WELLHEAD PROTECTION PLAN FOR THE CITY OF REDWOOD FALLS

PART 2

PREPARED FOR:

CITY OF REDWOOD FALLS, MINNESOTA

February 2010 (Revised August 2010)

PREPARED BY:

Liesch Companies

Minneapolis • Chicago • Los Angeles • Madison • Milwaukee • Phoenix

Wellhead Protection Plan Part II
Redwood Falls, Minnesota

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FEBRUARY 2010
(REVISED AUGUST 2010)

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PUBLIC WATER SUPPLY PROFILE

PUBLIC WATER SUPPLY

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GENERAL INFORMATION

The following table lists the common well name used by the City and the corresponding Minnesota Department of Health Unique Well Number.

Common Name	**Unique Well Number**
Well 1	209660
Well 2	455796
Well 3	403955
Well 5	403995
Ramsey	241414

Size of Population Served: 5,500

County: Redwood

DOCUMENTATION LIST

STEP	DATE PERFORMED
Scoping Meeting 2 Held (4720.5340, subp. 1)	May 20, 2008
Scoping 2 Decision Notice Received (4720.5340, subp. 2)	June 5, 2008
Remaining Portion of Plan Submitted to Local Units of Government (LUGs) (4720.5350)	June 26, 2009
Review Received From Local Units of Government (4720.5350, subp. 2)	July 31, 2009
Review Comments Considered (4720.5350, subp. 3)	August 15, 2009
Public Hearing Conducted (4720.5350, subp.4)	August 18, 2009
Remaining Portion WHP Plan Submitted (4720.5360, subp. 1)	February 10, 2010
Final WHP Plan Review Received (4720.5360, subp. 4)	

EXECUTIVE SUMMARY

This portion of the wellhead protection (WHP) plan for Redwood Falls includes:

- the results of the Potential Contaminant Source Inventory,
- the Potential Contaminant Source Management Strategy,
- the Emergency/Alternative Water Supply Contingency Plan, and
- the Wellhead Protection Program Evaluation Plan.

Part 1 of the wellhead protection plan presented the 1) delineation of the wellhead protection area (WHPA) and the drinking water supply management area (DWSMA) and 2) the vulnerability assessments for the system's wells and the aquifers within the DWSMA. Part 1 of the WHP plan was submitted to the Minnesota Department of Health (MDH) and approved on February 21, 2008. The boundaries of the DWSMA are shown on **Figure 1** in **Appendix A**.

The vulnerability assessment for the public water supply system's wells indicates that the wells are not vulnerable to contamination based on the information that documents the construction of each well. The vulnerability assessment for the aquifers within the DWSMA was performed using available information and indicates that the aquifers used by the system are not considered to be vulnerable to contamination because they are covered by fine-grained geologic materials that hydraulically separates (confines) the aquifers from surface water and provides some protection from activities at the land surface.

Due to slightly elevated tritium concentrations (an indication of relatively recent recharge to the aquifer system) identified in Well 5 and the Ramsey Well, the DWSMA vulnerability was raised to "Moderate Vulnerability" from "Low Vulnerability". Potential contaminant sources for Moderately Vulnerable aquifers include wells, above ground and underground storage tanks larger than 1100 gallons, reported spills and releases, and chemical storage or preparation areas. **Table 1** in **Appendix B** lists the number of potential contaminant sources by type that have been identified in the DWSMA. These potential contaminant sources are also shown on **Figure 2.**

The information and data contained in Sections 1.0 to 4.0 of this part of the WHP Plan (hereafter referred to as Plan) support the approaches taken to address potential contamination sources that have been identified as potentially affecting the aquifers used by the public water supply. The reader is encouraged to concentrate attention on Sections 1.0 to 4.0 in order to better understand why a particular management strategy is included in Section 5.0.

In Section 1.0, the data elements required by the Minnesota Department of Health (MDH) in the Scoping 2 Decision Notice are addressed, as well as the data's degree of reliability. Pertinent data elements include information about the geology, water quality and water quantity. The data elements and information supplied in Part 1 of the WHP Plan are the basis for the assessment that the aquifer providing drinking water for this system has the potential to become contaminated due to the presence of leaking storage tanks, chemical storage or mixing areas, spills, potential contamination sites and other wells that penetrate the same aquifers.

Section 2.0 addresses the possible impacts that changes in the physical environment, land use, and water resources may have on the public water supply. No significant changes are anticipated within the

next ten-year period and the City of Redwood Falls has considered the support necessary to implement its wellhead protection plan.

The problems and opportunities concerning land use issues relating to the aquifer, well water and the DWSMA, and those issues identified at public meetings, are addressed in Section 3.0. The limited number of identified potential contaminant sources other than wells, the large amount of cultivated land within the DWSMA and the good quality of water currently produced by the City's wells leaves only two major concerns: 1) other wells located within the DWSMA that could become pathways for contamination to enter the aquifers; and 2) potential contamination from feedlots and chemical storage/mixing areas.

The drinking water protection goals that the public water supplier (PWS) would like to achieve with this plan are listed in Section 4.0. In essence, the PWS would like to 1) maintain or improve the current drinking water quality, 2) increase public awareness of groundwater protection issues, 3) protect the aquifers, and 4) collect data to support future efforts in wellhead protection planning.

The objectives and action plans for managing the potential sources of contamination are contained in Section 5.0. Since virtually all of the DWSMA is located outside of the Redwood Falls city limits, Redwood Falls has no direct governmental authority over the DWSMA. This will require Redwood Falls to work with township, county and state government to implement any institutional controls for protection of the DWSMA. Actions aimed toward educating the general public about groundwater issues, gathering information about other wells and collecting data relevant to wellhead protection planning are the generally the items that the City of Redwood Falls can implement on its own behalf.

Section 6.0 contains a guide to evaluate the implementation of the identified management strategies in Section 5.0. The wellhead protection program for Redwood Falls will be evaluated on a two year basis prior to its budgeting process.

Finally, a Water Supply Emergency Management and Conservation Plan has been approved by the Minnesota Department of Natural Resources (DNR). This plan, addresses the possibility that the water supply system is interrupted due to either emergency situations or drought. This plan fulfills the requirement for a contingency strategy in Section 7.0.

1.0 DATA ELEMENTS AND ASSESSMENTS (4720.5200)

In this section of the Wellhead Protection Plan (WHP) for Redwood Falls, the data elements and their assessment is addressed as required by Minnesota Rules Chapter 4720.5200.

1.1 PHYSICAL ENVIRONMENT DATA ELEMENTS

1.1.1 Precipitation

This data element does not apply because there is not a direct hydraulic connection between surface waters and the aquifer serving this water supply system.

1.1.2 Geology and Hydrogeology

This data element is required for and is presented in the first part of the WHP Plan. The following recommendations are presented regarding the collection of geologic information over the time this plan remains in effect:

1. At present, Wells 1, 2 and 3 have not been tested for tritium content. It is recommended that the MDH conduct tritium sampling at these three wells so that the degree of vulnerability can be verified.

2. As Redwood Falls continues to operate, maintain and expand its water supply system, information from any newly identified wells located near and within the Drinking Water Supply Management Area (DWSMA) should be collected. Data concerning the geology, static and pumping water levels and any hydraulic testing should be collected and compiled for use in future model adjustments and calibrations. Any pumping test procedures conducted at existing or future wells should also include detailed water level measurements at available wells to facilitate calculation of aquifer parameters.

1.1.3 Soils

This data element does not apply because there is not a direct hydraulic connection between surface waters and the aquifer serving this water supply system.

1.1.4 Water Resources

This data element does not apply because there is not a direct hydraulic connection between surface waters and the aquifer serving this water supply system.

1.2 LAND USE DATA ELEMENTS

The land use data elements that require consideration are presented in this section. As required in the second scoping letter, current land use and public utility services are addressed.

1.2.1 Land Use

The tax parcel data in GIS format was obtained from Redwood County and is illustrated on the Tax Parcel map included in **Appendix D**. Plat maps showing the boundaries of land parcels within the DWSMA along with the property owners and residents have also been included in **Appendix D**. As a result of the work conducted in Part 1, the DWSMA for this public water supply has been determined to be moderately vulnerable. A listing of the potential contaminant sources inventoried within the DWSMA is included on **Table 2** in **Appendix B** and a map showing their locations is provided as **Figure 2** in **Appendix A**. Other information relating to land use consisting of a comprehensive land-use map and a zoning map for the area located within the DWSMA was specifically required to be included with this plan. This information can be helpful to decision-makers during future planning efforts by keeping WHP and groundwater quality issues in mind. Copies of the Redwood County zoning and land use maps have been included in **Appendix G**.

1.2.2 Public Utility Services

Public utilities are shown on **Figure 3** including existing roadways and drainage ditches. The DWSMA lies beyond City limits and is not served by City storm or sanitary sewers. City water service is generally not available within the DWSMA although a limited number of homes are connected to the City's raw water line. It is believed that the private wells formerly used to supply water to these homes have been sealed.

Transportation routes within the DWSMA include light duty gravel roads and US Highway 71 which runs in a north-south direction through a portion of the DWSMA.

Redwood County Judicial Ditch No. 52 and No. 22 also run through a portion of the DWSMA as shown on **Figure 3**.

There are no known oil or gas pipelines within the DWSMA.

Records of well construction, maintenance and use of wells within the DWSMA have been reviewed and used in preparation of both parts of the WHP plan.

1.3 WATER QUANTITY DATA ELEMENTS

As specified in the second scoping letter only the consideration of groundwater quantity elements are required. Consideration of surface water quantity is not required.

1.3.1 Groundwater Quantity

Other than the Redwood Falls public supply wells, there are currently two other high-capacity wells covered by the Minnesota Department of Natural Resources (DNR) Water Appropriation Permit program adjacent to or within the DWSMA. These two wells are permitted for irrigation, however, reported use has been minimal in recent years. Potential withdrawal from these wells was considered during delineation of the DWSMA. City of Redwood Falls and DNR staff have indicated that no well interference complaints involving the City's wells have been received. The DNR currently has two permanent observation wells located within the DWSMA that have been monitored periodically since installation in 1967. Measurement of these wells indicates an overall water level fluctuation of approximately 10 feet in the aquifer utilized by the City. This fluctuation appears to correlate with long term precipitation patterns during the monitoring period. Operation, maintenance and monitoring of the City water supply indicates that adequate volumes of water are available at the levels currently allowed under the City's Water Appropriation Permit.

1.4 WATER QUALITY DATA ELEMENTS

As specified in the second scoping letter only the consideration of groundwater quality elements are required. Consideration of surface water quantity is not required.

1.4.1 Groundwater Quality

Water quality data for the Redwood Falls water supply includes routine monitoring for potential contaminants at the wells and within the distribution system. This monitoring has not revealed the occurrence of contamination in the City's source of groundwater supply. The MDH has conducted tritium analysis at one of the City supply wells which has indicated that at least a portion of the water recharging the City wells is of relatively recent origin. Monitoring of the City's supply and distribution system will continue and the City will work with MDH to conduct additional tritium testing at the remaining City wells.

The City is not aware of additional water quality information form tracer studies or areas of known contamination within the DWSMA. In addition, the inventory of potential contaminant sources has not revealed the occurrence of spills, leaks or other sources of known potential contamination.

1.5 ASSESSMENT OF DATA ELEMENTS

The following sections are presented to summarize the assessment of the previously discussed data elements, the demands of the water system and their potential for causing significant impacts to the source aquifer in the DWSMA.

1.5.1 Use of the Wells

General information describing this public water supply system is presented in the Source Water Assessment (SWA) found in Part 1 of this Plan. See Part 1 of this Plan for documentation regarding how the following delineation criteria were applied to determine the boundaries of the WHPA:

1. Time of Travel – 10 years
2. Flow Boundaries – geologic information
3. Daily Volume – provided by the system
4. Groundwater Flow Field – delineation method
5. Aquifer Transmissivity – aquifer tests

1.5.2 Quality and Quantity of Water Supplying the Public Water Supply Wells

Water quality monitoring results indicate no evidence of contamination from 1) human origin, such as fuel and fuel break-down products, pesticides, or commercial fertilizer, or 2) naturally occurring contaminants such as arsenic and boron. At this time there are no known problems relate to water quality and contamination of the City's water supply. The City has enjoyed water quality that meets or exceeds standards in the Federal Safe Drinking Water Act.

1.5.3 Groundwater Uses in the DWSMA

Groundwater uses within the DWSMA include the City of Redwood Falls public water supply, crop irrigation and potable water supply through private wells for several farms, homes and two businesses.

The management strategies selected and documented in Chapter 5.0 of this Plan focus on activities that have the most potential to impact the aquifers that Redwood Falls utilizes for drinking water supply. Generally, for a moderately vulnerable system, wells, storage tanks, spills, chemical storage and preparation areas are the potential contaminant sources that are mostly likely to impact aquifers. **Table 1** in **Appendix B** is a summary of the Potential Contaminant Source Inventory (PCSI) that provides a listing of the types and numbers of potential contaminant sources that have been inventoried in the Redwood Falls DWSMA. **Table 1** lists a total of 37 potential contaminant sources including 31 wells, three animal

feedlots, one cemetery, one agricultural chemical storage and preparation area and one bridge. The inventory did not reveal the presence of regulated storage tanks and no spills or releases of potential contaminants have been reported in the DWSMA. **Figure 2** shows the location of the items contained on the PCSI list.

2.0 IMPACT OF CHANGES ON THE PUBLIC WATER SUPPLY WELLS (4720.5220)

This section provides a discussion of the changes anticipated in the future and their probable influence upon Redwood Falls' water supply.

2.1 CHANGES IDENTIFIED IN:

2.1.1 Physical Environment

Large-scale changes in the physical environment within the DWSMA are not anticipated during the 10-year period that this Plan is in effect. The geologic conditions that protect the water supply are such that changes in physical environment should have little to no effect on the aquifer within the DWSMA.

2.1.2 Land Use

Land uses in the DWSMA will likely have little impact on the aquifer unless additional wells are developed or water demand is increased to the point that additional loss in hydraulic head occurs within the aquifers used by the public water supply. Constructing additional wells into the aquifer may increase potential points of entry, or draw naturally-occurring or human-caused contaminants towards the public water supply wells.

2.1.3 Surface Water

There appears to be no direct hydraulic connection between surface water and the aquifers used by the public water supply (PWS) system as a drinking water source. Therefore, any changes to the conditions of surface waters will have little or no impact on the quality or quantity of the PWS.

2.1.4 Groundwater

The public water supply wells have historically provided groundwater of excellent quality and quantity. As of the date of Plan approval, the PWS system does not anticipate a large increase in water use or is not aware of any such water use expansions in the DWSMA or immediately adjacent area.

2.2 IMPACT OF CHANGES

2.2.1 Water Use

The PWS does not anticipate that its water use will increase by more than five-percent during the first five years that this Plan is in effect. The PWS will re-evaluate its water-use patterns for the second five-year interval as part of its normal planning activities and incorporate these results into future revisions of this Plan.

2.2.2 Influence of Existing Water and Land Government Programs and Regulation

Recognizing that the Minnesota Department of Health (MDH) is the authority for permitting wells, there may be existing land use ordinances by local governments that could be revised in the future to address new private wells within the DWSMA. However, there is no discussion or intention at this time of requiring additional regulation related to managing wells within the system's DWSMA. The Redwood County Environmental Office has identified the sealing of unused/unsealed wells in the system's DWSMA as a priority item and will assist with addressing additional unused/unsealed wells as they are identified. As of 2008, the minimum statewide construction standard is now the Minnesota State Building Code. The Minnesota State Building Code prohibits the connection of new wells to a plumbing system so that it interconnects with the public water supply distribution system. A copy of a Minnesota Department of Labor & Industry announcement of the application of the building code to the entire state and a copy of the section of the Minnesota Building Code pertaining to cross connections is included in **Appendix G**.

2.2.3 Administrative, Technical and Financial Considerations

The system assembled a Wellhead Protection Team early in the process of developing this Plan. Many of the activities during the planning process have been accomplished through efforts of this group, with assistance from studies provided by other units of government. For this Plan to be effective:

1. The PWS will need to raise public awareness of the issues affecting its drinking water supply through public educational programs.
2. Administrative duties will remain with the Wellhead Protection Manager, who will report to the governing authority, coordinate implementation of wellhead protection management action plans, and conduct regular meetings.
3. Support of Wellhead Protection activities will be provided by funds from the public water supply's operating fund for miscellaneous uses, as well as a WHP budget line item to be created during the next budgeting process. Other sources of funding or in-kind services to

help achieve the goals set forth in this Plan's Chapter 4 include 1) the Redwood County Soil and Water Conservation District office can assist with the sealing of unused wells through their well sealing cost-share programs; 2) the Minnesota Department of Health assisting with determining the correct measures for sealing unused wells, constructing new wells, and requiring the sealing of unused wells if this becomes necessary; and 3) the Minnesota Rural Water Association providing technical assistance during the wellhead protection implementation phase.

4. The costs of implementing Wellhead Protection activities will be evaluated on an biennial basis to determine whether the original cost estimates match 1) the scope of the management practices identified in this part of the Plan; 2) changes in the status of the wells listed in Table 2, and the PSCI data list; and 3) actual costs related to proper sealing of unused/unsealed wells. The system will discuss changes in plan implementation costs with MDH to determine the availability of state or federal funding for offsetting increased costs to plan implementation.

