

**PHASE II WELLHEAD PROTECTION PLAN
TOWN OF GREENTOWN
PWSID# 5234006
GREENTOWN, INDIANA**

Prepared for:

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1.0 INTRODUCTION

In response to requirements set forth in the 1986 Federal Clean Water Act, the Indiana Wellhead Protection Rule, 327 IAC 8-4.1, was signed into law on March 28, 1997. The Rule established requirements for the development of a Wellhead Protection (WHP) Plan by all community Public Water Supply Systems (PWSS) located in the state. The program, regulated by the Indiana Department of Environmental Management (IDEM), recognizes that groundwater quality can be threatened by specific land uses and activities that occur in areas adjacent to PWSS wells. The WHP Phase I Plan was originally prepared by Foresight Engineering in February 2002 for Greentown Utilities and the Town of Greentown. This WHP Phase II Plan was prepared by Wessler Engineering (Wessler) and documents the implementation of the Phase I Plan and provides a current update of Greentown's management strategies.

1.1 UTILITY BACKGROUND

Greentown Utilities provides water service to customers within the corporate limits of the Town of Greentown. The Town of Greentown is located in eastern Howard County, Indiana, approximately 10 miles east of Kokomo. Greentown utilizes a bedrock aquifer, semi-confined by glacial till, for its water supply. Based on 2010 Census estimates, the Town has an estimated population of 2,415. Therefore, IDEM classifies the PWSS as a small-sized system.

The municipal water supply for the community is supplied by three production wells (Well #1, Well #2 and Well #3). Production Well #1 is located at the Greentown Water Treatment Plant on North Maple Street, Production Well #2 is located near the

Greentown Maintenance Garage on East Uncle Tom Street and Production Well #3 is located at a commercial site owned by New Holland Agricultural Technologies on East Uncle Tom Road. Production Well #1 was constructed in 1957 along with the Town's water treatment facility. The dates of construction for Production Well #2 and Production Well #3 are unknown, but believed to be before 1930. All three production wells have rated capacities ranging from 200 to 400 gallons per minute.

1.2 WHP PROGRAM REQUIREMENTS

IDEM has divided the development of a WHP Plan into two phases, Phase I and Phase II. The Phase I portion of the Plan was approved by IDEM on February 16, 2006. The Phase I portion of the Plan included the following management strategies:

- Formation of a Local Planning Team (community planning);
- Delineation of the WHP Area;
- Inventory of potential contaminant sources;
- Management planning and public education; and
- Contingency planning for emergencies.

The Phase II portion of this Plan is the actual implementation of the Plan. This phase began following IDEM's approval of the Phase I. These five elements form the basis of the WHP Plan implementation as detailed in the following sections:

- Local Planning Team (LPT) Representation;
- WHP Area Delineation using the Model Method;
- Inventory of Potential Contaminant Sources;
- Management Plan Requirements; and
- Contingency Plan Requirements.

1.3 THE LOCAL PLANNING TEAM

The purpose of the LPT is to guide the development and implementation of the WHP Plan. In November 2001, Greentown Utilities and other Town officials began speaking with individuals living in and around the community about WHP issues and the need to protect the community's drinking water resources.

On October 26, 2001, a public notice was placed in the local newspaper, the Kokomo Tribune, announcing the formation of a LPT for the development of the Greentown WHP Plan. A copy of the public notice is provided in Appendix 1-1. The first organizational meeting of the LPT was held on November 6, 2001. Subsequent LPT meetings were scheduled to develop and implement the WHP Plan.

Greentown Utilities and the Town of Greentown would like to thank those members who graciously volunteered their time, energy and talents to assist in the development and implementation of the WHP Plan. Current LPT member names, roles and affiliations are provided in Appendix 1-2.

During the Phase II implementation, the LPT continued to meet, beginning in January 2010, to assist with the implementation of the WHP Plan and provide local knowledge in keeping the Plan current. LPT meeting dates, sign-in sheets and meeting agendas are provided in Appendix 1-3.

2.0 WELLHEAD PROTECTION AREA DELINEATIONS

A WHP Area is defined as the surface and subsurface area that contributes water to a well field. Contaminants introduced to the WHP Area are likely to migrate to the well field within a specified Time of Travel (TOT). The TOT is the distance traveled by a particle of water through an aquifer to a well or well field for a specified period of time. This area can also be thought of as a zone of contribution.

Peerless-Midwest, Inc. was contracted by the Town of Greentown to prepare the Phase I WHP Area delineation for the Town's drinking water well field in April 2000. The results of the delineation are detailed in the WHP Delineation Report. Although the delineation is an integral part of the Phase I WHP Plan, this report was prepared and submitted to IDEM as a separate document. A brief summary of the WHP Area delineation effort is provided below.

2.1 DELINEATION SUMMARY

In order to model groundwater flow conditions at and adjacent to Greentown's wells, the development of a conceptual model for generalization of the groundwater flow system was required. The model selected for this study was a two-dimensional, analytical element, groundwater flow model. The conceptual model was developed using geological publications and maps, engineering reports, well logs and information provided by the Town.

The modeled delineation rate was estimated to be 311,655 gallons per day (GPD). Current pumping data has been analyzed to determine whether or not the Phase I delineation is still appropriate for the Town's current operating conditions. Production well data and total yearly production rates (2011-2015) can be found in Attachment 2-1. The current five year average pumping rate for the Town's well field is 187,398 GPD. Thus, the Phase I delineation is still appropriate for the Town's operating conditions.

Based on the groundwater model, two main water-bearing formations exist in the Greentown area: an unconsolidated sand aquifer and a fractured limestone bedrock aquifer. The sand aquifer is highly discontinuous throughout the area and is mainly confined by clayey glacial till. For the purpose of this study, the fractured limestone bedrock aquifer is the main aquifer of concern.

2.1.1 Bedrock Aquifer

The Town of Greentown has one well field, containing three fractured limestone bedrock wells. The fractured limestone bedrock aquifer is confined by clayey glacial till. Clays and silty-clay confining units lie near the surface and extend to the bedrock aquifer where the sand aquifer is not present. The clay and silt confining units should provide moderate protection to the aquifer from the downward migration of potential contaminants.

Fractured limestone bedrock is encountered at elevations of approximately 740 to 810 feet above mean sea level throughout the area. The Town's municipal wells and many other wells in the vicinity are completed in the fractured limestone bedrock aquifer. Most observed fractures in central and northern Indiana extend to depths of less than 250 feet.

An aquifer performance test was conducted at the Town of Greentown's well field in April 1999 (Well #2). Analysis of the drawdown data collected at Well #1 and Well #3 confirmed that the aquifer is a leaky-confined aquifer, with an average transmissivity for a fractured limestone bedrock aquifer (4,720 ft²/day).

Wildcat Creek was the only surface water feature of significance included in the model. Other lakes, wetlands and streams were not considered in the scope of this model. It is unlikely that smaller surface water features interact with the semi-confined aquifer and would have only limited influences.

According to the Indiana Department of Natural Resources (IDNR), no other high capacity wells were reported within the model focus area.

2.1.2 Aquifer Susceptibility to Contamination

Sediments overlying the aquifer typically consist of clay and silty-clay deposits that serve as confining layers. Silty-clay and clay deposits have a low permeability and help reduce the threat to the aquifer from potential sources of contamination on the surface. Because of the confined nature, this aquifer is much less susceptible to surface and near-surface contamination.

A Source Water Assessment was conducted by IDEM for the Town's well field in June 2009. The study focused on a number of factors including area geology, well field geology, land use and potential contaminant sources. IDEM determined that Greentown's aquifer vulnerability to contamination was moderately low. The Source Water Assessment is included in Appendix 2-2.

Given the hydrogeologic setting of the aquifer and IDEM's Source Water Assessment, the LPT believes there is a low-to-moderate risk associated with surface and near-surface contamination to impact the community's drinking water supply. The community believes that an active WHP Plan will help ensure that the community's groundwater resources are preserved for future generations.

2.1.3 WHP Area Boundary

The model was used to predict the flow lines to the well field over which captured water would travel. This determines the WHP Area. The model results indicated that the five year time-of-travel capture zone for the current well configuration covers approximately 0.098 square miles (63 acres) and is located in the southeast quarter of Section 33 and the

southwest quarter of Section 34, Township 24 North, Range 5 East. The WHP Area boundary is shown on Figure 3-1.

3.0 POTENTIAL CONTAMINANT SOURCE INVENTORY

An inventory of potential sources of contamination that contains a complete listing of existing facilities, sites, practices and activities for both regulated and unregulated potential contaminant sources has been compiled. This inventory includes the identification and discussion of land use within the delineated WHP Area, a land use map overlain with the WHP Area showing potential sources of contamination (Figure 3-1) and a table that summarizes the identified potential sources illustrated on the map (Table 3-1).

3.1 LAND USE DESCRIPTIONS

In order to identify land use categories within the WHP Area, aerial photographs and USGS topographic maps were reviewed. Members of the LPT also provided additional details regarding past and present land use within the WHP Area. During the implementation period, the LPT discussed updates to land use at annual meetings. An aerial photo map illustrating current land use within and around the WHP Area is presented as Figure 3-1.

3.1.1 Greentown Well Field

The WHP Area for the Town of Greentown's Well Field, based on a 5-year TOT, encompasses approximately 63 acres. A significant portion of the WHP Area lies within the corporate limits of Greentown (approximately 75%). As detailed on Figure 3-1, land use within the 1, 5 and 10-year TOT includes industrial, commercial, recreational, agricultural and residential areas. Residential areas include both single and multi-family dwellings.

