WELLHEAD PROTECTION PLAN
FOR THE

CITY OF TRIMONT

Draft

May 7, 2014

Forward

This document presents the wellhead protection (WHP) plan for the City of Trimont that will help provide for an adequate and safe drinking water supply for community residents. It contains the following components:

- Assessment of the data elements used to prepare the plan;
- Delineation of the wellhead protection area;
- Delineation of the drinking water supply management area;
- Assessments of well and drinking water supply management area vulnerability;
- Impact of land and water use changes on the public water supply well(s) used by the water supplier;
- Issues, problems, and opportunities affecting the well(s), well water, and the drinking water supply management area;
- Wellhead protection goals for this plan;
- Objectives and plan of action for achieving the wellhead protection goals;
- Evaluation program for assessing the effectiveness of this plan; and
- Contingency strategy to address an interruption of the water supply.

Water Supply Wells Included in This Plan

Unique Number	Well Name or Number	Use/Status[1]
217102	**Well #3**	**Primary**
455811	**Well #4**	**Primary**
632061	**Well #5**	**Emergency**

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Glossary of Terms and Acronyms

Data Element. A specific type of information required by the Minnesota Department of Health to prepare a wellhead protection plan.

Drinking Water Supply Management Area (DWSMA). The surface and subsurface areas surrounding a public water supply well, including the wellhead protection area, that must be managed by the entity identified in the wellhead protection plan. (Minnesota Rules, part 4720.5100, subpart 13). This area is delineated using identifiable landmarks that reflect the scientifically calculated wellhead protection area boundaries as closely as possible.

Emergency Response Area (ERA). The part of the wellhead protection area that is defined by a one-year time of travel within the aquifer that is used by the public water supply well (Minnesota Rules part 4720.5250, subpart 3). It is used to set priorities for managing potential contamination sources within the DWSMA.

Emergency Standby Well. A well that is pumped by a public water supply system only during emergencies, such as when an adequate water supply cannot be achieved because one or more primary or seasonal water supply wells cannot be used.

Inner Wellhead Management Zone (IWMZ). The land that is within 200 feet of a public water supply well (Minnesota Rules, part 4720.5100, subpart 19). The City of Trimont must manage the IWMZ to help protect it from sources of pathogen or chemical contamination that may cause an acute health effect.

Primary Water Supply Well. A well that is regularly pumped by a public water supply system to provide drinking water.

Vulnerability. Refers to the likelihood that one or more contaminants of human origin may enter either 1) a water supply well that is used by the City of Trimont or 2) an aquifer that is a source of public drinking water.

WHP Area (WHPA). The surface and subsurface area surrounding a well or well field that supplies a public water system, through which contaminants are likely to move toward and reach the well or well field (Minnesota Statutes, part 103I.005, subdivision 24).

WHP Plan Goal. An overall outcome of implementing the WHP plan, e.g., providing for a safe and adequate drinking water supply.

WHP Measure. A method adopted and implemented by a City of Trimont to prevent contamination of a public water supply, and approved by the Minnesota Department of Health under Minnesota Rules, parts 4720.5100 to 4720.5590.

WHP Plan Objective. A capability needed to achieve one or more WHP goals, e.g., implementing WHP measures to address high priority potential contamination sources within 5 years.

Acronyms

DNR – Minnesota Department of Natural Resources

MDA - Minnesota Department of Agriculture

MDH – Minnesota Department of Health

MGS – Minnesota Geologic Survey

MPCA – Minnesota Pollution Control Agency

MRWA – Minnesota Rural Water Association

SWCD – Martin County Soil and Water Conservation District

US EPA – United States Environmental Protection Agency

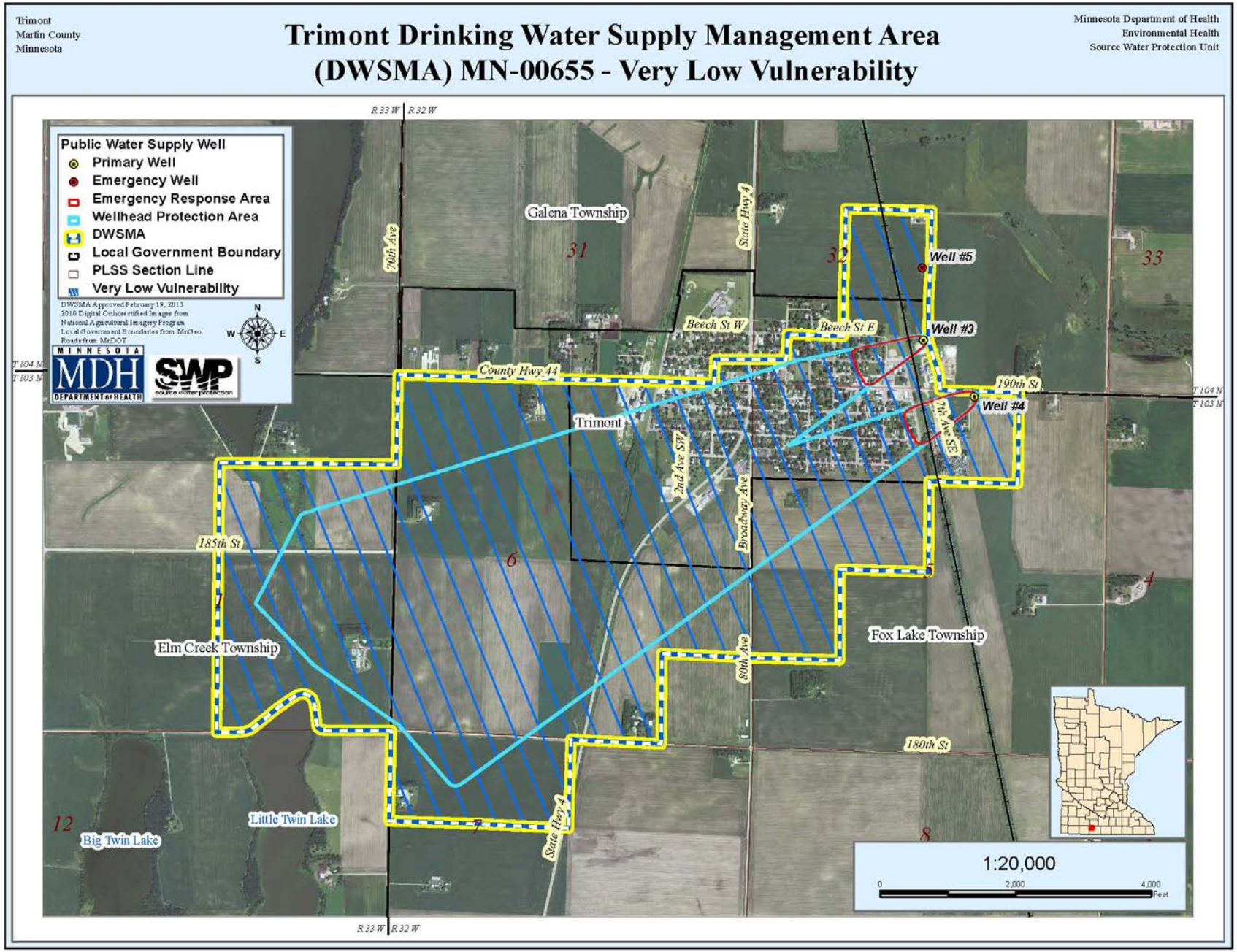

Figure 1 – Trimont Drinking Water Supply Management Area

Chapter 1 - Introduction

1.1 Background

The wellhead protection (WHP) plan for the City of Trimont was prepared in cooperation with the Minnesota Department of Health (MDH) and the Martin county Soil and Water Conservation District. It contains specific actions that the city will take to fulfill WHP requirements that are specified under Minnesota Rules, part 4720.5100 to 4720.5590. Also, the support that Minnesota state agencies, federal agencies, Martin County, and others will provide is presented to identify their roles in protecting the city's drinking water supply. The plan is effective for 10 years after the approval date specified by MDH and the city is responsible for implementing its WHP plan of action, as described in Table 9 of this report. Furthermore, the city will evaluate the status of plan implementation at least every two-and-one-half years to identify whether its WHP plan is being implemented on schedule.

1.2 Plan Appendices

Much of the technical information that was used to prepare this plan is contained in the appendices but is summarized in the main body of this plan. In particular:

- Appendix I contains the first part of the plan, consisting of the delineation of the wellhead protection area (WHPA), the drinking water supply management area (DWSMA), and the vulnerability assessments for the public water supply well(s) and the DWSMA. This part of the plan is summarized in Chapter 3.
- Appendix II contains documents and discussion regarding the data elements used for this plan.
- Appendix III contains the inventory of potential contamination sources. This inventory is discussed in Chapter 4 in terms of assigning risk to the city's water supply and is also discussed in Chapter 6, relating to issues, problems or opportunities.
- Appendix IV contains the contingency strategy to provide for an alternate water supply if there is a disruption caused by contamination or mechanical failure. This information is discussed in Chapter 11.
- Appendix V contains supporting documents.

Chapter 2 - Identification and Assessment of the Data Elements Used to Prepare the Plan

The data elements that are included in this plan were used to 1) delineate the WHPA and the DWSMA and to assess DWSMA and well vulnerability and 2) document the need for the WHP measures that will be implemented to help protect the city's water supply from potential sources of contamination. The city met with representatives from MDH on two occasions to discuss data elements that are specified in Minnesota Rules, part 4720.5400, for preparing a WHP plan.

The first scoping meeting, held on December 27, 2011 addressed the data elements that were needed to support the delineation of the WHPA, the DWSMA, and the well and DWSMA vulnerability assessments. The second scoping meeting, held on April 4, 2013 discussed the data elements required to 1) identify potential risks to the public water supply and 2) develop effective management strategies to protect the public water supply in relation to well and DWSMA vulnerability. The results of each

meeting were communicated to the city by MDH through a formal scoping decision notice and are presented in Appendix II.

Each data element is required to be assessed for its impact on 1) the use of the public water supply well, 2) delineation of the WHPA, 3) the quality and quantity of water supplying the public water supply wells, and 4) land and groundwater uses within the DWSMA. Presented in Appendix II is information about the availability of information regarding each data element and the results of assessing each data element relative to the overall impact each data element may have on the four items listed above.

The availability of the information relating to each data element that is used in this plan was assessed by the Minnesota Department of Health and the City of Trimont. During the assessment process the City of Trimont and Minnesota Department of Health 1) reviewed the completeness of the information available relating to each data element that is used in this plan and 2) determined if a data element is considered an issue, concern or opportunity that the City of Trimont can address in this plan.

The data elements specified by the MDH relating to the **physical environment** used in the development of the WHP plan are considered sufficient to provide an adequate assessment. No concerns or issues have been identified with these data elements. The assessment of the data elements specified by MDH relating to **land use** identified issues or concerns regarding the long-term management of the DWSMA. The following items summarize these land use issues that will be addressed in Chapter 9 of this WHP plan:

- Land use changes are not anticipated within the DWSMA; however,
- Martin county controls land uses outside the city limits. Therefore, the city and county will cooperate in managing land uses within the DWSMA to reduce the impact potential contaminant sources may have on the aquifer used by the city.

Finally, the data elements specified by the MDH relating to **water quantity and quality** used in the development of the WHP plan are considered sufficient to provide an adequate assessment. Ground water quantity information is used during the WHPA delineation process and assessed to determine the influence land uses may have on the city water well.

Actions that are needed to address identified issues, concerns or opportunities as a result of the data element assessment process are included in the plan of action (Chapter 9). Not all of the data elements listed in the WHP rule had to be addressed in the WHP plan because of the nonvulnerable nature of the city's source of drinking water.

Chapter 3 - Delineation of the Wellhead Protection Area, Drinking Water Supply Management Area and Vulnerability Assessments

A detailed description of the process used for 1) delineating the WHPA and the DWSMA, and 2) preparing the vulnerability assessments of the city water supply well(s) and DWSMA is presented in

Appendix I. The City of Trimont requested that MDH do this work and it was performed by Yarta Clemens-Billaigbakpu, who is licensed as a geoscientist by the State of Minnesota.

3.1 WHPA and DWSMA Delineation

Figure 1 shows the boundaries of the WHPA and the DWSMA. The WHPA was delineated using computer simulations of groundwater movement to generate the underground capture zone for city Well 1 (Unique No. 240636). The WHPA for this water supply well is shown in Figure 1. The City of Trimont does not have an emergency back up well.

The DWSMA boundaries were designated using the following criteria:

- Center-lines of highways, streets, or roads,
- Public Land Survey coordinates, and
- Political boundaries.

3.2 Well Vulnerability Assessment

The construction and water quality obtained from the primary well used by the City of Trimont is included in the assessment of well vulnerability. The vulnerability of the city well is considered low because it is constructed so that the well is adequately sealed into the borehole and does not pump water that contains human-caused contaminants.

3.3 DWSMA Vulnerability Assessment

The low vulnerability assigned to the DWSMA (Figure 1) was determined using geologic maps and reports, soils information and groundwater chemistry information which indicate that the aquifer exhibits a low to very low sensitivity throughout the DWSMA.

Chapter 4 – Inventory of Potential Contamination Sources, Establishing Priorities and Assigning Risk to Potential Contamination Sources

The types of potential contamination sources that may exist within the DWSMA were derived from the information collected to satisfy the data element requirements (Chapter 2). The impact assigned to each data element as part of the assessment process (Appendix II) was used to assess the types of potential contamination sources that may present a risk to the city's drinking water supply. The low vulnerability assessment for the DWSMA indicates that, generally, only wells, other types of boreholes, excavations that may reach the aquifer and certain types of Environmental Protection Agency Class V Wells are likely to impact the city well.

4.1 Contaminants of Concern

None of the human-caused contaminants regulated under the federal Safe Drinking Water Act have been detected at levels indicating that the well itself serves to draw contaminants into the aquifer as a result of pumping.

4.2 Inventory Results and Risk Assessment

A description of the types and locations of potential contamination sources is presented in Appendix III. A summary of the results for the IWMZ is listed in Table 1 and Table 2 presents these results for the remainder of the DWSMA. The priority assigned to each type of potential contamination source addresses 1) the number inventoried, 2) its proximity to a city well, 3) the capability of local geologic conditions to absorb a contaminant, 4) the effectiveness of existing regulatory controls, 5) the time required for the City of Trimont to obtain cooperation from governmental agencies that regulate it, and 6) the administrative, legal, technical, and financial resources needed. A **high (H)** risk potential implies that the potential source type has the greatest likelihood to negatively impact the city's water supply and should receive highest priority for management. A **low (L)** risk potential implies that a lower priority for implementing management measures is assigned.

Table 1 - Potential Contamination Sources and Assigned Risk for the IWMZ

Source Type	Total	Level of Risk
No Potential Contaminant Sources Identified		

Table 2 - Potential Contamination Sources and Assigned Risk for the Rest of the DWSMA

Potential Source Type	Total Number	Number Within Emergency Response Area and Level of Risk		Number Within Remainder of the DWSMA and Level of Risk	
Private Well (Unknown Status)	12	2	High	10	High
Private Well (Unused Status)	1	0	--	1	High
Private Wells (In Use)	2	0	--	2	Low
Old Municipal Well (Unsealed)	2	0	--	2	High
Monitoring Well (In Use owned by City)	1	0	--	1	Low

Chapter 5 - Impact of Land and Water Use Changes on the Public Water Supply Well

The city estimates that the following changes to the physical environment, land use, surface water, and groundwater-may occur over the 10-year period that the WHP plan is in effect (Table 3). This is needed to determine whether new potential sources of contamination may be introduced in the future and to identify future actions for addressing these anticipated sources. Land and water use changes may introduce new contamination sources or result in changes to groundwater use and quality. The anticipated changes may occur within the jurisdictional authority of the city, although some may not. Table 3 describes the anticipated changes to the physical environment, land use, and surface water or groundwater in relationship to the 1) influence that existing governmental land and water programs and regulations may have on the anticipated change, and 2) administrative, technical, and financial considerations of the City of Trimont and property owners within the DWSMA.

Table 3 - Expected Land and Water Use Changes

Expected Change (Physical Environment, Land Use, Surface Water, Groundwater)	Impact of the Expected Change On the Source Water Aquifer	Influence of Existing Government Programs and Regulations on the Expected Change	Administrative, Technical, and Financial Considerations Due to the Expected Change
Physical Environment: No change in the physical environment within the DWSMA is anticipated.	No changes, therefore, no impact.	No changes, therefore, existing programs or regulations are adequate.	Because there are no expected changes to the physical environment within the DWSMA no additional administrative, technical or financial considerations required.
Land Use: No change in current land use within the DWSMA is anticipated. City may explore development of new city ordinances or policies addressing wells, public water use and distribution requirements.	Land use planning that includes groundwater protection measures in the area surrounding the DWSMA can be of benefit to the city's source water.	Land use changes are not expected in the DWSMA in the near future and the city or county currently have no local ordinances in place addressing groundwater usage near or within the DWSMA. Adoption of new regulations or policies addressing wells and public water uses may be an outcome of a review process.	An updated county land use plan may provide additional measures to protect the city's source water in that portion of the DWSMA in the adjoining township. Within the city, any new land use ordinances adopted to further protect the public drinking water system would have to comply with all applicable state rules and regulations. The city may require technical assistance in developing new land use or water use related ordinances.
Groundwater: The city does not anticipate an increase in water use demand.	No change expected in demand, therefore, no impact.	No changes, therefore, existing programs or regulations are adequate.	Because there are no expected changes to the physical environment within the DWSMA no additional administrative, technical or financial considerations required.

Chapter 6 - Issues, Problems, and Opportunities

6.1 Identification of Issues, Problems and Opportunities

The City of Trimont has identified water and land use issues, problems and opportunities related to 1) the aquifer used by the city water supply wells, 2) the quality of the well water, or 3) land or water use within the DWSMA. The city assessed 1) input from public meetings and written comments it received, 2) the data elements identified by MDH during the scoping meetings, and 3) the status and adequacy of the city's official controls and plans on land and water uses, in addition to those of local, state, and federal government programs.

The results of this effort are presented in Table 4, which defines the nature and magnitude of contaminant source management issues in the city's DWSMA. Identifying issues, problems and opportunities, including resource needs, enables the city to 1) take advantage of opportunities that may be available to make effective use of existing resources, 2) set meaningful priorities for source management and 3) solicit support for implementing specific source management strategies.

