

2010 Exemplary Efforts in Environmental Protection Award

The purpose of this award is to recognize a water or wastewater system, which has demonstrated exemplary initiatives, projects or education on the critical role of the utility in Environmental Protection to the Public.

Nominee: Village of Paw Paw

Background

The Village of Paw Paw, located in central Van Buren County, is known for its vineyards and is home to the St. Julian Wine Company. In the center of town is the beautiful Maple Lake which features an outdoor amphitheater that hosts numerous summer and fall concerts. Also the county seat, the Village covers approximately 2.5 square miles and has a total population of approximately 3,369. The Village of Paw Paw operates three production wells (PWs). PW-6 and PW-8 are the primary production wells while PW-4 is used as a standby water source. Chlorine and phosphate are used to treat the drinking water.

Because of various historical environmental sites of concern and after experiencing the loss of one production well to contamination, the Village of Paw Paw decided to implement a local Wellhead Protection Program (WHPP). In June of 1996, a report titled, "Wellhead Protection Area Delineation of the Village of Paw Paw Production Wells No. 6 and No. 8" was completed by Earth Tech. On September 3, 1996, the report was approved by the Michigan Department of Natural Resources and Environment (MDNRE and formerly the Michigan Department of Environmental Quality).

In 2003, the Village contacted the Michigan Rural Water Association (MRWA) EPA Source Water Protection Specialist (formerly the Groundwater Specialist) to assist with the development and implementation of a local WHPP. In May of 2005, the Village applied for the Michigan Wellhead Protection Grant Program through the MDNRE. The Village identified a strong team of people to assist in the implementation of the WHPP. Team members included the:

- Village Manager
- Water Quality Specialist
- Department of Public Services Director
- Fire Chief
- High school English teacher (retired)/Member of the Planning Commission
- Paw Paw Township Supervisor
- Executive Director of the Conservation District
- Executive Vice President of St. Julian Winery
- MRWA EPA Source Water Protection Specialist

Not only is this a diverse group of people, but they have been dedicated to source water protection in their community. The Source Water Protection Specialist completed the WHPP Plan in May of 2006 and submitted the report to the MDNRE. The report was approved on June 13, 2006.

Why should Paw Paw receive this award?

I have had the chance to work with a number of communities throughout Michigan on source water protection. I am especially impressed with the environmental protection efforts in this small community for a number of reasons. First, the Village voluntarily started to work on wellhead protection efforts several years before grant funding became available through the state of Michigan. Consequently, when the Village did apply for funding several years later, they had over \$10,000 worth of previous expenditures. In addition, they have continued to apply each year thereafter. Second, the WHPP team is made up of a group of dedicated individuals that are committed to source water protection. Realizing the importance of program implementation, the team continued to meet quarterly. Team members have consistently attended meetings and volunteered excellent ideas that have made the WHPP the success that it is today.

Thirdly, within the last year, the Village was informed that residential wells north of the Village's wellfield were contaminated by a local industry. Realizing that the contamination could eventually impact the Village's wellfield, they took a proactive, aggressive approach. First, they utilized all of their previous studies on groundwater movement and flow and worked with the local industry to supply these documents to them to use during their environmental review. Second, the Village is studying potential sites to purchase and locate new wells. According to the Village Manager, the MDNRE has also recommended that the residents impacted should hook into the Village's water supply. In addition, the Village is going above and beyond the monitoring and testing that is being done by the local industry and doing their own monitoring and testing. Finally, they have done an excellent job keeping the public informed and educated about the problem. Problems such as these can occur within any community and the Village has taken all the right steps to ensure a safe and secure drinking water supply.

Fourth, they have implemented an aggressive environmental education program. Their efforts have been unique and used as successful examples within small and large systems around Michigan. Finally, they realize that environmental education is an ongoing effort. Below you will see both items that they have worked on in the past, and items that they will focus on in the future.

Environmental Protection Educational Efforts

Presentations within Local Schools



For the last four years, the Village has gone into the local schools and presented on source water protection. The Village has one groundwater model that they use to demonstrate groundwater movement and contamination prevention. In 2009, the Village also purchased an EnviroScape Model that demonstrates point and non-point source pollution. In addition to the groundwater model, they plan to use the EnviroScape at the spring presentation.



