# SOURCE PROTECTION PLAN

## Enosburg Falls Water System (WSID 5116)
## Enosburgh, Vermont - July 2018

**Prepared by:**

Enosburg Falls Village
Source Protection Review Committee
and
Vermont Rural Water Association
Liz Royer – Source Protection Specialist
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Updated by:
Gary Denton
Enosburg Falls Public Works Director

# *Review Annually and Update Every 3 Years*

| Date Reviewed | Reviewer | Changes or Comments |
|---|---|---|
| 6/27/2016 | Gary Denton | Install new roofs on well building #2 & rte. 108 pump building. Install new door and r-38 insulation in ceiling in rte. 108 pump building |
| 8/8/2016 | Gary Denton | Drain & clean cell #2 of reservoir and flush lines from reservoir to well 1&2. Rebuild pump#1 in Route 108 booster pump house. |
| 10/17/2016 | Gary Denton | Subcontract Weston & Sampson to perform redevelopment or well 2 and well and pump maintenance & inspection service well #1, and replace 20' of well casing on well#2 |
| 11/1/16 | Gary Denton | Mapping and GPS locations of water mains, main line valves and hydrant from a water asset management grant. |
| 8/9/17 | Gary Denton | Install 3- meter pits on Orchard street to meter water to private trailer park. |
| 9/20/17 | Gary Denton | Replace 2 old fire hydrants with new K81 Kennedy Hydrants on main street and church street |
| 10/8/18 | Gary Denton | Replace 30 hp. Electric well motor with a premium efficient (94.1%) power efficient 30 Hp. motor and install a new VFD for well #2 |
| | | |
| | | |

# Enosburg Falls Source Protection Plan

Gary Denton, Administrative Contact and Public Works Director — Date: 7-5-18

Gary Denton, Superintendent of Water and Light Department — Date: 7-5-18

Jonathan Elwell, Village Manager — Date: 7/5/18

## TABLE OF CONTENTS

## ACKNOWLEDGEMENTS

Funding for the original preparation of the Source Protection Plan in 2009 was provided through a United States congressional appropriation to the National Rural Water Association (NRWA) and the Vermont Rural Water Association (VRWA) and was administered in cooperation with the US Department of Agriculture - Farm Service Agency (USDA - FSA).

Additional assistance was provided by the Water Supply Division of the Vermont Department of Environmental Conservation (DEC), US Environmental Protection Agency (US EPA) Region I Office, and the Northwest Regional Planning Commission.

# I. INTRODUCTION

## A. Background and Purpose

The purpose of a Source Protection Plan is to identify water system vulnerabilities and to suggest techniques to manage land uses and activities that potentially may contaminate a public water source.

This Source Protection Plan[1] covers two active public wells in Berkshire, Vermont - both serving the Enosburg Falls Water System (WSID #5116). This system is located in Franklin County and the Missisquoi River Basin.

A Public Water System is defined as "any system(s) or combination of systems owned or controlled by a person, that provides drinking water through pipes or other constructed conveyances to the public and that has at least fifteen (15) service connections or serves an average of at least twenty five (25) individuals daily for at least sixty (60) days out of the year." (Vermont Water Supply Rule, Chapter 21, Subchapter Section 2.2)

This Source Water Protection Plan was developed to protect the quality and quantity of these sources and was prepared by the system with assistance from the Vermont Rural Water Association. The objective of this plan is to identify potential contamination sources that occur within the Source Protection Areas of these two public water supplies and to provide specific recommendations to manage these potential threats in order to maintain quality drinking water.

This document has been prepared in accordance with the Vermont Water Supply Rule, Chapter 21, April 2005 Revision. Under the Rule, a Source Protection Plan consists of the following basic elements:

- An inventory of potential sources of contamination (PSOCs);
- An assessment of risks posed by these PSOCs;
- A management plan to minimize risks to the water source(s); and
- A contingency plan for responding to emergency loss of the water supply.

This plan is a working document that will be reviewed at least annually and updated every three years to remain current, active, and viable. A carefully researched and thoughtfully drafted Source Protection Plan is an important first step in source water protection because it sets priorities for actions to take in protecting a water source. Actions taken by water system management, surrounding landowners, and the larger community are key to achieving comprehensive protection.

[1] *Note: This document provides an update to the original Source Protection Plan for the Enosburg Falls Water System WSID # 5116, dated November 1995.*

**B. Description of the Enosburg Falls Water System**

The Enosburg Falls Water System is a Community Public Water System. The system provides domestic water to 640 service connections for a total average population of 1700 people. The water system serves Enosburg Falls Village, including Enosburg Falls Elementary and Enosburg Falls Junior/Senior High School, Franklin Foods (process use), medical offices, restaurants, and other village businesses. The average daily demand is 200,000 gallons per day (GPD) with a maximum daily demand of 284,000 GPD based on design demand. Table 1 provides more information on the water system.

The Public Water System Permit to Operate was issued by the Vermont Water Supply Division on June 18, 2013 with no expiration date. The results from the most recent sanitary survey were received on March 19, 2015. The system had no deficiencies from that survey.

In 2012 both Well 1 and 2 were insulated with spray foam insulation. "R" values were increased from R-5 to R-22 in the walls and from R-5 to R-50 in the ceilings of both wells. Funding for this work was from an energy implement grant from Northwest Regional Planning and the water department's annual budget.

A new "SCADA" alarm system was installed at Well 1, Well 2 and the chemical feed building in 2012. This alerts department personnel when there is low water flow, pump failure to start, pump stuck in the on position, low air temperature, and low voltage.

Over the last fifteen years, the Enosburg Falls Water System underwent both simple and major improvements throughout the distribution system. Undersized pipe (2-, 4-, or 6-inch) was replaced with 8-inch ductile iron on Archibault St, Bismark St, Duffy Hill, Orchard St, Jay View Rd, Stebbins St, West Berkshire Rd. Depot Street was replaced with 10-inch ductile iron, while Water Tower Road was replaced with 16-inch pipe. The Samsonville Road line was extended up to the industrial park with 12" ductile iron pipe. Improvements over the last 3 years include;

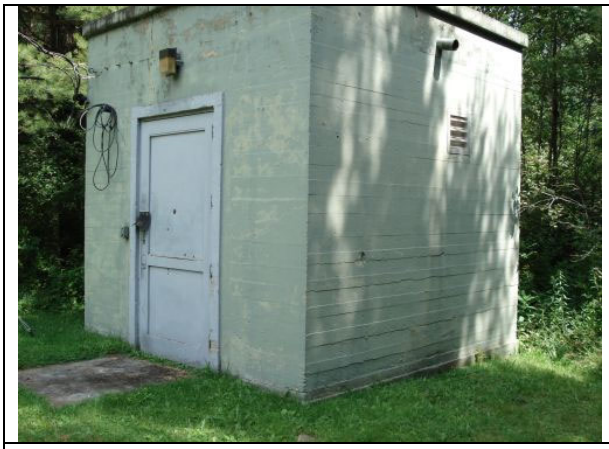
> 2012 – Replaced the 4" cast iron line on Pleasant Street with 12" which is now the main transmission/distribution line for the majority of the Village.
> 2014 – Replaced the 2" PVC water line on Pearl Street with an 8" Ductile Iron main with 7 new gate valves. This now creates a loop with Main Street and Church Street.

Other future projects and distribution upgrades have been proposed as "planned improvements." Water meters were installed in 1988 for each connection. Recently, the meters have been upgraded for some of the connections.

Currently, the system continuously chlorinates but the Water Supply Division has mentioned that they could switch to standby chlorination (see Appendix C). Fluoride is the only other chemical added to the finished water.

**Table 1. Summary of System Information for Enosburg Falls - WSID 5116**

| | |
|---|---|
| **System Name** | Enosburg Falls Water System |
| **Water Supply ID Number** | WSID 5116 |
| **Public System Type** | Community Water System |
| **Number of Connections** | 640 |
| **Population Served** | Estimated 1700 |
| **Average Daily Demand** | 200,000 GPD |
| **Type(s) of Treatment** | Chlorination (continuous) and Fluoride |
| **GWUDI? (under direct influence of surface water?)** | No - both wells tested<br>Well 1 - 1994<br>Well 2 - November 1993 |
| **Permit Expiration Date** | Permit to Operate was issued June 18, 2013 with no expiration date. |
| **Violations (past 3 years)** | None |
| **Waivers** | SOC's Testing |
| **System Contacts** | Operators – Dave Westcom and Jody Benoit, Village Manager Jonathan Elwell, Responsible Person – Gary Denton<br>Owner/Official – Enosburg Falls Village Trustees |



Old Well Building (Source 001)


Plaque on Treatment Building

## II. SOURCE AND PROTECTION AREA DESCRIPTIONS

Both of the water sources for Enosburg Falls and the entire source protection area are located in the Town of Berkshire. Berkshire is located in the northwestern part of the State of Vermont in the northeast corner of Franklin County. The majority of the predominantly rural town is designated as agricultural lands. Till is the predominant subsoil – with remnants of a kame terrace in the western sections of town.

