

DRINKING WATER SOURCE PROTECTION PLAN

FOR

**The Village of Versailles
Darke County, Ohio**

PWS ID: 1901312

**Developed by:
The Village of Versailles's
Source Water Protection Planning Team**

**Prepared by:
Ohio Rural Community Assistance Program**

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Protecting Your Source: Drinking Water Protection Plan

Protecting your drinking water source involves two efforts: 1) assessing its susceptibility to contamination, and 2) implementing strategies that minimize that risk of contamination.

In May 2003, the Ohio EPA Southwest District Office completed a source water assessment for the Village of Versailles as required by the 1996 Amendments to the Safe Drinking Water Act. This was revised in January of 2008 due to construction of a new well. The Assessment included a delineation of the protection area, potential contaminate source inventory and susceptibility analysis.

- **Delineation of the Protection Area.** The delineation outlines the areas that contribute water to the Village's public water supply wells. It includes both an inner and outer zone. The inner protection zone, or 1 year time of travel (YR TOT), is the land area that would provide ground water to the Village's wells within 1 year of current pumping rates. Ground water within the outer protection zone (5 YR TOT) will reach the Village's drinking water wells in five years or less with current pumping rates. Together they comprise the drinking water source protection area. Note this delineated area is based on both water usage and hydraulic conductivity (ease with which water moves through the aquifer). Thus changes in pumping rates and usage can result in a change in the delineation. See Appendix A for a copy of the Source Water Assessment.
- **Potential Contaminant Source Inventory.** The inventory identifies potential contaminant sources in and around the protection areas that could pose a threat to drinking water. A facility or activity is listed as a potential contaminant source if it has the potential to release a contaminant, based on the kinds and amounts of chemicals typically associated with that type of facility or activity. It does not necessarily indicate that any release has occurred. The potential contaminate list was developed by the Ohio EPA Southwest District Office in conjunction with the Village as part of the source water assessment. During the planning phase the Village updated the list and provided additional notes on the current status of the potential contaminates. Approximately 59 potential contaminant source sites are listed in the inventory. Around 19 are in the 1 YR TOT and 9 in the 5 YR TOT. The remainder are outside of the projection zone.
- **Susceptibility Analysis.** The analysis determines how susceptible the aquifer is to contamination. The Ohio EPA assigns a susceptibility of low, moderate or high based on the hydrogeologic setting, potential contaminant sources, and a review of the ground water quality data. The Village operates 10 wells that pump approximately 350,000 gallons per day. The groundwater source or aquifer is

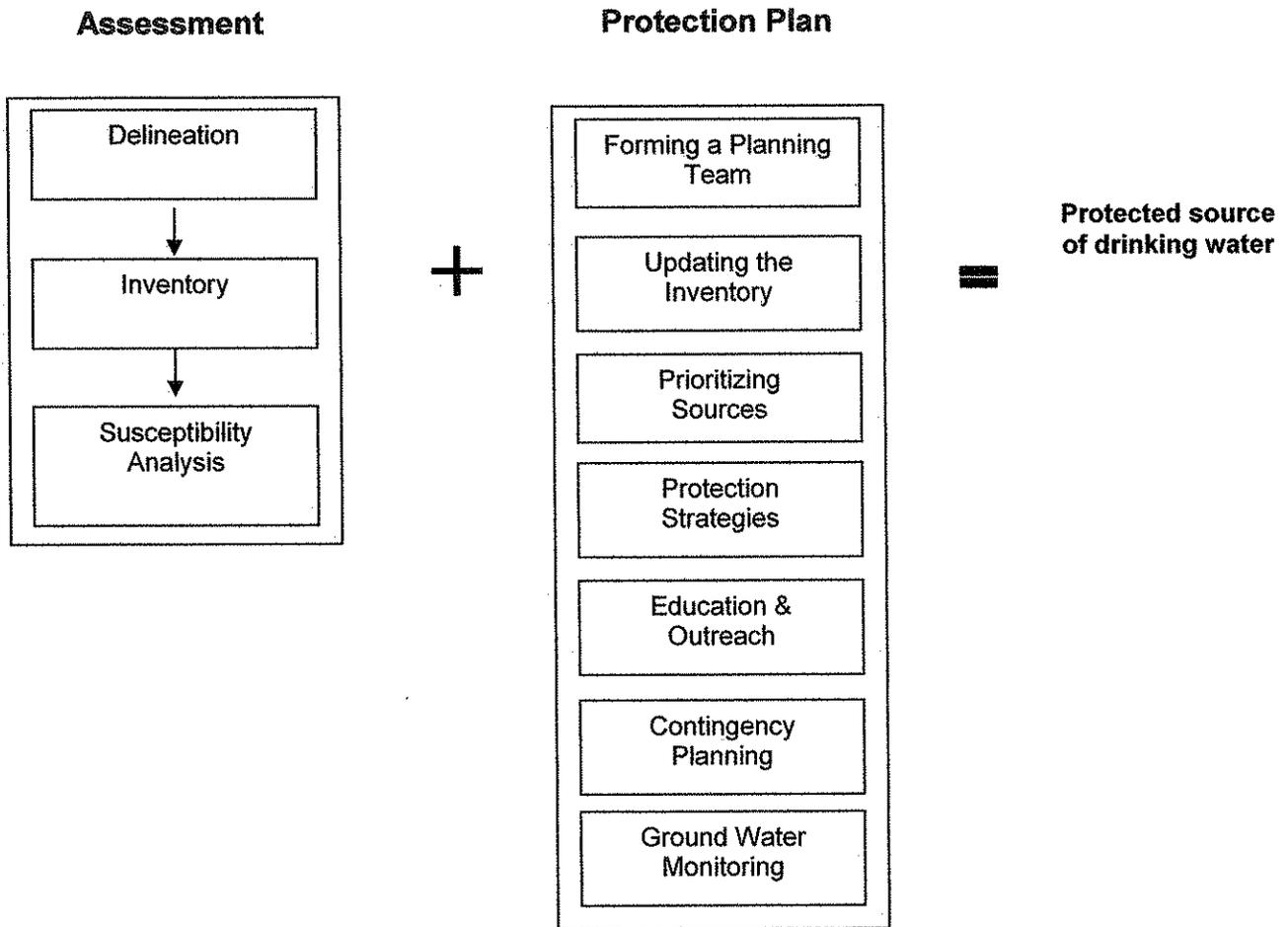
sand and gravel within a complex till. Depth to water in this aquifer ranges from 20 to 50 feet below the ground surface. Moderately well drained silty loams soils are prevalent in the protection zone. Groundwater generally flows toward the south, southeast.

The Ohio EPA determined that the Village of Versailles has a **high susceptibility** to contamination due to the following factors:

- 1) the presence of a relatively thin protection layer of low permeability material overlying the aquifer,
- 2) shallow depth of the aquifer (less than 40 feet below ground surface), and
- 3) the presence of significant potential contaminate sources in the protection zone.

The Protection Plan. Versailles's Source Water Protection Plan was developed by the Village through the Source Water Protection Planning Team. The plan explains how the drinking water source will be protected using strategies selected by the Planning Team. The plan includes the following sections.

- Forming a Planning Team
- Updating the Potential Contaminant Source Inventory
- Prioritizing Potential Contaminant Sources
- Protection Strategies for Potential Contaminant Sources
- Education & Outreach
- Contingency/Emergency Response Planning
- Ground Water Monitoring



Forming a Protection Planning Team

In April 2008, the Village of Versailles convened a source water protection planning team to develop the plan. The Village targeted a diverse group of participants for public participation in the development of the plan. The Village wanted input from local business and industry including large water users and those who might be most impacted by protection strategies.

Source Water Protection Team members are listed below. At the initial team meeting, RCAP reviewed the roles and responsibilities of participating organizations on the team, the outline for the planning process, participation expectations and a copy of the January 2008 Source Water Assessment.

Members of the Protection Team are listed below.

<u>Name</u>	<u>Organization</u>	<u>Representing</u>	<u>Phone Number</u>
Bob Dietrich	Midmark Corp	Local Business Medical Equipment	937-526-8291
Randy Gump	Village of Versailles	Village Administrator	937-526-3294
Dane Nagel	Village of Versailles	Village Utility Superintendent	937-526-3294
Phil McEldowney	King's Command Foods, Inc.	Local Business Food Processing	937-526-3553
Ken Moorman	Wayne Township	Township Trustee	937-526-4631
Ted Schmitmeyer	Wayne Township Farmer	Agriculture	937-526-5995
Jeff R. Subler	Village of Versailles	Council Member	937-526-9154
David Vail	Versailles Schools	School Superintendent	937-526-4773
Mark Voisard	Village of Versailles	Water/Sewer Plant Manager	937-526-3148
Steve Langston	Weaver Brothers, Inc.	Local Business Egg Production	937-526-3968

Updating the Potential Contaminant Source Inventory

Once of the first activities of the planning process was to review the potential contaminant source inventory and provide a status update. Mark Voisard completed a field survey of the inventory and updated the status of land use changes from the original inventory completed in May 2003. This included identifying facilities no longer in business, any changes in location of facilities and status of underground and above ground storage tanks. See Appendix A for the Source Water Assessment inventory with accompanying notes.

As mentioned earlier, the Ohio EPA identified 59 sources of potential contamination. Nineteen of those are within the 1 YR TOT and 9 in the 5 YR TOT. While a number of potential contaminate sources are outside the current time of travel parameters, it is also important to consider these sources in selecting management strategies as the time of travel can change based on pumping rates.

Around 18 potential contaminate sources were identified as underground storage tanks from the State Fire Marshalls database of Leaking Underground Tanks. Note that most of these have been removed and the sites are monitored. An additional 13 potential sources were identified on the U.S. EPA's regulated facilities database (US EPA Envirofacts). This is a database of facilities that either have permits issued through the EPA or have known past releases to land, air or water. Of the 3 above ground storage tanks identified in the inventory, only one is in the 5 YR TOT and it is diked and monitored. Linear potential sources include transportation routes, including streets, the railroad, sewer and storm drainage pipes as well as natural gas lines. The planning team noted that the gas lines are tested and well maintained. Other potential contaminants include waste from improperly functioning on-site septic systems, agricultural, home based businesses, and residential lawn care. Also noted as a potential contaminate source was improperly abandoned private wells. If not properly abandoned, wells can be a direct pathway for contaminants to enter the aquifer. See Appendix B for inventory summary.

Once the potential contaminate inventory was field checked and reviewed, the planning team prioritized the potential sources in order to focus management strategies on top priorities.

Prioritizing Potential Contaminant Sources

The Protection Planning Team prioritized the potential pollution sources. Each member was given three votes with the same weight. The potential sources with the most votes then became the highest priority. The Team chose to develop control strategies for all sources receiving a vote. See Appendix C for the prioritized potential sources.

The Planning Team prioritized sources based on the greatest potential for damage to source water, focusing on those potential entities that may not be regulated. The Team acknowledged that many of the sources identified on the inventory were regulated and had already implemented best management practices for monitoring and/or containing a potential leak or spill.

The top priority concern for the Protection Team was the railroad (received 9 votes). The railroad runs just north and adjacent to the Village's wells and through the 1 YR and 5 YR TOT. Team members recognized that this is a very active spur of CSXT and identified a spill in the wellfield as the most serious threat to their drinking water source.

Underground storage tanks were the second priority receiving 6 votes. The concern for underground storage tanks was not necessarily those falling under current requirements of the Bureau of Underground Storage Tank Regulations (BUSTR) but rather those that don't meet the size threshold to be regulated.

Receiving 4 votes was other transportation routes, specifically State Route 47 and 185. These routes bisect the Village and have significant truck traffic. This is in part due to the warehousing and trucking fleet industries located in the Village.

Fourth priority, receiving 3 votes, was improperly abandoned private wells. The Village allows some private well construction within the corporation limits, mostly for nonresidential, noncommercial use (lawn watering etc.). Estimates for the number of private wells in the corporation limits were around 6, with maybe 3 in the 1 YR TOT. Estimates for private wells located in the Township that are not being served by Village water supplies was around 20 – 25, though it was noted that these residents are using their wells and thus unlikely to dump contaminants in or around the well.

There was a five way tie for fifth priority with each of the following receiving 1 vote: Septic Systems, Sewer Lines, Storm Drains, L&K Plastics and C&G Distributing. It was noted that sewer lines and storm drains are throughout the 1 YR and 5 YR TOT and can be impacted by a relatively large area and, if not properly maintained, can leak improperly treated human waste as well as petroleum products and other pollutants "washed" from impervious surfaces during rain events. Septic and other on-site treatment systems can also contaminate ground water resources if not properly constructed and maintained. The inventory identified 1 house close to the wellfield in the 1 YR TOT. Estimates from the planning team identified another 20 – 25 households that were in the 5 YR TOT that were using private on lot wastewater treatment systems.

The two businesses receiving a vote were of concern due to past problems (The C&G site had a leaking underground storage tank that was removed and now has an above ground tank) and the nature of the current business.

Other sources, including agriculture, surface water, salt storage, etc., did not score any points. These sources will be reviewed again at the next plan update to determine if additional source control strategies may need to be developed.

The following table summarizes the prioritized sources.

**Table 1
Prioritized Potential Contaminant Sources**

Source	Time of Travel (TOT)	Inventory #	Potential Contaminants
# 1 CSXT Railroad	Within 1 & 5 YR TOT	52	Spills, Leakage Of Transported Materials Very Active Line
#2 Underground Storage Tanks	1 Within 1 YR TOT None in 5 YR TOT, around 18 total on inventory	1 – 7 13 - 23	Various Chemicals And Petroleum Products
#3 Transportation Routes	Within 1 & 5 YR TOT	Identified in Update	State Route 47 and 185, Significant Volume
#4 Private Wells	Within 1 & 5 YR TOT	Identified in Update	Improper Disposal of Household, Other Chemicals, Direct Pathway to the Aquifer.
#5 Septic Systems	Within 1 & 5 YR TOT	53	If Not Properly Designed, Constructed, Maintained, Source for Improperly Treated Human/Other Waste
#5 Sewer Lines	Within 1 & 5 YR TOT	48	If Not Properly Maintained, Source of Improperly Treated Human/Other Waste
#5 Storm Drains	Within 1 & 5 YR TOT	49	Leaking Storm Drains Can Release Nonpoint Source of Pollution from Rain Event Runoff, Petroleum Products, Salts, etc.
#5 L&K Plastics	Outside but adjacent to protection zone	42	Potential Petroleum Products, Synthetics, Small Quantity Generator
#5 C&G Distributorship	Outside but adjacent to protection zone	55	Above Ground Storage Tank, Small Quantity Generator

Potential Contaminant Source Control Strategies

After prioritization of potential contaminate sources, the Source Water Protection Planning Team brainstormed management strategies that would help protect the aquifer. See Appendix D for a complete listing of strategies generated during brainstorming.

The following tables outline the action plans of prioritized strategies. They are summarized below.

1. The top management strategy to reduce the risk of contamination from railroad transport was to construct a buffer device south of the railroad tracks and north of the Village's wells. This would help contain a spill and/or leak until first responders could react. The second strategy was to better coordinate emergency response with local and county first responders including raising awareness for the need to protect drinking water supplies. Finally the Team thought it would be beneficial to install signage with emergency contact numbers along the railroad tracks in the wellfield. This would also help raise the awareness of rail transport personnel that they are traveling through a source water protection zone while also providing them with a call number in an emergency.
2. Developing a wellhead or source water protection overlay district was the top management strategy for reducing the risk of contamination of underground storage tanks. The Team recognized that most commercial, industrial tanks are currently regulated by BUSTR, but were concerned about smaller tanks that may not have any regulations. The Team decided that developing a protection overlay district with conditional and/or prohibited uses as well as instituting best management practices would help protect water quality. The Village would take the lead in developing the source water protection overlay district within the corporation including required changes for code and permits followed by possible replication in Wayne Township's zoning and permitting regulations.
3. The top management strategy for reducing the risk of contamination from transportation routes was to install signage along State routes as well as targeted Village streets. The intent was to work with Ohio Department of Transportation to install signage along designated State routes while also installing signs along targeted Village streets to help raise awareness with the general public. The Village will work with the Versailles Exempted Village Schools to develop a design contest for the signage along Village streets. This will be part of an overall public education campaign to raise awareness throughout the Village and Township. The Planning Team also decided to target commercial trucking and warehousing facilities located in the Village to raise awareness of the need to protect drinking water in emergency events as well as through best management practices for transport and storage of potentially hazardous waste.