Transportation routes within and adjacent to the WHP Area include State Road 19, State Road 22 and State Road 213, US Highway 35, County Road South 900, an active railroad

system (Central Railroad of Indianapolis) and local streets within the corporate limits of the Town of Greentown.

3.2 SITE SPECIFIC POTENTIAL CONTAMINANT SOURCES

In order to identify site-specific potential contaminant sources within the WHP Area, EcoSearch Environmental Resources, Inc. (EcoSearch) of Indianapolis, Indiana, performed an environmental database record search on June 8, 2001. The EcoSearch Report is included as Appendix 3-1.

After combining the results of the environmental database searches and local knowledge provided by the LPT, an inventory of specific potential contaminant sources was compiled and is summarized in Table 3-1. Individual sites described in Table 3-1 are arbitrarily designated with a site identification number, keyed to Figure 3-1.

During the implementation period, the LPT discussed updates to potential contaminant sources by examining changes in businesses and chemical storage practices at annual meetings. IDEM's Virtual File Cabinet website was used to research database listings to update the list of potential contaminant sources for this Phase II Plan. Table 3-1 was updated at annual LPT meetings. A discussion of the facilities identified as potential contaminant sources is provided below.

3.2.1 Greentown Well Field

The EcoSearch environmental database record search identified three separate facilities, one facility with four State/Federal database listings (LUST, SPILL, UST, NPDES), located within or adjacent to the 1, 5 and 10-year TOT for the Town's drinking water well field. Based upon current and/or past activities, these facilities are considered potential contaminant sources. An additional five potential contaminant sources, not previously identified by the EcoSearch report, were identified by the LPT at annual WHP

meetings. These potential contaminant sources, their locations, potential contaminants and status of any regulatory permits are summarized in Table 3-1.

3.3 POTENTIAL CONTAMINANT SOURCES BASED ON LAND USE

In addition to site-specific potential contaminant sources, all land use categories illustrated on Figure 3-1 were evaluated to identify those general practices or activities that might result in groundwater contamination. A summary of land use activities and associated potential contaminants are summarized below.

3.3.1 Agricultural Land

Agricultural areas within the WHP Area are primarily used for cultivated row crops. There are no confined feeding operations or permitted land application areas within the WHP Area. Farming activities identified in these areas typically involve the application and storage of fertilizers, pesticides (includes a variety of herbicides, insecticides, rodenticides and fungicides) and the use and storage of petroleum products for farm machinery operation and maintenance. Potential contaminants associated with these activities may include nitrates, phosphates, pesticides, gasoline and diesel fuels, motor oils and lubricants. The Town developed a list of agricultural landowners (Table 3-4) that is updated as needed during annual LPT meetings.

While the improper storage, application and disposal of various fertilizers and pesticides are potential mechanisms for polluting groundwater, the LPT recognizes that existing regulations, licensing requirements and advances in agricultural technology should minimize impacts from these activities. Spills associated with chemical filling and refueling activities, chemical and fuel tank leaks and ruptures and equipment maintenance activities are perceived as the greatest threat to groundwater.

3.3.2 Residential Land

Residential areas include both single and multi-family dwellings inside and outside the corporate limits of Greentown. Activities in these areas typically include the storage and use of common household chemicals, lawn and gardening activities, heating oil storage, automobile and small engine maintenance and repair and swimming pool maintenance.

Potential groundwater contaminants associated with residential activities include household cleaners, disinfectants, solvents, paint, heating oil, automotive and small engine wastes including gasoline and waste oil, fertilizers, pesticides, septic system waste and swimming pool chemicals.

3.3.3 Commercial and Industrial Land

Areas of commercial and industrial land use are found in and/or adjacent to the WHP Area. Excluding any site-specific contaminants identified in Table 3-1, potential contaminants associated with these land uses generally include cleaners, detergents, disinfectants, solvents, paint, automotive wastes, kerosene, heating oil and refrigerants. Lawn and garden maintenance chemical products typically include fertilizers and pesticides.

3.3.4 Parks and Other Recreational Land Uses

There are no parks located within the WHP Area. The Howard County Fair Grounds are located within the WHP Area, at the intersection of Maple Street and Payton Street. Associated potential contaminants include spills of gasoline, diesel fuels, motor oils and lubricants as well as animal wastes and other County Fair related wastes. The Howard County Fair Grounds have been identified as a Potential Contaminant Source.

3.3.5 Wooded and Undeveloped Land

There are no potential contaminants identified for wooded and undeveloped land. This land use is found in small sections, between farm fields, within the WHP Area.

3.3.6 Transportation Routes

Transportation routes within and adjacent to the WHP Area include State Road 19 and State Road 22, US Highway 35, County Road South 900, an active railroad system (Central Railroad of Indianapolis) and local streets within the corporate limits of the Town of Greentown. Maintenance activities along these transportation routes may include road maintenance, the application of herbicides for weed control and the application of deicing chemicals. In addition, transportation related spills and contaminated storm water runoff from roads and streets are potential sources of groundwater contamination.

3.3.7 Private Septic Systems

Residential, commercial and industrial areas located outside of the corporate limits of Greentown treat their on-site wastewater through private septic systems. Groundwater contaminants associated with septic system leachate may include nitrates, bacteria and viruses. Greentown Utilities with assistance from the LPT developed a list of septic system owners within the WHP Area to track over time (refer to Table 3-2). The LPT will continue to identify septic system owners within the WHP Area.

In 2013, the Howard County Area Plan Commission adopted ordinance language to protect local WHP Areas from harmful future development. In 2014, the Town of Greentown also adopted a WHP ordinance, identifying restricted land uses within the WHP Area. A copy of the ordinance is included in Appendix 3-2.

3.3.8 Abandoned Wells

Water wells and natural gas wells may become potential conduits for surface or near surface contamination to reach underlying aquifers when wells become damaged or are no longer in use. Wells that were drilled, driven or dug are typically found in residential, commercial and agricultural areas throughout the county, including the older residential areas inside the corporate limits of Greentown. Some of these wells are still active, but many have stopped producing and may not have been properly abandoned. Potential groundwater contaminants which may enter through abandoned and inactive wells are storm water runoff, spilled or over applied agricultural, residential, and commercial fertilizers and pesticides, used oil, antifreeze, gasoline, road salt, septic system waste and a variety of other substances.

In 2013, a search of the IDNR Oil and Gas Online Well Records Database was completed for oil and natural gas wells located within the WHP Area. Six natural gas wells were identified within the WHP Area. The location and existence of the natural gas wells could never be verified. As a precaution, natural gas well educational information was included in a newspaper article published in 2014.

Several water wells were identified in the WHP Area through the online IDNR Water Well Record Database and by the LPT. Greentown Water Department developed a list of active, inactive and abandoned water wells to track over time (refer to Table 3-3).

The following efforts were used to implement the Phase I WHP Plan and will continue to be implemented in the future. Table 3-3 will be regularly updated to identify active, inactive and abandoned wells within the WHP Area.

- IDNR, Division of Water, Water Well Record Database (online);
- Informational pamphlets distributed at the Town Hall;

- A request for citizens to provide information on abandoned wells was incorporated into annual WHP newspaper articles and notification letters; and
- Residents and property owners within the WHP Area were mailed information on the potential for groundwater contamination that is associated with abandoned water wells.

3.4 POTENTIAL CONTAMINANT SOURCE SUMMARY

As previously discussed, an inventory of land use and potential contaminant sources for the 1, 5 and 10-year TOT WHP Area has been completed. A large portion of the WHP Area consists of residential and agricultural land use.

As summarized in Table 3-1, there are eight site-specific potential contaminant sources within and adjacent to the Town's WHP Area. In addition, practices and activities related to land use are identified as potential sources of groundwater contamination. Abandoned water wells are identified as potential conduits for surface or near surface contamination to impact groundwater. Based on the potential contaminant source inventory for the WHP Area, the management plan detailed in Section 4.0 will consider the following:

- Potential Contaminant Sources Inventory identified in Table 3-1
 - Site-specific contaminants
- Agricultural Land Uses
 - Storage and application of fertilizers and pesticides
 - Storage and use of gasoline, diesel fuel, and lubricants
 - Abandoned wells
- Residential Land Uses
 - Storage and use of common household chemical products
 - Lawn and garden maintenance chemicals
 - Swimming pool maintenance chemicals
 - Petroleum fuels and waste oil

- Abandoned wells
- Commercial and Industrial Land Uses
 - Storage and use of detergents, disinfectants, solvents, paint
 - Storage and use of gasoline, diesel fuel, and lubricants
 - Landscape maintenance chemicals
 - Abandoned wells
- Transportation Routes
 - Pesticide/herbicide use along right-of-ways
 - Road salt or other chemicals used for de-icing roads
 - Automotive wastes (roads)
 - Transportation related spills
 - Potential pollutants present during road or railroad maintenance projects
- Private Septic Systems
 - Potential for residential septic system waste

4.0 MANAGEMENT PLAN

A primary component of the WHP Plan is the development and implementation of a Management Plan that provides procedures for protecting groundwater within the WHP Area boundary. Greentown Utilities together with the LPT have developed a Management Plan that considers the WHP Area boundary for the Town's drinking water well field.

This plan was implemented as documented in this report and associated attachments. The Plan will continue to be updated and implemented. Plan updates and implementation status will be submitted to IDEM every five years. Refer to Tables 4-1, 4-2, 4-3 and 5-1 for more information on implementation of this management plan.