### A. Town Geology and Soils

Berkshire lies amid the western foothills of the Green Mountains, between the Champlain Lowlands to the west and the Green Mountains to the east. This area is underlain by rocks formed from sediments and volcanic material deposited some 600 million years ago (Cambrian period), which were then changed and hardened (metamorphosed) by the heat and pressure of mountain building.

Found in the source protection area, the Pinnacle Formation includes two bedrock members. One was formed from water deposited sands that were changed into a coarse sandstone (schistose graywacke) interbedded with metamorphosed clay sediments (phyllites), and includes such minerals as quartz, sericite, and chlorite. The other, known as Tibbit Hill volcanics, underlies most of Berkshire, and consists of metamorphosed volcanic rock (greenstones) interbedded with the graywacke.

Materials deposited during and after glaciation, including glacial tills, outwash sands and gravels, and lake bottom sediments, cover much of the Town's surface. These are the parent materials from which most soils in Berkshire have developed over the last 10,000 years, since the glacier's last retreat. Also found on the surface are organic peats and mucks that have accumulated in low-lying areas and more recent flood deposits adjacent to rivers and streams. Tills, consisting of unsorted, poorly drained materials, cover most of Berkshire in a thin layer. Exposed bedrock, bouldery surfaces, and shallow soils are common in till areas.

Predominant soils in the Enosburg source protection area include: Missisquoi Loamy Sand (at the old well site), Binghamville Silt Loam (at the new well site), Windsor Loamy Fine Sand, and Peru Stony Fine Sandy Loam. These soil types are all either prime agricultural soils or primary agricultural soils of statewide importance. Slope, drainage, depth to bedrock, water table,and presence of clay, sand, and gravel all vary greatly with these soil types.

### A. Description of the System Wells

The Enosburg Falls Water System has two permanent, full-time sources. These sources are both gravel wells known as Old Well #1 (Source 001) and New Well #2 (Source 002). Table 2 provides additional information on each of these wells.

*Well No. 1 (WSID 5116 Source 001)*

Well 1 (the old well) serves as a permanent, full time source for the Enosburg Falls Water System. The well is located just north of Reservoir in Berkshire. This location is

approximately two miles northeast of Enosburg Falls Village. Reservoir Road is a Class 3 gravel road maintained by the town of Berkshire. The altitude at the well is approximately 500 feet.

Well 1 was constructed in 1944 at a depth of 68 feet with a 47-foot, sixteen-inch steel casing. The pump is still the original pump and capacity is 600 GPM.

*Well No. 2 (WSID 5116 Source 002)*

Well 2 (new well) serves as a permanent, full time source for the Enosburg Falls Water System. The well is located just north of Reservoir Road in Berkshire. This location is approximately two miles northeast of Enosburg Falls Village. The altitude at this well is approximately 500 feet.

Well 1 and Well 2 are both a primary source of water for the Village of Enosburg Falls. The water is mixed in the reservoir.

Well 2 was constructed in 1971 at a depth of 78 feet with a sixteen-inch casing of a length of 15-feet. The pump capacity is also estimated to be to 600 GPM but overall the pump from Well 1 provides a higher yield.

*Storage Reservoir*

The two-cell concrete reservoir was constructed in 1988. The altitude at the reservoir is approximately 500 feet. The reservoir is located off Reservoir Road, just east of the two wells and adjacent to the treatment building. The reservoir has a usable capacity of 750,000 gallons.

| | |
|---|---|
|  |  |
| Interior of Treatment Building | Storage Reservoir |

**Table 2. Summary of Well Information**

| WSID | System Name | Source Number | Source Name | Source Use | Well Type | Depth (feet) | Casing | Date Drilled | Yield (GPM) |
|---|---|---|---|---|---|---|---|---|---|
| 5116 | Enosburg Falls WS | 001 | Well 1 | Permanent Full Time | Gravel | 68’ | 47 feet - 16” steel | 1944 | 600 |
| 5116 | Enosburg Falls WS | 002 | Well 2 | Permanent Full Time | Gravel | 78’ | 15 feet 16” steel | 1971 | 600 |

Old Well (001) Building Interior

New Well (002) Building Interior

**B. Description of Source Protection Areas**

A Source Protection Area is defined as "the surface and subsurface area through which contaminants are likely to move toward and reach water supplies" (Vermont Water Supply Rule). The purpose of delineating a Source Protection Area is to determine the recharge area that supplies water to a public water source. The recharge area or Source Protection Area for a groundwater source is defined by the nature of subsurface flow and that induced by pumping. Within a Source Protection Area, land uses and/or naturally occurring materials may cause a public water system to be vulnerable to contamination. While naturally occurring contaminants can usually be controlled by treatment methods, potentially contaminating land uses can be managed by activities outlined in a Source Protection Plan. A Source Protection Plan identifies water system vulnerabilities and enumerates techniques to manage potentially contaminating land uses.

Source Protection Areas for Public Community Water Systems may be delineated using the following methods:

1. Calculated fixed radius
2. Simplified variable shapes
3. Analytical methods
4. Hydrogeologic mapping
5. Flow models

The Source Protection Area of Public Community Water Systems is further classified into three zones:

- Zone 1 – 200 foot radius around well
- Zone 2 – Estimated zone of influence with "probable impacts"
- Zone 3 – Remainder of recharge area (2 year travel time for sewage disposal)

Zone 1: is a 200-foot radius around the well, also known as the sanitary radius. This is the area where impacts are likely to be immediate and certain. The Sanitary Radius is the most critical area for protection. Only activities that are related to the water system should occur within the sanitary radius. The sanitary radius should be under the control of the water system.

Zone 2: Consists of contributions from the monitoring radius as established as part of the Source Interference Testing for new systems and outside Zone 1. This zone is based on criteria such as water usage and pump test rate and is the area where impacts are probable from potential sources of contamination.

Zone 3: Is the outer most boundary of the Source Protection Area. Zone 3 consists of the remaining recharge area not delineated in Zone 2 and is the area where possible impacts from potential sources of contamination may occur. This area may also be thought of as the area supplying recharge to the public source simply by natural groundwater flow. A two-year travel time zone is used to identify a protection area to provide adequate protection from pathogen threats resulting from onsite disposal of sewage.

*Well 1 and Well 2*

There is one source protection area for both of the wells serving Enosburg Falls. The source protection area has been hydrogeologically defined by the Vermont Department of Environmental Conservation in field work done in the early 1980's. The Agency of Natural Resources then designated the Aquifer Protection Area (APA) - now referred to as the source protection area. The total source protection area is approximately 177 acres (0.28 square miles).

In the mid 1980's, there was a movement to expand the source protection area to include the entire aquifer. Other proposed options were a 3859' radius based on rainfall infiltration or a state default 3000' radius. In those options, the aquifer would be protected through zoning. Locals have speculated that a proposed landfill may have been thought to significantly impact the quality of the aquifer. It is not clear why the source protection area was never changed or updated.

Currently, the Source Protection Area for the Enosburg wells includes forested and agricultural land use. There are two surface waters in the SPA: the former Enosburg drinking water reservoir (known as the old reservoir) and Trout Brook.

| | |
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|  |  |
| Hayfield in SPA | Old Drinking Water Reservoir |

*Town Planning*

Water resource policies in the 2005 Berkshire Town Plan include discouraging "any development activity that degrades surface and/or ground water quality" and prohibiting "on-site sewage disposal, other forms of land disposal, roads, and unenclosed storage of possible contaminants or pollutants…in Well Head Protection Areas"

In addition, the Berkshire Town Plan mentions the Enosburg source protection area and potential sources of contamination, stating: "There are two Well Head Protection Areas in Berkshire, both protected through local zoning. One such area, associated with two gravel wells that supply the Enosburg Falls Water System, is located in Berkshire. This site is approximately 169 acres, fifty percent of which is currently in agricultural use. Another forty percent is forested. One structure with an on-site septic system, and 0.2 miles of road surface are located within it."

## III. INVENTORY OF POTENTIAL SOURCES OF CONTAMINATION AND ASSESSMENT OF THREATS

In order to assess current and future impacts from land uses in the Source Protection Areas, past land use was reviewed, existing zoning was determined, and a review of current property owners and their associated land uses was conducted. Windshield and ground level surveys were conducted by members of the Source Water Committee and Vermont Rural Water Association staff during the spring and summer of 2009. This information has been combined for the current inventories of Potential Sources of Contamination for the Enosburg Falls wells. Annual windshield and ground level surveys are conducted by the Village Public Works Director.