Table 4 - Issues, Problems, and Opportunities

Issue Identified	Impacted Feature	Problem Associated with the Identified Issue	Opportunity Associated with the Identified Issue	Adequacy of Existing Controls to Address the Issue
There may be unidentified, unused, unlocated or poorly maintained wells in or near the DWSMA.	Aquifer, Water well quality	Unused/unsealed or poorly maintained wells may provide a direct route for contaminants to reach the aquifer.	The City can work with the MDH and Martin County SWCD to continue to inventory and prioritize wells within or near the DWSMA. City can apply for a MDH-SWP grant for assistance in locating and sealing wells that are determined to be abandoned within the DWSMA.	City doesn't have any local controls to track existing wells, new wells or unused or abandoned wells, therefore will need to work with citizens, MDH and county to locate wells and promote proper sealing of any abandoned or unused wells.
The City has old municipal wells which have not been properly sealed.	Aquifer, Water well quality	Wells which have not been sealed according to MDH standards may provide a pathway for pollutants to enter into the aquifer.	With the assistance of MDH the city can locate, assess and seal the wells if they pose a threat to the city's drinking water supply.	MDH Well Management has the ability to require the city to properly address unused improperly sealed wells. The city can utilize the MDH WHP grant program to seal the wells.

Issue Identified	Impacted Feature	Problem Associated with the Identified Issue	Opportunity Associated with the Identified Issue	Adequacy of Existing Controls to Address the Issue
The City of Trimont has limited staff and financial resources to implement the wellhead protection plan.	DWSMA	With limited resources implementing the WHP plan will be a challenge for the City of Trimont.	The city could partner with the county and state agencies that may have regulatory authority or programs to assist the city in WHP implementation.	A MDH-SWP grant program is available to public water suppliers with approved WHP plans.
New high capacity wells drilled within the DWSMA or 1 mile of the DWSMA may alter the WHPA boundary and provide a pathway for pollutants to enter the aquifer.	Aquifer, DWSMA and water well quantity and quality.	A large capacity well could potentially impact the city's municipal water supply wells ability to supply water.	The city will need to work closely with the MDH, DNR-Waters and county to identify any new high capacity wells which may be drilled within or near the DWSMA. MDH & DNR can determine if a new high capacity well may influence the city well.	Current state law and rules are considered adequate insofar as requiring all wells to be constructed according to state well construction codes and setbacks.
The city does not have any ordinance or policies in place to control the placement of new private wells within the city.	Aquifer, DWSMA and water well quantity and quality	A property owner could potentially have a new water well drilled within the city limits without city input. The city has no authority over construction or placement of new wells or pumping rates which may influence the capture area of the city well.	The city could adopt a new ordinance or revise existing rules to control the placement or use of new wells within the city MDH has authority to require well sealing.	City ordinance prohibits cross connections between private wells and the city distribution system and can restrict water usage if necessary but does not address high capacity wells or the placement of new wells within city limits.
Class V wells within the DWSMA.	Aquifer, water well quality and DWSMA.	Auto/truck repair-related businesses within the DWSMA may have Class V drainage wells.	City can provide public and owners of such businesses with educational materials regarding Class V wells.	City could adopt an ordinance to restrict the use of Class V wells within the city limits.
It is important to educate the citizens within the DWSMA and newly-elected city officials and other local or state agencies about the City's WHP program.	Aquifer, Water well quality and quantity and DWSMA	Periodic turnover in elected officials and staff from various agencies can be a challenge to maintain continuity and momentum in future WHP plan implementation efforts.	City staff can work with MDH SWP or MRWA staff to provide WHP-related information to elected officials, citizens and other local or state technical staff. This keeps decision-makers informed of the importance and need for effective WHP plan implementation as they relate to the city's	Official local controls are not needed to address this issue. City can formally request assistance from MDH, MRWA or Martin Co. SWCD to develop appropriate educational materials related to WHP.

			drinking water supply.	
Video Well #3 to determine if grout was used during construction.	Aquifer, Water Well Quality	Properly constructed wells may act as conduits and allow pollution to travel down to the aquifer.	City can work cooperatively with MDH and local well drillers to conduct this recording. The city can apply for grant money via MDH to perform this task.	Current state law and rules are considered adequate insofar as requiring all wells to be constructed according to state well construction codes and setbacks.
Need to update the security at the well houses. Currently the doors are unlocked.	Water well quality	Improperly secured wellhouse(s) might allow someone to contaminant the wells.	Work cooperatively with MDH and apply for a grant to purchase locks for the wellhouse doors.	Current state law are considered adequate.

6.2 Comments Received

There have been several occasions for local governments, state agencies, and the general public to identify issues and comment on the city's WHP plan. At the beginning of the planning process, local units of government were notified that the city was going to develop its WHP plan and were given the opportunity to identify issues and comment. A public information meeting was held to review the results of the delineation of the wellhead protection area, DWSMA, and the vulnerability assessments. The meetings of the city's wellhead protection team were open to the public. Also, a public hearing was held before the completed WHP plan was sent to MDH for state agency review and approval. During WHP plan development the wellhead protection team discussed issues regarding the city's distribution system and other maintenance issues that are not directly related to source water protection.

Chapter 7 - Existing Authority and Support Provided by Local, State, and Federal Governments

In addition to its own controls, the City of Trimont will rely upon partnerships formed with local units of government, state agencies, and federal agencies with regulatory controls or resource management programs in place to help implement its WHP plan. The level of support that a local, state, and federal agency can provide depends on its legal authority, as well as the resources available to local governments.

7.1 Existing Controls and Programs of the City of Trimont

Table 5 shows the legal controls and/or programs that the city has identified to support the management of potential contamination sources within the DWSMA.

Table 5 - Controls and Programs of the City of Trimont

Type of Control	Program Description
Building Permits	Requires land uses within city to comply with city ordinance to control and direct city development and offset potential environmental risk posed by a specific land use.

Private Wells (Ordinance No. 2013-04)	Private wells are not allowed within city limits without permission from the City.
City Services Ordinance	Requires all citizens to connect to city services.

7.2 Local Government Controls and Programs

The following table lists departments or programs within Martin County may be able to assist the city with issues relating to potential contamination sources that 1) have been inventoried or 2) may result from changes in land and water use within the DWSMA:

Table 6 - Local Agency Controls and Programs

Government Unit	Name of Control/Program	Program Description
Martin Co. SWCD	Water Planning	Develop and implement the county water plan.
Martin County	Comprehensive Land Use Plan	In 2012 Martin County began a county wide comprehensive land use plan that will incorporate both rural and urban settings

7.3 State Agency and Federal Agency Support

MDH will serve as the contact for enlisting the support of other state agencies on a case-by-case basis regarding technical or regulatory support that may be applied to the management of potential contamination sources. Participation by other state agencies and the federal government is based on legal authority granted to them and resource availability. Furthermore, MDH 1) administers state regulations that affect specific potential sources of contamination and 2) can provide technical assistance to property owners to comply with these regulations.

The following table identifies the specific regulatory programs or technical assistance that state and federal agencies may provide to the City of Trimont to support implementation of the WHP plan. It is likely that other opportunities for assistance may be available over the 10-year period that the plan is in effect due to changes in legal authority or increases in funding granted to state and federal agencies. Therefore, the table references opportunities available when the city's WHP plan was first approved by MDH.

Table 7- State and Federal Agency Controls and Programs

Government Unit	Type of Program	Program Description
MDH	State Well Code (Minnesota Rules, Chapter 4725)	MDH has authority over the construction of new wells and the sealing of wells. MDH staff in the Well Management Program offer technical assistance for enforcing well construction codes, maintaining setback distances for certain contamination sources, and well sealing.

MDH	Wellhead Protection	MDH has staff that will help the city identify technical or financial support that other governmental agencies can provide to assist with managing potential contamination sources. MDH administers SWP grant program.
DNR	Water appropriation permitting (Minnesota Rules, Chapter 6115)	DNR can require that anyone requesting an increase in existing permitted appropriations, or to pump groundwater, must address concerns regarding the impacts to drinking water if these concerns are included in a WHP plan.
U.S. EPA	40 Code of Federal Regulations 144, Subpart G	Automatic closure of Class 5 automotive waste disposal wells in WHPA; inventory of all Class V wells.

7.4 Support Provided by Nonprofit Organizations

The City of Trimont will work with the Martin County SWCD, the Minnesota Rural Water Association and other established organizations to assist in the implementation of their WHP plan.

Chapter 8 - Goals

Goals define the overall purpose for the WHP plan, as well as the end points for implementing objectives and their corresponding actions. The WHP team identified the following goals after considering the impacts that 1) changing land and water uses have presented to drinking water quality over time and 2) future changes that need to be addressed to protect the community's drinking water:

- **Maintain a safe and adequate drinking water supply for community residents which meet all state and federal drinking water standards.**
- **Increase awareness among public officials, land owners and the general public about the importance of WHP in protecting the public drinking water supply.**

Chapter 9 - Objectives and Plan of Action

Objectives provide the focus for ensuring that the goals of the WHP plan are met and that priority is given to specific actions that support multiple outcomes of plan implementation. Both the objectives and the wellhead protection measures (actions) that support them are based on assessing 1) the data elements (Chapter 2), 2) the potential contaminant source inventory (Chapter 4), 3) the impacts that changes in land and water use present (Chapter 5) and 4) issues, problems, and opportunities referenced to administrative, financial, and technical considerations (Chapter 6). The initial result of this assessment process was to assign priority to the types of contamination sources that were inventoried (Table 2).

9.1 Objectives

The following objectives have been identified to support the goals of the WHP plan for the City of Trimont:

1. Communicate with public about wells and wellhead protection.
2. Utilize community comprehensive planning to protect drinking water.
3. Manage wells that are owned or operated by the community.
4. Provide guidance to private well owners to properly manage wells.
5. Collect, monitor and evaluate data necessary to support WHP Plan implementation.

9.2 Establishing Priorities

WHP measures reflect the administrative, financial, and technical requirements needed to address the risk to water quality or quantity presented by each type of potential contamination source. Not all of these measures can be implemented at the same time, so the WHP team assigned a priority to each. A number of factors must be considered when WHP action items are selected and prioritized (part 4720.5250, subpart 3):

- Contamination of the public water supply wells by substances that exceed federal drinking water standards.
- Quantifiable levels of contamination resulting from human activity.
- The location of potential contaminant sources relative to the wells.
- The number of each potential contaminant source identified and the nature of the potential contaminant associated with each source.
- The capability of the geologic material to absorb a contaminant.
- The effectiveness of existing controls.
- The time needed to acquire cooperation from other agencies and cooperators.
- The resources needed, i.e., staff, money, time, legal, and technical resources.

9.3 WHP Measures and Action Plan

Based upon these factors, the WHP team has identified WHP measures that will be implemented by the city over the 10-year period that its WHP plan is in effect. The objective that each measure supports is noted as well as 1) the lead party and any cooperators, 2) the anticipated cost for implementing the measure and 3) the year or years in which it will be implemented.

The following categories are used to further clarify the focus that each WHP measure provides, in addition to helping organize the measures listed in the action plan:

- Education and Outreach
- Well and Contaminant Source Management
- Land Use Planning
- WHP Coordination, Evaluation and Reporting
- Monitoring, Data Collection and Assessment

- Contingency Planning

The following table lists each measure that will be implemented over the 10-year period that the city's WHP plan is in effect, including the priority assigned to each measure. Unless otherwise specified, all efforts to implement identified measures listed in Table 8 must be summarized by the eighth year after WHP approval to coincide with the beginning of the formal process to amend this current version of the WHP plan.

Table 8 - WHP Plan of Action

Public Education and Outreach - Implementation Action Items																	
Action	Priority	Description	Objective Addressed	Cooperators	Cost	Implementation Time Frame											
						2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		
Action 1	High	**WHP & Drinking Water Protection Education:** Distribute the MN Rural Water Association's "Where Does My Drinking Water Come From?" factsheet to landowners in the DWSMA via a direct mailing. Publish a newspaper article notifying residents of the highlights in the city's wellhead protection plan. All of these outreach materials area available upon request or via the MN Rural Water Association website.	1, 4	MDH MRWA	Staff $100		•										

Well and Contaminant Source Management Implementation Action Items																	
Action	Priority	Description	Objective Addressed	Cooperators	Cost	Implementation Time Frame											
						2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		
Action 2	High	**Private Well Management:** Provide information on the proper management of wells to landowners located in the DWSMA. This factsheet is available upon request or via the MN Rural Water Association website.	1, 4	MRWA	Staff Time $400		•										
Action 3	High	Provide information to property owners about the hazards of unused wells and options for correctly managing/sealing them. This factsheet is available upon request or via the MN Rural Water Association website.	1, 4	MRWA	Staff Time $400		•										
Action 4	High	Request technical and financial assistance from MDH and/or SWCD for locating, prioritizing and properly sealing unused or abandoned wells located in the DWSMA. Apply for MDH grant to seal wells in DWSMA deemed to be a risk to the aquifer used by city.	1, 4	MDH MRWA, SWCD	$10,000			•	•								

Action 5	Medium	**High Capacity Well Management:** Identify any new high-capacity wells that are proposed for construction in or within one mile of the DWSMA. If a new high capacity well is identified, contact MDH Hydrologist to evaluate the effect that proposed pumping may have on the boundaries of the delineated WHPA or DWSMA.	1, 4	MDH DNR	Staff Time	As Needed														
Action 6	Low	**Class V Wells Management:** Identify any potential Class V wells in the DWSMA. If a Class V Well is identified, work with the MDH Planner to provide the property owner with management and permitting options.	1, 4	MDH, EPA	Staff Time	As Needed														
Action 7	High	**Municipal Well Management Practices:** Request technical and financial assistance from MDH for locating, prioritizing and properly sealing of unused or abandoned wells located in the DWSMA. Apply for MDH grant to seal wells in the DWSMA deemed to be a risk to the aquifer used by city.	3	MDH, MRWA, SWCD	Staff Time $10,000	•	•	•												
Action 8	High	**Manage the Inner Wellhead Management Zone (IWMZ):** Review and update the IWMZ survey form for all wells in the system every 5 years.	3	MDH, MRWA	Staff Time					•										•
Action 9	High	Monitor setbacks for all new potential sources of contamination within the IWMZ.	3	MDH, MRWA	Staff Time	As Needed														
Action 10	High	Implement WHP measures identified on the IWMZ Inventory forms.	3	MDH, MRWA	Staff Time	As Needed														

Evaluation and Reporting – Implementation Action Items																		
Action	Priority	Description	Objective Addressed	Cooperators	Cost	Implementation Time Frame												
						2014	2015	2016	2017	2018	2019	2020	2021	2022	2023			
Action 11	Medium	Implementation, Tracking and Reporting Activities Maintain a "WHP folder" that contains documentation of WHP activities you have completed and a date that it was done.	5	MDH, MRWA	Staff Time	•	•	•	•	•	•	•	•	•	•			
Action 12	High	WHP Program Evaluation Plan Reporting: Complete an Evaluation Report every 2.5 years that evaluates the "progress of plan of action and the impact of a (any) contaminant release on the aquifer supplying the public water supply well" MN WHP Rule 4720.5270. This evaluation will be mailed to the MDH Planner upon completion.	5	MDH, MRWA	Staff Time			•			•			•				

Land Use Planning and Coordination - Implementation Action Items																		
Action	Priority	Description	Objective Addressed	Cooperators	Cost	Implementation Time Frame												
						2014	2015	2016	2017	2018	2019	2020	2021	2022	2023			
Action 13	Medium	Continue to develop and maintain a good line of communication between the City and Martin County in order to remain abreast of any land use changes which are pending within the City's DWSMA. Send a letter and map of the DWSMA to Martin Co. requesting the opportunity to provide comments on pending landuse changes within the DWSMA and a one mile radius of city limits. Ask that all local units of government with land use or water resource planning authority incorporate a map of the DWSMA and aquifer and well vulnerability information within their planning documents.	2	County, SWCD	Staff Time	•												
Action 14	High	Explore the option of adopting a Cross Connection Ordinance. Example ordinances are available via MN Rural Water Association website.	2	MRWA	Staff Time			•	•									

Monitoring and Data Collection – Implementation Action Items																			
Action	Priority	Description	Objective Addressed	Cooperators	Cost	Implementation Time Frame													
						2014	2015	2016	2017	2018	2019	2020	2021	2022	2023				
Action 15	Medium	The MDH and the City of Trimont will verify the locations of new wells that are constructed within a one-mile radius of the DWSMA as part of the process for amending the City of Trimont's WHP plan. The MDH will provide well logs to assist the City in this process and the city will cooperate with MDH.	5	MDH, SWCD	Staff Time									•					
Action 16	Medium	The city will explore the options for conducting an aquifer test on one of their public supply wells. If a test is possible the city will work with the MDH hydrologist to conduct the test. MDH will develop a work plan that identifies steps and resources to complete work.	3, 5	MDH	Staff Time				•	•									
Action 17	High	Down hole video log Well #3 to determine the integrity of the casing. If this work is not to be completed by MDH the City will apply for an implementation grant via the MDH. If successful in receiving the grant the city will perform the work.	3, 5	MDH, Local Well Driller	Staff Time, $3,000				•	•									

Contingency Planning - Implementation Action Items																			
Action	Priority	Description	Objective Addressed	Cooperator(s)	Cost	Implementation Time Frame													
						2014	2015	2016	2017	2018	2019	2020	2021	2022	2023				
Action 18	Medium	Review and update the Contingency Strategy (Appendix IV) every five years.	1, 3, 5		Staff Time					•					•				
Action 19	High	Install locks on the doors of the well house(s). The City can apply for a grant via MDH to help with the cost of the locks.	3	MDH	Staff Time, $2,500	•	•	•											

9.4 Commitments From Cooperators

The agencies listed in Table 9 have indicated they will support the City of Trimont with implementing the WHP measure(s) in which they are identified.

Table 9 - Cooperating Agencies List

Agency Name and Measure Number	Agency Name and Measure Number
MDH - 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 19	Martin Co. SWCD – 4, 7, 13, 15
MRWA - 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 14	US EPA – 6
DNR - 5	Martin County - 13

Chapter 10 - Evaluation Program

Evaluation is used to support plan implementation and is required under Minnesota Rules, part 4720.5270 prior to amending the city's WHP plan. Plan evaluation is specified under Objective 5 and provides the mechanism for determining whether WHP action items are achieving the intended result or whether they need to be modified to address changing administrative, technical, or financial resource conditions within the DWSMA. The city has identified the following procedures that it will use to evaluate the success with implementing its WHP plan.