The Village is also doing an edible aquifer session with students in the spring. This activity involves yummy items such as ice cream (confining layer), oreos (dirts/gravels/pebbles), Sprite (water), sprinkles (top soils), food coloring (contamination) and a straw (well). The EPA Source Water Protection Specialist agreed to assist the Village with the activity.

Essay Contest for Paw Paw High School Students

Village of Paw Paw
Wellhead Protection Program \$500 Scholarship

Purpose: In an effort to protect a community's drinking water, the 1986 amendments to the Federal Safe Drinking Water Act provided for the establishment of Wellhead Protection Programs (WHPPs) designed to be locally initiated and implemented. In 2005, the Village of Paw Paw designed such a program in an effort to safeguard its drinking water and encourage public involvement.

Amount of the Scholarship: One first place scholarship (\$500) awarded annually.

Application Procedure:

1. Qualification of the applicant:
 - a. Must be a college-bound high school junior or senior.
2. Procedure for filing:
 - a. Submit an essay that addresses the question "What could each person do to save or protect the public water supply system?" The essay is to be a minimum of 300 words and a maximum of 500, typed, double-spaced, and one-inch margins.
 - b. Include in your essay why you think your idea would be effective, how you would get others to participate and how you would go about promoting your suggestion.
 - c. Complete and attach the scholarship application form.
3. Method of selection:
 - a. Judges from the Village of Paw Paw's WHPP Committee will judge the essay's content on **originality, depth of knowledge, practicality and ease of implementation.**
4. Deadline for filing:
 - a. The application and essay must be postmarked by April 1, 2009.
5. Award of scholarship:
 - a. The scholarship is contingent upon your acceptance to a chosen college.
 - b. The award will be drafted in your name and the name of the college or university to which you have been admitted.

TIPS

*Observe the application deadline of April 1, 2009
*Proofread everything. Check for spelling, grammar and punctuation.

As noted above, one of the team members is a former English teacher from Paw Paw High School. She drafted essay contest rules and worked closely with the local high school. The first essay contest was held in the Spring of 2009 and was a success. Students were asked to identify a major threat to the drinking water supply and explain ways to protect against such a threat. The chosen winner received a \$500 scholarship to a college or university of choice. Currently, the WHPP team is organizing the next essay contest which will take place in

the spring of 2010. The essay contest guidelines have also been shared with other communities around Michigan.

Poster Contest for Paw Paw High School Students

The Village also decided to organize a poster contest for source water protection. The former teacher is working with the high school art teacher to discuss the poster contest guidelines. Currently, rules are being drafted and the contest will take place in the Spring of 2010. Similar to the essay contest, the chosen winner will receive a \$500 scholarship to the college or university of choice.

Groundwater Model Donations to the Local Schools

The Village of Paw Paw talked with the Principal of the Paw Paw Middle School about donating a groundwater model to the school. During the 2009-2010 fiscal year, the Village will be purchasing one more groundwater model. They would like to give one model to Trinity Lutheran and St. Mary's to share and the other model to the Paw Paw Public Schools. (2 elementary, 1 middle school, 1 high school). The Village also plans to put a press release in the local newspaper along with a writeup about the program. They would like to present the models to the schools sometime between March and May 2010.

The Village will also talk with the Paw Paw Schools to see if teachers would be interested in a "train the trainer" session. This session could train the teachers on how to use the groundwater models. The EPA Source Water Protection Specialist has agreed to assist the Village with this training session.

Educational Materials

The Village has also purchased a variety of materials for environmental protection. Items include: water wheels, pencils, rulers, and coloring books for various age groups. These items have been given out at school presentations and at various community events. Village employees also received WHPP sweatshirts, t-shirts and coats with the Wellhead Protection logo. Questions arise by the public about what the WHPP is and this opens up the lines of communication for source water protection.

Movie Theater Advertisements on Source Water Protection

The Village worked with Digital Working Screen Media and the local movie theater to put groundwater protection advertisements together. The local theater decided to hold off on the effort until a later time, but I still believe this is an important activity to note because the Village spent numerous hours trying to organize the activity and they still plan to pursue the effort. Similar to the City of Kalamazoo's experience, they believe its message could reach a number of people.

Placemats for Environmental Protection

Rural Water Words

Water Wisdom

Paw Paw Drinking Water Protection Program

PROTECT YOUR DRINKING WATER

The Village also worked with the EPA Source Water Protection Specialist to design a placemat for environmental protection. These placemats are given to five local restaurants. Periodically, the

Village checks with them to see if they are being used. They are being used and have been a successful education tool.