After the Potential Sources of Contamination inventory was completed, PSOCs were ranked "Low", "Medium" or "High" based upon factors such as: distance to source, toxicity of element, elevation, and geology. High risk PSOC's include those sites of known contamination and prohibited uses within Zone 1. There have been no changes in our PSOC from 2012 to 2015.

### A. Enosburg Falls Wells

Current land uses identified with the Source Protection Area for the Enosburg wells include: agriculture, forest, and water system.

*Zoning within the Source Protection Area*

The source protection area is one of Berkshire's Wellhead Protection Overlay Districts (2007 Berkshire Land Use and Development Regulations). The purpose of the Wellhead Protection District is to maintain or improve the quality of Berkshire's and Enosburg's water resources, including surface and ground waters, and to ensure that surface water bodies and corridors are protected and well managed. The Dimensional Standards and Use for the Wellhead Protection Overlay District, along with a zoning map for Berkshire, are provided in Appendix D.

*PSOC Details*

Zone 1 is owned by Enosburg and is known as the Town Forest. Land uses include water system operations, forested areas, surface water, and a hayfield.

Zone 3 includes four parcels. Approximately 50% of Zone 3 is undeveloped and forested. The remaining area is agricultural, including hayfields and one cornfield. Adjacent to this zone there is one transportation corridor, Reservoir Road (town class 3, unpaved) and one VAST connector in the general area.

There are eight Potential Sources of Contamination identified in the Enosburg source protection area. These PSOC's are listed in Table 3 and depicted in Figure 3. Two have been ranked as "Medium" threats and six have been ranked as "Low" threats. Medium threats include agricultural fields and town forest with water system activities. Low threats

include recreation, other farm activities, surface water, and an unpaved road adjacent to the SPA. The following paragraphs describe several of these potential risks.

*Agriculture*

There are four hayfields within Zone 3 throughout the source protection area. On these fields, no chemical treatments are used and no manure is spread. There is also one corner of a cornfield in the northeast portion of the SPA, but according to the landowner, atrazine is not used as a herbicide on that field. In addition, no fertilizers, pesticides, herbicides, or manure is stored and no fields are used as pasture within the source protection area. Potential threats may include bacteria or fluid leakage from farm equipment. Other possible groundwater concerns in general areas with agricultural fields include nitrates, VOC's and SOC's.

*Forestry*

Much of the remaining land within the source protection area consists of forest and woods. The Enosburg Village Forest was purchased from the Town of Berkshire in 1925 in order to protect the municipal water supply, which was the surface water reservoir at that time. In the 1930's, a plantation of softwood was planted along the reservoir shores. In 1991, a partnership was formed between the Enosburg Area Vocational Center and the Village to use the parcel as a model of environmental protection and as an educational tool for science classes and forestry students. Until approximately ten years ago, the Tech program at Enosburg Falls High School continued selective logging and forestry management practices. Since that time, there has been no logging activity in any of the forested area of the SPA. While there are currently no plans for future cutting, by following AAP's and other best management practices, the impacts on surface water and groundwater can be greatly reduced. Potential contaminants from logging activities include sediment in surface water runoff and VOC's from equipment and machinery.

*Other*

Other potential sources of contamination include water system operations, surface water, recreation, and one road. Water system operations may include accidental contamination through vehicle and equipment use and chemical storage. Surface water, such as Trout Brook and the former reservoir, can provide a direct means of contaminants to reach groundwater, especially during drought conditions. Recreation in the SPA is limited to hunting and other low impact activities**; motorized recreation is banned.** The only road in the SPA is Reservoir Road, which touches the southern boundary for less than 100 feet. This is a Class 3 unpaved town road with limited traffic and no salt applied in the winter.

Hayfield in central SPA

Hayfield in NW SPA

Reservoir Road on edge of SPA

Dam on old reservoir

**Table 3. Potential Sources of Contamination Inventory and Risk Evaluation**

| PSOC # | Owner and Description | Property Use | PSOC's | WHPA Zone | Risk |
|---|---|---|---|---|---|
| 1 | Enosburg Municipal Forest<br>Hayfield – rented out, no manure spread<br>Mowed areas<br>Historic logging (over 10 yrs ago) | Water System<br>Hayfield | | 1/3 | Medium |
| 2 | Mark St. Pierre<br>1546 Richford Rd | Cornfield<br>Hayfield | | 3 | Medium |
| 3 | William Reznicek<br>1524 Water Tower Rd | Small hayfield<br>Forested | | 3 | Low |
| 4 | Tim and Tina Stanhope<br>2368 Water Tower Rd | Hayfield<br>Equipment usage | | 3 | Low |
| 5 | Gary Fadden<br>839 Reservoir Rd | Minimal | | 3 | Low |
| 6 | Reservoir Road<br>Town Class 3 - unpaved | Transportation | | 3 | Low |
| 7 | Recreation – hunting<br>Motorized recreation banned | Recreation | | 3 | Low |
| 8 | Surface water – Trout Brook<br>reservoir, wetlands (no geese) | Other | | 3 | Low |

## IV. MANAGEMENT OF RISK

After reviewing the potential sources of contamination inventory for the source, the water system developed a list of management priorities. These activities are discussed more specifically below.

### A. Outreach and Education

The system has started doing public education and outreach to landowners. Public education and outreach are central to the plan because increased awareness leads to better management of contamination risks within the Source Protection Area. All of the SPA landowners have been approached and notified of their status during the planning process. In addition, attempts were made to educate these landowners about ways to help protect the well through good environmental management practices.

A letter and map of the source protection area will be sent to all property owners located within the SPA, to notify them that their property is located within a SPA for a public water system. A list of property owners is provided in Appendix B. A copy of educational materials regarding relevant topics such as septic system maintenance and agricultural best management practices will be sent with each notice. A sample letter is found in Appendix A. A letter and copy of the SPP will be sent to local and regional planning boards and state agencies to notify them of the location of the public water source and the source protection area. A copy of an example letter is presented in Appendix A. This letter will be sent out within three months of receiving state approval of this plan. The mailing addresses are presented in Appendix B.

### B. Source Protection Area – Planning & Land Use

The Town of Berkshire completed a town plan which was updated during 2005. The plan includes information on the Enosburg Falls water system and source protection area. Vermont Rural Water will contact the Berkshire Planning Commission and Northwest Regional Planning Commission regarding the inclusion of corrected information on the system in the next update of the town plan. The zoning regulations for the wellhead protection area will also be discussed and edited.

In order to ensure future protection of the well, Enosburg may also consider purchasing additional land in the source protection area. Funding assistance is available from the Vermont DEC Water Supply Division.

### C. Contingency/Emergency Response/Security

Enosburg Falls has recently made several changes that will enhance emergency preparedness. The system has an operations and maintenance manual which they are continuously updating, which will also be useful in emergency situations. The system joined the Vermont WARN network in 2011. The wellheads, pumps, and tank area are inspected daily and it should be determined if there are any low-cost ways to prevent tampering or possible contamination of the water supply. The system has decided that security will be enhanced by

posting "no trespassing" signs and not identifying the wellheads or source protection area. There are also chained and locked entrances to the wells, treatment building, and reservoir.

**D. Source Water Protection – Plan Updates**

The system administrative contact will oversee implementation of the measures outlined in this Source Protection Plan. System representatives may also comment on development proposals that are located within the Source Protection Area. After the management activities in this plan have been implemented, a designated representative should review the plan once per year. The system operator will perform an inspection of the SPA every three years to confirm that all parties are following best management practices, and to identify any changes in land uses or property owners. Updates indicating any changes in land use or PSOC's will be submitted to the Water Supply Division. The updates may simply consist of a letter, which describes any changes to the original SPP or a letter stating that there have been no changes. See Appendix E for information on updating the plan.

The Enosburg Falls Water System reserves the right to amend or update this plan before the three-year submittal cycle has been completed.

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## V. CONTINGENCY PLAN

The Contingency Plan outlines the steps that the water system may take in the event that their well becomes contaminated, is at imminent risk of becoming contaminated (e.g., due to hazardous contaminant spill in the vicinity of the well), or declines in yield. The Vermont Water Supply Division considers a source to be in an emergency situation if the source experiences water quality problems, environmental releases, or water quantity problems. Examples of an interruption of service include power outages or mechanical failure. The plan may also be implemented if there are mechanical problems with the water system which require repair.

