refer to our ID No. 199500215-lad.

Sincerely,

Lee Anne Devine

Lee Anne Devine
Project Manager
Regulatory Branch

Enclosure

558 13

RECEIVED
JUL 05 1995
IDEM - OFFICE OF
WATER MANAGEMENT

EXHIBIT "B"

LEGAL DESCRIPTION

HELMSBURG REGIONAL SEWAGE DISTRICT

A part of the Southwest quarter of section 26, the Southeast quarter of section 27, the Northeast quarter of section 34 and the Northwest quarter of section 35, Township 10 North, Range 2 East, as located in Brown County, Indiana and as more particularly described below:

Commencing at a point which is the Northeast corner of Section 34; thence South on and along the East line of Section 34, 1,000 feet to the Point of Beginning; thence West running parallel with the North line of Section 34, 1,000 feet to a point; thence South running parallel with the East line of Section 34, 1,100 feet to a point; thence West running parallel to the North line of Section 34, 640 feet to a point; thence North running parallel to the East line of Section 34, 716 feet to a point; thence West running parallel with the North line of Section 34, 1,000 feet to a point; thence North running parallel to the East line of Section 34, 1,984 feet to a point; said point being approximately 600 feet North of the Northwest corner of the Northeast quarter of Section 34; thence East running parallel to the North line of Section 34 to a point of intersection with the East line of section 27 a distance of approximately 2,640 feet; thence continuing East on a line parallel to the North line of section 35 a distance of 1,500 feet to a point; thence South running parallel to the East line of Section 34, 1,600 feet to a point; thence West running parallel to the North line of Section 35 to the point of beginning a distance of approximately 1,500 feet, constituting an area containing 149.22 acres, more or less.

RECEIVED
JUL 05 1995
IDEM - OFFICE OF
WATER MANAGEMENT

RURAL SEWER

ENGINEERING FEASIBILITY REPORT 13, 14, 15

prepared for the

BROWN COUNTY COMMISSIONERS

Nashville, Indiana

APRIL 1992

© by AECON, Inc. 1992

AECON, Inc. reserves all rights.
No reproductions in whole or part of shall be made without the express written consent of AECON, Inc.

TABLE OF CONTENTS

COVER LETTER

I INTRODUCTION

II ENGINEERING APPROACH

III EXISTING FACILITIES

IV EXISTING FINANCIAL STATUS

V PROPOSED SYSTEMS:

A. GNAW BONE

B. BELMONT

C. LAKE LEMON/TREVLAC/NEEDMORE/HELMSBURG (LTNHB)

VI COST ESTIMATES

VII CONCLUSIONS AND RECOMMENDATIONS

LIST OF TABLES

1. EXISTING WATER RATES IN STUDY AREAS
2. ESTIMATED CONSTRUCTION COST
3. PROJECTED SEWER RATES IN STUDY AREAS

APPENDIX

GLOSSARY

LIST OF FIGURES

1. COUNTY OVERVIEW MAP
2. GNAW BONE
3. BELMONT
4. HELMSBURG/BEAN BLOSSOM
5. HELMSBURG ROAD
6. TREVLAC/EAST LAKE LEMON
7. WEST LAKE LEMON (MONROE COUNTY)

AECON
ENGINEERS & CONSULTANTS
P.O. BOX 367 • SALT CREEK PARK • NASHVILLE, INDIANA 47448 • (812) 988-2940

April 1992

Brown County Commissioners
Brown County Courthouse Annex
Nashville, IN 47448

Re: Brown County Sewers Feasibility Study

Dear Commissioners:

Over the past several years, there has been increasing concern related to domestic and commercial sewage collection and treatment in certain areas of rural Brown County. Because of their great concern and their wish to serve the residents of Brown County, this Feasibility Study and Report has been initiated and is funded by Brown County by and through the Board of County Commissioners and the County Council.

To that end, we have made studies, cost analyses, guidelines, and recommendations as to possible solutions to these problems and concerns.

The volume of information both gathered and available on this subject at this time is enormous. By necessity, it is impossible to address every concern in this report. Also, this report does not attempt to recite all of the facts, nor all of the theoretical solutions, nor every possible combination of funding. Instead, this report will give in the most brief and straight forward methods, a base of factual information that may be utilized to make good sound decisions as to the potential actions to be taken on an entire program or portions of a system.

The cost analyses are derived and shown in such a manner as to enable the addition of any grant monies and/or other external offsetting funding sources to be quickly integrated into the consumer cost indexing in order to assess their potential effect. This Report is not only a study, but will serve as a tool to assess and to calculate the costs for real projects to serve real needs and to solve real problems.

We encourage you to use this Report and its recommendations to the fullest extent. We will gladly answer questions and hope that everyone will give this Report their serious consideration.

Because of the large number of people contacted during this study, it would be impossible to name individuals for the sake of forgetting someone. Their help has been enormous and we hope their thanks shall be in the pride and fruitful culmination of their assistance in this study. To all of these who were so helpful, thank you.

Respectfully submitted,

Dale R. Legg, P.E.
President

I INTRODUCTION

This report was prepared at the direction of the County Commissioners and County Council. This report is an effort to help the community understand and address public health concerns. It will attempt to assist the public in the understanding of what might be done to protect and improve the environment. Most importantly, as with any proposed work, the report addresses the costs of that work, who will pay, and how it would be accomplished. All of the above items are answered in the following pages. The report describes what areas are affected, tehextent of each area, the cost of construction, the cost to the user, methods by which the projects could be administered, and the importance of the community support and leadership required tomake these types of improvements a reality should they be desired.

AREAS OF STUDY:

For purposes of easily identifying the areas involved in the study, they shall be identified generally as follows:

Area A	Gnaw Bone	(see figure 2)
Areas B & C	Belmont	(see figure 3)
Areas D, E, & F	Lake Lemon/Trevlac/Needmore/ Helmsburg/Bean Blossom (LTNHB)	(see figures 4, 5, 6, & 7)

Each of the above areas are identified on the enclosed Figure 1.

Those areas that were the focus of the study were defined as areas of need by the County Commissioners. The specific limits of the areas were established by the study from data gathered from the field and aerial maps. The boundaries were established by housing and user concentrations, i.e., density. Two factors entered into the placement of the basic boundaries, the first being the physical and economic constraints of the design, and construction of sewer collection systems. Secondly, the higher the density (smaller lots) of the existing and proposed building sites places severe limitations on the physical and functional placement of on-site sewage disposal (i.e., septic tanks and field laterals and/or mound systems).

The specific limits were established such that they could be used for the descriptions, sketch design, and economic analysis. Should the study result in the promulgation of a project in any or all areas studied, the boundaries established in final design may be slightly different than those proposed in this study.

II ENGINEERING APPROACH

The following is a description of the proposed systems, their concept, function, and operating characteristics. Please see the glossary for definitions of the terminology used in the following descriptions of systems studied and proposed.

In order to make good estimates of the cost associated with the construction, financing, administration, and operational costs of a system to collect and treat sewage from rural areas of the county, it was important to complete conceptional designs which allowed the quantities of materials and installation, the operating cost, and the maintenance to be fairly accurately estimated.

Generally, it costs more to construct gravity collection systems but less to maintain and operate. Also, gravity systems allow the hook-ons or laterals to be placed at any point along the line with less expense per hook on, especially new add-ons after the system is completed. Pressure mains are more economical to construction but there are more costs associated with each individual hook on since it requires a pump to get the sewage into the main. Systems and combinations of systems were studied with economic analysis made of each to determine the most practical and apparent economic solution at this time.

The methods of treatment of the sewage is very straight forward. One of the two methods available for treatment of sewage from the study areas is the use of existing treatment facilities at the plant at the town of Nashville. Of course, in order to bring the sewage from a remote area to Nashville, a long length of sewer main must be constructed, and there is an associated cost of pumping to move the sewage to the plant. The use of regional treatment facilities closer to the areas served is more economical but, requires additional labor to operate and maintain. For areas where sewage could be pumped to an existing treatment plant, these costs were calculated and the systems compared to arrive at the most apparently economic solution.

NEED FOR STUDY:

Septic tanks and leach fields were originally designed to provide temporary relief and a means of on site sanitary disposal of sewage until such time as permanent sewer collection systems and proper treatment and disposal methods could be extended to those areas. The original concept of the systems ability to adequately treat and dispose of sewage is grossly misunderstood. In order for a septic system to function even on a temporary basis, many conditions must be met, including proper soil conditions, adequate area for the leach field, physical traits of the leach field, and proper detention time.

The areas that were selected to be studied have certain physical constraints that make the use of septic systems undesirable. The small lot sizes, the soil characteristics, the slope of the lots, the proximity to streams susceptible to pollution from effluent run off and a history of problems. Growth in these areas in limited by the availability of adequate means of sewage disposal.

It is not the point of this study to predict either the restriction in growth or the potential or projected growth in the area or areas should adequate sewers be provided or not provided. Areas may or may not experience growth due to a large number of factors, only one of which is the point of this study. The lack of sewers in the studied areas from technical, administrative and health reasons, prevents growth, but conversely the provision of providing those services may not necessarily promote growth. We will allow the readers of this report to assess the possible affects on these studied areas and the areas outside the bounds of this report.

METHOD OF STUDY:

The most important aspect of this study is to accumulate adequate current data as to the number of potential users and to then arrive at a conceptional plan to calculate the cost to the users to cover the initial capital investment and the continued operation and maintenance of the system.

To provide accurate data as to the number of users, it was necessary to use combinations of USGS quadrangle maps, aerial photographs, legal plat maps, and

most important, make house by house counts in the field. For purposes of this report we shall define a user as a single family dwelling. Each user shall therefore produce a sewage design flow of 310 gallons/day that must be collected and treated. Also, all commercial users have been converted to users as designated by the flow rate - i.e., a motel would be counted as a number of users, depending upon its size. No differentiation between a full time, year round household, i.e., user, and a part-time weekend or summer occupied user is made. The reason that we shall not separate these functions is that the capital investment must be made to accommodate all and the operation and maintenance will be affected very little by seasonal or part time usage.

The other important assumption in the cost analysis is that the district is assumed to have 100% participation. This does not mean that everyone within a boundary area is hooked on, but that everyone within the study area that falls within a certain distance of a trunk or extension is hooked on. No projections of potential users is made in this study, all sites shall be based on actual numbers of existing homes/businesses or property that is currently under construction.