4. The fourth priority from the potential pollution inventory was improperly abandoned private wells. The top management strategy was to raise awareness of best management practices for owners/operators and the need to protect groundwater resources, particularly for those households located in Wayne Township. The Team decided to incorporate educational materials for on-site wastewater treatment systems as well since the target audience was relatively the same. The Village will use the development of the protection overlay district to restrict and/or eliminate private well construction in the protection zone while also ensuring that requirements are enforced for proper well abandonment. In addition the Village will continue to implement its backflow prevention program while distributing educational campaign materials developed to those entities with backflow prevention devices.
5. The Village currently has a long term capital improvements plan for waste and storm water facilities. They are also in the process of developing a long term control strategy to address infiltration and inflow with their wastewater facilities. The management strategy for these potential sources is to continue to maintain, replace and upgrade infrastructure to protect source water as well as provide for optimum infrastructure performance.
6. Commercial and Industrial Waste Management was also targeted for source control strategies. Strategies include increasing awareness of the need to protect the Village's source while also encouraging best management practices for storage and transport of potentially hazardous materials and promoting adequate contingency planning. Some of these facilities will actually be targeted under other source control strategies, i.e. targeting trucking and warehousing facilities as well as those with backflow prevention devices. But this strategy will ensure that outreach will include all potential commercial/industrial facilities located in and adjacent to the protection zone. The Village will also explore the feasibility of partnering with the Solid Waste District to sponsor a drop off day in the Village/Township.

Source Control Strategies Action Plans

- 1a. CSX Railroad Potential Spills and Leaks – Install Containment Device Between Wells and Railroad Tracks in Wellfield.
The goal of this strategy is to contain any potential spill until emergency personnel respond.

Tasks	Time Frame	Person(s) Responsible
Determine costs for the installation of a containment device on the south side of railroad tracks. The south side was chosen as the first priority for construction because of proximity to the Village's wells and ease of implementation. The land is currently owned by the Village.	By April 2009	Dane Nagel - Utility Superintendent
Work with Council to appropriate resources for construction.	By October 2009	Randy Gump – Village Administrator Village Council
Construct containment device.	By March 2010	Dane Nagel – Utility Superintendent
Research the feasibility of constructing containment device on north side of tracks, property not owned by the Village.	By December 2010	Dane Nagel – Utility Superintendent

- 1b. CSX Railroad Potential Spills and Leaks – Raise Awareness County, City and Other Local Emergency First Responders.
 The goal is to ensure that all organizations involved in emergency response are aware of source water protection needs. Meeting objectives will also emphasize integrating and collaborating on contingency planning and identifying and supporting any needed training that targets best management practices for source water protection. The Village will also use this opportunity to get input on their contingency plan and make any needed improvements.

Tasks	Time Frame	Person(s) Responsible
Identify representatives from County/Village/Township - first responders (Hazmat, EM, police, fire, etc.).	By April 2009	Randy Gump, Village Administrator Ken Moorman, Wayne Township Trustee June Mung, Director, Darke County EMA/Homeland Security
Identify/develop educational materials for meeting including protocol for contacting public water supplier in event of potential contamination event.	By December 2009	Randy Gump, Village Administrator
Conduct meeting: goal is to raise awareness for need to protect source water in the event of spill/leak/fire and support training on best management practices. Discuss contingency plans and determine adequacy for source water protection. Distribute above materials including protocol.	By January 2010	Randy Gump, Village Administrator

- 1c. CSX Railroad Potential Spills and Leaks – Install Signage with Emergency Contact Numbers.
 The goal of this strategy to raise awareness of train operators that they are traveling through a drinking water protection area and also readily provide a contact in case of a spill.

Tasks	Time Frame	Person(s) Responsible
Determine location for 2 to 4 signs in wellfield along railroad tracks.	By June 2009	Dane Nagel – Utilities Superintendent
Develop design contest program.	By September 2009	Dane Nagel – Utilities Superintendent With David Vail, District Superintendent
Purchase and install.	By March 2010	Dane Nagel – Utilities Superintendent

2. Underground Storage Tanks – Change Current Zoning, Permitting Requirements to Better Ensure Protection of Source Waters.
 The goal is to develop a source water protection overlay district and/or change current permitting requirements in order to minimize risk from underground storage tank leaks. The intent would be to develop requirements that would mirror BUSTRs for all tanks, regardless of size. In addition, owners/operators would have to submit contingency plans as part of the permit as well as annual inspection reports. The Village would also reserve the right to conduct annual inspections as well as obtain annual inspection reports from other agencies. During the development phase, the Village may also develop additional requirements for other potential sources, i.e. above ground storage tanks and private well installation (see 4b below).

Tasks	Time Frame	Person(s) Responsible
Research and develop legislation for a source water overlay district and/or change in current permitting requirements.	By September 2009	Randy Gump, Village Administrator Ken Moorman, Wayne Township Trustee Fire Chief, Robert Frey
Develop draft overlay district language and/or updated permitting requirements and present to Council.	By December 2009	Randy Gump, Village Administrator Village Council
Conduct public hearings.	By January 2010	Randy Gump, Village Administrator
Implement.	By June 2010	Randy Gump, Village Administrator
Work with Township to replicate above process in Township's zoning code.	By December 2010	Ken Moorman, Wayne Township Trustee Randy Gump, Village Administrator

3a. Transportation Routes – Install Signage Along State Routes and Other Streets in Protection Area.

This goal is similar to addressing rail transportation. However it also coincides with public educational goals and raising awareness for all residents. The Village will work with the Versailles Exempted Village Schools to sponsor a design contest for signs not located on state routes. The intent is to integrate the design contest with an overall public education campaign. It also serves to provide a visual reminder of important water resources, which are predominately buried and thus “out of sight, out of mind” of most residents.

Tasks	Time Frame	Person(s) Responsible
Determine number and exact location of proposed signage.	By June 2009	Dane Nagel, Utilities Superintendent
Contact ODOT with endorsed plan to install signs along state routes.	By September 2009	Dane Nagel, Utilities Superintendent
Determine design/costs of signs for Village streets.	By December 2009	Dane Nagel, Utilities Superintendent With Versailles Exempted Village Schools (High, Middle and Elementary Schools)
Install signage along state routes and Village streets.	By March 2010	Dane Nagel, Utilities Superintendent

36. Transportation Routes – Increase Awareness of Commercial Trucking and Warehousing Facilities of The Need to Protect Drinking Water during Emergency Response Events.

The goals of this source control strategy is both to increase awareness and insure adequate contingency plans are in place. The Planning Team felt individual visits to facilities would be the most effective means to reach these potential sources.

Tasks	Time Frame	Person(s) Responsible
Develop and/or identify educational materials to distribute at meetings. This may include general educational information on source water protection, a protocol of emergency response and elements to include in contingency planning that address source water protection.	By December 2009	Dane Nagel, Utilities Superintendent
Identify and contact representatives from above facilities and make site visit appointments.	By March 2010	Dane Nagel, Utilities Superintendent
Conduct site visits.	By June 2010	Dane Nagel, Utilities Superintendent
Replicate as ownership/management changes.	Ongoing	Dane Nagel, Utilities Superintendent

4a. Private Wells/On Site Wastewater Treatment-- Increase Awareness of the Need to Protect Ground Water Resources Through Best Management Practices for Private Owners/Operators.

The Planning Team identified educational strategies as a method to reduce the risk of contamination from these sources. There are numerous educational materials available for properly managing on site systems. The implementation team will work with the Health Department in identifying the most pertinent and effective educational materials and integrating these with educational materials specific to source water protection. This goal will also allow for better collaboration and enforcement from the Health Department by heightening their awareness of the source water protection area.

Tasks	Time Frame	Person(s) Responsible
Identify owners/operators in source water protection area.	By June 2009	Mark Voisard, Water/Sewer Plant Manager Ken Moorman Township Trustee Health Department Representative
Develop/identify educational materials for homeowners including general educational on source water protection and best management practices for on lot private systems.	By September 2009	Mark Voisard, Water/Sewer Plant Manager Ken Moorman Township Trustee Health Department Representative With Educational Subcommittee
Distribute materials.	By January 2010	Mark Voisard, Water/Sewer Plant Manager Ken Moorman Township Trustee Health Department Representative

- 4b. Private Wells – Restrict and/or Eliminate New Well Construction in Village.
 This management strategy will be incorporated into the development of the source water protection overlay district and/or changes in permitting requirements. See #2 above.

Tasks	Time Frame	Person(s) Responsible
<p>Research potential for restricting/eliminating new construction of wells in Village's protection zone. Language will allow denial of applications for new well construction if deemed negative impact on aquifer and/or allow for additional restrictions needed to protect source water.</p>	<p>By June 2009</p>	<p>Mark Voisard, Water/Sewer Plant Manager Randy Gump, Village Administrator</p>
<p>Develop legislation for overlay district and/or revise current language in permitting requirements for new well construction.</p>	<p>By September 2009</p>	<p>Mark Voisard, Water/Sewer Plant Manager Randy Gump, Village Administrator</p>
<p>Present to Council.</p>	<p>By December 2009</p>	<p>Randy Gump, Village Administrator</p>
<p>Conduct public hearings if needed.</p>	<p>By January 2010</p>	<p>Randy Gump, Village Administrator</p>
<p>Implement overlay district and/or additional permitting requirements for new well construction.</p>	<p>By June 2010</p>	<p>Randy Gump, Village Administrator Village Council</p>

- 4c. Private Wells – Implement Current Best Management Practices for Proper Abandonment.
 The goal is to ensure that proper abandonment standards are being enforced throughout the protection zone both within corporation limits and in Wayne Township.

Tasks	Time Frame	Person(s) Responsible
Integrate proper abandonment protocols into any permit to install for new well development in the Village's overlay district, zoning requirements.	By September 2009	Randy Gump, Village Administrator Mark Voisard, Water/Sewer Plant Manager
Present to Council.	By December 2009	Randy Gump, Village Administrator
Conduct public hearings.	By January 2010	Randy Gump, Village Administrator
Implement.	By June 2010	Village of Versailles
Work with Township to replicate above process in Township permitting requirements.	By December 2010	Ken Moorman, Wayne Township Trustee Randy Gump, Village Administrator

4d. Private Wells – Continue to Implement Backflow Prevention Program.

The goal is to continue to implement best management practices in the Village’s backflow prevention program. The Village will also integrate source water protection educational efforts by targeting these facilities with outreach efforts.

Tasks	Time Frame	Person(s) Responsible
Review current policies to make sure they meet the need of protecting source water resources.	By June 2009	Mark Voisard, Water/Sewer Plant Manager
Revise if needed.	By September 2009	Mark Voisard, Water/Sewer Plant Manager
Present any needed changes to Council.	By December 2009	Randy Gump, Village Administrator
Village currently requires annual inspections from certified professionals for all backflow prevention devices. Continue to review annual reports of inspections and insure they are following requirements.	By January 2010	Mark Voisard, Water/Sewer Plant Manager
Distribute educational information on source water protection activities. Note these materials will be developed in conjunction with other educational materials.	By March 2010	Mark Voisard, Water/Sewer Plant Manger.

5. Village Sewer Facilities – Continue to Maintain, Replace and/or Upgrade Infrastructure to Reduce Risk of Leaking and Overflows.

The goal is to continue to identify needs and appropriate resources to keep infrastructure in optimum operating condition.

Tasks	Time Frame	Person(s) Responsible
Continue to develop long term capital improvement plan for sewer facilities.	Updated Annually	Randy Gump, Village Administrator Village Council
Identify needs for wastewater treatment plant upgrade and develop implementation schedule.	By December 2009.	Dane Nagel, Utilities Superintendent
Develop long term control strategy for infiltration/inflow and implementation schedule.	By December 2010	Dane Nagel, Utilities Superintendent
Implement above plans.	2010 And Annually Thereafter	Village Council

6. Commercial/Industrial Waste Management – Increase Awareness and Encourage Best Management

Practices including Contingency Planning.

While many facilities were targeted through other management strategies, the Planning Team also wanted to make sure all facilities that dealt with potential contaminants were included in protection planning efforts. This strategy mirrors those identified for Transportation/Warehousing Facilities and those governed under the backflow prevention requirements.

Tasks	Time Frame	Person(s) Responsible
Identify representatives from targeted facilities.	By June 2009	Mark Voisard, Water/Sewer Plant Manager
Identify/develop informational packet that will include educational information on source water protection as well as information on Ohio EPA's pollution prevention and compliance assistance program (and other identified resources). The Village will also use this opportunity to distribute emergency response protocol and reinforce the need for contingency planning.	By September 2009	Mark Voisard, Water/Sewer Plant Manager
Contact representatives and schedule meetings.	By January 2010	Mark Voisard, Water/Sewer Plant Manager
Conduct Meetings.	By June 2010	Mark Voisard, Water/Sewer Plant Manager

7. Work with Solid Waste District to Sponsor Recycling/Drop-Off Day in Village.
 Though this was not identified as a management strategy during the brainstorming session, the Team thought it would be a good idea to partner with an existing organization to bring needed services to the Village. This strategy will help reduce the risk of contamination from residential hazardous waste.

Tasks	Time Frame	Person(s) Responsible
Contact the Solid Waste District and evaluate potential for sponsoring a Drop Off Day in Versailles.	By September 2009	Dane Nagel, Utilities Superintendent
If feasible, develop schedule, program logistics and obtain Council approval.	By December 2009	Randy Gump, Village Administrator
Sponsor the Recycling/Drop- Off Day.	By December 2010	Dane Nagel, Utilities Superintendent

In summary, for the calendar year 2009 the Village will concentrate on developing educational and public awareness materials, revising zoning legislation, changing code and permitting requirements, identifying targeted audiences and collaborating with other agencies. Actual implementation of the management strategies will occur in 2010. The Planning Team felt that management strategies would have a bigger impact throughout the Village if there was a concentrated effort to “blitz” the community with activities around source water protection. Thus instead of implementing one strategy one year, and then moving on to the next one, the source control strategies would be implemented in conjunction with overall educational and outreach activities detailed below.

Education and Outreach

This section overviews strategies the Village proposes to implement for education and outreach activities. The goal of the overall education and outreach plan is to raise public awareness of the need to protect drinking water supplies and build public support for implementation strategies.

Educating Public Officials:

The Planning Team included elected representatives from Wayne Township and the Village, a Township Trustee and Council member. The Village Administrator, Utilities Superintendent and Water/Sewer Plant Manager also participated in the planning process. These members will continue to provide updates to Council as they work to implement management strategies. In addition, the Source Water Protection Planning Team will have an annual plan review meeting in conjunction with Council. Wayne Township Trustees will also be invited to attend the meeting.

Educating the General Public:

All Team members will continue to serve as ambassadors promoting good stewardship of the community's drinking water source to their neighbors and colleagues. The Village has also identified strategies outlined in the following table for the general public. As stated earlier, the Village will target 2010 for conducting media and educational events in conjunction with the implementation of their priority source control strategies. Many of these efforts will be conducted on an annual and/or ongoing basis. Also note that homeowners in the protection area that are not on public water and sewer will also be targeted for distribution of educational materials.

Educating Business and Industry:

Management strategies identified rely in large part on educating facility owners/operators and employees on the need to protect drinking water supplies. The Village will conduct outreach by targeting local business and industry with on site visits to distribute materials. This also provides an opportunity for staff to get input on how the Village can continue to assist local business and industry in implementing best management practices and working in partnership to prevent and reduce the risk of potential contamination to the Village's water supply. The overall media campaign will also reach this audience.

Education and Outreach Strategies	Time line for Implementation	Who (name and title) will implement this strategy?
Create a web page that highlights drinking water resources in the Village including source water protection activities.	By January 2010 with updates as needed.	Utilities Superintendent
Incorporate information on the source water protection plan and ongoing updates on implementation activities into the Consumer Confidence Reports. The web page will be promoted on the CCR reports as well.	By July 2010 and annually thereafter.	Water/Sewer Plant Manager
Provide ongoing updates in the Village's newsletter. Articles on source water protection activities and general educational information will be published in the newsletter when pertinent and at least annually.	By February 2010 and at least annually thereafter.	Village Administrator
Participate as an educational vendor in the annual <u>Poultry Days</u> community festival. The Village will partner with an existing vendor or obtain their own booth to display educational information.	By June 2010 and annually thereafter.	Utilities Superintendent
Continue to conduct tours of the Village's water treatment plant and wellfield for the local schools and as well as the general public. These tours will be conducted during National Drinking Water Week.	By May 2010 and annually thereafter.	Water/Sewer Plant Manager

Education and Outreach Strategies	Time line for Implementation	Who (name and title) will implement this strategy?
<p>Develop a public media campaign around source water protection. In conjunction with the above activities, the Village will explore developing a “brand” to publicize the need to protect water resources. The Village will review existing campaign materials (including the Source Water Collaborative’s “Your Water – Your Decision,” the Groundwater Foundation’s “Good Water, Good Health, Good Choices,” and the National Environmental Services Center’s “SMART about Water”) and/or evaluate the feasibility of designing their own. The signage design contest will be part of the media campaign. In addition, the Village has a local cable access channel that can be used for public service announcements and other educational programming. See Appendix E.</p>	<p>By January 2010</p>	<p>Village Administrator</p>

Drinking Water Shortage/Emergency Response

This section summarizes how the Village of Versailles is prepared for and responds to any drinking water shortages or emergencies that may occur. See Appendix F for a copy of the Village's Contingency Plan.