3.0 ISSUES, PROBLEMS AND OPPORTUNITIES (4720.5320)

3.1 LAND USE ISSUES, PROBLEMS AND OPPORTUNITIES RELATED TO:

3.1.1 The Aquifers

The moderately vulnerable aquifers, identified as the source of the system's water supply, are afforded some protection from activities at the land surface, with the exception of other wells that penetrate the overlying confining layer to the same aquifer.

3.1.2 The Well Water

The wellhead protection plan is primarily concerned with other water supply wells located within the DWSMA. The potential contaminant source inventory indicated the types and numbers of wells listed on **Table 1** in **Appendix B**. Some of these wells may extend into the aquifers that supply the system with its water. These wells, if not maintained properly, could convey pollutants to the aquifer.

The placement of additional high-capacity wells, increased pumping from existing wells, or significant changes in current groundwater appropriations within the DWSMA may have an impact on 1) groundwater availability to all users, or 2) the configuration of the DWSMA.

3.1.3 The DWSMA

The principal concern regarding potential contamination sources within the DWSMA are related to long-term management of water wells, environmental bore holes, observation wells and to prevent new sources of potential contamination. The public water supply has limited legal capabilities to regulate well construction and sealing, or other contaminant sources, in the DWSMA beyond its legal authority. Second, changes in land use that increase pumping from the aquifer used by the system's wells need to be assessed for possible impacts on water availability and quality. Finally, the system has no regulatory authority over water appropriations and must rely on the State of Minnesota to address issues and concerns related to pumping.

3.2 IDENTIFICATION OF:

3.2.1 Problems and Opportunities Disclosed at Public Meetings and Written Comment

At the beginning of the planning process other Local Units of Government (LUGs) were identified and informed that the system was beginning the wellhead protection planning process. Each unit of government was also sent a copy of the system's delineated WHPA and DWSMA and vulnerability assessment for the wells and DWSMA. In order to expedite the receipt of

comments from the LUGs, each LUG was contacted and requested to comment by July 31, 2009 (30 days after receiving the "Draft" of the Part 2 plan). All LUGs responded and a copy of each response is included in **Appendix H**.

Redwood Falls Township made clear that they do not receive any information concerning new wells or the abandonment of existing wells within the township boundaries. Paxton Township expressed concerns that property values within the DWSMA may be negatively affected by the following:

1) Limitation of fertilizer use in relationship to surrounding properties outside the DWSMA

2) Limitation on spreading of manure or fertilizer

3) Elimination of ability to sell manure rights to livestock producers

4) Possibility of eliminating the drilling of personal wells within the DWSMA

5) The elimination of septic systems and drain fields (including cluster systems)

6) Property could be prevented from being developed into residential properties or being sold to certain businesses

7) Existing feedlots could not be expanded or new ones added

No concerns were identified by the other LUGs. The City of Redwood Falls is aware of the expressed concerns and will consider them in light of any public health concerns that arise within the DWSMA. Following is a brief discussion of the stated concerns in relationship to the Redwood Falls Wellhead Protection Plan as it is currently written:

1) There is no planed action to limit chemical fertilizer or manure use within the DWSMA other than to educate the property owners so that no more fertilizer than necessary is applied. This is also in the landowners' best economic interest.

2) There is no planed action to limit spreading of fertilizer other than education to minimize spreading to the most cost effective application rates.

3) There are no planned actions to limit the sale of manure rights to livestock producers.

4) There are no planed actions to eliminate the installation of private wells within the DWSMA

5) There is no planned action to limit septic systems or drain fields other than to identify any Class V wells and to follow current state and federal regulations for septic systems and Class V injection wells.

6) There is no planned action to limit residential development or business use within the DWSMA; however, the Redwood Falls Planning Commission and Engineering Department, and other local units of government are being asked to consider wellhead protection and source water protection as part of future planning, zoning, and permitting issues.

7) There is no planned action to limit feedlot expansion or the creation of new feedlots, however, the Minnesota Pollution Control Agency (MPCA) requires the permitting of feedlots and feedlot expansion. The MPCA will review new applications for feedlot permits within the DWSMA and may take wellhead protection into consideration before granting any feedlot permit.

The general public was also given opportunities to participate in the planning process and to comment at the Public Informational Meeting and Public Hearing. No comments or concerns from the general public were expressed at those meetings.

3.2.2 Data Elements

The state's Wellhead Protection Rule requires that existing information be utilized in developing the initial Wellhead Protection Plan. Much of the data collected and utilized to delineate the system's WHPAs and DWSMA, and to determine the vulnerability of the aquifers to possible contamination comes from small-scale or regional studies. There is a limited amount of subsurface information available to define local groundwater flow conditions and the groundwater chemistry of the aquifers within the DWSMA. The direction of groundwater flow was evaluated to address concerns that the current amount of subsurface information does not permit an unquestioned determination of local groundwater flow conditions toward the system's water supply wells. As a result, delineation of the WHPA represents a composite of capture zones generated by varying aquifer properties.

The system plans to utilize public education opportunities, both existing and proposed, to address potential contamination of the aquifer by other wells. Additionally, the system will work in cooperation with the Redwood County Soil and Water Conservation District office to utilize the well sealing cost-share program currently available. As of 2008, the State Building Code has become the minimum construction standard throughout the state of Minnesota. The State Building Code prohibits the cross connection between privately owned wells and the community water supply distribution system. The City will set a high priority on well sealing for existing

wells that are unused or not properly maintained. The City will include any wells that are apparently unused or improperly sealed in the contaminant source inventory updates.

The system plans to continue to focus its data collection efforts on the following activities throughout the ten-year life of this plan:

1. The public water supply will work with MDH to identify new wells that are constructed within the DWSMA and to verify their locations;
2. The system will inform MDH when any system well is repaired so that information regarding well construction, static water level, and pumping capacity can be verified or updated;
3. The MDH will collect a water sample from at least one well after the first five years of plan implementation and have the water analyzed for tritium content using an enriched analytical technique. Testing results will be used to document that the rate of recharge to the aquifer is not increasing and that it is still hydraulically isolated from surface water.
4. The system and MDH will inform each other of additional high-capacity wells that are to be constructed within the DWSMA or within a mile of its boundary. MDH will determine with the DNR whether the applicant for a water appropriations permit needs to conduct an aquifer test to evaluate the long-term pumping impacts on the system's water supply wells;
5. Inform MDH of any wells that are to be properly sealed within the DWSMA so that the Minnesota Geological Survey can be notified and determine whether it can run a borehole geophysical survey of the wells; and
6. Inform MDH if the system is considering the construction of a new water supply well so that MDH can determine whether any potential sites for the new well present concerns over well interference or the movement of existing contamination plumes toward existing system or private water supply wells.

3.2.3 Status and Adequacy of Official Controls, Plans, and Other Local, State and Federal Programs on Water and Land Use

Adequate regulatory control is available to assist in maintaining control over the DWSMA. Redwood Falls will maintain contact with MPCA, MDH, DNR and MDA concerning regulated industries, spills, permitting etc. The City will also work with Redwood County to identify potential sources of negative impacts to the DWSMA aquifers. Redwood Falls will continue to educate the public with respect to wellhead and source water protection.

4.0 WELLHEAD PROTECTION GOALS (4720.5240)

In accordance with Minnesota Rules chapter 4720.5240, this section provides goals for future water and land use and provides a framework for wellhead plan objectives and related issues.

4.1 GOALS

The goals included in this section were developed utilizing information from the data elements, WHPA and DWSMA delineations, vulnerability assessments, the potential contaminant source inventory results, anticipated changes in land and water use and evaluation of identified issues, problems and opportunities.

Redwood Falls has provided a high quality water supply to its residents and businesses and will continue to do so in the future by implementing this wellhead protection plan.

Redwood Falls has identified the following goals for implementation of this Wellhead Protection Plan:

- The City will maintain or improve the current level of municipal water quality in order to meet or exceed state and federal drinking water standards.
- The City will provide and promote activities that protect the source water aquifers. This includes management of potential contaminant sources within the DWSMA and increased public awareness of the Wellhead and Source Water Protection Program and groundwater-related issues.
- The City will provide the ongoing collection of data to support current and future wellhead and source water protection efforts.

These goals will be achieved through the following existing and planned programs:

<u>Potential Contaminant Source Management</u>

- Creation and maintenance of a potential contaminant source inventory.
- Identification of Class V injection well sites in DWSMA
- Tank Management and Spill Response

- Unused well identification and abandonment
- Any other items of concern identified through review of activities within the inner well management zone (200 foot radius of each City production well)

Public Education

- Educate and provide informational materials for well owners
- Provide informational brochures and public meetings
- Include well information on the City's website
- Publication of the City's Drinking Water Consumer Confidence Report
- Include wellhead and source water protection in the City's planning process
- Provide Tank Owners with Educational Material
- Establish Spill Response Educational Program

Continued Data Collection

- Ongoing maintenance of the potential contaminant source data base
- Record static and pumping water levels in the municipal production wells and the City's observation well network
- Collect local geologic and hydrogeologic data
- Assist MDH with isotope analysis

5.0 OBJECTIVES AND PLANS OF ACTION (4720.5250)

In accordance with Minnesota Rules chapter 4720.5250, this section discusses the objectives, plans of action and goals for Redwood Falls' Wellhead and Source Water Protection Program.

5.1 ESTABLISHING PRIORITIES

The source water aquifers that provides groundwater for Redwood Falls' public water supply has been determined to be moderately vulnerable to contamination. Sources of potential contaminants within the DWSMA include improperly constructed and unused wells, Class V wells, known Potential Contamination Sites, spills and chemical storage of preparation areas.

The following priorities have been established to protect the City's water supply based on aquifer vulnerability and the work conducted to date on the source of drinking water supply and the potential contaminant source inventory. The top priority for protection of the City's source of drinking water supply is identification of unused or improperly sealed wells or any other wells that may compromise the integrity of the clayey confining layer that overlies the aquifer. The second priority is management of the indentified wells and the third priority is management of any other identified potential contaminant sources. These top priorities are followed by public education, land use planning and data collection all of which are intended to support the top three priorities. Finally, a regional transportation corridor is present in a portion of the DWSMA and steps should be taken to minimize the potential impact to the aquifer from spills and/or construction and maintenance activities.

1) Potential Contaminant Source Database

2) Well Management

3) Tanks, Spills and Storage Areas

4) Public Education

5) Integrating WHP Into Land Use Planning

6) Data Collection

7) Transportation Corridors

5.2 POTENTIAL CONTAMINANT SOURCE MANAGEMENT

The following plans of action involve ongoing identification and managing of potential contaminant sources identified in the DWSMA through the Potential Contaminant Source inventory (Section 2.2.2). These include wells, Class V wells and chemical storage areas.

5.2.1 Potential Contaminant Source Database

This plan includes a comprehensive database of potential sources of contamination within the DWSMA. The initial Potential Contaminant Source Inventory (PCSI) provided by MDH has been supplemented with additional data collected in the field, on air photos, from the City, Redwood County and, with regards to wells and water use, from the Minnesota Geological Survey (DNR) Well Inventory Database and the Department of Natural Resources (DNR) Water Appropriation Permit program. This information is summarized on the tables and figures contained in **Appendices A** and **B.**

This item is intended to periodically update the inventory so that newly identified potential sources of contamination can be effectively managed.

PCSI Database Maintenance

Action: Information will be added to the WHP Potential Contaminant Source Inventory, as listed in Scoping 2 Decision Notice Attachment, as additional potential contaminant sources are located within the DWSMA through working with the MPCA, MDH, MDNR, MGS and Redwood County.

Source of Action: Redwood Falls Public Works Department

Cooperators: MPCA, MDH, MDNR, MGS and Redwood County staff

Time Frame: Potential Contaminant Source Inventory has been created and is summarized in this part of the WHP plan. The database will be maintained on an annual basis and as additional information becomes available to the City. The DWSMA will be reviewed at least annually for new potential contaminant sources and for changes in the status of known sources already in the inventory.

Estimated Cost: City staff time

Goals Achieved: The database will provide documentation and a tracking system for potential sources of contamination within the DWSMA. The database will also serve as a contact list for distribution of educational materials. For example, providing information

on maintenance and sealing of private water supply wells to known well owners within the DWSMA.

5.2.2 Well Management

Management of Class V Injection Wells

Class V Injection Wells, particularly those associated with automotive waste disposal or other industrial operations, can serve to introduce potential contaminants into the subsurface. Proper management of Class V wells in the DWSMA to minimize the impact of any release to the environment would include sealing and remediation of known Class V wells. Presently Class V Injection Wells are regulated by the United States Environmental Protection Agency (USEPA) and they are the only agency currently identifying Class V wells in the state. The USEPA web site indicates that approximately 1,600 Class V wells exist in the state of Minnesota (2008 inventory) which can include a wide variety of devices ranging from large drain fields to "dry wells" and other waste disposal systems. The PCSI currently does not include any Class V injection wells and none are known to exist within the DWSMA.

Action: The City will cooperate with the USEPA in identifying Class V injection wells within the DWSMA and in notifying the landowner regarding his/her obligation to contact USEPA Region 5 Staff.

Source of Action: Redwood Falls Public Works Department

Cooperators: Class V Injection Well owners/ USEPA

Time Frame: To begin upon plan approval and ongoing thereafter

Estimated Cost: City staff time

Goals Achieved: Class V Injection wells will be identified, and where appropriate, the owners will be contacted and notified they are located within a wellhead protection area. Class V well owners will have the opportunity to take appropriate action and meet federal regulations.

Inner Well Management Zone

The inner well management zone is the area within a 200 foot radius of the public water supply well. Due to the proximity of the public supply well activities within this area have the potential to impact water quality at the well and require special management.

Action: The City will maintain the setbacks, or isolation distances, from potential sources of contamination as stated in the Water Well Construction Code for all City wells.

Source of Action: City

Cooperators: None

Time Frame: Ongoing

Estimated Cost: City Staff time

Goal Achieved: Protect wells from potential sources of contamination and maintain compliance with public water supply requirements.

Promote the Sealing of Unused, Poorly Maintained, Damaged or Abandoned wells

Improperly sealed or abandoned wells have been identified as a significant risk to water quality within the DWSMA. These wells can short circuit the natural protection afforded to the aquifer by penetrating the overlying clayey confining layers.

Action: Promote the sealing of unused, poorly maintained, damaged or abandoned wells. The City will provide educational materials to well owners within the DWSMA that promote proper care, maintenance or abandonment of a well.

Source of Action: City of Redwood Falls/Redwood County SWCD

Cooperators: Redwood County SWCD staff

Time Frame: Ongoing, beginning upon plan approval

Estimated Cost: City and County staff time

Goals Achieved: Eliminate potential pathways for pollutants to reach the source aquifer.

High Capacity Wells

The construction and operation of new high capacity wells within and or near the DWSMA have the potential to affect the City's WHP areas and corresponding DWSMA. The construction and operation of new high capacity wells could also adversely affect the quantity of water available to the City.

Action: City and MDH staff will coordinate with the MDNR Water Appropriations Program to identify new high-capacity wells in the area and/or significant changes to

groundwater appropriations for existing high-capacity wells. This information will be assessed by MDH staff to determine whether the proposed pumping will change the boundaries of the WHPAs and corresponding DWSMA for the City's municipal wells.

Source of Action: Redwood Falls Public Utilities Department, MDH and MDNR

Cooperators: High Capacity Well owners, MDH and DNR

Time Frame: Commencing with Wellhead Protection Plan approval and ongoing thereafter

Estimated Cost: City staff time

Goal Achieved: Identify new high capacity wells and/or increased appropriations in the area to determine whether the new appropriations will affect the City's Wellhead Protection Plan.

5.2.3 Tanks, Chemical Storage Areas and Spills

Above Ground and Below Ground Storage Tanks

Releases from aboveground and underground storage tanks within the DWSMA may impact the source water aquifers. Proper management of tanks within the DWSMA will minimize the potential for releases to the environment and could prevent contamination of the source water aquifer. The PCSI currently does not include any tanks and none are known to exist within the DWSMA.

Action: The City will send notices to owners of tanks within the DWSMA regarding state and federal tank regulations and the importance of early leak detection and reporting.

Source of Action: Redwood Falls Public Works and Fire Departments

Cooperators: MPCA and tank owners

Time Frame: To begin upon plan approval and annually thereafter

Estimated Cost: City staff time (Assumes that the MPCA will provide informational brochures free of charge)

Goals Achieved: Tank owners will have documentation they are located within the DWSMA and notification of their obligations to meet state and federal regulations.

Management of Leaking Above Ground or Underground Storage Tanks

Releases from underground storage tanks impact soil and may contaminate groundwater. Historical releases, even those that have been remediated and have received closure from the MPCA may leave residual soil or groundwater contamination, which may potentially impact the source water aquifer.

Action: The City of Redwood Falls will periodically request and review copies of leaking underground storage tank files from the MPCA for any open leaking underground storage tank sites within the DWSMA. The MPCA records provide information concerning the status and history of the sites and may indicate future risks to the source water aquifer. At present, no leak sites have been identified within the DWSMA. If identified, the City will inform tank owners that they are in a DWSMA.

The City will request to be copied on correspondence regarding leaking underground storage tank sites within the DWSMA.

Source of Action: Redwood Falls Public Works and Fire departments

Cooperators: MPCA project managers responsible for underground storage tank leak sites within, and adjacent to, the DWSMA.

Time Frame: Underground storage tank leak site files to be requested from the MPCA upon plan approval and on at least a yearly basis thereafter.