In many of the areas there exists platted subdivisions or other approved plans that would potentially have additional users. Unimproved lots were not used in any calculations for either the number of users or the user cost.

The overall conceptional design of a system to collect and treat sewage from each area was derived by using the cumulated field data to arrive at a reasonable and economic system with system sizing and related costs based on actual measured distances from scaled maps. Sizes of the treatment facilities were determined by the projected sewer flows. Operation and maintenance vary with the size and amount of projected flow.

Overall costs were then calculated based on the system capital costs, engineering, legal, administrative, financing, and on going operational and maintenance costs.

From the overall estimated capital investment, the projected operation and maintenance costs, and the variable effects of "tap on" fees, the projected sewer rates have then been calculated. As the reader of the report will observe, the rates may be very quickly varied by changes in the reduction of initial capital investment. Therefore, if any outside monies are invested in the system, the cost reductions may be quickly determined. Grant monies or other sources of funds contributed toward the initial capital investment in the system will have an effect on the monthly rates. We have not made projections of potential "outside" sources of money that may be available to offset cost, but we have set up the report to give the readers and users of this report the tools to assess the results of such inclusion of outside sources.

RESULTS OF STUDY:

The results of the study and this report include the following:

1. Establishment of the boundaries of the economically feasible areas.
2. Projected user cost on a monthly basis.
3. Descriptions of the general conceptional design of the proposed systems.
4. Descriptions of potential governmental organizations necessary to operate the systems.
5. Notes and comments from interested parties and legal entities as it relates to the described areas and studied systems.
6. General conclusions and recommendations, where applicable.

GOVERNMENTAL ORGANIZATIONS:

In order to make any system work it must have a form of administration. The function of that administrative organization is to provide for financing, billing, payment of debts, operation, and maintenance of the system. Several alternatives exist to provide a method and means to create such a system within Indiana. There are six types of agencies, political entities and communities that can be involved in the ownership and operation of publicly owned collection and treatment works. Only two types are rationally reasonable for the required system in this study.

The Conservancy District is available to serve the purpose and an example exists in Brown County at Cordry-Sweetwater. This entity was created where intense use of land made it necessary for a form of government or sub-government to be created to serve a certain region, district, or area of people. It is an organization of the local people which it serves and has certain governmental powers not unlike small towns and cities. It is self-governing and may deal with a variety of problems including sewer.

The Regional Sewer District (RSD) is available to any area of the State. This entity was created to alleviate problems arising in areas having insufficient facilities for sewage collection and treatment. A Regional Sewer District is the same set-up as the Regional Solid Waste Districts as are now being formulated throughout the state.

The major difference in the above two entities lies in their power to tax. The Conservancy district has the power to tax real property and the regional sewer district does not. However, both have the power to sell revenue bonds, the charge for services, and exercise the power of eminent domain. The regional sewer district has the power to require connection to its system and to collect a "tap on" charge.

Both of the administrative entities described above could be established to provide the service and to protect the health and welfare of the constituents of the area. Also, the above entities are not restricted to a single county or township but rather are established on the basis of a definite area in need of those services.

The Regional Sewer District (RSD) is set up for a very specific purpose and it many only collect money on a user fee basis, that is to say, a fee for services provided. The means and methods of establishing a district under either method is not an engineering question, but rather a political and legal question and should be left to the elected representatives of the people and the legal professionals to answer those specific questions related to its establishment.

It is of this writers opinion that the Regional Sewer District (RSD) is the most logical and best suited method to operate any of the studied areas and continued studies should be made in that direction. The Sewer District is very direct, to the point of the problem, and provides the most responsive governmental organization available. However, the draw back is financing, as no fees may be collected prior to furnishing services. Therefore, the start up of a RSD is made all the more difficult.

As a final note on the administration of a RSD and the entity from which it operates, we wish to provide the following as assistance:

1. A strong administrative system must be established with good executive direction
2. The boards of these entities must have good leadership.
3. The board must have good legal advice and must retain that advisor from its inception through its complete operation, including normal continuous operational functions.
4. The system must be set up on a sound financial basis.
5. Operation and maintenance of the system must be sound and continuous.
6. Good sound engineering must be employed at the beginning and continued through the operation and maintenance.
7. The Districts must have the power and be willing to enforce the regulations to provide a workable system for all concerned.
8. The District must establish and provide high quality service and maintain a high level of responsiveness to the public.

III EXISTING FACILITIES:

The only existing public sewage treatment facility in Brown County serves the Town of Nashville. The treatment plant is located on Salt Creek just down stream of the SR 46 West crossing. This plant serves the Town of Nashville. The Brown County State Park, the KOA Campground, and the Wabash Village Apartments, all to the east of Nashville, are provided sewer service by means of a 6" force main. The 6" force main begins at Wabash Village and extends to the east edge of Nashville.

The Town of Nashville, which provides water and sewer services, currently has 500 sewer users. Additionally, there are 473 water users that are not currently serviced by sewer. One of the reasons for the large differences in the two numbers is that the Town provides water service to rural areas from Salt Creek on SR 46 West to the Town because these areas lie along the water supply line from Bloomington to Nashville. Without a rural water system in the area, service to those homes and businesses is facilitated by the Town water supply line along the way.

Currently, the treatment plant (with a recent upgrading) has the capacity to treat approximately 0.6 MGD. The current actual usage is approximately 0.3 MGD; therefore, there is a reserve capacity of approximately 0.3 MGD available to serve additional users both inside and outside of Nashville.

Because of the rough terrain of Brown County, the shear distances involved to all of the study areas from Nashville, with the exception of the Gnaw Bone area, the Nashville Treatment Plant was not considered as a viable means of treatment for any areas other than Gnaw Bone.

As a note of interest, there is one other known treatment facility in the County; it is located at Ski World. This is a privately owned and operated facility and shall not be considered as having potential for treatment of sewage from any of the areas studied.

Other areas in this study must therefore be supported by new treatment plants located in or near the vicinity of the areas to be served. Obviously then, the only area under study that is assumed to be feasible to pump sewage to an existing treatment plant is the Gnaw Bone Area (Area A). Treating the sewage at the Nashville Plant would be the most economical alternative as there is no capital investment in a new sewage treatment plant for that area. All projected costs have been calculated based on the assumption of utilizing the existing facilities. If for some reason the Nashville facilities could not be used, then a plant can be constructed to serve only that area; but this would, of course, increase the cost to the user due to the increased capital expenditure and slightly higher O & M costs.

IV EXISTING FINANCIAL STATUS:

The Town of Nashville charges slightly varying rates for water and sewer. The current rates for water are included on the Current Water Rate Summary Tabulation as shown on Table I. Sewer rates for the Town of Nashville along with rates from the Lake Monroe Regional Wastewater District (that is operational and whose district includes the western portion of Lake Lemon by virtue of its being in Monroe County) are included in Table III as a reference to compare with the projected rates of proposed sewage systems (see Table III).

No information is given in this report as to other systems, their financial conditions, obligations, or potential future plans, as it is not germane to the planning of sewer districts in the studied areas. None of the studied areas, if planned or implemented, should have any detrimental effects on current systems. Some of the existing systems might actually be benefitted by the addition of sewer systems. As Table I indicates, there appears to be a slight increase in water usage where sewers are available. Typically, the greater the sales of water, especially on rural water systems, the more solid the financial standing of the corporation.

We have used a volume of 4000 gal/month for an average user to calculate costs/month. However, we suggest that any formula developed for billing purposes not unduly penalized the heavier user as the majority of the cost is for the capital improvement, and not for treatment of the sewage.

Construction costs are based on 9000 gal/month which closely approximates the value of 310 gpd as used by the Indiana Department of Environmental Management for design flows.

All costs for projected monthly user fees were based on 4000 gal/month. All costs for construction were based on 9000 gal/month for the capital improvement cost which is a part of the monthly projected billing. Therefore, should a user have a greater usage than the 4000 gal/month, their bill would be higher, but there would not be an increase in the capital debt service cost to the system as a whole.

V PROPOSED SYSTEMS:

All of the rural systems in this study have one common design feature. They are based on a low pressure system with very minor amounts of gravity sewer mains. The systems are based on small individual "grinder pumps". For those areas where the connections are at some distance from each other and the terrain is hilly or very flat, grinder pumps have become a reliable, economical, and proven method of servicing those types of areas. Other methods of collection were studied and were either too costly, unreliable, or appear to have higher operation and maintenance costs.

The County originally requested four areas be studied. After doing a substantial amount of research and cost analysis, we have reduced the number to three areas as will be explained in the descriptions delineated below.

AREAS:

AREA A - GNAW BONE

The Gnaw Bone area is graphically shown on figure 2. For purposes of this study, there are 167 users utilized for estimating the system cost as well as the general size and configuration of the proposed system.

The Gnaw Bone area is comprised of generally residential areas with some light commercial . Because of its location between Nashville and Columbus on State Road 46 with its good accessibility and visibility, the area seems to promote growth especially in commercial development.

The system as presented will be comprised of approximately 35,000 linear feet of main trunk line low pressure collector piping. The area would be collected from the eastern most boundary and parallel SR 46. The entire system would generally serve the Gnaw Bone Creek Valley. Because the valley generally falls to the West toward Nashville, the individual pumps would be capable of pumping all effluent to the end of the system at Wabash Village Apartments, where it would be pumped by a larger lift station (pump) via an existing 6" force main to the Nashville treatment plant. This entire system is proposed

as a collection system only and would propose the use of the treatment plant at Nashville rather than using a regional plant for treatment. As previously discussed the plant at Nashville has available the capacity to treat approximately 300,000 gpd additional to the present flows. The projected design flows from this area would be a little over 50,000 gpd or approximately 1/6 the reserve capacity of the existing plant. Again, as stated earlier in this report, this should not unduly tax the capacity of the plant nor should it restrict the growth of Nashville.

Also, the 6" force main from Wabash Village to the treatment plant should not be over taxed. The capacity of the line with remodeled or a new wet well and pumps would have the ability to meter the flow to match the capacity of the existing line.

Certainly the first step in pursuing this system would be reaching and making agreements with the Town of Nashville as to the availability and cost of treatment. If, for any reason, those should not be agreed upon, then the following would be proposed. A regional treatment plant to serve the Gnaw Bone area would be constructed near Wabash Village discharging into the North Fork of Salt Creek. The result of this change from the proposed system would be an increase in the capital investment and operation/maintenance costs thereby increasing the debt service and in turn increasing the monthly service charges to the consumer.