Note the Planning Team decided that the Contingency Plan did not need updated at this time. Since one control strategy was to coordinate activities with emergency response and first responders, the Team felt it would be beneficial to get input from these experts on any needed improvements to the current plan.

The current Contingency Plan addresses the following.

1. What are the long-term alternative sources of drinking water availability should something happen to the Village of Versailles's source of drinking water?

Currently the Village has ten wells for their source supply. However, they are located in close proximity in the wellfield. The Village of Russia is currently constructing a water treatment plant. In the event of a contamination event that would affect the entire wellfield, Versailles would have to evaluate the alternatives of developing a new source versus connection with another system. Russia is approximately 4.5 miles away and would be the closest facility for connecting for bulk water purchase. Short term solutions for a potential contaminate events include: a) shutting down of affected wells, b) notifying the public of conservation needs, c) hauling water for distribution through pumping to hydrants, and d) shutting down of non-essential and non-critical users.

2. What are the financial mechanisms that the Village of Versailles will use to implement these long-term alternatives?

The Village has established a Water Enterprise Fund and Water Supply Development Fund. The Development Fund is capitalized by transfers from the income tax fund on an as needed basis, the Enterprise fund from user charges. Both Funds can be used for emergency situations and other needed capital improvements. Other funding sources available to the Village for water supply capital improvements are the Ohio Water Development Authority and/or the Ohio EPA's Water Supply Revolving Loan Fund Account.

3. How is the Village of Versailles planning for future water supply needs?

The Village has an ongoing capital improvement planning process. Current development of the wellfield and expansion of water supply is a result of that process. The Village will continue to incorporate water supply and contingency source planning in its ongoing identification of capital improvement needs.

Ground Water Monitoring

The Village of Versailles does not currently have a raw water monitoring program. Current water quality is monitored through the required testing of treated water. This includes sampling for inorganics, volatile organic chemicals (VOCs) and synthetic organic chemicals (SOVs) as well as nitrates and radiologicals. Note many of these are sampled once a year and all may not be required every year. However, past levels have shown to be insignificant and/or below detectable limits.

The desirability of ground water monitoring depends on: 1) the susceptibility of the aquifer, 2) the presence of contaminant plumes and point sources, and 3) the protective strategies selected to protect the aquifer.

The Planning Team decided that no additional monitoring was needed. While the Village was identified as having a high susceptibility to contamination, most sources are outside of the 1 YR TOT. In addition, the Village is pursuing management strategies in their protection area to reduce the risk of contamination including developing containment devices, limiting construction and promoting rapid response if a spill should happen. The Village will re-examine the need to develop a ground water monitoring program if identified management strategies are not implemented, pumping rates change, and/or significant changes in land use occur in the Village.

Protection Plan Updates

The Village of Versailles and the Source Water Protection Planning Team have committed to review the Drinking Water Source Protection Plan annually, beginning one year after the plan's endorsement from Ohio EPA. The Planning Team as well as the Wayne Township Trustees will be invited to a Council meeting to discuss the progress and challenges of planning implementation efforts. After three years, the Planning Team will reconvene to address any revisions and/or updates that may be needed. Any revisions of the Protection Plan will be documented on the front cover by adding "Revised [date]" beneath the date at the bottom of the page.

When evaluating the need to complete a plan update or revision, the Village should also consider the following.

Delineation Updates

- Has the amount of pumping increased or decreased since the date Ohio EPA provided the Drinking Water Source Assessment report?
- Have any wells been added or removed?
- Has a new wellfield been added or are there any plans for a new wellfield?

If the answer to any of the above questions is yes, the Village will contact Ohio EPA's Source Water Assessment and Protection Program staff at the Southwest District Office to determine whether the protection area should be re-delineated. Ohio EPA staff can provide this service without charge, or—if preferred—the community may contract with a private consultant.

Potential Contaminant Source Inventory

- Has the community developed rapidly?
- Have land uses in and around the protection area changed?
- Has management of businesses in the protection area changed?

Ohio EPA recommends re-inventorying the protection area at least every 10 years and encourages updates at shorter intervals, especially where development has been rapid.

Ohio EPA's Source Water Assessment and Protection Program staff can provide assistance, with inventory updates and can also provide an updated map of potential contaminant sources located within and near the protection zone.

Protection Plan

- Is the list of Protection Team members and contact numbers current?
- Are there new potential contaminant sources that need to be addressed with new source control strategies?
- Should local businesses and residents be reminded about the location of the protection area by redistributing educational materials?
- Are there any updates concerning the size and shape of the protection area that local businesses and residents need to know about?
- Are there any updates to the Drinking Water Shortage/Emergency Response Plan?
- Are there new potential contaminant source or land use issues that would influence the need to develop a ground water monitoring program?

The Village and Protection Planning Team will review these issues and determine needed updates and revisions to the plan based on ongoing community improvements and challenges for implementing management strategies.

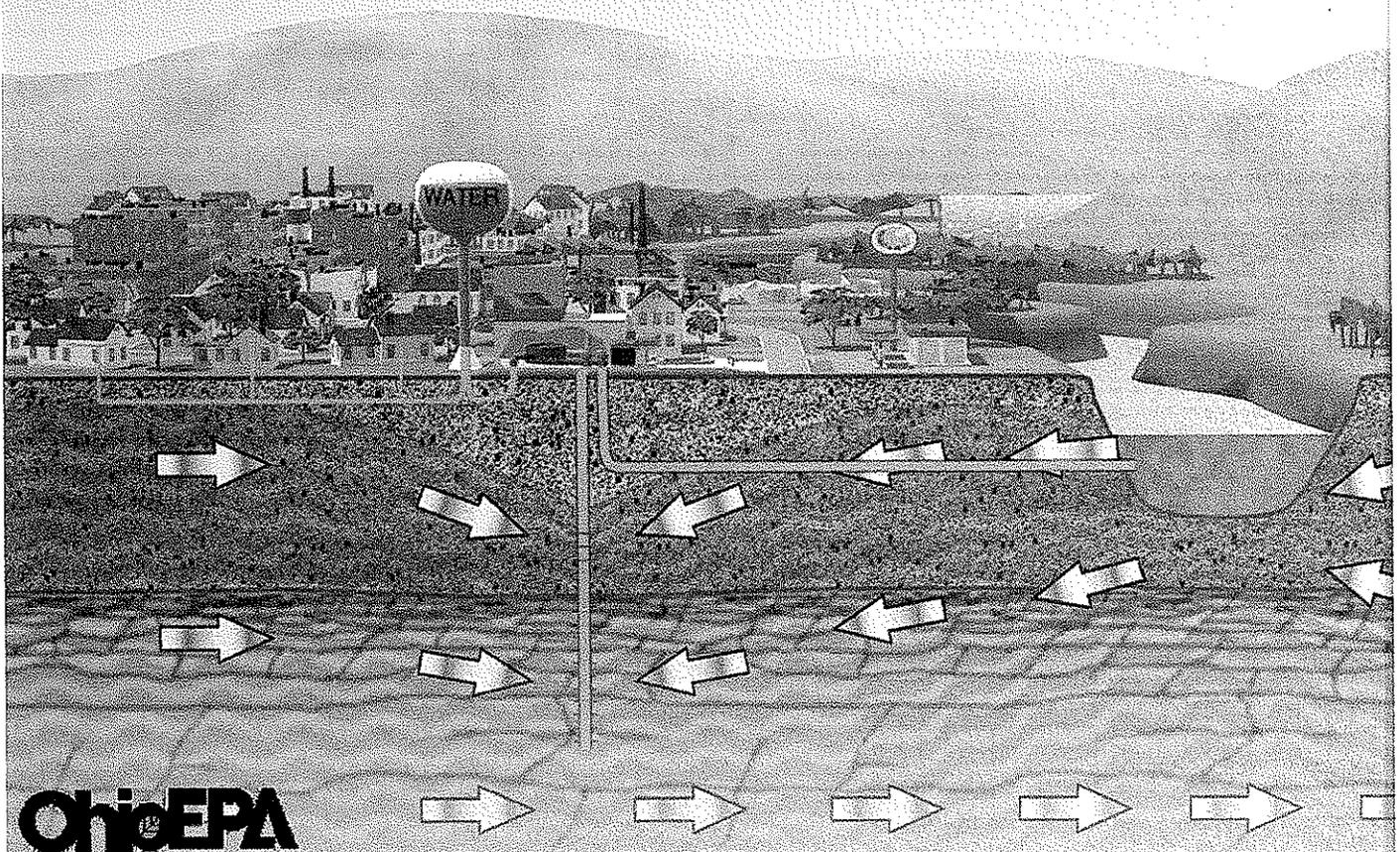
Drinking Water Source Assessment for the Village of Versailles

Public Water System #1901312
Darke County

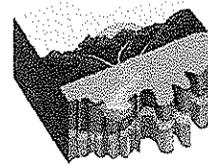
Prepared by:
Ohio Environmental Protection Agency
Division of Drinking and Ground Waters
Southwest District Office

May, 2003

Revised January 2008



DRINKING WATER SOURCE ASSESSMENT for the Village of Versailles PWS ID # 1901312



Protecting
Ohio's Drinking
Water Sources

OhioEPA

April 2003
Revised January 2008

INTRODUCTION. The 1996 Amendments to the Safe Drinking Water Act establish a program for states to assess the drinking water source for all public water systems. Ohio's Source Water Assessment and Protection Program is designed to help public water systems protect their sources of drinking water from becoming contaminated. This assessment:

- ▶ identifies the drinking water source protection area, based on the area that supplies water to the well(s),
- ▶ inventories the potential contaminant sources in the area,
- ▶ evaluates the susceptibility of the drinking water source to contamination, and
- ▶ recommends protective strategies.

The purpose of the assessment is to provide information that the Village of Versailles can use to help protect its source of drinking water from contamination.

SYSTEM DESCRIPTION & GEOLOGY. The Village of Versailles is a community public water system serving approximately 2600 people. Versailles is located in Wayne township, Darke County, Ohio. This system operates 9 wells that pump approximately 576,000 gallons of water per day from a sand and gravel aquifer (water-rich zone) within a complex till (Table 1). According to well logs for the Village wells, the aquifer is covered by varying amounts of low-permeability material to a depth of 50 - 60 feet, which provides some protection from contamination. Depth to water in this aquifer ranges from 20 to 50 feet below the ground surface.

Soils in the area are silty loams which are moderately well-drained, meaning that much of

the rainfall and snowmelt will infiltrate into the soil, instead of running off or ponding. The topography is generally level to gently sloping. Ground water in this area is replenished by the gradual flow of water underground from higher to lower elevations and by approximately 4-7 inches per year of precipitation that infiltrates through the soil. At the Village of Versailles wellfield, ground water flows generally toward the south - southeast, based on a survey of residential well logs in the area.

PROTECTION AREA. The drinking water source protection area for the Village of Versailles's well is illustrated in Figure 1. This figure shows two areas, one inside the other. The "inner protection zone" is the area that provides ground water to Village of Versailles's wells within one year of pumping. A chemical spill in this zone poses a greater threat to the drinking water, so this area warrants more stringent protection. The "outer protection zone" is the additional area that contributes water when the wells are pumped for five years. Together, they comprise the drinking water source protection area.

Method Selection An analytic element model computer program called GFLOW 2000 (Ground water FLOW 2000) was used to determine the areal extent of the protection area. Protection areas based on computer modeling can be significantly more credible than those produced by simpler methods, especially in areas with complex geology. The time and effort required to develop a computer model are warranted when the wellfield is located in a complex hydrogeologic setting, and the hydrogeologic data needed to run the program are available for the area. Both criteria were met for Village of Versailles's source water assessment.

The GFLOW model for Village of Versailles's wellfield was designed to simulate the

characteristics of a sand and gravel aquifer within a complex till. Indian Creek and Swamp Creek were modeled as lines along which ground water enters or leaves the aquifer (called "line sink strings"). A recharge of 5-7 inches / year was applied to the model.

Model Values

Information needed to run the model includes, at a minimum, **pumping rate** of the wells, **hydraulic conductivity** of the aquifer (that is, the ease with which water moves through it), aquifer thickness, and aquifer porosity (Table 2). For this model, a pumping rate of 662,400 gallons per day was used. This value represents the average daily pumping rate of 400 gpm as recorded in Ohio EPA's files, plus an additional 15 percent, to provide a more protective area.

The hydraulic conductivity of 190 feet per day for the sand-and-gravel aquifer was based on an aquifer test conducted at the wellfield in 2004. According to the 2004 aquifer testing, it was concluded that pumping of the aquifer responded in a manner characteristic of a leaky or confined aquifer. Finally, an aquifer thickness of 48 feet was used. The thickness was based on a review of Versailles well logs and other available information. Since site specific information on porosity was not available, values used in the model were based on values typically found in these kinds of sediments. A porosity value of 20 % was used for the sand and gravel aquifer.

The protection area was determined based on the best information available at the time of the assessment. If you would like to have more information about how this protection area was derived, or if you would like to collect additional information and revise your protection area, please call Ohio EPA staff listed at the end of this report. Also, a more detailed discussion of the technical aspects of modeling drinking water source protection areas, can be found in the *Delineation Guidelines and Process Manual* (Ohio EPA, 2000) on Ohio EPA's Source Water Assessment and Protection Web page (www.epa.state.oh.us/ddagw/pdu/swap.html).

INVENTORY. On 03/20/03, an inventory of potential contaminant sources located within the drinking water source protection area was conducted by Ohio EPA with the assistance of

Village of Versailles personnel. Twenty three potential sources of contamination were identified within the protection area (see Figure 2). This number of potential contaminant sources includes, the railroad track, Swamp Creek and Indian Creek, and transportation routes in the area. Please note that several other potential contaminant sources were located during the inventory. These sources are identified in figure 2, but are not located within the delineated protection area. Table 3 provides additional information about these types of potential contaminant sources.

A facility or activity is listed as a potential contaminant source if it has the **potential** to release a contaminant, based on the kinds and amounts of chemicals typically associated with that type of facility or activity. It is beyond the scope of this assessment to determine whether any specific potential source is **actually** releasing (or has released) a contaminant to ground water. Also, the inventory is limited to what Ohio EPA staff were able to observe on the day of the site visit. Therefore, Village of Versailles staff should be alert to the possible presence of potential sources of contamination that are not on this list.

GROUND WATER QUALITY. A review of Village of Versailles's water quality record currently available in Ohio EPA's drinking water compliance database did not reveal any evidence of chemical contamination at levels of concern in the aquifer.

Please note that this water quality evaluation has some limitations:

- ▶ the data evaluated are mostly for treated water samples only, as Ohio EPA's quality requirements are for the water being provided to the public, not the water before treatment.
- ▶ sampling results for coliform bacteria and naturally-occurring inorganics (other than arsenic) were not evaluated for this assessment, because they are not a reliable indicator of aquifer contamination.

Current information on the quality of the treated water supplied by Village of Versailles's Public Water System is available in the Consumer

Confidence Report for the system, which is distributed annually. It reports on detected contaminants and any associated health risks from data collected during the past five years. Consumer Confidence Reports are available from Village of Versailles.

SUSCEPTIBILITY ANALYSIS. This assessment indicates that Village of Versailles's source of drinking water has a HIGH susceptibility to contamination due to:

- ▶ The presence of a relatively thin protective layer of low permeability material overlying the aquifer, and
- ▶ shallow depth (less than 40 feet below ground surface) of the aquifer, and
- ▶ the presence of significant potential contaminant sources in the protection area.

This susceptibility means that under currently existing conditions, the likelihood of the aquifer becoming contaminated is relatively high. This likelihood can be minimized by implementing appropriate protective measures.