Estimated Costs: Costs will include copying fees from the MPCA and City staff time

Goals Achieved: The City will be in an informed position to assess risks to the source water aquifer from leaking underground storage tanks and take additional corrective action if necessary.

Chemical Storage or Preparation Area

Releases from chemical storage or chemical preparation areas within the DWSMA may impact the source water aquifers. Proper management of these areas within the DWSMA will minimize the potential for releases into the environment and could prevent contamination of the source water aquifer.

Action: The City will send notices to owners and operators of chemical storage or preparation areas notifying them that they area located within the DWSMA. Owners of these areas will also be asked to notify the City of spills releases of chemicals to the environment.

Source of Action: Redwood Falls Public Works and Fire Departments

Cooperators: MPCA, MDA and tank owners

Time Frame: To begin upon plan approval and annually thereafter

Estimated Cost: City staff time

Goals Achieved: Owners and operators of chemical storage and preparation areas will have documentation they are located within the DWSMA and notification of their obligation to meet state and federal regulations.

Spill Response

Spills of fuels and various chemicals within the DWSMA have the potential to impact water quality at the City's wells. While the City is not equipped to clean up large quantities of spilled materials the City does operate a hazardous materials response vehicle and does provide emergency response services in the DWSMA. Depending on the nature of a potential spill Public works may be able to assist in identifying potential contaminant pathways and may be able to limit potential impacts by taking specific wells out of service during an emergency.

Action: The City Public Works Department will provide a DWSMA map and contact list to the Fire Department and make arrangements to contact public works and the water operator in the event of a spill within the DWSMA.

Source of Action: Redwood Falls Public Works Department

Cooperators: Redwood Falls Fire Department, County Sheriff, State Highway Patrol, and MPCA

Time Frame: In-place

Estimated Costs: No new or additional costs

Goal Achieved: Timely notification of spills so that public works and the water operator can assist in responding to potentially limit impacts to the source and aquifer to protect public health.

5.2.4 Public Education

Public education has been identified as an important component of the City's WHP plan. This section will focus on informing the owners and operators of potential contaminant sources of

their location within the DWSMA and on educating the public of the importance of the City's WHP ands source water protection program.

Letter & Informational Brochure

Action: The City will prepare a letter for delivery for residents and businesses within the DWSMA. The letter will inform them of their location within the DWSMA and provide sources for additional information including the City's website, newsletter and other sources of information on wellhead and source water protection. The letter will also include educational materials from available through MPCA, MDH and MRWA.

Source of Action: Redwood Falls Public Works Department

Cooperators: MDH, MRWA and City

Time Frame: Begin upon plan approval, then annually

Estimated Cost: City Staff time, postage, materials and copying

Goal Achieved: The public will become aware of the City's wellhead and source water protection program and steps that everyone can take to protect the City's public water supply.

City Website

Action: The City will add information to the City website concerning the City's WHP and source water protection program. The site will include items from the City's WHP plan, contact information and links to other sources of information.

Source of Action: Redwood Falls Public Works Department.

Cooperators: None

Time Frame: Initiate upon plan approval, then update periodically

Estimated Cost: No new or additional costs

Goal Achieved Public awareness of federal water quality standards and the overall quality of the City's public water supply.

Drinking Water Consumer Confidence Report

Action: Redwood Falls will continue to publish the *Drinking Water Consumer Confidence* Report to area residents

Source of Action: Redwood Falls Public Works Department.

Cooperators: None

Time Frame: Ongoing Federal regulations require annual distribution.

Estimated Cost: No new or additional costs

Goal Achieved Public awareness of federal water quality standards and the overall quality of the City's public water supply.

5.2.5 Include Wellhead and Source Water Protection into the City's Planning Process

Action: The City will include a review of its wellhead and source water protection plan in its normal zoning and planning review process. Report copies will be provided to the City's Planning Department, Planning Commission, Redwood Falls and Paxton Townships and Redwood County.

Source of Action: Redwood Falls Planning Commission and Engineering Departments

Cooperators: Redwood Falls Planning Commission and Engineering Departments, Redwood and Paxton Townships and Redwood County

Time Frame: Distribute copies upon plan approval and provide updates as needed thereafter.

Estimated Cost: No new or additional costs

Goal Achieved: Consideration of wellhead and source water protection efforts in future planning, zoning and permitting processes

5.2.6 Data Collection

The City will continue to collect data related to the local geologic and hydrogeologic conditions in order to provide accurate data for future revisions of the City's Wellhead Protection Program.

Monitoring Static and Pumping Levels in Municipal Wells

Action: The City will continue to monitor and record static and pumping levels in the municipal wells on a monthly basis.

Source of Action: Redwood Falls Public Works Department

Cooperators: None

Time Frame: In place, the City is currently monitoring groundwater levels

Estimated Cost: No new or additional costs

Goal Achieved: Monitor water levels over time to correlate with water use and climate trends. Information can be used to monitor well efficiency and to identify potential problems related to declining water levels.

Geologic and Hydrogeologic Information

Action: The City will obtain geologic and hydrogeologic information and data as it becomes available.

Source of Action: Redwood Falls Public Works Department

Cooperators: Agencies, firms or well drilling companies conducting geologic or hydrogeologic investigations

Time Frame: Beginning upon plan approval and ongoing thereafter

Estimated Cost: No new or additional costs

Goal Achieved: More accurate data will be available to delineate future or revised WHPAs and the DWSMA for existing and proposed municipal wells. Also may be used to more accurately assess DWSMA vulnerability.

Isotope Analysis

Action: The City will continue to cooperate with the MDH in collection of groundwater samples for ^{2}H, ^{18}O and tritium analyses.

Source of Action: Redwood Falls Public Works Department and MDH

Cooperators: MDH and City

Time Frame: When notified by MDH

Estimated Costs: Laboratory costs paid by MDH. City staff time assisting the MDH in collecting the samples

Goal Achieved: Determining the age and composition of groundwater captured by the municipal wells will assist in determining the vulnerability of the wells and source water aquifers.

5.2.7 Transportation Corridors

Review of Improvement Projects

Action: The City will continue to review new transportation construction projects within the DWSMA and will emphasize safe working conditions and overall public safety in these projects. The City will pay particular attention the best management practices to prevent potential contamination from construction vehicle fueling, storage and handling of hazardous materials during construction.

Source of Action: Redwood Falls Planning Commission and Engineering Department

Cooperators: Redwood Falls and Paxton Townships, Redwood County, MPCA, MDH, Minnesota Department of Transportation (MDOT), USEPA, United States Department of Transportation (USDOT) and Office of Safety and Health Administration (OSHA)

Time Frame: In-place

Estimated Costs: No new or additional costs

Goal Achieved: Minimize the potential for serious transportation accidents and promote safe working and operating conditions. This will lower the potential for spills during construction and due to transportation accidents.

6.0 EVALUATION PROGRAM (4720.5279)

In order to ensure a successful wellhead and source water protection plan, the plan's effectiveness must be routinely evaluated to determine whether the plan is meeting its goals. Redwood Falls' Wellhead and Source Water Protection Plan includes monitoring and evaluation measures to ensure implementation and determine effectiveness of its management strategies proposed in Section 5 of this report.

This Plan's evaluation activities include the following:

- Track the implementation of the objectives, activities, and tasks covered in Section 5 of this report;
- Determine the effectiveness of specific management strategies corresponding to the protection of the City's municipal water supply;
- Identify potential changes to the current management strategies in order to improve the overall effectiveness, and;
- Determine the adequacy of financial resources and staff availability to perform and implement the upcoming year's management strategies.

Cooperation between the City of Redwood Falls and the MDH regarding annual monitoring of the City's municipal water supply will continue in order to ensure that the management strategies mentioned previously in this Plan are producing the desired effects. If the Plan's effects are not positive, the problems will be identified and addressed.

The Redwood Falls Commission will be presented a biennial report by the Redwood Falls Wellhead Protection Manager. This report will include a summary of the implementation of the management strategies and Plan objectives, as well as the water quality data from the City's municipal supply. The report will utilize the MDH Wellhead Protection Program Evaluation form included in **Appendix F**. A copy of the report will be retained by the City and one will be sent to the MDH Source Water Protection Unit in St. Paul. The intended purpose of the biennial reporting is to compile a comprehensive review of the implementation of the source management strategies for use in revision of the City's Plan. The Plan must be revised at a minimum of once every 10 years, in compliance with the Wellhead Protection Rules.

7.0 ALTERNATIVE WATER SUPPLY - CONTINGENCY STRATEGY (4720.5280)

The Redwood Falls Water Supply Emergency Management and Conservation Plan is complete and has been approved by the DNR. A copy of the complete plan, together with the DNR approval letter, is included in **Appendix I.**

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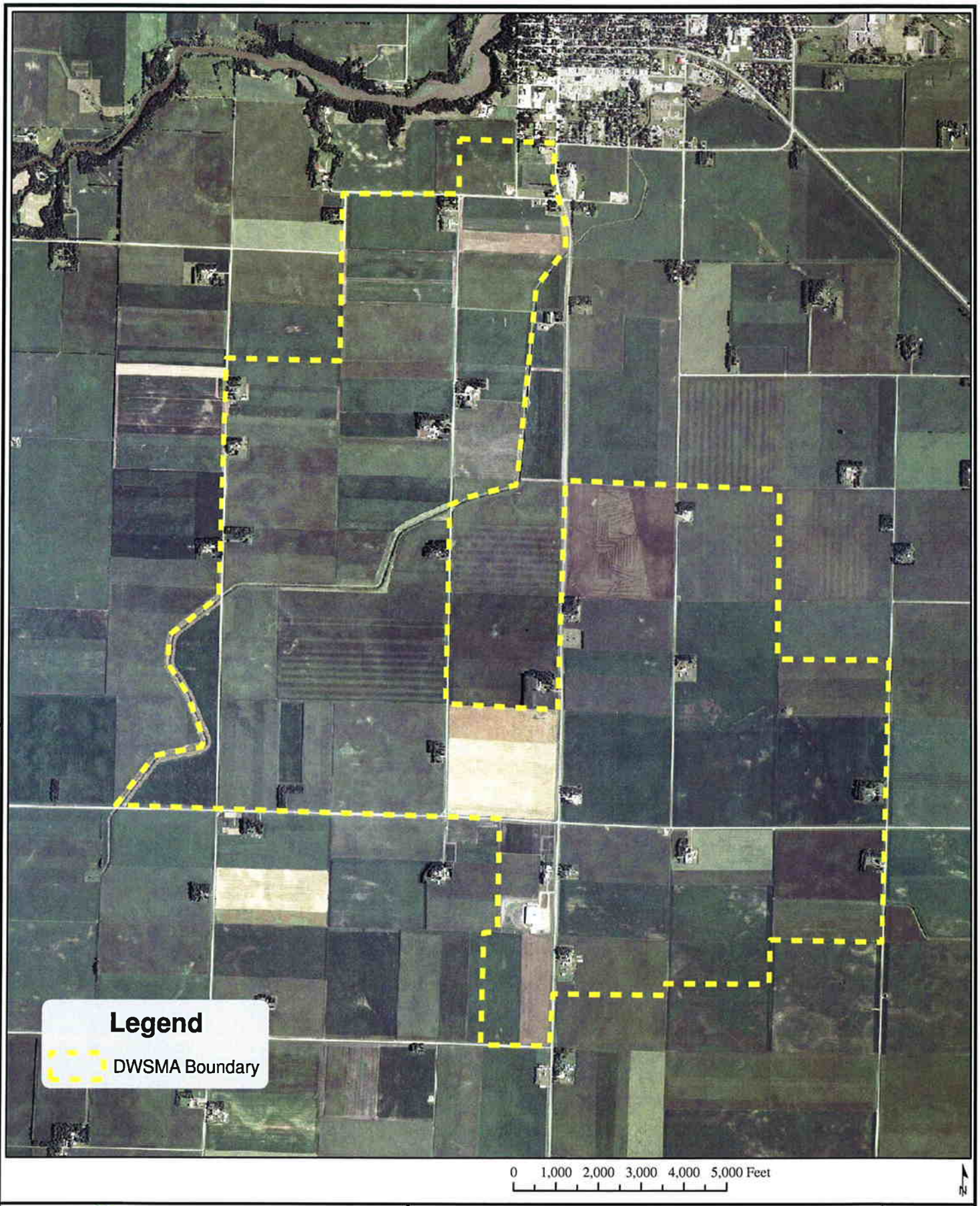
APPENDIX A



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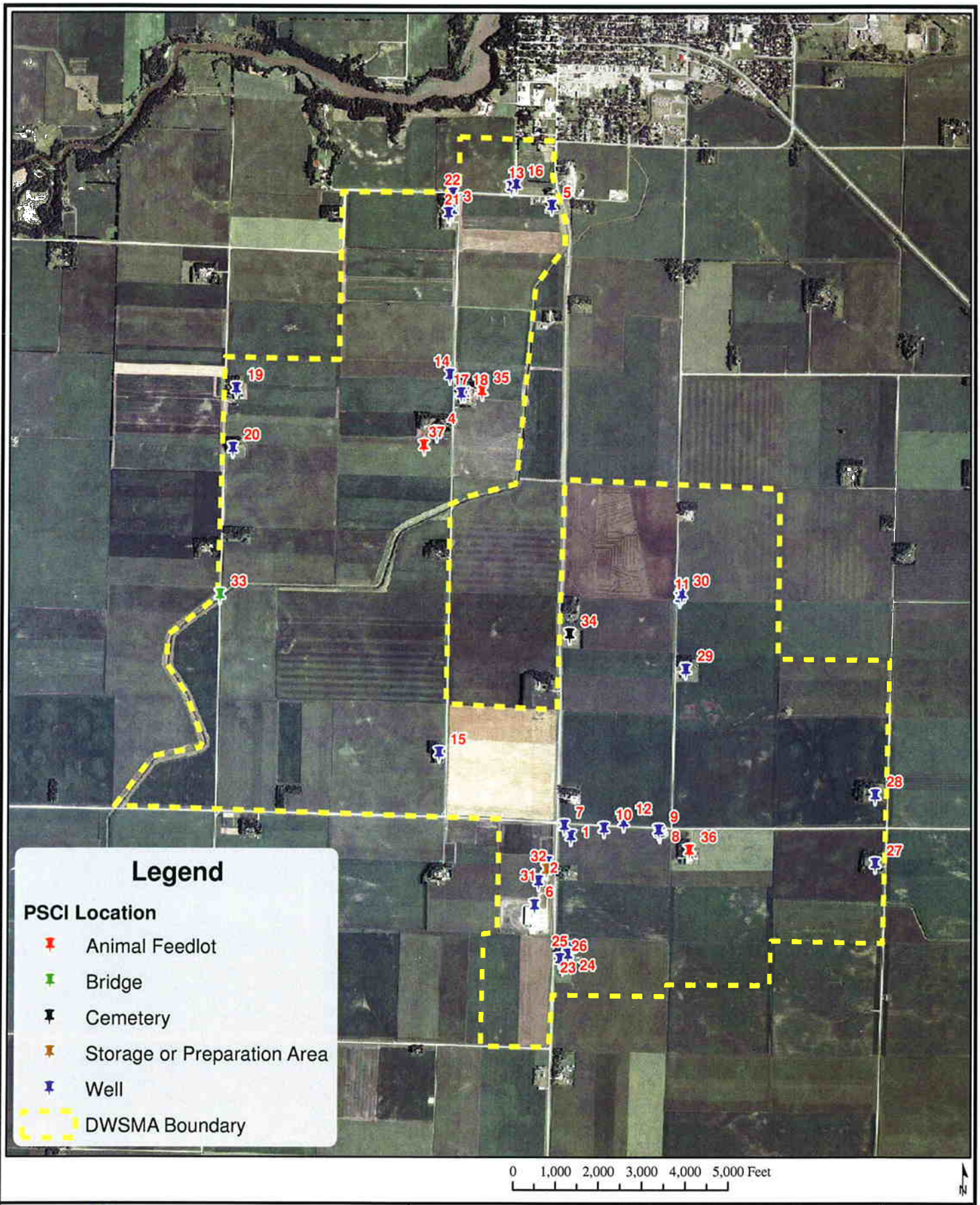
Redwood Falls - Wellhead Protection Program	Feb 10
DWSMA Location Map	Figure 1