4.1 MANAGEMENT OPTIONS SELECTION CRITERIA

During the initial stages of developing the Management Plan, members of the LPT discussed both regulatory and non-regulatory management options for protecting groundwater. Based on the hydrogeologic characteristics of the aquifer (described in Section 2.0), land use, perceived risk, existing regulations and overall cost, the LPT determined that preferred management strategies would primarily focus on non-regulatory approaches that emphasize public education. However, existing local and county regulations were also evaluated and both non-regulatory and regulatory approaches were incorporated into the WHP Plan. Although the WHP Area includes 1, 5 and 10-year TOT boundaries, no special management considerations (other than what state regulations provide for) were specified for the 1, 5 and 10-year TOT.

4.2 SANITARY SETBACK MANAGEMENT REQUIREMENTS

The sanitary setback is defined as an established area around each production well to protect groundwater from direct contamination. For purposes of this plan, the sanitary setback radius for all three production wells is assumed to be 100 feet. While the standard sanitary setback radius specified by IDEM for a Community PWSS is 200 feet (327 IAC 8-3.4-9), protection radii of 100-feet should be adequate since the Greentown Water Utility currently provides automatic disinfection of drinking water at the water treatment plant. Specific management issues for the setback areas were implemented and recorded in Table 4-1 and will continue to be implemented according to the following strategies:

- Management of the sanitary setback should be consistent with requirements in the Public Water System Well Rule (327 IAC 8-3.4);
- Development of measures to prohibit the storage and mixing of chemicals (other than drinking water treatment chemicals or pesticides that are regulated by the pesticide review board);
- Manage existing transportation routes within setbacks using Best Management Practices (BMPs); and
- Secure wellheads to prevent unauthorized access, tampering or vehicle collision.

Discussions of the specific management issues and plan recommendations for the sanitary setback areas are provided below.

4.3 MANAGEMENT OF SANITARY SETBACK AREAS

Wessler performed a visual inspection of the sanitary setback areas for Well #1, Well #2 and Well #3 on January 28, 2010. This inspection included an analysis of adjacent land use, wellhead security and drainage. The 100-foot radius sanitary setback areas for the

three wells are shown on Figure 3-1. Further descriptions of all three sanitary setbacks and management recommendations are detailed below.

Production Well #1 is located at the Greentown Water Treatment Plant on North Maple Street. The property is bound by an active railway (Central Railroad of Indianapolis) to the north, Maple Street to west and privately-owned farm fields to the south and east. Adjacent to the well and located within the 100-foot sanitary setback area is the Greentown Water Treatment Plant and Water Tower. Production Well #1 was constructed in 1957 along with the Town's water treatment facility. There are no security or drainage concerns associated with Well #1.

Production Well #2 is located near the Greentown Maintenance Garage on East Uncle Tom Street. The property is owned by the Town of Greentown and is approximately bound by Uncle Tom Street to the south, Covalt Street to the east, an active railway (Central Railroad of Indianapolis) to the north and a commercial business (New Holland Agricultural Technologies) to the west. Best Management Practices have been implemented by Greentown Utilities to protect the well and manage the 100-foot setback area. The date of construction for Production Well # 2 is unknown, but believed to be before 1930. There are no security or drainage concerns associated with Well #2.

Production Well #3 is located on a privately-owned commercial site located on East Uncle Tom Street. The property is approximately bound by Uncle Tom Street to the south, Mill Street to the west, an active railway (Central Railroad of Indianapolis) to the north and the Greentown Maintenance Garage to the east. The date of construction for Production Well #2 is unknown, but believed to be before 1930. The property is currently owned by New Holland Agricultural Technologies, formerly Greentown Equipment. The well is secure with a concrete barricade to prevent accidental contact with the wellhead. Best Management Practices have been developed to protect the well and manage the 100-foot setback area. A notification letter with educational materials to protect Well #3 was sent to the property owner in 2015.

Management strategies implemented for the sanitary setback areas for Wells #1, #2 and #3 are summarized and recorded in Table 4-1 and include the following:

- Provide training to all employees regarding restrictive uses within the sanitary setback areas;
- Maintain security locks at well houses and on fences and gates;
- Perform routine security inspections of each well to identify and repair any security problems;
- Restrict future expansions of sanitary and storm sewers within setback areas;
- Establish a working relationship with the property owners of the commercial and residential areas located adjacent to Wells #2 and #3. Recommend property owners minimize the use, application, storage, mixing, loading and transportation of chemicals within the sanitary setbacks;
- Verify through inspections that surface water drains away from all wellheads. Document the inspections and correct any deficiencies; and
- Contact the Central Railroad of Indianapolis about transportation routes within the setback area.

4.4 WHP AREA MANAGEMENT REQUIREMENTS

For managing the 5-year TOT within the WHP Area, but outside the 100-foot sanitary setbacks, the following management strategies were implemented:

- Management or monitoring measures for all potential sources of contamination identified in Section 3.0 of this plan;
- Compliance of production wells with state construction standards and permit requirements;
- Monitoring for contaminants associated with identified potential sources of contamination according to IDEM's standardized monitoring framework (SMF);

- Methods or procedures for maintaining and updating records (consideration for future growth);
- Identification of abandoned wells not in compliance with IC 25-39-4-6 and 310 IAC 16-10;
- Use, application, storage, mixing, loading, transportation and disposal of pesticides in accordance with IC 15-3-3.5, IC 15-3-3.6, and the rules and guidance there under, developed by the pesticide review board and state chemist;
- Notification of property owners, mineral owners and leaseholders of record that they are located within a WHP Area;
- Provide owners and operators of identified potential sources of contamination access to a copy of the WHP Plan;
- Establish a Public Outreach Program to educate the public and owners or operators of identified potential sources of contamination about the consequences of groundwater contamination and the methods available for preventing groundwater contamination;
- Post wellhead protection signs along major thoroughfares (in the future, the Town does not plan to post WHP signs due to security concerns); and
- Any additional management measures deemed important by the LPT such as developing procedures to protect the PWSS from potential new sources of contamination.

A discussion of these elements, specific management issues and plan recommendations are provided below.

4.5 MANAGEMENT OF WHP AREA

The LPT determined the preferred management strategies for the WHP Plan should emphasize public education, awareness, monitoring, voluntary compliance and where applicable, be in conjunction with existing and proposed federal, state and local programs. For future land use considerations, WHP concerns were considered for

inclusion in local regulations. The following sections summarize the management strategies that were implemented for the WHP Area.

4.5.1 Site-Specific Potential Contaminant Sources

At a minimum, management strategies and their implementation dates (summarized and recorded in Table 4-2) for all potential contaminant sources identified in Table 3-1 include the following:

- Notification in writing to each site-specific potential contaminant source located within or adjacent to the WHP Area. As part of this notification, request that these facilities provide information regarding locations of any inactive or abandoned wells on their property. Provide each facility with contact notification information and procedures to follow in the event of a spill (refer to Section 5.0);
- Provide each facility with information regarding the availability of the WHP Plan (requirement under 327 IAC 8-4.1-8, Section 4, B, viii). A copy of the plan is maintained at the Greentown Utilities Office (refer to Section 4.12); and
- Table 3-1 will be updated annually or as the Town becomes aware of information changes. The Town of Greentown will organize an annual LPT meeting to track changes in the potential contaminant sources. The Greentown Town Council will discuss changes and assign appropriate tasks (such as personal contact with property owners, or windshield surveys of the WHP Area) to LPT members.

4.5.2 Agricultural Land Use

The following management strategies (summarized and recorded in Table 4-2) were selected and implemented to address potential groundwater contaminants associated with agricultural land use that includes the storage of agricultural fertilizers, pesticides and petroleum products:

- Identify and provide notification to agriculture land owners of record and tenant farmers located within the WHP Area. Provide educational information in notification letters;
- Identify commercial herbicide and pesticide applicators that may work within the WHP Area. Work with pesticide and fertilizer users to monitor pesticide use and to identify improved methods of using these chemicals if possible. In 2013, agricultural land owners were sent notification letters with WHP educational information. The notifications requested that agricultural land owners share WHP educational information with herbicide and pesticide applicators;
- Provide access to educational materials; and
- Provide agricultural land owners and tenant farmers with access to the WHP Plan. The WHP Plan is available at the Town Utilities Office for public viewing.

4.5.3 Residential Land Use

The following management strategies (summarized and recorded in Table 4-2) were selected and implemented to address potential groundwater contaminants associated with the storage, use and disposal of common household chemical products, lawn and garden maintenance activities (fertilizers, herbicides, pesticides) and swimming pool chemicals:

- Within the Town limits, notify residents living inside the WHP Area. Residents are notified through public outreach strategies including annual CCRs, annual newspaper articles and other various public outreach strategies;
- Provide residents with access to the WHP Plan. The WHP Plan is available at the Town Utilities Office for public viewing; and
- Provide additional public education and outreach as described in Section 4.13.

4.5.4 Commercial and Industrial Land Use

The following management strategies (summarized and recorded in Table 4-2) were selected and implemented to address potential groundwater contaminants associated with commercial and industrial land use that includes the storage of cleaners, detergents, disinfectants, solvents, paint, automotive wastes, kerosene, heating oil, refrigerants, fertilizers and pesticides.

- Identify and provide notification to businesses located in the WHP Area that are not identified as potential contaminant sources through public outreach described in Section 4.13; and
- Provide businesses with access to the WHP Plan. The WHP Plan is available at the Greentown Utilities Office for public viewing.