PROTECTIVE STRATEGIES. Protective strategies are activities that help protect a drinking water source from becoming contaminated. Implementing these activities benefits the community by helping to:

- ▶ protect the community's investment in its water supply.
- ▶ protect the health of the community residents by preventing contamination of its drinking water source.
- ▶ support the continued economic growth of a community by meeting its water supply needs.
- ▶ preserve the ground water resource for future generations.
- ▶ reduce regulatory monitoring costs.

Ohio EPA encourages Village of Versailles to develop and implement an effective Drinking Water Source Protection Plan. The plan can be developed from the information provided in this Drinking Water Source Assessment Report. The potential contaminant source inventory provides a

list of facilities or activities to focus on. Table 4 lists protective strategies that are appropriate for the kinds of facilities/activities listed in the inventory. Finally, a document titled *Developing Local Drinking Water Source Protection Plans in Ohio* is available from Ohio EPA. This document offers comprehensive guidance for developing and implementing a municipal Drinking Water Source Protection Plan. Ongoing implementation of the plan will help protect Village of Versailles's valuable drinking water resources for current and future generations.

For further technical assistance on drinking water source protection, please contact the Ohio EPA Southwest District Office at (1-800-686-8930) or visit the Ohio EPA Source Water Assessment and Protection Web page at:

<http://www.epa.state.oh.us/ddagw/pdu/swap.htm>
!

This report was written by John McGinnis, Ohio EPA, Division of Drinking and Ground Waters, Southwest District Office.

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Ohio Department of Natural Resources, 1995, *Ground Water Pollution Potential of Darke County, Ohio*, Report No. 25.

Ohio Department of Natural Resources, 1993, *The Water Resources of Darke County, Ohio*, Map.

Ohio Department of Natural Resources, 2000, *Glacial Aquifer Map* (digital).

Ohio EPA, 2002, *Drinking Water Source Protection Area Delineation Guidelines & Process Manual*.

MACTEC, Results of the Aquifer Test performed on Production Well PW-9, Village of Versailles Well Field, MACTEC Project # 3359041990

Malcolm-Pirnie, Water System Expansion and Improvements Design Report, 2001.

Table 1. Data for Public Water System Wells

Well #	Total Depth (feet)	Casing Length (feet)	Screen Length (feet)	Pump Capacity (gallons per min.)	Well Status
1	67	57	10	58	In Use
2	64	54	10	70	In Use
3	74	64	10	120	In Use
4	70	57	10	74	In Use
5	77	57	12	66	In Use
6	61	44	12	128	In Use
7	61	54	7	17	In Use
8	81	64	12	173	In Use
9	102	82	20	115	In Use

Table 2. Data Used in Construction of Ground Water Flow Model

Type of Information	Value Used	Source of Information
Pumping rate	662, 400 gallons per day	Ohio EPA public drinking water files. Average well field pumping rate of 400 gpm.
Aquifer porosity (sand and gravel)	20%	Estimated, based on typical porosity of sand and gravel aquifer
Aquifer thickness	48 feet	Well logs for area, filed at Ohio Department of Natural Resources, Division of Water
Hydraulic conductivity of aquifer (sand and gravel)	190 feet per day	Based on pumping test of well 9. Typical hydraulic conductivity of sand and gravel aquifer in complex till.
Precipitation recharge	4-7 inches per year	From Ohio Department of Natural Resources, 1995, <i>Ground Water Pollution Potential of Darke County, Ohio</i> , Report No. 25

Table 3 Potential Contaminant Sources

Potential Contaminant Source	Environmental Concerns	Protection Area
AGRICULTURAL SOURCES		
Animal Feedlots	Potential contaminant sources that may be found at feedlots include: concentrations of animal waste; aboveground storage tanks; underground storage tanks; and chemical storage areas. These types of facilities may be a source for nitrates, ammonia, animal pathogens, and pesticides in drinking water sources.	Outside Protection Area
Confined Animal Feeding Operations (CAFOs)	Confined animal feeding operations may be a source of nitrates, ammonia, animal pathogens, and/or pesticides in source water.	Outside Protection Area
Crops: Corn, Soybean, Wheat	Potential contaminant sources that may be associated with pastures include sludge application, fertilizer, and pesticide use. Cropland may be associated with nitrates, ammonia, pesticides, and pathogens in drinking water sources.	Inner Management Zone/Outer management Zone
Dairy Facility	Potential contaminant sources that may be found at dairy facilities include: aboveground storage tanks, underground storage tanks, other liquid storage, vehicle maintenance areas and agricultural chemical storage areas. These types of facilities may be associated with nitrates, ammonia, pesticides, animal pathogens, and the potential for oil, gasoline, and automotive fluid leaks and spills.	Inner Management Zone/Outer management Zone
Drainage Canals / Tiles (Agricultural)	Drainage canals receiving runoff from pastures, crop land, or confined animal feeding operations and agricultural drainage tiles may be a source of animal pathogens, excess nutrients, and/or pesticides in source water.	Outer Management Zone
Pasture	Pastures may be a source of elevated levels nitrates, ammonia, and animal pathogens in ground and/or surface water.	Outside Protection Area
MUNICIPAL SOURCES		

Contaminant Source Potential	Environmental Concern Potential Contaminant Sources	Protection Area
Composting Facility / Yard Wastes	Runoff or infiltration of liquids from composting facilities and yard waste storage may be a source of excess nutrients and other organic compounds in source water.	Inner Management Zone
Drinking Water Treatment Plants	Among the potential contaminant sources related to these facilities are: underground storage tanks; aboveground storage tanks; and storage of chemicals used in water treatment and testing.	Inner Management Zone
Garages	Among the potential contaminant sources related to these facilities are: underground storage tanks; automotive fluid storage; equipment storage areas; parking lots; vehicle storage areas; vehicle maintenance areas; and vehicle washing areas. These types of facilities may be associated with the potential for leaks and spills of oil, gasoline, other petroleum products, and automotive fluids. Waste oil and machining wastes may contain metals that could contaminate drinking water sources.	Inner Management Zone
Schools	Among the potential contaminant sources schools include aboveground storage tanks, underground storage tanks, lawn chemical storage, and vehicle storage, maintenance, and washing areas.	Outside Protection Area
Wastewater Treatment Plant	Among the potential contaminant sources related to these facilities are waste treatment lagoons, aboveground storage tanks, and underground storage tanks. Wastewater treatment plants may be associated with nitrates, ammonia, pathogens, and chemical spills and leaks.	Inner Management Zone
COMMERCIAL SOURCES		
Auto Repair Shops / Body Shops	Among the potential contaminant sources related to these facilities are: underground storage tanks, automotive fluid storage, vehicle maintenance areas, and vehicle washing areas. These types of facilities may be associated with the potential for leaks and spills of oil, gasoline, other petroleum products, and automotive fluids. Waste oil and machining wastes may contain metals that could contaminate drinking water sources.	Inner Management Zone
Cemeteries	Cemeteries have been associated with arsenic and formaldehyde contamination in ground water.	Inner/Outer Management Zone
Food Processor	Potential impacts to the drinking water source from food processing facilities are dependent on the specific facility.	Outside Protection Area

Table 3 Potential Contaminant Sources

Potential Contaminant Source	Environmental Concerns	Protection Area
Gas Stations	Among the potential contaminant sources related to these facilities are: underground storage tanks, automotive fluid storage, vehicle maintenance areas, and vehicle washing areas. These types of facilities may be associated with the potential for leaks and spills of oil, gasoline, other petroleum products, and automotive fluids. Historic gas station locations have been associated soil and water contamination related to leaks and spills of gasoline and other petroleum products. Unused underground storage tanks may be used for the improper disposal of wastes.	Outside Protection Zone
Veterinary Offices	Among the potential contaminant sources related to these facilities are diseased and deceased animals. These types of facilities may be associated with animal pathogens.	Outside Protection Zone
Other Commercial Sources	Environmental concerns are dependent on the materials used and other site specific conditions.	
INDUSTRIAL SOURCES		
Asphalt / Cement / Concrete Plants	Among the potential contaminant sources related to these facilities are: aboveground storage tanks, underground storage tanks, other liquid storage, vehicle maintenance areas, electric substations, and vehicle washing areas. These types of facilities may be associated with surface water contaminants and the potential for leaks and spills of oil, gasoline, other petroleum products, and automotive fluids.	Inner Management Zone

Table 3 Potential Contaminant Sources

Potential Contaminant Source	Environmental Concerns	Protection Area
Plastics / Synthetics Producers	Among the potential contaminant sources related to these facilities are chemical storage in underground storage tanks, above ground storage tanks, and other storage areas. The chemicals of concern at these facilities are dependent on the materials processed and the processes used at the facility, but may include solvents and organic chemicals.	Outside Protection Area
Power Plants	Among the potential contaminant sources related to these facilities are: aboveground storage tanks, underground storage tanks, other liquid storage, electric substations, and material stockpiles. These types of facilities may be associated the potential for leaks and spills of oil, and other chemicals that may impact surface or ground water.	Outside Protection Area
Other Industrial Sources	Environmental concerns are dependent on the materials used and other site specific conditions.	
Aboveground Storage Tanks	Above ground storage tanks present a potential for leaks and spills that could impact surface or ground water.	Outside protection Zone
Septic Systems	If poorly maintained, may be a source of household chemicals, excess nutrients, viruses and bacteria in drinking water sources.	Outer Management Zone
Wells: Abandoned	Improperly sealed unused water wells create a direct pathway for potential contaminants to reach the aquifer.	
Surface Water Bodies	May provide a direct pathway for spilled chemicals, nitrates, and pesticides from the ground surface to the aquifer.	Inner /Outer Protection Zone

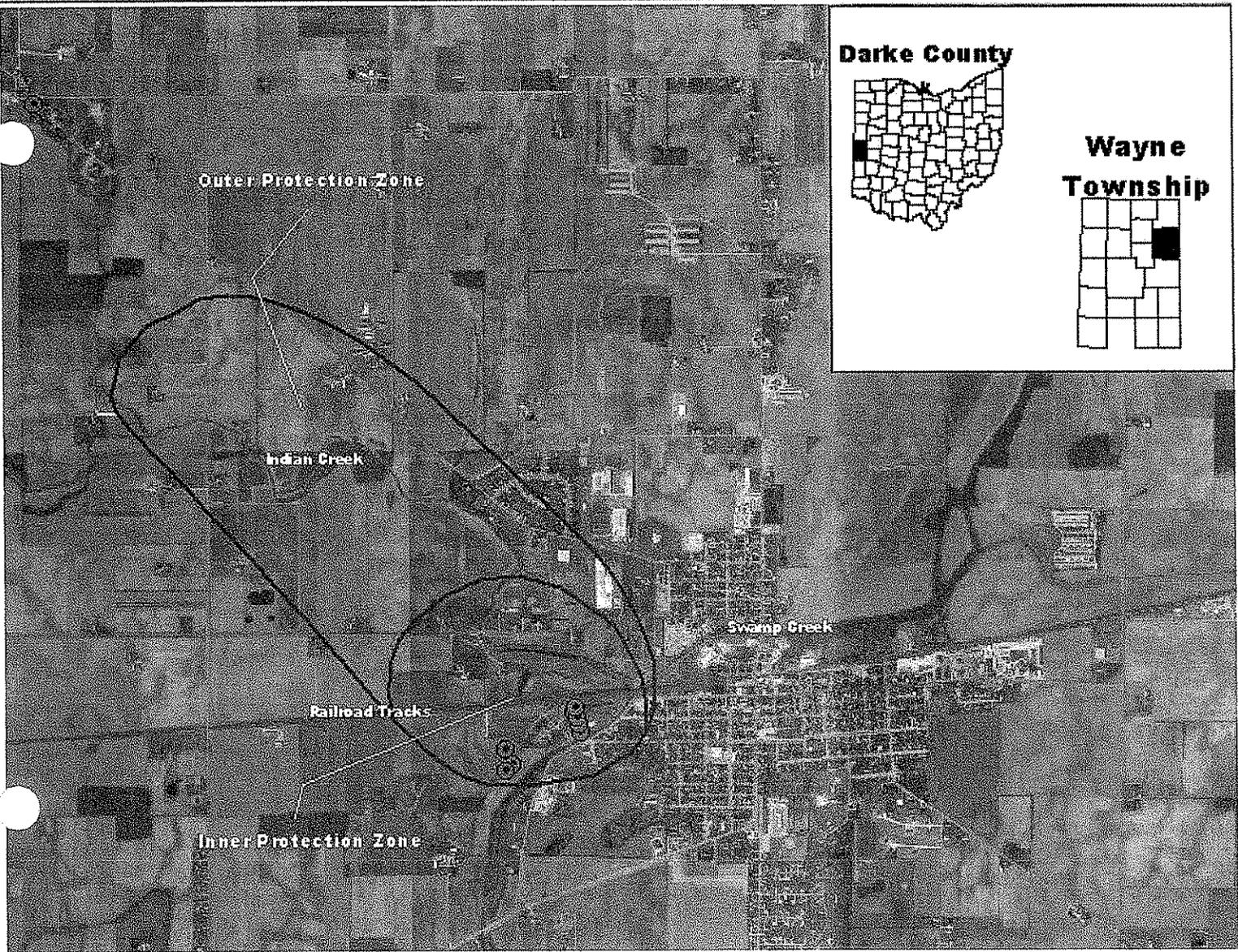
Potential Contaminant Source	Environmental Concerns	Protection Area
Sewage Sludge / Biosolid Application	Biosolids application in excess of agronomic rates may be a source of metals and nutrients, including nitrates.	
Highway / Transportation Route	Accidents on transportation routes pose the threat of leaks and spills of fuels and chemicals. Weed killers used to control vegetation can elevate levels of pesticides in drinking water sources. Runoff may contain oil, metals, and deicers.	Inner /Outer Protection Zone
Pipelines	Spills and leaks from pipelines the potential to impact drinking water sources, even at small quantities. Condensate in natural gas pipelines may contain PCBs and other chemicals.	Inner /Outer Protection Zone

Table 4 Protective Strategies

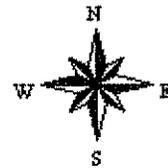
Potential Contaminant Source	Protective Strategies To Consider
General	<ul style="list-style-type: none"> ▶ Purchase additional property. ▶ Provide educational material to members of the community on topics regarding the drinking water source protection area. ▶ Include drinking water source protection into the local school curriculum. ▶ Provide education (material/meetings) local businesses and industries on topics relating to drinking water source protection. ▶ Encourage 'ground water friendly' development. ▶ Form partnerships with neighboring jurisdictions and potential contaminant source owners ▶ Develop/enact/enforce a local ordinance which may include any of the following: changing zoning; illegal waste disposal; requiring registration of existing facilities; banning certain new types of activities; dictating chemical handling procedures; maintaining/filing a chemical inventory; facility spill/contingency planning; engineering controls for existing/new facilities; paralleling existing federal or state requirements.
Agricultural Sources	<ul style="list-style-type: none"> ▶ Assess the use of best management practices and recommend additional practices. ▶ Encourage road safety with agricultural chemicals. ▶ Provide education (material/meetings) to local farmers and agribusinesses on appropriate topics. ▶ Plan/design/implement methods to control impacts to surface water.
Residential Sources	<ul style="list-style-type: none"> ▶ Inventory/remove underground home heating oil tanks in the protection area. ▶ Identify areas used for illegal dumping. ▶ Provide education (material/meetings) to home owners on: drinking water protection; use/maintenance of septic systems; illegal dumping; proper well abandonment (both the reason and the process). ▶ Develop a centralized wastewater collection/treatment system. ▶ Encourage/require (and provide incentives) for sealing unused wells. ▶ Ensure enforcement of existing requirements for closing unused wells. ▶ Ensure the proper construction of new wells.

