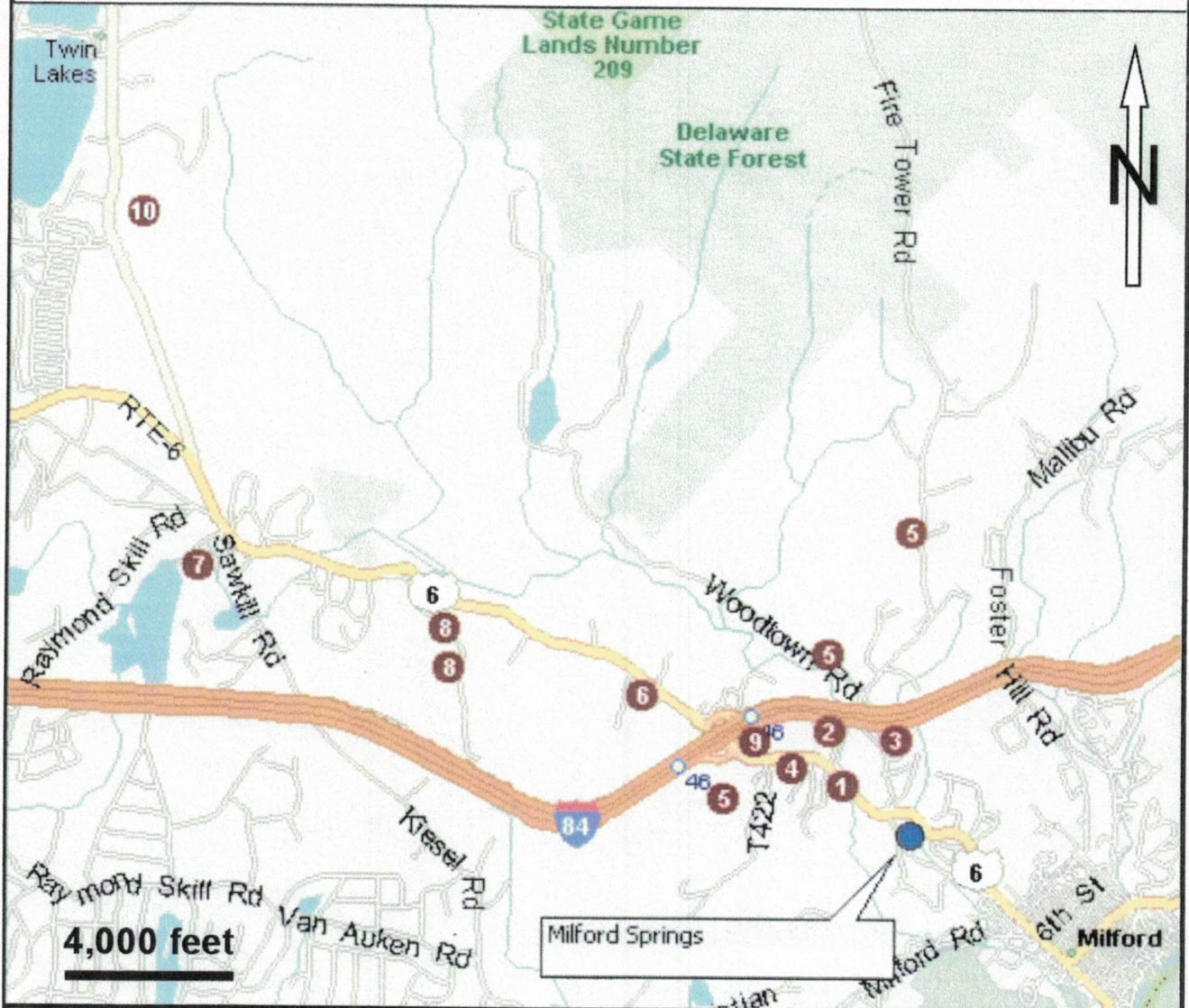


# Contaminant Source Locations



The maroon circles indicate contaminant source locations. The numbers match the numbers in the tables in the report.

## SOURCE WATER PROTECTION PLAN FOR THE MILFORD SPRINGS Milford Township, Pike County Pennsylvania

Figure 7. Contaminant Source Locations



## **4. SOURCE WATER PROTECTION AREA MANAGEMENT and COMMITMENT**

### **Introduction**

The predominant land uses in the source water area (the Sawkill Creek and Vantine Brook watersheds upgradient of the springs) are forests, residences, both year-round and seasonal, and major highways. There is some limited commercial development along Route 6. The largest single commercial activity is a stone quarry and crushing plant located along Route 6 more than 2 miles from the springs.

### **Management Methods**

#### **Acquire land**

The gravel pit that impacted the springs is now closed and the pit is revegetated. The Milford Water Authority is negotiating with the land owner to purchase this 28-acre parcel. The closing was held on December 12, 2005 using funding secured via grants from DCNR, the Delaware Highlands Conservancy, the US Army Corps of Engineers, and Milford Water Authority reserve funds. The Authority has applied for a Department of Conservation and Natural Resources grant to fund part of the purchase price. The proposed land use after purchase is an inter-municipal greenway with noninvasive recreational uses along the stream corridor. The Authority will monitor opportunities for additional purchases and easements of key parcels primarily within zone 2, and will use grants, bargain sales strategies, and Authority backed mortgages as appropriate. The Board of Directors will assume the responsibility for this activity. Preliminary discussions are also underway which will hopefully lead to the acquisition of an additional strategically-located parcel of land.

#### **Obtain conservation easements**

The Milford Water Authority is working directly with other land owners to establish conservation easements on key land parcels located in close proximity to the springs. Establishing conservation easements can create the same level of source water protection as outright ownership, given the appropriate level of commitment by the owners. There are a number of very large tracts of land, owned by private individuals and by hunting clubs, whose development would significantly impact the Sawkill Creek Watershed. Large, interstate development companies are showing interest in such parcels throughout the county. The Authority recently negotiated for and on March 1, 2005 signed a conservation easement with the Schnieder family for 60 acres of land adjoining a planned residential development located in the south quadrant of the intersection of Route 6 and Interstate Highway 84. This easement area is within Zones 2 and 3, and the Authority will oversee the owner's management of the parcel to assure compliance with the terms and conditions of the easement. The easement allows the Authority to drill two well to be used to add to or backup the Authority's water supply should it be required in the future.

#### **Inspect facilities**

The Water Authority has performed a site inspection at the Eureka Stone Quarry along Route 6 to evaluate the potential threats posed by the storm water treatment system and the petroleum hydrocarbon fuels stored on site. The Milford Water Authority contacted the DEP Bureau of Mining and Reclamation and as a result made a combined inspection visit to the Eureka Quarry during which a number of site deficiencies were discovered and have been corrected. This



occurred during the fall of 2004. The Quarry has at the Authority's request revised its emergency call lists to include the Authority and posted them in their offices near the Sawkill Creek. The greatest potential threats from this facility are the large diesel and heating oil tanks on the premises. The Mining and Reclamation Bureau's inspector assures us that the tanks have proper double walls. The Milford Water Authority operators use this facility to obtain asphalt and crushed stone and will provide a continuous level of dialog and on-site observation to help identify areas of concern. The Shohola School (Twin Lakes) has agreed in writing to notify the Authority by phone of any sewage spill or incident which might effect the Sanvantine tributary of the Sawkill Creek. The Authority's operators will annually visit or otherwise assure that operations level communication is open. The N.J. Y Camps were contacted on multiple occasions by letter and phone asking that they agree in writing to notify the Authority by phone of sewage treatment plant spills into Sawkill Lake or Sawkill Creek. For "legal" reasons they have refused ( Fall 2004). Dingman Township has been asked by letter to notify the Authority should the Y Camp ever report a problem to them. The Authority will periodically remind Dingman Township of this. PennDOT has agreed to provide the Authority with semi-annual reports from their consultant's testing of the three monitoring wells that are located amount their salt dome located at the south eastern corner of the Interstate Highway 84 and Route 6 interchange. PennDOT is part of the Authority's spill response plan and regular dialog between our operators and this agency will be assured by Authority personnel.

#### **Review proposed activities**

The Water Authority has made an educational presentation using the table-top ground-water flow model to the Planning Commissions of Milford Township and Dingman Township. These township planning commissions will review and approve or disapprove all future development proposals within the source water area. This educational program is designed to identify any development aspect posing a significant impact to the springs so the appropriate protective measures can be implemented. Milford Township and Milford Borough, with the participation of the Authority, are revising their Comprehensive Plans under a LUPTAP state funded inter-municipal grant. By resolution, they have made ground-water and watershed protection a top priority of their joint efforts.