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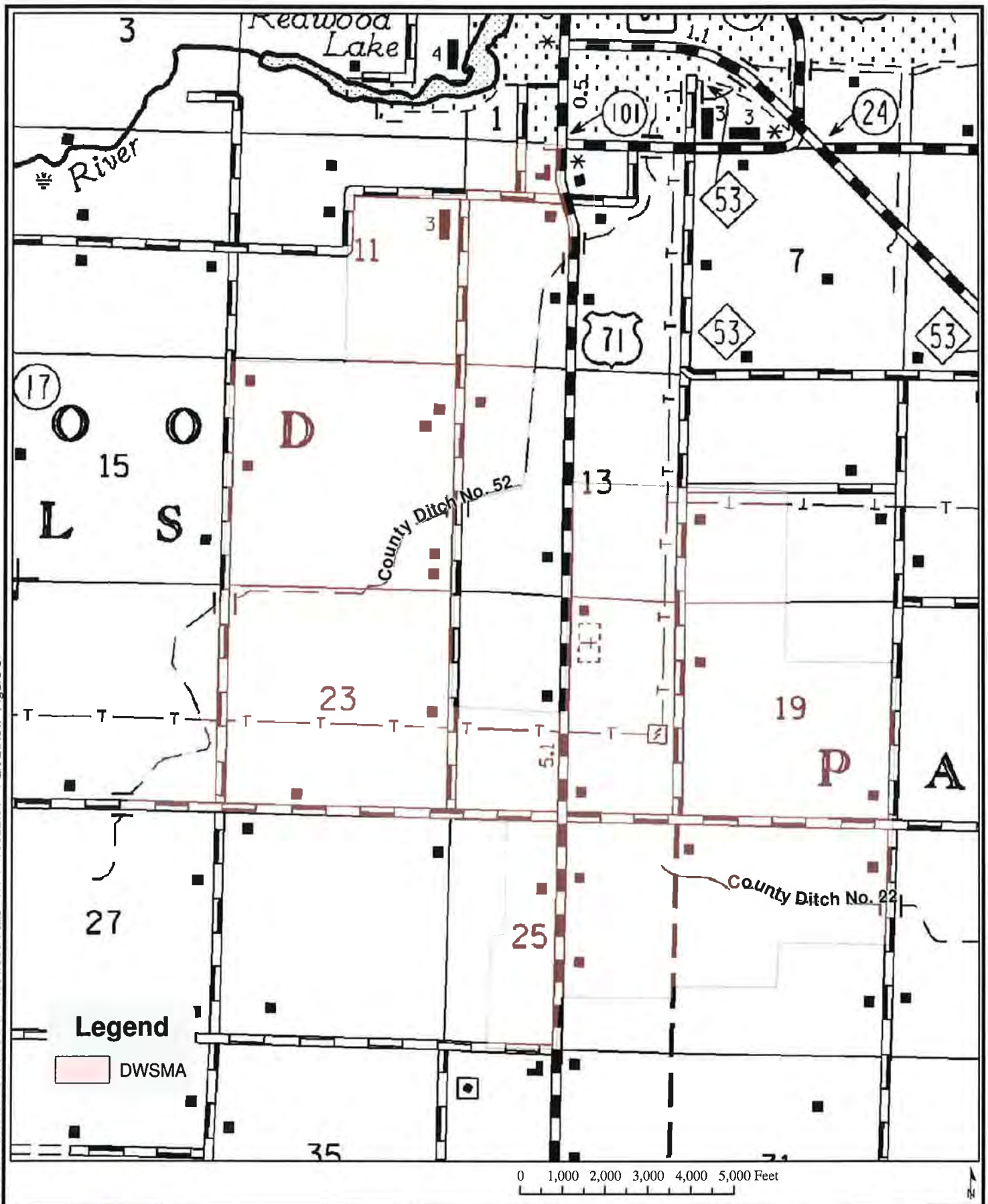
Redwood Falls - Wellhead Protection Program	Feb 10
PSCI Location Map	Figure 2



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Redwood Falls - Wellhead Protection Program	Feb 10
DWSMA Transportation Corridor and County Ditch System	Figure 3

APPENDIX B

Table 1: Types of Potential Contaminant Sources Identified in the DWSMA

PCSI SOURCE TYPE	NUMBER IDENTIFIED IN DWSMA	DATABASE / PCS_CODE	MAT_CODE
POTENTIAL CLASS V WELL	0	ADW, DISWLL, INDW, CVLCC, INJWLL, CVMVW, RWLL, RIWLL, SPDW, SWI	
UNDERGROUND STORAGE TANK > 1100 Gal	0	LUST, UST	
ABOVE GROUND STORAGE TANK > 1100 Gal	0	AST	
SPILLS	0	SPL	
POTENTIAL CONTAMINANT SITES	0	PCS, BMS, DPLP, NPL, HWIC, NFRAP, PLP, CERCL, VIC	
SOLID WASTE MANAGEMENT SITES	0	SWMS	
STORAGE AND PREPARATION AREAS	1	STOR	A050
IRRIGATION WELLS	2	SWUDS	
PUBLIC SUPPLY WELLS	7	PWS	
DOMESTIC WELLS	23	WEL	
PIPELINE FACILITY	Not Available	PLFAC	
ANIMAL FEEDLOT	3	AFL, FEED	W000
CEMETARY	1	CMTY	
BRIDGE	1	BDG	

Table 2: Potential Contaminant Sources Identified in DWSMA

MAP_ID	PCSI_NAME	PCSI_TYPE	TOWNSHIP	TOWN_DIR	RANGE	RANGE_DIR	SECT	SUBSECT	FAC_CODE	PCS_CODE	MAT_CODE
1	Well in Well House	Well	112	N	36	W	25	ABB	9000	WEL	
2	Monsanto SWUDS Well	Well	112	N	36	W	25	BDA	9000	WEL	
3	Ball, G.	Well	112	N	36	W	11	ADAADA	1100-01	WEL	
4	Boots, Frank	Well	112	N	36	W	14	ADADB	1100-01	WEL	
5	Krueger, Wayne	Well	112	N	36	W	12	BDA	1100-01	WEL	
6	Monsanto Company	Well	112	N	36	W	25	BDDB	9000	WEL	
7	Redwood Falls 1	Well	112	N	36	W	25	ABBBBD	4000	WEL	
8	Redwood Falls 2 (old)	Well	112	N	36	W	25	AAAAAC	4000	WEL	
9	Redwood Falls 2	Well	112	N	36	W	25	AAAA	4000	WEL	
10	Redwood Falls 3	Well	112	N	36	W	25	ABAA	4000	WEL	
11	Redwood Falls 5	Well	112	N	35	W	18	CCCC	4000	WEL	
12	RF Obwell 64002	Well	112	N	36	W	24	DDC	4000	WEL	
13	Redwood Falls So. Ramsey	Well	112	N	36	W	12	BBD	4000	WEL	
14	RF Obwell 64001	Well	112	N	36	W	14	AAA	4000	WEL	
15	Stocker, Sean	Well	112	N	36	W	23	ADD	1100-01	WEL	
16	Tersteeg, Jim	Well	112	N	36	W	12	BBD	1100-01	WEL	
17	Tiffany, J.c.	Well	112	N	36	W	13	BBBCCC	1100-01	WEL	
18	Tiffany, John	Well	112	N	36	W	13	BBB	1100-01	WEL	
19	31797 Lazer Av	Well	112	N	36	W	14	BBB	1100-01	WEL	
20	31535 Lazer Av	Well	112	N	36	W	14	BCC	1100-01	WEL	
21	Old Well Not Used	Well	112	N	36	W	11	AAA	1100-01	WEL	
22	32724 Liberty Ave.	Well	112	N	36	W	11	AAA	1100-01	WEL	
23	29439 HWY 71	Well	112	N	36	W	25	CBB	1100-01	WEL	
24	29439 HWY 71	Well	112	N	36	W	25	CBB	1100-01	WEL	
25	29439 HWY 71	Well	112	N	36	W	25	CBB	1100-01	WEL	
26	29439 HWY 71	Well	112	N	36	W	25	CBB	1100-01	WEL	
27	Drilled Well	Well	112	N	35	W	30	AAA	1100-01	WEL	
28	Drilled Well	Well	112	N	35	W	19	DDD	1100-01	WEL	
29	Old and New Wells	Well	112	N	35	W	19	BBB	1100-01	WEL	
30	2" Owell at RF-5	Well	112	N	35	W	18	CCCC	4000	WEL	
31	Monsanto Research Well	Well	112	N	36	W	25	AAA	9000	WEL	
32	Monsanto	Storage or preparation area	112	N	36	W	25	AAA	9000	STOR	A050
33	Co Ditch # 52	Bridge	112	N	36	W	23	AAA	4000	BDG	
34	Crestlawn Memorial Garden	Cemetery	112	N	36	W	24	ABC	5000	CMTY	
35	John and Bruce Tiffany Farm	Animal feedlot	112	N	36	W	13	BBB	9000	AFL	
36	Mark Parker Farm	Animal feedlot	112	N	35	W	30	BBB	9000	AFL	
37	Prairie Winds	Animal feedlot	112	N	36	W	14	ADD	9000	AFL	

APPENDIX C

Protecting, maintaining and improving the health of all Minnesotans

June 5, 2008

Mr. Keith Muetzel
Administrator - City of Redwood Falls
P.O. Box 10
Redwood Falls, Minnesota 56283-0010

Dear Mr. Muetzel:

Subject: Second Scoping Decision Notice

This letter provides notice of the results of the second scoping meeting held with you, Tom Stough (City), and Dave Lowell (Liesch and Associates) on May 20, 2008, at Redwood Falls City Hall regarding Part II of your wellhead protection (WHP) plan. During the meeting, we discussed 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 that were discussed at the meeting.

Redwood Falls has met the requirements to distribute copies of the first part of the wellhead protection plan to local units of government and hold an informational meeting for the public. The city of Redwood Falls will have until August 20, 2009, 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. We understand Liesch and Associates will develop a draft of the remainder of the wellhead protection plan. 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@health.state.mn.us or by phone at 507/389-6597.

Sincerely,

Terry L. Bovee

Terry L. Bovee, Principal Planner
Environmental Health Division
410 Jackson Street - Suite 500
Mankato, Minnesota 56001

TLB:kmc
Enclosures
cc: John Blomme, Minnesota Department of Health, Marshall District Office
Chuck Regan, Minnesota Pollution Control Agency
Brian Williams, Minnesota Department of Agriculture
Laurel Reeves, Minnesota Department of Natural Resources
Eric Mohring, Board of Water and Soil Resources
Tom Stough, Water Superintendent, City of Redwood Falls
Dave Lowell, Liesch and Associates

SCOPING 2 DECISION NOTICE

➢ **Remainder of the Wellhead Protection Plan**

Name of Public Water Supply:		**Date:**
City of Redwood Falls	PWSID 1640008	June 5, 2008
Name of the Wellhead Protection Manager:		
Mr. Keith Muetzel, Administrator		
Address:	**City:**	**Zip:**
333 South Washington Street P.O. Box 10	Redwood Falls	56283-0010
Unique Well Numbers:		**Phone:**
209660 (Well 1), 455796 (Well 2), 403955 (Well 3), 403995 (Well 5), 241414 (Well So. Ramsey)		507/637-5755

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 the geology of the area(s).

N	R	S	
	X		Existing surface geophysical studies.

Technical Assistance Comments: The management of all the Drinking Water Supply Management Area(s) must reflect the geology of the area(s).

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

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

Moderate 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:

1) a list of specific potential sources of contamination from State data bases. At least 25 of each type of potential contaminant source must be inventoried, location verified, and mapped during plan development. The remaining sources, if any, must be inventoried, location verified and mapped during the first year of plan implementation; and
2) 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 the land uses and potential sources of contamination listed above.

N	R	S	An existing comprehensive land-use map.
	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	Existing zoning map.
	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.

PUBLIC UTILITY SERVICES

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

Technical Assistance Comments: It is not necessary to include a map of your public water supply system in your plan if you feel it would pose a threat to the security of your system. An existing map of the storm sewers and sanitary sewers in the Drinking Water Supply Management Area(s) must be included in the wellhead protection plan and must also be submitted to MDH as part of the approval.

N	R	S	An existing map of the gas and oil pipelines used by gas and oil suppliers.
	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 or list of public drainage systems.
	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 record of construction, maintenance, and use of the public water supply well 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 this data element.

N	R	S	An existing description of known well interference problems and water use conflicts.
	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 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	
X			An existing map or list of the state water quality management classification for each stream and lake.

Technical Assistance Comments:

N	R	S	
X			An existing summary of lake and stream water quality monitoring data, including: 1. bacteriological contamination indicators; 2. inorganic chemicals; 3. organic chemicals; 4. sedimentation; 5. dissolved oxygen; and 6. excessive growth or deficiency of aquatic plants.

Technical Assistance Comments:

GROUNDWATER QUALITY

N	R	S	
	X		An existing summary of water quality data, including: 1. bacteriological contamination indicators; 2. inorganic chemicals; and 3. organic chemicals.

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		An existing list of water chemistry and isotopic data from wells, springs, or other groundwater sampling points.

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		An existing report of groundwater tracer studies.

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		An existing site study and well water analysis of known areas of groundwater contamination.

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		An existing property audit identifying contamination.

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

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

Scoping 2 Decision Notice Attachment

Potential Contaminant Source Inventory Requirements

Moderately Vulnerable DWSMA

The following current and historical potential contaminant sources and related codes, materials and related codes, and facility designation and related codes are required to be included in the potential contaminant source inventory. Each potential contaminant source identified must be assigned a facility designation and related code. In cases where a materials identification is required a materials designation and code must be assigned.

Potential Contaminant Sources (PCS) Material	PCS Codes Material Codes
Above-Ground Storage Tank - Greater than 1100 gallons	AST
Chemicals	C000
Fertilizers	A050
Fuels, gases, and oils	F000
Hazardous substances	C001
Solvents and coatings	S000
Waste	W000
Agricultural Drainage Well (potential Class V)	ADW
Disposal Well (potential Class V)	DISWLL
Industrial Drainage Well (potential Class V)	INDW
Large Capacity Cesspool (potential Class V)	CVLCC
Large Capacity Waste Water Disposal Site (potential Class V)	CVWWD
Leaking Underground Storage Tank	LUST
Misc. Injection Well (potential Class V)	INJWLL
Motor Vehicle Waste Disposal Well (potential Class V)	CVMVW
Pipeline Facility	PLFAC
Potential Contamination Site[1]	PCS
Recharge Well (potential Class V)	RWLL
Reinjection Well (potential Class V)	RIWLL
Solid Waste Management Site	SWMS
Special Drainage Well (potential Class V)	SPDW
Spills	SPL
Storage or Preparation Area	STOR
Chemicals (include RMP facilities here)	C000
Fertilizers	A050
Fuels, gases, and oils	F000
Hazardous substances (include TRIS facilities here)	C001
Solvents and coatings	S000
Waste	W000
Stormwater Injection Well (potential Class V)	SWI

Potential Contaminant Sources (PCS) Material	PCS Codes Material Codes
Suspected Contaminant of Concern	SCC
Chemical	C000
Food, agricultural, and consumer products	A000
Fuels, gases, and oils	F000
Materials and minerals	M000
Pathogens	P000
Solvents and coatings	S000
Waste	W000
Underground Storage Tank	UST
Chemicals	C000
Fertilizers	A050
Fuels, gases, and oils	F000
Hazardous substances	C001
Solvents and coatings	S000
Waste	W000
Wells	WEL

Footnotes:

[1]Potential Contamination Sites (PCS) include the following:

Brownfields (BMS)
Delisted State Superfund Sites (DPLP)
Federal Superfund Sites (NPL)
Hazardous Waste Investigative/cleanup (HWIC)
No Further Remedial Action Planned (NFRAP)
State Superfund Sites (PLP)
Suspected Hazardous Waste Site (CERCL)
Voluntary Investigative Cleanup (VIC)

List of Facility Designations and Codes

Residential

Residential Category Description: includes all establishments offering residence or accommodation, such as homes, apartments, housing for the elderly, hotels, and motels.

Facility Codes and Designations

1100: Private Household **(used unless one of the facility designations listed below apply)**
- **1100-01**: Residence
- **1100-02**: Apartment or condominium
- **1100-03**: Mobile home park

1200: Housing Services for Special Needs

1300: Hotels, Motels, or Other Accommodation Services

Commercial

Commercial Category Description: includes establishments typically associated with commercial land use. Examples include: general sales and service; retail sales and service; automobile sales and service; finance and insurance; business, professional, scientific and technical services; food services, and personal services.

Facility Codes and Designations

2000: General Sales and Service **(used unless one of the facility designations listed below apply)**
- **2100**: Retail sales or service
  - **2110**: Automobile sales or service establishment
    - **2110-01**: Automotive/vehicle repair
    - **2110-02**: Car wash
  - **2114**: Boat or marine craft dealer
    - **2114-01**: Boat services/repair/refinishing
  - **2116**: Gasoline services
  - **2120**: Heavy consumer goods, sales, or service establishments
    - **2120-01**: Furniture repair/refinishing
  - **2122**: Hardware stores and home centers
  - **2123**: Lawn and garden supply establishments
  - **2124**: Department stores, warehouse clubs or superstores
  - **2126**: Lumber yards and building materials
  - **2130**: Durable consumer goods, sales, or service

Industrial

Industrial Category Description: includes manufacturing establishments located in plants, factories or mills and employs power-driven machines and materials handling equipment. Many manufacturing establishments process products of agriculture, forestry, fishing, mining or quarrying.

Facility Codes and Designations

3000: Manufacturing and Wholesale Trade

Transportation, Communication and Utilities

Transportation, Communication, and Utilities Category Description: a catch-all category that includes transportation, communication, and utilities for essential facilities.

Facility Codes and Designations

4000: Transportation, Communication, Information, and Utilities
- **4345:** Sanitary landfill (disposal)
- **4346:** Waste treatment and disposal
  - **4346-01:** Salvage yard
  - **4346-06:** Dump
  - **4346-07:** State closed landfill

Arts, Entertainment and Recreation

Arts, Entertainment and Recreation Category Description: includes establishments that provide services for cultural, entertainment, and recreational activities such as live performances, events, exhibits intended for public viewing, and historical sites.

Facility Codes and Designations

5000: Arts, Entertainment and Recreation

Education, Public Administration, Health Care and other Institutions

Institutional Category Description: a catch-all category that includes education, public administration, health care, and other institutions. Examples include schools of all types, governmental buildings, military installations, public safety facilities, medical clinics and hospitals, other health and human services facilities, religious institutions, and death care services.

