



Protecting, Maintaining and Improving the Health of All Minnesotans

7/10/17

Stephanie Adams
12 Hwy 28 E St 2
Morris, MN 56267

Dear Stephanie:

Subject: Initial Comment Letter – *Pomme de Terre, One Watershed One Plan*

Thank you for the opportunity to submit comments regarding water management issues for consideration in the 1W1P planning process for the *Pomme de Terre* Watershed Planning Area. Our agency looks forward to working closely with the local government units, stakeholders, and other agency partners on this watershed planning initiative.

The Minnesota Department of Health's (MDH) mission is to protect, maintain, and improve the health of all Minnesotans. An important aspect to protecting citizen health is the protection of drinking water sources. MDH is the agency responsible for implementing programs under the federal Safe Drinking Water Act (SDWA).

Source Water Protection (SWP) is the framework MDH uses to protect drinking water sources. The broad goal of SWP in Minnesota is to protect and prevent contamination of public and private sources of groundwater and surface water sources of drinking water using best management practices and local planning. Core MDH programs relevant to watershed planning are the State Well Code (MR 4725), Wellhead Protection (MR 4720) and surface water / intake protection planning resulting in a strong focus in groundwater management and protecting drinking water sources.

One of the three high level state priorities in Minnesota's Nonpoint Priority Funding Plan is to "Restore and protect water resources for public use and public health, including drinking water" which aligns with our agency's mission and recommendations to your planning process.

MDH Priority Concerns:

Protection of Public Water Supply Drinking Water Sources

Prioritize Protecting Drinking Water Supply Management Area in the Pomme de Terre Watershed 1W1P.

The Drinking Water Supply Management Area (DWSMA) boundaries establish a protection area through an extensive evaluation that determines the contribution area of a public water supply well, aquifer vulnerability and provides an opportunity to prioritize specific geographic areas for drinking water protection purposes.

Aquifer vulnerability determines the level of management required to protect a drinking water supply and provides an opportunity to target implementation practices in accordance with the level of risk different land uses pose. The attached Public Water Supply Summary Spreadsheet identifies the high potential and low potential contaminant risk DWSMAs in the basin and sub watersheds. DWSMAs with high potential contaminant risk have groundwater that is moderately or highly vulnerable to contamination from land use activities. DWSMAs with low potential contaminant risk have well protected groundwater that has low vulnerability to contamination from land use activities. Some DWSMAs have variable vulnerability. These DWSMAs are a mixture of at least two vulnerabilities that may be comprised of low, moderate, high, very high vulnerable areas. This spreadsheet can be used to prioritize projects in areas with high potential contaminant risk. As some of DWSMAs extend across multiple watersheds and subwatersheds, they are listed multiple times in the spreadsheet.

Protect Water Quality and Quantity

Storm water infiltration basins and water storage may be of concern in vulnerable DWSMAs. Surface water storage and storm water infiltration can alter both the quality and quantity of groundwater in the surrounding area through groundwater mounding. Groundwater mounding may alter local hydraulic gradients, decrease the removal of certain pollutants, and mobilize contaminants that are in soil or groundwater. Metals, nitrate, and phosphorus are typically present at low concentrations in urban stormwater, and present a low risk to groundwater. Chlorides, however, are a significant concern because they are typically present in high concentrations near roads and commercial areas. MDH in cooperation with MPCA has developed a guidance on stormwater and wellhead protection. It can be found in the Minnesota Stormwater Manual at

[https://stormwater.pca.state.mn.us/index.php/Stormwater and wellhead protection](https://stormwater.pca.state.mn.us/index.php/Stormwater_and_wellhead_protection)

Ensuring that public water supply systems have no well interference conflicts promotes public health, economic development and community infrastructure by maintaining a potable public drinking water supply for the community. Increase local awareness of available resources and technology for soil moisture monitoring and management of irrigated land.

Encourage Local Government Units to utilize Wellhead Protection Plans to assess needs and changes in land use (zoning and ordinance development, and enrollment in CRP programs) to protect groundwater quantity and quality.

Prioritize Drinking Water Supply Management Areas impacted by Nitrate.

Prioritize these protection areas for working with landowners on nutrient management and other sources of nitrogen such as failing septic systems. Additionally, it is important to target highly vulnerable DWSMAs for working with landowners on the advantages of small grain crops, perennial vegetation, nutrient and water requirements of corn and soybeans. Vulnerable DWSMAs are the most likely to be impacted by nitrates. According to the spreadsheet, Morris, Appleton, and Barrett have low levels of nitrates in the groundwater. Prioritize these protection areas for working with landowners in enrollment in CRP programs, nutrient management, and other sources of nitrogen such as failing septic systems.