#### **Education**

The Authority has committed to send one of its treatment plant operators to conduct the fifth grade source water protection education program in the three Delaware Valley Schools located in the watershed. These in-class sessions will be conducted by a Milford Water Authority operator each January and February at the Authority's expense in the three elementary schools in the District. Each student will be given a copy of our brochure "Protecting Your Drinking Water Supply" as a take-home brochure for their parents to read. This program will be repeated each year to continue to educate both the students and their parents, and will use the ground-water flow simulation model and provide the brochure "*Protecting Your Drinking Water Supply*" to take home. This program will reach approximately 500 of the 2,000 homes in the watershed annually. The Authority will work with the Columbia Gas Company to assure that a high level of protection is applied to the at-risk areas of the watershed scheduled for transmission line upgrades in the next few years.

#### **Coordination with DEP programs**

The now-closed gravel pit that caused severe turbidity impacts on the springs was permitted by the DEP Bureau of Mining and Reclamation without the permit approval process identifying the



presence of the public water supply springs downgradient of the proposed gravel pit site. The permit approval process also did not identify the contamination vulnerabilities of the outwash aquifer to be excavated by the gravel pit operation and no special restrictions or controls were added to the permit. The Milford Water Authority will be sending a letter and a map of the Milford Springs source water protection area to the Bureau of Mining and Reclamation Pottsville District Office, with a copy to the Pike County Conservation District. The letter will request that the Department give notice to the Milford Water Authority of any bedrock or sand and gravel mining applications within the source water area that the Department receives.

**Commitment**

The very strong track record of the Milford Water Authority proactively and vigorously protecting their source water area spans more than 37 years. This record demonstrates the unrelenting commitment of the Milford Water Authority to the management and protection of their source water area. This commitment has been implemented through in-kind services, expenditures of general revenues, and the repeated application for and successful award of grant funds. Grants in addition to the funds for this project have been received from the Pennsylvania League of Women Voters (WREN grant) in the amount of \$3,800.00. The Authority will review its progress against the management goals stated above on a semi-annual basis. Funds to complete source water area management activities will come from general Authority revenues and from grants to the Authority.



## 5. CONTINGENCY PLANNING

### Monitoring Wells

Three ground-water quality monitoring wells were constructed during this project and they are a key component of the contingency planning done by the Milford Water Authority. A contaminant spill from a truck accident is the greatest threat to the Milford Springs. The high impact risk area is not just the area in close proximity to the springs, but extends more than 15 miles from the springs in the Sawkill Creek and Vantine Brook watersheds. The high risk area is this large because a contaminant would be conveyed very rapidly by the flow of Sawkill Creek or Vantine Brook to the vicinity of the springs where the dissolved contaminant could enter the outwash aquifer and flow to the springs. The three monitoring wells are located so that by sampling them, the quality of the ground water before it reaches the springs can be evaluated. Authority personnel purge and sample each of the three monitoring wells on a quarterly basis. Depending on the location of the spill, the nature of the contaminant, and the contaminant concentrations found in the monitoring wells, the Authority could take the appropriate responses.

The locations of the three monitoring wells are shown on Figure 6, Inferred Ground-Water Flow Directions. Each well was constructed to a depth of approximately 150 feet so the 20 foot long screened interval at the bottom was at the elevations of the springs. The wells are constructed of 4-inch diameter, PVC plastic casing and screen, and the screened section has a uniform sand pack. The casing is grouted from the top of the screened interval up to the ground surface and each well has a locked protective steel sleeve cemented into the ground.

The Authority is measuring water-table levels in and is pumping water-quality samples from the three monitoring wells on a quarterly basis to establish a baseline of aquifer water quality immediately upgradient from the springs. Depending on the location of a particular spill event, one or more of the monitoring wells will be sampled to evaluate the impact of the spill on the aquifer.

### Emergency Response Plan for Spills of Contaminants along Roadways

Prepared by Tim Gartner, Assistant Superintendent

#### Upon being notified of a spill take the following actions:

1. Identify the spill location on the Spill Priority List below
2. Notify the Department of Environmental Protection by telephone
3. Start increasing flows in the treatment plant to bring the storage tank to its full level
4. Start sampling at the three monitoring wells
5. If contamination shows up in the monitoring wells, immediately bring storage tank to full
6. Notify the public by radio to start conserving water immediately
7. Within one hour of contamination showing up in the monitoring wells, shut down the water treatment plant
8. If working with an extremely toxic contaminant, where it appears that the springs will be impacted for a prolonged period, start additional emergency procedures to conserve water
  - A. Shut down Laundromats
  - B. Turn off Grey Towers pumps
  - C. Restaurants; no serving water unless asked for
  - D. Motels; no bed linens laundered daily unless asked for by client



E. Notify Fire Department to refill trucks from streams or river unless there is an emergency

F. Public notification by radio: conserve water, no washing vehicles, no watering lawns, no filling of pools.

**Emergency phone numbers:** Chairman – Ron Gregory 296-6120, Vice-Chairman – Tom Hoff 296-5584, DEP (570) 895-4040, DEP After hours (579) 826-2511, Fire Dept. 296-7700, Police Dept. 296-7700, Radio station 96.7 WDLC 856-5185, B.A. Halok Trucking, 610-681-6175.

### **Ranking of Road Locations by Distance from the Springs**

#### **Level #1 – These roads are all in close proximity to the springs**

Old Owego Turnpike and Route 6

Route 84 (mile marker #47 and 3/10 of a mile in either direction)

Grey Towers (garage area at Route 6)

Route 6 (from interchange at Route 84 to Pine Acres Road)

Victory Drive / Sawkill Business Center

Schocopee Road (Quick Lane to Fire Tower Road)

Schocopee Road (intersection of Fire Tower Road to ½ mile Northwest on Woodtown)

Fire Tower Road (intersection at Schocopee Road to Stroyan Lane)

#### **Level #2 – Roads located further from the springs**

Fire Tower Road (intersection of Stroyan Lane to 1 mile Northeast of Stroyan)

Evergreen Lane

Woodtown Road (1/2 mile from Fire Tower Road to Pike County Park)

School House Lane (first mile from Fire Tower Road)

Route 84 (mile marker #46 to #46-7/10)

Route 6 (interchange at 84 to 1 mile West on Route 6)

Buist Road

#### **Level #3 – Roads located in the headwaters area of the Sawkill Creek Watershed**

Route 6 (1 mile West of I-84 to Twin Lakes Road)

Route 84 (mile marker #41 to #46)

### **Log of spills that occurred in the vicinity of the Milford Springs since the initiation of the Source Water Protection Project:**

**August 2003:** Transformers fell off tractor trailer on Route 6 West, leaving town. (Hazmat involved)

**March 2004:** Diesel spill in PennDOT maintenance yard, 25 gallons. (Hazmat involved)

**June 2004:** Diesel spill on Route 84 off ramp (Eastern exit), 100 gallons. (Hazmat involved)

**July 2004:** Diesel spill at Kwik Joes Gas Station (Route 6), 60 gallons. (Hazmat involved)

**August 12, 2004:** Tractor trailer rolled over on Route 6 at the Route 84 West on ramp, limited oil spill.

**January 11, 2005:** Tractor trailer rolled over at mile marker 41 on Interstate Highway 84 and approximately 125 gallons of diesel fuel were spilled.

**January 20, 2005:** Tractor trailer went through the guard rail and over the embankment at mile marker 47 on Interstate Highway 84 and landed within 200 feet of Sawkill Creek, An unknown amount of diesel fuel was spilled and DEP was notified.

The Milford Water Authority will maintain a continuous log of spills.



### **Spill Response Signs along Highways**

PennDOT will be erecting the standard blue 'Public Water Supply Area – Spill Response' informational signs on the westbound lane of Interstate Highway 84 and on the westbound lane of Route 6 at the east watershed boundary of Vantine Brook. Corresponding signs will be erected on the eastbound lane of Interstate Highway 84 and on the eastbound lane of Route 6 at the western watershed boundary of Sawkill Creek. Additional informational signs will be erected along Route 6 to notify traffic exiting from Interstate Highway 84 onto Route 6 at interchange number 46. The phone number on the signs will reach the Pike County Emergency Management Office, who will then notify the Authority.

### **Interagency Spill Response Agreement**

The Milford Water Authority, Penn DOT, Pike County Emergency Management, and the Milford Fire Department have agreed on a plan to assure prompt interagency communications concerning spills that could impact the springs. This Interagency Spill Response Agreement is in Appendix 4.

### **Bottled and Bulk Water**

In the event of an emergency causing drinking water from other DEP approved sources to be needed, the Authority will obtain bulk drinking water by contacting B.A. Halock Trucking by phone at 610-681-6175. If also necessary, bottled water from DEP approved sources will be purchased by the Authority and will be made available for distribution at the Milford Borough Fire Hall.