The above possible situations may result in a loss of water supply for the village for a number of hours, days, weeks, or even permanently. The Contingency Plan specifies emergency response procedures including names and phone numbers of key people/officials that may be needed to solve the particular problem. The village will need to identify the appropriate people to call for each situation. In addition, short-term and long-term water supply alternatives are outlined. Being prepared for potential emergency situations will greatly improve the system's ability to address problems.

### A. Water Supply Disruption Response Procedures

If an emergency occurs, such as a contaminant spill in the Source Protection Area or if a regulated compound is detected in the water supply above acceptable levels, the following notification procedure should be implemented.

**Step 1: The person discovering the emergency situation will call the responsible person and/or the operator of the water system:**

| ENOSBURG FALLS RESPONSIBLE PERSON | |
|---|---|
| Dispatch Number (Public Works)<br>*Call this number first | (802) 933-4443 |
| Gary Denton | (802) 827-6685<br>Cell-802-370-2660 |

| ENOSBURG FALLS OPERATORS | |
|---|---|
| Dave Westcom | (802) 933-6602 |
| Jody Benoit | (802) 933-4305 |

**Step 2: The responsible person and/ or operator will then be responsible for notifying some of the following officials, depending on the nature of the situation:**

| EMERGENCY CONTACT LIST | |
|---|---|
| Statewide Emergency Services | 911 |
| Vermont State Police –St Albans Station | (802) 524-5993 |
| Franklin County Sheriff | (802) 524-2121 |
| Enosburgh Fire and Rescue - Ambulance | (802) 933-2118 |

| | |
|---|---|
| Enosburgh Fire Department | (802) 933-4345 |

| STATE CONTACT LIST | |
|---|---|
| Vermont Water Supply Division | (802) 828-1535 |
| Vermont DEC Hazardous Materials Spills Hotline | (800) 641-5005 |
| Vermont Department of Health Poison Hotline | (800) 222-1222 |

| SERVICE/REPAIR NOTIFICATION LIST | |
|---|---|
| Electrician – Ken Whitehead | (802) 933-5352 |
| Chlorine and Fluoride Supplier – Allen Pools and Spa<br>USA Bluebook – other supplies and equipment | (800) 649-5952<br>(800) 548-1234 |
| Endyne – All Water Testing | (802) 879-4333 |
| Weston & Sampson<br>427 Main Street, Suite 400<br>Worcester, MA 01608 | 978-977-0110 x 5021 |

| TOWN AND VILLAGE CONTACTS | |
|---|---|
| Enosburg Falls Village Manager – Jonathan Elwell | (802) 933-4443 |
| Enosburgh Town Clerk – Billie Jo Draper | (802) 933-4421 |
| Town Health Officer – Larry Fiske | (802) 933-8470 |
| Village Trustees – Walter Scott - Chair | (802) 933-4443 |
| Enosburg Falls Wastewater Department | (802) 933-6669 |
| Berkhire Town Clerk | (802) 933-2335 |
| Berkshire Town Garage | (802) 933-5592 |

It will be the Administrative Contact's responsibility to determine who should be called on this list. If the AC is not available, the operator will assume this responsibility. Actions that may be considered include:

- Seeking advice from a consultant or the Vermont Water Supply Division
- Providing an alternate water source (bottled water, hauled water)
- Ordering repair equipment, or contracting for repair
- Remediating or cleanup related to a hazardous materials spill
- Providing water system treatment
- Implementing water conservation measures

**B. Notification of Water System Users**

In the event of a shutdown and use of an alternative source, the system will notify water users by one or more of the following methods:

- Door-to-door hand delivery
- Phone calls to critical customers

- Public posting (post office, store, town hall, library, etc.)
- Local newspaper, radio, and/or television

Utility customers will be told the nature of the problem and expected duration. Flushing schedules are sent out with the monthly water bills. Short-term treatment options will be specified – such as boiling or do-not-drink orders. In case of a water main break or other emergency repairs, water may need to be shut off without notice. Users such as the school, elderly housing, and Franklin Foods have special needs and should be contacted before shutting off the water if possible.

### C. Short-Term Contingency Options

In the event that water from the Enosburg Falls Water System is determined to be unsuitable to drink or use, the following situation may occur:

- When the water is deemed unsuitable for drinking, the Water System Operator will issue a Boil Water notice and/or recommend that bottled water be utilized for drinking water purposes. In the event of a coliform hit, notification and sampling procedures from the Vermont Water Supply Division should be followed.
- When the water supply has been deemed temporarily unsuitable for use, the Water System Operator will issue a "Do Not Use" notice indicating that water is only to be used for flushing toilets. In addition, treatment alternatives should be considered.
- In the event that water quantity problems arise, conservation measures will go into effect. These conservation measures may include:
  - water use only for drinking and food preparation
  - no irrigation of lawns and gardens
  - no washing of motor vehicles
  - no use of water for pools

Short-term water supply alternatives include bottled water delivery to individual homes or bulk water delivery to fill the reservoirs. Bottled water for use at individual homes serviced by the Water System is available from the following suppliers:

| BOTTLED WATER SUPPLIERS | | |
|---|---|---|
| Vermont Pure/Crystal Rock | Randolph, VT | 1-866-524-3613 |
| Vermont Heritage | Newport, VT | 1-800-698-4792 |

A short term supply of water can be provided by filling the water reservoir. A number of bulk water suppliers can provide 4000 to 6000 gallon loads. A water use restriction should be put in place to conserve supply in the event of water hauling. Sanitary tank truck delivery can be provided from:

| BULK WATER SUPPLIERS | | |
|---|---|---|
| McDermotts Trucking | Enosburg Falls | 802-933-2144 |
| Fresh Water Haulers | Burlington, VT | 802-658-2223 |
| Booth Brothers Dairy | Barre, VT | 802-476-6605 |

## D. Long-Term Contingency Options

No alternate water supplies are connected to the Enosburg Village Water System. Dairy Center is the only other public water system in town. Berkshire has several water systems but their supplies are minimal. Swanton and Richford have been contacted and may be able to supply water in an emergency situation.

If a source from the Enosburg Falls Water System becomes continuously unavailable due to quantity or quality issues, the Village will initiate a program to determine future necessary steps. Decisions will be made to determine if, in the case of contamination, water can be treated until contamination is no longer present, or if the contaminated source(s) will need to be abandoned.

If existing sources must be abandoned or permanently modified, long-term options include:

- Drilling one or more new wells
- Installing an appropriate water treatment system

## E. Water System Shut Down & Start Up Procedures

The procedure for a non-scheduled sequenced shutdown and startup for the Water System is included in the Operations and Maintenance manual. The system owns a portable generator. The system is a member of Vermont WARN.

### SHUT DOWN PROCEDURES

In case of an emergency shut down the following procedure should be followed:

1. Turn power to both booster pumps at the "Route 108 Pump Station" **OFF**.

2. Turn the chlorine and fluoride chemical feed pumps at the Chemical Feed Building **OFF.**

3. Turn power to **Well Pumps 1 and 2 OFF**. Switching the main power switch on the right side of the large grey power box at each site **DOWN** to the **OFF** position does this.

4. Turn **OFF** both 10" valves in the chemical feed building.

5. At the reservoir, just inside the chain link fence, turn the valves that are labeled "Village Water Cell 1" and "Village Water Cell 2" **OFF**.

**Be sure to do the procedure in the sequence that is listed above.**

**Once the above procedure is completed the entire Water System is shut down.**

**START UP PROCEDURES**

1. Turn both 10" valves in the chemical feed building **ON**.

2. Turn power **ON** to well pumps 1 and 2. This is done by switching the power switch on the right side of the large grey power box at each site to the **ON** position.

3. Turn **ON** the chlorine and fluoride chemical feed pumps.

4. While the reservoir is filling, open the all hydrants on Reservoir Road and Water Tower Road. Also open the fire hydrants at the intersection of Elm Street and West Berkshire Road, at the Industrial Park, the last hydrants on West Berkshire Road, the West Enosburg Road. Other hydrants at high points in the system may be opened. This will allow air to escape from the system while the system is filling with water. Other hydrants at high points in the system may be opened. The more air that is released from the system while it is filling with water the better.

5. When the reservoir is about half full, open the valve labeled "Village Water Cell 1" about 5 to 6 turns, or until you hear water passing through the valve. **FILL THE WATER SYSTEM SLOWLY.**

6. Monitor the hydrants that were opened and when the air stops and water is present shut the hydrants down when clean water is flowing from the hydrant.