Brochures for Environmental Protection

The Village also worked with the EPA Source Water Protection Specialist to design two different brochures for environmental protection. These brochures were placed in areas around the Village and sent in the mail. The first brochure describes how groundwater moves and contamination occurs. It also explains the local WHPP and provides tips to protect the drinking water source. The second brochure discusses the dangers of abandoned wells and provides information on plugging these wells. The Village plans to pursue abandoned well issues in the future. A picture of each brochure is below.

What Can You Do To Protect Your Drinking Water?

1. Inform the Village of Paw Paw of any potential source of contamination.
2. Properly plug abandoned wells on your property.
3. Be aware of dangerous household hazardous chemicals and never dump them directly onto the ground.
4. Consider alternatives to household products that contain hazardous chemicals.
5. Participate in a Household Hazardous Waste Collection Day.
6. Recycle used motor oil and brake and transmission fluid. Many service stations will accept used oil.
7. Pick up and dispose of animal waste.
8. Follow instructions and soil test recommendations for use of pesticides and fertilizers. Over-application is harmful.
9. If you have a private well, test your water annually.
10. If you have a septic system, have it checked every three years to ensure that it is functioning properly.
11. Get involved in the Paw Paw Wellhead Protection Program.

For Further Information

Village of Paw Paw
111 East Michigan Avenue
Paw Paw, MI 49079
269-537-3169

What is Groundwater?

Groundwater is the water that fills the small spaces between rock particles (sand, gravel, etc.) or cracks in solid rock. Rain, melting snow, or surface water becomes groundwater by seeping into the ground and filling these spaces. The top of the water-saturated zone is called the water table.

Water movement is cyclical and moves from the ground to the surface (springs, rivers, lakes, wells) to the air (evaporation) and back to the surface (precipitation) where it seeps into the ground and into an aquifer. An aquifer is any type of geologic material, such as sand or sandstone, which can supply water to wells or springs.

Groundwater, which supplies wells, often comes from within a short distance (a few miles) of the well. How far the groundwater now depends both on how much the well is pumped and what type of rock particles or bedrock it is moving through.

How Do Wells Become Contaminated?

Wells become contaminated when substances that are harmful to human health get into the groundwater. Water from these wells can be dangerous to drink when the level of pollutants is above health standards. Many of our everyday activities can cause contamination. The diagram includes potential sources of contamination.


What is Wellhead Protection?

Because residents in the Village of Paw Paw and Paw Paw Township depend on clean, safe groundwater to supply homes, industries and recreational activities, a voluntary Wellhead Protection Program (VWHP) was developed. The VWHP is a planning and management program aimed at protecting the Village's groundwater supply from contamination. The Village established a VWHP team to oversee the program. First, a Wellhead Protection Area (WHPA) was established. A picture of Paw Paw's WHPA is shown. At the edge of this area, it would take ten years for contamination to reach the Village's municipal wells. To prevent this area, potential and existing sources of contamination were mapped. Finally, activities were implemented to educate the public about groundwater protection.

How to Locate Abandoned Wells on Your Property

- Search for water well drilling logs or old drilling statements that show well depth and well location.
- Information can be found by contacting any of the following sources: (a) the contractor who drilled or serviced the well, (b) the local health department, (c) the Michigan Geological Survey Division in Lansing.
- If there are no records available for your well, look for the following:
 - Pipes sticking out of the ground.
 - Pipes sticking through wall or floor in the basement.
 - Electrical switch boxes out in the yard.
 - Cement pits in or under sheds.
 - Windmills.
 - Old brick, block, or stone structures.
 - Old hand pumps.
- For locating buried wells:
 - Metal detectors may be used to find buried steel well casings.
 - First, locate where the old water line entered the home or building.
 - From this point, survey the ground with the metal detector moving away from the structure.
 - Use a marker to designate the location of any readings you get.
 - Well casings will typically be 4 to 6 feet below grade and will be located between 3 to 25 feet from your home.

Plugging



Abandoned Water Wells

Protecting Your Safety, Health and the Environment

Unplugged Abandoned Wells Pose Safety, Health and Environmental Threats

Safety Hazard—Each year the Michigan Department of Environmental Quality (MDEQ) receives reports of people, mostly children, falling into old wells. Injury or death may result.