## 6. NEW SOURCES

### **Vantine Brook**

In the event a spill occurred that was going to impact both springs and render them non-potable even with treatment, water from Vantine Brook could be piped to the treatment plant, filtered, chlorinated, and used on a temporary basis. Locally available piping would be placed to convey the Vantine Brook water to the treatment plant. Access currently exists to allow the placement of approximately 500 linear feet of pipe on the ground surface so brook water would flow overland to the treatment plant by gravity. Filtration and chlorination of the brook water could provide a temporary source from Vantine Brook.

### **New Well**

If the outwash aquifer was contaminated by a spill on Interstate Highway 84, and both springs were rendered non-potable, a replacement source well could be constructed in the outwash aquifer more than one mile upstream from the Interstate Highway 84. Another temporary source such as Vantine Brook would have to be used while the replacement source well was sited, approved, and constructed. The transmission pipeline from the new well to the treatment plant could be constructed simultaneously with the new well approval and construction process. Several months would be necessary to bring this new well on line. The Authority has negotiated a 60-acre conservation easement in a planned development on the northwest corner of the Route 6 and Interstate Highway 84 interchange and will have rights to drill two wells on this land.

### **Additional Treatment**

Depending on the concentration and nature of the contaminant, additional treatment could be undertaken at the site of the springs<sup>10</sup> of render the contaminated spring water potable. For example, portable, truck mounted treatment systems are available to remove contaminants from petroleum hydrocarbon spills and other volatile contaminants. Not all contaminants would be able to be effectively and economically removed by additional treatment.

### **New Source Summary**

Because the nature, quantity, and location of a contaminant spill all determine the appropriate remedial actions and alternate water source selection, no specific new source has been explored on more than a theoretical basis. Fortunately, the isolation of the glacial outwash aquifer far upstream from Interstate Highway 84 makes it a very promising location for a new well to replace the springs should that ever be required. The implementation of this source water protection plan is, of course, designed to protect the Milford Springs to the greatest extent possible so that a replacement well will not have to be constructed. It will be through the diligent future efforts of the Milford Water Authority in implementing this source water protection plan that a new water source will never be needed to replace the Milford Springs.



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**Appendix 1**

**Final Report of the Public and School Education Campaign**



The Municipal Authority of the Borough of Milford

## Source Water Protection Program

Box 459  
120 Pear Alley  
Milford PA 18337  
June 10, 2004

### FINAL REPORT - PUBLIC AND SCHOOL EDUCATIONAL CAMPAIGN

As stated in our Interim Report on our Educational Campaign there are three primary components:

1. A continuing education curriculum for fifth grade students within the watershed.
2. An informational press series on ground water, its conservation and contamination risks .
3. A brochure on ground water and its protection sent directly to watershed property owners.

First, as outlined in the Interim Report, we have implemented the first year of an ongoing curriculum based ground water science program with the seventeen fifth grade classes in three area Elementary Schools . With the support of Dr. Candis Finan, Superintendent of the Delaware Valley School District, the teaching staff was provided with training in the use of the TAPWater curriculum materials we received from the American Water Works Association - Pennsylvania Section. Three kits were purchased with the WREN grant and an additional kit, designated to serve as a backup supply of resources, was given to the Authority by AWWA.

The teachers tailored the materials to fit their individual class needs and have integrated the material into their science class lessons during the months of December 2003 and January 2004. (Please see letters from Principals in Appendix.)

During the months of January and February Mr. Tim Gartner, Assistant Superintendent of the Authority gave seventeen in-class demonstrations of ground water movement and contamination to these students using the custom made Ground Water Simulator model. This Simulator was designed under the direction of Dr. Todd Giddings, the consultant to our SWP Program with input from Joel Jordan of PRWA. The Simulator incorporates the key geologic features that make our water source unique. It helps the students and adults better orient themselves to the specifics of our watershed and their potential impact on it. (Please see color photo of Simulator in Appendix.)



Secondly, we have had considerable success in reaching and informing residents and property owners in our watershed through our media effort. With the support of the Pike County Dispatch, the county's official newspaper and with the assistance of journalist Ken Baumel, a series of six extensive articles began in November 2003. It was titled, "The Water We All Share". (Please Appendix for the entire series) The general subjects of the article were:

Part 1, November 7, 2003, addresses the water cycle, groundwater, Milford's springs, our watershed and its boundaries and our Source Water Program.

Part 2 January 1, 2004, discusses our educational programs and the Simulator.

Part 3, March 11, 2004, focuses on protection, treatment and contamination risks.

Part 4, April 8, 2004, presents more information on contaminants and risks and suggest actions that residents can take to reduce the contamination potential.

Part 5, May 6, 2004, summarizes the presentation made to the Pike County Commissioners following their Proclamation in recognition of Drinking Water Week. It attempts to stimulate public awareness and the need for action to conserve and protect our water supply for the future.

Part 6, June, 2004, focuses on resources available to residents and the public at large to help them learn more and to make better decisions concerning the use and disposal of water and various contaminants.

These articles themselves total some 400 inches of column space and are equal to approximately four full pages. In addition we worked with "Milford Magazine" on an article title "Good Water - Good Life" which has a circulation of 15,000 copies in Milford and the surrounding Tri-state counties. (Please see Appendix for "GoodWater - Good Life")

We also had periodic coverage in other newspapers in the form of stories, news photos and TV news. (Please see voice over TV script and news photos in Appendix)

Thirdly, the "Water We All Share" series was recast into a custom brochure titled, "Protecting Your Water Supply) to be mailed in June to the 1850 property owners within the watershed along with a cover letter. This mailing includes all the customers of the Authority who receive treated water and all of those who take their water from private or community wells in the watershed. (Please see "Protecting Your Water Supply" in the Appendix)

The brochure will see continuing use as a take home handout from Mr. Gartner as



he continues to make fifth grade class room presentations in support each teacher's curriculum efforts in future years.

The cover letter with each brochure outlines our educational program for the property owners. In addition those recipients who are customers of the Authority will also receive a copy of our Annual Drinking Water Quality Report which includes a section on Water Quality Protection. (Please see Appendix for letters.)

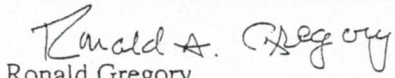
The Authority and the SWP Committee believe that we have fully implemented the integrated educational campaign for the public and for area students that we outlined in the WREN grant request. We further feel we have put in place the mechanisms and the commitments necessary to continue the process for years to come through our involvement with the school system.

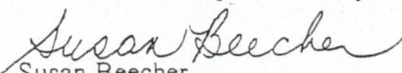
The Simulator has proven to be a very useful with leadership groups such as the county commissioners, township / borough officials and planners to help them prioritize the importance of our source water in terms of the area's growth and development. In a recent situation its use at a SWP meeting led to a request by the management of the local PennDOT facility to educate the area foreman, engineer and select staff on ground water dynamics. This was prompted by a spill which happened hours after the Simulator was presented at a regular SWP meeting and resulted in PennDOT preparing a set of maps of drainage flows along the Route 6 and 84 interchange. These maps will facilitate spill response efforts between the Authority, Emergency Management and PennDOT in the future.

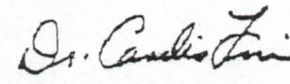
This WREN Report will form the basis of the Educational Section of the SWP Program plan currently under development. The Public and School Educational Campaign funded by WREN appears to meet the criteria for this requirement of the SWP grant. We are grateful to the League of Women Voters for their support and to the assistance we have received from Sherene Hess and her staff in the implementation and communication of our campaign

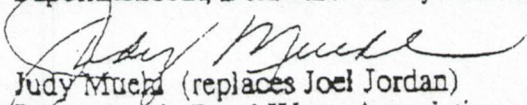
Sincerely,

  
Thomas W. Hoff  
Chairman, Source Water Protection Committee

  
Ronald Gregory  
Chairman, Municipal Authority of the Borough of Milford

  
Susan Beecher  
Direct, Pike County Conservation District

  
Dr. Candis Finan  
Superintendent, Delaware Valley School District

  
Judy Mucha (replaces Joel Jordan)  
Pennsylvania Rural Water Association.



# Delaware Valley School District

SHOHOLA ELEMENTARY SCHOOL  
940 Twin Lakes Road - Shohola, PA 18458  
Telephone (570) 296-3600 · Fax (570) 296-3161

Margaret M. Schaffer

Principal

March 18, 2004

Mr. Tom Huff  
Milford Water Authority  
120 Pear Valley  
Milford PA 18337

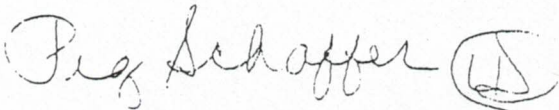
Dear Mr. Huff,

Thank you for the wonderful water kits. They provide valuable information and instructional tools for our classrooms. In particular, our fifth grade teachers have utilized the materials to develop standards-based lesson plans directly linked to the environment and ecology benchmarks. The hands on activities are of high interest to our students and the waterflow model presentation by Mr. Tim Gartner was of special interest. The Shohola Elementary School is geographically situated at a strategic point for the Milford Aquifer. These students need to be stewards of these valuable environmental resources. Providing the students and their families with information regarding water resources is essential to keeping this water system as pure and natural as it currently is being maintained.