Municipal Sources	<ul style="list-style-type: none"> ▶ Monitor compliance with existing regulations through inspections and/or contact with regulatory agencies (such as the local fire department, State Fire Marshal, or the Ohio EPA). ▶ Encourage/arrange hazardous materials training or waste and disposal assessments for employees. ▶ Develop an early release notification system for spills and emergency planning; educate emergency responders to be aware of drinking water protection areas; or coordinate facility spill/contingency planning. ▶ Encourage compliance with materials handling procedures/requirements. ▶ Install of engineering controls at municipal facilities ▶ Implement pollution prevention strategies. ▶ Work with the street department and Ohio DOT to minimize use of road salt. ▶ Evaluate and close fire cisterns or other city owned wells. ▶ Conduct routine sewer inspections, maintenance & upgrades.
Commercial Sources	<ul style="list-style-type: none"> ▶ Monitor compliance with existing regulations through inspections and/or contact with regulatory agencies. ▶ Use routine inspections as an educational opportunity. ▶ Encourage compliance with materials handling procedures/requirements. ▶ Encourage/arrange hazardous materials training or waste and disposal assessments for local businesses (and their employees). ▶ Request installation of engineering controls for existing facilities. ▶ Encourage facility spill/contingency planning in conjunction with the fire department. ▶ Encourage local businesses to implement pollution prevention strategies.
Industrial Sources	<ul style="list-style-type: none"> ▶ Monitor compliance with existing regulations through inspections and/or contact with regulatory agencies. ▶ Use routine inspections as an educational opportunity. ▶ Encourage compliance with materials handling procedures/requirements. ▶ Encourage/arrange hazardous materials training or waste and disposal assessments for local industries (and their employees). ▶ Encourage facility spill/contingency planning in conjunction with the fire department. ▶ Request installation of engineering controls for existing facilities. ▶ Encourage local industries to implement pollution prevention strategies. ▶ Encourage compliance with materials handling procedures/requirements. ▶ Encourage/arrange waste and disposal assessments for local businesses.

Spills	<ul style="list-style-type: none"> ▶ Develop an early release notification system for spills and an emergency response plan. ▶ Include drinking water protection in response planning and training. ▶ Post signs indicating the extent of the protection area.
Transportation	<ul style="list-style-type: none"> ▶ Create hazardous materials routes around the protection area and require/encourage transporters to use them. ▶ Work with local transporters on protection area awareness. ▶ Encourage road safety with chemicals. ▶ Post signs indicating the extent of the protection area.



2000 0 2000 4000 Feet



Information Used to Develop Protection Area:

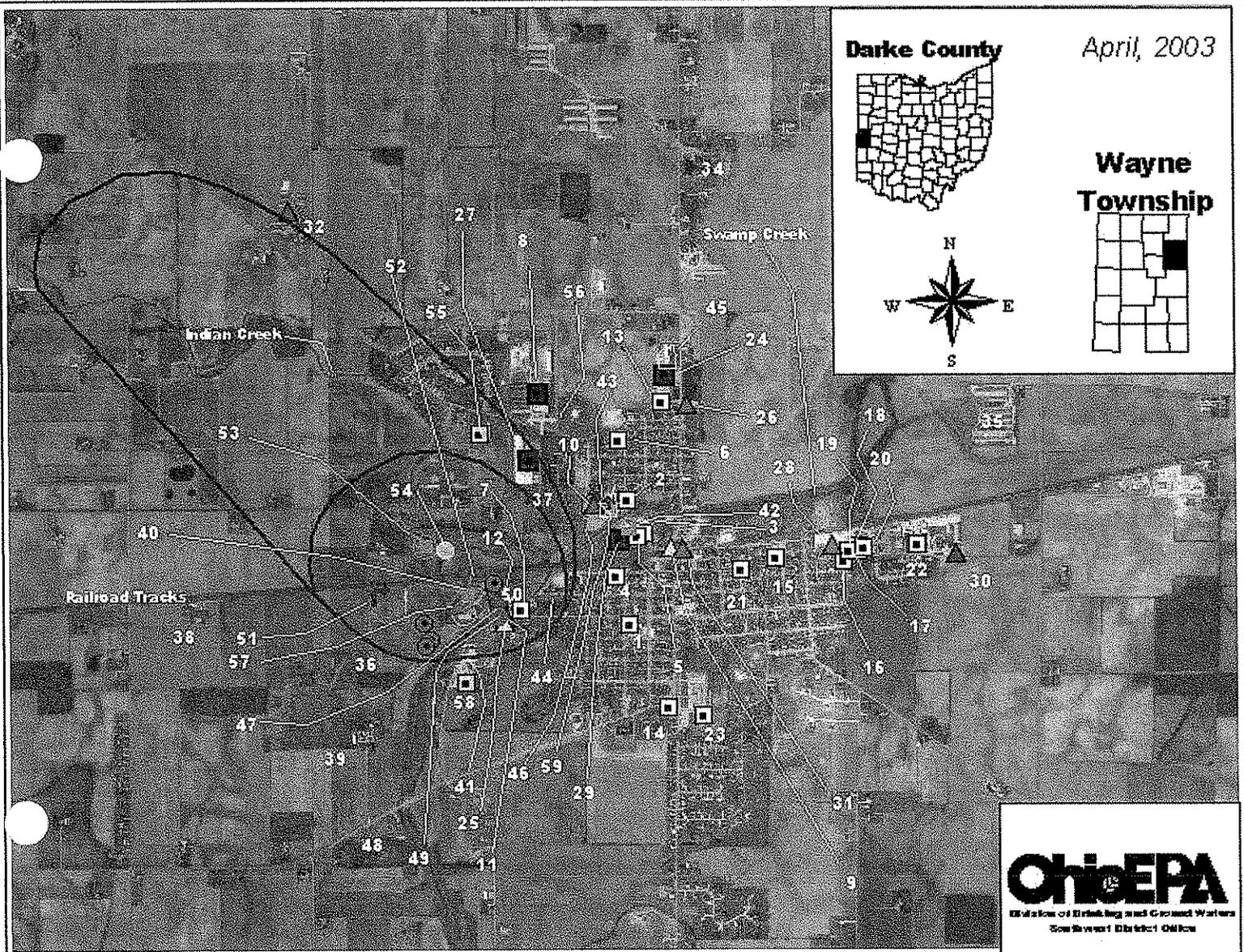
Number of Wells = 8
Total Well Pumping Rate = 720,000 gpd
Porosity = 0.20
Aquifer Thickness = 20 feet
Hydrogeologic Setting = Sand and Gravel

 Protection Area
 Inner Protection Zone (inner circle)
 Outer Protection Zone (outer circle)
 Public Water System Well Locations

April, 2003



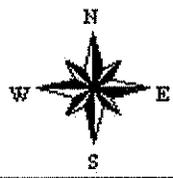
Figure 1. Drinking Water Source Protection Area
Village of Versailles Public Water System Identification # 1901312



Darke County

April, 2003

Wayne Township



0 1000 2000 Feet

Potential Contaminant Sources

- | | | |
|--------------------------------|----------------------------------|--------------------------------------|
| Above Ground Storage Tank | Food Processor | Power Plant |
| Animal feedlot | Gas Line | Regulated Under Several EPA Programs |
| Asphalt/cement/concrete plant | Hazardous Waste Handlers(RC RIS) | Salt Storage Area |
| Auto Repair/Body Shop | Lagoon/P#/Pond | Septic System (leachfield) |
| Cemetery | Leaking Underground Tank | Sewer Line |
| Composting/Yard Waste Facility | NPDES Permitted Facility (PCS) | Storm Drain |
| Confined Animal Feedlot | Other Commercial Source | Surface Impoundment |
| Crops: corn, soybean, wheat | PCB Facility (PADS) | Veterinary Office |
| Dairy Facility | Pesticide Application | Wastewater Treatment Plant |
| Drainage Canals/Tiles | Plastics/Synthetics Producer | |

The majority of the protection area is served by a sanitary sewer system and Use within the protection area is primarily Agricultural and Commercial



SUSCEPTIBILITY

**Figure 2. Potential Contaminant Source Inventory
Village of Versailles Public Water System Identification # 1901312**

"Seq_num"	"Name"	"Address"	"Type"	"Source"	"Comments"
1	VERSAILLES ELEM SCHOOL	130 W WARD ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed and Testing Ongoing (Soil Sampling with Test Holes)
2	BARGA OIL CO	255 N WEST ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed and Testing Ongoing
3	FORMER GARAGE	123 W WATER ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	No Longer In Service
4	VERSAILLES VOL LIFE RESCUE SQ	220 W MAIN ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Village Property
5	VERSAILLES MACK INC	176 N WEST ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	New Plastic Manufacturing Building
6	WAYNE TWP GARAGE	JACKSON & NORTH WEST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Township Building - Tank?
7	ELSON FORD	624 W WARD	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed (monitoring well/soil sampling) Owned by peppon
8	MIDMARK	60 VISTA DR	TRIS RCRIS	US EPA Envirofacts	Regulated by EPA
9	VILLAGE VERSAILLES	NORTH 177 CENTER ST	PADS	US EPA Envirofacts	Village Owned Property (PCB Containment Site)
10	SUBLER CARL TRUCKING	NORTH 200 WEST ST	RCRIS	US EPA Envirofacts	Not in Business
11	NEW ERA AUTO	WEST 624 WARD	RCRIS	US EPA Envirofacts	Same as #7 Above
12	VERSAILLES WATER WORKS	200 Grand Avenue	Leaking Underground Tank	OEPA-DSW Surface Impoundment GIS	Old Water Plant - Note Corrected Address
13	VERSAILLES FRAME & BODY SHOP	738 BRANDON ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	No Longer in Business - Building For Rent
14	VERSAILLES OIL & GAS	16 MARKER RD	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tanks Removed (Auto Service Only No Fuel Sales)
15	EUGENE MYER INC	31 N WILLIAMSON ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed
16	TONY'S AUTO SALES	706 E MAIN ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed
17	FLEET MAINT CENTER	791 MAIN ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed (Monitoring Wells)
18	FLEET MAINTENANCE CENTER	791 MAIN (N OF GARAGE)	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed (Monitoring Wells)
19	ELSON FORD	723 E MAIN ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed
20	ELSON FORD	769 E MAIN ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed (Monitoring Wells) Out of Business
21	CERTIFIED OIL CO	306 E MAIN	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank Removed & Converted to Above Ground Storage
22	WEAVER BROS. INC.	885 E MAIN ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Tank in Diked Containment
23	VERSAILLES EXEMPTED SCHOOL	459 S CENTER ST	Leaking Underground Tank	BUSTR: LUST database (geocoded)	Removed Tank (Above Ground Tank Now)
24	WHITEFORD FOODS	NORTH 770 CENTER ST	RMP	US EPA Envirofacts	Regulated by EPA; Kings Command Food Processor
25	VILLAGE VERSAILLES	200 Grand Avenue	POS	US EPA Envirofacts	Wastewater Treatment Plant Pump Station (Grand Ave)
26	VERSAILLES BUILDERS SUPPLY	NORTH 741 CENTER ST	RCRIS	US EPA Envirofacts	Wood Finisher (lacquer, varnish, staining)
27	MIDMARK B	WEST 47 ST RTE	RCRIS AIRS/AFS	US EPA Envirofacts	Regulated by EPA
28	FLEET MAINTENANCE	EAST 711 MAIN ST	RCRIS	US EPA Envirofacts	Empty lot behind railroad tracks, now storage/lock box renting complex
29	BUCKEYE FEED GRAIN	EAST 895 MAIN A ST	RCRIS SSTS	US EPA Envirofacts	Need to be moved over by #22 on inventory list
30	WEAVER	EAST 895 MAIN B ST	RCRIS	US EPA Envirofacts	Weaver Brothers
31	VERSAILLES VILLAGE	GRAND AVE	RCRIS	US EPA Envirofacts	Village Garage
32	KAISER AGRI	WEST 127 W RTE	RCRIS	US EPA Envirofacts	No Longer There - Marshall Farm on Versailles-Yorkshire Road
33	Hoover Cemetery		cemetery	USGS Geonames	Cemetery Jamison Road (Township)
34	Roll Turkey Farm	10863 Reed Rd.	poultry (turkeys)	OEPA Livestock GIS Coverage	Longview Cattle (Some Barns Sold Off)
35	A-1/Pullet Facility (Weaver Bros.)	NW of SR 47 & CR 231	poultry	OEPA Livestock GIS Coverage	Poultry Farm - All Pullet Farm (Weavers)
36	Unknown		Crops : corn, soybean., whe	Field Inventory of SWAP area	Farm Ground
37	Greenlawn Cemetery		Cemeteries	Field Inventory of SWAP area	Greenlawn Cemetery
38	Schmidtmeyer		Animal feedlots	Field Inventory of SWAP area	Schmidtmeyer Hog Farm - Conover Road
39	Schmidtmeyer		Dairy facility	Field Inventory of SWAP area	Schmidtmeyer Dairy Farm SR 121
40	Compost		Composting/yard waste facil	Field Inventory of SWAP area	Village Compost Pile
41	Peppon		Asphalt/concrete producer	Field Inventory of SWAP area	Cement Plant
42	L&K Products		Plastics/synthetics producer	Field Inventory of SWAP area	Plastic Manufacturer
43	Bruns Vet		Veterinary offices	Field Inventory of SWAP area	Vet Office
44	Tony's Body Shop		Auto repair shops/body shot	Field Inventory of SWAP area	No Longer in Service
45	Whiteford's Foods		Food Processor	Field Inventory of SWAP area	Now Codino's Regulated by EPA Food Processor
46	Versailles		Power plants	Field Inventory of SWAP area	Greenlawn Substation - Village Owned
47	Versailles WWTP		Wastewater treatment plant	Field Inventory of SWAP area	NPDES permit for discharge
48	Versailles		Sewer Lines	Field Inventory of SWAP area	Sewer Lines throughout 1 and 5 yr TOT
49	Versailles		Storm Drains	Field Inventory of SWAP area	Storm rains throughout 1 and 5 yr TOT; 60" drains by WWTP
50	Versailles		Pesticide Application	Field Inventory of SWAP area	Occasional pesticide application at WTP/WWTP/ Used to
51	Unknown		Drainage canals/files	Field Inventory of SWAP area	be farmed, now just grass cover
52	CSXT		Other Commercial Sources	Field Inventory of SWAP area	Agricultural drainage throughout 1 and 5 yr TOT/Railroad Ditch
53	Unknown		Septic Systems (leachfield)	Field Inventory of SWAP area	Railroad Lines
54	Unknown		Lagoon/Pond/Pit	Field Inventory of SWAP area	Several homes not sewer w/in protection area - assume
55	C&G Distributorship		Above Ground Storage Tank	Field Inventory of SWAP area	leachfields Brandon House
56	Unknown		Gas Lines	Field Inventory of SWAP area	Brandon Pond
57	Versailles		Salt storage areas	Field Inventory of SWAP area	1000 gallon (+) aboveground tank; equipped w/ SPCC/diked
58	Unknown		Above Ground Storage Tank	Field Inventory of SWAP area	Gas Lines throughout area/regulator Midmark Property
59	Versailles Feed		Food Processor	Field Inventory of SWAP area	Moved Salt Shed to Higher Ground on WWTP Property

Appendix B

**Source Water Protection Planning
Versailles Stakeholder Committee
May 22, 2008 Meeting Minutes
Potential Contaminate Source Inventory Update**

- A. Underground Storage Tanks: Petroleum products potential contaminate.
- 18 total on list
 - 13 evidence removed/monitored
 - 2 no longer in service (#3 - Former Garage and #13 Versailles Frame and Body Shop)
 - 3 still in service/questionable
 - Village - EMS (#4) - none on site, may be referring to an old gas station that used to be next door to EMS building
 - Formerly Versailles Mack, now L&K Plastics (#35)
 - Township Garage (#6) - may have been removed.

The group also identified a couple of sites that may have had underground tanks in the past: 1) Midmark - removed, 2) old filling station and 3) TeeBos Garage.

Out of the 18; the only 1 underground storage tank in the 1 year time of travel, has been removed and the site is monitored. There were none identified in the 5 year time of travel.

- B. EPA regulated facilities (US EPA Envirofacts Database): facility is listed on EPA's (state and/or federal) regulated list either from permitting process and/or history of releases that may affect air, water, land. Permits and/or releases cover topics: waste, water, toxics, air, radiation, land, other. Could only find one release identified Midmark - Air? - 1993. Other sites have permit or handle/store waste considered hazardous.
- 13 potential sources
 - Within 1 year time of travel
 - New Era Auto (#11) Now Pepcon - had an underground storage tank but removed and site monitored. Now has an above ground storage tank and truck garage. Potential petroleum product contaminates

- Village of Versailles Pump Station (#25) - monitored, risk of untreated waste overflow minimal, Village has separated storm/sewer collection and station has monitors
- Within 5 year time of travel
 - Midmark (#27) storage/use of chemicals for washing including phosphoric acid. In buildings drain to wastewater treatment plant. More concern is spill from chemical transport to facility.
 - Kaiser Agriculture (#32) no longer in business, was grain elevator, now empty barns, storage facility.
- Outside protection zone
 - Village Power Station (#9) used to be site for storing/cleaning transformers, potential PCB contamination, removed.
 - Subler Carl Trucking (#10) No longer in business. Used to be trucking facility, tire shop, potential of petroleum products contaminates.
 - Whitefood Foods (24) Now Kings Command, food processor. Use ammonia in freezer system. Supplied in cylinders, leak would probably vaporize, there was a prior spill that entered creek from storm sewer.
 - Versailles Building Supply (#26) Woodworking, stains, varnishes potential contaminate source.
 - Fleet Maintenance (#28) Converted to storage/lock box facility and empty lot, behind railroad tracks, was a garage that had petroleum products and paints, thinners for body work.
 - Buckeye Feed (#29) Now Weaver, process feed, past site for fertilizers/pesticides.
 - Weaver (#30) Above ground storage tanks, diked, waste applied to fields. Potential petroleum products.