The proposed system and utilizes the existing facilities. The system has a substantial amount of flexibility to afford expansion should the area grow or change significantly. Should the area possibly grow to the extent that the Nashville plant and force main would not have sufficient capacity, then a regional treatment plant could be considered. A regional treatment facilitiy would increase the cost to the user slightly, but it would still remain in the range of other proposed systems described in this report.

AREAS B & C - BELMONT

The Belmont area is graphically depicted on figure 3. This area has been divided into two subareas for purposed of this study. The core or base area

is comprised of Belmont proper with an estimated current user load of 89. This area would concentrate on the two sides of North Fork of Salt Creek with a small regional treatment plant located adjacent to the North Fork of Salt Creek. The second area would be an addition to the base area and extend east along lower Schooner Road to SR 46. Then, the lines would extend west on SR 46 and take in Knights Corner and the Somerset Lake area. This area was divided into two phases as indicated on figure 3 because the area naturally has two areas of user concentrations.

It is not the intent, because the area was divided into phase I and phase II, that it be constructed in phases or operated as two separate sections. The reason for the separation was to look at the economics of collection and operation of either independently or both combined.

As can be seen from Table III, the overall cost to the user is very close to being the same for either one or the two sections combined. Because of the general design concepts used throughout this study, this area shows that as long as the density of the users remain somewhat constant, then the end result of the cost will remain very consistent. Therefore, a larger number of users does not necessarily decrease the cost to the individual user.

Generally, the Belmont base area is served by the East Monroe Water Company and the Somerset Lake area is served by the Town of Nashville. Because of the very small size of this area and the total number of users, it would be most prudent to operate the system on a contract basis and the O&M costs for the study were based upon this premise.

From the cost studies and reviewing the area, we would recommend that if the Belmont area is considered for a project, then it would be best to include both sections. This area is almost entirely residential and there appears to be very little growth at this time. There are several plotted/unbuilt lots in the Belmont area and we would anticipate slow but stable growth during the next few years as has occurred historically.

AREAS D, E, & F - LTNHB (Lake Lemon/Trevlac/Needmore/Helmsburg/Bean Blossom)

This area is graphically depicted on figures 4, 5, 6, and 7. Originally, the area to be studied consisted of two areas: the Lake Lemon/Trevlac/ Needmore/ Helmsburg area and the Bean Blossom area. As we began our conceptual designs of the area, two things became readily apparent. The first problem was location of the treatment facility. Discharges from a treatment plant should be placed in a moving stream well upstream of a lake or stilling basin. Therefore, it was important to locate the plant to discharge either west of (downstream) of the Lake Lemon Dam or into the North Fork of Salt Creek. The second obstacle was the County line which approximately bisects Lake Lemon. The County line is not an obstacle for a RSD pursuit but, the entire County of Monroe is already included in a RSD, more about this later in this description. Because of the above, we rethought the breakdown of the area and concentrated on what was requested originally by the County. The County Commissioners' first concern was for the Helmsburg area and therefore we decided to locate the center of our design around the Helmsburg area and include additional areas that would make a system there feasible.

For the study and to best serve the Helmsburg area, we combined the entire east-west corridor into one large area with two additional phases or sections added to the base area (Area D). To facilitate the discharge of effluent, we then chose to locate the treatment plant on the North Fork of Salt Creek. Therefore, to start we began with a base area consisting of Helmsburg in the center with Bean Blossom connecting from the East. Beginning at the Monroe/Brown County line, we included North Shore Drive and Trevlac and connected to west side of Helmsburg. From Helmsburg, we take all collected sewage from the area and head south along Helmsburg Road collecting additional users along the way and including the Annadale Estates area west of Nashville. The main collector then extends due south along Owl Creek Road to a new treatment plant located very near North Fork Salt Creek.

The size of the above base system is large. There would currently be 673 users served by this system. This can be compared to the Town of Nashville which currently serves only 500 users. The system would require approximately 133,000 linear feet of low pressure main piping. To put this in better

perspective, the mains would be over 25¼ miles in length. The general area served would be residential with some various commercial intermixed. Also, the Helmsburg Elementary School would be served within this area. The projected construction costs and projected sewer rates can be found on Tables II and III respectively. This may seem a rather grand project but various alternatives were investigated and this appears to be the most reasonable. Lesser projects really do not have the potential to stand by themselves. Dense concentrations of housing and lots in the Helmsburg, Trevlac and North Shore Drive areas make this a very attractive resolution to these troubled areas. This base project (Area D) will relieve the high potential of health related problems in the areas and the stagnant, if not negative growth in these plagued sites. The overall positive effect on Lake Lemon and the relief of leaking septic systems will be noticeable.

As good as the base project would be for the individual subareas extensions of the base would be both logical and necessary to have lasting and major effects on the Lake Lemon drainage basin. As indicted on figure 6, there is a phase II (Area E) shown which would include SR 45, Needmore, and South Shore Drive. This additional area would add another 183 users and increase the overall number of users to 856. This addition would also continue to relieve the potential pollution of the Lake Lemon drainage basin. With the phase II addition, approximately 60% of the potential polluters in the drainage basin would have been removed. Again, because of the slightly increase density of the overall system, there is a predicted decrease in the monthly user bills.

The final phase III (Area F) would include portions of Monroe County as shown on figure 7. This would include areas of Reed Point off North Shore Drive and extending on South Shore Drive to and beyond Riddle Point. This addition would add another 343 users for a total of 1,199 and would again present a projected lower average monthly user fee as shown on Table III. With this last addition of Phase III, it would require either a cooperating agreement with the Lake Monroe Wastewater District or the release of this area to the newly formed RSD in Brown County. However, if this were completed there would be an 85% to 90% reduction of point pollution potential reduction in the Lake Lemon Basin. Without any further studies, it can be said that there would

certainly be an overall improvement in the water quality and an increase in the quality of life in the Lake Lemon Area.

As can be seen from the above, the base area addresses the current critical problem areas and leaves open the potential to conclude a project that would enhance the area and benefit both direct and indirect users of the system. Also, it must be noted that this is a project that is large in scope and magnitude. It would include a number of users potentially 2½ times the size of Nashville and would become a large business in itself. This additionally reinforces the proposed outlines for the establishment and operation of an RDS as previously discussed in this report.

GENERAL DISCUSSION:

For purposes of estimating construction costs of systems, it must be noted that we have utilized individual grinder pumps for each user. The basic concept and analysis are accurate for this study and enclosed estimates. The exact configuration and final design of these systems must take into account a variety of factors. There will be some changes that will be more economically or more practically served by sections of gravity sewers that will then be pumped in what is better described as a "mini-lift station". These stations will still be a grinder pump installation but, in fact, may serve more than an individual user or individual "tap on". However, in any case, the entire system is proposed as a pressure system and estimated as such. The minor differences as encountered from these pre-preliminary design concepts to more exacting, engineering design, should be minor, and the variation in final cost should be within the normally accepted standards for planning purposes.

We wish to address one other concept that was considered but not utilized in the design parameters. There is a system called a STEP system which utilizes a septic tank as an interceptor/settlement/and pretreatment before going to an effluent pump to be discharged into a low pressure sewer collection system. This is sometimes referred to as an effluent system. This system was discarded from consideration due to the fact that the disadvantages outweighed the advantages for the area under consideration. The system depends upon

effective septic tanks that must be maintained on a system wide basis and the unknown conditions of the existing tanks and the potential maintenance problems can become a factor in the O&M costs that could totally disrupt the financial stability of the RSD.

However, upon the initial studies of an engineering design, the STEP system should still be considered. A relatively new concept in filtering systems added to the STEP system to prevent the potential maintenance problems associated with these systems may make this an attractive alternative or in combination with grinder (raw sewage) pumps.

A mixture of effluent and raw sewage pumps could be utilized on the same system. All methods should be studied in more depth as a system would be designed to enhance the operating characteristics and to possibly reduce the costs either in capital investment or operating cost.

VI COST ESTIMATES:

Detailed cost estimates of the studied areas follow in the appendix. These estimates are based on the areas as delineated on the figures and the number of potential users as field verified. The costs are approximate and are based on pre-preliminary conceptual designs. The other related construction costs are a part of the actual construction cost and included in the construction cost estimate but not included in contract work, as they will have to be completed either with or before the actual project construction can begin.

Included in the appendix are the estimated operation and maintenance (O & M) for each subsystem or study area. The itemized lists of cost give a breakdown of the amount of money required to operate a sewer system including administration, supervision, billing, physical maintenance of the system, and the cost of treatment of the sewage at the plant.

To complete the cost of running a RSD, there must, of course, be some method of paying for the cost of any borrowed money utilized in the construction of the capital improvement. For purposes of this report, we will call this "debt service". The debt service on this project is calculated based on a loan at 7% interest over a period of 25 years. Therefore, in the study where projected rates are calculated, the debt service will vary directly with the amount of borrowed capital.

The projected monthly rates are a summation of the debt service and the O & M cost. Various rates have been shown in Table III to indicate the changes in the monthly rates as will be varied by the debt service. The only factor considered in the study that will effect the debt service is the amount of "tap on" fees. As the "tap on" fee is increased, the debt service will decrease; therefore, decreasing the monthly bill but increasing the "up front" payment by the user. Also, financing of the "tap on" may be accomplished by increasing the debt service to the individual as a loan, thereby increasing the monthly bill as a function of the financial "tap on" fee.

VII CONCLUSIONS AND RECOMMENDATIONS:

There have been four specific areas studied with this report. Each of the areas carry different costs, problems, development potential, hazards, tangible and intangible benefits. In terms of environmental improvement, the citizens of the Lake Lemon Area appear to benefit the most due to a reduction in pollution of the Lake. The Helmsburg area benefits most from a potential health hazard problem. The Gnaw Bone and Bean Blossom areas seem most prone to the lack of ability to grow. The Belmont area would appear to benefit most in the general sense of the quality of life.

There are intangible benefits of these projects whereby the people that are not directly on the systems have an improved overall living environment in the vicinity of the project. The best example of this is the improved quality of the water in Lake Lemon where all users of the lake would benefit.

If rural sewers are not installed, the situation will remain the same as now. Plus, with time, the existing problems will only continue to worsen.