I would like to share with you comments by our fifth grade teachers regarding the water kits: Fits well into the curriculum and addresses standards; Lessons are well developed, grade appropriate, and clear; Numerous choices of activities and materials appealing to students; Favorite activity was creating individual "edible aquifers"—both enjoyable and effective!

Thank you, again, for generously supporting the environmental education programs at the Delaware Valley School District.

Sincerely,

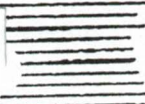


Peg Schaffer  
Principal

MMS:lnd

*Delaware Valley School District - Educating for Life's Journey*





# Delaware Valley School District

DINGMAN DELAWARE ELEMENTARY SCHOOL

1355 ROUTE 739

DINGMANS FERRY, PA. 18328

Mark L. McElroy  
Principal

(570) 296-3123  
FAX (570) 296-3171  
E-mail: mmcelroy@dvsd.org

April 13, 2004

Mr. Tom Hoff  
Source Water Protection Program  
Box 459, 120 Pear Alley  
Milford, PA 18337

Dear Mr. Hoff:

The fifth grade teachers at Dingman-Delaware Elementary School participated this year in the TAP Water Program. We have nothing but good things to say about the program. The students were totally engrossed in the lessons and learned a lot.

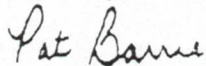
We found the materials in the kit and the lesson plans to be relevant for the most part. Some of the activities were for higher levels, so we picked our lessons accordingly. Lessons were coordinated with the state standards, which helped guide us as to the most important topics to cover. The materials in the kit were excellent. Students enjoyed the coordinating videos and came away with new knowledge.

The students and we especially enjoyed the presentation with Tim Gardner. He was well spoken and very knowledgeable of the topic. He was able to show them the path water takes instead of just explaining it to them. He reinforced all the concepts that had been presented by us to them. He was extremely patient with the students, answering all their questions.

We would like to be able to have more than the two kits available to us. When we have to share materials, it becomes difficult when we need them at the same time. It is also good when we have our own manuals because we are then able to peruse them without having a time constraint because someone else needs them.

Overall, the students and we were quite pleased with the program.

Sincerely,



Pat Barrie  
Grade 5/Head Teacher

*Delaware Valley School District - Educating for Life's Journey*



Milford Water Authority  
SOURCEWATER PROTECTION COMMITTEE  
120 Pear Alley  
P.O.Box 459  
Milford, PA 18337  
(570) 296-6556

Dear Fellow Drinker:

As residents in the Sawkill Watershed we all share the same water source every time we take a drink from our taps.

Fortunately Mother Nature has endowed us with a wonderful source of clear and clean water whether ours comes from a well sunk into our watershed's aquifer or whether it comes from the springs that bubble forth from Pinchot's hill to supply Milford.

The Milford Water Authority, through a Source Water Protection Grant from the Department of Environmental Protection and an educational grant from the League of Women Voters, is proud to provide the enclosed brochure, *Protecting Your Water Supply*. The brochure is based on an outstanding series that has been appearing in the Pike County Dispatch titled *The Water We All Share*.

Please read it and discuss it within your family, with children and with friends.

If you have or may soon have 5<sup>th</sup> graders going to Dingman/Delaware, Shohola or Delaware Valley elementary schools, they will be learning about our shared water supply and how to keep water safe and clean for future generations. Ground water is now part of their science curriculum. As adult consumers of ground water its protection should be part of our daily agenda.

We're dedicated to conserving and protecting our source water, please help!

Sincerely,

The Executive Committee and Steering Committee

PS. Our thanks to newsman Ken Baumel and the Dispatch in preparing the brochure and news series to help us all better appreciate one of our area's precious resources.

EXECUTIVE COMMITTEE:

Susan Beecher  
Roger Maltby  
Matt Osterberg  
Peter Pinchot  
Tom Hoff  
Kevin Stroyan

STEERING COMMITTEE:

A. Augustine	R. Banach	P. Bowling	E. Brannon
D. Brink	E. Brylawski	R. Cioppa	R. Cochrane
D. Cooke	J. Donahue	R. Fish	G. Fluhr
W. Gaa	T. Gartner	T. Giddings	A. Greening
R. Gregory	G. Hansen	R. Hendricks	D. Quick
S. Jones	J. Jose	N. Krause	J. Leighty
R. Litzenberger	J. Muehl	G. Myer	C. Obster
M. Ronzinski	J. Rose	S. Sheldon	M. Tan
K. Thiele	C. Wildermuth	G. Williams	P. Wulfhorst
J. Zenes			



# Protecting Your Drinking Water

## Water We All Share

## Water We All Share

## Water We All Share

### The Water We All Share

This brochure, by the Milford Water Authority (MWA) and the Sourcewater Protection Committee (SWP), summarizes a series of articles, "The Water We All Share," was recently published in concert with the Pike County Dispatch, on the need to protect drinking for everyone living within the 22-square mile Sawkill Creek watershed (see illustration 2), roughly the Delaware Valley School District boundary, including Milford Borough and parts of Dingman, Milford, Shohola, and Westfall townships.

### Water Cycle

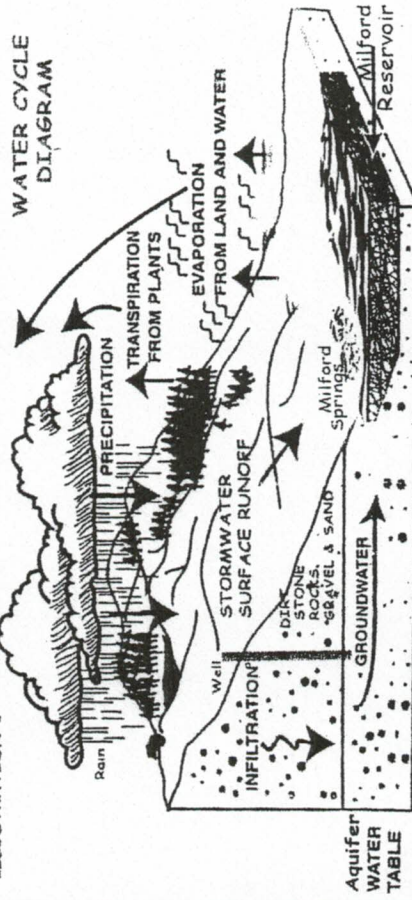
The water that we drink is continually recycled, evaporating mostly from oceans, gathering in the sky as clouds, and falling to earth as rain or snow on your roof, yard, lawn, sidewalk, road, and streets. The rainwater or snow melt runs downhill (as storm-water runoff) to the nearest stream and flows through ponds, lakes, and rivers on its way back to the ocean, where it once again evaporates and forms clouds. This process is called the water cycle. Only about two-percent of the earth's water is fresh and only about half of it is drinkable.

### Groundwater

Some rainwater and snow melt infiltrates into the ground and percolates down to the water table and is stored as ground water. Depending on the local geology, some water is also stored in the pore spaces of sand and gravel deposits or is held in the joints and fractures of bedrock. (See Illustration 1). Meanwhile, the water going downhill along the ground surface eventually make its way through streams, lakes, and rivers to the ocean. Some of this runoff is absorbed into the ground underneath the streams and lakes, adding to the ground water. Water on the ground also evaporates into the air and goes back up into the sky to be stored in clouds, only to be released and fall back to the earth as rain or snow - hence the fresh water cycle begins again.

Rainwater and snow melt-off goes into the earth through dirt, rock, stone, gravel, and sand. It then enters the aquifer (a porous geologic formation) into the water table and groundwater deeper in the earth. The groundwater recharges lakes, springs, and reservoirs. The groundwater also can be tapped by property owners with wells or by municipalities that have central water systems that supply water to property owners.

ILLUSTRATION 1



Courtesy: Tobyanna Creek Tunhunnock Creek Watershed Assoc

Ground water can discharge from the earth through springs, which are often located at the bottom of a hillside where the water table meets the ground surface (see Illustration 1).