1. The WHP team will meet, at a minimum, every two-and-one-half years to assess the status of plan implementation and to identify issues that impact the implementation of action steps throughout the DWSMA;
2. The city will prepare a written report that documents how it has assessed plan implementation and the action items that were carried out. The report will be presented to MDH at the first scoping meeting held with the city to begin amending the WHP plan.

Chapter 11 - Contingency Strategy

The WHP plan includes a contingency strategy that addresses disruption of the water supply caused by either contamination or mechanical failure. The city prepared this strategy using a template provided by MRWA and presented in Appendix IV of this plan.

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Appendix I: Wellhead Protection, Part 1 WHPA and DWSMA Delineation and Vulnerability Assessment

Appendix II: Data Elements

Appendix III: Inventory of Potential Contamination Sources

Appendix IV: Contingency Strategy

Appendix V: Supporting Documents

Appendix I: Wellhead Protection, Part 1 WHPA and DWSMA Delineation and Vulnerability Assessment

Wellhead Protection Plan

Part I

Wellhead Protection Area Delineation
Drinking Water Supply Management Area Delineation
Well and Drinking Water Supply Management Area Vulnerability Assessments

For

City of Trimont

January 2013

James L. Berglund
Yarta Clemens-Billaigbakpu, P.G.

Minnesota Department of Health

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Glossary of Terms

Data Element. A specific type of information required by the Minnesota Department of Health to prepare a wellhead protection plan.

Drinking Water Supply Management Area (DWSMA). The area delineated using identifiable land marks that reflects the scientifically calculated wellhead protection area boundaries as closely as possible (Minnesota Rules, part 4720.5100, subpart 13).

Drinking Water Supply Management Area Vulnerability. An assessment of the likelihood that the aquifer within the DWSMA is subject to impact from land and water uses within the wellhead protection area. It is based upon criteria that are specified under Minnesota Rules, part 4720.5210, subpart 3.

Emergency Response Area (ERA). The part of the wellhead protection area that is defined by a one-year time of travel within the aquifer that is used by the public water supply well (Minnesota Rules, part 4720.5250, subpart 3). It is used to set priorities for managing potential contamination sources within the DWSMA.

Inner Wellhead Management Zone (IWMZ). The land that is within 200 feet of a public water supply well (Minnesota Rules, part 4720.5100, subpart 19). The public water supplier must manage the IWMZ to help protect it from sources of pathogen or chemical contamination that may cause an acute health effect.

Wellhead Protection (WHP). A method of preventing well contamination by effectively managing potential contamination sources in all or a portion of the well's recharge area.

Wellhead Protection Area (WHPA). The surface and subsurface area surrounding a well or well field that supplies a public water system, through which contaminants are likely to move toward and reach the well or well field (Minnesota Statutes, section 103I.005, subdivision 24).

Well Vulnerability. An assessment of the likelihood that a well is at risk to human-caused contamination, either due to its construction or indicated by criteria that are specified under Minnesota Rules, part 4720.5550, subpart 2.

Acronyms

CWI - County Well Index

DNR - Minnesota Department of Natural Resources

EPA - United States Environmental Protection Agency

FSA - Farm Security Administration

MDA - Minnesota Department of Agriculture

MDH - Minnesota Department of Health

MGS - Minnesota Geological Survey

MnDOT - Minnesota Department of Transportation

MnGEO - Minnesota Geospatial Information Office

MPCA - Minnesota Pollution Control Agency

NRCS - Natural Resource Conservation Service

SWCD - Soil and Water Conservation District

UMN - University of Minnesota

USDA - United States Department of Agriculture

USGS - United States Geological Survey

Introduction

The Minnesota Department of Health (MDH) developed Part I of the wellhead protection (WHP) plan at the request of the City of Trimont (PWSID 1460009). The work was performed in accordance with the Minnesota Wellhead Protection Rule, parts 4720.5100 to 4720.5590.

This report presents delineations of the wellhead protection area (WHPA) and drinking water supply management area (DWSMA), and the vulnerability assessments for the City of Trimont water supply wells and DWSMA. Figure 1 shows the boundaries for the WHPA and the DWSMA. The WHPA is defined by a 10-year time of travel. Figure 1 also shows the emergency response area (ERA), which is defined by a 1-year time of travel. Definitions of rule-specific terms that are used are provided in the "Glossary of Terms."

This report also documents the technical information that was required to prepare this portion of the WHP plan in accordance with the Minnesota Wellhead Protection Rule. Additional technical information is available from MDH.

The wells included in the WHP plan are listed in Table 1.

Table 1 - Water Supply Well Information

Local Well ID	Unique Number	Use/ Status[1]	Casing Diameter (inches)	Casing Depth (feet)	Well Depth (feet)	Date Constructed/ Reconstructed	Aquifer	Well Vulnerability
3	217102	P	16	98	140	1968	QBAA	Nonvulnerable
4	455811	P	12	120	142	1989	QBAA	Nonvulnerable
5	632061	E	12	110	140	1999	QBAA	Nonvulnerable

Note: 1. Primary (P), Emergency Backup (E), Seasonal Use (S)

Assessment of the Data Elements

MDH staff met with representatives of the City of Trimont on December 27, 2011, for a scoping meeting that identified the data elements required to prepare Part I of the WHP plan. Table 2 presents the assessment of these data elements relative to the present and future implications of planning items that are specified in Minnesota Rules, part 4720.5210.

Table 2 - Assessment of Data Elements

Data Element	Present and Future Implications				Data Source
	Use of the Well (s)	Delineation Criteria	Quality and Quantity of Well Water	Land and Groundwater Use in DWSMA	
Precipitation					
Geology					
Maps and geologic descriptions	M	H	H	H	USGS
Subsurface data	M	H	H	H	MGS, MDH,
Borehole geophysics	M	H	H	H	MGS
Surface geophysics	L	L	L	L	Not Available
Maps and soil descriptions					
Eroding lands					
Water Resources					
Watershed units					
List of public waters					
Shoreland classifications					
Wetlands map					
Floodplain map					
Land Use					
Parcel boundaries map	L	H	L	L	Not Available
Political boundaries map	L	H	L	L	USGS
PLS map	L	H	L	L	USGS, MnGeo
Land use map and inventory	M	H	M	M	Sanborn Fire Maps, City Records
Comprehensive land use map	L	L	L	L	City, County
Zoning map	L	L	L	L	County
Public Utility Services					
Transportation routes and corridors					
Storm/sanitary sewers and PWS system map					
Oil and gas pipelines map					
Public drainage systems map or list					
Records of well construction, maintenance, and use	H	H	H	H	City, CWI, MDH files
Surface Water Quantity					
Stream flow data					
Ordinary high water mark data					
Permitted withdrawals					
Protected levels/flows					
Water use conflicts					
Groundwater Quantity					
Permitted withdrawals	H	H	H	H	DNR
Groundwater use conflicts	H	H	H	H	DNR, City

Data Element	Present and Future Implications				Data Source
	Use of the Well (s)	Delineation Criteria	Quality and Quantity of Well Water	Land and Groundwater Use in DWSMA	
Water levels	H	H	H	H	DNR, MDH, City
Surface Water Quality					
Stream and lake water quality management classification					
Monitoring data summary					
Groundwater Quality					
Monitoring data	H	H	H	H	Not Available
Isotopic data	H	H	H	H	MDH,
Tracer studies	H	H	H	H	Not Available
Contamination site data	M	M	M	M	MPCA, MDA
Property audit data from contamination sites					
MPCA and MDA spills/release reports					

Definitions Used for Assessing Data Elements:

High (H) - the data element has a direct impact

Moderate (M) - the data element has an indirect or marginal impact

Low (L) - the data element has little if any impact

Shaded - the data element was not required by MDH for preparing the WHP plan

Acronyms used in this report are listed on page ii, after the "Glossary of Terms."

General Descriptions

Description of the Water Supply System

The City of Trimont obtains its drinking water supply from two primary wells and one emergency well; Table 1 summarizes information regarding them.

Description of the Hydrogeologic Setting

The description of the hydrologic setting for the aquifer used to supply drinking water is presented in Table 3.

Table 3 - Description of the Hydrogeologic Setting

Attribute	Descriptor	Data Source
Aquifer Material	Quaternary buried sands and gravels	CWI and Greer, 2000.
Porosity Type and Value	Primary: 25%	Fetter, 2001
Aquifer Thickness	43ft.	CWI; geologic cross sections (Figures 4 and 5) and area well logs, Greer, 2000.
Stratigraphic Top Elevation	1117 ft. (MSL)	CWI; geologic cross sections (Figures 4 and 5) and area well logs, Greer, 2000.
Stratigraphic Bottom Elevation	1074 ft. (MSL)	CWI; geologic cross sections (Figures 4 and 5) and area well logs, Greer, 2000.
Hydraulic Confinement	Confined	CWI; geologic cross sections (Figures 4 and 5) and area well logs, Greer, 2000.
Transmissivity	Range of Values: 13,800 – 37,800 $ft^{2/}$day	A range of transmissivity values from the City of Trimont Aquifer Test report (Greer, 2000) was used to reflect changes in aquifer composition and thickness as well as uncertainties related to the quality of existing aquifer test data. See Table 4 for the reference value.
Hydraulic Conductivity	Range of Values: 320-879 ft/day Reference Value: 464 ft/day	The reference value was obtained from the average Hydraulic Conductivity from the City of Trimont Aquifer pump test (Greer, 2000).
Groundwater Flow Field	See Figure 2 - Ambient Groundwater Flow Field	Defined by using static water level elevations from well records in the CWI database and documents listed in the "Selected References" section of this report.

Figures 3, 4, and 5 show the distribution of the aquifer and its stratigraphic relationships with adjacent geologic materials. They were prepared using well record data that is contained in the CWI database. The geological maps and studies that were used to further define local hydrogeologic conditions are provided in the "Selected References" section of this report.

Delineation of the Wellhead Protection Area

Delineation Criteria

The boundaries of the WHPA for the City of Trimont are shown in Figure 1. Table 4 describes how the delineation criteria that are specified under Minnesota Rules, part 4720.5510, were addressed.

Table 4 - Description of WHPA Delineation Criteria

Criterion	Descriptor	How the Criterion was Addressed
Flow Boundary	None	There are no flow boundaries close enough to the public water supply wells that may have an impact on their capture areas.
Daily Volume of Water Pumped	See Table 5	Pumping information was obtained from the DNR, Appropriations Permit 1969-0057.
Groundwater Flow Field	See Figure 2	Ambient groundwater flow is easterly (25 degrees North of East) with a gradient of 0.0013.
Aquifer Transmissivity (T)	Reference Value: 19,900 ft^2/day	The aquifer test plan was approved on 06/15/2012. The T value was obtained from the transmissivity results for the City of Trimont Aquifer Test report (Greer, 2000). Uncertainty regarding aquifer transmissivity was addressed as described in Section 4.4.
Time of Travel	10 years	The public water supplier selected a 10 year time of travel.

Information provided by the public water supplier was used to identify the maximum volume of water pumped annually by each well over the previous five-year period, as shown in Table 5. The public water supplier is not projecting any increase in pumping over the next five years. Previous pumping values have been reported to the DNR, as required by the public water supply's Groundwater Appropriation Permit No. 1969-0057. The maximum daily volume of discharge used as an input parameter in the model was calculated by dividing the greatest annual pumping volume by 365 days.

Table 5
Annual Volume of Water Discharged from Trimont Water Supply Wells

Well Name	Unique No.	2007	2008	2009	2010	2011	Daily Volume (cubic meters)
Well 3	217102	8,000,000	13,900,000	8,600,000	14,700,000	**16,927,000**	175.6
Well 4	455811	**20,900,000**	11,200,000	14,900,000	6,600,000	5,389,000	216.8
Well 5*	632061	400,000	300,000	500,000	900,000	**945,800**	9.8

(Expressed as gallons, except as noted. Bolding indicates greatest annual pumping volume. Asterisk indicates well is not used in groundwater modeling.)

Method Used to Delineate the Wellhead Protection Area

The WHPA for the public water supply wells was determined using a combination of two methods. The first involved calculating the groundwater capture zone deterministically using representative

aquifer parameters that were input into MLAEM, a groundwater modeling code (Strack, 1989). The second approach used the probabilistic analytical groundwater flow method Oneka (Barnes and Soule, 2002). The resulting WHPA boundaries are a composite of the capture zones calculated using these two approaches (Figure 1). The input files for both models are available at MDH upon request.

Uniform flow conditions were simulated using the MLAEM code (Strack, 1979). This approach was selected because it is appropriate for simple geologic settings with no flow boundaries. No flow boundaries were directly observed in drillers' logs in the area around the primary city wells, at least in the area defined by a 10-year time of travel. Applied in this simplistic manner, this type of simulation in the Mlaem code produces a conservative capture zone because aquifer recharge was not used as an input parameter.

A second code, using the analytical groundwater flow method named Oneka (Barnes and Soule, 2002), was used to assess the probability of impacts that local variations in hydrogeologic conditions may have on a well capture zone. The models created using this code treat the aquifer properties and the available water level measurements as variable input parameters. The locations of wells, water levels, and the aquifer geometry were evaluated using information from the CWI database. For the solution, Oneka finds the groundwater flow field that best fits the network of water level elevations for the prescribed values of the aquifer thickness and transmissivity. Typically, Oneka is run multiple times to evaluate capture zones over a range of input conditions (e.g., the range of hydraulic conductivity values presented in Table 3). Oneka then evaluates the probability of the capture of a given point based on the number of times it is included in the capture areas generated by the total number of solutions. The output from the model is a capture zone probability map for the specified time of travel (10 years).

Results of Model Calibration and Sensitivity Analysis

Model calibration is a procedure that compares the results of a model based on estimated input values to measured or known values. This procedure can be used to define model validity over a range of input values, or it helps determine the level of confidence with which model results may be used. As a matter of practice, groundwater flow models are usually calibrated using water elevation.

However, owing to the relatively limited amount of water elevation data for the aquifer used by the City of Trimont, a flowpath model based on available hydraulic head observations was calculated and a model uncertainty analysis was conducted in place of a traditional model calibration. Flowpath lines were calculated in the MLAEM Model using equations that reflected 1) a constant pumping rate, 2) direction of groundwater flow, 3) hydraulic gradient, 4) aquifer thickness, 5) aquifer hydraulic conductivity, and 6) aquifer porosity. As such, it is a simple calculation of the portion of the aquifer that contributes water, based on the width of the flow field that is affected by pumping.

The Oneka Model is used to support the MLAEM Model results by using an iterative process which provides the best fit for the ranges of values assigned to its input parameters. This helps to define the subset of values for which the delineation results are most likely to reflect local hydrogeologic conditions and, therefore, provide the best calibration results.

Model sensitivity is the amount of change in model results caused by the variation of a particular input parameter. Because of the simplicity of the MLAEM Model, the direction and extent of the modeled capture zone may be very sensitive to any of the input parameters:

- The pumping rate directly affects the volume of the aquifer that contributes water to the well. An increase in pumping rate leads to an equivalent increase in the volume of aquifer within the

capture zone, proportional to the porosity of the aquifer materials. However, the pumping rate is based on the results presented in Table 5 and, therefore, is not a variable factor that will influence the delineation of the WHPA.

- The direction of groundwater flow determines the orientation of the capture area. Variations in the direction of groundwater flow will not affect the size of the capture zone but are important for defining the areas that are the source of water to the well. The ambient groundwater flow field that is defined in Figure 2 provides the basis for determining the extent to which each model run reflects the conceptual understanding of the orientation of the capture area for a well.
- An hydraulic gradient of zero produces a circular capture zone, centered on the well. As the hydraulic gradient increases, the capture zone changes into an elliptical shape, with the well centered on the down-gradient focal point. The hydraulic gradient was determined by using water level elevations that were taken from wells that have verified locations (Figure 2). Generally, the accuracy of the hydraulic gradient determination is directly proportional to the amount of available data that describes the distribution of hydraulic head in the aquifer.
- The aquifer thickness, permeability, and porosity influence the size and shape of the capture zone. A decrease in either thickness or porosity causes a linear, proportional increase in the areal extent of the capture zone; whereas permeability defines the relative proportions of the capture zone width to length. A decrease in permeability decreases the length of the capture zone and increases the distance to the stagnation point, making the capture zone more circular in shape and centered around the well.

Addressing Model Uncertainty

Using computer models to simulate groundwater flow necessarily involves representing a complicated natural system in a simplified manner. Local geologic conditions may vary within the capture area of the City of Trimont wells, but the amount of existing information that is needed to accurately define this degree of variability is often not available for portions of the WHPA. In addition, the current capabilities of groundwater flow models may not be sufficient to represent the natural flow system exactly. However, the results are valid within a range defined by the reasonable variation of input parameters for this delineation setting.

The MLAEM Model, used as it was in this delineation, has limited capabilities to address these kinds of uncertainties, other than by using multiple runs in which the following six input parameters are varied: 1) constant pumping rate, 2) hydraulic gradient, 3) direction of ambient flow, 4) aquifer thickness, 5) aquifer permeability, and 6) porosity. The uncertainty associated with the MLAEM model results from 1) the model limitations mentioned above, 2) the fact that the model cannot be calibrated. The steps employed for this delineation to address model uncertainty were:

1) Pumping Rate - For each well, a maximum historical (five-year) pumping rate was used, (Minnesota Rules, part 4720.5510, subpart 4).
2) Ambient Flow Field - A composite of capture zones was created from angles of flow that are 10 degrees greater and 10 degrees lesser than the representative angle of ambient flow (Minnesota Rules, part 4720.5510, subpart 5, B(2).
3) Aquifer Thickness - The mean aquifer thickness was estimated from nearby well logs and reports (Greer, 2000) used for the MLAEM Model and Oneka Model.
4) Probability Analysis - The Oneka Model was used to estimate capture zone probability.

Capture areas were developed for a range of groundwater flow directions, aquifer permeabilities, and times of travel of one and ten years (Figure 6). As the model code uses constant input values for each run, several runs were required to include all variations in input parameters. Table 6 documents the variables used to address MLAEM Model uncertainty.