7. When water is present at hydrants on Reservoir Road and Water Tower Road slowly open the valves labeled "Village Water Cell 1" and Village Water Cell 2" all the way and

8. Turn pumps on at the "Route 108 Pump Station".

**Be sure to do the procedure in the sequence that is listed above.**

**Once the above procedure is completed the Water System fully operational.**

## VI. REFERENCES

Comprehensive Municipal Plan for the Town of Berkshire, Vermont: 2005-2010
Prepared by the Berkshire Planning Commission
Adopted by the Berkshire Select Board on April 25, 2005

Land Use and Development Regulations for the Town of Berkshire, Vermont
Approved and Adopted by the Town of Berkshire
March 6, 2007

Public Water System Permit to Operate
Enosburg Falls Water System WSID #5116
June 18, 2013

Source Protection Plan (WSID # 5116)
Village of Enosburg Falls
September 2009

Vermont Water Supply Rule
Agency of Natural Resources, Department of Environmental Conservation
Revision Date April 25, 2005 - Final

**Online References:**

Northwest Regional Planning Commission
http://www.nrpcvt.com/

USDA NRCS Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

Vermont Water Supply Division
http://www.anr.state.vt.us/dec/watersup/wsd.htm

Vermont Geological Survey
http://www.anr.state.vt.us/dec/geo/vgs.htm

Vermont Rural Water Association