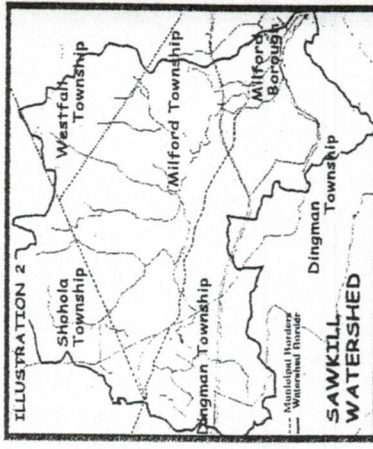
### Milford Springs

The MWA Springs, which supply water to Milford Borough are just such springs. The Springs are located on the side of the hill on which Grey Towers is located. The ground water flowing to the Springs can discharge over one million gallons of high-quality drinking water per day. This spring water is monitored, treated, stored, and distributed by the Milford Water Authority to its customers in the borough and surrounding areas.

Scientific tests by Hydrogeologist Todd Giddings have shown that ground water moves by gravity from higher areas to discharge from the Springs (see Illustration 3). Pumping ground water from a well can also cause ground water to move and flow.

Though the rate of ground-water movement in most watersheds is quite slow, measured in inches or feet per year, depending on the underground geologic conditions, near Milford Springs, the ground water flowing within the Sawkill Creek Watershed moves rapidly through coarse gravel buried deep within the glacial aquifer. This coarse gravel flow pathway was deposited by a glacier about 12,000 years ago. Some of the water flowing within Sawkill Creek seeps through the stream bed and becomes ground water that discharges from the Milford Authority's Springs. Giddings has demonstrated that ground water

flowing in the vicinity of the Springs can travel 3,000 feet in only 8 hours. This unique geologic condition also could facilitate ground water pollutants moving rapidly in the watershed, where it could be tapped through wells or end up discharging in the Milford Springs. This is one compelling reason that a sourcewater protection plan is so vital. MWA and SWP protection plan include monitoring wells near Milford Springs and a strategy to reduce the danger of highway environmental disasters, spills, and other transmission of pollutants on roadways.



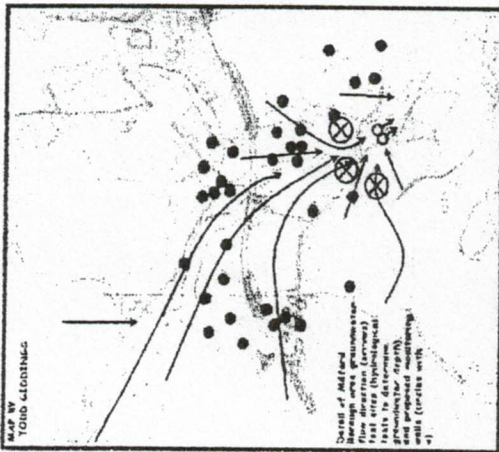
The Sawkill Creek Watershed includes all or part of five municipalities.

### Contamination Is Pollution

Every household regularly puts contaminants into the groundwater, such as by flushing a toilet, putting chemicals in sinks, or dumping toxic household hazardous waste (HHW), fluids, or substances on the ground and highway disasters can affect drinking water. Pollution is any contaminant that could affect drinking water negatively and harm us physically. Pollutants could be particles, chemicals, metals, road salt, oil, gasoline, kerosene,



# Water We All Share Water We All Share Water We All Share



*Illustration 3 by Hydrogeologist Todd Giddings shows the path of underground flow of groundwater in the Sawkill Creek Watershed near the springs and the location of monitoring wells, which allows the Authority to track and monitor movement of water and identify potential contaminants and pollution before it reaches the springs.*

paint, paint thinner, lacquer, oven cleaner, drain cleaner, nail polish and remover, metals (such as mercury from broken thermometers), home heating oils, medical waste, human waste, some prescription pills (such as anti-biotics), pesticides, and some fertilizers. In our world today, we are surrounded by hazardous substances. Environmental agencies have identified over 20,000 pollutants that can foul or poison the water supply. Communities within five Pike watersheds are more at risk of having greater pollution entering the groundwater. Due to population growth, there is a good side and bad side of this growth. The bad news is that as the population grows, so will the volume of

contaminants entering the groundwater, unless people's awareness and habits change.

Whatever we put in our sink, toilet, or in the ground can end up in just about everyone's drinking water and the cost of remediation can be astronomical. For example, in-ground (underground) heating oil tanks can develop leaks that can silently pollute. In the early 1990's Lehman Township suffered two pollution disasters, a gasoline spill from a leaky underground fuel tank polluted wells of homes in the surrounding area when it entered the groundwater and a road salt/anti-skid pollution that leached into the groundwater by rain and snow over the years. These disasters cost the township and taxpayers hundreds of thousands of dollars and about 10 years to clean up.

### We Can Make a Difference

Though we may not be able to eliminate pollution, through small daily diligences, responsible citizens can take the little steps needed to keep pollution to a minimum and assure that water remains relatively pure for generations. The good news related to population growth is that the growth has alerted us to the magnitude of the problem facing the community and to a need for a plan to protect the water. Every watershed resident can play an important role in controlling pollution in their own home, on their own property, and ultimately in the entire watershed. The cumulative effects of everyone working to reduce pollution will preserve water for many generations, noted Thomas Hoff, MVA Vice Chairman and SWP Chairman. To protect our common groundwater, everyone should know what causes pollution and what products are pollutants. We can then be more careful with what we pour into the ground or into the sink and toilet.

The following are some guidelines can help protect your water and everyone else's water:

**\*Study** labels on any containers on product used in a household to determine what may be toxic,

hazardous, or potentially harmful. **Research** the Internet.

**\*Research** - Go to Internet links, such as [www.newsfax.com/swplinks.htm](http://www.newsfax.com/swplinks.htm) or to [www.earth911.org](http://www.earth911.org) for household hazardous waste disposal tips.

**\*Contact** the local municipality where you live for guidelines on how often to professionally clean out the septic tank.

**\*Check** garden hoses, sprinkler system, or yard faucet for leaks or dripping and turn the water off when you are finished. Don't let the shower run too long. Reduce the amount of water going into the septic system, which prolongs the life of septic system, which can be expensive to replace.

**\*Don't** pour pollutants onto your property, streams, lakes, ponds, or anywhere in the watershed. Be careful when changing oil or fluids in a vehicles, lawn mowers, small motors, weed trimmers, blowers, lamps, and fluids that can cause pollution. **Don't** spill these fluids in the sink, toilet, or on the ground.

**\*Dispose** containers through your licensed trash hauler. Use pesticides and fertilizers with care. The devastating impact of pesticide DDT in the latter half of the 20th century led to the disappearance of eagles in the Delaware River corridor in our area after DDT entered the groundwater and ended up in the river, interfering with the fish and eagle food cycles.

### Conserving Water

Conserve water. Make sure there are no dripping faucets or leaks in the house. A leaky toilet can waste 360 gallons of water a day, a \$15 a month cost to Millford residents. A dripping faucet not only wastes water, but increases the usage of energy (electricity, for example). Using more energy costs extra money and adds even more pollution to the environment. If enough people waste electricity, it can also cause brown outs and even black outs. Comply with state and local water conservation alerts during droughts. Our ground water contributes

to the Delaware River's total water flow that other downstream communities, such as Philadelphia and Trenton, depend on. We are all therefore connected by our need for using and conserving water.

### Millford Sourcewater Protection Committee

This brochure and related material, developed by the MWA, its consultant and Hydrogeologist Todd Giddings, the Pike Conservation District (PCD), Division of Pennsylvania American Waterworks Association's (PAWA), TAPWater Program, Newsfax, and other sources, were designed for the following uses: As primary source material for Delaware Valley School District's fifth-grade elementary school students (who live in the watershed) highlighting sourcewater protection and to bring a highly focused message to parents and adults living in the school district and watershed on the paramount importance of protecting our sourcewater.

### To contact the Millford Sourcewater Protection Committee:

Call (570) 296-6556, e-mail [waterofc@pid.net](mailto:waterofc@pid.net), or for reference material go to the Internet website at [www.newsfax.com/swplinks.htm](http://www.newsfax.com/swplinks.htm). This brochure and Source Water Protection Project is funded by the League of Women Voters of Pennsylvania Citizen Education Fund (CEF) WREN Grant, through the Pennsylvania Department of Environmental Protection (DEP).

For additional Internet information, use key words on search engines. These words can include the following: groundwater, sourcewater protection, clean water, drinking water, and water pollution. Also, contact by phone environmental agencies, such as Environmental Protection Agency (EPA), Pennsylvania Department of Environmental Protection (DEP), League of Women Voters, or the Pike County Conservation District (PCCD).



# Good Water, Good

"There's got to be a starting point to preservation of the environment," says Tom Hoff, Vice-Chairman of the Milford Water Authority (MWA). "We've had the advantage of enjoying clean, fresh drinking water over the years. We want to keep it that way."