Table 6 - Model Parameters Used in MLAEM Model Runs

File Name	Well Name	Discharge (m^3/day)	Transmissivity (m^2/day)	Gradient	Flow Angle	Porosity (%)	Aquifer Thickness (meters)	Remarks
121207_Trimont_base	Well 3 (217102)	175.6	1855	0.0013	25	25	13.11	Base flow direction
	Well 4 (455811)	216.8						
121207_Trimont_p10	Well 3	175.6	1855	0.0013	35	25	13.11	Base flow direction plus 10 degrees
	Well 4	216.8						
121207_Trimont_m10	Well 3	175.6	1855	0.0013	15	25	13.11	Base flow direction minus 10 degrees
	Well 4	216.8						

Oneka Model - Uncertainty related to water levels reported on well records is based on the accuracy of the ground elevation assigned to the well using topographic maps and the transient variability of the water levels in the aquifer over time. Water levels that are probably inaccurate were identified using data from 1) the CWI database, and 2) DNR observation well measurements. Only water levels that fit the flow field (Figure 2) were used for the Oneka analysis.

The Oneka Model helps to address uncertainties related to aquifer parameters as variations of the flow field. A 10-year capture zone probability map (Figure 6) was generated for the public water supply wells; the values used for the Oneka Model are shown in Table 7. The Oneka results fit well with the capture zones calculated from the MLAEM Model.

Table 7 - Range of Values Used for the Oneka Model

Well Number	File Name	Hydraulic Conductivity (meters/day)	Thickness (meters)	Porosity (%)
Well 3 (217102)	Trimont_Oneka.one	97.6 – 268.2	13.11	25
Well 4 (455811)				

Delineation of the Drinking Water Supply Management Area

The boundaries of the Drinking Water Supply Management Area (DWSMA) were defined for the City of Trimont using the following features (Figure 1):

- Center-lines of streets and roads and;
- Public Land Survey coordinates.

Vulnerability Assessments

The Part I wellhead protection plan includes the vulnerability assessments for the City of Trimont and DWSMA. These vulnerability assessments are used to help define potential contamination sources within the DWSMA and select appropriate measures for reducing the risk that they present to the public water supply.

Assessment of Well Vulnerability

The vulnerability assessment for each well used by the City of Trimont is listed in Table 1 and is based upon the following conditions:

1) In the case of Well 3 (217102), it is unknown if well construction meets current state well code specifications, as the grouting history for the well is undocumented. The lack of grouting of the casing may provide a pathway for contaminants to enter the aquifer used by the public water supplier;
2) The geologic conditions at the well site include a cover of clay-rich geologic materials over the aquifer that is sufficient to retard or prevent the vertical movement of contaminants;
3) None of the human-caused contaminants regulated under the federal Safe Drinking Water Act have been detected at levels indicating that the wells themselves serve to draw contaminants into the aquifer as a result of pumping.
4) Water samples collected from Trimont Well 3 (217102) on 6/13/2006 were tested for tritium. Tritium was not detected above the analytical detection limit of 0.8 tritium units (TU).

Assessment of Drinking Water Supply Management Area Vulnerability

The vulnerability of the DWSMA is based upon the following information:

1) Isotopic and water chemistry data from wells located within the DWSMA indicate that the aquifer contains water that has no detectable levels of tritium or human-caused contamination.
2) Review of the geologic logs contained in the CWI database and geological maps and reports indicate that the aquifer exhibits a very low geologic sensitivity throughout the DWSMA and is isolated from the direct vertical recharge of surface water.

Therefore, given the information currently available, it is prudent to assign a very low vulnerability rating to the DWSMA, in accordance with the Minnesota Wellhead Protection Rule (parts 4720.5100 to 4720.5590).

Selected References

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Strack, O.D.L. (1989), Groundwater mechanics, Prentice Hall, Englewood Cliffs, N.J., 732 p.

Figures

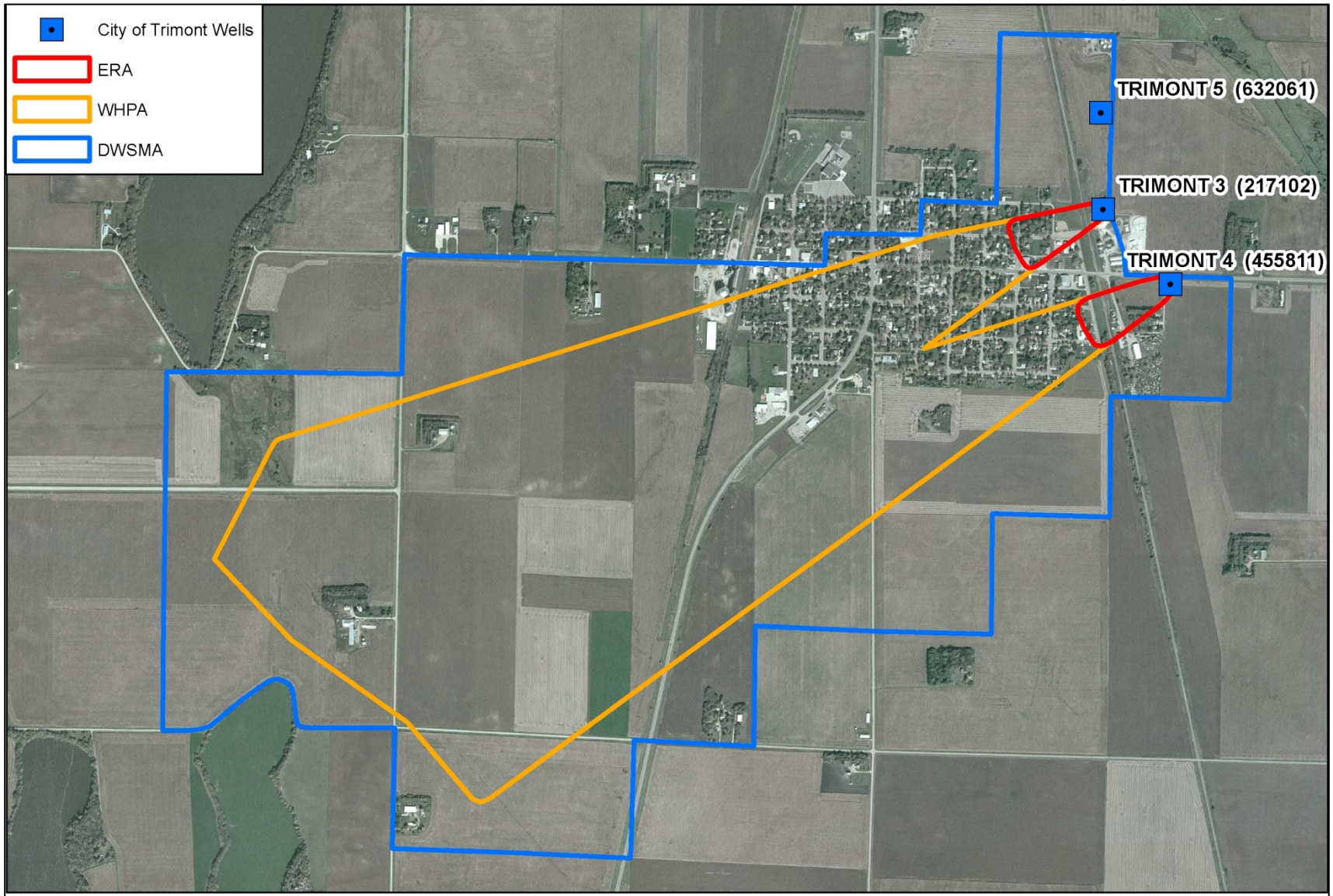


Figure 1
Wellhead Protection Area and Drinking Water Supply Management Area
City of Trimont

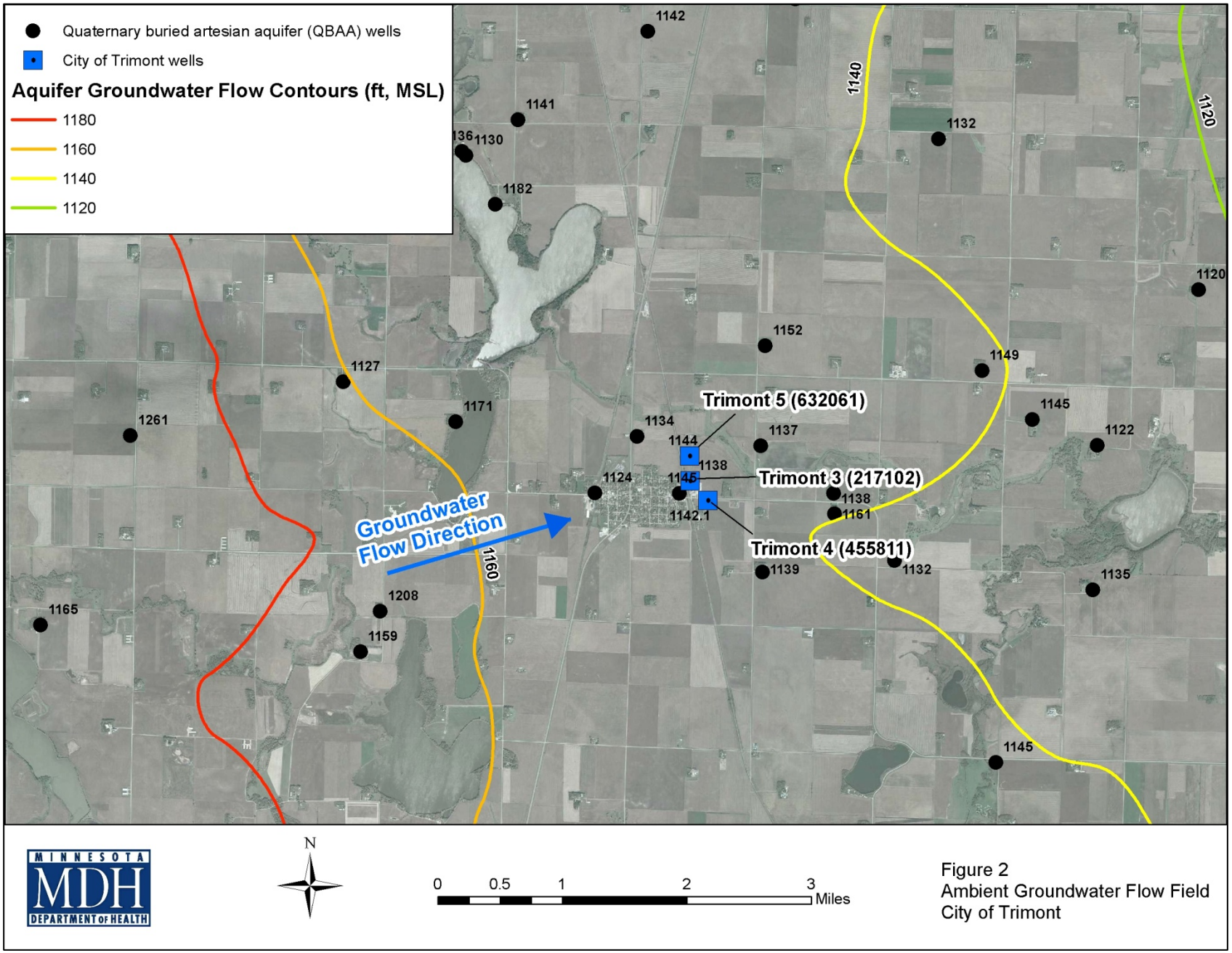


Figure 2
Ambient Groundwater Flow Field
City of Trimont

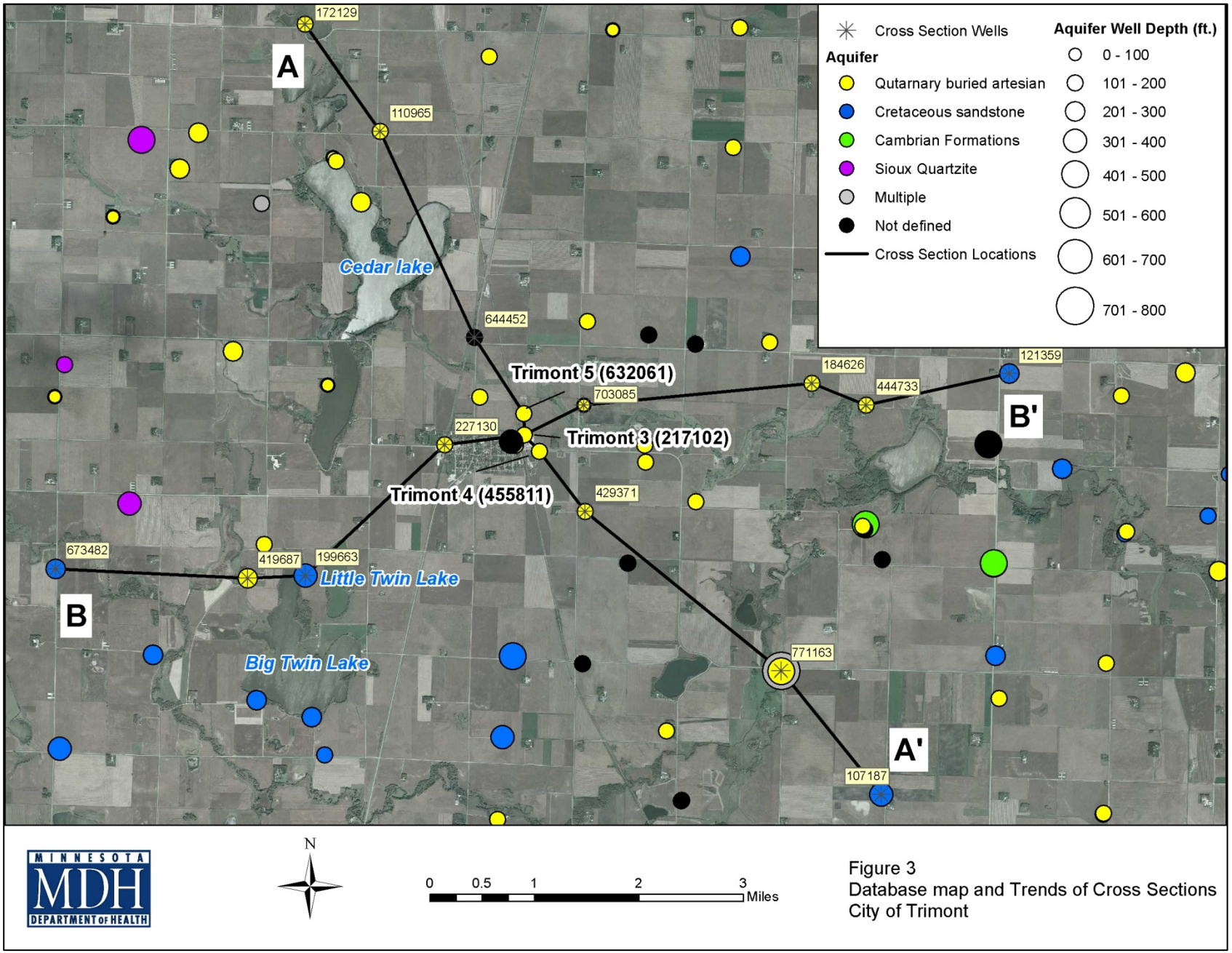
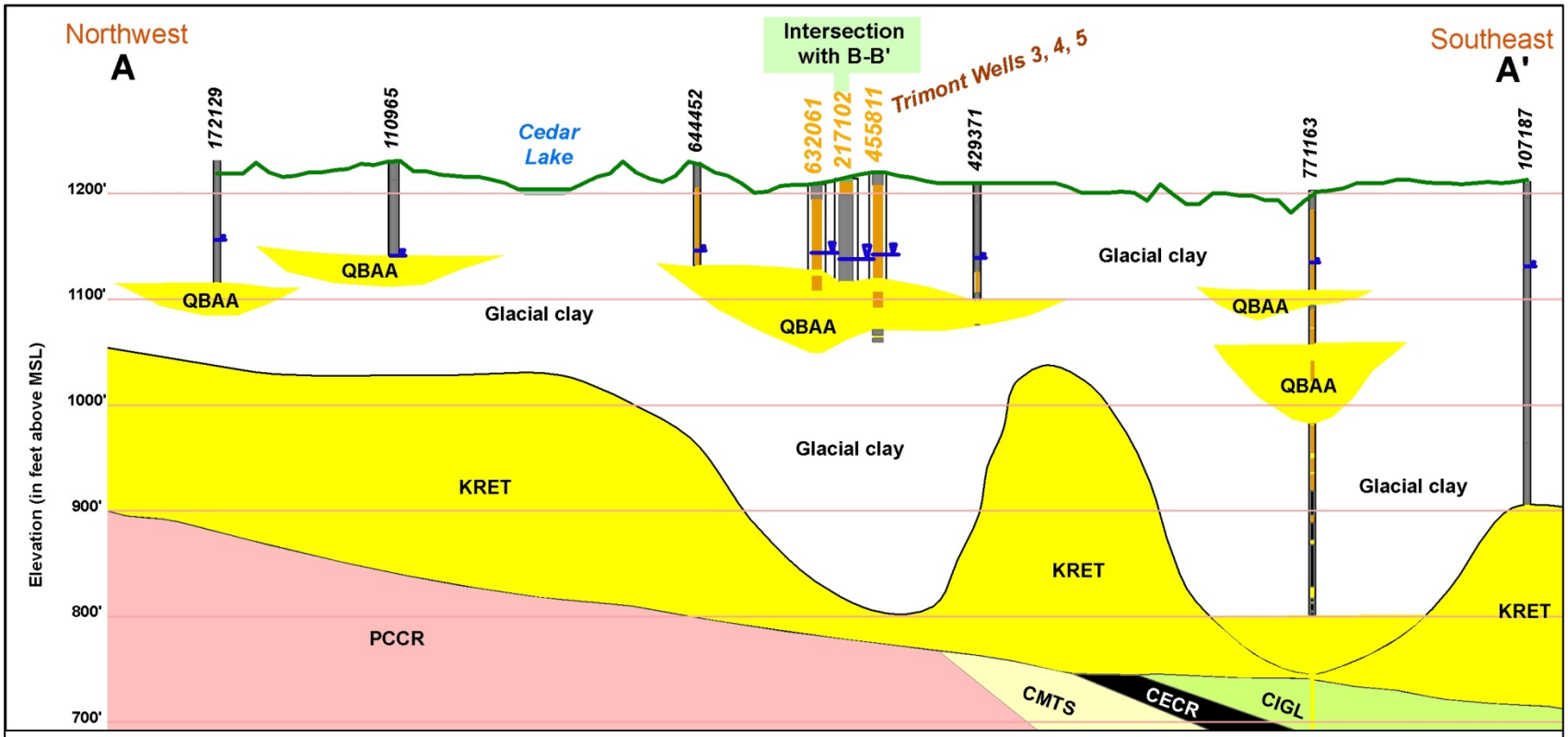
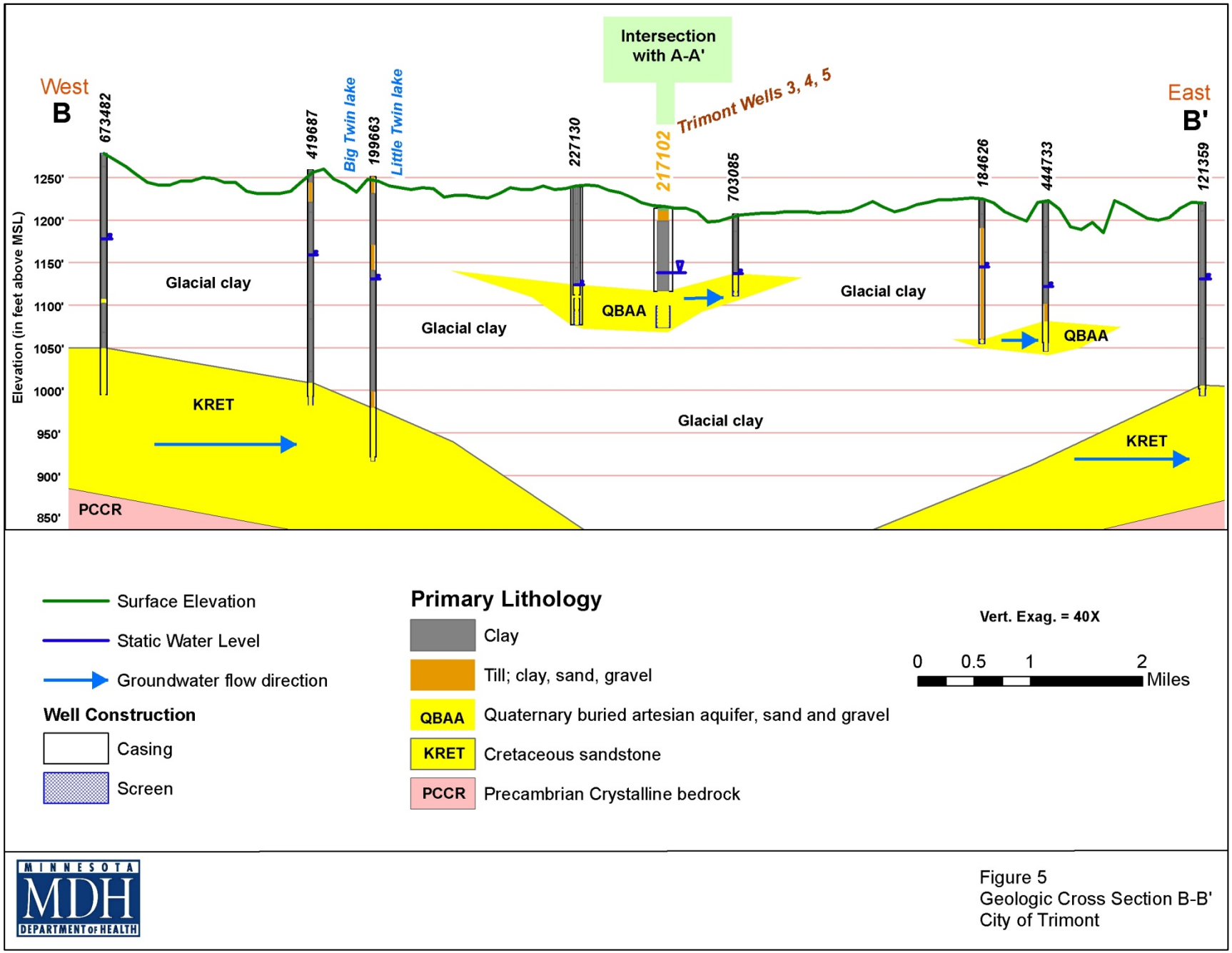