C. Above Ground Storage Tanks: Potential Petroleum Products

- C&G (#55) diked and monitored, in 5 year time of travel
- Pepcon (#58) out of protection zone
- Weaver (#22) out of protection zone, removed underground and installed above ground but diked, out of protection zone

D. Natural Gas Lines

- #56 in 1 and 5 year time of travel. Tested and maintained.

- E. Cemeteries: 2 identified, potential for formaldehyde and arsenic contamination.
- Greenlawn (#37) in 1 year time of travel
 - Hoover (#33) out of protection area
- F. Livestock Operations: 3, potential contaminate improperly treated/storage waste
- Dairy (#39) south of protection zone
 - Hogs (#38) west of protection zone
 - Chickens (#35) east of protection zone
- G. Septics and other on site wastewater treatment facilities
- #53 residential house close to wellfield, in 1 year time of travel, around 5 in 1 year time of travel and 20 - 25 in 5 year time of travel, potential contaminate of improperly treated waste
- H. Pond (#54) residential use in 1 year time of travel
- I. Composting Facility (#40) out of protection zone, accepts only yard, "clean" materials, Village owned and operated.
- J. Asphalt, Concrete, Cement (41) Pepcon, in 1 year time of travel. Potential contaminates usually associated with petroleum products transport/storage and/or vehicle maintenance.
- K. Food Processing Codinos (#45) out of protection zone, pasta, liquid nitrogen for quick freezing potential contaminate.
- L. Plastics (#42) L&K out of protection zone, recycled plastics manufacturer, may have oils, lubricants in small quantities.
- M. Veterinary Offices (#43), out of protection zone, may have animal pathogens.
- N. Auto Body Shops (#44) In 1 year time of travel, home based, no longer in business, potential petroleum products.
- O. Salt Storage (#57) In 1 year time of travel, Village owned, operated, salt inside/covered.

- P. Private wells (not identified in original inventory) some in town used for lawn watering (around 6) , backflow prevention installed if in Village, around 3 in 1 year time of travel for domestic use (in township), around 20 - 25 in 5 year time of travel.
- Q. Storm Drains (#49) Village owned and operated, throughout 1 and 5 year time of travel, potential contaminates runoff from nonpoint pollution and leaks.
- R. Drainage Tiles (#51) throughout 1 and 5 year time of travel, Baker Town Ditch discharges into Swamp Creek, potential source of runoff from pesticides/herbicides, improperly treated wastewater and spills.
- S. Railroad (#52) In 1 and 5 year time of travel, very active line, 30-50 trains a day, potential spills.
- T. Power Plant (#46) 5 year time of travel, Village owned and operated, PCB transformer storage, diked containment.
- U. Wastewater Treatment Plant (#47) 1 year time of travel, Village owned and operated. Originally designed 1988, updated 1992. Potential contaminate of improperly treated waste.
- V. Public Sewer Lines (#48) throughout 1 and 5 year time of travel, Village owned and operated. Potential contaminate improperly treated waste.
- W. Pesticides/Herbicides Application: Agriculture and Lawn Care
- Village Wellfield (#50) use to be cropped but now grass field and mowed, no above applications. In 1 year time of travel.
 - Cropping (#36) in 1 year and 5 year time of travel, corn, wheat, soybeans.
 - Lawn Care (not identified in original inventory) throughout protection area.
- X. Surface Water: Swamp and Indian Creek in 1 year and 5 year time of travel, potential source of runoff from pesticides/herbicides, improperly treated wastewater and spills.
- Y. Transportation Routes: State Route 47 and 185. In 1 year and 5 year time of travel. Potential spills.

Appendix C

Results of Prioritizing Exercise
Potential Pollution Sources
Village of Versailles
6/19/08

- 1) Railroad (9 votes)
- 2) Underground Storage Tanks (6 votes)
- 3) Transportation Routes (4 votes)
- 4) Private Wells (3 votes)
- 5) Each of the following received 1 vote:
 - a. Septic Systems
 - b. Sewer Lines
 - c. Storm Drains
 - d. L&K Plastics (small quantity generator – oils/lubricants)
 - e. C&G Distributing (above ground storage tank)

Appendix D

**Source Water Protection Planning
Versailles Stakeholder Committee
June 26, 2008 Meeting Record
Management Strategies for Prioritized Potential Contaminate Sources**

#1 CSX Railroad (potential spills and leaks)

- 1) Buffer Strip in Wellfield - berm, barriers, plant targeted vegetation that might serve for treating/reducing risk of contamination if event occurs (8 votes)
- 2) Training/raising awareness of city, local emergency first responders (5 votes)
- 3) Signage with numbers to call for emergency (4 votes)
- 4) Rapid Response - direct contact with CSX, engineer, Darke County EM (1 vote)
- 5) Reduce speed through town - source water protection area (1 vote)
- 6) Increase awareness of location of wellfield/source water protection area (1 vote)
 - Restrict time of train travel, more daylight hours for faster response time.
 - Limit materials shipped, must have manifest of what cargo shipping, MSD sheets etc.

#2 Underground Storage Tanks

- 1) Develop annual inspection program (7 votes)
- 2) Require contingency plans from owners (5 votes)
- 3) Develop local permitting process and/or monitor state permitting process for new construction (3 votes)
- 4) Develop incentive program for owner inspection, routine maintenance, especially older or smaller unregulated ones (2 votes)
- 5) Regulate new construction through zoning (1 vote)
- 6) Eliminate old, unused tanks (1 vote)
- 7) Develop local response, notification process when find old UST during construction (1 vote)

- Obtain state notification when new installing, permits occur

#3 Transportation Routes

- 1) Signage (8 votes)
- 2) Work with local first responders to make sure have spill contingency plan (8 votes)
- 3) Build relationships with owners of transportation services, target for information and education. (2 votes)
- 4) Develop/support first responders/Hazmat - resources and training (2 votes)
 - Target owners that received shipments on for education, spill contingency planning

#4 Private Wells

- 1) Work with Health Department on identifying owners and partner with them in developing educational materials, support best management practices (8 votes)
- 2) Eliminate new well construction in source water protection zone and/or in Village (7 votes)
- 3) Develop, enforce best management practices in well construction, abandonment (2 votes)
- 4) Don't approve new wells in WHPA or at least notify Village - isolation radius (1 vote)
- 5) Educate well owners, annual site visits in and out of Village, in protection zone (1 vote)
- 6) Increase awareness of how to properly abandon wells (1 vote)
 - Develop incentive program to help defer costs of properly abandoning wells - inside/outside the Village

#5 Septic Systems

- 1) Homeowner Education (7 votes)
- 2) Partner with Health Department to enforce regulations (3 votes)

#5 Sewer Lines, Pump Stations (6-7) Storm Drains

- 1) Develop and implement I/I program (6 votes)
- 2) Conduct proper operation and maintenance (1 vote)
- 3) Replace and Rehab as part of Capital Improvement program (1 vote)
 - Install monitoring, alarm system at pump stations

#5 Commercial/Industrial Waste Management

- 1) Ensure they have contingency plan for inventory of materials on site (5 votes)
- 2) Increase awareness through education and training (4 votes)
 - Changes in processing, to decrease any adverse environmental thumbprint, i.e. "greener" production practices
 - Incentives for changing processes, reducing environmental thumbprint

Parking Lot: Develop signage throughout town to raise awareness, public education, branding or logo approach to public involvement and awareness

Appendix E

Additional Resources For Source Water Protection

Ohio EPA: www.epa.state.oh

You will find information on educational materials and sample ordinances as well as templates for brochures and posters. The source water materials can be found under the source water assessment program, under groundwater, under division of drinking and ground waters. This site will also link to most of the following sites as well, particularly USEPA.

USEPA: www.epa.gov/safewater

Fact sheets and resources materials including information for public education.

Groundwater Foundation: www.groundwater.org

Educational information on protecting source water most of which is free of charge or low cost. Materials for teachers and children. Can use their public awareness campaign materials for free "Good Water, Good Health, Good Choices". Also can become a Groundwater Guardian community, a program they have to institutionalize ground water protection campaigns.

Source Water Collaborative: www.protectdrinkingwater.org

Collaborative with governmental and nongovernmental entities working together to promote source water protection. Also provides educational materials and links to other useful web sites. Can use their public awareness materials for free, "Your Water, Your Decision".

SMART About Water, National Environmental Services Center: www.wvu.edu/smart
Recent initiative from RCAP and the National Environmental Services Center focusing on source water protection planning and implementation. Also public education and information materials including social marketing for source water protection.

Public Education Campaigns: <http://waterwordsthatwork.com>

Provides tips on conducting a public education campaign around source water protection.

Appendix F

**WATER SUPPLY CONTINGENCY PLAN
(REVISED EDITION)
VILLAGE OF VERSAILLES, OHIO
November 14, 2007**

**PWS ID #1901312
STU ID #1953755**

**PREPARED UNDER OHIO ENVIRONMENTAL
PROTECTION AGENCY
RULE NO. 3745-85-02 (03, 04)**

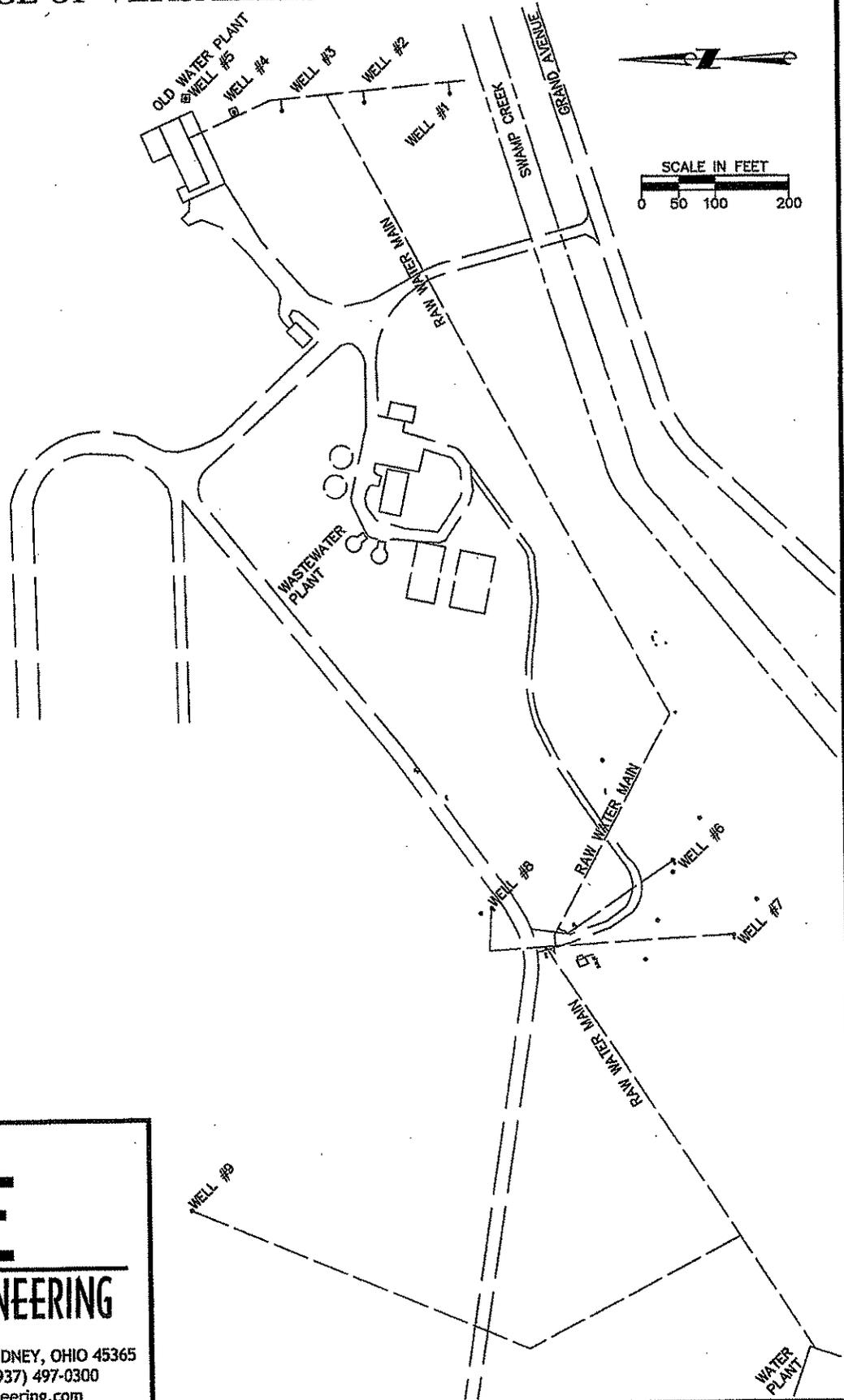
COPIES LOCATED AT:

- 1. WATER PLANT**
- 2. MAYOR'S OFFICE**
- 3. VILLAGE ADMINISTRATOR'S OFFICE**
- 4. SUPERINTENDENT OF UTILITIES' OFFICE**
- 5. POLICE DEPARTMENT OFFICE**
- 6. FIRE DEPARTMENT OFFICE**
- 7. FISCAL OFFICER'S OFFICE**
- 8. WASTEWATER PLANT**
- 9. OHIO EPA**

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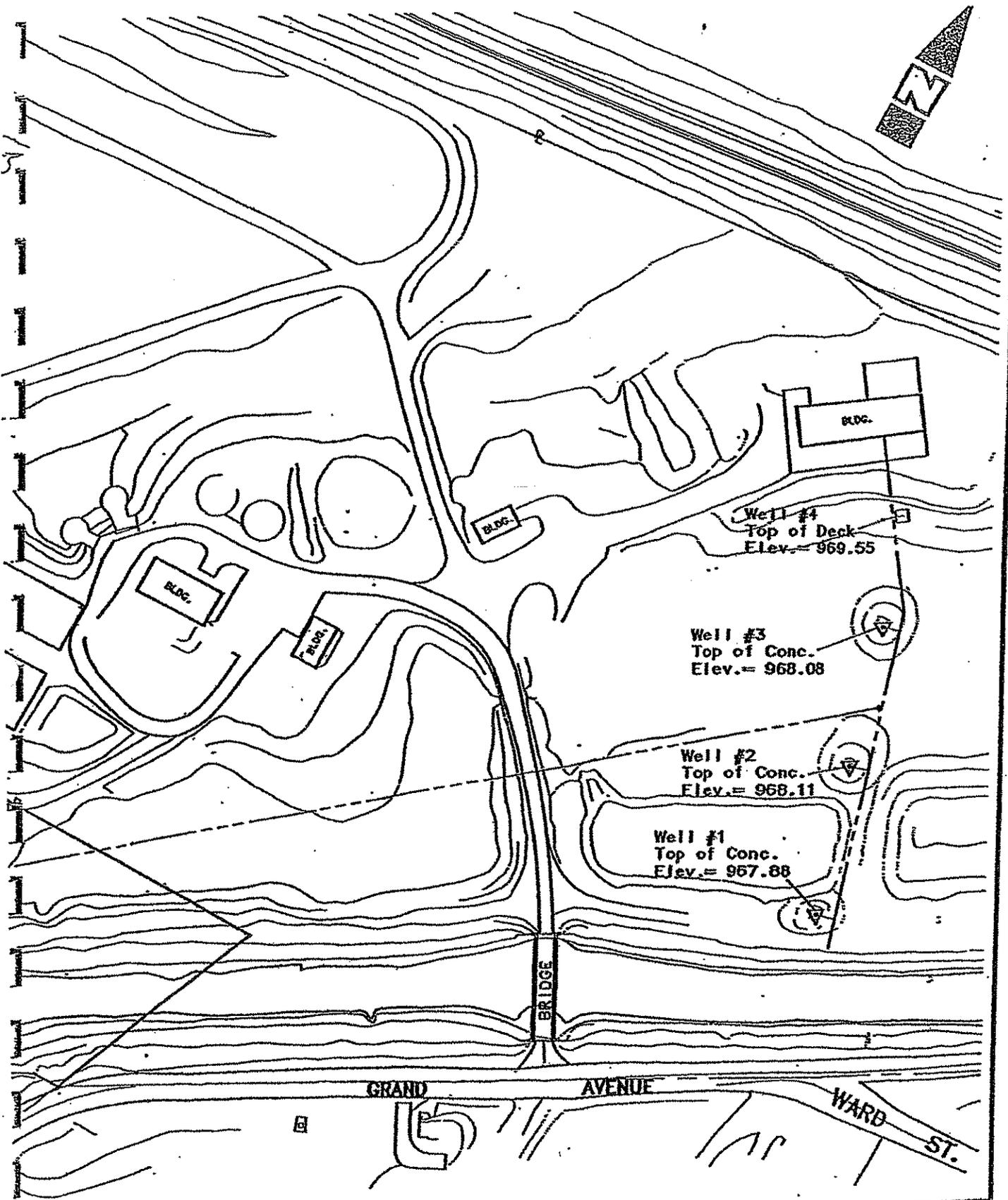
- A. Map of Well Field
- B. Coliform Sample Siting Plan
- C. Possible Emergencies
 - 1. Short Term Power Failure
 - 2. Extended Power Failure
 - 3. Pump Failure
 - 4. Loss of Water
 - 5. Major Water Main Break
 - 6. Unplanned Absence of Operator
 - 7. Train Accident With Chemical Spill
 - 8. Destruction of Plant
 - 9. Destruction of Tower
 - 10. Chemical Supply Cut Off
 - 11. Drought
 - 12. Flooding of Plant Site
- D. Method of Transporting Water and Description of Three Alternate Water Sources
- E. Water Users With Critical Needs
- F. Methods of Notifying Users
- G. Depressurization of System
- H. List of Emergency Telephone Numbers