1. Persons living within only a short distance of the scenic center of Indiana will continue to be without a reliable and sanitary means of sewage disposal.
2. Persons living in these areas will continue to be prone to possible water borne diseases.
3. Subsurface and surface water resources will continue to be polluted.
4. Without adequate disposal of sewage, the quality of life as measured by such amenities as clothes washers, dishwashers, etc. cannot exist.
5. Growth and development in the subject areas will be stalled or will see negative growth.
6. Certainly any new industry or commercial ventures will not be possible and therefore growth of new jobs will be very limited.
7. Continual complaints from these areas will be forth coming with the question "why can't something be done?"

As discussed earlier in this report, one of the largest obstacles to overcome is the initial start up of a RSD. Should the public and local government all

wish to pursue a RSD in either one or all of the areas within this study, then the first problem becomes the organization of the district and the ability of the RSD to raise "seed money" to start the project. As outlined and shown with the cost estimates, and the operation characteristics of the system, it is easy to see that smaller amounts of money to assist in the start of the project are reasonable but, conversely, it would require huge amounts of money to greatly reduce the capital investment and therefore reduce the monthly bill. Also, because the RSD is a user funded system whereby the users receive the direct benefit, it is prudent that the users bear the majority of the cost.

So, it is our recommendation that if the County or any other agency places any grants or moneys into the system, it should be as start up money (seed money) and not as a reduction in capital, as the system should be self supporting.

We also wish to present one other important aspect that must be considered in regard to the starting of a RSD. A method and means of handling fee structures for undeveloped land and lots along and in the district must be equitably established at the onset of the project. To describe, study, and establish a fair and equitable method of dealing with these areas is beyond the scope of this study. The study and the rate tables only relate to current users of the system and do not predict growth. However, because of the accessibility of sewers in these areas, it is most probable that additional development will occur.

It is our recommendation that undeveloped property be assessed in the process of setting up the system. This may be introduced by voluntary contributions for "tap on fees" or by methods that penalize in a fair manner late arrivals as they too should pay their proportional share. Any additional monies collected through the system would reduce the debt service and therefore, reduce the monthly user fees.

Based on the data presented in this report and the general benefits arrived, we must answer first the question: "Why can't something be done?" The answer is simple, something <u>can</u> be done. As engineers, charged with the

responsibility of protecting the health and welfare of the public, we recommend that all or at least portions of these sewers be constructed. This recommendation is made although we did not find direct proof or a correlation between known health hazards and failing septic systems in the studied areas. If there were a direct correlation, then the answer is simple - do it. However, because there is not direct evidence, then the benefits become less tangible and the question is: Do the people want the sewers and are they willing to pay for a higher quality of life?

We have presented factors throughout this report that will allow the public and elected officials to have available the costs of the proposed services. We have presented in this report the information to make intelligent informed decisions on the real question at hand, not "can it be" but rather the more difficult question of "what are we willing to pay"?

TABLES

TABLE I

CURRENT WATER RATES IN STUDY AREAS

AREA	GNAWBONE	BELMONT			SOMERSET LAKE	LAKE LEMON	S.W. CORNER OF LAKE LEMON			HELMSBURG TREVLAC	NASHVILLE
SOURCE	Brown County Water	East Monroe Water Dist			Nashville Water	Brown County Water	B & B Water (Bloomington)			Brown County Water	Nashville Water
Average water useage/household in gallons/month	3,790	6,000			4,000	2,900	4,000			2,900	5,500
Average payment/household	$ 24.65	$ 21.00			$ 23.58	$ 17.87	$ 19.70			$ 17.87	$ 22.62
Base Rate (* includes minimum - see next line)	* $ 13.02	* $ 10.23			$ 3.50	* $ 11.58	* $ 14.46			* $ 11.58	$ 3.59
Minimum gallon charged in gallons	2,000	3,000			0	2,000	3,000			2,000	0
Rate/1000 gallons for 1st 10,000 gallons	$ 6.50	$ 3.41 (1st 3,000)	$ 3.03 (2nd 3,000)	$ 2.66 (next 4,000)	$ 5.02	$ 5.80	$ 4.82 (1st 3,000)	$ 3.91 (4th 1,000)	$ 3.39 (next 6,000)	$ 5.80	$ 3.46
"Tap On" Fees	$ 450.00	$ 550.00			$ 336.00 min.	$ 450.00	$ 500.00 min.			$ 450.00	$ 336.00 min.
Plus a Membership Fee of:	$ 100.00	$ 60.00			$ 0.00	$ 100.00	$ 100.00			$ 100.00	$ 0.00

(Rates do not include sales tax.) (Data 1992)

TABLE II

ESTIMATED CONSTRUCTION COST SUMMARY

AREA	NO. OF USERS	FIELD CONSTRUCTION	OTHER CONSTRUCTION COSTS	TOTAL
A	167	$ 747,800	$ 216,100	$ 963,900
B	89	$ 579,100	$ 167,400	$ 746,500
C	151	$ 930,000	$ 268,800	$ 1,198,800
D	673	$ 3,245,000	$ 937,800	$ 4,182,800
E	856	$ 3,907,900	$ 1,129,400	$ 5,037,300
F	1,199	$ 5,137,400	$ 1,484,700	$ 6,622,100
*All Areas Combined	1,517	$ 6,819,600	$ 1,970,900	$ 8,790,500

* See composite sheet

(All estimates based on 1992 costs)

Project Areas

- A Gnawbone
- B Belmont
- C Belmont plus Somerset Lake
- D Owl Creek Area - includes Beanblossom, Helmsburg, Trevlac, Lake Lemon - North Shore (Brown Co.), Helmsburg Road and Annandale Estates
- E Includes Area D plus Needmore, Lake Lemon - South Shore (Brown Co.)
- F Includes Area D and E plus Lake Lemon - North and South Shore (Monroe Co.)

TABLE III

PROJECTED MONTHLY SEWER RATES

(Based on 4000 GPM as per 1992 data)

AREA	RATES WITH VARIOUS "TAP ON FEES"				FULL "TAP ON" FEE
	ZERO	$ 2000	$ 3000	FULL FEE	
A	65.54	51.41	44.34	24.75	5,800.00
B	82.03	67.90	60.83	22.75	8,400.00
C	78.86	64.73	57.66	22.75	8,000.00
D	66.68	52.54	45.47	22.75	6,200.00
E	64.34	50.21	43.14	22.75	5,900.00
F	61.79	47.65	40.58	22.75	5,500.00
All Areas Combined	63.92	49.79	42.72	22.99	5,800.00

Project Areas

A Gnawbone
B Belmont
C Belmont plus Somerset Lake
D Owl Creek Area - includes Beanblossom, Helmsburg, Trevlac, Lake Lemon - North Shore (Brown Co.), Helmsburg Road and Annandale Estates
E Includes Area D plus Needmore, Lake Lemon - South Shore (Brown Co.)
F Includes Area D and E plus Lake Lemon - North and South Shore (Monroe Co.)

CURRENT SEWER RATES (per 4,000 GPM)

ITEM	NASHVILLE SEWER	LAKE MONROE
"Tap On" Fees	$ 350.00 min.	$ 1,500.00
Avg Monthly Rates	$ 22.40	$ 30.00

APPENDICES

CONSTRUCTION COST ESTIMATES

	AREA NO. A	AREA NO. B	AREA NO. C	AREA NO. D	AREA NO. E	AREA NO. F	ALL AREAS
Area Variables							
Number of Customers	167	89	151	673	856	1,199	1,517
Linear Feet of Trunkline	32,250	18,817	40,956	97,319	124,005	172,228	248,434
Linear Feet of Large Trunkline	1,500	1,500	1,500	35,969	35,969	35,969	38,969
Average Length from Trunkline to House	200	200	200	194	186	178	183
Number of Lift Stations Needed	1	0	0	2	2	2	3
Construction Costs							
Main Trunkline @ $ 8.00/ft	282,000	150,536	327,648	778,552	992,040	1,377,824	1,987,472
Large Trunkline @ $ 10.00/ft	15,000	15,000	15,000	359,690	359,690	359,690	389,690
House to Trunkline Piping @ $ 2.00/ft	66,800	35,600	60,400	260,793	319,211	426,871	554,342
Lift Stations @ $ 50,000.00/ea	50,000	0	0	100,000	100,000	100,000	150,000
Grinder Pumps @ $ 2,000.00/user	334,000	178,000	302,000	1,346,000	1,712,000	2,398,000	3,034,000
Treatment Plants	0	200,000	225,000	400,000	425,000	475,000	700,000
Sub-total	747,800	579,136	930,048	3,245,035	3,907,941	5,137,385	6,815,504
Other Related Construction Costs							
Land and Right-of-Way	1,870	1,448	2,325	8,113	9,770	12,843	17,039
Legal Land Surveys	7,478	5,791	9,300	32,450	39,079	51,374	68,155
Engineering Design	56,085	43,435	69,754	243,378	293,096	385,304	511,163
Archeological Survey	748	579	930	3,245	3,908	5,137	6,816
Construction Observation	44,868	34,748	55,803	194,702	234,476	308,243	408,930
Administration	13,460	10,424	16,741	58,411	70,343	92,473	122,679
Legal Counsel	5,609	4,344	6,975	24,338	29,310	38,530	51,116
Interim Construction Financing	11,217	8,687	13,951	48,676	58,619	77,061	102,233
Contingency: 10%	74,780	57,914	93,005	324,503	390,794	513,738	681,550
Sub-total	216,114	167,370	268,784	937,815	1,129,395	1,484,704	1,969,681
TOTAL ESTIMATED COST OF CONSTRUCTION	963,914	746,506	1,198,832	4,182,850	5,037,336	6,622,089	8,785,185

PROJECTED ANNUAL OPERATING BUDGETS

(Projected monthly rates on estimated 4,000 gal./mo. shown at bottom of chart)

ITEM	Area No. A	Area No. B	Area No. C	Area No. D	Area No. E	Area No. F	All Areas
No. of Customers	167	89	151	673	856	1,199	1,517
No. of Customers x 4,000 gal./mo.	668,000	356,00	604,000	2,692,000	3,424,000	4,796,000	6,068,000
Rate/1,000 gal.	2.00	1.50	1.50	1.50	1.50	1.50	1.50
Treatment Cost at rate above	1,336	534	906	4,038	5,136	7,194	9,466
Electricity for pumping	167	89	151	673	856	1,199	1,517
Billing by Contract	251	134	227	1,010	1,284	1,799	2,276
Management (part time) or Contract	376	200	340	1,514	1,926	2,698	3,413
Maintenance/Repairs (by Contract)	2,004	1,068	1,812	8,076	10,272	14,388	18,204
(per month) *TOTAL*	4,133	2,025	3,435	15,311	19,474	27,277	34,876
(O&M) Rate/mo.	24.75	22.75	22.75	22.75	22.75	22.75	22.99