4.5.5 Transportation Routes

Transportation routes within the WHP Area include state highways, county roads, local streets and an active railroad. As shown on Figure 3-1, these transportation corridors traverse portions of the WHP Area. Potential groundwater contaminants associated with transportation routes include herbicides and pesticides used along right-of-ways, deicing chemicals, automotive wastes (petroleum products and other fluids), maintenance activities and transportation related spills. The following management strategies (summarized and recorded in Table 4-2) were selected and implemented for addressing concerns related to transportation routes within the WHP Area:

- Post signs designating the presence of the WHP Area along thoroughfares near the WHP boundary. In accordance with 327 IAC 8-4.1-8, Section 4, B, ix, the Town originally planned to post WHP signs along major thoroughfares at the perimeter of the Greentown Town Limits to notify drivers that they were entering

a WHP Area. However, due to security concerns the signs were never posted. Currently there are no plans to post WHP signs;

- Contact the Central Railroad of Indianapolis. A notification letter was sent in 2012. Emergency notification procedures, contact information and a WHP Area figure were provided. The Town will send the railroad a notification once per implementation period or as appropriate; and
- Contact INDOT and County Highway Departments. Provide notification and procedures to follow in the event of a spill. Include WHP map to show the location of the sanitary setbacks of the production wells.

4.5.6 Private Septic Systems

Those residential areas that are located outside the corporate limits of Greentown and yet are still located inside the WHP Area, currently treat their on-site wastewater through private septic systems. The LPT believes that the best methodology for addressing concerns related to private septic systems is through education and existing regulations. The following management strategies (summarized and recorded in Table 4-2) were implemented to address this issue:

- Provide notification and educational information to rural residences and owners of residential septic systems. A list of septic system owners was developed and included as Table 3-2. This list is updated at annual LPT meetings; and
- Supply the Howard County Health Department with WHP information. Provide the Health Department with copies of Figure 3-1 and Table 3-2 and discuss issues related to private septic systems. In 2015, the LPT determined that this item was no longer a priority concern, as only two septic system owners have been identified in the WHP Area. The Town of Greentown sends notifications to private septic system owners once per implementation period. Septic System maintenance information is available at the Greentown Utilities Office.

4.6 PRODUCTION WELL COMPLIANCE WITH STATE CONSTRUCTION STANDARDS

The Town of Greentown's existing production wells may not be in compliance with standards for new well construction. However, the wells were installed using the best available technology at the time and the overall integrity of the community's wells appears to be good. Any future wells will be constructed in compliance with applicable State Construction Standards and Well Permitting Standards.

4.7 MONITORING FOR CONTAMINANTS

As part of the Greentown Utilities Standardized Monitoring Framework (SMF) regulated by the IDEM Drinking Water Branch, Greentown Utilities currently monitors groundwater produced at all three production wells. System sampling requirements are as detailed in the SMF (refer to Appendix 4-1). Based on the potential contaminant source inventory, the current monitoring schedule and list of monitoring parameters appears to be adequate to protect the water quality provided to the customer.

An annual Consumer Confidence Report, mailed to all water customers in Greentown by July 1st of each year, provides customers with information regarding sampling parameters and any contaminants detected in their drinking water. A copy of the current Consumer Confidence Report is provided in Appendix 4-2.

4.8 CONSIDERATIONS FOR FUTURE GROWTH

Regarding future growth within the WHP Area, all petitions for changes in land use must go before the Greentown Town Council to receive approval. In order to incorporate WHP concerns into future development and zoning decisions, the following management strategies (summarized and recorded in Table 4-2) were selected and implemented by the LPT:

- Provide notification to Area Planning Commission (APC) with WHP information. Request by mail that the Utilities Office be notified of new building permit applications. Include a copy of Figure 3-1; and
- Work with County officials in reviewing and commenting on planned developments within the WHP Area. In 2013, the Howard County Area Plan Commission adopted ordinance language to protect local WHP Areas from harmful future development.
- In 2014, the Town of Greentown adopted a WHP ordinance, identifying restrictions with the WHP Area. A copy of the ordinance is included in Appendix 3-3.

4.9 ABANDONED WELLS

Active, abandoned and inactive water wells and natural gas wells are potential conduits for surface or near surface contamination to reach groundwater. In addition to the strategies previously listed for site-specific contaminant sources and agricultural land use to identify abandoned wells not in compliance with IC 25-39-4-6 and 310 IAC 16-10, the following management strategies (summarized and recorded in Table 4-2) were selected and implemented by the LPT:

- Attempt to identify any active/abandoned/inactive water wells within the WHP Area. A list of wells has been compiled and included as Table 3-3. This list is updated by the LPT;
- Identify existing and abandoned oil and natural gas wells in the WHP Area;
- At the time that residents, property owners and mineral owners are notified, distribute educational information and request assistance in finding abandoned wells; and
- As abandoned wells are identified, compile a list and provide the owners with educational material regarding hazards, landowner responsibilities and regulations for abandonment.

4.10 PESTICIDES

The Office of the Indiana State Chemist (OISC) regulates the use, application, storage, mixing, loading, transportation and disposal of pesticides in Indiana. Aside from those management strategies (Section 4.3) for restricting use of pesticides near all three wells, Greentown Utilities and the Town of Greentown will rely on existing regulations to provide for adequate groundwater protection from pesticides.

4.11 NOTIFICATION OF PROPERTY OWNERS AND LEASEHOLDERS

Rural property and agricultural land owners as well as leaseholders (applicable leaseholders are tenant farmers currently engaged in farming) located within the WHP Area were identified using available plat maps, local knowledge and the Howard County online GIS database. The Town compiled a list of these entities and notifications were provided to each resident and business within the WHP Area (refer to Sections 4.5.3 and 4.5.4). The list is included as Table 3-4. The list will be updated at LPT meetings using local knowledge. As necessary, the list will be updated using available plat maps and the Howard County GIS online database.

4.12 PROVIDING OWNERS AND OPERATORS OF POTENTIAL CONTAMINANT SOURCES ACCESS TO THE WHP PLAN

Potential contaminant sources, landowners, mineral owners, tenant farmers, businesses and residents located within the WHP Area, as well as the general public, will have access to the WHP Plan. Due to security reasons, the LPT decided to maintain a copy of the WHP Plan for public viewing at the Greentown Utilities Office (112 North Meridian Street) where viewing of the Plan can be monitored.

4.13 PUBLIC OUTREACH PROGRAM

Public education is the cornerstone of an effective WHP Plan. The LPT's established goal for the Public Education Plan is to educate and inform officials, residents and businesses located within and adjacent to the WHP Area about the consequences of groundwater contamination and the methods available for prevention. This effort increased public and private support for the WHP process. In addition to those previously described educational strategies specific to identify potential contaminant sources, as part of an on-going public outreach program, Greentown Utilities and the LPT implemented the following (summarized in Table 4-3):

- The Town of Greentown publishes educational articles in the local newspaper (Greentown Grapevine) regarding WHP activities and concerns;
- Distribute public education materials specific to the protection of groundwater (i.e. IDEM, USEPA, and Purdue University Cooperative Extension Service publications, fact sheets and brochures). These materials are available at the Greentown Utilities Office;
- Provide water customers with information on WHP and groundwater resource issues in the annual Drinking Water Quality Report (Consumer Confidence Report or CCR); and
- If the Utility perceives that the public or specific community interest groups are interested in learning more, informational meetings will be scheduled as needed.

The above strategies are considered an ongoing component of the WHP process. A summary of these Public Outreach strategies is summarized and recorded in Table 4-3. Documentation of Public Outreach strategies is included in Appendix 4-3.

4.14 POSTING WELLHEAD PROTECTION SIGNS

In accordance with 327 IAC 8-4.1-8, Section 4, B, ix, the Phase I WHP Plan required that WHP signs be posted. However, due to security concerns expressed by the LPT and Greentown Utilities, signs were not posted and there are no plans to post signs in the future.

4.15 MANAGEMENT PLAN ADMINISTRATION

Once approved by IDEM, the Greentown Utilities was responsible for the administration of this Management Plan. Management Plan strategies are summarized in Tables 4-1, 4-2, and 4-3. Management issues related to the sanitary setback areas at each production well are summarized in Table 4-1. Key management elements related to land-use categories and abandoned wells are summarized in Table 4-2. Public outreach strategies are summarized and recorded in Table 4-3. These tables can be utilized throughout the implementation of the Plan as a guidance tool and as a place to record dates of completion. Greentown Utilities had ten years to complete their implementation of the Management Plan following IDEM approval of the Phase I submittal. After submittal of the Phase II, Greentown will have five years to implement and update the Plan before submitting another report to IDEM. As detailed in 327 IAC 8-4.1-9, all Phase II submittals and subsequent submittals every five years will include the following:

- Any required updates to the WHP Area delineations;
- An update to the potential sources of contamination inventory;
- Provide documentation and results of the Management Plan implementation; and
- Provide documentation of training given to local responders as detailed in the Contingency Plan (Section 5.0).

5.0 CONTINGENCY PLAN

Contingency planning is critical to minimize impacts to groundwater in the event of a leak, spill or discharge of a hazardous substance within the designated Wellhead Protection (WHP) Area and to provide safe drinking water to the citizens of Greentown in the event of an emergency. Details for the Contingency Plan are provided below.