Facility Codes and Designations

6000: Education, Public Administration, Health Care, and Other Institutions

Construction

Construction Category Description: includes establishments that build structures or perform additions, alterations, reconstruction, installation and repairs. Examples include excavation contractors, carpentry, concrete contractors, painters, electricians, painters, highway and street construction, and sewer and well drilling.

Facility Codes and Designations

7000: Construction-Related Businesses

Mining and Extractive Uses

Mining and Extractive Uses Category Description: includes establishments that extract natural mineral solids, liquid materials, and gases.

Facility Codes and Designations

8000: Mining and Extraction Establishments

Agriculture and Forestry

Agricultural and Forestry Category description: includes establishments that grow crops, raise animals, harvest timber and harvest fish and other animals from farms, ranches, or natural habitats.

Facility Codes and Designations

9000: Agriculture, Forestry, Fishing, and Hunting

COPY

Protecting, maintaining and improving the health of all Minnesotans

June 18, 2008

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Redwood Falls City Council
c/o Mr. Keith Muetzel, Administrator
333 South Washington Street
Redwood Falls, Minnesota 56283

Dear Council Members:

SUBJECT: Notice of Violation, Failure to Comply with Minnesota Rules, Part 4720.5130, Subparts 3 and 4, City of Redwood Falls, Redwood County, PWS ID No. 1640008

According to our records, the city of Redwood Falls failed to complete their wellhead protection plan by June 7, 2006. We extended this date to April 7, 2008 (see attached copy of our letter to the city). This makes the city out of compliance with the Wellhead Protection Rule (Minnesota Rules, part 4720.5130, subparts 3 and 4).

It is in the best interest of the water consumers, the ownership, and the State of Minnesota to return your drinking water system to an in compliance status. The city is required to submit their final wellhead protection plan (six copies) and a copy of the public hearing minutes that documents the city council approval of the plan to the Minnesota Department of Health no later than August 20, 2009. Failure to comply with the Wellhead Protection Rule by this date will result in additional enforcement action by the Minnesota Department of Health or Office of the Attorney General, which may include fines of up to $10,000.

If you believe our records to be incorrect, please notify us within five days. We will correct our records and rescind this notice of violation.

If you have any questions regarding this rule requirement, please contact Ms. Trudi Witkowski (651/201-4670). If you have any technical questions or need assistance regarding your wellhead protection plan, please contact Mr. Terry Bovee (507/389-6597) of my staff.

Sincerely,

Bruce M. Olsen, Supervisor
Source Water Protection Unit
Environmental Health Division
P.O. Box 64975
St. Paul, Minnesota 55164-0975

BMO:TVW
Enclosure
cc: Mr. Tom Stough, Water/Wastewater Superintendent, City of Redwood Falls
Mr. David Lowell, Liesch Associates, Inc.
Mr. Terry Bovee, Planner, Source Water Protection Unit, Mankato District Office
Mr. John Blomme, Engineer, Community Public Water Supply Unit, Marshall District Office

COPY

Protecting, maintaining and improving the health of all Minnesotans

September 13, 2006

Mr. Keith Meutzel, Administrator
City of Redwood Falls
P.O. Box 10
Redwood Falls, Minnesota 56283-0010

Dear Mr. Meutzel:

This letter is in response to the city's request for an extension of time (dated August 24, 2006) to complete the city of Redwood Falls' wellhead protection plan. According to Minnesota Rules, part 4720.5130, subparts 3 and 4, the time for the completion of your wellhead protection plan has expired on June 7, 2006. This makes the city out of compliance with the Wellhead Protection Rule, but we approve your work plan. Because the city does not meet any of the criteria for granting an extension, they must submit to the Minnesota Department of Health their final wellhead protection plan (six copies) and public hearing minutes no later than April 7, 2008. **Failure to submit the plan by this date will result in a Notice of Violation.**

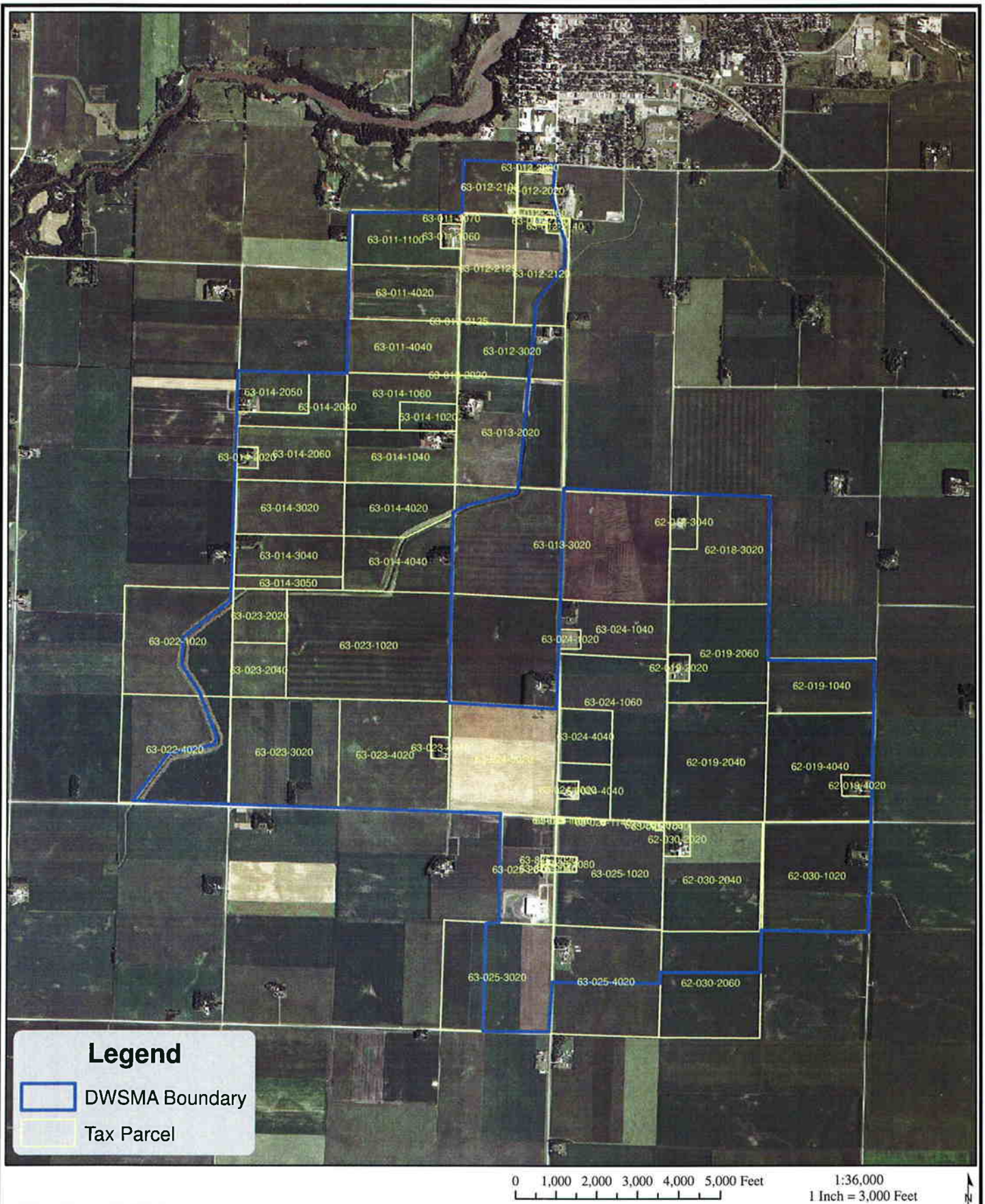
If you have any questions, please contact Mr. Terry Bovee of my staff at (507) 389-6597. Your desire to complete a wellhead protection plan that helps protect the health of your consumers is appreciated and commendable. We look forward to working with you to complete your plan.

Sincerely,

Bruce M. Olsen, Supervisor
Source Water Protection Unit
Environmental Health Division
P.O. Box 64975
St. Paul, Minnesota 55164-0975

BMO:TVW
cc: Mr. Ronald G. Mannz, Engineer, City of Redwood Falls
Mr. Tom Stough, Water/Wastewater Superintendent, City of Redwood Falls
Mr. Terry Bovee, Planner, Source Water Protection Unit, Mankato District Office
Mr. John Blomme, Engineer, Community Public Water Supply Unit, Marshall District Office

APPENDIX D



C:\GIS PROJECTS\ws\10922 - Redwood Falls WHPA\10922.01 - Part 2\ Figure 4

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Hydrogeologists • Engineers • Environmental Scientists

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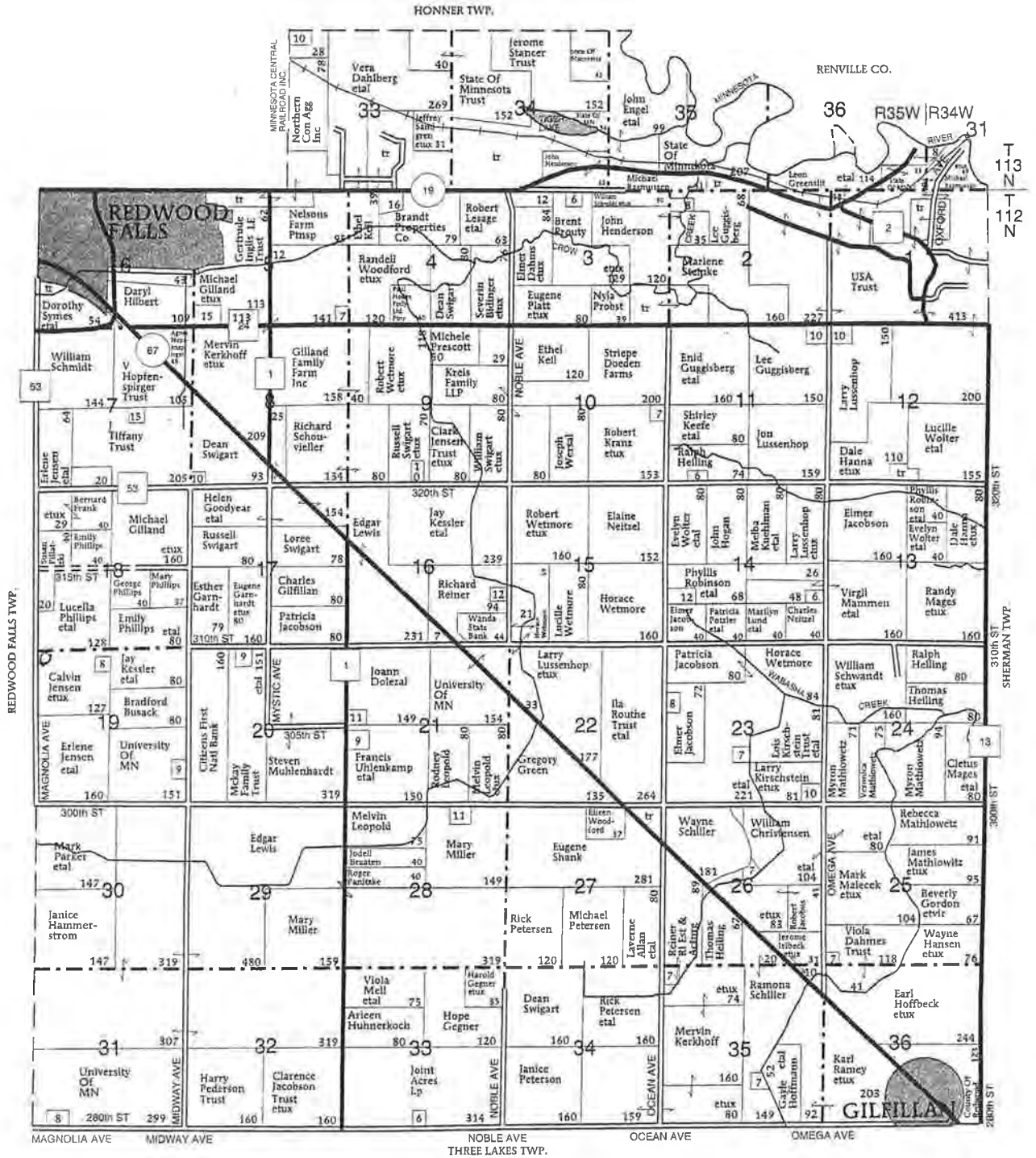
Redwood Falls - Wellhead Protection Program

Tax Parcel Map

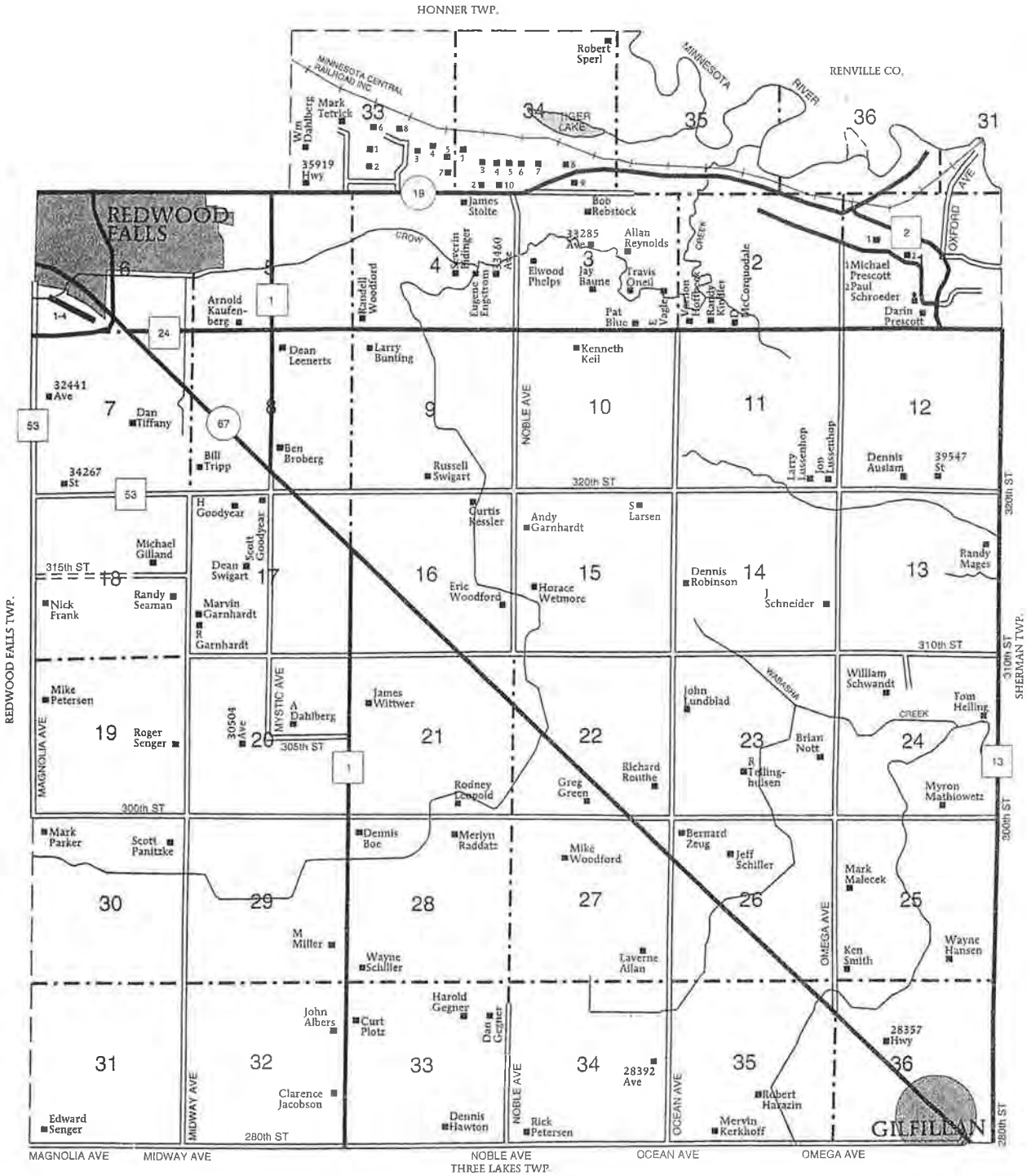
T-112-113-N PAXTON PLAT R-34-35-W

(Landowners)



T-112-113-N PAXTON DIRECTORY R-34-35-W

(Residents - Owners or Renters)