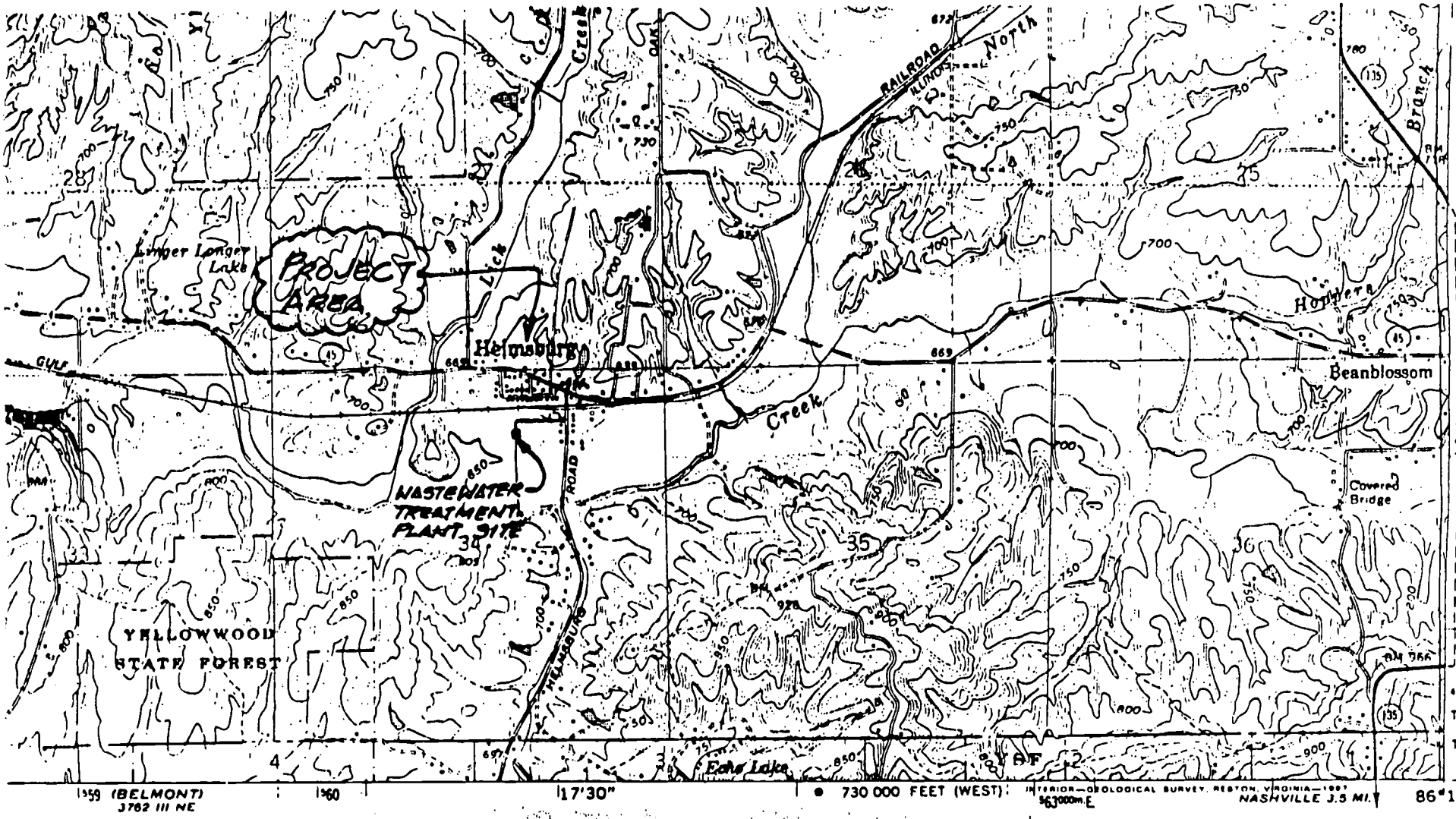
GLOSSARY

dynamic head:	pressure required to overcome the friction in a pipe due to the moving fluid.
effluent:	the material that is discharged after some treatment of sewage. It may be from a treatment plant or from a septic tank.
effluent pumps:	small sewage pumps specifically designed to pump septic tank effluent with no or very small solids.
feet of head:	indicates pressure in feet of water or friction losses in feet of water
pump head:	the maximum amount of pressure (to total dynamic head) the pump can deliver for a given discharge.
GPM:	gallons per month
gpm:	gallons per minute
grade:	the slope of the sewer line.
gravity sewers:	any sewers where the collection and transporting of sewage is by gravity, i.e., where the down hill slope allows the sewage to flow naturally.
gray water:	normally refers to domestic waste excluding toilets.
grinder pumps:	sewage pumps combined with a garbage disposal like grinder to make raw sewage into a slurry so it may be pumped through small diameter pipes.
head pressure:	normally referred to in feet
laterals:	individual sewer lines that connect to the main sewer lines.
lift stations:	any sewage pump or pumps specifically designed to pump sewage under pressure to another location, including the necessary controls and collection basin.
low pressure sewers:	a system of small diameter pipes that collect and transport sewage under pressure like water pipes.
manholes:	an under ground chamber where lines connect. In the case of gravity sewers, where grades or the horizontal direction of the lines change.
mgd:	million gallons per day.
pressure mains:	pipes where the sewage is being pumped through under pressure.
raw sewage:	that sewage that has not been treated in any manner and has not changed in chemical composition.
septic tank:	a tank specially designed to accept raw sewage, separate the solids, collect inorganic matter, retain the sewage for a period of time, begin an initial treatment, and discharge an effluent.
static head:	pressure required to overcome a vertical distance
total dynamic head:	the pressure required to overcome both static and dynamic losses while moving fluids through a pipe
treatment plant:	the mechanical equipment by which sewage is processed so that the discharge is cleaned to a point that it is not harmful to the environment. Requires a permit for operation and discharges at a prescribed legal level.
vacuum sewers:	water/air-tight constructed pipe line that utilizes a vacuum to move the sewage through the lines for either collection or transport.

APPENDIX A

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF
HISTORIC PRESERVATION & ARCHAEOLOGY



SCALE 1:24 000

0 1 MILE

000 2000 3000 4000 5000 6000 7000 FEET

5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

TIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION

Heavy-duty ——— Light-duty ———

Medium-duty ——— Unimproved dirt - - - - - -

State Route

INDIANA

QUADRANGLE LOCATION

OMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

L SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092

NT OF NATURAL RESOURCES, INDIANAPOLIS, INDIANA 46204

TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Revisions shown in purple compiled in cooperation with State of Indiana agencies from aerial photographs taken 1977 and other source data. This information not field checked. Map edited 1980

MORGANTOWN, IND.

39086-C3-TF-024

1961

PHOTOREVISED 1980

DMA 3762 IV SE—SERIES V851

BEFORE THE

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS, INDIANA 46204

IN THE MATTER OF)
)
HELMSBURG REGIONAL SEWER DISTRICT)
)
13-3-2-5.)

Transcript of proceedings held
on September 12, 1995, in Helmsburg, Indiana,
before Notary Public Aimee LaBorn.

WM. F. DANIELS, RPR/CP CM d/b/a
ACCURATE REPORTING OF INDIANA
12922 BRIGHTON AVENUE
CARMEL, INDIANA 46032
317/848-0088

FED ID #35-1645983

APPEARANCES:

OFFICES OF COMMUNITY RELATIONS
FOR THE INDIANA DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT.....By: April Sasso

OFFICE OF LEGAL COUNSEL.....By: Mylene Huybers

SPEAKER.....By: Lars Halverson

COURT REPORTERS:

Aimee LaBorn
Jodie Franzen

* * * * * * * * * * * * * * * * * * *

9-12-95

7:00 p.m.

(Comments by Ms. Huybers off the record.)

(Reporter sworn.)

This is a public hearing before the Indiana Department of Environmental Management in the matter docketed before the Agency as the Helmsburg Regional Sewer District. Notice of time and place of hearing is given as provided by Indiana Code 13-3-2-5 by requesting publications of the Brown County Democrat during the weeks of August 30th and September the 6th, 1995.

Proof of publication of the notice has been received by the Department and the notice and the proofs are now incorporated in the record of this cause by records placed in the official files of the department. Notice has also been given to the Office of the Attorney General.

My name is April Sasso. I'm Director of the Office of Community Relations for the Indiana Department of Environmental Management and have been appointed by the commissioner to act as a hearing officer in this cause. Attendance sheets have been distributed in the hearing room for all those desiring to be shown as appearing of record in this cause. If you have not already filled out this form, please do so and indicate, as Mylene said, if you're appearing for yourself, or on behalf of a group or

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

September 27, 2000

VIA CERTIFIED MAIL 7000 0520 0023 5048 3456

Ms. Sharon Rivenbark, President
Helmsburg Regional Sewer District
P.O. Box 147
Helmsburg, Indiana 47435

Dear Ms. Rivenbark:

Re: Final NPDES Permit No. IN 0058416
Helmsburg Regional Sewer District's WWTP
Brown County

Your application for a National Pollutant Discharge Elimination System (NPDES) permit has been processed in accordance with Sections 402 and 405 of the Federal Water Pollution Control Act as amended, (33 U.S.C. 1251, et seq.), and IDEM's permitting authority under IC 13-15, as amended (formerly IC 13-7, et seq.). The enclosed NPDES permit covers your discharges into the Bean Blossom Creek to Lemon Lake. All discharges from this facility shall be consistent with the terms and conditions of this permit.

One condition of your permit requires monthly reporting of several effluent parameters. Reporting is to be done on the enclosed Monthly Report of Operation (MRO) form. We have included enough forms to establish a supply for approximately four months of reporting. Additionally, you will soon be receiving a supply of the computer generated preprinted federal NPDES DMR forms. Both the state MRO and federal DMR forms need to be completed and submitted on a monthly basis. If you do not receive the preprinted DMR forms in a timely manner, please call this office at 317/232-8808.