5.1 AVAILABLE RESOURCES

Contingency plans and operational procedures for responding to emergencies are currently in place for local, county, state and federal agencies. Howard County has an operational 911 system for all emergencies. Those agencies that could respond to hazardous material spills, leaks or illegal discharges within the WHP Area include the following:

- Local Agencies
 - Greentown Fire Department
 - Greentown Police Department
- County Agencies
 - Howard County Sheriff's Department
 - Howard County Emergency Management Agency
 - Howard County Health Department
- State Agencies
 - Indiana Department of Environmental Management
 - Indiana State Board of Health
 - Indiana Department of Natural Resources
 - State Conservation Officer

- Federal Agencies
 - United States Environmental Protection Agency (USEPA)

Emergency and general telephone numbers for emergency response organizations are included in Appendix 5-1.

5.2 DESCRIPTION OF PLAN TO TRAIN LOCAL RESPONDERS

Primary emergency responders within the WHP Area are the Greentown Fire Department and the Greentown Police Department. Because these emergency personnel are trained to respond to situations including chemical spills, it is important that they be aware of specific concerns related to WHP.

The plan to train local responders will become part of the existing Howard County Emergency Management Plan. By adding specific wellhead protection information such as maps defining the WHP Area as well as the Town of Greentown emergency contact personnel and telephone numbers, the existing plan can continue to serve as the basis for training emergency responders in Howard County.

The Town of Greentown will send written requests to the Howard County Emergency Management Agency and the Greentown Fire and Police Departments to include WHP concerns in future training exercises. At a minimum, WHP training for each of these organizations will be performed annually as part of regularly scheduled training and will incorporate those WHP concerns detailed below in Section 5.3.

5.3 DESCRIPTION OF EMERGENCY REPORTING AND RESPONSE TO SPILLS, LEAKS, OR ILLEGAL DISCHARGES

When a spill of a hazardous substance or petroleum product occurs within the WHP Area, the reporting facility will at a minimum, follow the contact procedures detailed in

Appendix 5-1. Greentown Utilities will provide a copy of the contact list to all potential contaminant sources and request that facilities post the information in a conspicuous place and train employees regarding contact procedures. Emergency responses to leaks, spills, and illegal discharges within the WHP Area must incorporate the following wellhead protection concerns:

- Initially identify if spill response activities are located within 1, 5 and 10-year WHP Area boundaries as shown in Figure 3-1;
- Assure that response contractors as well as local, county, state, and federal agencies are informed of WHP concerns. A list of emergency organizations and contact numbers is provided in Appendix 5-1;
- If response activities are within or immediately adjacent to the WHP Area, contact the appropriate Greentown Utilities personnel at the initial response stage. A 24-Hour Telephone Directory of Water Utility personnel is included in Appendix 5-2;
- When necessary, Greentown Utilities will follow the Emergency Response Coordination Plan provided in Appendix 5-3;
- Within the sanitary setbacks, response activities must consider the potential for direct contamination at the wellhead; and
- Response activities must consider potential impacts to groundwater.

5.3.1 Emergency Planning and Response – Chlorine Gas

Chlorine (Cl₂) is a non-flammable gas, liquefied under pressure and is utilized at the Greentown Water Treatment Facility for disinfection of the plant effluent, tertiary filter

influent or filtered water storage. Chlorine gas is an inhalation hazard and will become a strong acid and oxidizer when mixed with water. At most, six containers (capacity of 150 pounds each) of chlorine gas are maintained on-site and stored within the 100-foot sanitary setback area of Well #1, Well #2 and #3.

In the event of a chlorine leak (a leak of chlorine that is enough to produce perceptible irritation) an emergency program will be implemented at the facility. The facility has deemed that it will not conduct its own response to operations for an emergency release of chlorine.

5.3.1.1 Emergency Contacts

In the event of an emergency, local emergency responders are to be contacted immediately. Emergency procedures and contacts are detailed in Appendix 5-1. A 24-Hour Telephone Directory of Water Utility personnel is included in Appendix 5-2. Both, Appendix 5-1 and Appendix 5-2 will be conspicuously posted near all employee available telephones at the facility. All employees will be trained as to the procedures to follow in the event of a chlorine emergency.

5.3.1.2 Evacuation Plan

Once an emergency has been declared, all on-site personnel must promptly leave the facility. Only trained personnel wearing approved self-contained breathing apparatuses (SCBA) will be permitted to re-enter the area. For safe evacuation, facility personnel will evaluate the current wind direction and will quickly move either directly upwind or at a minimum, crosswind to the release site. Chlorine gas is heavier than air and will accumulate in basements and low areas, so those evacuating should avoid low-lying areas. The evacuation will be performed either on foot or in vehicles as required by weather conditions, magnitude of the release and locations of personnel/vehicles at the time of the evacuation.

5.3.1.3 Response to Incidental Releases

Chlorine gas containers are monitored for leaks by a chlorine gas detector that monitors continuously. If a chlorine gas leak is detected, utility employees are not to attempt to repair leaks. The facility will rely on hazardous material (hazmat) responders with the Greentown Volunteer Fire Department to repair leaks. Approved respiratory protection should always be worn, no matter how small the leak. It is not always possible to stay in a "safe" position while working on a leak. A "safe" position may be made hazardous by a change in wind direction, occurrence of new leaks, or the existing leak may get larger. SCBA is required under emergency conditions.

5.3.1.4 Employee Training

Although the facility has elected to not respond to an emergency release of chlorine, all facility employees will be trained in emergency contact procedures. Training will be incorporated into the existing Howard County Emergency Management Plan.

The Town of Greentown will send a written request to the Howard County Emergency Management Agency and the Greentown Fire and Police Departments to include chlorine gas management in future training exercises.

5.3.1.5 Health and Safety Equipment

The facility is not equipped with proper health and safety equipment to respond to chlorine leaks. The facility will rely on hazmat responders with the Greentown Volunteer Fire Department to repair leaks.

5.4 LIST OF INFORMATION TO BE PROVIDED TO LOCAL AND STATE RESPONDERS

Greentown Utilities will provide the following information to the Greentown Fire Department, Greentown Police Department, Howard County Sheriff's Department, Howard County Emergency Management Agency and Howard County Health Department:

- A copy of Figure 3-1 indicating the locations of the WHP area boundary;
- A copy of the Contingency Plan; and
- A copy of emergency procedures and contact information. (refer to Appendix 5-1 and 5-2).

A request will be made that the emergency procedures and contact information be posted in a conspicuous place.

5.5 IDENTIFICATION AND DESCRIPTION OF POTENTIAL ALTERNATIVE WATER SUPPLIES

Greentown's three production wells are located in close proximity to one another and are completed within the bedrock aquifer. As described in the WHP Management Plan, there is a moderate risk for surface and near-surface contamination sources to impact the community's drinking water supply. However, since Well #1 is located approximately 1,000 feet east of Well #2 and Well #3, if groundwater contamination occurred at Well #1, the risk for the other two wells to be immediately affected is not likely. In the event that the water supply at one well is disrupted, the Town does have the ability to provide drinking water to its customers via the remaining unaffected wells. However, this would

likely be an interim solution only. If groundwater contamination at the well field occurs in the future, a permanent alternative water supply would likely be required.

Based on geological information compiled as part of the WHP Area Delineation Report (Peerless-Midwest, Inc., April, 2000) and summarized in Section 2.0, two aquifers, Well #1, Well #2 and Well #3 occur in the Greentown area. It appears that the bedrock aquifer could be further developed in areas outside the influence of the current well field. While information provided in the referenced delineation report could be utilized to guide the development of any future water needs that the community may have, a test-drilling program should be an integral part of any assessment.

In the event the distribution system becomes contaminated, a boil order could be issued to customers and, if required, drinking water for human consumption could be supplied to central distribution points via portable containers and tanks (jerry cans, plastic containers, polytanks, area water haulers with tank trucks, etc.). It is possible that contaminated water in the distribution system could still be utilized for other non-potable uses such as irrigation and firefighting. As defined in Appendix 5-3, the Utilities Superintendent will assess the emergency and make the final determination regarding the operational capabilities of the system.

In some cases, an active program to conserve water may be required. Greentown Utilities has developed a Water Conservation Emergency Management Plan detailed in Appendix 5-5. Greentown Utilities may implement any or all portions of this plan as required under emergency or drought conditions.

If an additional short term public water supply is required, a list of alternate water sources and water haulers has been compiled. Contact information for these water sources and water haulers is included in Appendix 5-4.

5.6 CRITICAL WATER USER IDENTIFICATION AND NOTIFICATION

In the event the water system becomes contaminated, communication to the public is critical. Greentown Utilities has developed an Emergency Response Coordination Plan that details the necessary steps to assure public safety and to keep water customers informed. A copy of this plan is included in Appendix 5-3. A list of news media contacts for public notifications is provided in Appendix 5-6.

If Greentown Utilities determines that the contaminant poses a risk to human health, the broad-based media notifications detailed in Appendix 5-6 will be supplemented with a separate approach for notifying all affected critical water users such as medical facilities, nursing homes, schools, day care establishments, senior centers and retirement complexes. A list of critical water users has been compiled and is included in Appendix 5-7. In the event of a water system emergency, Greentown Utilities will contact these institutions by telephone to provide appropriate instructions. If a critical water user cannot be reached by telephone, a Utilities Office employee will personally deliver the necessary information.