VILLAGE OF VERSAILLES WELL FIELD SITE PLAN



CHOICE ONE
ENGINEERING

440 E. HOEWISHER ROAD, SIDNEY, OHIO 45365
(937) 497-0200 FAX (937) 497-0300
www.choiceoneengineering.com



SCALE: 1" = 100'

PAGE 1 OF 2


GRIFFITHS-VANDEN BOSCH & ASSOCIATES INC.
 CIVIL ENGINEERS LAND SURVEYORS
 ENGLEWOOD, OHIO



Mon. Well #5T
Top Casing = 986.55
Grnd. = 981.77

Well #8
Grnd. = 980.79

Well #7Y
Casing = 978.34
Ind. = 974.31

Mon. Well #3T
Top Casing = 967.66
Grnd. = 959.45

Mon. Well #1T
Top Casing = 975.10
Ind. = 969.27

Well #6
Grnd. = 965.89

Mon. Well #2T
Top Casing = 971.20
Grnd. = 965.56

Well #7
Grnd. = 966.37

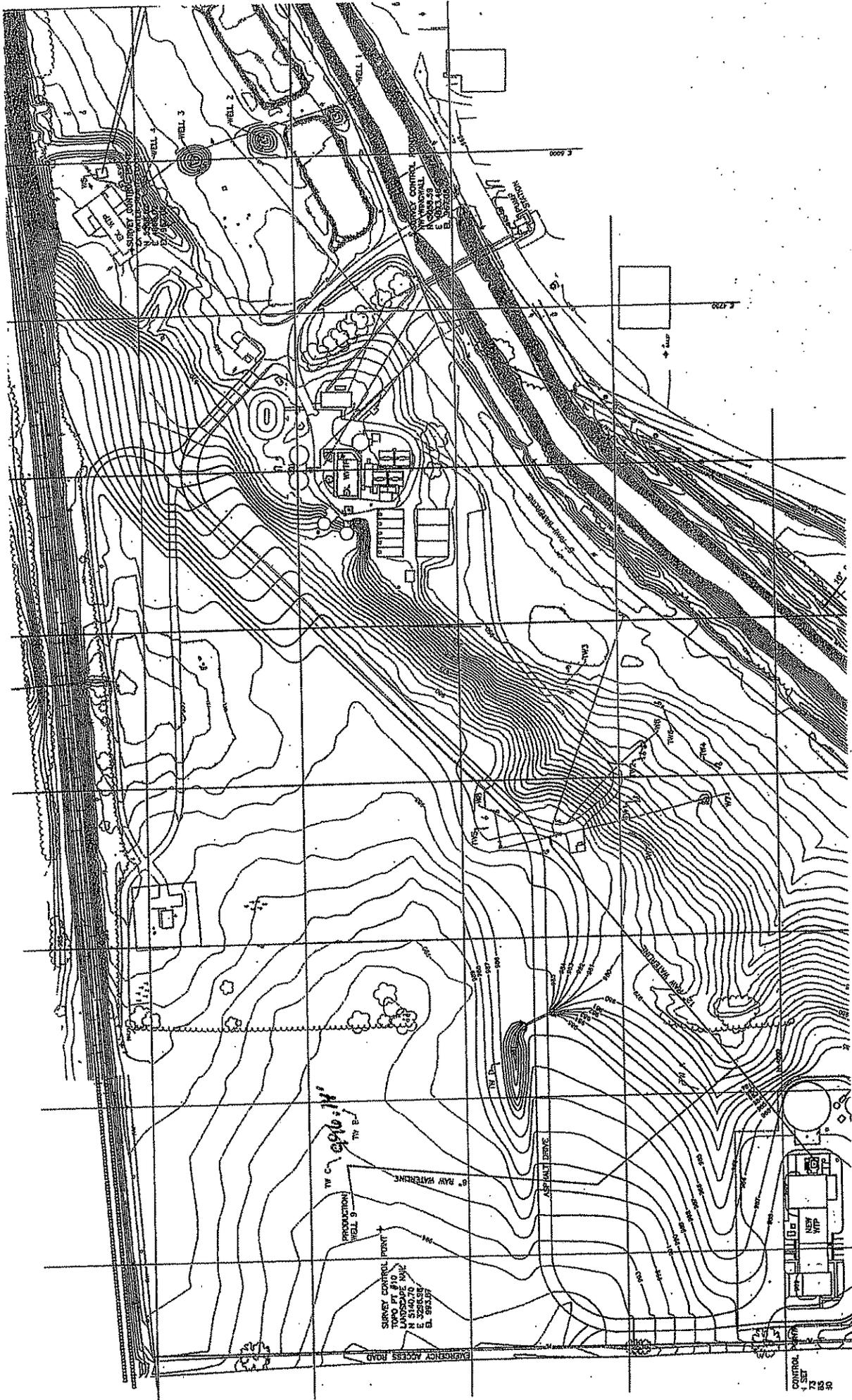
Mon. Well #6T
Top Casing = 968.66
Grnd. = 961.92

Mon. Well #4T
Top Casing = 968.48
Grnd. = 962.65

GRAND AVE

 **GRIFFITHS-VANDEN BOSCH & ASSOCIATES INC.**
 CIVIL ENGINEERS LAND SURVEYORS
 ENGLEWOOD, OHIO

Scale: 1" = 100'



SURVEY CONTROL POINT
TWO PT. #10
LANDSIDE NO. 2
E. 3285.58
E. 563.37

WELL 9
WELL 8
WELL 7
WELL 6
WELL 5
WELL 4
WELL 3
WELL 2
WELL 1

RAW WATERLINE

EARTHQUAKE ACCESS ROAD

CONTROL
NET
12 88

NEW WPT

STATION

WELL 1

WELL 2

WELL 3

E 6000

E 4750

**VERSAILLES WATER PLANT
TOTAL COLIFORM SAMPLE SITING PLAN
FOR VILLAGE WATER SYSTEM**

COUNTY	<u>Darke</u>
WATER SYSTEM NAME	<u>Versailles Water Plant</u>
PWS ID NUMBER	<u>1901312</u>
STU ID NUMBER	<u>1953755</u>
DATE	<u>November 14, 2007</u>

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**PUBLIC WATER SYSTEM
TOTAL COLIFORM SAMPLE SITING PLAN
FOR VILLAGE WATER SYSTEM**

Copies of this plan, along with the Contingency Plan, are at the following locations:

- | | |
|------------------------------------|-----------------------------------|
| 1. Versailles Water Plant | 5. Versailles Police Department |
| 2. Versailles Wastewater Plant | 6. Mayor's Office |
| 3. Utility Superintendent's Office | 7. Village Administrator's Office |
| 4. Versailles Fire Department | 8. Fiscal Officer's Office |

Map(s) for the distribution system are located at the Utilities Office and Village Light Plant.

The following person(s) are thoroughly familiar with the plan and are authorized to implement all or part of the plan as necessary:

Name	Address	Phone
Mark J. Voisard	220 West Wood Street Versailles, OH 45380	937-526-4554
Dane A. Nagel	73 South Main Street Ft. Loramie, OH 45845	937-295-2817
Frank Treon	535 East Ward Street Versailles, OH 45380	937-526-5438
Tim Wehrkamp	36 West Ward Street Versailles, OH 45380	937-526-5677

Note: TOTAL COLIFORM BACTERIOLOGICAL SAMPLE SITING PLANS must be updated at least yearly, and a copy of the reviewed plan submitted to the:

*Ohio EPA, DDAGW
Southwest District Office
401 East Fifth Street
Dayton, OH 45402-2911*

OHIO EPA Laboratory
Instructions For the Collection of Drinking Water Samples
For Total Coliform Analysis

The prescribed procedures must be followed in detail for a valid laboratory analysis:

1. *Select the sampling tap*

- a. A tap, such as a faucet or small valve, is preferable. Do not sample from hoses or drinking water fountains.
- b. Avoid taps with a leak at the stem or taps with a swivel joint.
- c. Aerated or screened nozzles may harbor bacteria. The aerator or screen must be removed before collection of the sample.
- d. Place all carbon filters, sediment filters, and water softeners on bypass unless operated by a public water system.
- e. Sanitize the nozzle of the tap with a chlorine solution.
 - i. Use a 5.25% sodium hypochlorite solution, such as Chlorox liquid bleach. **Do not use chlorine solutions with special scents.** To prepare a sanitizing solution that will contain about 400 mg/L of available chlorine (as hypochlorite) from the 5.25% sodium hypochlorite, add one ounce of bleach to one gallon of water (or 1 tablespoon per half gallon). Store the mixed solution in a tightly closed, screw-capped container. The solution should be discarded and remade six months after preparation. Stronger solutions can be used; however, some faucet discoloration may result.
 - ii. Flush the sample tap to waste for one minute. Close the valve.
 - iii. Apply the sanitizing solution prepared in step (i) above to the nozzle. This can be accomplished by either using a spray bottle or a plastic bag.
 - (1) Using a spray bottle, saturate the tap opening with sanitizing solution, then wait at least two minutes before proceeding;
 - OR
 - (2) Place a bag over the nozzle and hold the bag tightly on the tap. Alternately squeeze and release the bag to flush the solution in and out of the tap. Do this for two minutes. A fresh solution and bag must be used to sanitize each tap.

2. *Flush the tap*

The sample to be collected is intended to be representative of the water in the main. The tap must be opened fully and the water run to waste for at least 3-5 minutes to allow for adequate flushing of the piping between the tap and water main.

3. *Reduce the flow from the tap*

This will allow the sample bottle to be filled without splashing.

4. *Remove the cap from the sample bottle*

- a. Grasp the bottom of the sample bottle.

- b. Remove the cap and hold the exterior of the cap between fingers while filling the sample bottle. Take care not to touch the mouth of the bottle or the inside of the cap with fingers or the sample could become contaminated.
- c. The bottle must be open during the collection of the sample.

5. *Fill the sample bottle*

- a. Do not rinse out the bottle before collecting the sample. Do not remove any "pills" from the bottle. The bottle contains a small amount of sodium thiosulfate to neutralize the chlorine in the water.
- b. Do not touch the rim or mouth of the bottle during collection of the sample.
- c. Do not overflow. Fill the bottle to within 1/2 - 1" of the top.

6. *Immediately recap the sample bottle tightly*

If there is any question as to whether a sample or bottle has become contaminated during collection of the sample, the sample must be discarded and a new sample collected in a new sample bottle.

7. *Deliver the sample to the laboratory as soon as possible*

The laboratory must receive the sample so that analysis can be initiated within 30 hours after collection. Allow the laboratory adequate time to analyze the sample. Certified laboratories will not test samples greater than 30 hours old, because the results will be invalid, and the laboratory risks loss of certification.

8. *Additional information*

- a. A bacteriological sample report form is supplied with each sample bottle. The top half of the form is to be filled out in a legible manner using either indelible pen, rubber stamp, or typewriter. Do not use a fountain pen or other pens having water soluble ink.
- b. Samples must be collected in bottles supplied by the certified laboratory.
- c. Bacteriological sample report forms that have not been properly completed as to name of water system, PWS ID#, address, date and time of collection, and signature of collector will not be accepted for bacteriological examination.

BACTERIOLOGICAL SAMPLE LOCATION

Name	Address/Tap Location	Phone
1. Routine sample location	350 Grand Avenue - Plant Tap	937-526-3148
a. Repeat sample location within five service connections upstream of the routine sample site	300 Grand Avenue - WWTP	937-526-3148
b. Repeat sample location within five service connections downstream of the routine sample site	498 W. Main Street	937-526-4938
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	507 W. Wood Street	937-526-4960
2. Routine sample location	137 N Center St - Village Plant	937-526-4191
a. Repeat sample location within five service connections upstream of the routine sample site	11 E Water Street	937-526-5254
b. Repeat sample location within five service connections downstream of the routine sample site	177 N Center St - Utilities Office	937-526-4191
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	14 North Center Street	937-526-4853
3. Routine sample location	459 S. Center Street	937-526-4427
a. Repeat sample location within five service connections upstream of the routine sample site	4 Virginia Street	937-526-4773
b. Repeat sample location within five service connections downstream of the routine sample site	16 Marker Road	937-526-3051
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	680 S. Center Street	937-526-4689
4. Routine sample location	895 E. Main Street	937-526-3331
a. Repeat sample location within five service connections upstream of the routine sample site	863 E. Main Street	937-526-3111
b. Repeat sample location within five service connections downstream of the routine sample site	960 E. Main Street	937-526-9044
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	970 E Main Street	937-526-3914

Name	Address/Tap Location	Phone
5. Routine sample location	130 W Ward Street	937-526-4681
a. Repeat sample location within five service connections upstream of the routine sample site	206 Pearl Street	937-526-4729
b. Repeat sample location within five service connections downstream of the routine sample site	105 W Ward Street	937-526-4194
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	56 W. Ward Street	937-526-9229
6. Routine sample location	741 E Main Street	937-526-3711
a. Repeat sample location within five service connections upstream of the routine sample site	723 E Main Street	937-526-4571
b. Repeat sample location within five service connections downstream of the routine sample site	769 E Main Street	937-526-5545
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	750 E Main Street	937-526-3841
7. Routine sample location	770 N Center Street	937-526-5172
a. Repeat sample location within five service connections upstream of the routine sample site	738 N Center Street	937-526-3459
b. Repeat sample location within five service connections downstream of the routine sample site	900 N Center Street	937-526-3431
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	1168 N Center Street	937-526-9973
8. Routine sample location	16 Marker Road	937-526-3051
a. Repeat sample location within five service connections upstream of the routine sample site	459 S Center Street	937-526-4427
b. Repeat sample location within five connections downstream of the routine sample site	680 S Center Street	937-526-4689
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	4 Virginia Street	937-526-4773

Add additional pages as necessary.

Name	Address/Tap Location	Phone
9. Routine sample location	177 N Center St - Utilities Office	937-526-4191
a. Repeat sample location within five service connections upstream of the routine sample site	137 N Center St - Village Garage	937-526-4191
b. Repeat sample location within five service connections downstream of the routine sample site	176 N Center Street	937-526-4038
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	255 N Center Street	937-526-3754
10. Routine sample location	791 E Main Street	937-526-3000
a. Repeat sample location within five service connections upstream of the routine sample site	769 E Main Street	937-526-5545
b. Repeat sample location within five service connections downstream of the routine sample site	811C E Main Street	937-526-9046
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample site	750 E Main Street	937-526-3841
11. Routine sample location	834 Jackson Street	937-526-3169
a. Repeat sample location within five service connections upstream of the routine sample site	60 Vista Drive	937-526-3662
b. Repeat sample location within five service connections downstream of the routine sample site	943 Jackson Street	937-526-5181
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample	971 Jackson Street	937-526-9821
12. Routine sample location		
a. Repeat sample location within five service connections upstream of the routine sample site		
b. Repeat sample location within five service connections downstream of the routine sample site		
c. Additional repeat sample location within five service connections upstream or downstream of the routine sample		

Add additional pages as necessary.