Health Hazard—Abandoned wells act as conduits for contaminants to move from the surface into deeper aquifers. Drinking water contamination has been caused by abandoned wells.

Environmental Hazard—Disconnected well casings or open, uncased boreholes allow movement of water between previously separated aquifers. This can degrade water quality. Abandoned wells have also been used for illegal dumping of waste.

What is an Abandoned Water Well?

An abandoned water well is defined as a well which:

- has its use permanently discontinued;
- is, in such a repair that its continued use for obtaining groundwater is impractical;
- has been left uncompleted;
- is a threat to groundwater resources;
- is, or may be a health or safety hazard.

The material was created by the Association of Health Commissioners

Village of Paw Paw
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A temporarily abandoned well is a well which is not in use, but is intended by the owner to be used as a source of groundwater. To be classified as temporarily abandoned, a well casing must:

- be securely sealed with a threaded, welded, or solvent welded cap to prevent access into the well and eliminate openings into the well.
- Comply with isolation distance and construction requirements.

Who is Responsible for Plugging Abandoned Water Wells?

The property owner is responsible for plugging an abandoned water well.

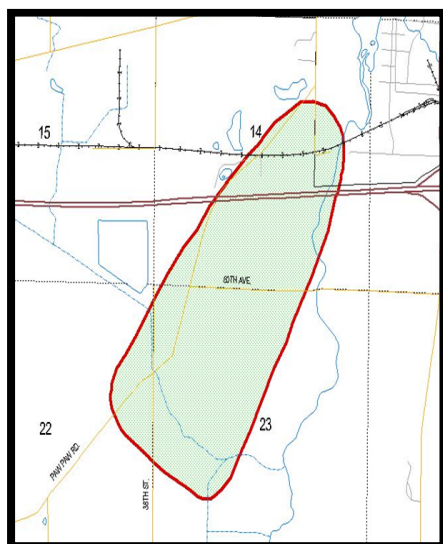
A registered well drilling contractor or his/her employee may plug a well at any residence, farm, industry, business or other water supply facility.

Examples of Abandoned Wells That Must Be Plugged

- Wells that are not operational.
- Wells that are disconnected and taken out of service and the connection is made to the municipal water system.
- Any operable or abandoned well which is not properly sealed that can be a safety or environmental hazard.

For Further Information, contact:
Village of Paw Paw
Phone: 269-637-3148

Digitizing of WHPA Maps



The Village also worked with the Van Buren County Land Services on the purchase of large scale delineation maps. The Village plans to purchase approximately ten large scale maps for the following groups:

- Village Hall
- Water Treatment Plant
- Police and Fire Stations
- Van Buren County Health Department
- Others

These will be especially important when making decisions regarding site plan review criteria.

Website

In the next year, the Village would like to work on adding information to the website. The Village would also like to effectively advertise the website in unique areas so that residents are aware that information is available.

Road Signs

During 2008, the Village purchased and posted four drinking water protection road signs around the Wellhead Protection Area. These road signs indicate that the Village is committed to drinking water protection and help ensure residents that the Village is taking an active approach to drinking water protection.

“Paw Paw Days” Booth

The Village of Paw Paw annually hosts Paw Paw Days. At this event, the Village has had a booth with the groundwater model and educational materials on source water protection. The Village has worked closely with the Van Buren Conservation District to assist with this event.

Village Recycling Program

The Village also has an ordinance in place that requires local trash haulers to have a recycling program in place for businesses and residents. The Village also recycles a variety of materials, but they are currently working to put a better system in place so that more items can be recycled.

Household Hazardous Waste Collection Program

The Village and its residents also participate in the Van Buren County Household Hazardous Waste Collection Program.

Cable Access Channel

The Village is working to place videos and powerpoint presentations on the local cable access channel. They will work with the EPA Source Water Protection Specialist. Source water protection powerpoints can be tailored to the Village of Paw Paw. In addition, the Village is interested in looking at a variety of videos on source water/environmental protection that can be shown on the local cable access channel.

Groundwater Protection Ordinance

The Village also developed a groundwater protection ordinance. The Village attorney reviewed the document and finalized it. They plan to look at other management tools as well such as site plan review standards, environmental permits checklists, agricultural management and abandoned well management.

For these reasons, please strongly consider the Village of Paw Paw for the Exemplary Efforts in Environmental Protection Award.

Submitted by: Kelly Hon, MRWA EPA Source Water Protection Specialist