5.7 AVAILABILITY AND IMPLEMENTATION OF THE CONTINGENCY PLAN

Copies of the Contingency Plan should be kept in an easily accessible place. A copy of emergency procedures and contact information (Appendix 5-1 and Appendix 5-2) will be posted in a conspicuous place at the Greentown Utilities Office (112 North Meridian Street, Greentown, IN). In addition, a complete copy of the Contingency Plan will be available at the Utilities Office for inspection by State representatives. In addition to the Utilities Office, one copy of the plan will be kept at the following locations:

- Greentown Police Department (112 North Meridian Street, Greentown, IN 46936);

- Greentown Fire Department (224 North Meridian Street, Greentown, IN 46936);
- Howard County Emergency Management Agency (120 East Mulberry Street, #6, Kokomo, IN 46901);
- Howard County Sheriff's Department (1800 West Markland Avenue, Kokomo, IN 46901); and
- Howard County Health Department (120 East Mulberry Street, #206, Kokomo, IN, 46901).

At the time the Phase I WHP Plan was submitted to IDEM, Greentown Utilities became responsible for administering the Contingency Plan. Greentown Utilities will update the plan when significant changes in department operations occur. At a minimum, the plan will be reviewed every five years and updated as necessary. Key elements of the plan are summarized in Table 5-1. This table can be utilized by the Town throughout plan implementation as a guidance tool and as a place to record task completion dates. The Contingency Plan was implemented following IDEM's approval of the Phase I Plan on February 16, 2006 and is updated annually.

**LOCAL PLANNING TEAM MEMBERS
GREENTOWN WATER UTILITY
TOWN OF GREENTOWN**

Greentown Utilities and the Town of Greentown would like to thank the following citizens who graciously volunteered their time, energy and talents to assist in the development and implementation of this Wellhead Protection Plan:

LPT MEMBER

BACKGROUND INFORMATION

Scott Deyoe*	Town Board President
Michael Mauk*	Certified Water Operator
Michael Mckinstery*	Certified Wastewater Operator
Michael Sanders*	Street Department Employee
Michael Swisher*	Street Department Employee
Heath Haalck*	Town Marshal

In addition to the above individuals, Wessler Engineering provided technical support during plan development.

* - These Local Planning Team members will be directly affected by the implementation of the Wellhead Protection Plan. Each member lives and/or works within the Wellhead Protection Area and will be directly involved in the implementation of the Plan.

**PERSONNEL DIRECTORY
GREENTOWN WATER UTILITY
TOWN OF GREENTOWN**

Telephone numbers where employees can be reached if needed after-hours, weekends, and holidays:

CONTACTS

TELEPHONE NUMBER

Michael Mauk

(765) 480-7032 (Cell)

Utility Office (after-hours)

(765) 628-3263

**CRITICAL WATER USERS
GREENTOWN WATER UTILITY
TOWN OF GREENTOWN**

EDUCATIONAL INSTITUTIONS

NAME	LOCATION	TELEPHONE
Eastern Elementary School	308 S. Harrison St.	765-628-7866
Eastern High School	421 S. Harrison St.	765-628-3333

CHILD CARE FACILITIES

NAME	LOCATION	TELEPHONE
Wesleyan Daycare and Preschool	120 N. Maple St.	765-628-2111
Son Beam Childcare	9151 E. 00 N S	765-628-7444

SENIOR/RETIREMENT/DISABLED COMMUNITIES

NAME	LOCATION	TELEPHONE
Century Fields Retirement Community	825 N. Meridian St.	765-628-3377
Greencreek Estates Apartments	616 S. Harvey Dr.	765-628-2740

HEALTH CARE FACILITIES

NAME	LOCATION	TELEPHONE
Century Villa Health Care	705 N. Meridian St.	765-628-3377

Table 3-1. Wellhead Protection Inventory of Potential Contaminant Sources (PCS), Greentown Water Utility, Greentown, Indiana.

Site Identification ⁽¹⁾	Current Site Name/Owner	Former Site Name/Owner	Site Location (Mailing)	Site Description	Potential Contaminants	Operating Status	Database Listing
1	Town of Greentown	N/A	624 Uncle Tom Street	Municipal office	UST permanently out of service, 2 ASTs of diesel and gasoline fuel within secondary containment	Active	UST (2323)
2	Vacant (Ellis Land Management LLC)	Jacobs East End Service Station	824 E. Main Street	Gravel lot; former gas station, mini-mart (abandoned commercial property)	Fuel oil spill, USTs permanently out of service and tanks removed	Inactive	LUST (199905161), SPILL (8901087) and (9905161), UST (3202), NPDES (ING080227)
3	New Holland Agricultural Technologies	Greentown Equipment	532 Uncle Tom Street	Bobcat loaders and excavators retailer	AST of diesel fuel and 55 gallon barrels of motor oil (located inside)	Active	None Identified
4	Private Residence (James & Lynn Robinson)	N/A	125 North Maple Street (210 Holiday Lane, Greentown, IN 46936)	Residence with oil tank	Buried fuel oil tank	Active	None Identified
5	Howard County Fairgrounds (Greentown Lions Club)	N/A	610 E. Payton Street (PO Box 275, Greentown, IN 46936)	Fairgrounds	Fairground activities, animal waste	Active	None Identified
6	Terrell's Auto Service	Top Ag Greentown Bulk Plant	613 E. Payton Street	Auto service	Oil, fuel, antifreeze, and other auto chemicals	Active	Former CRTK (01755)
7	H&H Enterprises	Kokomo Grain	239 N. Mill Street (PO Box 312, Greentown, IN 46936)	Grain elevator and maintenance shop, 10-yr TOT	UST, as well as oil, fuel, and other chemicals	Inactive	UST (10762)
8	American Automotive (Corum Keck)	Greentown Auto Repair	308 E. Main Street (480 S. 400 E., Kokomo, IN 46902)	Auto service	Oil, fuel, other chemicals	Active	LUST (9110557), UST (011297)
9	Casey's General Store	N/A	9011 E 00 NS (One SE Convenience Blvd., Ankeny, IA 50021)	Fueling station	Oil, fuel, other chemicals	Active	UST (25520)

Table Notes:

Site Identification ⁽¹⁾ - keyed to Figures 3-1 and 3-2

Table 3-1 is updated annually at Local Planning Team Meetings

IDEM Virtual File Cabinet referenced on February 7, 2020

UST = Underground storage tank

LUST = Leaking underground storage tank

SPILL = Indiana Spills Database

CRTK = Community Right to Know

TOT = Time of Travel

NPDES = National Pollutant Discharge and Elimination System

AST = Above Ground Storage Tank

Table 3-2. Residential Septic Systems Within the Wellhead Protection Area, Greentown Water Utility, Greentown, Indiana.

Owner	Address (Mailing)	Status	WHP Phase II Plan 5-Year Update (2017-2021) Implementation	WHP Phase II Plan 5-Year Update (2022-2026) Implementation
RDM Holdings LLC	394 CR N. 900 E., Greentown, IN 46936 (12561 CR E. 300 N., Greentown, IN 46936)	Active	Sent in 2019	To send notification in 2023

Table 3-3. Abandoned/Active/Inactive Water Wells Within the Wellhead Protection Area, Greentown Water Utility, Greentown, Indiana.

Owner	Address (Mailing)	Status	WHP Phase II Plan 5-Year Update (2017-2021) Implementation	WHP Phase II Plan 5-Year Update (2022-2026) Implementation
RDM Holdings LLC	394 CR N. 900 E., Greentown, IN 46936 (12561 CR E. 300 N., Greentown, IN 46936)	Active	Sent in 2019	To send notification in 2023
Bryck Roush & Anna Marie Bennett	414 E. Payton Street, Greentown, IN 46936	Active	Sent in 2019	To send notification in 2023
Casey's Marketing Company	9011 E. 00 NS, Greentown, IN 46936 (One SE Convenience Blvd., Ankeny, IA 50021)	Abandoned	N/A	N/A
Town of Greentown	394 CR N. 900 E., Greentown, IN 46936 (PO Box 247, Greentown, IN 46936)	Abandoned	Production Well #6 abandoned in 2018	Production Well #6 abandoned in 2018

Table 3-4. Agricultural Land Owners Within the Wellhead Protection Area, Greentown Water Utility, Greentown, Indiana

Owner (Tenant Farmer)	Address (Mailing)	WHP Phase II Plan 5-Year Update (2017-2021) Implementation	WHP Phase II Plan 5-Year Update (2022-2026) Implementation
Dennis Maple (HH Tenant Farmer)	950 E 00 NS, Greentown, IN 46936 (12561 CR E 300 N, Greentown, IN 46936)	Sent in 2018	
Jay Echelbarger (GWC Tenant Farmer)	120 N Maple St., Greentown, IN, 46936 (3274 CR S 1330 E, Greentown, IN 46936)	Sent in 2018	
Greentown Lion's Club	610 E Payton St., Greentown, IN 46936 900 E 75 N, Greentown, IN 46936 (P.O. Box 275, Greentown, IN 46936)	Sent in 2018	
Greentown Wesleyan Church	120 N Maple St., Greentown, IN, 46936 (P.O. Box 9, Greentown, IN 46936)	Sent in 2018	
Harold Harvey	950 E 00 NS, Greentown, IN 46936 (11021 CR E 400 N, Greentown, IN 46936)	Sent in 2018	
Randy Wimmer (GLC Tenant Farmer)	610 E Payton St., Greentown, IN 46936 (2328 S 1250 E, Greentown, IN 46936)	Sent in 2018	
Snow Revocable Family Trust	100 N 850 E, Greentown, IN 46936 (665 S 700 E, Greentown, IN 46936)	Sent in 2020	
Catherine Marlau and Danita Rodibaugh	900 E 75 N, Greentown, IN 46936 (3053 W 725 S, Rensselaer, IN 47978)	Sent in 2020	

Table 4-1. Summary of Sanitary Setback Management Strategies, Wellhead Protection Plan, Greentown Water Utility, Greentown, Indiana.