Milford's Water Authority was first formed almost 100 years ago as a private company owned by local families — including Hoff's ancestors — interested in a healthy investment and pure drinking water. In the 1960s Milford Borough bought the company and established the independent Milford Water Authority, whose five board members are appointed by the Borough Council.

The MWA services more than 650 customers (homes or businesses) in Milford Borough and about 50 clients outside the Borough, along Route 2001 in Milford and Dingman Townships.

Hoff chairs the MWA's Source Water Protection Committee, whose mission is to educate area residents about the underground layer of earth, gravel and porous stone — the Milford aquifer — that protects and purifies the water supply.

A \$100,000 Pennsylvania Department of Environmental Protection (PA DEP) Growing Greener Grant and an approximately \$3,800 Water Resources Education

Network (WREN) Grant are enabling the group — partnered with the Pike County Conservation District, Delaware Valley School District, PA Rural Water Association and the Milford Borough Council — to map the aquifer's specific geological detail and to provide public education on important water-related issues.

The project involves implementation of a water education curriculum in 13 fifth grade classes within the Delaware Valley School District and a series of local newspaper articles that will eventually be collected into a brochure and mailed to each customer served by the MWA.

Hoff says educational efforts such as this can prevent degradation. "Our great water is not an endless supply. If kids can get that message by imagining their own house and their own circumstances, they'll understand it."

Originally, Milford's water supply came directly from two underground springs located between today's Route 6 and Grey Towers National Historic Landmark. "That water ran through our faucets at about 60 pounds of pressure, untouched by human hands. There was no energy consumption, no storage facility, no chemical treatment.

**WELL, WELL, WELL:** Recently, the Milford Water Authority (MWA) completed drilling on three monitoring wells — on Schocopee Road, in the forest near Vantine Brook and near the maintenance area at Grey Towers National Historic Landmark — to establish "a picket line" of early warning to any changes in Milford's groundwater purity. "These are permanent monitoring sites," says MWA's Tom Hoff, above. "We check them regularly, but they will eventually be monitored on an as-needed basis." The MWA source springs are located within Pike County's Sawkill Creek Watershed.



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# ood Life

no filtration, no chlorination. That's the way it ran for a long, long time," says Hoff.

Today, more stringent PA DEP regulations require the spring water to be filtered through a \$1.25-million water treatment facility and pumped into a 540,000-gallon water storage tank near the original springs (which still produce more than one million gallons per day).

That rate hasn't varied in over 100 years, according to Hoff, but future development — such as the Nestle Group's recent search for a possible bottled water facility site near the MWA treatment plant — could change that equation.

*"Our great water is not an endless supply. If kids can get that message by imagining their own house and their own circumstances, they'll understand it."*

— Tom Hoff

According to Hoff, Nestle is no longer actively pursuing a Milford location. Rapid growth in our region, though, will very likely bring similar industrial development and land-use plans to the table.

It's the MWA's challenge to preserve the quality of Milford's drinking water as these proposals are considered. ■

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# Model Teaches Water Protection

By Ken Baumel

MILFORD — A unique new custom groundwater simulator/model (which looks somewhat like a Plexiglas aquarium) will be used to teach fifth-grade elementary school students in the Delaware Valley school district about the importance of protecting the groundwater in Sawkill Watershed.

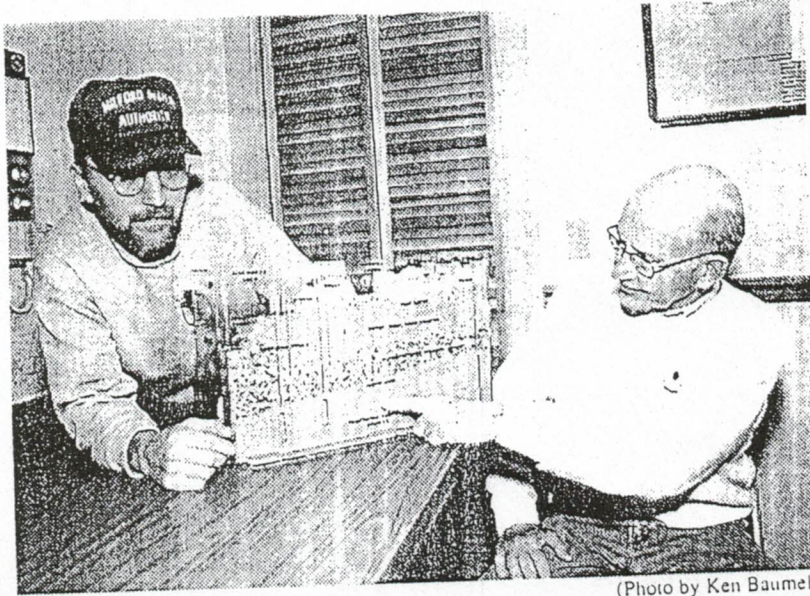
The model will be used in DV classrooms starting this month, according to Milford Water Authority's Sourcewater Protection Committee (SWPC) Chairman Tom Hoff.

The simulator/model was introduced to the SWPC members at their December meeting (held at the Columns Museum Foundation Room in Milford) as a key element in the SWPC's ongoing Educational Campaign (part of the "Water We All Share" program conducted this school year.

The model was recently built for SWPC by Envision, Inc. after receiving scientific input from Dr. Todd Giddings, a professional hydro-geologist working with the authority and SWPC.

Prior to SWPC contracting with the company to design a simulator/model, Giddings had developed a scientific three-dimensional profile of underground geology, sand, gravel, and rock formations that underlie the Sawkill Watershed through systematic research and testing.

The watershed feeds the Milford Springs, which provides (through a central water system) fresh water to Milford Borough residents (plus a few homes in Dingman and Milford townships) and the private wells of residents in parts of Dingman, Shohola, Mil-



(Photo by Ken Baumel)

Milford Water Authority and Sawkill Watershed Protection Committee (SWP) are sponsoring a watershed awareness and protection program for 5th-graders that is part of the DV school district curriculum starting this year. The 3D model of the Sawkill Watershed is part of the program. From the left are Tim Gartner and Tom Hoff of the Water Authority.

ter We All Share program, which includes a one-time educational mailing to every household in the watershed following a series of newspaper articles published in the Pike County Dispatch to reach the public living in the watershed and a special educational program to be introduced for the first time this school year to fifth grade students in DV school district. (The school district roughly corresponds to the territory within watershed borders.)

Hoff said that the information regarding the simulator/model and its ability to illustrate how pollution can enter the groundwater adds to the "Water We All Share" series.

curriculum of DV fifth-grade elementary students.

At the DV, Shohola, and Ding-Del elementary schools, 13 teachers will teach about the watershed, how water travels underground, and the effects of pollution. These teachers have received state approved curriculum materials on water, which includes books, literature, CD's, and other educational tools developed by the American Waterworks Association.

The curriculum material meets the state's educational standards for a science unit designed to help children understand the water cycle, how water moves underground, and protecting the water supply.



in parts of Dingman, Shohola, Milford, and Westfall Township.

Among Giddings' studies were measuring the depth of the groundwater table, determining the boundaries of the watershed, and measuring the time it takes for a harmless dye introduced into the groundwater within the watershed to reach Milford Springs.

Giddings' intent was to develop through field research a scientific basis to understand how water and pollution travels underground to reach Milford Springs.

As that knowledge base was established, the authority could develop strategies to better protect the water within the watershed.

One of the strategies developed by SWPC was to enlist the aid of the public in a long-term plan to protect the water within the 22-mile watershed. By explaining how pollution introduced anywhere in the watershed could appear within hours or days (depending on distance from Milford) at Milford Springs, the public could be made aware to be more careful of what they put into the ground (such as motor oil) or household hazardous waste down a sink or toilet.

Less pollution introduced in the watershed means less pollution appearing at Milford Springs and less pollution entering the groundwater from which everyone in the watershed draws drinking water from wells.

Over the years, the cumulative effect of people introducing fewer pollutants could help preserve the drinking water supply for thousands of people who live in the watershed, since both central water and well water are drawn from the same watershed.

The simulator/model will also be used beyond the classroom to aid municipal planners and officials to better understand the impact of pollution while considering developments and projects in the watershed.

Also, SWPC wants to enlist the entire public through its "The Wa-

series. Once Giddings began identifying the watershed's underground profile, the three-dimensional simulator/model could be designed showing how water (and pollution) in the watershed could travel underground in the Sawkill Watershed.

Hoff said, "The Milford Springs Groundwater Simulator/Model has been specially constructed to provide each class with a dramatic and engaging demonstration of just how water gets to the Springs (and to wells) and how things like a leaky home heating oil tank might effect the water we all share."

Water in the simulator/model is moved by a series of miniature pumps to create water movement (which when colored with food dyes by the operator) powerfully demonstrates the dynamics (of water flow) specifically in the Milford Springs and the Sawkill Watershed generally.