Figure 3
Database map and Trends of Cross Sections
City of Trimont



MINNESOTA MDH DEPARTMENT OF HEALTH

Figure 4
Geologic Cross Section A-A'
City of Trimont



MINNESOTA MDH DEPARTMENT OF HEALTH

Figure 5
Geologic Cross Section B-B'
City of Trimont

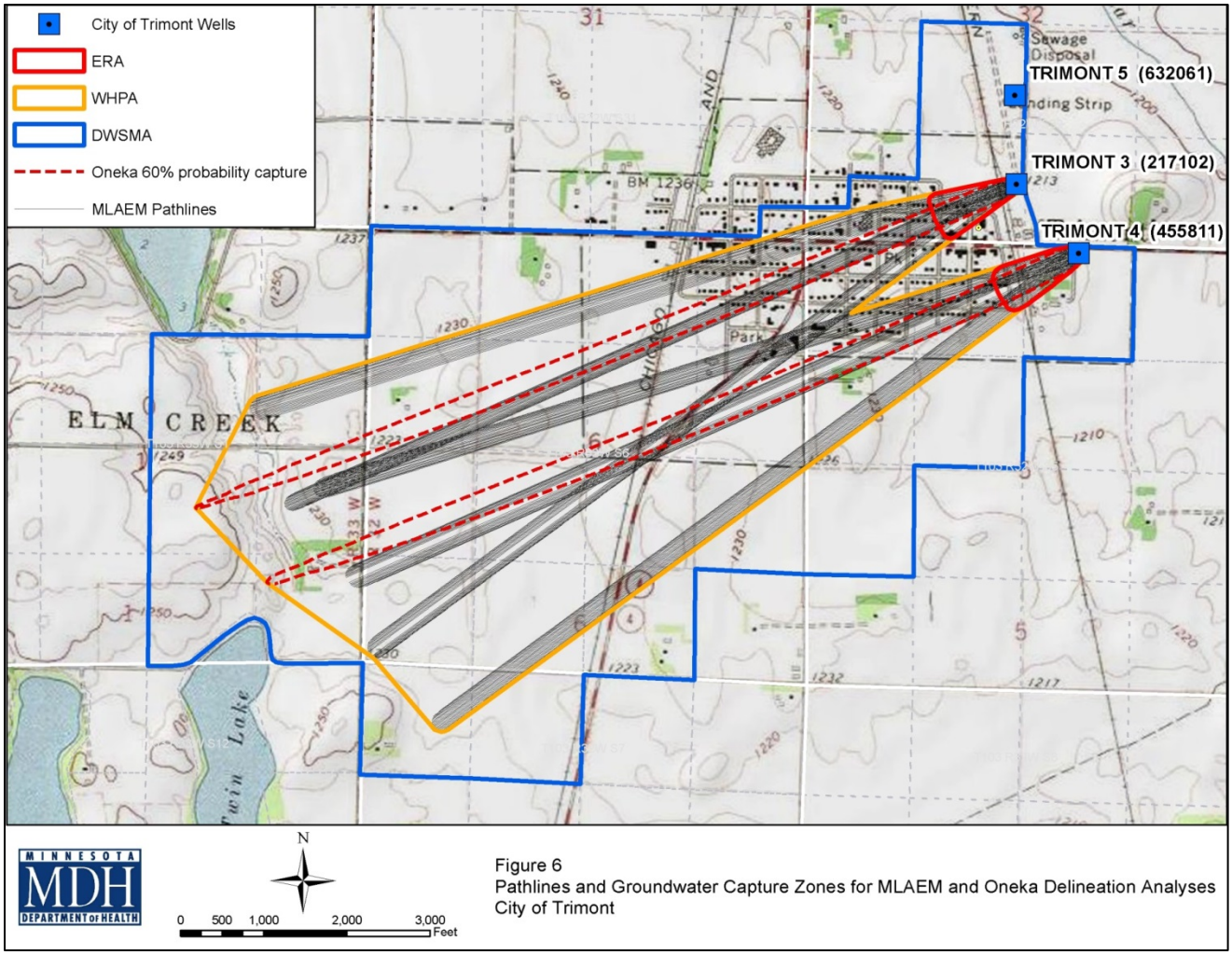


Figure 6
Pathlines and Groundwater Capture Zones for MLAEM and Oneka Delineation Analyses
City of Trimont

Appendix II: Data Elements

ASSESSMENT OF THE DATA ELEMENTS USED TO PREPARE THE PLAN

The data elements listed in the Minnesota Department of Health Scoping 1 and 2 Letter and Notice and summarized in Table 1, (Chapter 2) were identified by the MDH to be used in the WHP plan and were specified in the scoping decision notices that were presented to the Public Water Supplier. The selection of a data element for inclusion in the plan is based on 1) the hydrogeological setting and 2) vulnerability of the wells used by the Public Water Supplier, and 3) vulnerability of the DWSMA known at the time that each scoping meeting was held. Each data element is assessed for its impact on 1) the use of the public water supply well, 2) delineation of the WHPA, 3) the quality and quantity of water supplying the public water supply well, and 4) land and groundwater uses within the DWSMA.

Physical Environment

Precipitation information was not required because of the hydraulically confined aquifer used by the city of Trimont.

Geologic information was obtained from 1) **existing maps, reports, and studies** that are listed in the References section of the Part 1 report, and 2) the **records of wells, test borings, and well sealing records** that are on file at the MDH and stored in the County Well Index (CWI) database. Soil data was not required because of the hydraulically confined aquifer used by the city of Trimont.

Geologic information was used to determine 1) the extent and composition of the aquifer(s) used by the city wells, 2) the vulnerability of the aquifer at the location of each well used by the Public Water Supplier, and 3) the vulnerability of the DWSMA. Geologic information affects the delineation of the WHPA because it is used to address the aquifer transmissivity and hydrologic boundaries delineation criteria. Second, geologic information provides insight into the pathways that recharging water takes to enter the aquifer, which impacts 1) the use of the well, and 2) the quality and quantity of water that is pumped. Finally, it is the principle information that is used to assess DWSMA vulnerability, which impacts land- and groundwater-uses within the DWSMA.

Water resources information was not required because of the hydraulically confined aquifer used by the city of Trimont.

Land Use

Land use information was obtained from the maps shown in figure 1 and Appendix V relating to existing **parcel boundaries**, **political boundaries**, **public land survey coordinates**, c**omprehensive land-use**, and **zoning**. Appendix III contains the map and inventory of current and historical agricultural, residential, commercial, industrial, recreational, and institutional land uses and potential contamination sources.

Center-lines of highways, streets or roads and public land survey coordinates were used in defining DWSMA boundaries. DWSMA boundaries impact land- and groundwater-uses because they define where the WHP plan will be implemented. They have no direct impact on 1) the use of the public water supply well(s), 2) delineation of the WHP area, and 3) the quantity and quality of the well water used by the public water supply.

The **comprehensive land use and zoning maps** affect land- and water-use within the DWSMA because they provide a basis for limiting future land uses that may be incompatible with ordinances or planning goals. As such, they may be used for denying new potential contamination sources or imposing performance standards

that affect the use of existing or new public water supply wells and the quantity and quality of the well water used by the Public Water Supplier. The land surrounding the city of Trimont is zoned for agriculture, which because of the hydraulically confined aquifer used by the city of Trimont, does not impact the aquifer. The city of Trimont does not have a comprehensive land use plan or a zoning map.

The information contained in Appendix III provides the basis for defining the types of potential contamination sources that may or do impact the quantity and quality of the well water used by the public water supply. The priorities that are assigned to the WHP action steps that are specified in the plan are based on the information contained in Appendix III. As a result, these actions steps affect the future use of the public water supply wells and land- and groundwater-uses within the DWSMA. Groundwater use was included to meet the hydrologic boundary and water use criteria for delineating the WHPA.

Information about public utility services includes maps of 1) **transportation routes and corridors**, 2) **storm sewers**, **sanitary sewers**, the **public water supply distribution system**, 3) **gas and oil pipelines**, and 4) **public drainage systems** was not required because of the hydraulically confined aquifer used by the city of Trimont.

Record of the construction and maintenance of the public water supply wells is presented in Table 1 and their use is presented in Table 5 of the Part 1 report found in Appendix I. Whether the well serves as a primary source of drinking water or as emergency standby source, determines how often it is pumped. This affects the delineation of its WHPA because pumping amount is a delineation criterion. Emergency backup wells only have an IWMZ because they are only pumped to supply water when primary water supply wells cannot meet water demands. In addition, pumping may affect the movement of contamination toward a well and the one and ten-year capture areas are used to establish priorities for managing potential contamination sources within the DWSMA. The construction and maintenance of a public water supply well affect the well vulnerability assessment and the focus of the potential contamination source inventory. Sealing an improperly constructed or maintained well may be a priority action step for protecting other wells because such wells may become conduits for contamination to enter the aquifer.

Water Quantity Information

Water Quantity Information was obtained for groundwater resources. **Water Quantity Information** was not required for surface water resources because of the hydraulically confined aquifer used by the city of Trimont.

The DNR is the principle source of water quantity information although studies and reports that are available from other state and federal agencies or from the Public Water Supplier are described in the References section of this report. Water quantity information affects the 1) delineation of the WHPA because the pumping amounts are used to calculate the daily well discharge which is a WHPA delineation criterion, 2) use of the public water supply well because a maximum annual amount for the public water supply system is specified under the DNR appropriations permit, and 3) land and water use within the DWSMA because pumping may impact whether other wells or existing land uses may cause contamination of the aquifer or contamination to move toward the public water supply well(s). It may indirectly affect the future quantity and quality of the water from the public water supply well.

A list of wells covered by state appropriations permits, including the amounts of water appropriated, type of use, and aquifer source were assessed as follows. The Public Water Supplier provided the information describing pumping for water supply over the previous 5 years and the projected pumping for the first five years of plan implementation (Part 1, Table 5). The only high capacity wells located in close proximity to the City of Trimont are the city public supply wells.

There are no **known well interference problems and water use conflicts** within the City of Trimont's DWSMA. Well interference and water use conflicts are used (if they exist) to delineate the WHPA because they document hydrologic boundaries that must be included. Also, they indicate areas where aquifer recharge is

insufficient to meet pumping demands and this condition 1) limits groundwater use in the DWSMA and 2) may impact land uses such as agricultural irrigation or industry that rely on high capacity wells.

A search was conducted for **environmental bore holes, including the unique number, aquifer measured, years of record, and average monthly levels** from the observation well networks that are maintained by the DNR and the U.S. Geological Survey. This information is used to delineate the WHPA by providing information that helps to define aquifer recharge and the distribution of hydraulic head. It may have an indirect influence on water use within the DWSMA because the water level data can be used to document seasonal or long-term impacts that pumping has on the aquifer supplying the public water supply well. This information has no impact on the quality the water supplying the public water supply well and land and groundwater uses within the DWSMA. There were no environmental bore holes listed.

Water Quality Information

Groundwater quality information was obtained from the Public Water Supply Program and Well Management Program at MDH, the Public Water Supplier, and from reports and studies that are listed in the references section of this report. Surface water quality information was not required because of the hydraulically confined aquifer used by the city of Trimont.

Information that summarizes **groundwater quality** is used to assess the pathways that recharge takes to the aquifer and this may impact the selection of methods that are used to delineate the WHPA and to assess well and DWSMA vulnerability. The presence of human-made contaminants is used to 1) calibrate a groundwater flow model by providing a means of checking travel time distance from the source of a contaminant to a public water supply well and 2) assess the vulnerability of the well and the DWSMA. The presence of naturally occurring contaminants is used to assess the extent that the source water aquifer is isolated from surface water recharge. The presence of either human-made or naturally occurring contaminants may influence pumping of the public water supply well because pumping may impact the rate at which contamination may be moving into the aquifer. Also, the level of contamination may require that the water be treated for potable use or that the contaminated water be blended with other water to reduce contaminant levels to drinking water standards.

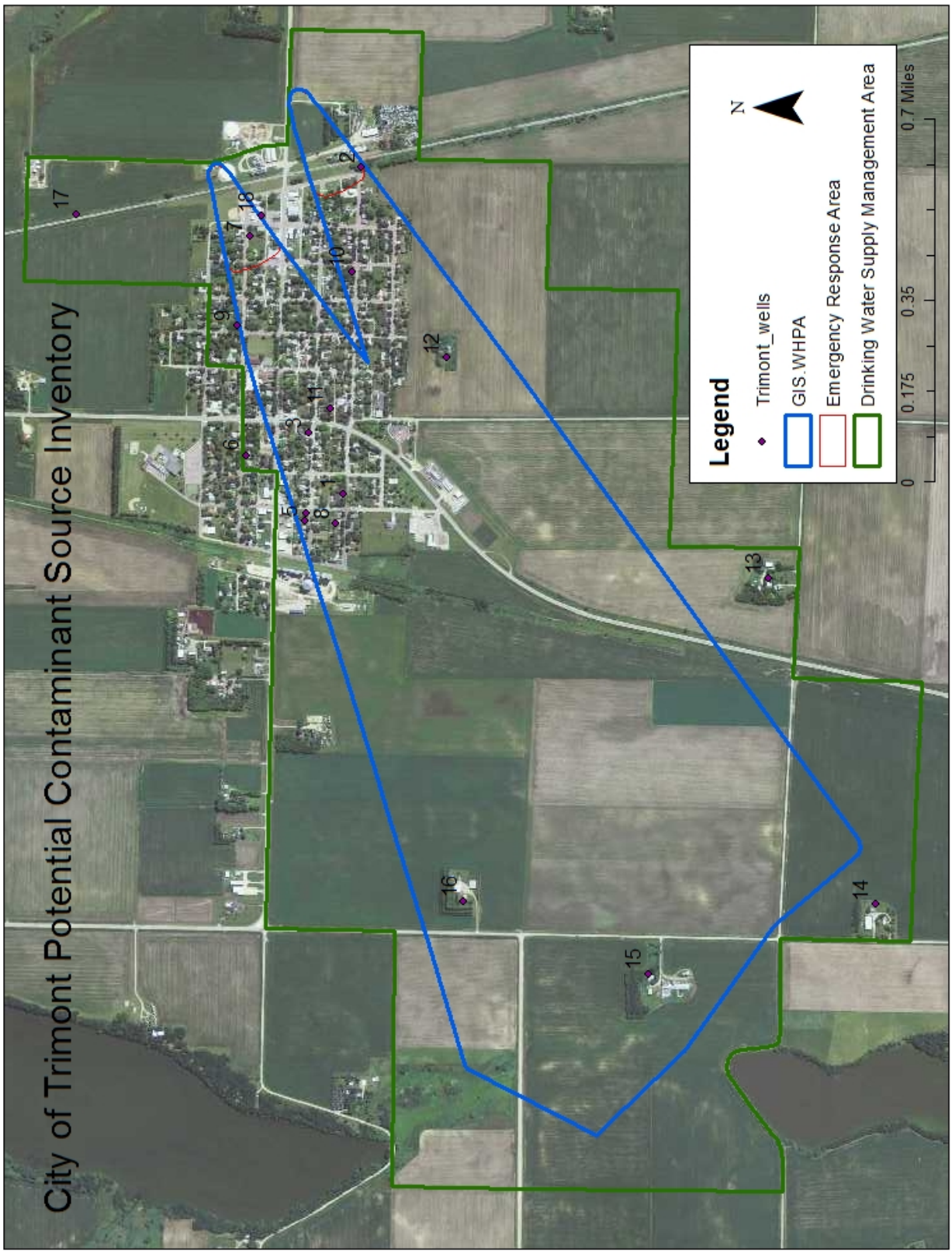
The presence of human-made contaminants is used to identify potential sources of the contamination that should receive a high priority for inventory and for supporting the priority that is assigned to objectives and actions in the plan that manage these sources. This affects the focus of land and water use management practices within the DWSMA.