http://www.vtruralwater.org/

## VII. FIGURES

**Figure 1. Locator Map – Enosburg Falls Village and Source Protection Area**

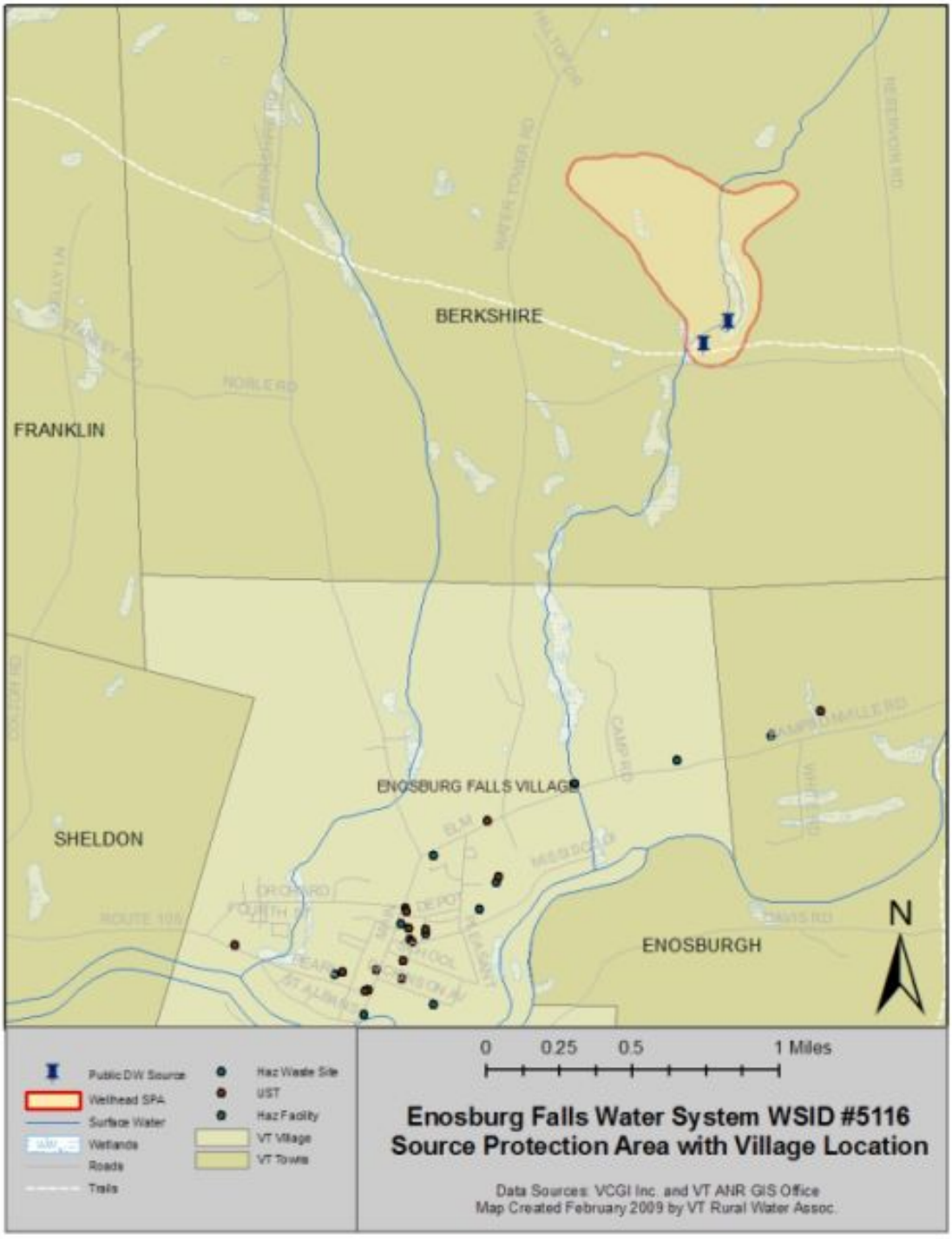


**Figure 2. Topographic Map**

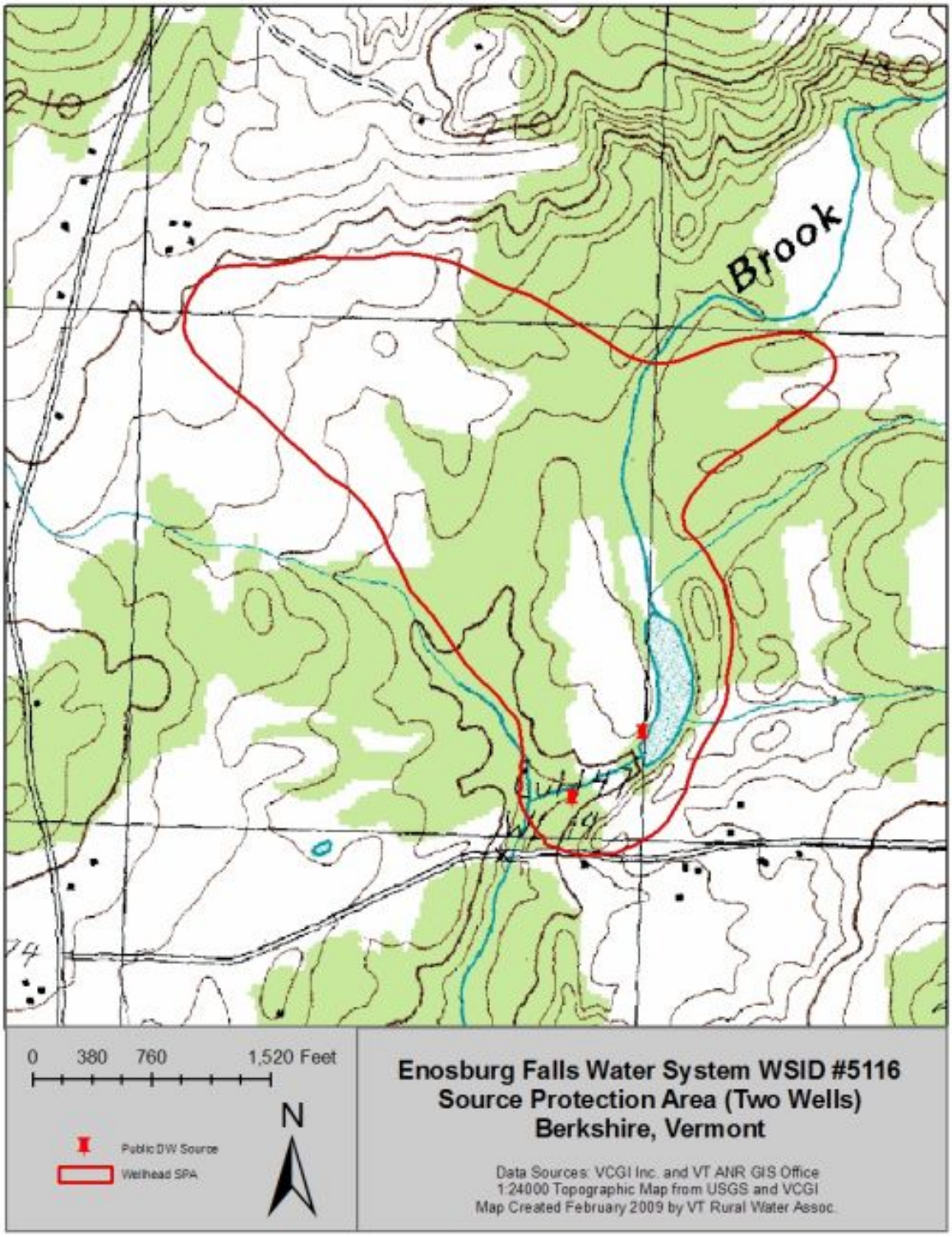


**Figure 3. Orthophoto**

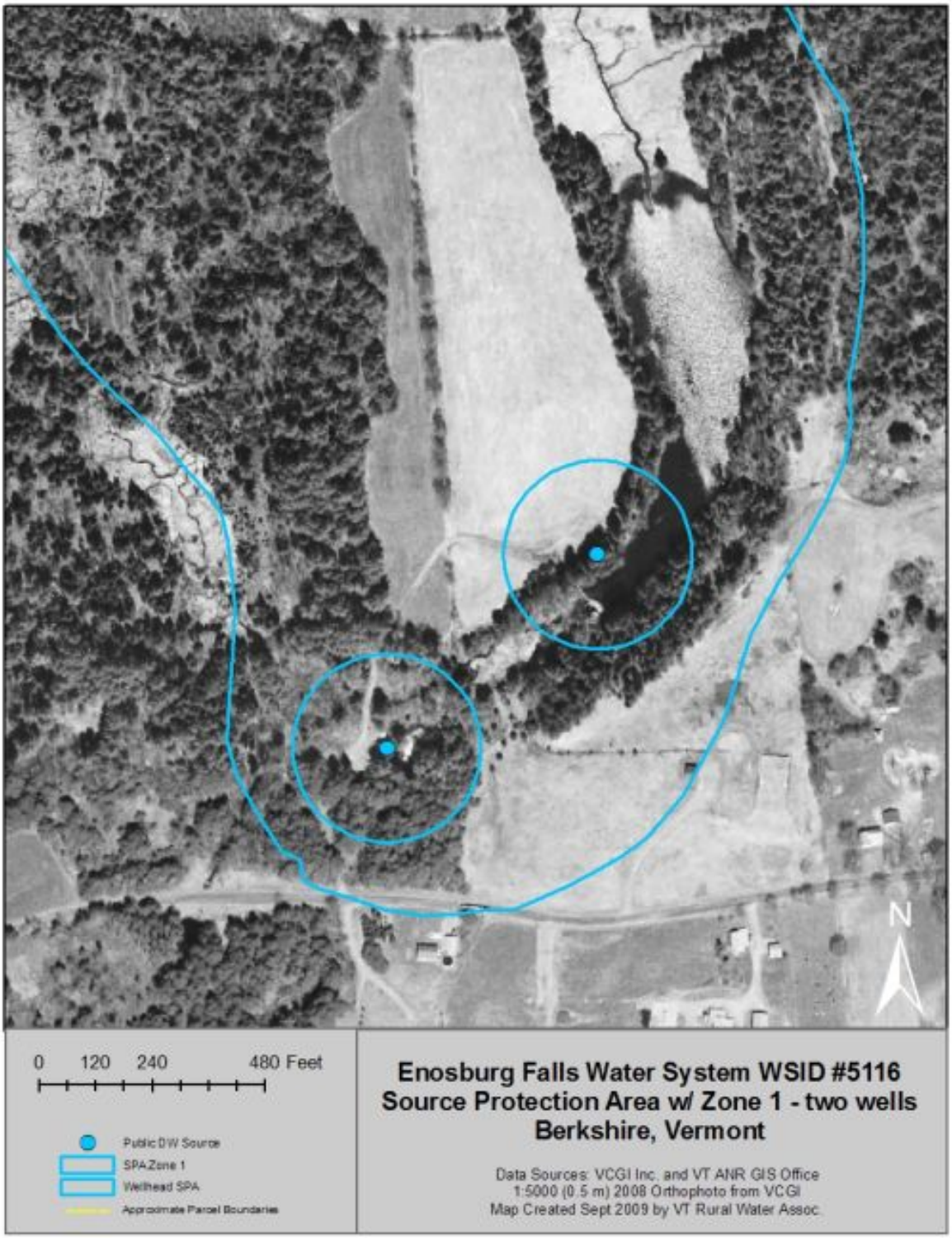


**Figure 4. NAIP Aerial Photo**

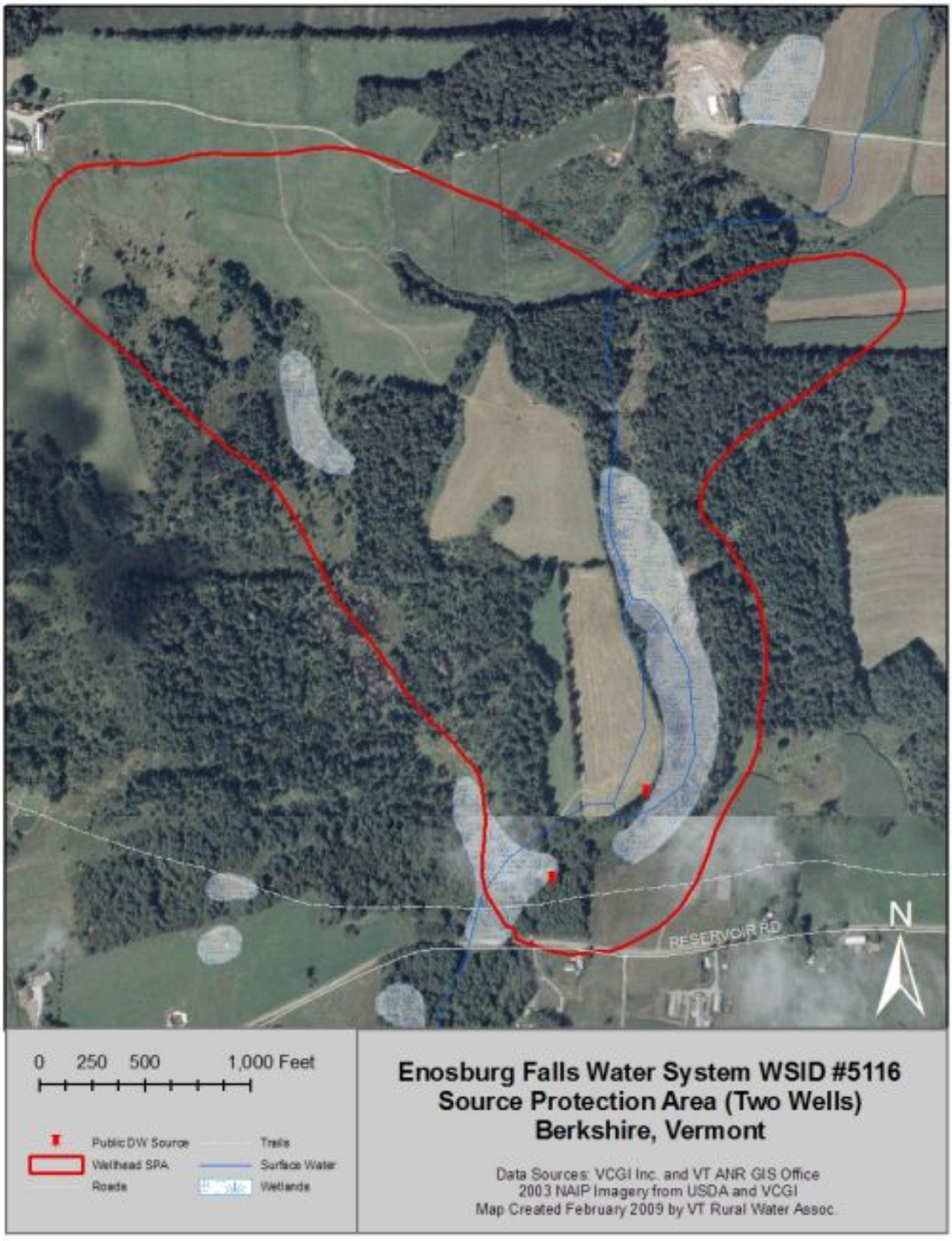


**Figure 5. Potential Sources of Contamination Map**

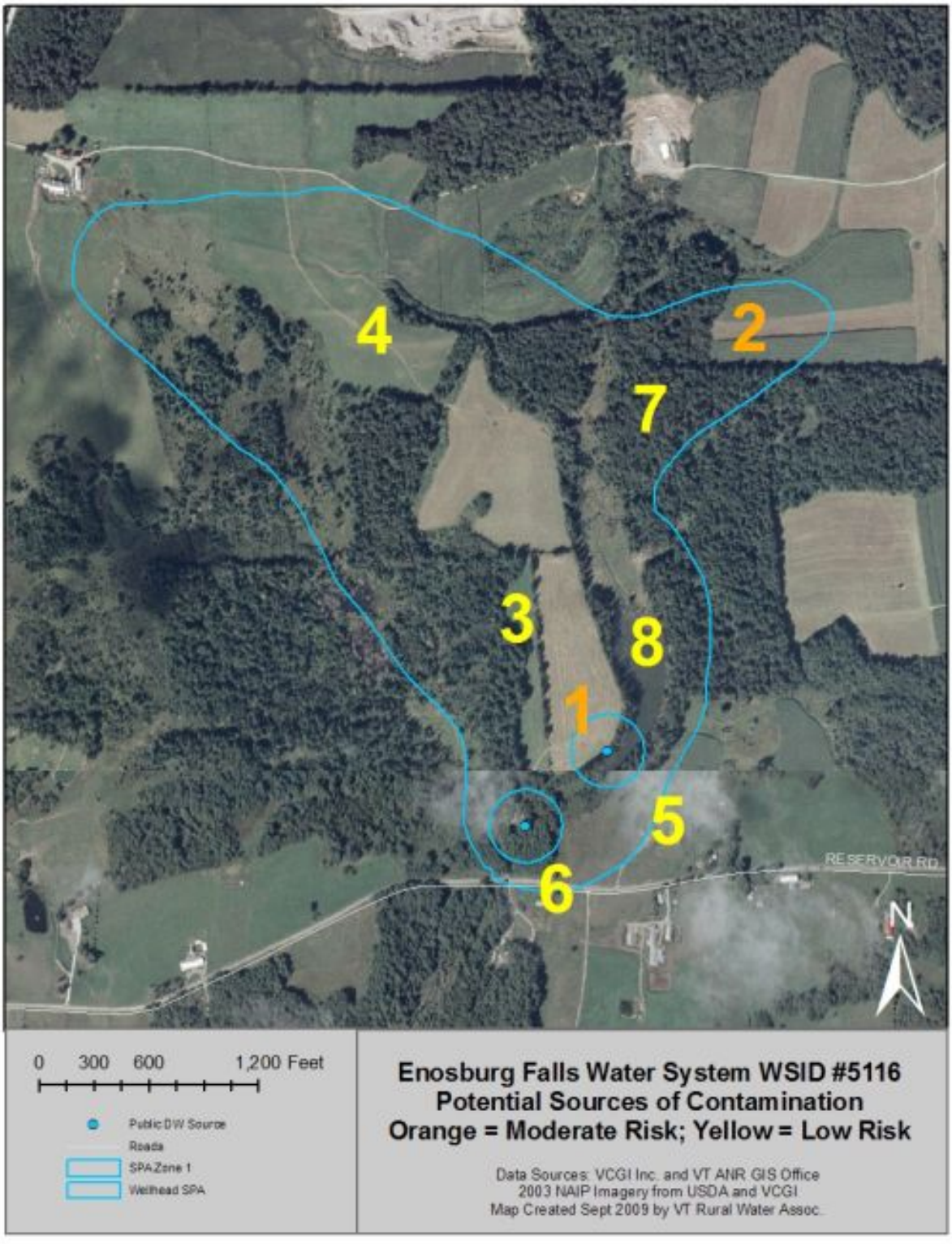
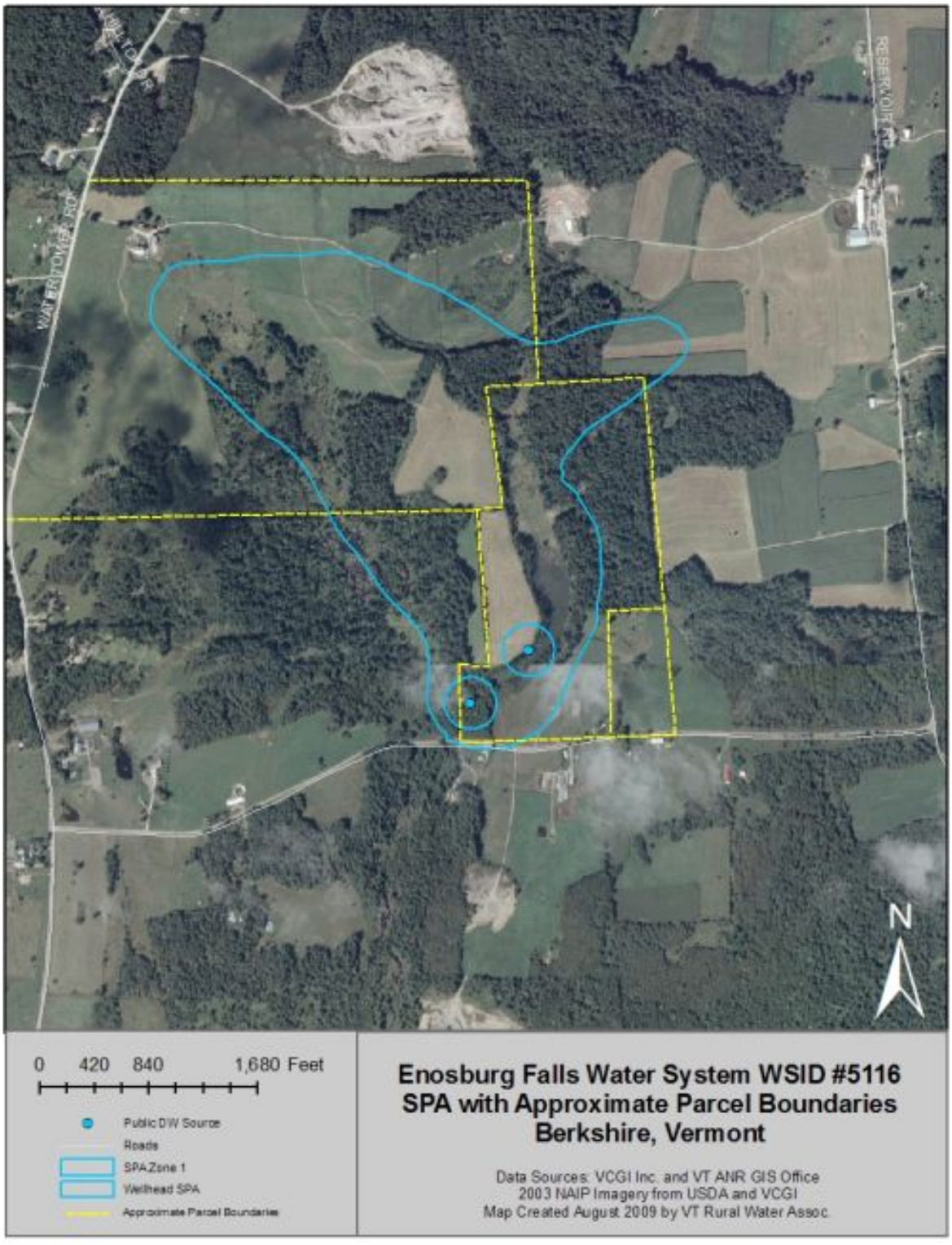


**Figure 6. Approximate Parcel Boundaries – Source Protection Area (no maps available)**




**VII**

# I. APPENDICES

## Appendix A. Letters to Landowners and Public Officials

Enosburg Falls Public Works Department
42 Village Drive
Enosburg Falls, Vermont 05450

August 14, 2018

Dear Landowner,

As required by the State of Vermont, the Village of Enosburg Falls Water Department has been working to update our Source Protection Plan to protect the drinking water wells located in Berkshire. The purpose of the plan is to identify potential contaminants and to manage and maintain the quality and quantity of our public drinking water sources.

Your land is located in the wellhead protection area defined by the Vermont Agency of Natural Resources (see enclosed map). You may have already been contacted to provide information necessary in the updating of this plan. A source protection area is the land from which contaminants are considered likely to reach a well. Within a source protection area, human land uses and naturally occurring materials may cause a public water system to become vulnerable to contamination. While naturally-occurring contaminants can usually be controlled by treatment methods, property owners are often able to manage their land uses to further lower the risk of contamination.

Land use activities that occur within a Source Protection Area have the ability to negatively impact a water source. For example, activities such as improperly disposing of household hazardous wastes and motor oil, overuse of fertilizer and pesticides, and spillage of gasoline or home heating fuel all have the potential to contaminate a water source. Many of the negative impacts associated with these activities can be avoided with good management.

If you have any questions, please contact the Enosburg Falls Village Public Works Department. Copies of the Enosburg Falls Source Protection Plan are available for review at the Village of Enosburg Falls office at 16 Village Drive or on our website WWWvilageofenosburgfalls.org.

Thank you in advance for helping us protect the drinking water in our community.