PAXTON TOWNSHIP

SECTION 6

1 33385 MAGNOLIA AVE
2 Draeger, Erwin
3 Neuenburg, B.
4 34069 COUNTY HIGHWAY 101

SECTION 33N

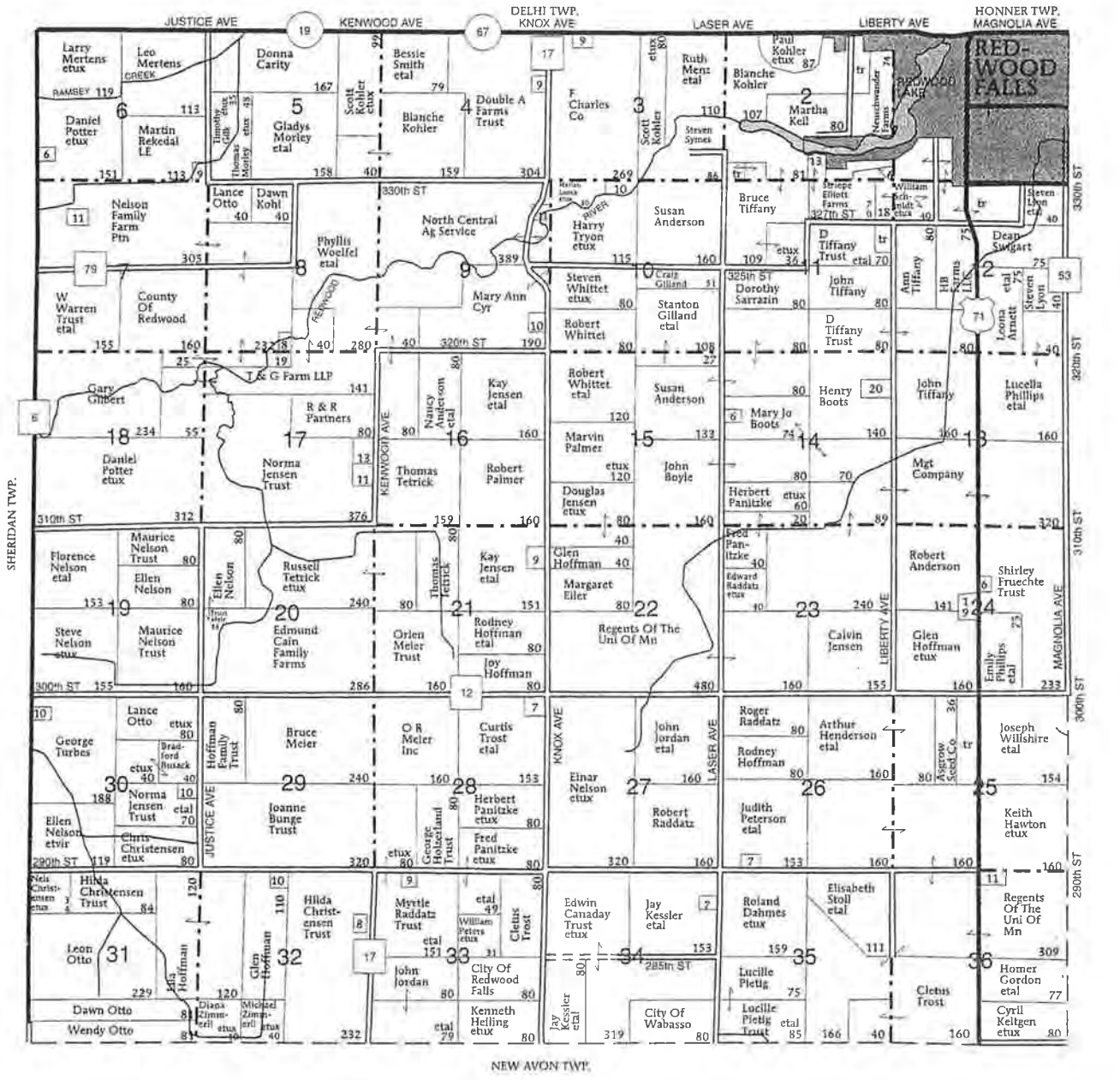
1 34412 WAPASHA TRL
2 Houle, Doug
3 Morey, S
4 Madsen, Glen
5 Oberloh, Dennis
6 Rolloff, Ronald
7 Edwards, Jim
8 Sandgren, Jeff

SECTION 34N

1 Nieland, James
2 Hammers, Greg
3 Walz, Raymond
4 Meyer, Ernie
5 Okins Jr, Donald
6 Okins, Larry
7 Anderson, Steve
8 37105 US HIGHWAY 71
9 Henderson, John
10 Fenske, Gene

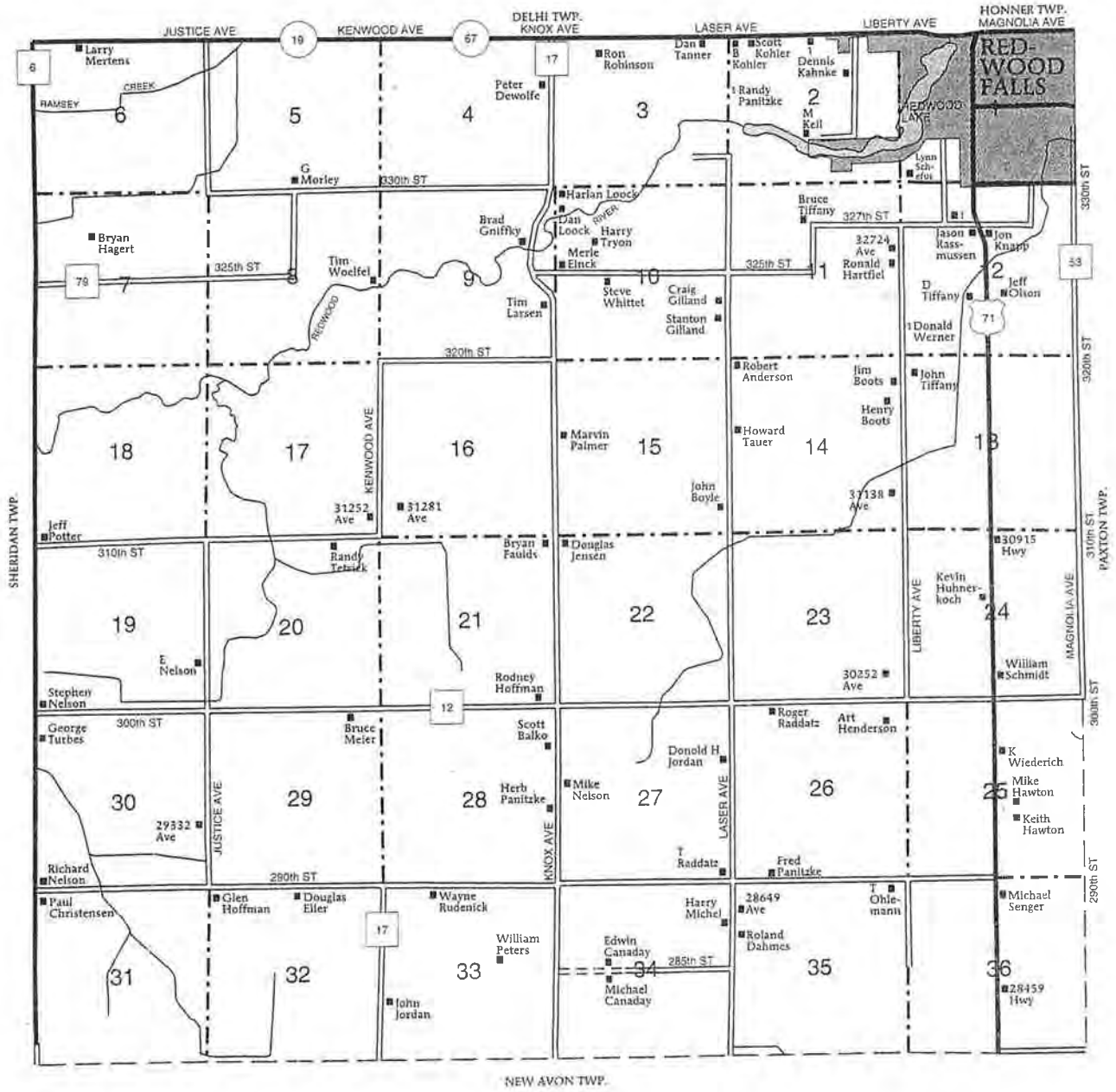
T-112-N REDWOOD FALLS PLAT R-36-W

(Landowners)



T-112-N REDWOOD FALLS DIRECTORY R-36-W

(Residents - Owners or Renters)



APPENDIX E

FIELD VERIFIED PCSI DATA FILES

MAP_ID	PSCI_NAME	PSCI_TYPE	X_UTM	Y_UTM	PSCI_VERIF	Well_Log	UNIQ_No	SWUDS	PWS	DEL_ADDR	CITY	STATE_ABB	ZIP5_CODE	TOWNSHIP	TOWN_DIR	RANGE	RANGE_DIR	SECT	SUBSECT	FAC_CODE	PCS_CODE	MAT_CODE
1	Well in Well House	Well	331711	4927842	V	No	0	570051-1	0		Redwood Falls	MN	56283	112	N	36	W	25	ABB	9000	WEL	
2	Monsanto SWUDS Well	Well	331482	4927520	V	Yes	0	894280-1	0		Redwood Falls	MN	56283	112	N	36	W	25	BDA	9000	WEL	
3	Ball, G.	Well	330847	4932295	V	Yes	209642		0	32678 Liberty Av	Redwood Falls	MN	56283	112	N	36	W	11	ADAADA	1100-01	WEL	
4	Boots, Frank	Well	330739	4930713	V	Yes	209643		0	31678 Liberty Av	Redwood Falls	MN	56283	112	N	36	W	14	ADADB	1100-01	WEL	
5	Krueger, Wayne	Well	331563	4932325	V	Yes	624244		0	32746 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	12	BDA	1100-01	WEL	
6	Monsanto Company	Well	331452	4927349	V	Yes	682460		5640176	29668 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	25	BDDB	9000	WEL	
7	Redwood Falls 1	Well	331664	4927915	V	Yes	209660	540268-1	164000802		Redwood Falls	MN	56283	112	N	36	W	25	ABBBBD	4000	WEL	
8	Redwood Falls 2 (old)	Well	332340	4927866	V	Yes	209659	570051-2	0		Redwood Falls	MN	56283	112	N	36	W	25	AAAAAC	4000	WEL	
9	Redwood Falls 2	Well	332330	4927884	V	Yes	455796	540268-2	164000803		Redwood Falls	MN	56283	112	N	36	W	25	AAAA	4000	WEL	
10	Redwood Falls 3	Well	331947	4927898	V	Yes	403955	540268-3	164000805		Redwood Falls	MN	56283	112	N	36	W	25	ABAA	4000	WEL	
11	Redwood Falls 5	Well	332477	4929538	V	Yes	403995	540268-5	164000804		Redwood Falls	MN	56283	112	N	35	W	18	CCCC	4000	WEL	
12	RF Obwell 64002	Well	332085	4927940	V	Yes	244363		0		Redwood Falls	MN	56283	112	N	36	W	24	DDC	4000	WEL	
13	Redwood Falls So. Ramsey	Well	331273	4932460	V	Yes	241414	540268-0	164000801		Redwood Falls	MN	56283	112	N	36	W	12	BBD	4000	WEL	
14	RF Obwell 64001	Well	330832	4931121	V	Yes	250531		0		Redwood Falls	MN	56283	112	N	36	W	14	AAA	4000	WEL	
15	Stocker, Sean	Well	330761	4928434	V	Unk	0		0	32678 Liberty Av	Redwood Falls	MN	56283	112	N	36	W	23	ADD	1100-01	WEL	
16	Tersteeg, Jim	Well	331307	4932476	V	Yes	229604	774164-1	0		Redwood Falls	MN	56283	112	N	36	W	12	BBD	1100-01	WEL	
17	Tiffany, J.c.	Well	330936	4930991	V	Yes	209644		0	31837 Liberty Av	Redwood Falls	MN	56283	112	N	36	W	13	BBBCCC	1100-01	WEL	
18	Tiffany, John	Well	330913	4930990	V	Yes	161632		0	31837 Liberty Av	Redwood Falls	MN	56283	112	N	36	W	13	BBB	1100-01	WEL	
19	31797 Lazer Av	Well	329315	4931021	V	Unk	0		0	31797 Lazer Av	Redwood Falls	MN	56283	112	N	36	W	14	BBB	1100-01	WEL	
20	31535 Lazer Av	Well	329291	4930596	V	Unk	0		0	31535 Lazer Av	Redwood Falls	MN	56283	112	N	36	W	14	BCC	1100-01	WEL	
21	Old Well Not Used	Well	330819	4932271	V	Unk	0		0	30252 Liberty Av	Redwood Falls	MN	56283	112	N	36	W	11	AAA	1100-01	WEL	
22	32724 Liberty Ave.	Well	330850	4932410	V	Yes	545479		0	32724 Liberty Av	Redwood Falls	MN	56283	112	N	36	W	11	AAA	1100-01	WEL	
23	29439 HWY 71	Well	331716	4927044	V	Unk	0		0	29439 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	25	CBB	1100-01	WEL	
24	29439 HWY 71	Well	331695	4927004	V	Unk	0		0	29439 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	25	CBB	1100-01	WEL	
25	29439 HWY 71	Well	331691	4926998	V	Unk	0		0	29439 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	25	CBB	1100-01	WEL	
26	29439 HWY 71	Well	331635	4926966	V	Unk	0		0	29439 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	25	CBB	1100-01	WEL	
27	Drilled Well	Well	333877	4927643	V	Unk	0		0	29826 Midway Av	Redwood Falls	MN	56283	112	N	35	W	30	AAA	1100-01	WEL	
28	Drilled Well	Well	333878	4928131	V	Unk	0		0	30136 Midway Av	Redwood Falls	MN	56283	112	N	35	W	19	DDD	1100-01	WEL	
29	Old and New Wells	Well	332520	4929027	V	Unk	0		0	30693 Magnolia Av	Redwood Falls	MN	56283	112	N	35	W	19	BBB	1100-01	WEL	
30	2" Owell at RF-5	Well	332491	4929563	V	Unk	0		0		Redwood Falls	MN	56283	112	N	35	W	18	CCCC	4000	WEL	
31	Monsanto Research Well	Well	331546	4927653	V	Yes	556660		0	29768 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	25	AAA	9000	WEL	
32	Monsanto	Storage or preparation area	331538	4927603	V	No	0		0	29770 US Hwy 71	Redwood Falls	MN	56283	112	N	36	W	25	AAA	9000	STOR	A050
33	Co Ditch # 52	Bridge	329202	4929554	V	No	0		0		Redwood Falls	MN	56283	112	N	36	W	23	AAA	4000	BDG	
34	Crestlawn Memorial Garden	Cemetery	331699	4929276	V	No	0		0		Redwood Falls	MN	56283	112	N	36	W	24	ABC	5000	CMTY	
35	John and Bruce Tiffany Farm	Animal feedlot	331065	4931006	V	No	0		0	31837 Liberty Ave	Redwood Falls	MN	56283	112	N	36	W	13	BBB	9000	AFL	
36	Mark Parker Farm	Animal feedlot	332547	4927740	V	No	0		0	34076 300th St	Redwood Falls	MN	56283	112	N	35	W	30	BBB	9000	AFL	
37	Prairie Winds	Animal feedlot	330648	4930619	V	No	0		0	31678 Liberty Ave	Redwood Falls	MN	56283	112	N	36	W	14	ADD	9000	AFL	

MDH PROVIDED STARTING PCSI DATA LIST

FID	FAC_NAME	MDH_FAC_ID	DEL_ADDR	SEC_ADDR	ST_ADDR	CITY	STATE_ABB	ZIP5_CODE	CCI	PID	PIN	COUNTY_C	TOWNSHIP	TOWN_DIR	RANGE	RANGE_DIR	SECT	SUBSECT
0		449874				Redwood Falls	MN	56283	US			64	112	N	36	W	25	ABB
1		449874				Redwood Falls	MN	56283	US			64	112	N	36	W	25	ABB
2	Asgrow Seed Co	448309				Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDA
3	Asgrow Seed Co	448309				Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDA
4	Asgrow Seed Co	448309				Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDA
5	Asgrow Seed Co	52375	29770 Us Hwy 71			Redwood Falls	MN	56283	US			64	112	N	36	W	25	
6	Ball, G.	237383				Redwood Falls	MN	56283	US			64	112	N	36	W	11	ADAADA
7	Ball, G.	237383				Redwood Falls	MN	56283	US			64	112	N	36	W	11	ADAADA
8	Boots, Frank	178399				Redwood Falls	MN	56283	US			64	112	N	36	W	14	ADADB
9	Boots, Frank	178399				Redwood Falls	MN	56283	US			64	112	N	36	W	14	ADADB
10	Boots, Frank	178399				Redwood Falls	MN	56283	US			64	112	N	36	W	14	ADADB
11	Co Ditch # 52	113249				Redwood Falls	MN	56283	US			64	112	N	36	W	23	
12	Crestlawn Memorial Garden	23891				Redwood Falls	MN	56283	US			64	112	N	36	W	24	
13	John and Bruce Tiffany Farm	435193	31837 Liberty Ave			Redwood Falls	MN	56283	US			64	112	N	36	W	13	BB
14	John and Bruce Tiffany Farm	435193	31837 Liberty Ave			Redwood Falls	MN	56283	US			64	112	N	36	W	13	BB
15	Krueger, Wayne	356685	32746 US Hwy 71			Redwood Falls	MN	56283	US			64	112	N	36	W	12	BDA
16	Krueger, Wayne	356685	32746 US Hwy 71			Redwood Falls	MN	56283	US			64	112	N	36	W	12	BDA
17	Mark Parker Farm	435127	34076 300th St			Redwood Falls	MN	56283	US	62-030-2020		64	112	N	35	W	30	B
18	Mark Parker Farm	435127	34076 300th St			Redwood Falls	MN	56283	US	62-030-2020		64	112	N	35	W	30	B
19	Monsanto Company	141579	29668 US Hwy 71			Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDDB
20	Monsanto Company	141579	29668 US Hwy 71			Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDDB
21	Monsanto Company	141579	29668 US Hwy 71			Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDDB
22	Prairie Winds	434987	31678 Liberty Ave			Redwood Falls	MN	56283	US			64	112	N	36	W	14	AD
23	Redwood Falls 1	158497				Redwood Falls	MN	56283	US			64	112	N	36	W	25	ABBBBD
24	Redwood Falls 1	158497				Redwood Falls	MN	56283	US			64	112	N	36	W	25	ABBBBD
25	Redwood Falls 1	158497				Redwood Falls	MN	56283	US			64	112	N	36	W	25	ABBBBD
26	Redwood Falls 1	158497				Redwood Falls	MN	56283	US			64	112	N	36	W	25	ABBBBD
27	Redwood Falls 2 (old)	133594				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAAAC
28	Redwood Falls 2 (old)	133594				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAAAC
29	Redwood Falls 2 (old)	133594				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAAAC
30	Redwood Falls 2 (old)	133594				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAAAC
31	Redwood Falls 2	255449				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAA
32	Redwood Falls 2	255449				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAA
33	Redwood Falls 2	255449				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAA
34	Redwood Falls 2	255449				Redwood Falls	MN	56283	US			64	112	N	36	W	25	AAAA
35	Redwood Falls 3	193733				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
36	Redwood Falls 3	193733				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
37	Redwood Falls 3	193733				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
38	Redwood Falls 3	193733				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
39	Redwood Falls 5	267487				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
40	Redwood Falls 5	267487				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
41	Redwood Falls 5	267487				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
42	Redwood Falls 5	267487				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
43	Redwood Falls 5	267487				Redwood Falls	MN	56283	US			64	112	N	36	W	25	
44	Redwood Falls Ob Well 2	296876				Redwood Falls	MN	56283	US			64	112	N	36	W	24	DDC
45	Redwood Falls Ob Well 2	296876				Redwood Falls	MN	56283	US			64	112	N	36	W	24	DDC
46	Redwood Falls Ob Well 2	296876				Redwood Falls	MN	56283	US			64	112	N	36	W	24	DDC
47	Redwood Falls Ob Well	296874				Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDA
48	Redwood Falls Ob Well	296874				Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDA
49	Redwood Falls Ob Well	296874				Redwood Falls	MN	56283	US			64	112	N	36	W	25	BDA
50	Redwood Falls So. Ramsey	188421				Redwood Falls	MN	56283	US			64	112	N	36	W	11	
51	Redwood Falls So. Ramsey	188421				Redwood Falls	MN	56283	US			64	112	N	36	W	11	