Another condition which needs to be clearly understood concerns violation of the effluent limitations in the permit. Exceeding the limitations constitutes a violation of the permit and may bring criminal or civil penalties upon the permittee. (See Part II of this permit.) It is very important that your office and treatment operator understand this part of the permit.

It should also be noted that any appeal must be filed under procedures outlined in IC 13-15-5-1, IC 4-21.5 and the enclosed Public Notice. The appeal must be initiated by filing with the Office of Environmental Adjudication (OEA) a request for an adjudicatory hearing within 18 days of the mailing of this letter. Please send a copy of any written appeal to me at the above address.

APPENDIX J

HELMSBURG REGIONAL SEWAGE DISTRICT
WASTEWATER TREATMENT PLANT
IDEM NPDES PERMIT

The permit should be read and studied. It requires certain action at specific times by you, the discharger, or your authorized representative. One copy of this permit is also being sent to your operator to be kept at the treatment facility. You may wish to call this permit to the attention of your consulting engineer and/or attorney.

If you have any questions concerning your NPDES permit, please contact Ms. Staci Whipker at 317/233-1449. Questions concerning appeal procedures should be directed to the Office of Environmental Adjudication, at 317/232-8591.

Sincerely,

Len Ashack, Chief
Permit & Compliance Branch
Office of Water Management

Enclosures
cc: Brown County Health Department
Mr. Chris Shank, Certified Operator
Mr. John Johnson
Mr R.W. Armstrong

STATE OF INDIANA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Act"), and IDEM's permitting authority under IC 13-15, as amended, (formerly IC 13-7), the

HELMSBURG REGIONAL SEWER DISTRICT

is authorized to discharge from a municipal wastewater treatment plant located off Helmsburg Road, Helmsburg, Indiana to receiving waters named Bean Blossom Creek to Lake Lemon in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I and II hereof.

Effective Date: November 1, 2000.

Expiration Date: August 31, 2005.

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Signed this 27th day of September, 2000, for the Indiana Department of Environmental Management.

Len Ashack, Chief
Permit & Compliance Branch
Office of Water Management

TREATMENT FACILITY DESCRIPTION

The Permittee currently operates a Class II, 0.025 MGD, extended aeration activated sludge wastewater treatmetn facility equipped with a flow meter, aeration tank, clarification, and chlorination/dechlorination facilities.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 001. The permittee shall take samples and measurements to meet the effluent limitations and monitoring requirements at a location representative of the discharge. Such discharge shall be limited and monitored by the permittee as specified below:

TABLE 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Weekly Average	Units	Monthly Average	Weekly Average	Units	Measurement Frequency	Sample Type
Flow [1]	Report	Report	MGD	----	----	----	5 X Weekly	24-Hr. Total
$CBOD_5$								
Summer[2]	3.1	4.7	lbs/day	15	22.5	mg/l	1 X Weekly	24-Hr. Composite
Winter[3]	5.2	8.3	lbs/day	25	40	mg/l	1 X Weekly	24-Hr. Composite
TSS								
Summer[2]	3.8	5.6	lbs/day	18	27	mg/l	1 X Weekly	24-Hr. Composite
Winter[3]	6.3	9.4	lbs/day	30	45	mg/l	1 X Weekly	24-Hr. Composite
Ammonia-nitrogen								
Summer[2]	0.27	0.40	lbs/day	1.3	1.9	mg/l	1 X Weekly	24-Hr. Composite
Winter[3]	0.40	0.61	lbs/day	1.9	2.9	mg/l	1 X Weekly	24-Hr. Composite

TABLE 2

	Quality or Concentration				Monitoring Requirements	
Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Measurement Frequency	Sample Type
pH	6.0	9.0	----	s.u.	2 X Weekly	Grab
Dissolved Oxygen[4]						
Summer[2]	6.0	----	----	mg/l	2 X Weekly	2 Grabs/24-Hrs.
Winter[3]	5.0	----	----	mg/l	2 X Weekly	2 Grabs/24-Hrs.
Total Residual Chlorine[5]						
Contact Tank[6]	0.5	Report	----	mg/l	2 X Weekly	Grab
Final Effluent[7]	----	0.02	0.01	mg/l	2 X Weekly	Grab

NOTE: Refer to Part I.B. of this permit for additional monitoring and reporting requirements.

[1] Flow measurement is required per 327 IAC 5-2-13. The flow meter(s) shall be calibrated at least once annually.

[2] Summer limitations apply from May 1 through November 30 of each year.

[3] Winter limitations apply from December 1 through April 30 of each year.

[4] The reported daily average concentration of dissolved oxygen in the effluent shall be the arithmetic mean determined by summation of the 2 daily grab sample results and dividing this sum by 2. These samples are to be collected over equal time intervals during the period of operator attendance.

Disinfection Requirements

[5] In accordance with 327 IAC 5-10-6, the effluent shall be disinfected on a continuous basis such that excursions above the *E. coli* standards do not occur from April 1 through October 31, annually. Practice of chlorination for any reason from November 1 through March 31 shall result in the maximum residual chlorine restrictions and monitoring requirements being effective whenever the disinfectant is used.

[6] The chlorine residual shall be maintained at a concentration not less than 0.5 mg/l as measured at the effluent end of the chlorine contact tank for the term of the permit. The daily maximum chlorine residual value at the chlorine contact tank shall be monitored and reported.

[7] In accordance with 327 IAC 5-2-11.1(f), compliance with this permit will be demonstrated if the observed effluent concentrations are less than the limit of quantitation (0.06 mg/l). If the measured effluent concentrations are above the water quality-based permit limitations and above the limit of detection specified by the permit in any of three (3) consecutive analyses or any five (5) out of nine (9) analyses, the discharger is required to re-evaluate their chlorination/dechlorination practices to make any necessary changes to assure compliance with the permit limitation for TRC.

Effluent concentrations less than the limit of quantitation shall be reported on the discharge monitoring report forms as the actual value. Effluent concentrations less than the limit of detection shall be reported on the discharge monitoring report forms as less than the value of the limit of detection. For example, if a substance is not detected at a concentration of 0.01 mg/l, report the value as < 0.01 mg/l. At present, two methods are considered to be acceptable to IDEM, amperometric and DPD colorimetric methods, for chlorine concentrations at the level of 0.06 mg/l.

Parameter	LOD	MDL	LOQ
Chlorine	0.01 mg/l	0.02 mg/l	0.06 mg/l

Case-Specific MDL

The permittee may determine a case-specific method detection level (MDL) using the analytical method specified above, or any other test method which provides a MDL equal to or less than the specified MDL and which is approved by the IDEM prior to use. The MDL shall be derived by the procedure specified for MDLs contained in 40 CFR Part 136, Appendix B, and the limit of quantitation shall be set equal to 3.18 times the MDL. Other methods may be used if first approved by IDEM.

2. Minimum Water Quality Requirements

The discharge from any and all point sources regulated within this permit shall not cause receiving waters, including the mixing zone, to contain substances, materials, floating debris, oil, or scum:

a. that will settle to form putrescent or otherwise objectionable deposits;

b. that are in amounts sufficient to be unsightly or deleterious;

c. that produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;

d. which are in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;

e. which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.

B. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Data on Plant Operation

The raw influent and the wastewater from intermediate unit treatment processes, as well as the final effluent shall be sampled and analyzed for the pollutants and operational parameters specified by the applicable Monthly Report of Operation Form, as appropriate, in accordance with 327 IAC 5-2-13.

3. Reporting

The permittee shall submit monitoring reports to the Indiana Department of Environmental Management containing results obtained during the previous month and shall be postmarked no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective. These reports shall include, but not necessarily be limited to, the Discharge Monitoring Report and the Monthly Report of Operation. The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance of the permit.

4. Definitions

a. Effluent Limitations

The arithmetic mean of the $CBOD_5$, TSS, and ammonia-nitrogen values for effluent samples collected in a calendar month, week or day shall not exceed the monthly averages, weekly averages or daily maximum values contained in the Discharge Limitation Section of this permit for concentration and quantity.

b. Terms

(1) "Monthly Average" - The monthly average discharge means the total discharge during a calendar month. The monthly average shall be determined by the summation of the measured daily discharge divided by the number of days during the calendar month when measurements were taken.

(2) "Weekly Average" - The weekly average discharge means the highest average of a calendar week during a calendar month. The weekly average shall be determined by the summation of the measured daily discharge divided by the number of days during the calendar week when measurements were taken.

(3) "Daily Maximum" - The daily maximum discharge limitation is the maximum allowable daily discharge for any calendar day. The "daily discharge" means the total mass of a pollutant discharged during the calendar day or, in the case of a pollutant limited in terms other than mass pursuant to 327 IAC 5-2-11(e), the average concentration or other measurement of the pollutant specified over the calendar day or any twenty-four hour period that represents the calendar day for purposes of sampling.

(4) The 24-hour Composite Sample consists of two (2) grab samples, one collected at a time representing the daily peak flow, and the other sample collected at a time representing the average daily flow. The grab samples for the composites shall be proportioned to flow. A flow proportioned composite sample is obtained by:

(a) recording the discharge flow rate at the time each individual sample is taken,

(b) adding together the discharge flow rates recorded from each individuals sampling time to formulate the "total flow value,"

(c) the discharge flow rate of each individual sampling time is divided by the total flow value to determine its percentage of the total flow value,

(d) then multiply the volume of the total composite sample by each individual samples percentage to determine the volume of that individual sample which will be included in the total composite sample.

(5) $TBOD_5$: Total Biochemical Oxygen Demand

(6) $CBOD_5$: Carbonaceous Biochemical Oxygen Demand

(7) TSS: Total Suspended Solids

(8) E. coli: Escherichia coli bacteria

c. The "Regional Administrator" is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.

d. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, located at the following address: 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015.

5. Test Procedures

The analytical and sampling methods used shall conform to the current version of 40 CFR, Part 136. The approved methods may be included in the texts listed below. However, different but equivalent methods are allowable if they receive the prior written approval of the State agency and the U.S. Environmental Protection Agency.

a. Standard Methods for the Examination of Water and Wastewater
19th Edition, 1995, American Public Health Association,
Washington, D.C. 20005.

b. A.S.T.M. Standards, Part 23, Water; Atmospheric Analysis
1972 American Society for Testing and Materials,
Philadelphia, PA 19103.

c. Methods for Chemical Analysis of Water and Wastes
June 1974, Revised, March 1983, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 45202.

6. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The person(s) who performed the sampling or measurements;

c. The dates the analyses were performed;

d. The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of all required analyses and measurements.

7. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monthly Discharge Monitoring Report. Such increased frequency shall also be indicated.

8. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three-year period shall be extended:

a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

C. REOPENING CLAUSES

In addition to the reopening clause provisions cited at 327 IAC 5-2-16, the following reopening clauses are incorporated into this permit:

1. This permit may be modified or, alternately, revoked and reissued after public notice and opportunity for hearing to incorporate effluent limitations reflecting the results of a wasteload allocation if the Department of Environmental Management determines that such effluent limitations are needed to assure that State Water Quality Standards are met in the receiving stream.

2. This permit may be modified due to a change in sludge disposal standards pursuant to Section 405(d) of the Clean Water Act, if the standards when promulgated contain different conditions, are otherwise more stringent, or control pollutants not addressed by this permit.

3. This permit may be modified, or, alternately, revoked and reissued, to comply with any applicable effluent limitation or standard issued or approved under section 301(b)(2)(C), (D) and (E), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:

   (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   (2) controls any pollutant not limited in the permit.

4. This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing, to include a case-specific Method Detection Level (MDL). The permittee must demonstrate that such action is warranted in accordance with the procedure specified under Appendix B, 40 CFR Part 136, or approved by the Indiana Department of Environmental Management.

5. This permit may be modified or, alternatively, revoked and reissued after public notice and opportunity for hearing to include and /or modify limitations to reflect any changes to State Water Quality Standards.

PART II

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all conditions of this permit in accordance with 327 IAC 5-2-8(1). Any permit noncompliance constitutes a violation of the Clean Water Act and IC 13 and is grounds for enforcement action or permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

3. Duty to Provide Information

In accordance with 327 IAC 5-2-8(4)(B) and 40 CFR 122.41(h), the permittee shall furnish to the Commissioner, within a reasonable time, any information which the Commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. In accordance with 327 IAC 5-2-8(7)(B), the permittee shall also furnish to the Commissioner, upon request, copies of records required to be kept by this permit.

4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to request the application. The application must be submitted at least 180 days before the expiration date of this permit. The Commissioner may grant permission to submit an application less than 180 days in advance of the expiration date of this permit but no later than the permit expiration date.

As required under 327 IAC 5-2-3(g)(1) and (2), POTWs with design influent flows equal to or greater than one million (1,000,000) gallons per day and POTWs with approved or that are to required to develop a pretreatment program, will be required to provide the results of whole effluent toxicity testing as part of their NPDES renewal application.

5. Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except after notice to the Commissioner pursuant to 327 IAC 5-2-6(c). The Commissioner may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

6. Permit Actions

In accordance with 327 IAC 5-2-8(4)(A), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

The filing of (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

7. Property Rights

The issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or an invasion of personal rights, nor any infringement of federal, state, or local laws or regulations as stated in 327 IAC 5-2-8(6).

8. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application or such provision to other circumstances and the remainder of this permit shall not be affected thereby.

9. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

10. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

11. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30 and 327 IAC 5-2-20, any person who violates a permit condition implementing Sections 301, 302, 306, 307, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed $25,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307, or 308 of the Clean Water Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. If the conviction is for a violation committed after a first conviction of such person under this provision, punishment shall be a fine of not more than fifty thousand dollars ($50,000) per day of violation, or by imprisonment for not more than two (2) years, or both.

Except as provided in permit conditions on "Bypass of Treatment Facilities," Part II.B.2., and "Upset Conditions," Part II.B.3., nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

12. Toxic Pollutants

Notwithstanding Part II.C.3., if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5).

13. Containment Facilities

When cyanide or cyanogen compounds are used in any of the processes at this facility, the permittee shall provide approved facilities for the containment of any losses of these compounds in accordance with the requirements of 327 IAC 2-2-1.

14. Operator Certification

The permittee shall have the wastewater treatment facilities under the direct supervision of an operator certified by the Commissioner as required by IC 13-18-11 and 327 IAC 8-12-3.

15. Construction Permit

The permittee shall not construct, install, or modify any water pollution control facility without a valid construction permit issued by the Commissioner pursuant to 327 IAC 3-2. Upon completion of any construction, the permittee must notify the Compliance Evaluation Section of the Office of Water Management in writing.

16. Inspection and Entry

In accordance with 327 IAC 5-2-8(7), the permittee shall allow the Commissioner, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

B. MANAGEMENT REQUIREMENTS

1. Facility Operation, Maintenance and Quality Control

Pursuant to 327 IAC 5-2-8, all waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

a. at all times, all facilities shall be operated as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants.

b. the permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit.

c. maintenance of all waste collection, control, treatment, and disposal facilities that results in degradation of effluent quality shall be scheduled during noncritical water quality periods and shall be carried out in a manner approved by the Commissioner.

d. Any extensions to the sewer system must continue to be constructed on a separated basis. Plans and specifications for extension of the sanitary system must be submitted to the Facility Construction Section, Office of Water Management in accordance with 327 IAC 3-2-1. There shall also be an ongoing program to prevent deterioration of the sanitary sewer system.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(11):

a. Terms as defined in 327 IAC 5-2-8(11)(A):

(1) "Bypass" means the intentional diversion of a waste stream from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypasses, as defined above, are prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, as defined below;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The permittee submitted notices as required under Part II.B.2.d; or

(4) The condition under Part II.B.2.f below is met.

c. In accordance with 327 IAC 2-6.1, bypasses which result in damage or death are subject to the "Two-Hour Reporting Requirements" in Part II.C.9 of this permit.

d. The permittee must provide the Commissioner with the following notice:

(1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.

(2) The permittee shall orally report an unanticipated bypass within 24 hours of becoming aware of the bypass event. The permittee must also provide a written report within five (5) days of the time the permittee becomes aware of the bypass event. The written report must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the event. Alternatively, in accordance with 327 IAC 2-6.1, the permittee may be subject to the "Two-Hour Reporting Requirements" in Part II.C.9 of this permit if the unanticipated bypass causes damage to waters of the state.

e. The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.b. The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

f. The permittee may allow any bypass to occur that does not cause a violation of the effluent limitations in the permit, but only if it also is for essential maintenance to assure efficient operation. This provision will be strictly construed. These bypasses are not subject to the provisions of Part II.B.2.c and d of this permit.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(12):

a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this subsection, are met.

c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:

(1) An upset occurred and the permittee has identified the specific cause(s) of the upset, if possible;

(2) The permitted facility was at the time being operated in compliance with proper operation and maintenance procedures;

(3) The permittee complied with any remedial measures required under "Duty to Mitigate", Part II.A.2; and

(4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or the "Two Hour Reporting Requirements," Part II.C.9, whichever is applicable.

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal.

a. Collected screenings, slurries, sludges, and other such pollutants shall be disposed of in accordance with methods established in 329 IAC 10 and 327 IAC 6.1, or another method approved by the Commissioner.

b. The permittee shall comply with existing federal regulations governing solids disposal, and with applicable 40 CFR Part 503, the federal sludge disposal regulation standards.

c. The permittee shall notify the Commissioner prior to any changes in sludge use or disposal practices.

5. Power Failures

In accordance with 327 IAC 5-2-8(13), in order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, or

b. shall halt, reduce or otherwise control all discharge in order to maintain compliance with the effluent limitations and conditions of this permit upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(10)(F) any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by advance notice to the Commissioner of such changes. Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(9) and 327 IAC 5-2-13, monitoring results shall be reported at the intervals and in the form specified in "Data On Plant Operation", Part I.B.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(10), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance:

a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

b. Any noncompliance which may pose a significant danger to human health or the environment;

c. Any upset (as defined in Part II.B.3 above) that exceeds any effluent limitations in the permit;

The permittee can make the oral reports by calling 317/232-8795 during regular business hours or by calling 317/233-7745 (888/233-7745 toll free in Indiana) during non-business hours. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain: a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence. The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. Alternatively the permittee may submit a "Bypass Fax Report" to IDEM at 317/232-8637. If a complete fax submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the fax report will satisfy both the oral and written reporting requirements.

4. Other Noncompliance

Pursuant to 327 IAC 5-2-8(10)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3 or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in the compliance schedule.

5. Other Information

Pursuant to 327 IAC 5-2-8(10)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

6. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(14):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

(1) For a corporation: by a principal executive defined as a president, secretary, treasurer, any vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making functions for the corporation or the manager of one or more manufacturing, production, or operating facilities employing more than two hundred fifty (250) persons or having gross annual sales or expenditures exceeding twenty-five million dollars (25,000,000) (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a federal, state, or local governmental body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

b. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The authorization is submitted to the Commissioner.

c. Certification. Any person signing a document identified under paragraphs a and b of this section, shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7. Availability of Reports

Except for data determined to be confidential under 327 IAC 12, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-10(14) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine or not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

9. Two-Hour Reporting Requirement

Pursuant to 327 IAC 2-6.1, any discharge of pollutants to waters of the State from the permittee's collection system or wastewater treatment plant which results in damage, acute injury, or death to any humans, animals, or aquatic life must be reported as soon as possible, but within two (2) hours after the permittee becomes aware of the occurrence. (This includes any discharge regardless of whether or not it is authorized by the NPDES permit.)

Any discharge of pollutants which enters waters of the state from the permittee's collection system or wastewater treatment plant and which is not authorized by the NPDES permit must also be reported within two (2) hours after the permittee becomes aware of the occurrence. [Note: Only those outfalls which are specifically identified in Part I.A, Part II.B.2.f, and/or Attachment A of this permit are considered to be authorized discharges under this NPDES permit.] Any unauthorized discharge of pollutants from the collection system which does not reach waters of the state must be reported to the IDEM in accordance with the "Twenty-Four Hour Reporting Requirements" in Part II.C.3.

The permittee is required to notify IDEM's Office of Emergency Response at 317/233-7745 or 888/233-7745 (toll-free within Indiana) of any discharges which meet the criteria of 327 IAC 2-6.1.