The unit was bundled with a special operator training video to help the authority's Assistant Superintendent Tim Garner and John Jose from the Pike County Conservation District learn how to best use the simulator in the classroom to support goals of individual teachers as they apply the curriculum objectives.

The cost of developing the custom simulator/model was covered by a Pennsylvania Department of Environmental Protection grant received by the authority to delineate, protect and properly manage the Sawkill Watershed.

Hoff said that the authority has undertaken a three-pronged educational initiative. The first is a series of newspaper articles, which will be followed by a brochure mailing to every residence in the 22 square mile watershed. The second will focus on placing hazardous spill emergency response signage on Routes 84, Route 6, and on Schoepce Road, wherever the two highways cross or border the watershed. The third involves in-class education as part of the regular

supply. The material also emphasizes what each family and child needs to do to protect the water. It also warns people what they should not do if they want to protect this essential resource of drinking water.

The simulator/model is expected to be ready for classroom use at the beginning of the year and its use will be coordinated in the individual schools by DV Principal of Curriculum Bill Riker.

Hoff said, "The SWPC also received a separate educational grant from the League of Women Voters, which is defraying the cost of the entire SWPC educational campaign program."

"The SWPC hopes also to use the simulator/model with local governments and township planners to increase their understanding of the need to consider sourcewater protection in their development plans."

Phone: (570)

Pages: 2

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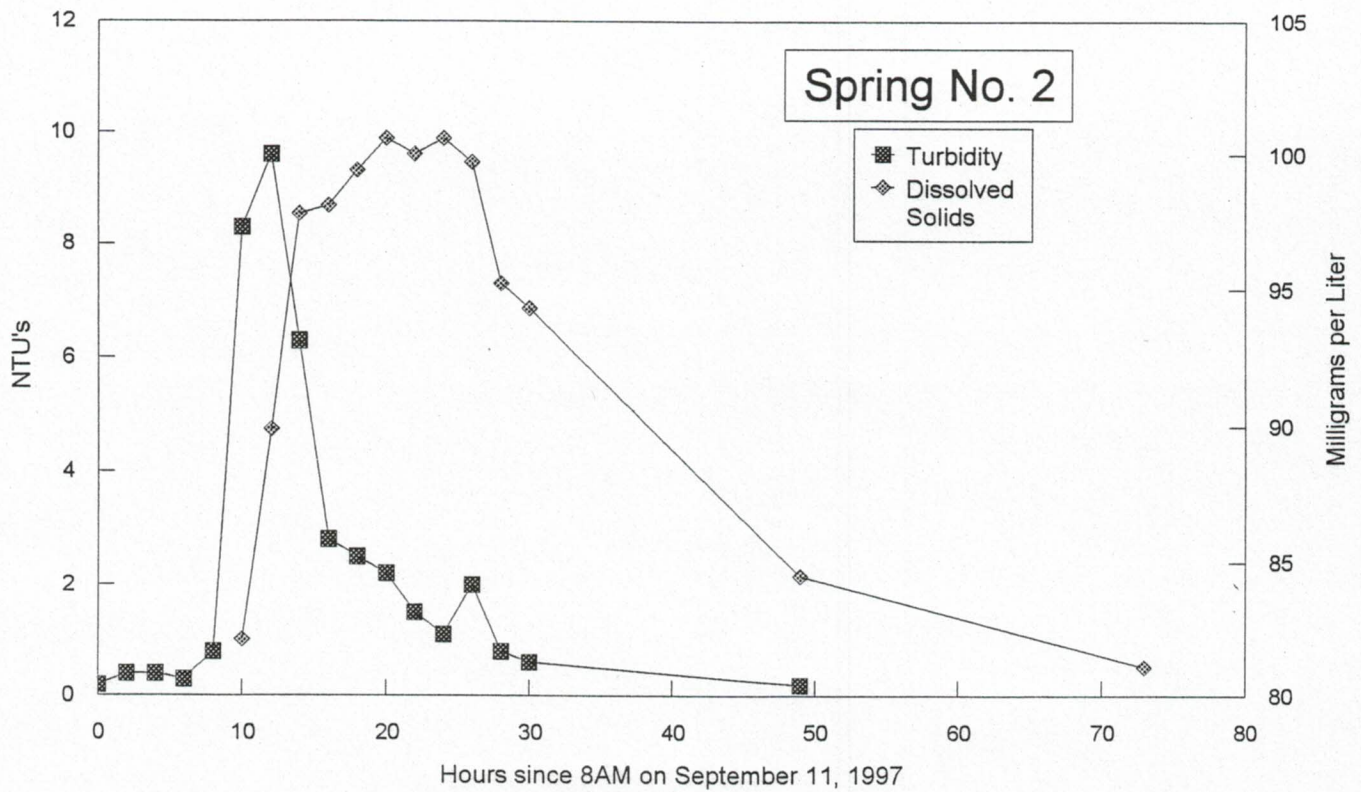
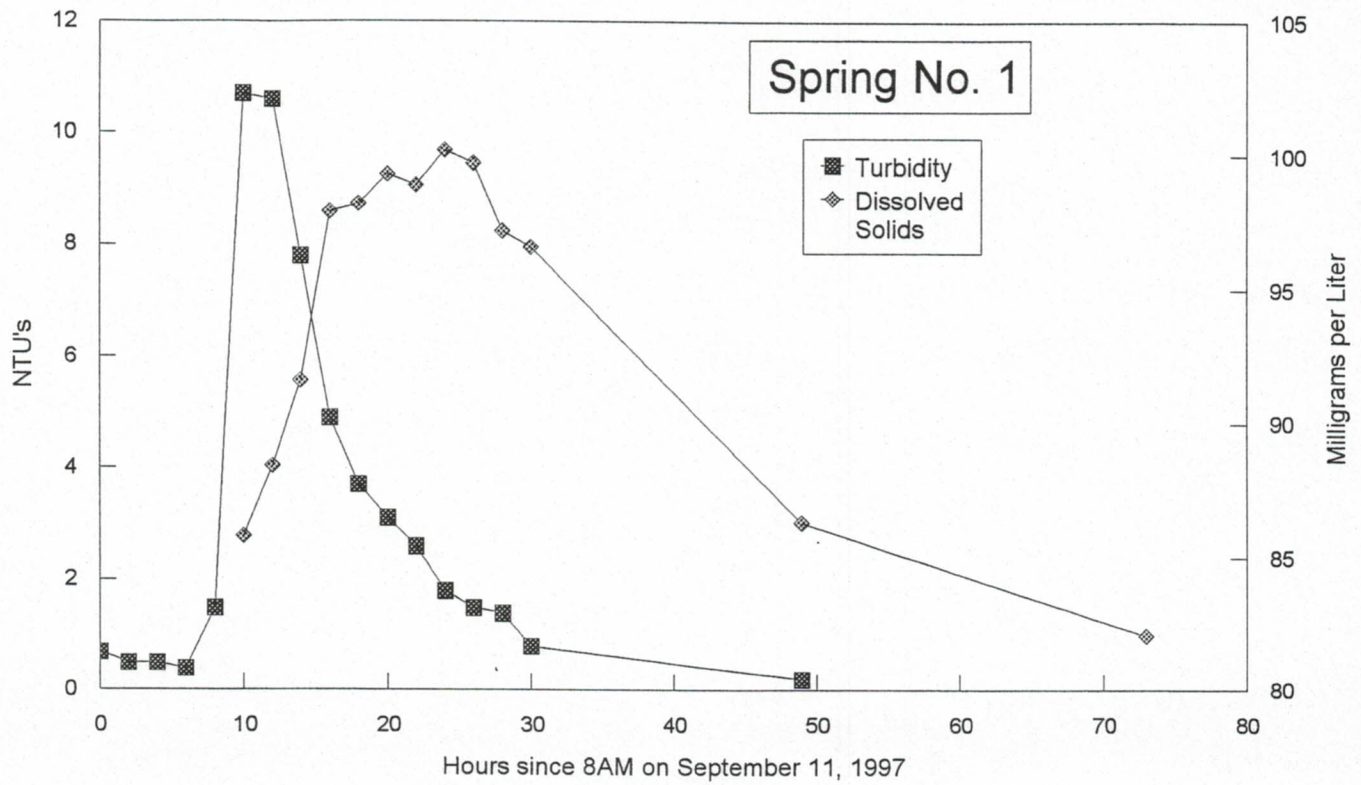
Comment  Please Reply  Please Recycle



**Appendix 2**

**Graphs of Turbidity and Dissolved Solids Concentrations  
in the Two Milford Water-Supply Springs  
for the Storm Event of September 11, 1997**





Turbidity and Dissolved Solids Concentrations in the Two Milford Water-Supply Springs for the Storm Event of September 11, 1997



**TODD GIDDINGS and ASSOCIATES, INC.**

HYDROGEOLOGISTS and ENGINEERS  
3049 Enterprise Drive, State College, PA 16801



**Appendix 3**

**Report of the Heating Oil Tank Survey**



## REPORT OF THE RESIDENTIAL HEATING OIL TANK SURVEY

The purpose of this survey was to identify the contamination potential of residential heating oil tanks among individual property owners in the watersheds of Sawkill Creek and Vantine Brook upgradient of the springs.