Sincerely,

Gary Denton, Enosburg Falls Public Works Director

Enosburg Falls Public Works Department
42 Village Drive
Enosburg Falls, Vermont 05450

September 14, 2018

Dear State, Local and Regional Officials,

As required by the State of Vermont, the Village of Enosburg Falls has been working to develop a Source Protection Plan to protect the drinking water wells located in Berkshire. The Town and Village are being assisted by the Vermont Rural Water Association, a non-profit group, to update this plan. The purpose of the plan is to identify potential contaminants and to manage and maintain the quality and quantity of our public drinking water sources.

Enclosed is a map showing the Source Protection Area for two wells serving the Enosburg Falls Public Community Water System. A Source Protection Area consists of the surface and subsurface area from or through which contaminants are likely to reach a water supply source. Land use activities located in the protection area have the potential to adversely impact water quality of the associated wells. If the ground water that supplies our well becomes contaminated, it may be impossible to eliminate the contamination so that the source can continue to be used for drinking water. We are proactively trying to protect our water sources by implementing a source protection plan of which this letter of notification is a part.

We are contacting you to request your assistance in protecting these water supplies. There are a number of ways in which your agency may be able to help with protection that can help reduce the possibility of contamination of the water supply. For example, please keep us informed of any related land use decisions or permitting issues and involve us in the planning and decision process where it is deemed appropriate.

On behalf of the Village of Enosburg Falls, I would like to thank you for your attention to this matter. If you have any questions, please contact the Enosburg Falls Public Works Department.

Sincerely,

Gary Denton, Enosburg Falls Public Works Director

**Appendix B. Addresses of Source Protection Area Landowners and Public Officials**

Information from: Town of Berkshire 2009 Grand List and landowner knowledge (for boundaries)

| Landowner Name and Mailing Address |
|---|
| Enosburg Municipal Forest<br>Village of Enosburg Falls<br>Enosburg Falls, VT 05450 |
| Mark St. Pierre<br>1546 Richford Rd<br>Richford, VT 05476 |
| William Reznicek<br>1524 Water Tower Rd<br>Enosburg Falls, VT 05450 |
| Tim and Tina Stanhope<br>2368 Water Tower Rd<br>Enosburg Falls, VT 05450 |
| Gary Fadden<br>839 Reservoir Rd<br>Enosburg Falls, VT 05450 |

## List of Local, Regional and State Agencies**
## (To receive letter and Source Protection Area Map)

| | |
|---|---|
| Berkshire Town Clerk<br>Virginia Messier<br>4454 Water Tower Road<br>Enosburg Falls, VT 05450 | Berkshire Health Officer<br>4454 Water Tower Road<br>Enosburg Falls, VT 05450 |
| Berkshire Planning Commission<br>4454 Water Tower Road<br>Enosburg Falls, VT 05450 | Berkshire Zoning Administrator<br>4454 Water Tower Road<br>Enosburg Falls, VT 05450 |
| Enosburg Falls Village Trustees<br>Walter Scott, Chair<br>42 Village Drive<br>Enosburg Falls, VT 05450 | Enosburgh Health Officer<br>Larry Fiske<br>50 St. Albans Street<br>Enosburg Falls, VT 05450 |
| Northwest Regional Planning Commission<br>155 Lake Street<br>St. Albans, VT 05478<br>802-524-5958 | District 6 Env. Commission – Act 250<br>111 West Street<br>Essex Junction, VT 05452<br>802-879-5657 |
| Vermont State Police – Troop A<br>St. Albans Station<br>P.O. Box 809<br>St. Albans, VT 05478<br>802-524-5993 | Vermont Department of Environmental Conservation<br>Drinking Water & Groundwater Protection Division<br>1 National Life Drive, Main 2<br>Montpelier VT 05620-3521 |

**Appendix C. Letter from State Regarding Chlorination**

**and**

**Appendix D. Berkshire Wellhead Zoning Documents**

SEE FOLLOWING PAGES

## Appendix E. Preparing a Source Protection Plan Update

VERMONT
ENVIRONMENTAL CONSERVATION
Water Supply Division

GUIDANCE

# PREPARING A SOURCE PROTECTION PLAN UPDATE

### Guidance for Public Community and Non-Transient Non-Community Water Systems

The Water Supply Division (WSD) has been assisting water systems with their source protection needs for over ten years. This program is successful at protecting and preserving safe drinking water for the people of Vermont. The hard work and diligence of those involved in protecting their water is very evident. An excellent job of keeping up with the ever-changing requirements mandated by state and federal agencies is also apparent. The following guideline was developed to streamline the approval and updating process, making the most efficient use of the time and resources we have available to us.

Please use each section when organizing your Source Protection Plan (SPP) update. At the end of the process, you may find you don't need to make many changes. Even if this is so, it is important to say so in writing when addressing each section in your SPP update.

**Inspect the Source Protection Area**

Visually inspect the Source Protection Area (SPA) and review the potential sources of contamination (PSOC) identified in your original Source Protection Plan (SPP) or most recent SPP Update. Your inspection should consist of a physical walk through, in addition to a drive through. Some questions you should be asking while completing the PSOC section of your update include:

- Is the farmer still growing corn on the field within your SPA? If so, does he use any pesticides? If not still growing corn, what is he now doing with the land? Is he haying it? Does he spread manure? How often? Can you ask him to reduce or eliminate spreading in the area closest to your source?
- Is there a gas station or other place that stores petroleum products in your SPA? Establish a relationship with the owner to alert you when and/or if a spill occurs and to help you evaluate the following questions. How old are the tanks? Is there proper containment should a spill occur? Has it been tested for leaks? If the tank is no longer in service, has it been removed or properly closed in place?
- Are the septic systems in the area properly maintained? Have landowners received outreach material on how to maintain their septic system?
- Is there a household hazardous waste collection day or a safe place for homeowners to drop off their hazardous waste so it does not end up in their septic tanks?

**Update Your PSOC Maps and Inventory**

You must make reference to all PSOCs within your SPA in your update. Please also weigh their risk (high, medium, low) to your source and identify a management plan for each. Please indicate if a PSOC has been added and consider the same circumstances as followed in the original SPP for their risk assessment (your well construction, proximity to the source, nature of contamination, probability of contamination). If a PSOC has been removed, please describe why. Also modify your PSOC map to reflect your observations, if any. If necessary, the WSD is available to create an updated map for use in your SPP update.

1/2

**Update Your Landowner List**
Visit your town clerk's office to determine whether any land or land rights within your SPA have changed hands. Add any new landowners to your list and remove anyone who no longer owns property in your SPA. A complete list of landowners should be included in each update. Those who are new to the SPA should be sent a copy of your landowner letter and pertinent outreach material.

**Update Your Management Plan**
Each PSOC management plan should describe a way to ensure the least amount of impact is occurring to your source. This may be something as simple as sending outreach material to residents or it might involve establishing a direct relationship with the owner of the service station across the street from your source. Or you might only have to maintain awareness on your site if your activities are the only PSOC in the SPA.

**Update Your Contingency Plan**
You should update your contingency plan to reflect changes, if any, which have occurred among the personnel of your system. For example, if the responsible person or operator has changed this needs to be indicated in the contingency plan for easy reference. You should also use this section to update any emergency procedure changes that have occurred. Also, be sure the WSD is aware of changes in personnel by submitting a 'blue form' for administrative updates to our records.

**Communicate with Relevant Landowners and Town/County/State Officials**
Send out letters to regulatory agencies to remind them that you are concerned about land use activities in your SPA. Also, send letters to newly identified landowners who may not know about your water source. Although not required, it's a good idea to contact the other landowners within your SPA with a positive message about actions they can take to help protect your supply, and to thank them for any efforts they have made since your last letter. You do not need to include a copy of the landowner letter with your SPP update, unless you wish.

**Other Useful Information**
An example of what might be useful to include in your update is if your town passes zoning rules or establishes a conservation district around your source. Look back over the last three years and think about what actions you have taken to make your source less vulnerable to contamination. Have you worked with a local farmer to reduce pesticide and fertilizer use in your SPA? Have you purchased development rights for land in your SPA? Have you posted signs at key locations to notify people when they enter your SPA? Have you responded swiftly and appropriately to an emergency situation? Use the SPP Update as an opportunity to boast about the progress you have made

This list may appear daunting; however, you will quickly realize the above steps are what you followed to create your initial SPP. Once you develop a format for your update, future revisions will become easier. These steps are integral in protecting your water supply for present and future generations.

**Please send your Source Protection Plan Update to the address below**

This guidance document and related environmental information are available electronically via the internet. For information visit us through the Vermont Homepage at http://www.vermont.gov or visit VT WSD directly at http://www.vermontdrinkingwater.org

Water Supply Division
103 South Main Street
Waterbury, VT 05671-0403
Toll free 1-800-823-6500
Out of State 1-802-241-3400
Fax 1-802-241-3284