MDH PROVIDED STARTING PCSI DATA LIST

FID	FAC_NAME	MDH_FAC_ID	DEL_ADDR	F_UTYPE_C	F_STATUS_C	F_VERIFY_C	F_GEOCDATE	F_ACCURACY	F_X_COORD	F_Y_COORD	FAC_INV_ID	FINV_C	FINV
0		449874		1	TM		10/6/2004 0:00	140	331711	4927842	972385	SWUDS	State water use permit
1		449874		1	TM		10/6/2004 0:00	140	331711	4927842	981444	WEL	Well
2	Asgrow Seed Co	448309		1	A		10/6/2004 0:00	140	331496	4927455	970820	SWUDS	State water use permit
3	Asgrow Seed Co	448309		1	A		10/6/2004 0:00	140	331496	4927455	979879	WEL	Well
4	Asgrow Seed Co	448309		1	A		10/6/2004 0:00	140	331496	4927455	986900	WLL	Well log
5	Asgrow Seed Co	52375	29770 Us Hwy 71	SEED	A		4/4/2001 0:00	100	331538.49	4927602.59	106865	STOR	Storage or preparation area
6	Ball, G.	237383			U	V	3/1/1997 0:00	25	330864	4932355	330238	WEL	Well
7	Ball, G.	237383			U	V	3/1/1997 0:00	25	330864	4932355	614505	WLL	Well log
8	Boots, Frank	178399		DO	A	V	1/1/1994 0:00	25	330762	4930690	1012338	OBWELL	Observation well
9	Boots, Frank	178399		DO	A	V	1/1/1994 0:00	25	330762	4930690	271254	WEL	Well
10	Boots, Frank	178399		DO	A	V	1/1/1994 0:00	25	330762	4930690	555521	WLL	Well log
11	Co Ditch # 52	113249		OW	U	U	3/4/2008 0:00	200	329202.0477	4929554.301	22538	BDG	Bridge
12	Crestlawn Memorial Garden	23891			U		9/18/1997 0:00	100	331699.0685	4929275.755	0	CMTY	Cemetery
13	John and Bruce Tiffany Farm	435193	31837 Liberty Ave	Y	U		1/17/2002 0:00	1000	331065	4931006	202497	AFL	Animal feedlot
14	John and Bruce Tiffany Farm	435193	31837 Liberty Ave	Y	U		1/17/2002 0:00	1000	331065	4931006	221143	AFP	Animal feedlot permit
15	Krueger, Wayne	356685	32746 US Hwy 71	DO	A		3/17/2005 0:00	1000	331587	4932309	449540	WEL	Well
16	Krueger, Wayne	356685	32746 US Hwy 71	DO	A		3/17/2005 0:00	1000	331587	4932309	733807	WLL	Well log
17	Mark Parker Farm	435127	34076 300th St	Y	U		1/15/2002 0:00	1000	332794	4927506	202431	AFL	Animal feedlot
18	Mark Parker Farm	435127	34076 300th St	Y	U		1/15/2002 0:00	1000	332794	4927506	221108	AFP	Animal feedlot permit
19	Monsanto Company	141579	29668 US Hwy 71	PN	A	V	9/2/2003 0:00	25	331449.889	4927352.222	989019	PWS	Public water supply
20	Monsanto Company	141579	29668 US Hwy 71	PN	A	V	9/2/2003 0:00	25	331449.889	4927352.222	234434	WEL	Well
21	Monsanto Company	141579	29668 US Hwy 71	PN	A	V	9/2/2003 0:00	25	331449.889	4927352.222	518701	WLL	Well log
22	Prairie Winds	434987	31678 Liberty Ave	N	U		7/18/2001 0:00	1000	330648	4930619	202291	AFL	Animal feedlot
23	Redwood Falls 1	158497		PC	A	V	4/7/1999 0:00	25	331641	4927919	990239	PWS	Public water supply
24	Redwood Falls 1	158497		PC	A	V	4/7/1999 0:00	25	331641	4927919	960400	SWUDS	State water use permit
25	Redwood Falls 1	158497		PC	A	V	4/7/1999 0:00	25	331641	4927919	251352	WEL	Well
26	Redwood Falls 1	158497		PC	A	V	4/7/1999 0:00	25	331641	4927919	535619	WLL	Well log
27	Redwood Falls 2 (old)	133594		MU	A	V	3/14/1995 0:00	25	332340	4927866	966222	SWUDS	State water use permit
28	Redwood Falls 2 (old)	133594		MU	A	V	3/14/1995 0:00	25	332340	4927866	966835	SWUDS	State water use permit
29	Redwood Falls 2 (old)	133594		MU	A	V	3/14/1995 0:00	25	332340	4927866	226449	WEL	Well
30	Redwood Falls 2 (old)	133594		MU	A	V	3/14/1995 0:00	25	332340	4927866	510716	WLL	Well log
31	Redwood Falls 2	255449		PC	A	V	4/7/1999 0:00	25	332330.239	4927884.477	997246	PWS	Public water supply
32	Redwood Falls 2	255449		PC	A	V	4/7/1999 0:00	25	332330.239	4927884.477	960401	SWUDS	State water use permit
33	Redwood Falls 2	255449		PC	A	V	4/7/1999 0:00	25	332330.239	4927884.477	348304	WEL	Well
34	Redwood Falls 2	255449		PC	A	V	4/7/1999 0:00	25	332330.239	4927884.477	632571	WLL	Well log
35	Redwood Falls 3	193733		PC	A	V	4/7/1999 0:00	25	331947	4927898	992841	PWS	Public water supply
36	Redwood Falls 3	193733		PC	A	V	4/7/1999 0:00	25	331947	4927898	960402	SWUDS	State water use permit
37	Redwood Falls 3	193733		PC	A	V	4/7/1999 0:00	25	331947	4927898	286588	WEL	Well
38	Redwood Falls 3	193733		PC	A	V	4/7/1999 0:00	25	331947	4927898	570855	WLL	Well log
39	Redwood Falls 5	267487		PC	A	V	4/7/1999 0:00	25	332477	4929538	998027	PWS	Public water supply
40	Redwood Falls 5	267487		PC	A	V	4/7/1999 0:00	25	332477	4929538	960403	SWUDS	State water use permit
41	Redwood Falls 5	267487		PC	A	V	4/7/1999 0:00	25	332477	4929538	966221	SWUDS	State water use permit
42	Redwood Falls 5	267487		PC	A	V	4/7/1999 0:00	25	332477	4929538	360342	WEL	Well
43	Redwood Falls 5	267487		PC	A	V	4/7/1999 0:00	25	332477	4929538	644609	WLL	Well log
44	Redwood Falls Ob Well 2	296876		OB	U		3/17/2005 0:00	1000	332134	4928014	1013419	OBWELL	Observation well
45	Redwood Falls Ob Well 2	296876		OB	U		3/17/2005 0:00	1000	332134	4928014	389731	WEL	Well
46	Redwood Falls Ob Well 2	296876		OB	U		3/17/2005 0:00	1000	332134	4928014	673998	WLL	Well log
47	Redwood Falls Ob Well	296874		OB	I		3/17/2005 0:00	1000	331484	4927466	1013417	OBWELL	Observation well
48	Redwood Falls Ob Well	296874		OB	I		3/17/2005 0:00	1000	331484	4927466	389729	WEL	Well
49	Redwood Falls Ob Well	296874		OB	I		3/17/2005 0:00	1000	331484	4927466	673996	WLL	Well log
50	Redwood Falls So. Ramsey	188421		PC	A	V	4/7/1999 0:00	25	331273	4932460	992453	PWS	Public water supply
51	Redwood Falls So. Ramsey	188421		PC	A	V	4/7/1999 0:00	25	331273	4932460	960399	SWUDS	State water use permit

MDH PROVIDED STARTING PCSI DATA LIST

FID	FAC_NAME	MDH_FAC_ID	DEL_ADDR	MDH_MAT	CAPACITY	CAP_UNIT_C	PSYS_ID	PSYS_ACRO	S_UTYPE_C	S_STATUS_C	S_VERIFY_C	S_GEOCDATE	S_ACCURACY	X_COORD	Y_COORD
0		449874			494	MGY	570051-1	SWUDS	1	TM		10/6/2004 0:00	140	331711	4927842
1		449874			0		5700511	SWUDS	1	TM		10/6/2004 0:00	140	331711	4927842
2	Asgrow Seed Co	448309			19.6	MGY	894280-1	SWUDS	1	A		10/6/2004 0:00	140	331496	4927455
3	Asgrow Seed Co	448309			0		8942801	SWUDS	1	A		10/6/2004 0:00	140	331496	4927455
4	Asgrow Seed Co	448309			0		502652	CWI	1	A		10/6/2004 0:00	140	331496	4927455
5	Asgrow Seed Co	52375	29770 Us Hwy 71	Agricultural chemical	0		13032	ADAMS	SEED	A		4/4/2001 0:00	100	331538.49	4927602.59
6	Ball, G.	237383			0		209642	CWI		U	V	3/1/1997 0:00	25	330864	4932355
7	Ball, G.	237383			0		209642	CWI		U	V	3/1/1997 0:00	25	330864	4932355
8	Boots, Frank	178399			0		64001	OBWELL	DO	A	V	1/1/1994 0:00	25	330762	4930690
9	Boots, Frank	178399			0		209643	CWI	DO	A	V	1/1/1994 0:00	25	330762	4930690
10	Boots, Frank	178399			0		209643	CWI	DO	A	V	1/1/1994 0:00	25	330762	4930690
11	Co Ditch # 52	113249			0		L1954	DOT-BI	OW	U		10/30/2000 0:00	1000	329201.574	4929553.953
12	Crestlawn Memorial Garden	23891			0								0	331699.0685	4929275.755
13	John and Bruce Tiffany Farm	435193	31837 Liberty Ave		539	ANU	127-62908	FEED	Y	U		8/18/2003 0:00	1000	331065	4931006
14	John and Bruce Tiffany Farm	435193	31837 Liberty Ave		539	ANU	127-62908	FEED	Y	U		8/18/2003 0:00	1000	331065	4931006
15	Krueger, Wayne	356685	32746 US Hwy 71		0		624244	CWI	DO	A		3/17/2005 0:00	1000	331587	4932309
16	Krueger, Wayne	356685	32746 US Hwy 71		0		624244	CWI	DO	A		3/17/2005 0:00	1000	331587	4932309
17	Mark Parker Farm	435127	34076 300th St		279	ANU	127-62524	FEED	Y	U		8/18/2003 0:00	1000	332794	4927506
18	Mark Parker Farm	435127	34076 300th St		279	ANU	127-62524	FEED	Y	U		8/18/2003 0:00	1000	332794	4927506
19	Monsanto Company	141579	29668 US Hwy 71		0		5640176S01	MNDWIS	PN	PRIM	V	9/2/2003 0:00	25	331449.889	4927352.222
20	Monsanto Company	141579	29668 US Hwy 71		0		682460	CWI	PN	A	V	9/2/2003 0:00	25	331449.889	4927352.222
21	Monsanto Company	141579	29668 US Hwy 71		0		682460	CWI	PN	A	V	9/2/2003 0:00	25	331449.889	4927352.222
22	Prairie Winds	434987	31678 Liberty Ave		120	ANU	127-50037	FEED	N	U		8/18/2003 0:00	1000	330648	4930619
23	Redwood Falls 1	158497			0		1640008S02	MNDWIS	PC	PRIM	V	4/7/1999 0:00	25	331641	4927919
24	Redwood Falls 1	158497			250	MGY	540268-1	SWUDS	PC	A		4/7/1999 0:00	25	331641	4927919
25	Redwood Falls 1	158497			0		209660	CWI	PC	A	V	4/7/1999 0:00	25	331641	4927919
26	Redwood Falls 1	158497			0		209660	CWI	PC	A	V	4/7/1999 0:00	25	331641	4927919
27	Redwood Falls 2 (old)	133594			250	MGY	540268-OLD3	SWUDS	MU	AB		3/14/1995 0:00	100	332340	4927866
28	Redwood Falls 2 (old)	133594			494	MGY	570051-2	SWUDS	MU	TM		3/14/1995 0:00	100	332340	4927866
29	Redwood Falls 2 (old)	133594			0		209659	CWI	MU	A	V	3/14/1995 0:00	25	332340	4927866
30	Redwood Falls 2 (old)	133594			0		209659	CWI	MU	A	V	3/14/1995 0:00	25	332340	4927866
31	Redwood Falls 2	255449			0		1640008S03	MNDWIS	PC	PRIM	V	4/7/1999 0:00	25	332330.239	4927884.477
32	Redwood Falls 2	255449			250	MGY	540268-2	SWUDS	PC	A		4/7/1999 0:00	25	332330	4927884
33	Redwood Falls 2	255449			0		455796	CWI	PC	A	V	4/7/1999 0:00	25	332330.239	4927884.477
34	Redwood Falls 2	255449			0		455796	CWI	PC	A	V	4/7/1999 0:00	25	332330.239	4927884.477
35	Redwood Falls 3	193733			0		1640008S05	MNDWIS	PC	PRIM	V	4/7/1999 0:00	25	331947	4927898
36	Redwood Falls 3	193733			250	MGY	540268-3	SWUDS	PC	A		4/7/1999 0:00	25	331947	4927898
37	Redwood Falls 3	193733			0		403955	CWI	PC	A	V	4/7/1999 0:00	25	331947	4927898
38	Redwood Falls 3	193733			0		403955	CWI	PC	A	V	4/7/1999 0:00	25	331947	4927898
39	Redwood Falls 5	267487			0		1640008S04	MNDWIS	PC	PRIM	V	4/7/1999 0:00	25	332477	4929538
40	Redwood Falls 5	267487			250	MGY	540268-5	SWUDS	PC	A		4/7/1999 0:00	25	332477	4929538
41	Redwood Falls 5	267487			250	MGY	540268-4	SWUDS	PC	AB		4/7/1999 0:00	25	332477	4929538
42	Redwood Falls 5	267487			0		403995	CWI	PC	A	V	4/7/1999 0:00	25	332477	4929538
43	Redwood Falls 5	267487			0		403995	CWI	PC	A	V	4/7/1999 0:00	25	332477	4929538
44	Redwood Falls Ob Well 2	296876			0		64002	OBWELL	OB	U		3/17/2005 0:00	1000	332134	4928014
45	Redwood Falls Ob Well 2	296876			0		244363	CWI	OB	U		3/17/2005 0:00	1000	332134	4928014
46	Redwood Falls Ob Well 2	296876			0		244363	CWI	OB	U		3/17/2005 0:00	1000	332134	4928014
47	Redwood Falls Ob Well	296874			0		64005	OBWELL	OB	I		3/17/2005 0:00	1000	331484	4927466
48	Redwood Falls Ob Well	296874			0		244365	CWI	OB	I		3/17/2005 0:00	1000	331484	4927466
49	Redwood Falls Ob Well	296874			0		244365	CWI	OB	I		3/17/2005 0:00	1000	331484	4927466
50	Redwood Falls So. Ramsey	188421			0		1640008S01	MNDWIS	PC	PRIM	V	4/7/1999 0:00	25	331273	4932460
51	Redwood Falls So. Ramsey	188421			250	MGY	540268-0	SWUDS	PC	SB		4/7/1999 0:00	25	331273	4932460