Water chemistry and isotopic data from wells, springs, or other groundwater sampling points and reports of groundwater tracer studies is used to determine the 1) time needed for surface water or precipitation to travel from the surface to the source water aquifer and 2) degree to which the source water aquifer if impacted by recharge from surface water features. This assessment affects the delineation of the WHPA because it helps define the degree of hydraulic confinement and whether a surface water feature comprises a hydraulic boundary that must be included. Also, this information is used to determine the sustainability of the aquifer and any surface water features that may be impacted by increased pumping within the DWSMA. No human-caused contaminants have been detected at elevated levels in samples from the wells, indicating the water in the aquifer has not been affected by activities on the land surface. Also, tritium results for water samples from the wells indicate that less than 0.8 tritium units was present, indicating the water in the aquifer has not been affected by recent recharge.

Site studies and water quality analyses of known areas of groundwater contamination, property audit results, reports of contamination spills and releases by the Minnesota Pollution Control Agency and Minnesota Department of Agriculture provide basic information that is used to determine the extent that groundwater quality may already be impaired by previous land- and groundwater-use practices. This information is used to assess the vulnerability of the well and the DWSMA, which affects 1) the scope, and direction of the inventory of potential contamination sources and 2) the resulting priorities that are assigned to

objectives and actions for managing land- and groundwater-uses within the DWSMA. Also, the hydrogeologic information contained in the reports is used to refine the understanding of local groundwater conditions that affects the delineation of the WHPA. There are no known areas of contamination within the aquifer used by the city of Trimont.

Appendix III: Potential Contaminant Source Inventory



City of Trimont: Wellhead Protection Potential Contaminant Source Inventory										
Map #	Parcel No.	Name	Property Adress	Unique Well #	Facility Code	PCS Code	Status			Comment
							In Use	Unused	Unknown	
1	39.250.0050	Shannon Schwager	121 Birch St. West		1100	WEL			X	Well present, Hand Pump
2	39.997.0010	Union Pacific RR	6th Avenue East	227130	4140	WEL		X		Abandoned, still there
3	39.040.0090	Joyce Rabbe	81 Broadway South		1100	WEL			X	Hand Pump
4	39.060.0110	Kenneth West	211 Ash St. West		1100	WEL			X	Hand Pump
5	39.060.0120	David Holtz	221 Ash St. West		1100	WEL			X	Hand Pump
6	39.060.0650	Rudy Schoewe	60 Apple St. West		1100	WEL			X	Hand Pump
7	39.820.0110	Mattsen Welding	41 5th Ave. Northeast		2000	WEL			X	Likely site of Trimont TW 217109; Site was Fisher Elec w/possible addl. Well
8	39.100.0020	Elaine Anderson	221 Birch St. West		1100	WEL			X	Hand Pump
9	39.820.1240	Kris Fuller	221 Apple St. East		1100	WEL			X	Hand Pump
10	39.820.0730	Karen Steinberg	351 Birch St. East		1100	WEL			X	Hand Pump
11	39.820.1900	Morris Holm	20 Ash St. East		1100	WEL			X	Hand Pump
12	06.005.0700	Sara Zimmerman	1870 80th Ave.		1100	WEL			X	Abandoned home site
13	06.006.0500	Birdella Allen	768 180th St.	46W0005110	1100	WEL	X			Domestic Well
14	06.007.0100	Harris Family Trust	1780 70th Ave.	46W0005112	1100	WEL	X			Domestic Well; 2 wells?
15	04.001.0700	Trenton Bonser	1823 70th Ave.	46W0005054	9000	WEL			X	Abandoned home site; 2 wells?
16	06.006.0900	Wes Anderson			1100	WEL			X	Abandoned home site
17	39.810.0025	City of Trimont	41 2nd Ave. NW	217102	4334	WEL	X			Trimont # 3
18	39.810.0220	City of Trimont	41 2nd Ave. NW	455811	4334	WEL	X			Trimont #4
19	08.032.0400	City of Trimont	41 2nd Ave. NW	632061	4334	WEL	X			Trimont #5 - backup
20	08.032.0400	City of Trimont	41 2nd Ave. NW	629445	4334	WEL	X			Monitoring Well near Well #5
21	39.820.0040	City of Trimont	41 2nd Ave. NW	217110	4334	WEL			X	old well #1 (westerly?) & old well #2 (easterly?)

Appendix IV: Contingency Strategy

Water Supply Contingency Plan
Trimont, Minnesota

Index

A. Purpose

B. Public Water Supply Characteristics
   1. Current Supply Source
   2. Treatment
   3. Storage and Distribution
   4. Maps and Plans

C. Priority of Water Users During Water Supply Emergency

D. Alternative Water Supply Options
   1. Surface Water Sources and Treatment
   2. Bottled Water
   3. System Interconnects
   4. Other Alternative Water Resources

E. Inventory of Available Emergency Equipment and Materials

F. Emergency Identification Procedures

G. Notification Procedures
   1. Agency Contact List
   2. Critical Response Personnel
   3. Public Information Plan

H. Mitigation and Conservation Plan
   1. Mitigation
   2. Conservation

Purpose

The purpose of this Contingency Plan is to establish, provide, and keep updated certain emergency response procedures and information for the City of Trimont which may become vital in the event of a partial or total loss of public water supply services.

B. Public Water Supply Characteristics

1. Current supply source:

City of Trimont	Well Number 3	Well Number 4	Well Number 5
Unique Well #	217102	455811	632061
Supply Source	QBAA	QBAA	QBAA
Well Depth (ft.)	140	142	140
Well Diameter (in.)	16	12	12
Well Capacity (gpm)	600	390	600
Well Production (gpm)	150	150	550

2. Treatment

The City of Trimont adds pretreatment and post treatment with chlorine & fluoride at the treatment plant.

3. Storage and distribution

The City of Trimont has a 50,000 gallon underground storage tank and a 50,000 gallon water tower. The water system maintains all necessary valving and piping to all connections

4. Maps/plans

Maps of the water system are available at the Trimont Water Treatment Facility.

C. Priority of Water Users During Water Supply Emergency

Table C1: Water Use Priority Grouping

Priority Group and Rank	Maximum Daily Use (gpd)	Minimum Daily Use (gpd)
Residential #1	45,187	34,598
Institutional #2	2692	1379
Commercial #3	17,076	5,039
Industrial #4		
Unaccounted		

Triggers for Implementing Water Supply Reduction/Allocation Procedures:

In the event of a major system disruption, failure, or an emergency, conservation procedures would be enacted by the Public Works Supervisor, Mayor and City Council.

D. Alternative Water Supply Options

1. **Surface water sources and treatment needs.** (May not be applicable)
   There are no suitable surface water sources available.

2. **Bottled water supplies, delivery and distribution:**
   Culligan, Fairmont, MN (507) 238-4451
   Walmart, Fairmont, MN (507) 235-2500

3. **System interconnects with other water supplies.**
   No interconnects are available in the Trimont area at this time.

4. **New well.**
   No new wells are planned at this time.

5. **Emergency or backup wells:**
   The City of Trimont uses wells #3 and #4 to provide the City with water. Well #5 is available for emergency use.

6. **Emergency treatment of water system.**
   The City of Trimont will work with the MDH Community Engineer to follow appropriate measures to bring the public water supply system back to full operating capacity. The City of Trimont is a member of MNWARN and Minnesota Rural Water Association to aid in emergency response efforts

7. **Source management (blending).**
   See #5 for more information. The City of Trimont can blend water.

8. **Other.**
   No other water supply alternatives have been identified at this time.

E. Inventory of Available Emergency Equipment and Materials

Table E1 contains a list of services, equipment, and supplies that are available to the City of Trimont to respond to a disruption in the water system. It is believed that the items contained in Table E1 would be adequate to respond to most (if not all) water system emergencies.

Table E1: Available Emergency Equipment and Materials

Description	Owner	Telephone	Location	Acquisition Time
Well Repair	LTP Well Service	(800) 848-7794	Hutchinson, MN	1.5 Hrs
Pump Repair	Electric Pump	(952) 758-6600	New Prague, MN	2 Hrs
Electrician	Kuehl's Electric	(507) 639-3921	Trimont, MN	.5 Hrs
Plumber	Feder Mechanical	(507) 642-3522	Madelia, MN	.5 Hrs
Backhoe/Excavator	Rosburg Construction	(507) 920-9797	Welcome, MN	.5 Hrs
Chemical Feed	Hawkins Chemical	(612) 331-9100	St. Paul, MN	2.5 Hrs
Meter Repair	Servocal Instruments	(952) 496-2592	Shakopee, MN	2 Hrs
Generator	MTU Onsite Energy	(507) 625-7973	Mankato, MN	1 Hr
Valves	Minnesota Pipe	(877) 207-6191	Farmington, MN	2.5 Hrs
Pipe & Fittings	Minnesota Pipe	(877) 207-6191	Farmington, MN	2.5 Hrs

F. Emergency Identification Procedures

Table F1: Emergency Procedural Operations

Incident	Response Procedure & Comments
Identify Disruption	Person identifying disruption contacts City Hall. City Hall contacts Response Personnel Coordinator, and / or Mayor.
Notify Response Personnel (Coordinator)	Notify Response Personnel Coordinator or Current Mayor.
Identify Incident Direction and Control	Response Personnel Coordinator or Alternate assesses situation and determines incident direction and control, begin solving problem.
Identify Internal Communication	Response Personnel Coordinator or Mayor contacts City Hall and City Clerk to inform of situation.
Inform Public	Response Coordinator or Mayor contacts appropriate organizations to inform public of problem.
Assess Incident on Continual Basis	Response Personnel Coordinator or Alternate continue to monitor/solve problem
Assess Contamination Disruption	Response Personnel Coordinator or Alternate determines if water supply is contaminated. Monitor/solve problem as needed
Assess Mechanical Disruption	Response Personnel Coordinator or Alternate assesses mechanical disruption. Monitor and solve disruption as needed.
Provide Alternate Water Supply	If needed, alternate water supply is located and provided
Impose Water Use Restrictions	If needed, Public Works Supervisor, Mayor and Council may impose water use restrictions.

G. Notification Procedures

1. Agency notification

Table G1 contains the names and telephone numbers for contacts at various local and state agencies that may be notified in the event of a public water supply system emergency. Based on the nature of the emergency and the information available, various representatives from this listing will be selected by the response coordinator to be part of the ***emergency oversight committee***, which will then meet throughout the duration of the emergency to aid in decision-making and positive outcomes.

Table G1: Agency Emergency Contact Listing

Personnel	Name	Home Telephone	Work Telephone
Public Works Supervisor	Michael Paulson	(507) 639-7887	(507) 236-7576
Mayor/Board Chair	Thomas Eckmann	(507) 639-6423	(319) 750-9849
Council Members	Ronald Reicherts	(507) 639-6467	(507) 236-5846
Council Members	Karen Koeder	(507) 639-6275	N/A
Council Members	Sterling Adamson	(507) 639-9351	(507) 621-1501
Council Members	Bruce Borntrager	(507) 639-6420	(507) 639-3082
Response Coordinator	Michael Paulson	(507) 639-7887	(507) 236-7576
Alt. Response Coordinator	Thomas Eckmann	(507) 639-6423	(319) 750-9849
State Incident Duty Officer	N/A	N/A	(800) 422-0798
County Emergency Director	Jeffrey Markquart	N/A	(507) 238-4481
Fire Chief	Scott Borntrager	N/A	(507) 639-3082
Sheriff	Jeffrey Markquart	N/A	(507) 238-4481
Police Chief	Anthony Nelson	N/A	(507) 236-2131
System Operator	Michael Paulson	(507) 639-7887	(507) 236-7576
Alt. System Operator	David Lubben	(507) 639-6372	(507) 236-1081
School Superintendent	Allison Schmidt	N/A	(507) 764-2330
Ambulance	Ronald Shade	(507) 639-7881	(507) 847-7636
Hospital	Fairmont Medical Center	N/A	(507) 238-8100
Power Company	Alliant Energy	N/A	(800) 255-4268
County Highway Department	Martin County	N/A	507-235-3347
State Highway Department	Minnesota Highway Department	N/A	(800) 657-3747
Telephone Company	Frontier Communications	N/A	(800) 921-8101
Neighboring Water System	Red Rock Rural Water	N/A	(507) 628-4201
MPCA	Mankato	(507) 389-5977	(800) 657-3864
MRWA Technical Services	Jeff Dale	N/A	(800) 367-6792
MDH District Engineer	Mark Sweers	N/A	(507) 829-7144
MDH Source Water Protection	Terry Bovee	(507) 344-2744	

2. Critical response personnel:

Table G2: Critical Response Personnel

Title	Name	Response Assignment
Response Coordinator	Michael Paulson	Coordinate actions to address emergency
Alt. Response Coordinator	Mayor Thomas Eckmann	Coordinate actions to address emergency
Water Operator	Michael Paulson	Direct or contact firms to resolve issue
Alt. Water Operator	David Lubben	Direct or contact firms to resolve issue
Public Relations	Mayor Thomas Eckmann	Contact media to inform citizens/businesses of emergency
Alt. Public Relations	Mayor Pro-Tem Ronald Reicherts	Contact media to inform citizens/businesses of emergency
Public Health/Medical	City of Trimont Police, Fire, and Ambulance Dept.	Assist City as needed to address emergency
Alt. Public Health/Medical	Martin Co. Sheriff's Dept.	Assist City as needed to address emergency

3. Public information plan:

a) Public relations center and primary spokesperson:

Name: Thomas Eckmann
Title: Mayor
Address: 41 2nd Ave. NW
Home Phone: (507) 639-6423
Work Phone: (319) 750-9849

Public information center location during emergency: City Hall

Times available: City Hall will be open as needed to respond & coordinate response to emergency.

Alternate information center location site: Fire Hall

b) Information checklist to be conveyed to the public and media:

1) Name of water system
2) Contaminant of concern and date
3) Source of contamination
4) Public health hazard
5) Steps the public can take
6) Steps the water system is taking
7) Other information

c) Media contacts:

Media	Name	Telephone	Address
Newspaper	Martin County Star	(507) 764-6681	Sherburn, MN
Television	KEYC, Mankato	(507) 625-7905	Mankato, MN
Radio	KSUM	(507) 235-5595	Fairmont, MN

H. Mitigation and Conservation Plan

1. Mitigation

a) Infrastructure maintenance/upgrades/maps:
The water system is flushed one time each year. Various water mains have been replaced in the past 10 years and are replaced as required and as funds are available. Current maps and map booklets are available at the water plant.

b) Regular inspection of tower, well, pump house:
The water treatment plant, well houses, water tower and chemical room have keyed or coded locks and are locked, and are inspected daily. The water tower is cleaned and inspected every other year.

c) Staff emergency training:
Staff receives training annually through the Minnesota Department of Health.

d) System security analysis:
All facilities are locked with coded or keyed entry.

e) Site new backup well:
No new well is planned at this time.

f) System valving to isolate problems:
The water system is adequately valved to isolate problems.

g) Sanitation procedures for construction/repairs:
Shock chlorination is done when needed. All disinfection procedures are performed per

State specifications.

h) Other:

None

2. Conservation

a) Water meters:
All water connections are metered.

b) Public education:
The City of Trimont publishes the consumer confidence report annually in the official newspaper, the Martin County Star.

c) Rate structure:
All water is billed monthly at a base rate of $12.00 per month and $3.00 per thousand gallons used.
A disconnection/reconnection fee is $50.00 if service is disconnected.
The MN Dept. of Health test fee is billed each August at $6.36.