Recommended Sanitary Setback Management Plan Activity	Referenced Section in Plan	WHP Phase II 5-Year Update (2017-2021) Implementation	WHP Phase II 5-Year Update (2022-2026) Implementation
Provide training to all Utility employees regarding restrictive uses within the sanitary setback areas.	Section 4.3.1.1	Utility employees receive WHP training at annual Local Planning Team Meetings. Town Supervisor, Michael Mauk, received WHP training in 2018, at the time of the WHP Local Planning Team Meeting.	Utility employees receive WHP training at annual Local Planning Team Meetings. Certified Water Operator, Michael Mauk, to complete Employee Training Checklist with Utility staff.
Maintain security locks at well houses.	Section 4.3.1.1	Production Wells #1 and #2 are secured in well houses. Production Well #3 is secured with a concrete barrier. Production Wells #4 and #5 are secured with a chain link fence, located approximately 50 feet from each wellhead.	Production Wells #1 and #2 are secured in well houses. Production Well #3 is secured with a concrete barrier. Production Wells #4 and #5 are secured with locks and a chain link fence, located approximately 50 feet from each wellhead.
Perform routine security inspections of each well to identify and repair any security problems.	Section 4.3.1.1	Visual inspections are conducted daily at each of the production wells. No security or drainage issues have been identified.	Visual inspections are conducted daily at each of the production wells. No security or drainage issues have been identified.
Restrict future expansions of sanitary and storm sewers within setback areas.	Section 4.3.1.1	The Greentown Lion's Club owns the sanitary setbacks for Wells #4 and #5. Production Well #6 was abandoned in 2018.	The Greentown Lion's Club owns the sanitary setbacks for Wells #4 and #5. Production Well #6 was abandoned in 2018.
Establish a working relationship with the property owners of the commercial and residential areas located adjacent to Wells #2 and #3. Notify them to minimize the use, application, storage, mixing, loading, and transportation of chemicals within the sanitary setbacks.	Section 4.3.1.1	In 2018, sanitary setback notification letters were sent to the Greentown Lion's Club and Dennis Maple, property owners located adjacent to newly drilled production Wells #4, #5 and #6. In 2019, sanitary setback notification letters were sent to property owners located adjacent to production Wells #2 and #3.	Sanitary setback notification letters to be sent in 2023 to property owners located within and/or adjacent to sanitary setback areas.
Verify through inspections that surface water drains away from all wellheads. Document the inspections and correct any deficiencies.	Section 4.3.1.1	Visual inspections are conducted at each of the production wells daily. No security or drainage issues have been identified.	
Notify the railroad company that railroad is within the setback area for Well #3.	Section 4.3.1.1	A transportation route notification letter was sent to Genesee & Wyoming Railroad Services, Inc. in 2017.	A transportation route notification letter was sent to the Central Railroad Company of Indianapolis in 2022.

Table 4-2. Summary of Recommended Management Strategies for Land Use Categories, Wellhead Protection Plan, Greentown Water Utility, Greentown, Indiana.

Management Category	Recommended Management Activity	Referenced Section in Plan	WHP Phase II 5-Year Update (2017-2021) Implementation	WHP Phase II 5-Year Update (2022-2026) Implementation
Potential Contaminant Sources	Identify and provide notification by mail to all potential contaminant sources listed in Table 3-1. Identify individuals, provide notification and procedures to follow in the event of a spill by mail. Include information on septic system maintenance and identifying and plugging abandoned wells.	Section 4.5.1	Notifications were sent to Potential Contaminant Sources in 2017. Emergency contact information and spill procedures were included with the notifications.	Notifications were sent to Potential Contaminant Sources in 2022. Emergency contact information and spill procedures were included with the notifications.
	Make WHP plan available as a reference at the Utilities office.	Section 4.5.1	The WHP Plan is available at the Utilities Office for public viewing.	The WHP Plan is available at the Utilities Office for public viewing.
	Annually update Table 3-1 in order to track changes in the status of potential sources of contamination within the WHP Area.	Section 4.5.1	Table 3-1: Potential Contaminant Sources, is updated at annual WHP Local Planning Team meetings.	
Agricultural Land Use	Identify and provide notification to all Landowners, Mineral Owners of record and Tenant farmers located within the WHP Area.	Section 4.5.2.1	Table 3-4: Agricultural Land Owners, is updated at annual WHP Local Planning Team Meetings.	Table 3-4: Agricultural Land Owners, is updated at annual WHP Local Planning Team Meetings.
	Identify commercial herbicide and pesticide applicators that may work within the WHP Area (develop list with the assistance of area farmers). Provide commercial applicators with contact information for spills that occur within WHP Area and WHP educational materials.	Section 4.5.2.1	Agricultural Land Owner notification letters were sent in 2018. Notifications included a request that WHP educational information be discussed with land applicators and fuel suppliers. Additional notification letters were sent in 2020 to newly identified Agricultural Land Owners located within the WHP Areas.	
	Provide access to educational materials.	Section 4.5.2.1	Educational materials are available at the Utilities Office for public viewing.	Educational materials are available at the Utilities Office for public viewing.
	Provide Landowners, Mineral Owners, and Tenant farmers with access to the WHP Plan.	Section 4.5.2.1	The WHP Plan is available at the Utilities Office for public viewing.	The WHP Plan is available at the Utilities Office for public viewing.
Residential Land Use	Within the Town Limits, notify all residents living inside the WHP Area. Utilize local Newspaper, Annual Consumer Confidence Report, and other Various Public Outreach Programs (as described in Section 4.13).	Section 4.5.3.1	WHP information has been incorporated into the CCR since 2012. A newspaper article is published in the <i>Greentown Grapevine</i> or <i>Kokomo Tribune</i> annually (2017-2020).	WHP information has been incorporated into the CCR since 2012. A newspaper article is published in the <i>Kokomo Tribune</i> annually (2022-2023).
	Provide residents with access to the WHP Plan.	Section 4.5.3.1	The WHP Plan is available at the Utilities Office for public viewing.	The WHP Plan is available at the Utilities Office for public viewing.
	Provide support to the existing Howard County Recycling District household hazardous waste (hazwaste) collection effort and drop-off sites. Promote the existing program by including information in a newspaper article or advertisement.	Section 4.5.3.1	The county advertises household hazardous waste (HHW) events through the radio, postings, at the Howard Co. Fair and schools. Twice a year mailings are sent along with utility bills advertising HHW clean up.	The county advertises household hazardous waste (HHW) events through the radio, postings, at the Howard Co. Fair and schools. Twice a year mailings are sent along with utility bills advertising HHW clean up.

Table 4-2. (cont.) A Summary of Recommended Management Strategies for Land Use Categories, Wellhead Protection Plan, Greentown Water Utility, Greentown, Indiana.

Management Category	Recommended Management Activity	Referenced Section In Plan	WHP Phase II 5-Year Update (2017-2021) Implementation	WHP Phase II 5-Year Update (2022-2026) Implementation
Commercial and Industrial Land Use	Identify and provide notification to all businesses located in WHP Area that are not identified as potential contaminant sources.	Section 4.5.4.1	WHP information has been incorporated into the CCR since 2012. A newspaper article is published in the <i>Greentown Grapevine</i> or <i>Kokomo Tribune</i> annually (2017-2020). Additional educational materials are available at the Utilities Office.	WHP information has been incorporated into the CCR since 2012. A newspaper article is published in the <i>Kokomo Tribune</i> annually (2022-2023). Additional educational materials are available at the Utilities Office.
	Provide businesses with access to the WHP Plan.	Section 4.5.4.1	The WHP Plan is available at the Utilities Office for public viewing.	The WHP Plan is available at the Utilities Office for public viewing.
Transportation Routes	Post WHP signs along major thoroughfares at the WHP Area boundaries.	Section 4.5.6.1	No longer enforced. Signs are not posted due to security concerns.	
	Contact railroad company. Provide notification and procedures to follow in the event of a spill by mail.	Section 4.5.6.1	A transportation notification letter (Genesee & Wyoming Railroad Services, Inc.) was sent in 2017. The notification letter included a WHP Area figure and WHP educational materials.	A transportation notification letter (Central Railroad Company of Indianapolis) was sent in 2022. The notification letter included a WHP Area figure and WHP educational materials.
	Contact INDOT and County Highway Department. Provide notification and procedures to follow in the event of a spill by mail.	Section 4.5.6.1	Transportation notification letters (INDOT - Tipton Sub District and Howard County Highway Department) were sent in 2017. Notification letters included a WHP Area figure and WHP educational materials.	Transportation notification letters (INDOT - Greenfield District and Howard County Highway Department) were sent in 2022. Notification letters included a WHP Area figure and WHP educational materials.
Private Septic Systems	Provide educational information to all rural residences & owners of residential septic systems. Notify individuals (Table 3-2) through a letter and provide educational materials (include BMP information for septic systems).	Section 4.5.7.1	Private Septic System notification letters with educational information were sent to septic system owners in 2019.	Private Septic System notification letters with educational information are to be sent to septic system owners in 2023.
	Supply Howard County Health Department with WHP information. Provide copies of Figure 2-1, 3-1, Table 3-2 and discuss issues related to private septic systems.	Section 4.5.7.1	The Local Planning Team determined that it was not necessary to request that the Howard County Health Department specifically educate septic system owners within the WHP Area. Two septic system owners have been identified in the WHP Areas.	
Future Land Use	Provide notification to Area Planning Commission (APC) with WHP information. Request by mail that the Utilities Office be notified of new permit applications. (Include a copy of Figure 3-1).	Section 4.8	The Howard County Area Plan Commission approved ordinance language protecting the WHP Area from harmful future development. The Town of Greentown approved a WHP Ordinance in May 2014.	
	Work with County officials in reviewing and commenting on planned developments within the WHP Area.	Section 4.8		
Abandoned Wells	Attempt to identify any abandoned/active/inactive water wells within the WHP Area. Conduct a search of the IDNR Division of Water.	Section 4.9	Updated at annual WHP Local Planning Team meetings.	