Prioritize Protecting Noncommunity Public Water Supplies in the *Pomme de Terre* Watershed 1W1P

Noncommunity public water supplies provide drinking water to people at their places of work or play (schools, offices, campgrounds, etc.). Land use and management activities should consider effects on these public water systems. Find information regarding noncommunity public water supplies in the watershed in reports titled Source Water Assessments at <http://www.health.state.mn.us/divs/eh/water/swp/index.htm#swa>

Protection of Drinking Water Sources for Private Wells

Prioritize Protection of Private Wells

Many residents of *Pomme de Terre* Watershed rely on a private well for the water they drink. However, no public entity is responsible for water testing or management of a private well after drilling is completed. Local governments are best equipped to assist private landowners through land use management and ordinance development, which can have the greatest impact on protecting private wells. Other suggested activities to protect private wells include: hosting well testing or screening clinics, providing water testing kits, working with landowners to better manage nutrient loss, promoting household hazardous waste collection, managing storm water runoff, managing septic systems, and providing best practices information to private well owners. Utilize information regarding pollution sensitivity of the upper most aquifers and wells, and nitrate and arsenic results from well testing to further target areas within the watershed for implementation activities.

Unused “Abandoned” Wells

Prioritize Sealing Abandoned Wells

Unused, unsealed wells can provide a conduit for contaminants from the land surface to reach the sources of drinking water. This activity is particularly important for abandoned wells that penetrate a confining layer above a source aquifer.

Sealing wells is a central practice in protecting groundwater quality, however when resource dollars are limited it is important to evaluate private well density to identify the populations most at risk from a contaminated aquifer.

Attached you will find information regarding drinking and groundwater prioritization with PTMapp and a listing of the data and information MDH can provide to help you in the planning process. Thank you for the opportunity to be involved in your watershed planning process. If you have any questions, please feel free to contact me at (218) 308-2153 or Jenilynn.Marchand@state.mn.us.

Sincerely,



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Attachments

CC: Trent Farnum, Source Water Protection Unit
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Pomme de Terre 1W1P Interagency Core Team

Prioritizing Groundwater & Drinking Water Protection in the 1W1P Planning Process

Watershed models used for prioritizing and targeting implementation scenarios in the One Watershed One Plan (1W1P), whether PTMapp, HSPF SAM or others, leverage GIS information and/or digital terrain analysis to determine the flow paths of runoff across the landscape and the pour points where concentrated flow reaches surface water features. While this is an effective approach for targeting surface water contaminants, it does not transfer to groundwater concerns because it only accounts for the movement of water on the land's surface. Unfortunately, targeting tools are not currently available to model the impact on groundwater resources. Therefore, the Minnesota Department of Health suggests using methodologies applied by the agency to prioritize and target implementation activities in the Source Water Protection program.

These methodologies for public water supply systems include:

- Identifying Drinking Water Supply Management Areas (DWSMA) located in the watershed.
- Examining the vulnerability of the aquifer to contamination risk to determine the level of management required to protect groundwater quality. For example, a highly vulnerable setting requires many different types of land uses to be managed, whereas a low vulnerability setting focuses on a few land uses due to the long recharge time and protective geologic layer.

These methodologies for private wells include:

- Evaluating the vulnerability of the upper most aquifers to determine the areas within the watershed most at risk from different land uses. Geologic atlases provide this information where available, as well as the statewide geomorphology layer, or the DNR's statewide aquifer sensitivity layer.

Data and information MDH can provide:

- Drinking Water Statistics – 100% of citizens and businesses get their drinking water from groundwater in the Pomme de Terre Watershed. This information can help you understand where people are obtaining their drinking water and develop implementation strategies to protect the sources of drinking water in the watershed.
- A spreadsheet of the public water supply systems in the watershed, status in wellhead protection planning, and any drinking water protection concerns or issues that have been identified in protection areas. This information can help you understand the drinking water protection issues in the watershed, prioritize areas for implementation activities, and identify potential multiple benefits for implementation activities.
- Shape files of the Drinking Water Supply Management Areas (DWSMA) in the watershed are located at <http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm>. This information can help you prioritize and target implementation activities that protect drinking water sources.
- A figure detailing the “Pollution Sensitivity of the Upper Most Aquifer” in the Pomme de Terre Watershed. This information can help you understand the ease with which recharge and contaminants from the ground surface may be transmitted into the upper most aquifer on a watershed scale. Individual wellhead protection areas provide this same information on a localized scale. This in turn can be used to prioritize areas and implementation activities.
- A figure detailing “Pollution Sensitivity of Wells” in the Pomme de Terre Watershed. This information can help you understand which wells in the watershed are most geologically sensitive based on the vulnerability of the aquifer in which the well is completed. This information allows for targeting of implementation activities to the sources of water people are drinking.
- A figure detailing “Pollution Sensitivity of Wells and Nitrate Results” in the Pomme de Terre Watershed Underlain by Geologic Sensitivity Ratings from Wells”. This information takes what we know about the sensitivity of wells to contamination and combines it with nitrate results to highlight areas of the watershed where there is known nitrate contamination of the water people are drinking. This figure can help prioritize implementation activities aimed at reducing nitrate levels in the sources of drinking water.
- A figure detailing “Pollution Sensitivity of Wells and Arsenic Results” in the Pomme de Terre Watershed Underlain by Geologic Sensitivity Ratings from Wells”. This information can help you understand which wells in the watershed contain elevated arsenic levels.

Pomme De Terre River Basin Public Water Supplies -
Drinking Water Protection Concerns for Quality & Quantity

Name	County	Watershed (HUC 10)	Subwatershed (HUC 12)	WHP Plan	DWSMA Vulnerability	Drinking Water Protection Concerns
High potential contaminant risk - Focus on potential land use contaminant sources that may impact water quality						
Morris	Stevens	Middle Pomme de Terre	City of Morris-Pomme de Terre River	yes/ 2018 undergoing amendment	Variable (very high, high, low)	Low levels of nitrates in groundwater, storm water infiltration basins should be located outside of DWSMA. Land use is a concern as DWSMA extends beyond city limits. Prioritize the sealing of unused wells in DWSMA and old public water supply wells.
Appleton	Swift	Lower Pomme De Terre River	Pomme de Terre River	yes/ 2018 undergoing amendment	Variable (high, moderate, low)	Low levels of nitrates in groundwater, storm water infiltration basins should be located outside of DWSMA. Land use is a concern as DWSMA extends beyond city limits. Prioritize the sealing of unused wells in DWSMA and old public water supply wells.
Barrett	Grant	Middle Pomme de Terre	Barrett Lake-Pomme de Terre River	yes/ 2018 undergoing amendment	Variable (high, moderate, low)	Low levels of nitrates in groundwater, storm water infiltration basins should be located outside of DWSMA. Land use is a concern as DWSMA extends beyond city limits. Prioritize the sealing of unused wells in DWSMA and old public water supply wells.
Low potential contaminant risk - Focus on sealing of unused wells and old public water supply wells (funding available from MDH)						
Morris	Stevens	Middle Pomme de Terre	City of Morris-Pomme de Terre River	yes/ 2018 undergoing amendment	Low (DWSMA portion in watershed)	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Morris	Stevens	Muddy Creek	Muddy Creek	yes/ 2018 undergoing amendment	Low (DWSMA portion in watershed)	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.

Barrett	Grant	Middle Pomme de Terre	Pomme de Terre Lake-Pomme de Terre River	yes/ 2018 undergoing amendment	Low (DWSMA portion in watershed)	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Elbow Lake	Grant	Middle Pomme de Terre	Barrett Lake-Pomme de Terre River	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Elbow Lake	Grant	Middle Pomme de Terre	Pomme de Terre Lake-Pomme de Terre River	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Chokio	Stevens	Muddy Creek	Headwaters Muddy Creek	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Donnelly	Stevens	Muddy Creek	Harstad Slough	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Ashby	Grant	Pelican Creek	Pelican Creek	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Ashby	Grant	Pelican Creek	Pelican Lake	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Dalton	Otter Tail	Upper Pomme de Terre River	Rose Lake-Pomme de Terre River	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Dalton	Otter Tail	Upper Pomme de Terre River	Tenmile Lake-Pomme de Terre River	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.
Underwood	Otter Tail	Upper Pomme de Terre River	Stalker Lake	yes	Low	DWSMA extends beyond city limits. Prioritize the sealing of unused wells in the DWSMA and old public water supply wells.

0 Non Municipal PWS

Acronyms:

SWCA=Surface Water Contribution Area

DWSMA=Drinking Water Supply Management Area

WHP=Wellhead Protection Plan