Appendix V: Supporting Documentation

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

INNER WELLHEAD MANAGEMENT ZONE (IWMZ) - POTENTIAL CONTAMINANT SOURCE INVENTORY (PCSI) REPORT

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1460009 **COMMUNITY**
NAME	Trimont
ADDRESS	Trimont Water Superintendent, City Hall, 41 Second Avenue NW, P.O. Box 405, Trimont, MN 561760405

FACILITY (WELL) INFORMATION

NAME	Well #3
FACILITY ID	S02
UNIQUE WELL NO.	217102
COUNTY	Martin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1460009 S02	UNIQUE WELL NO.	217102

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
Agricultural Related							
*AC1	Agricultural chemical buried piping	50	50		N		
*AC2	Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight	50	50		N		
ACP	Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards	150	150		N		
ACS	Agricultural chemical storage or equipment filling or cleaning area with safeguards	100	100		N		
ACR	Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed	50	50		N		
ADW	Agricultural drainage well[2] (Class V well - illegal[3])	50	50		N		
AAT	Anhydrous ammonia tank (stationary tank)	50	50		N		
AB1	Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard)	50	20	100/40	N		
AB2	Animal building or poultry building, including a horse riding area, more than 1.0 animal unit	50	50	100	N		
ABS	Animal burial area, more than 1.0 animal unit	50	50		N		
FWP	Animal feeding or watering area within a pasture, more than 1.0 animal unit	50	50	100	N		
AF1	Animal feedlot, unroofed, 300 or more animal units (stockyard)	100	100	200	N		
AF2	Animal feedlot, more than 1.0, but less than 300 animal units (stockyard)	50	50	100	N		
AMA	Animal manure application	use discretion	use discretion		N		
REN	Animal rendering plant	50	50		N		
MS1	Manure (liquid) storage basin or lagoon, unpermitted or noncertified	300	300	600	N		
MS2	Manure (liquid) storage basin or lagoon, approved earthen liner	150	150	300	N		
MS3	Manure (liquid) storage basin or lagoon, approved concrete or composite liner	100	100	200	N		
MS4	Manure (solid) storage area, not covered with a roof	100	100	200	N		
OSC	Open storage for crops	use discretion	use discretion		Y	70	Y
SSTS Related							
AA1	Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day	300	300	600	N		
AA2	Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less	150	150	300	N		
AA3	Absorption area of a soil dispersal system, average flow 10,000 gal./day or less	50	50	100	N		
AA4	Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well)[2]	50/300/150[4]	50/300/150[4]	100/600/300[4]	N		
CSP	Cesspool	75	75	150	N		
AGG	Dry well, leaching pit, seepage pit	75	75	150	N		
*FD1	Floor drain, grate, or trough connected to a buried sewer	50	50		N		
*FD2	Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences	50	20		N		
*GW1	Gray-water dispersal area	50	50	100	N		
LC1	Large capacity cesspools (Class V well - illegal)[2]	75	75	150	N		
MVW	Motor vehicle waste disposal (Class V well - illegal)[2]	illegal	illegal		N		
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		

PWS ID / FACILITY ID	1460009 S02	UNIQUE WELL NO.	217102

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		

PWS ID / FACILITY ID	1460009 S02	UNIQUE WELL NO.	217102

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
SBM	Sewer, buried collector, municipal, pressurized, open jointed, or unapproved materials	50	50		Y	70	N

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

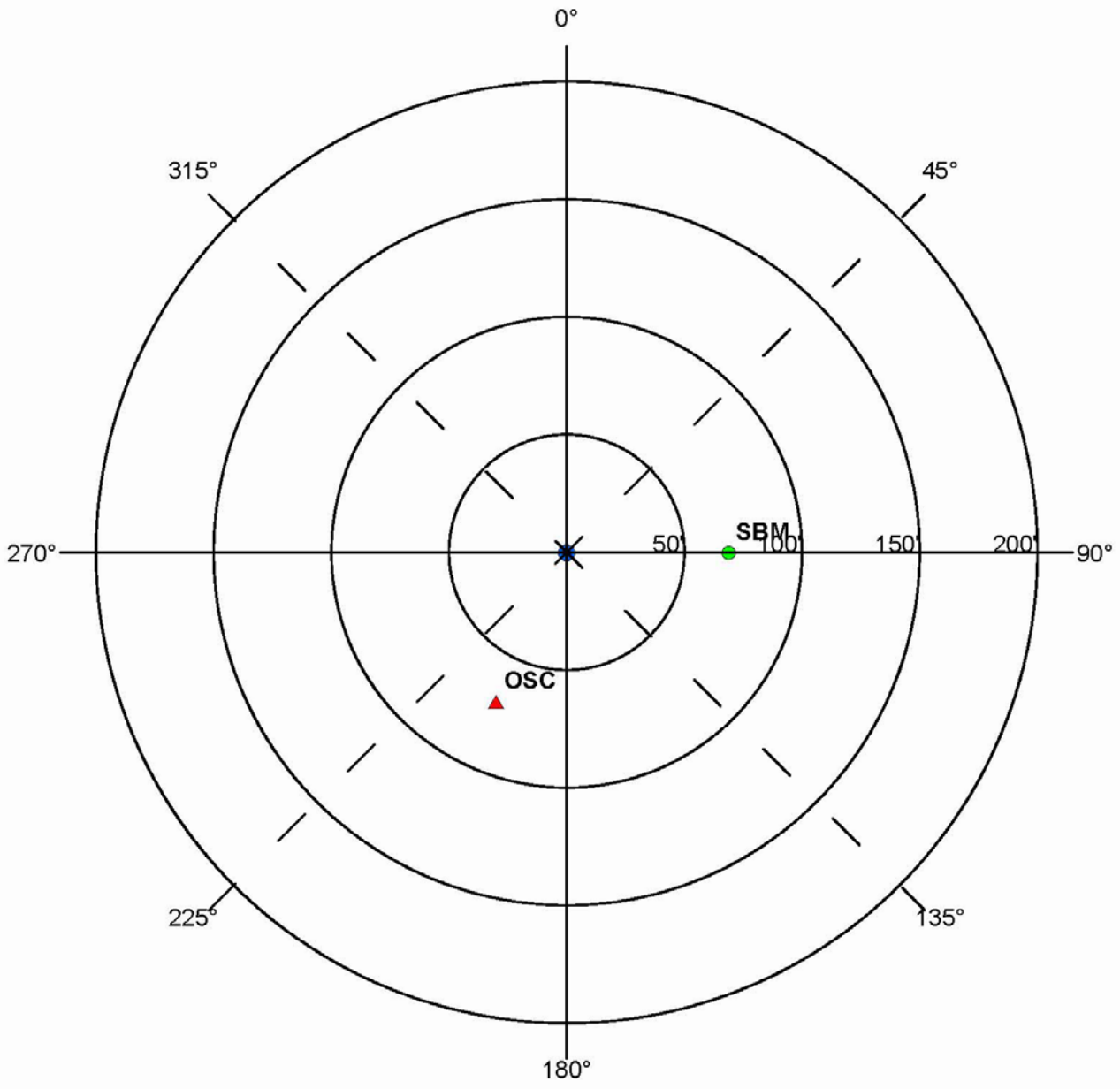
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

PWS ID / FACILITY ID	1460009 S02	UNIQUE WELL NO.	217102

SETBACK DISTANCES	All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



Were the isolation distances maintained for the new sources of contamination?	Y	N	N/A
Is the system monitoring existing nonconforming sources of contamination?	Y	N	N/A

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR	Bovee, Terry	DATE	1 - 24 - 2014

PWS ID / FACILITY ID	1460009 S02	UNIQUE WELL NO.	217102

RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES	WHP MEASURE IMPLEMENTED? Y or N	DATE VERIFIED

COMMENTS

For further information, please contact:

Minnesota Department of Health
Drinking Water Protection Section
Source Water Protection Unit
P.O. Box 64975
St. Paul, Minnesota 55164-0975

Section Receptionist: 651-201-4700
Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

INNER WELLHEAD MANAGEMENT ZONE (IWMZ) - POTENTIAL CONTAMINANT SOURCE INVENTORY (PCSI) REPORT

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1460009	**COMMUNITY**
NAME	Trimont	
ADDRESS	Trimont Water Superintendent, City Hall, 41 Second Avenue NW, P.O. Box 405, Trimont, MN 561760405	

FACILITY (WELL) INFORMATION

NAME	Well #4
FACILITY ID	S03
UNIQUE WELL NO.	455811
COUNTY	Martin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1460009 S03	UNIQUE WELL NO.	455811

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
Agricultural Related							
*AC1	Agricultural chemical buried piping	50	50		N		
*AC2	Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight	50	50		N		
ACP	Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards	150	150		N		
ACS	Agricultural chemical storage or equipment filling or cleaning area with safeguards	100	100		N		
ACR	Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed	50	50		N		
ADW	Agricultural drainage well[2] (Class V well - illegal[3])	50	50		N		
AAT	Anhydrous ammonia tank (stationary tank)	50	50		N		
AB1	Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard)	50	20	100/40	N		
AB2	Animal building or poultry building, including a horse riding area, more than 1.0 animal unit	50	50	100	N		
ABS	Animal burial area, more than 1.0 animal unit	50	50		N		
FWP	Animal feeding or watering area within a pasture, more than 1.0 animal unit	50	50	100	N		
AF1	Animal feedlot, unroofed, 300 or more animal units (stockyard)	100	100	200	N		
AF2	Animal feedlot, more than 1.0, but less than 300 animal units (stockyard)	50	50	100	N		
AMA	Animal manure application	use discretion	use discretion		N		
REN	Animal rendering plant	50	50		N		
MS1	Manure (liquid) storage basin or lagoon, unpermitted or noncertified	300	300	600	N		
MS2	Manure (liquid) storage basin or lagoon, approved earthen liner	150	150	300	N		
MS3	Manure (liquid) storage basin or lagoon, approved concrete or composite liner	100	100	200	N		
MS4	Manure (solid) storage area, not covered with a roof	100	100	200	N		
OSC	Open storage for crops	use discretion	use discretion		N		
SSTS Related							
AA1	Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day	300	300	600	N		
AA2	Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less	150	150	300	N		
AA3	Absorption area of a soil dispersal system, average flow 10,000 gal./day or less	50	50	100	N		
AA4	Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well)[2]	50/300/150[4]	50/300/150[4]	100/600/300[4]	N		
CSP	Cesspool	75	75	150	N		
AGG	Dry well, leaching pit, seepage pit	75	75	150	N		
*FD1	Floor drain, grate, or trough connected to a buried sewer	50	50		N		
*FD2	Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences	50	20		N		
*GW1	Gray-water dispersal area	50	50	100	N		
LC1	Large capacity cesspools (Class V well - illegal)[2]	75	75	150	N		
MVW	Motor vehicle waste disposal (Class V well - illegal)[2]	illegal	illegal		N		
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		

PWS ID / FACILITY ID	1460009 S03	UNIQUE WELL NO.	455811

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		

PWS ID / FACILITY ID	1460009 S03	UNIQUE WELL NO.	455811

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

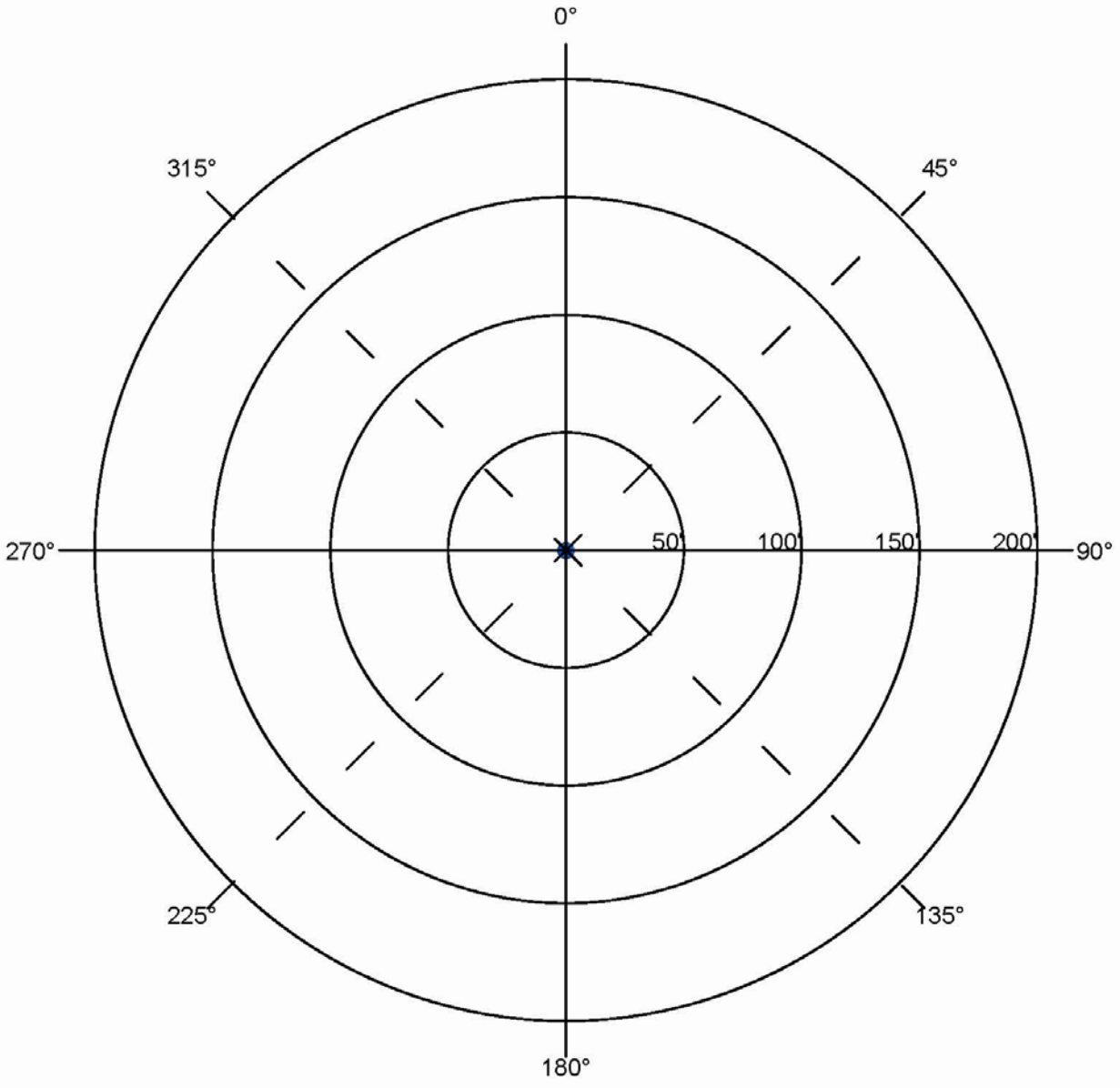
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

PWS ID / FACILITY ID	1460009 S03	UNIQUE WELL NO.	455811

SETBACK DISTANCES	All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



Were the isolation distances maintained for the new sources of contamination?	Y	N	N/A
Is the system monitoring existing nonconforming sources of contamination?	Y	N	N/A

Reminder Question: Were the wellhead protection measure(s) implemented?			
INSPECTOR	Bovee, Terry	DATE	1 - 24 - 2014

PWS ID / FACILITY ID	1460009 S03	UNIQUE WELL NO.	455811

RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES	WHP MEASURE IMPLEMENTED? Y or N	DATE VERIFIED

COMMENTS

For further information, please contact:

Minnesota Department of Health
Drinking Water Protection Section
Source Water Protection Unit
P.O. Box 64975
St. Paul, Minnesota 55164-0975

Section Receptionist: 651-201-4700
Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000

Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

INNER WELLHEAD MANAGEMENT ZONE (IWMZ) - POTENTIAL CONTAMINANT SOURCE INVENTORY (PCSI) REPORT

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1460009 **COMMUNITY**
NAME	Trimont
ADDRESS	Trimont Water Superintendent, City Hall, 41 Second Avenue NW, P.O. Box 405, Trimont, MN 561760405

FACILITY (WELL) INFORMATION

NAME	Well #5
FACILITY ID	S04
UNIQUE WELL NO.	632061
COUNTY	Martin

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?

☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1460009 S04	UNIQUE WELL NO.	632061

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
Agricultural Related							
*AC1	Agricultural chemical buried piping	50	50		N		
*AC2	Agricultural chemical multiple tanks or containers for residential retail sale or use, no single tank or container exceeding, but aggregate volume exceeding 56 gal. or 100 lbs. dry weight	50	50		N		
ACP	Agricultural chemical tank or container with 25 gal. or more or 100 lbs. or more dry weight, or equipment filling or cleaning area without safeguards	150	150		N		
ACS	Agricultural chemical storage or equipment filling or cleaning area with safeguards	100	100		N		
ACR	Agricultural chemical storage or equipment filling or cleaning area with safeguards and roofed	50	50		N		
ADW	Agricultural drainage well[2] (Class V well - illegal[3])	50	50		N		
AAT	Anhydrous ammonia tank (stationary tank)	50	50		N		
AB1	Animal building, feedlot, confinement area, or kennel, 0.1 to 1.0 animal unit (stockyard)	50	20	100/40	N		
AB2	Animal building or poultry building, including a horse riding area, more than 1.0 animal unit	50	50	100	N		
ABS	Animal burial area, more than 1.0 animal unit	50	50		N		
FWP	Animal feeding or watering area within a pasture, more than 1.0 animal unit	50	50	100	N		
AF1	Animal feedlot, unroofed, 300 or more animal units (stockyard)	100	100	200	N		
AF2	Animal feedlot, more than 1.0, but less than 300 animal units (stockyard)	50	50	100	N		
AMA	Animal manure application	use discretion	use discretion		N		
REN	Animal rendering plant	50	50		N		
MS1	Manure (liquid) storage basin or lagoon, unpermitted or noncertified	300	300	600	N		
MS2	Manure (liquid) storage basin or lagoon, approved earthen liner	150	150	300	N		
MS3	Manure (liquid) storage basin or lagoon, approved concrete or composite liner	100	100	200	N		
MS4	Manure (solid) storage area, not covered with a roof	100	100	200	N		
OSC	Open storage for crops	use discretion	use discretion		N		
SSTS Related							
AA1	Absorption area of a soil dispersal system, average flow greater than 10,000 gal./day	300	300	600	N		
AA2	Absorption area of a soil dispersal system serving a facility handling infectious or pathological wastes, average flow 10,000 gal./day or less	150	150	300	N		
AA3	Absorption area of a soil dispersal system, average flow 10,000 gal./day or less	50	50	100	N		
AA4	Absorption area of a soil dispersal system serving multiple family residences or a non-residential facility and has the capacity to serve 20 or more persons per day (Class V well)[2]	50/300/150[4]	50/300/150[4]	100/600/300[4]	N		
CSP	Cesspool	75	75	150	N		
AGG	Dry well, leaching pit, seepage pit	75	75	150	N		
*FD1	Floor drain, grate, or trough connected to a buried sewer	50	50		N		
*FD2	Floor drain, grate, or trough if buried sewer is air-tested, approved materials, serving one building, or two or less single-family residences	50	20		N		
*GW1	Gray-water dispersal area	50	50	100	N		
LC1	Large capacity cesspools (Class V well - illegal)[2]	75	75	150	N		
MVW	Motor vehicle waste disposal (Class V well - illegal)[2]	illegal	illegal		N		
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		

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PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		

PWS ID / FACILITY ID	1460009 S04	UNIQUE WELL NO.	632061

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

[1] A sensitive well has less than 50 feet of watertight casing, and which is not cased below a confining layer or confining materials of at least 10' in thickness.

[2] These sources, known as Class V underground injection wells, are regulated by the federal U.S. Environmental Protection Agency.

[3] These sources are classified as illegal by Minnesota Rules, Chapter 4725.

[4] Isolation distance is determined by average flow per day or if a facility handles infectious or pathological wastes.