Table 4-2. (cont.) A Summary of Recommended Management Strategies for Land Use Categories, Wellhead Protection Plan, Greentown Water Utility, Greentown, Indiana.

Management Category	Recommended Management Activity	Referenced Section in Plan	WHP Phase II 5-Year Update (2017-2021) Implementation	WHP Phase II 5-Year Update (2022-2026) Implementation
Abandoned Wells (cont.)	Identify any existing and/or abandoned natural gas wells in the WHP Area. Conduct a search at the Indiana DNR Division of Oil & Gas.	Section 4.9	A search of the Indiana DNR Natural Gas database was conducted in 2019 and 2020. No natural gas wells were documented within the Greentown WHP Areas.	A search of the Indiana DNR Natural Gas database was conducted in 2023. No natural gas wells were documented within the Greentown WHP Areas.
	At the time that residents, property owners and mineral owners are notified, distribute educational information and request assistance in finding abandoned wells.	Section 4.9	Water Well notification letters containing educational information were sent to well owners in 2019.	Water Well notification letters notification letters containing educational information are to be sent to well owners in 2023.
	As abandoned wells are identified, compile a list and provide the owners with educational material regarding hazards, landowner responsibilities, and regulations for abandonment.	Section 4.9	Educational materials are available at the Utilities office.	

Table 4-3. A Summary of Public Outreach Strategies, Wellhead Protection Plan, Greentown Water Utility, Greentown, Indiana.

LPT Recommended Outreach Activity	Referenced Section in Plan	WHP Phase II 5-Year Update (2017-2021) Implementation	WHP Phase II 5-Year Update (2022-2026) Implementation
Publish educational articles in local newspapers (<i>Kokomo Tribune</i>) regarding WHP activities and concerns.	Section 4.5.1	Newspaper articles are published annually (2017-2020).	Newspaper articles are published annually (2022-2023).
Distribution of public education materials specific to the protection of groundwater (i.e. IDEM, USEPA, and Purdue University Cooperative Extension Service publications, fact sheets and brochures). These materials can be distributed through the Town office.	Section 4.5.1	Educational materials are available at the Utilities Office.	Educational materials are available at the Utilities Office.
Include information on WHP, groundwater resource issues, and Best Management Practices (BMPs) in the annual Drinking Water Quality Report.	Section 4.5.1	WHP information has been incorporated into the CCR since 2012.	
If the Utility perceives that the public or specific community interest groups are interested in learning more, informational meetings will be scheduled as needed.	Section 4.5.1	No requests have been made to the Utility to provide additional information on wellhead protection (2017-2019).	No requests have been made to the Utility to provide additional information on wellhead protection (2022-2023).

Table 5-1. A Summary of Contingency Plan Strategies, Wellhead Protection Plan, Greentown Water Utility, Greentown, Indiana.

Recommended Contingency Plan Activity	Referenced in Plan	WHP Phase II 5-Year Update (2017-2021) Implementation	WHP Phase II 5-Year Update (2022-2026) Implementation
Provide all potential contaminant sources (Table 3-1) with notification that they are located within the WHP Area. Provide PCS with Emergency Contact Procedures, Organizations and Telephone Numbers (Appendix 5-1).	Sections 5.3	Potential Contaminant Source Notifications were sent in 2017. Notifications included WHP educational information.	Potential Contaminant Source Notifications were sent in 2022. Notifications included WHP educational information.
Train Local Emergency Responders. Provide outlines and training materials to the Greentown Police and Fire Departments and remind them to conduct annual training and keep an updated contingency plan in an easily accessible location.	Sections 5.2 and 5.3	Greentown Police Department completed the WHP Training Checklist included in the Emergency Responder Notification letters and revised WHP Contingency Plans on 01/26/2021.	
Provide the Greentown Police and Fire Departments, Howard County Sheriff's Department, EMA and Health Department with maps of the WHP Area boundaries, copies of the Contingency Plan, and emergency contact information (Appendix 5-2).	Section 5.4	The WHP Contingency Plan was revised in 2020. Revised Contingency Plans were distributed to Emergency Responders in 2020.	
Provide written request to the Howard County Emergency Management Agency and the Greentown Fire and Police Departments to include chlorine gas management in future training exercises.	Section 5.3.1.4	The Contingency Plan includes chlorine gas management. Emergency Responder Notifications were sent in 2020 requesting that future training exercises include chlorine gas management.	
Maintain an updated copy of the Contingency Plan at the Town Hall, Greentown Fire and Police Departments, Howard County Health Department, EMA, and Sheriff's Department.	Section 5.7	The WHP Contingency Plan was revised in 2020. Revised Contingency Plans were distributed to emergency responders in 2020.	
Periodically update contingency plan and appendices.	Section 5.7	Contingency Plan Appendices are updated annually at the local planning team meetings. The WHP Contingency Plan is updated once each 5-Year implementation period or more often, as necessary. The Contingency Plan is maintained at the Utilities Office.	
Post emergency procedures and contact information in a conspicuous place and keep a copy of the Contingency Plan in an easily accessible location at the Town Office and Water Department.	Section 5.7	The WHP Contingency Plan is maintained at the Utilities Office and Water Department.	The WHP Contingency Plan is maintained at the Utilities Office and Water Department.

APPENDIX 5-1

**Town of Greentown Emergency Contact Procedures,
Organizations and Telephone Numbers**

EMERGENCY PROCEDURES ORGANIZATIONS & TELEPHONE NUMBERS

Anytime that a spill or leak of a hazardous substance (i.e. herbicides, pesticides, fertilizers, petroleum fuel, chlorine gas or other chemicals) occurs at a site that is located within a designated Wellhead Protection Area, contact the following:

- 1) Immediately call 9-1-1. The 9-1-1 Operator will dispatch the appropriate local and/or county emergency response personnel.**
- 2) Contact the Greentown Utilities Office at 765-628-3263.**
- 3) Within 30 minutes of the spill, contact the Indiana Department of Environmental Management 24-Hour Spill Hotline at 1-888-233-7745.**
- 4) If the spill has impacted surface water, within 30 minutes of the spill call the National Response Center at 1-800-424-8802.**
- 5) Where required, contact a hazardous materials contractor to assist with cleanup of the spill (see contactor list and numbers below).**
- 6) Additional emergency telephone numbers are included below.**

ORGANIZATION

TELEPHONE NUMBER

LOCAL CONTACTS

For all local emergency responders

9-1-1

Greentown Utilities Office
112 North Meridian Street
Greentown, IN 46936

765-628-3263

Greentown Fire Department
224 North Meridian Street
Greentown, IN 46936

765-628-7750

Greentown Police Department
112 North Meridian Street
Greentown, IN 46936

765-628-3434

COUNTY CONTACTS

For all county emergency responders

9-1-1

Howard County Health Department
120 East Mulberry Street
Kokomo, IN 46901

765-456-2408

Howard County Emergency Management Agency
120 East Mulberry Street
Kokomo, IN 46901

765-456-2242

Howard County Sheriff's Department
1800 West Markland Avenue
Kokomo, IN 46901

765-456-2020

Howard Regional Health System
3500 South Lafountain Street
Kokomo, IN 46902

765-453-0702

STATE CONTACTS

Indiana Department of Environmental Management 24-Hour Emergency Spill Hotline	888-233-7745
Drinking Water Branch	317-234-7430
Indiana State Department of Health	317-233-1325
Indiana Department of Natural Resources (IDNR)	800-847-4367
Office of Indiana State Chemist (OISC)	765-494-1492
Indiana Department of Transportation (INDOT)	317-232-5533

FEDERAL CONTACTS

National Response Center (Reporting Oil & Toxic Chemical Spills)	800-424-8802
United States Department of Agriculture (USDA)	800-688-9889
USEPA Region V (Chicago)	312-353-2072

SPILL RESPONSE CLEANUP CONTRACTORS (24-Hour)*

Heritage Environmental Services, LLC.	800-487-7455
SET Environmental	888-322-3374

* Note: By providing the names and numbers of the private Spill Response Contractors above, Greentown Water Utility does not necessarily endorse either of these companies. Other contractors are available as well. It is the responsibility of the individual and/or company responsible for the spill to contact an appropriate Spill Response Cleanup Contractor.

APPENDIX 5-2

Town of Greentown Personnel Directory

**GREENTOWN WATER UTILITY
PERSONNEL DIRECTORY**

Telephone Numbers where employees can be reached if needed after-hours, weekends, and holidays:

CONTACTS

TELEPHONE NUMBER

Michael Mauk, Water Operator

Office: 765-628-3263

Cell: 765-480-7032

Utility Office (after hours)

765-628-3263