Following discussion at the January 12, 2004 Steering Committee meeting we realized that because of the rural and pristine nature of the watershed above the Milford Springs we had little or no resource to help identify significant contaminant sources beyond the two known sewage treatment plants, the Interstate Highway 84 corridor, the PennDOT salt dome, two gas stations and a stone quarry, we decided to field a broad based survey of all land owners in the watershed.

A survey instrument was designed and field tested by mailing to 20 random residents from a list provided by the Pike County Administration Office of all owners in the watershed based on tax records. The survey instrument which is attached used the novel approach of using the mailing address label as the return address when the completed pre stamped reply card was returned to the Milford Water Authority. The survey was mailed out using window envelopes.

The survey had as its objective to find out what percent of property owners heated with fuel oil as distinct from those who used natural gas, propane, electricity, wood, etc. It was further designed to identify by percent how many were located in the residence, in the ground or were free standing. The relative age of the tanks was also requested to help identify the degree of risk posed by age especially among those under ground.

The field test provided a 45% overall response and demonstrated that the questions and mechanisms of response were satisfactory and that we had a viable instrument. Beginning in early July 1,310 additional surveys were sent to reach the entire audience of property owners above the springs. We did not survey customers within the Borough of Milford as they nearly all heat with natural gas and are below the springs.

As of August 10, 2004 a total of 505 responses were received against the total of 1,330 surveys mailed out for a 38.5% response rate. All responses were usable and only one had had its return address mailing label removed preventing any future contactor follow up.

Analysis of the responses to the various questions provided the following data:

### **Type of heat:**

Respondents (179) who heat with oil.....	35.5 %
Respondents(309) who do not heat with oil.....	61.2 %
Respondents (17) who did not answer question.....	3.3 %

### **Location of oil tank:**

Respondents (119) with oil tank in residence.....	66.5 %
Respondents (38) with buried tank.....	21.2 %
Respondents (29) with above ground oil tank.....	16.2 %

### **Age of tank:**

Respondents (85) with oil tank 1 to 10 years old.....	47.5 %
Respondents (46) with oil tank 11 to 20 years old.....	25.7 %
Respondents (38) with oil tank 20 plus years old.....	21.2 %



**General:**

Four (4) respondents indicated that they have some type of bulk diesel or gasoline storage facility on their property.

Four (4) respondents indicate they are concerned about materials that have been or are being dumped onto property near their parcel.

Anecdotally the Authority has learned that an individual recipient of the survey was motivated by the questions to remove several diesel and oil tanks on his premises which apparently were no longer being used.

The mailing of this survey itself was timed to follow the SWP Committee's newspaper series on "The Water We All Share". It was also timed to mail just prior to the Committee's mailing of our brochure, "Protecting Your Water Supply". We believe this sequence boosted the readership and response to the survey itself. We further believe that it added to our educational process by getting watershed owners to think about the effects of there contaminant source on their drinking water and that of their neighbor.

The SWP Committee via the MWA operators intends to make follow up contacts with the four individuals who shared their concerns about dumping on nearby parcels and we will seek an appropriate way of mitigating what ever they find.

Further, we plan to work with the Pike County Dispatch to report the results of the survey and present in the story the essence of the DEP's Fact Sheet, "Tips for Residential Heating Oil Tank Owners".

In the future the Authority may elect to mail these fact sheets or synopsis to each property owner who has an old under ground tank. The Survey response card provides us with the respondents address to facilitate this tactic.

Some totals may be higher or lower than 100% due to multiple responses or no response.

A copy of the transmittal letter and the questionnaire follows this report.



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Dear Milford Watershed Resident

The Milford Water Authority is conducting a Source Water Protection Program to learn more about our mutual drinking water supply and the risks to its safety. Whether or not your water comes from a private well or from the Authority's treatment plant, it all comes from the same sourcewater.

Our goal is to help protect the water supply we all share.

You can help by returning the attached post card after checking the proper box or boxes.

Thank you,

The Board of Directors  
Milford Water Authority  
Box 459  
Milford, PA 18337

Cut along dotted line and mail lower half

---

We **heat** with oil

We **do not** heat with oil

Our **oil tank** is: ( check those that apply)

in the house

buried in the yard

outside, above ground

Its age is (circle one): **1-10yrs**, **11-20 yrs**, **20 plus yrs**.

We have a tank for diesel fuel or gasoline

We are aware of an activity such as manufacturing, dumping or storage of possible contaminants near our property and / or there is an abandoned or former gas station nearby.

---

(please describe)



**Appendix 4**

**Interagency Spill Response Agreement**



**Milford Water Authority  
Source Water Protection Project  
Spill Response Meeting Notes**

On Monday, October 4<sup>th</sup>, 2004 at 5 pm, a meeting was held at the office of the Director of Pike County Emergency Management in the Pike County Administration Building on Broad St., Milford, Pa.

The meeting participants were:

Roger Maltby, Director, Pike Co. Emergency Management  
Rob Hutchinson, Chief, Milford Fire Department  
Bob Collins, Manager, Milford Penn DOT Facility  
Tom Hoff, Chairman, SWP and Vice Chairman, Milford Water Authority (MWA)  
Tim Gartner, Assistant Superintendent, MWA

The purpose of the meeting was to develop a common understanding of the sensitivity and interconnectedness of the Sawkill Watershed and the Milford Springs, with emphasis on the area surrounding the Route 6 and Interstate Highway 84 interchange.

Following a review of the hydrogeology involved, led by Hoff and Gartner, we began a discussion of the particulars of the responses to the 5 spills that are known to have occurred between August 2003 and August 12, 2004. They all were relatively low volume fuel situations.

The MWA Spill Priority List developed for the Authority and the SWP Committee were presented by Tim Gartner with a discussion of the recently installed up-gradient monitoring wells and their use as an early warning of underground contamination.

The general roles and responsibilities of each group were discussed with the MWA requesting the following:

1. MWA would like to be advised of each spill as it intends to log the substance, estimated amount, date, and location on a map.
2. Spills of fuel judged to be greater than 20 gallons should be relayed to the MWA via phone ASAP, preferably at the scene or as soon as possible thereafter.
3. All chemical / hazardous substance spills (non-fuel) should be communicated to the MWA immediately so the MWA can begin ground-water monitoring and/or take steps outlined in its Spill Response Protocol.
4. PennDOT agreed to assure regular testing of the monitoring wells located at their salt shed at the Route 6 and Interstate Highway 84 interchange.
5. MWA offered to provide demonstrations using its ground-water flow simulator to PennDOT or other personnel to assure understanding and awareness of potential problems associated with spills.

There was general agreement that the above was acceptable and implimentable by all present.

Thomas W. Hoff,  
Source Water Protection Steering Committee Chairman



**Appendix 5**

**U. S. Forest Service Letter**



File Code: 1560

Date: March 23, 2006

Todd Giddings  
Todd Giddings and Associates, Inc.  
3049 Enterprise Dr.  
State College, PA 16801

Dear Mr. Giddings:

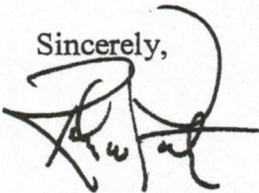
Thank you for your letter of January 20 requesting limitations for Milford Springs Source Water Protection Project. We have enjoyed the collaborative relationship with Milford Water Authority and wish to support the project.

The Forest Service Manual (FSM 2542) gives me direction on municipal watersheds. It strongly discourages deed restrictions to manage activities and impacts when implementing Best Management Practices (BMPs) will serve the purpose. With 191 million acres under management, the Forest Service usually does not enter into formal restrictions on tracts of this size and we would consider it excessive to write and administer a deed restriction of this nature.

Our practice agency-wide is to meet or exceed state water quality standards through implementation of BMPs. On this particular property, due largely to the location and physical nature of the site, our long-term plans do not call for any changes in the use or management of the 0.8 acres. Our current management practices do not impact the water supply. Any future changes in management would be subject to state standards, which would be more than adequate to protect the water supply. Should we determine a change in management is needed in the future we would contact you to seek your input and address your concerns directly.

If I can provide more information on this matter, please let me know.

Sincerely,



RICHARD PATERSON  
Director