APPROVED LABORATORY TESTING

Laboratory Name	Lab Cert #	Address	Phone Number
Belmont Labs	872	25 Holiday Drive Englewood, OH 45322	937-832-8242

**EXAMPLE BOIL ADVISORY
PUBLIC NOTICE - ACUTE BACTERIOLOGICAL VIOLATION**

Public water systems are required by rule 3745-81-21 of the Ohio Administrative Code (OAC), to routinely monitor the bacteriological quality of the drinking water in their distribution system. The sampling conducted for the _____ water system indicated that the permissible maximum contaminant level for total coliform, as specified in rule 3745-81-14 of the OAC, was exceeded during _____, 20____.

“The United States Environmental Protection Agency (USEPA) sets drinking water standards and has determined that the presence of coliform bacteria is a serious health concern. These bacteria are generally not harmful themselves, but their presence in drinking water is serious, because they often are associated with sewage or animal wastes. The presence of these bacteria in drinking water generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, fever, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms; however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. USEPA has set an enforceable drinking water standard for coliform bacteria to reduce the risk of these adverse health effects. Under this standard, drinking water samples must be free of coliform bacteria. Drinking water which is free of coliform bacteria is usually not associated with a health risk from disease-causing bacteria and should be considered safe. State and local health authorities recommend that consumers take the following precautions:

Until further notice, consumers vigorously boil, for at least one minute, any water used for drinking (including water used to make ice), cooking, or oral hygiene.”

The water department/management is conducting an investigation and collecting additional samples and hopes to have this problem corrected soon. An additional notice will be given when the water use advisory is lifted. For further information, contact _____ at _____.

The paragraph in quotation marks is mandatory wording.

**HOW PUBLIC NOTIFICATION MUST BE ISSUED
(ACUTE BACTERIOLOGICAL VIOLATION)**

The Ohio Administrative Code rule 3745-81-32 requires that community public water systems issue public notice when an acute total coliform maximum contaminate level violation occurs by the following methods:

1. By publication for three consecutive days in a daily newspaper of general circulation in the area served by the water system as soon as possible, but in no case more than fourteen days after the violation or failure. If the area served by a public water system is not served by a daily newspaper of general circulation, notice shall be given instead by publication for three consecutive weeks in a weekly newspaper of general circulation serving the area; and
2. By mail delivery (by direct mail or with the water bill) or by hand delivery, not later than thirty days after the violation or failure; and
3. By furnishing a copy of the notice to the radio and television stations serving the area served by the public water system as soon as possible, but in no case later than seventy-two hours after the violation or failure.

(NOTE: If the community water system is in an area which is not served by a daily or weekly newspaper of general circulation, then the owner shall give notice as soon as possible, but in no case later than seventy-two hours after the violation or failure for acute violations by mail or hand delivery or by continuous posting in conspicuous places throughout the area served by the water system.)

(For community acute MCL violation)

I HEREBY CERTIFY THAT THE PUBLIC NOTICE ATTACHED WAS DISTRIBUTED TO ALL CONSUMERS OF THE DRINKING WATER BY THE METHOD(S) INDICATED BELOW, AS REQUIRED BY THE OHIO ADMINISTRATIVE CODE RULE 3745-81-32

Type of Water System	Required Method of Public Notification	Actual Method of Public Notification Based On Type of Community Water System (Fill out all appropriate blanks)
Community served by a daily newspaper	<ol style="list-style-type: none"> Furnishing a copy of the notice to radio and tv stations serving the area served by the water system as soon as possible, but no later than 72 hours after the violation; <u>and</u> Publication for 3 consecutive days in a daily paper of general circulation in the area served by the water system within 14 days of the violation; <u>and</u> Mail or hand delivery within 30 days of the violation. 	Date notice provided to tv and radio: _____ Name of newspaper: _____ Date of publication of notice in paper: _____ Date(s) of mail or hand delivery: _____
Community served only by a weekly newspaper	<ol style="list-style-type: none"> Furnishing a copy of the notice to radio and tv stations serving the area served by the water system as soon as possible, but no later than 72 hours after the violation; <u>and</u> Publication for 3 consecutive weeks in a daily paper of general circulation in the area served by the water system within 14 days of the violation; <u>and</u> Mail or hand delivery within 30 days of the violation. 	Date notice provided to tv and radio: _____ Name of newspaper: _____ Date of publication of notice in paper: _____ Date(s) of mail or hand delivery: _____
Community not served by a newspaper	<ol style="list-style-type: none"> Mail <u>or</u> hand delivery <u>or</u> continuous posting in conspicuous places as soon as possible, but no later than 72 hours of the violation. Mail or hand delivery of the notice must be repeated at least once every 30 days as long as the violation exists. 	Date of mail or hand delivery: _____ or Date notice first posted: _____ or Location(s) of <u>continuous</u> posting: _____ _____ _____

Signature of Responsible Official

Printed Name and Title of Responsible Official

Date

Name of Public Water System

PWS ID Number

County Name

Monitoring Period

For OEPA Use Only:
 Date PN Received: _____
 PN acceptable: _____ PN not acceptable: _____

DISINFECTION OF WELLS

All wells are to be properly disinfected by chlorination before being placed into service. The following procedures outline a common method of well disinfection:

Procedure

1. Pour two gallons of household bleach (sodium hypochlorite) into the well casing; making sure the inner walls, cable, and drop pipe are wetted.
2. Circulate the water in the casing by pumping from the well back into the casing for a period of approximately one hour. Wash down the inside of the casing, drop pipe, and electrical cable.
3. Cap the well and allow it to stand overnight.
4. Pump the chlorinated water from the well, then flush the system free of chlorinated water.
5. Collect a sample of water from the well for bacterial analysis. This sample shall not be taken less than 24 hours after the system has been flushed free of chlorine.
6. If the bacteriological sample taken from the well in step 5 is reported as total coliform positive, repeat steps 1, 2, 3, 4 and 5 a second time.
7. If the water is reported as total coliform positive after repeating the procedure two times, contact the district representative.

B. BUDGET

The Village has established a Water Enterprise Fund and a Water Supply Development Fund. These funds could be used if any emergency situation were to occur with the water system.

On August 24, 1981, the Village Council approved Resolution No. 81-26 which adopted a purchasing manual. The purchasing manual included the following section on emergency purchases:

IX. Emergency Purchases

When a circumstance requires that a purchase be made in a limited period of time so as to preclude the competitive bidding or negotiations process, the Village Administrator or Mayor may waive the purchasing procedure and authorize an emergency purchase. Such emergency purchases shall be limited to situations where:

1. Delay in making the purchase presents a threat to the health or welfare of the citizens of Versailles.
2. The purchase is required due to unforeseen circumstances, and delay would seriously hinder the effective delivery of municipal services.
3. There are no feasible alternatives to the emergency purchase.

Negligence on the part of supervisors to plan properly is not justification for an "Emergency Purchase." Every effort should be made to keep this type of purchase to an absolute minimum.

Under normal, non-emergency circumstances, the Village Administrator may approve purchases under \$25,000.00. Purchases over \$25,000.00 must be approved by the Finance and Purchasing Committee of Council.

C. POSSIBLE EMERGENCIES

1. Short Term Power Failure (Time Interruption Less Than Two Hours)

The water plant has an emergency diesel fuel generator. The generator includes a John Deere 6-cylinder inline engine with a KVA rating of 468.8. If a short term power failure were to occur, the emergency generator would be used with virtually no lost pumping or treatment time.

If for some reason both the electrical power and emergency generator were to be lost for a short period of time, there would still not be a water supply problem. The two 500,000 storage tanks could easily handle a two hour peak demand which would total approximately 40,000 gallons.

The Village would have another advantage during a short term power failure in that the electric distribution system is municipally owned and operated. Village line crews would be dispatched immediately during any power loss. One individual assigned to work at the water plant previously worked on the line crew and has extensive experience in electric system maintenance.

2. Extended Power Failure (Two Hours or More)

Obviously, the first step during any extended power failure would be to attempt to use the backup generator.

If the backup system does not function, then the following steps should be taken to provide water service:

- Notify civil defense agency.
- Communicate with public to reduce or eliminate water consumption. If necessary, close industrial plants.
- Use fire department to pump water from other sources directly unto the distribution system at hydrant locations. This operation should be completed under the supervision of the County Health Department and Ohio EPA.
- Responsibilities during outage would be:

Overall Responsibility	Village Administrator & Superintendent of Utilities
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Communications	Village Administrator or Designee
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Power Resumption	Electric Department
Temporary Water	Fire Department
Plant Maintenance	Plant Operators
Public Safety	Police Department

3. Pump or Motor Failure

There are four pumps which push water into the distribution system. Normally, only one of these pumps is used at any one time. The failure of a single pump would not hinder the distribution operation.

If all of the pumps were to fail, water would be supplied from other sources directly into the system, as described in No. 2 above.

4. Loss of Water From a Well

There is sufficient pumping capacity so that an adequate supply could still be maintained if one well were to go out of service. If several wells were put out of service, a combination of using the remaining wells and other sources (as described in No. 2) would be used. In addition, the public would be asked to reduce or eliminate consumption.

5. Major Water Main Break

Obviously, the main efforts should be directed toward repairing the break. Any single break could be repaired by in-house crews. Additional contractors (listed in Section H) could also be contracted, if needed. For the most part, the distribution system is adequately looped so that a single break would not cut off service to a large number of customers.

6. Unplanned Absence of Operator

There are three operators assigned full-time to the water and sewage plants. If these operators became unavailable, the Superintendent of Utilities and the distribution crew all have considerable experience operating and maintaining the plant. The cities of Sidney and Piqua have also agreed that their personnel could be used during an emergency in Versailles.

7. Train Accident With Chemical Spill

If it appeared that the ground water supply may be contaminated, then the supply would temporarily be shut off and reserves from the clear well and elevated tank used. During this period, personnel from the Ohio EPA would be contacted to determine the affect of the chemical on the water supply. For a short period of time, the well located the greatest distance from the disaster could be used.

8. Destruction of Plant

During reconstruction of the plant, water would be pumped directly into the distribution system with appropriate chemicals added at selected locations.

9. Destruction of Tower

The mains to the tower would be valved off. The pressure relief valve at the water plant would be used. Operations would be similar to those when the tower is being repaired. No significant inconvenience would be experienced by customers.

10. Chemical Supply Cut Off

Under normal circumstances, the water would be safe to drink without the help of chemicals. However, increased emphasis would be placed on testing the supply on a continual basis.

11. Drought

During an extended period of drought, all users of the water system will initially be asked to voluntarily cut back on water consumption. Well water levels and distribution system flow will be closely monitored by plant operators. If the drought condition worsens, additional measures will be taken which would consist of the Village Council adopting a mandatory water usage policy. This policy would ban all non-essential use of water. Violators will be subject to penalties that would include a written notice or disconnection of water service. If the water source would completely fail to produce water, we would then have water hauled in from an available outside source and pumped directly into the distribution system or dumped in portable drop tanks that would be placed at emergency stations within the Village. All water in the elevated storage tanks would be strictly isolated for drinking purposes only. Methods for notifying users in case of an emergency would be followed as outlined in Section F.

12. Flooding of Plant Site

During severe flooding at the plant site, clear well contamination will occur and power will need to be terminated to the facility. Procedures utilized during an extended power failure (Section C-2) will be utilized. Pumps, other equipment, and clean-up crews would be utilized once the flooding has subsided to place the facility back into safe and sanitary operation.

D. METHOD OF TRANSPORTING WATER FROM ALTERNATIVE SOURCES

Water would be transported from alternate sources using the tank trucks from various surrounding fire departments. Presumably, these departments would bring already treated water from their communities. Upon arrival, the water would still be treated with chlorine (under supervision of the Department of Health), and residents would be notified by radio that they should boil the water before consuming. The first water sources would be the communities of Greenville, Ansonia, Union City, and the Civil Defense Unit in Sidney. The Versailles Fire Department also has a tank truck with considerable capacity. Other communities' equipment would also be used as needed.

E. WATER USERS WITH CRITICAL NEEDS

The Village has a nursing home facility (Versailles Health Care Center, Inc.) that might normally receive critical priority. Those customers needing water for refrigeration operation, livestock care, or manufacturing operations should be placed high on any priority listing, and include:

Versailles Schools

All Doctors Offices

All Grocery Stores

Weaver Brothers, Inc.

Midmark Corporation

Plastic Recycling Technology

Codino's Limited

King's Command Foods

F. METHODS OF NOTIFYING USERS OF EMERGENCY

The following methods would be used to notify users of a water supply emergency:

- Radio
- Television
- Newspapers
- Notices posted in banks or at the post office
- Announcements over public address systems placed in police cars.

G. DEPRESSURIZATION OF SYSTEM

If depressurization of the water system has occurred, the procedure used to return the system to normal service would be:

- Begin putting water back into the system.
- Use hydrants to let air out of the system.
- Pick highest hydrants to let air out and also hydrants that are at the end of the distribution lines.

H. LIST OF EMERGENCY TELEPHONE NUMBERS

1. Ohio EPA - Office of Water Supply
 - Southwest District Office (937) 285-6004
 - State (Columbus) - Central District Office (614) 466-8307
2. Police
 - Versailles (Local) 911
 - Sheriff 911
 - State Highway Patrol (Greenville) 911
3. Fire
 - Versailles (Local) 911
 - Greenville 911
 - Ansonia 911
4. Emergency Medical Services 911
5. Local Disaster Services
 - June Mong/Darke Co EMA Director Work: 548-1444
Cell: (937) 459-0197
 - Mindy Saylor/Darke Co EMA Deputy Director Work 548-1444
Cell: (937) 459-0199
6. CSX Railroad
 - Richard Havenar, Roadmaster (937) 214-2022
 - Track Supervisor (800) 841-7112
 - Dispatch (317) 267-4964 or
(317) 267-4023
 - Police (800) 232-0144

7. Water Supply Personnel

- Mark Voisard 526-4554
- Frank Treon 526-5438
- Tim Wehrkamp 526-5677
- Brian Gehret 526-9412

8. Administrative Personnel

- Jeff A. Subler 526-5439
- Randy Gump 526-4058
- Dane Nagel (937) 295-2817
- Mary Ann Gump 526-4058

9. Consultants

- Singer Environmental, Inc.
(Operations, Technical & Environmental) (513) 260-4123
- CH2M Hill (Engineering) (614) 888-3100
- Choice One Engineering (937) 497-0200
- Mote & Associates (937) 548-7511
- Griffiths-Vanden Bosch & Associates
(Engineering) (937) 836-4888

10. Contractors for Line Break

- Bohman Excavating 526-9306
- Ahrens Plumbing 526-4705

Others (Second Call)

- Chuck Samples General Contractors, Inc. (419) 586-1434 or
(419) 305-5459
- Brumbaugh Construction 692-5107
- Richard Campbell Excavating 337-5237

11. Electric Power Suppliers

- Dayton Power & Light (937) 331-4222
- American Municipal Power-Ohio (800) 875-2676

12. Electricians

- (First Call) Village Personnel 526-4191
- (Second Call) Scott's Electric 526-9973
- (Third Call) Piqua Municipal System (937) 778-2051

13. Well Drilling and Pump Service

- Reynold's (419) 826-1000
- Moody's (937) 859-4482
- HD Water Service (937) 492-9282

14. Plant Mechanical Contractors

- (First Call) US Filter (515) 268-8447
- (Second Call) Tomco (800) 832-4262
- (Third Call) Chemco Systems (724) 258-7333

15. Chemical Suppliers

- Air Liquide (708) 482-8400
- Jones Chemicals (317) 787-8382

- Univar (513) 714-5238
- Bonded Chemical (614) 777-9240

16. Hospital, Emergency Squad, Medical

- Wayne Hospital 548-1141
- Upper Valley Medical Center 440-4000
- Wilson Memorial Hospital 498-5300
- Miami Valley Hospital (937) 223-6192
- Emergency Squad 911
- Dr. Bowlin 526-3271
- Dr. Lenox 526-3271
- Dr. Rawlins 526-3016
- Dr. Harshbarger 526-3016
- Dr. Elshoff 526-9834
- Dr. Klamar 526-9834