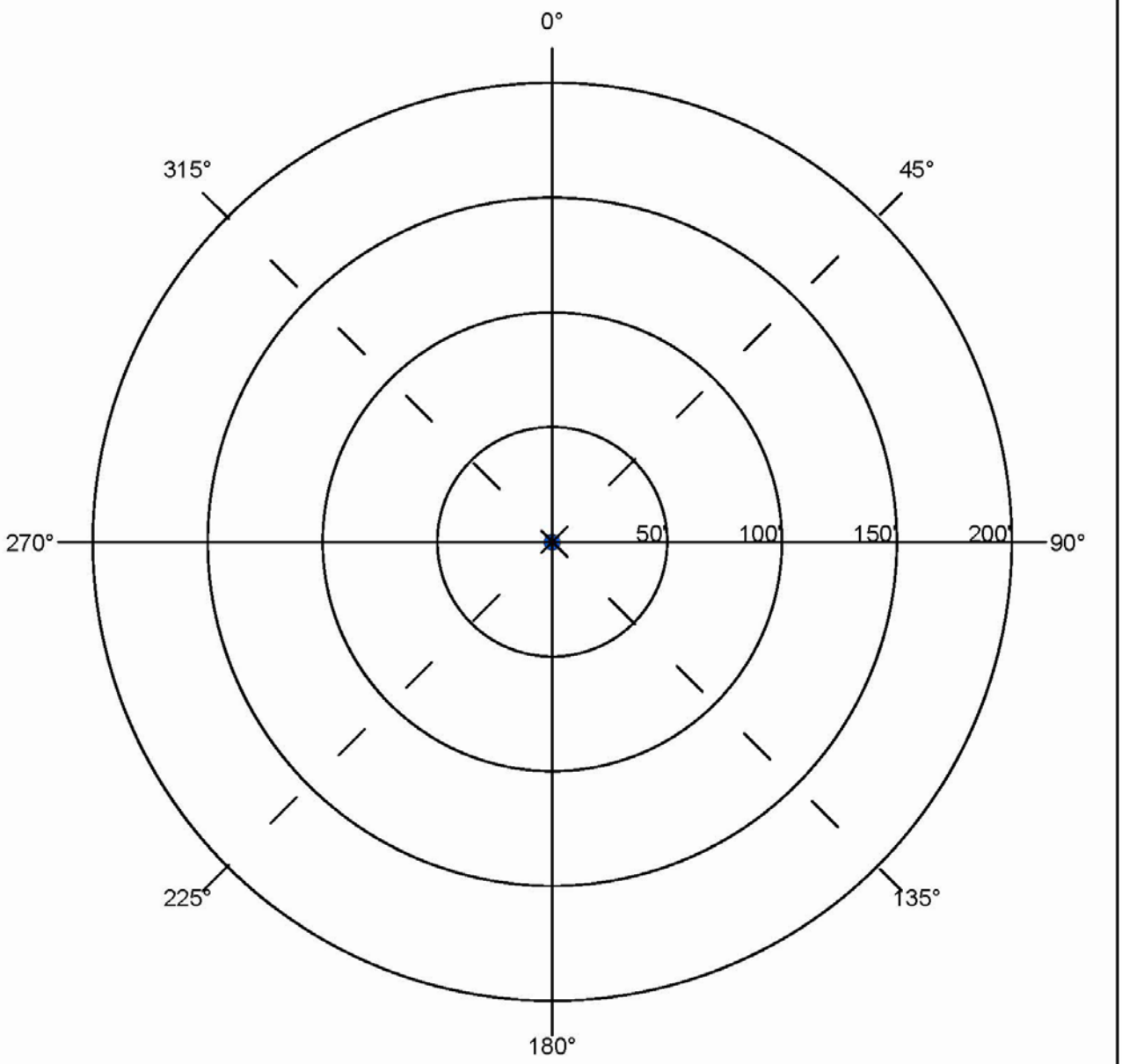
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls; or is protected with secondary containment.

This form is based on the new isolation distances in Minnesota Rules, Chapter 4725, related to wells and borings adopted August 4, 2008, and Minnesota Rules, Chapter 4720, related to wellhead protection.

PWS ID / FACILITY ID	1460009 S04	UNIQUE WELL NO.	632061

SETBACK DISTANCES	All potential contaminant sources must be noted on sketch.

Record the distance and approximate compass bearing of each potential contaminant source from the well, and identify the source using the "Source Code". Unlabeled points on the map are unsealed wells.



Were the isolation distances maintained for the new sources of contamination?	Y	N	N/A
Is the system monitoring existing nonconforming sources of contamination?	Y	N	N/A

Reminder Question: Were the wellhead protection measure(s) implemented?

INSPECTOR		DATE	

PWS ID / FACILITY ID	1460009 S04	UNIQUE WELL NO.	632061

RECOMMENDED WELLHEAD PROTECTION (WHP) MEASURES	WHP MEASURE IMPLEMENTED? Y or N	DATE VERIFIED

COMMENTS

For further information, please contact:

Minnesota Department of Health
Drinking Water Protection Section
Source Water Protection Unit
P.O. Box 64975
St. Paul, Minnesota 55164-0975

Section Receptionist: 651-201-4700
Division TDD: 651-201-5797 or MN Relay Service @ 1-800-627-3529 and ask for 651-201-5000

Mr. Michael Paulson, Utilities Director
Mr. Dave Lubben, Water Operator
City of Trimont
P.O. Box 405
Trimont, Minnesota 56176-0405

Dear Mr. Paulson and Mr. Lubben:

Subject: **Second Scoping Decision Notice – City of Trimont – PWSID 1460009**

This letter provides notice of the results of a scoping meeting held with you, Dave Lubben and Melissa Flohrs, Trimont city staff, and me on April 4, 2013, at Trimont City Hall regarding wellhead protection (WHP) planning. During the meeting, we discussed the data elements that must be included and used to prepare the part of the WHP plan related to the management of potential contaminants in the approved drinking water supply management area. The enclosed Scoping 2 Decision Notice lists the data elements discussed at the meeting.

The city of Trimont has met the requirements to distribute copies of the first part of the WHP plan to local units of government and hold an informational meeting for the public. The city of Trimont will have until December 28, 2014, to complete its wellhead protection plan.

If a data element is marked on the enclosed notice as a data element that must be used and it does not exist, it is helpful if your plan notes this. I will be working with you to develop a draft of the remainder of the WHP. I will be contacting you to review the progress of the development of Part II of your plan. If you have any questions regarding the enclosed notice, contact me by email at Terry.bovee@state.mn.us or by phone at 507/344-2744.

Sincerely,

Terry Bovee, Planner
Source Water Protection Unit
Environmental Health Division
12 Civic Center Plaza, Suite 2105
Mankato, Minnesota 56001-7789

TB:ds-b
Enclosures
cc: Mark Sweers, MDH Engineer, Mankato District Office
Byron Adams, Water Monitoring Section, Minnesota Pollution Control Agency
Joe Richter, Division of Waters, Minnesota Department of Natural Resources
Ron Struss, Minnesota Department of Agriculture
Eric Mohring, Hydrologist, Board of Water and Soil Resources

SCOPING 2 DECISION NOTICE

- **Remainder of the Wellhead Protection Plan**

Name of Public Water Supply:		**Date:**
City of Trimont **PWSID 1460009**		April 26, 2013
Name of the Wellhead Protection Manager:		
Michael Paulson, Utilities Director Dave Lubben, Water Operator		
Address:	**City:**	**Zip:**
P.O. Box 405	Trimont, Minnesota	56176-0405
Unique Well Numbers:		**Phone:**
217102 (Well 3), 455811 (Well 4), 632061 (Well 5 Emergency)*		507/639-2060

*Emergency wells only use the IWMZ Form for data collection.

Instructions for Completing the Scoping 2 Form

N	R	S	
X			**N = Not required.** If this box is checked, this data element is **NOT** necessary for your wellhead protection plan because it is not needed or it has been included in the first scoping decision notice. **Please go to the next data element**.

N	R	S	
	X		**R = Required for the remainder of the plan.** If this box is checked, this data **MUST** be used for the "**remainder of the plan**."

N	R	S	
		X	**S = Submit to MDH.** If this box is checked, this data element **MUST** be included in your **wellhead protection plan and submitted to MDH**. If there is **NO** check mark in the **"S"** box but there is an **"X"** in the **"R"** box, this data element **MUST** be included in your plan, but should **NOT be submitted to MDH**. This box will only be checked if MDH does not have access to this data element. This will help to reduce the cost by reducing the amount of paper and time to reproduce the data element.

Note: Any data elements required in the first scoping decision notice must also be used to complete the remainder of the wellhead protection plan.

DATA ELEMENTS ABOUT THE PHYSICAL ENVIRONMENT

PRECIPITATION

N	R	S	
X			An existing map or list of local precipitation gauging stations.

Technical Assistance Comments:

N	R	S	
X			An existing table showing the average monthly and annual precipitation in inches for the preceding five years.

Technical Assistance Comments:

GEOLOGY

N	R	S	
	X		An existing geologic map and a description of the geology, including aquifers, confining layers, recharge areas, discharge areas, sensitive areas as defined in Minnesota Statutes, section 103H.005, subdivision 13, and groundwater flow characteristics.

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.

N	R	S	
	X		Existing records of the geologic materials penetrated by wells, borings, exploration test holes, or excavations, including those submitted to the department.

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.

N	R	S	
	X		Existing borehole geophysical records from wells, borings, and exploration test holes.

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.

N	R	S	
	X		Existing surface geophysical studies.

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.

SOILS

N	R	S	
X			Existing maps of the soils and a description of soil infiltration characteristics.

Technical Assistance Comments:

N	R	S	
X			A description or an existing map of known eroding lands that are causing sedimentation problems.

Technical Assistance Comments:

WATER RESOURCES			
N	**R**	**S**	An existing map of the boundaries and flow directions of major watershed units and minor watershed units.
X			
Technical Assistance Comments:			
N	**R**	**S**	An existing map and a list of public waters as defined in Minnesota Statutes, section 103G.005, subdivision 15, and public drainage ditches.
X			
Technical Assistance Comments:			
N	**R**	**S**	The shoreland classifications of the public waters listed under subitem (2), pursuant to part 6120.3000 and Minnesota Statutes, sections 103F.201 to 103F.221.
X			
Technical Assistance Comments:			
N	**R**	**S**	An existing map of wetlands regulated under chapter 8420 and Minnesota Statutes, section 103G.221 to 103G.2373**.**
X			
Technical Assistance Comments:			
N	**R**	**S**	An existing map showing those areas delineated as floodplain by existing local ordinances.
X			
Technical Assistance Comments:			

DATA ELEMENTS ABOUT THE LAND USE

LAND USE			
N	**R**	**S**	An existing map of parcel boundaries.
	X	**X**	
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	**R**	**S**	An existing map of political boundaries.
	X	**X**	
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	**R**	**S**	An existing map of public land surveys including township, range, and section.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			

N	R	S	
	X	X	A map and an inventory of the current and historical agricultural, residential, commercial, industrial, recreational, and institutional land uses and potential contaminant sources.

Technical Assistance Comments: The inventory, mapping, and management of land uses and potential sources of contamination for all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements, as follows:

Low Vulnerability:

1) All potential contaminant sources and facility designations as listed on the attachment,
2) a land use/land cover map and table, and
3) an inventory of the Inner Wellhead Management Zone (IWMZ).

As a starting point, MDH will provide a 1992 or 2001 land cover map and table from federal data bases. This data set must be used unless an alternative electronic data set that is more current and detailed is available.

Management strategies must be developed for all land uses and potential sources of contamination.

N	R	S	
	X	X	An existing comprehensive land-use map.

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element. Include any urban fringe planning areas.

N	R	S	
	X	X	Existing zoning map.

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.

PUBLIC UTILITY SERVICES

N	R	S	
X			An existing map of transportation routes or corridors.

Technical Assistance Comments:

N	R	S	
X			An existing map of storm sewers, sanitary sewers, and public water supply systems.

Technical Assistance Comments:

N	R	S	
X			An existing map of the gas and oil pipelines used by gas and oil suppliers.

Technical Assistance Comments:

N	R	S	
X			An existing map or list of public drainage systems.

Technical Assistance Comments:			
N	**R**	**S**	An existing record of construction, maintenance, and use of the public water supply well(s) and other wells within the drinking water supply management area.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			

DATA ELEMENTS ABOUT WATER QUANTITY

SURFACE WATER QUANTITY

N	**R**	**S**	An existing description of high, mean, and low flows on streams.
X			
Technical Assistance Comments:			

N	**R**	**S**	An existing list of lakes where the state has established ordinary high water marks.
X			
Technical Assistance Comments:			

N	**R**	**S**	An existing list of permitted withdrawals from lakes and streams, including source, use, and amounts withdrawn.
X			
Technical Assistance Comments:			

N	**R**	**S**	An existing list of lakes and streams for which state protected levels or flows have been established.
X			
Technical Assistance Comments:			

N	**R**	**S**	An existing description of known water-use conflicts, including those caused by groundwater pumping.
X			
Technical Assistance Comments:			

GROUNDWATER QUANTITY

N	**R**	**S**	An existing list of wells covered by state appropriation permits, including amounts of water appropriated, type of use, and aquifer source.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			

N	**R**	**S**	An existing description of known well interference problems and water use conflicts.
	X		

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			
N	**R**	**S**	An existing list of state environmental bore holes, including unique well number, aquifer measured, years of record, and average monthly levels.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			

DATA ELEMENTS ABOUT WATER QUALITY

SURFACE WATER QUALITY

N	**R**	**S**	An existing map or list of the state water quality management classification for each stream and lake.
X			
Technical Assistance Comments:			
N	**R**	**S**	An existing summary of lake and stream water quality monitoring data, including: 1. bacteriological contamination indicators; 4. sedimentation; 2. inorganic chemicals; 5. dissolved oxygen; and 3. organic chemicals; 6. excessive growth or deficiency of aquatic plants.
X			
Technical Assistance Comments:			

GROUNDWATER QUALITY

N	**R**	**S**	An existing summary of water quality data, including: 1. bacteriological contamination indicators; 2. inorganic chemicals; and 3. organic chemicals.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			
N	**R**	**S**	An existing list of water chemistry and isotopic data from wells, springs, or other groundwater sampling points.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			
N	**R**	**S**	An existing report of groundwater tracer studies.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.			
N	**R**	**S**	An existing site study and well water analysis of known areas of groundwater contamination.
	X		
Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about these data elements.			

N	R	S	An existing property audit identifying contamination.
	X		

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.

N	R	S	An existing report to the Minnesota Department of Agriculture and the Minnesota Pollution Control Agency of contaminant spills and releases.
	X		

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect what is known about this data element.

Old Municipal Well Information for Trimont.

City of Trimont (PWSID 1460009, Martin County)

Well Sequence (in record)	Well Name	Unique #	Casing Diameter (inches)	Depth Cased (feet)	Well Depth (feet)	Year Constructed	Well Type	Year Out of Service	Sealing Record	Location
T - A	Triumph Old Easterly well	none found	8"	unknown	116 ft	Prior to 1931	Drilled	Standby 1939; Abandoned and Filled 1946	none found	**1931:** "in the basement of the pump station in the central part of the village" **1932:** "in the basement of the fire hall"
** T - B	Triumph Westerly well	none found	8"	unknown	116 ft	Prior to 1931	Drilled	Unknown	none found	**1931:** "in the basement of the pump station in the central part of the village" **1932:** "in the basement of the fire hall"
M - C	Monterey well	none found	10"	unknown	162 ft	Prior to 1932	Drilled	Abandoned and filled 1946	none found	**1932:** "in a pump house in back of the (Monterey) city hall" **1939:** "on Lots 14 and 15, Block 1 of the original plat.
M - D	Second Monterey well	none found	10"	175 ft	195 ft	1946	Drilled	Unknown	none found	**1946:** "on Lots 6 and 7 of Block 6....adjacent to a gasoline station.
E	**Trimont 1**	217110	14"	unknown	120 ft	1940	Drilled	Standby after 1968	none found	**CWI:** T104, R32W, Sec. 32, cddcba
F	Triumph New Easterly well; **Trimont 2**	217111	16"	110 ft	120 ft	1946	Drilled	Unknown; removed from flow in MNDWIS		**1946:** "in Block 1 of the original plat near the edge of the business district" **CWI:** T104, R32W, Sec. 32, cddcba
G	Unknown Trimont Well	none found	12"	117 ft	129 ft	1953	Drilled	Unknown	none found	**1953:** "approximately 17 ft south of the abandoned well"

Well Sequence (in record)	Well Name	Unique #	Casing Diameter (inches)	Depth Cased (feet)	Well Depth (feet)	Year Constructed	Well Type	Year Out of Service	Sealing Record	Location
H	**Trimont 3**	217102	1972: 8" CWI: 16"	115 ft	140 ft	1968	Drilled	Still in use as a primary well		**CWI:** T104, R32W, Sec. 32, cdadda
I	**Trimont 4**	455811	12"	120 ft	142 ft	1989	Rotary	Still in use as a primary well		**CWI:** T103, R32W, Sec. 5, ababbc
J	**Trimont 5**	632061	12"	110 ft	140 ft	1999	Rotary	Still in use as an emergency well		**CWI:** T104, R32W, Sec. 32, bab
## K	Unknown Sealed Trimont Well	unknown	16" / 10"	114 ft	126 ft	unknown	unknown	Unknown; sealed in 2005	H219469	**Sealing record:** near southwest corner of 5th Ave. NE and Main St. between a garage building and a county building.

Data Bases Searched:
CWI
MDH DWP Microfiche
MDH DWP MNDWIS
MDH Wells Database

M - (letter) is a Village of Monterey well, T - (letter) is a Village of Triumph well

** This well is most likely the same well as Trimont 1, but they are listed separately here due to conflicting construction dates.

This sealing record pretty closely matches the specifications for the unknown well listed as Well G and may in fact be the same well.

Parcel Maps for Trimont Drinking Water Supply Management Area.


080320750
080310300
STHWY 4
080320500
080320400
7TH AVE NE
080320800
390400220
398100170
398100190
CHERRY ST E
BEECH ST W
BEECH ST E
1ST AVE NE
BROADWAY AVE N
APPLE ST W
APPLE ST E
2ND AVE NW
2ND AVE NE
3RD AVE NE
4TH AVE NE
5TH AVE NE
6TH AVE NE
MAIN ST E
ASH ST W
ASH ST E
2ND AVE SW
BROADWAY AVE S
2ND AVE SE
3RD AVE SE
5TH AVE SE
6TH AVE SE
7TH AVE SE
398100023
BIRCH ST W
BIRCH ST E
1ST AVE SE
4TH AVE SE
398100020
CHESTNUT ST W
CHESTNUT ST E
0TH AVE