Briefing Memo
May 23, 2000

Helmsburg Regional Sewer District WWTP
off Helmsburg Road
Helmsburg, Indiana
Brown County
NPDES Permit No. IN 0058416

Background

The Permittee currently operates a Class II, 0.025 MGD, extended aeration activated sludge wastewater treatment facility equipped with a flow meter, aeration tank, clarification, and chlorination/dechlorination facilities.

Collection System

The Helmsburg Regional Sewage District collection system is a 100% sanitary sewer system by design with no overflow or bypass points.

Industrial Contributors

According to the NPDES permit application submitted to this Office, the permittee's collection system receives no significant industrial wastewater. This permit does not authorize any industrial contributions of wastewater.

Compliance Status

The Helmsburg Regional Sewage District's WWTP is under no formal enforcement activity at the drafting of this permit.

Receiving Stream

Discharge from the Helmsburg Regional Sewage District WWTP is a tributary to Bean Blossom Creek to the Lemon Lake. The $Q_{7,10}$ low-flow of the receiving stream is 0.0 cfs.

Effluent Limitations and Rationale

The effluent limitations proposed herein are based on the Indiana Water Quality Standards, NPDES regulations, 327 IAC 5-10-5, and current NPDES Permit . The parameters to be limited and/or monitored include: flow, $CBOD_5$, TSS, ammonia-nitrogen, pH, dissolved oxygen, and total residual chlorine.

Flow

Flow measurement is required per 327 IAC 2-4-1 and 327 IAC 5-2-13. In accordance with current Office procedures, flow is to be monitored five (5) times per week and reported as a 24 hour total.

$CBOD_5$

The $CBOD_5$ is limited to 15 mg/l (3.1 lbs/day) as a monthly average and 22.5 mg/l (4.7 lbs/day) as a weekly average for the summer monitoring period and 25 mg/l (5.2 lbs/day) as a monthly average and 40 mg/l (8.3 lbs/day) as a weekly average for the winter monitoring period. Monitoring is to be conducted one (1) time weekly by a 24-Hr. composite sample.

TSS

The TSS is limited to 18 mg/l (3.8 lbs/day) as a monthly average and 27 mg/l (5.6 lbs/day) as a weekly average for the summer monitoring period and 30 mg/l (6.3 lbs/day) as a monthly average and 45mg/l (9.4 lbs/day) as a weekly average for the winter monitoring period. Monitoring is to be conducted one (1) time weekly by a 24-Hr composite sample.

Ammonia-Nitrogen

Ammonia-Nitrogen is limited to 1.3 mg/l (0.27 lbs/day) as a monthly average and 1.9 mg/l (0.40 lbs/day) as a weekly average for the summer monitoring period and 1.9 mg/l (0.40 lbs/day) as a monthly average and 2.9 mg/l (0.61 lbs/day) as a weekly average for the winter monitoring period. Monitoring is to be conducted one (1) time weekly by 24-Hr composite sample.

pH

The pH of the final effluent must be between 6.0 and 9.0 standard units (s.u.). The pH must be measured two (2) times weekly by grab sample. The pH limitations in this permit are in accordance with 327 IAC 2-1-6.

Dissolved Oxygen

Dissolved Oxygen shall not fall below 6.0 mg/l as a daily minimum average for the summer monitoring period, nor fall below 5.0 mg/l as a daily minimum average for the winter monitoring period. Monitoring is to be conducted two (2) times weekly by two (2) grabs samples taken in a 24-hr. period.

Flow

Flow measurement is required per 327 IAC 2-4-1 and 327 IAC 5-2-13. In accordance with current Office procedures, flow is to be monitored five (5) times per week and reported as a 24 hour total.

$CBOD_5$

The $CBOD_5$ is limited to 15 mg/l (3.1 lbs/day) as a monthly average and 22.5 mg/l (4.7 lbs/day) as a weekly average for the summer monitoring period and 25 mg/l (5.2 lbs/day) as a monthly average and 40 mg/l (8.3 lbs/day) as a weekly average for the winter monitoring period. Monitoring is to be conducted one (1) time weekly by a 24-Hr. composite sample.

TSS

The TSS is limited to 18 mg/l (3.8 lbs/day) as a monthly average and 27 mg/l (5.6 lbs/day) as a weekly average for the summer monitoring period and 30 mg/l (6.3 lbs/day) as a monthly average and 45mg/l (9.4 lbs/day) as a weekly average for the winter monitoring period. Monitoring is to be conducted one (1) time weekly by a 24-Hr composite sample.

Ammonia-Nitrogen

Ammonia-Nitrogen is limited to 1.1 mg/l (0.27 lbs/day) as a monthly average and 1.7 mg/l (0.40 lbs/day) as a weekly average for the summer monitoring period and 1.6 mg/l (0.40 lbs/day) as a monthly average and 2.4 mg/l (0.61 lbs/day) as a weekly average for the winter monitoring period. Monitoring is to be conducted one (1) time weekly by 24-Hr composite sample.

pH

The pH of the final effluent must be between 6.0 and 9.0 standard units (s.u.). The pH must be measured two (2) times weekly by grab sample. The pH limitations in this permit are in accordance with 327 IAC 2-1-6.

Dissolved Oxygen

Dissolved Oxygen shall not fall below 6.0 mg/l as a daily minimum average for the summer monitoring period, nor fall below 5.0 mg/l as a daily minimum average for the winter monitoring period. Monitoring is to be conducted two (2) times weekly by two (2) grabs samples taken in a 24-hr. period.

Disinfection

Disinfection is required from April 1 through October 31, annually. The chlorine residual at the end of the chlorine contact tank must be no less than 0.5 mg/l to ensure disinfection. Monitoring the total residual chlorine must be conducted two (2) times weekly during chlorination periods by grab sample. The calculated water quality based limits are 0.01 mg/l monthly average and 0.02 mg/l daily maximum. Compliance with these limits will be demonstrated by reporting values as less than the LOQ (0.06 mg/l). Disinfection requirements are established in 327 IAC 5-10-6 and 327 IAC 2-1-6(d).

Other Parameters

Due to the small design flow of the facility, phosphorus limitations were not included in this permit in accordance with 327 IAC 5-10-2(a)(1)(A).

Reopening Clauses

Five reopening clauses were incorporated into the permit. One clause is to incorporate effluent limits from any further waste load allocations performed, the second is to allow for changes in sludge disposal standards, the third is to allow for changes to the Clean Water Act, the fourth is to allow for changes in the Method Detection Level, and the fifth is to allow for changes to the State Water Quality Standards.

Sludge Disposal

The Helmsburg Regional Sewage District's WWTP must dispose of solids in accordance with 329 IAC 10 and 327 IAC 6.1, or another method approved by the Commissioner of the Indiana Department of Environmental Management

Backsliding

The permit limitations are no less stringent than the previous permit limitations therefore, backsliding is not an issue.

Permit Term

A five-year NPDES permit is proposed.

Drafted by: Staci J. Whipker
6/7/00

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

PUBLIC NOTICE NO. 2000-9-L-F-P

DATE OF NOTICE: September 27, 2000

DATE APPEAL DUE: October 15, 2000

The Office of Water Management issues the following permit action listed below:

NPDES PERMIT ISSUED/MINOR RENEWAL

HELMSBURG REGIONAL SEWER DISTRICT, Helmsburg Road, Helmsburg, Indiana, NPDES Permit No. IN0058416. This minor municipal wastewater treatment plant discharges 0.025 million gallons per day of treated sanitary wastewater into Bean Blossom Creek to Lemon Lake in BROWN COUNTY. Proposed effluent parameters to be limited and/or monitored at Outfall 001: flow, pH, $CBOD_5$, total suspended solids, ammonia-nitrogen, dissolved oxygen and total residual chlorine. Permit Writer: Ms. Staci Whipker at 317/233-1449.

PUBLIC NOTICE
GENERAL INFORMATION - APPEAL PROCEDURES

Any person affected by the issuance of the Final Permit may appeal by filing a *Petition for Administrative Review* with the Office of Environmental Adjudication (OEA) within eighteen (18) days after the Date of Notice of the Public Notice. Any appeal must be filed in accordance with IC 4-21, 5-3-7 and must include facts demonstrating that the party requesting appeal is the applicant, a person aggrieved or adversely affected, or otherwise entitled to review by law.

ıely filing: the *Petition for Administrative Review* must either: (1) **be received** by the Office of Environmental Adjudication (OEA) ater than the date notated as the Appeal Due Date; (2) **be postmarked** by the appeal date; or (3) **be received** from private carrier by the appeal date, verified by receipt issued by the carrier.

This *Petition for Administrative Review* represents a request for an Adjudicatory Hearing and must also:
(1) state the name and address of the person making the request;
(2) identify the interest of the person making the request;
(3) identify any persons represented by the person making the request;
(4) state specifically the reasons for the request;
(5) state specifically the issues proposed for consideration at the hearing; and
(6) identify the permit terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this type permit.

If the person filing the *Petition for Administrative Review* desires any part of the NPDES permit to be stayed pending the outcome of the appeal, a *Petition of Stay* must be included in the appeal request, identifying those parts to be stayed. Both petitions shall be mailed or delivered to the address listed here:

Environmental Law Judge
Office of Environmental Adjudication
ISTA Building - STE 618
150 West Market Street
Indianapolis IN 46204

Stay Time Frame: If the Petition (s) are filed within eighteen (18) days of the mailing of this Notice, the effective date of any part of the permit, within the scope of the *Petition for Stay* is stayed fifteen (15) days. The permit will become effective again at the expiration of the fifteen (15) days, unless or until an Environmental Law Judge stays the permit action in whole or in part.

Hearing Notification: Pursuant to Indiana Code, when a written request is submitted, the OEA will provide the petitioner or any person wanting notification, with the Notice of pre-hearing conferences, preliminary hearings, hearing stays, or orders disposing of the *Petition for Administrative Review*. The *Petition* must be filed in compliance with the procedures and time frames outlined herein. Procedural or scheduling questions regarding *Petition* should be directed to the OEA at 317/232-8591.

Additional Information

Copies of the Final Permit & related documents are on file & may be inspected at the IDEM, Office of Water Management/P Section, 12th floor/Rm 1203, 100 N. Senate Avenue, Indianapolis, Indiana. **Please note: visitors must sign in at the 12th f Reception Desk, west end, just off the elevator.** Files can be viewed between 9:00 a.m. & 4:00 p.m., Monday-Friday. 10¢ per page). A copy of the Final Permit is also on file & can be viewed at the local Health Department.