MDH PROVIDED STARTING PCSI DATA LIST

FID_	FAC_NAME	MDH_FAC_ID	DEL_ADDR	DWS_ID	MAP_ID
0		449874		453	0
1		449874		453	44
2	Asgrow Seed Co	448309		453	0
3	Asgrow Seed Co	448309		453	0
4	Asgrow Seed Co	448309		453	43
5	Asgrow Seed Co	52375	29770 Us Hwy 71	453	2
6	Ball, G.	237383		453	0
7	Ball, G.	237383		453	12
8	Boots, Frank	178399		453	0
9	Boots, Frank	178399		453	0
10	Boots, Frank	178399		453	8
11	Co Ditch # 52	113249		453	4
12	Crestlawn Memorial Garden	23891		453	1
13	John and Bruce Tiffany Farm	435193	31837 Liberty Ave	453	0
14	John and Bruce Tiffany Farm	435193	31837 Liberty Ave	453	41
15	Krueger, Wayne	356685	32746 US Hwy 71	453	0
16	Krueger, Wayne	356685	32746 US Hwy 71	453	38
17	Mark Parker Farm	435127	34076 300th St	453	0
18	Mark Parker Farm	435127	34076 300th St	453	40
19	Monsanto Company	141579	29668 US Hwy 71	453	0
20	Monsanto Company	141579	29668 US Hwy 71	453	0
21	Monsanto Company	141579	29668 US Hwy 71	453	6
22	Prairie Winds	434987	31678 Liberty Ave	453	39
23	Redwood Falls 1	158497		453	0
24	Redwood Falls 1	158497		453	0
25	Redwood Falls 1	158497		453	0
26	Redwood Falls 1	158497		453	7
27	Redwood Falls 2 (old)	133594		453	0
28	Redwood Falls 2 (old)	133594		453	0
29	Redwood Falls 2 (old)	133594		453	0
30	Redwood Falls 2 (old)	133594		453	5
31	Redwood Falls 2	255449		453	0
32	Redwood Falls 2	255449		453	0
33	Redwood Falls 2	255449		453	0
34	Redwood Falls 2	255449		453	13
35	Redwood Falls 3	193733		453	0
36	Redwood Falls 3	193733		453	0
37	Redwood Falls 3	193733		453	0
38	Redwood Falls 3	193733		453	11
39	Redwood Falls 5	267487		453	0
40	Redwood Falls 5	267487		453	0
41	Redwood Falls 5	267487		453	0
42	Redwood Falls 5	267487		453	0
43	Redwood Falls 5	267487		453	14
44	Redwood Falls Ob Well 2	296876		453	0
45	Redwood Falls Ob Well 2	296876		453	0
46	Redwood Falls Ob Well 2	296876		453	35
47	Redwood Falls Ob Well	296874		453	0
48	Redwood Falls Ob Well	296874		453	0
49	Redwood Falls Ob Well	296874		453	34
50	Redwood Falls So. Ramsey	188421		453	0
51	Redwood Falls So. Ramsey	188421		453	0

MDH PROVIDED STARTING PCSI DATA LIST

FID	FAC_NAME	MDH_FAC_ID	DEL_ADDR	SEC_ADDR	ST_ADDR	CITY	STATE_ABB	ZIP5_CODE	CC1	PID	PIN	COUNTY_C	TOWNSHIP	TOWN_DIR	RANGE	RANGE_DIR	SECT	SUBSECT
52	Redwood Falls So. Ramsey	188421				Redwood Falls	MN	56283	US		64		112	N	36	W	11	
53	Redwood Falls So. Ramsey	188421				Redwood Falls	MN	56283	US		64		112	N	36	W	11	
54	Rf-1	295334				Redwood Falls	MN	56283	US		64		112	N	36	W	14	AAA
55	Rf-1	295334				Redwood Falls	MN	56283	US		64		112	N	36	W	14	AAA
56	Rf-17	295340				Redwood Falls	MN	56283	US		64		112	N	36	W	12	CBA
57	Rf-17	295340				Redwood Falls	MN	56283	US		64		112	N	36	W	12	CBA
58	Rf-18	295341				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BDD
59	Rf-18	295341				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BDD
60	Rf-2	295336				Redwood Falls	MN	56283	US		64		112	N	36	W	13	DBB
61	Rf-2	295336				Redwood Falls	MN	56283	US		64		112	N	36	W	13	DBB
62	Rf-23	295342				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BCA
63	Rf-23	295342				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BCA
64	Rf-24	295343				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BBD
65	Rf-24	295343				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BBD
66	Rf-26	295326				Redwood Falls	MN	56283	US		64		112	N	36	W	25	BDA
67	Rf-26	295326				Redwood Falls	MN	56283	US		64		112	N	36	W	25	BDA
68	Rf-27	295331				Redwood Falls	MN	56283	US		64		112	N	36	W	24	DBC
69	Rf-27	295331				Redwood Falls	MN	56283	US		64		112	N	36	W	24	DBC
70	Rf-29	295332				Redwood Falls	MN	56283	US		64		112	N	36	W	23	DDD
71	Rf-29	295332				Redwood Falls	MN	56283	US		64		112	N	36	W	23	DDD
72	Rf-3	295337				Redwood Falls	MN	56283	US		64		112	N	36	W	13	CBB
73	Rf-3	295337				Redwood Falls	MN	56283	US		64		112	N	36	W	13	CBB
74	Rf-30	295330				Redwood Falls	MN	56283	US		64		112	N	36	W	24	DDD
75	Rf-30	295330				Redwood Falls	MN	56283	US		64		112	N	36	W	24	DDD
76	Rf-32	295333				Redwood Falls	MN	56283	US		64		112	N	36	W	22	DDD
77	Rf-32	295333				Redwood Falls	MN	56283	US		64		112	N	36	W	22	DDD
78	Rf-33	295367				Redwood Falls	MN	56283	US		64		112	N	35	W	19	DDD
79	Rf-33	295367				Redwood Falls	MN	56283	US		64		112	N	35	W	19	DDD
80	Rf-35	295325				Redwood Falls	MN	56283	US		64		112	N	36	W	25	CDD
81	Rf-35	295325				Redwood Falls	MN	56283	US		64		112	N	36	W	25	CDD
82	Rf-36	295335				Redwood Falls	MN	56283	US		64		112	N	36	W	13	DCC
83	Rf-36	295335				Redwood Falls	MN	56283	US		64		112	N	36	W	13	DCC
84	Rf-38	295329				Redwood Falls	MN	56283	US		64		112	N	36	W	25	ABB
85	Rf-38	295329				Redwood Falls	MN	56283	US		64		112	N	36	W	25	ABB
86	Rf-40	295328				Redwood Falls	MN	56283	US		64		112	N	36	W	25	ABB
87	Rf-40	295328				Redwood Falls	MN	56283	US		64		112	N	36	W	25	ABB
88	Rf-41	295327				Redwood Falls	MN	56283	US		64		112	N	36	W	25	ABB
89	Rf-41	295327				Redwood Falls	MN	56283	US		64		112	N	36	W	25	ABB
90	Stocker, Sean	326670	RR 1			Redwood Falls	MN	56283	US		64		112	N	36	W	11	ADA
91	Stocker, Sean	326670	RR 1			Redwood Falls	MN	56283	US		64		112	N	36	W	11	ADA
92	Stocker, Sean	326670	RR 1			Redwood Falls	MN	56283	US		64		112	N	36	W	11	ADA
93	Tersteeg, Jim	297410				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BAC
94	Tersteeg, Jim	297410				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BAC
95	Tersteeg, Jim	447238				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BAC
96	Tersteeg, Jim	447238				Redwood Falls	MN	56283	US		64		112	N	36	W	12	BAC
97	Tiffany, J.c.	188130				Redwood Falls	MN	56283	US		64		112	N	36	W	13	BBBCCC
98	Tiffany, J.c.	188130				Redwood Falls	MN	56283	US		64		112	N	36	W	13	BBBCCC
99	Tiffany, John	286353				Redwood Falls	MN	56283	US		64		112	N	36	W	13	BBB
100	Tiffany, John	286353				Redwood Falls	MN	56283	US		64		112	N	36	W	13	BBB
101	Tiffany, John	286353				Redwood Falls	MN	56283	US		64		112	N	36	W	13	BBB
102	Warner, Arthur	58331	Rte Q Box 107			Redwood Falls	MN	56283	US		64		112	N	35	W	19	

MDH PROVIDED STARTING PCSI DATA LIST

FID	FAC_NAME	MDH_FAC_ID	DEL_ADDR	F_UTYPE_C	F_STATUS_C	F_VERIFY_C	F_GEOCDATE	F_ACCURACY	F_X_COORD	F_Y_COORD	FAC_INV_ID	FINV_C	FINV
52	Redwood Falls So. Ramsey	188421		PC	A	V	4/7/1999 0:00	25	331273	4932460	281276	WEL	Well
53	Redwood Falls So. Ramsey	188421		PC	A	V	4/7/1999 0:00	25	331273	4932460	565543	WLL	Well log
54	Rf-1	295334		TW	U		3/17/2005 0:00	1000	330765	4931165	388189	WEL	Well
55	Rf-1	295334		TW	U		3/17/2005 0:00	1000	330765	4931165	672456	WLL	Well log
56	Rf-17	295340		TW	U		3/17/2005 0:00	1000	331177	4931889	388195	WEL	Well
57	Rf-17	295340		TW	U		3/17/2005 0:00	1000	331177	4931889	672462	WLL	Well log
58	Rf-18	295341		TW	U		3/17/2005 0:00	1000	331587	4932099	388196	WEL	Well
59	Rf-18	295341		TW	U		3/17/2005 0:00	1000	331587	4932099	672463	WLL	Well log
60	Rf-2	295336		TW	U		3/17/2005 0:00	1000	331755	4930260	388191	WEL	Well
61	Rf-2	295336		TW	U		3/17/2005 0:00	1000	331755	4930260	672458	WLL	Well log
62	Rf-23	295342		TW	U		3/17/2005 0:00	1000	331177	4932309	388197	WEL	Well
63	Rf-23	295342		TW	U		3/17/2005 0:00	1000	331177	4932309	672464	WLL	Well log
64	Rf-24	295343		TW	U		3/17/2005 0:00	1000	331177	4932519	388198	WEL	Well
65	Rf-24	295343		TW	U		3/17/2005 0:00	1000	331177	4932519	672465	WLL	Well log
66	Rf-26	295326		TW	U		3/17/2005 0:00	1000	331484	4927466	388181	WEL	Well
67	Rf-26	295326		TW	U		3/17/2005 0:00	1000	331484	4927466	672448	WLL	Well log
68	Rf-27	295331		TW	U		3/17/2005 0:00	1000	331724	4928438	388186	WEL	Well
69	Rf-27	295331		TW	U		3/17/2005 0:00	1000	331724	4928438	672453	WLL	Well log
70	Rf-29	295332		TW	U		3/17/2005 0:00	1000	330720	4928092	388187	WEL	Well
71	Rf-29	295332		TW	U		3/17/2005 0:00	1000	330720	4928092	672454	WLL	Well log
72	Rf-3	295337		TW	U		3/17/2005 0:00	1000	330927	4930260	388192	WEL	Well
73	Rf-3	295337		TW	U		3/17/2005 0:00	1000	330927	4930260	672459	WLL	Well log
74	Rf-30	295330		TW	U		3/17/2005 0:00	1000	332339	4928014	388185	WEL	Well
75	Rf-30	295330		TW	U		3/17/2005 0:00	1000	332339	4928014	672452	WLL	Well log
76	Rf-32	295333		TW	U		3/17/2005 0:00	1000	329093	4928130	388188	WEL	Well
77	Rf-32	295333		TW	U		3/17/2005 0:00	1000	329093	4928130	672455	WLL	Well log
78	Rf-33	295367		TW	U		3/17/2005 0:00	1000	333893	4928009	388222	WEL	Well
79	Rf-33	295367		TW	U		3/17/2005 0:00	1000	333893	4928009	672489	WLL	Well log
80	Rf-35	295325		TW	U		3/17/2005 0:00	1000	331484	4926419	388180	WEL	Well
81	Rf-35	295325		TW	U		3/17/2005 0:00	1000	331484	4926419	672447	WLL	Well log
82	Rf-36	295335		TW	U		3/17/2005 0:00	1000	331755	4929622	388190	WEL	Well
83	Rf-36	295335		TW	U		3/17/2005 0:00	1000	331755	4929622	672457	WLL	Well log
84	Rf-38	295329		TW	U		3/17/2005 0:00	1000	331692	4927885	388184	WEL	Well
85	Rf-38	295329		TW	U		3/17/2005 0:00	1000	331692	4927885	672451	WLL	Well log
86	Rf-40	295328		TW	U		3/17/2005 0:00	1000	331692	4927885	388183	WEL	Well
87	Rf-40	295328		TW	U		3/17/2005 0:00	1000	331692	4927885	672450	WLL	Well log
88	Rf-41	295327		TW	U		3/17/2005 0:00	1000	331692	4927885	388182	WEL	Well
89	Rf-41	295327		TW	U		3/17/2005 0:00	1000	331692	4927885	672449	WLL	Well log
90	Stocker, Sean	326670	RR 1	DO	A		3/17/2005 0:00	1000	330800	4932355	898918	ISTS	Individual sewage treatment system
91	Stocker, Sean	326670	RR 1	DO	A		3/17/2005 0:00	1000	330800	4932355	419525	WEL	Well
92	Stocker, Sean	326670	RR 1	DO	A		3/17/2005 0:00	1000	330800	4932355	703792	WLL	Well log
93	Tersteeg, Jim	297410		IR	A		3/17/2005 0:00	1000	331382	4932519	390265	WEL	Well
94	Tersteeg, Jim	297410		IR	A		3/17/2005 0:00	1000	331382	4932519	674532	WLL	Well log
95	Tersteeg, Jim	447238		1	A		10/6/2004 0:00	140	331401	4932509	969749	SWUDS	State water use permit
96	Tersteeg, Jim	447238		1	A		10/6/2004 0:00	140	331401	4932509	978808	WEL	Well
97	Tiffany, J.c.	188130			U	V	3/1/1997 0:00	25	330882	4931024	280985	WEL	Well
98	Tiffany, J.c.	188130			U	V	3/1/1997 0:00	25	330882	4931024	565252	WLL	Well log
99	Tiffany, John	286353		DO	A		3/15/2005 0:00	1000	330927	4931111	875632	ISTS	Individual sewage treatment system
100	Tiffany, John	286353		DO	A		3/15/2005 0:00	1000	330927	4931111	379208	WEL	Well
101	Tiffany, John	286353		DO	A		3/15/2005 0:00	1000	330927	4931111	663475	WLL	Well log
102	Warner, Arthur	58331	Rte Q Box 107	FEED	A		4/4/2001 0:00	15000	332533.72	4929472	19410	STOR	Storage or preparation area

MDH PROVIDED STARTING PCSI DATA LIST

FID	FAC_NAME	MDH_FAC_ID	DEL_ADDR	MDH_MAT	CAPACITY	CAP_UNIT_C	PSYS_ID	PSYS_ACRO	S_UTYPE_C	S_STATUS_C	S_VERIFY_C	S_GEOCDATE	S_ACCURACY	X_COORD	Y_COORD
52	Redwood Falls So. Ramsey	188421			0		241414	CWI	PC	A	V	4/7/1999 0:00	25	331273	4932460
53	Redwood Falls So. Ramsey	188421			0		241414	CWI	PC	A	V	4/7/1999 0:00	25	331273	4932460
54	Rf-1	295334			0		250531	CWI	TW	U		3/17/2005 0:00	1000	330765	4931165
55	Rf-1	295334			0		250531	CWI	TW	U		3/17/2005 0:00	1000	330765	4931165
56	Rf-17	295340			0		250525	CWI	TW	U		3/17/2005 0:00	1000	331177	4931889
57	Rf-17	295340			0		250525	CWI	TW	U		3/17/2005 0:00	1000	331177	4931889
58	Rf-18	295341			0		250524	CWI	TW	U		3/17/2005 0:00	1000	331587	4932099
59	Rf-18	295341			0		250524	CWI	TW	U		3/17/2005 0:00	1000	331587	4932099
60	Rf-2	295336			0		250529	CWI	TW	U		3/17/2005 0:00	1000	331755	4930260
61	Rf-2	295336			0		250529	CWI	TW	U		3/17/2005 0:00	1000	331755	4930260
62	Rf-23	295342			0		250523	CWI	TW	U		3/17/2005 0:00	1000	331177	4932309
63	Rf-23	295342			0		250523	CWI	TW	U		3/17/2005 0:00	1000	331177	4932309
64	Rf-24	295343			0		250522	CWI	TW	U		3/17/2005 0:00	1000	331177	4932519
65	Rf-24	295343			0		250522	CWI	TW	U		3/17/2005 0:00	1000	331177	4932519
66	Rf-26	295326			0		250539	CWI	TW	U		3/17/2005 0:00	1000	331484	4927466
67	Rf-26	295326			0		250539	CWI	TW	U		3/17/2005 0:00	1000	331484	4927466
68	Rf-27	295331			0		250534	CWI	TW	U		3/17/2005 0:00	1000	331724	4928438
69	Rf-27	295331			0		250534	CWI	TW	U		3/17/2005 0:00	1000	331724	4928438
70	Rf-29	295332			0		250533	CWI	TW	U		3/17/2005 0:00	1000	330720	4928092
71	Rf-29	295332			0		250533	CWI	TW	U		3/17/2005 0:00	1000	330720	4928092
72	Rf-3	295337			0		250528	CWI	TW	U		3/17/2005 0:00	1000	330927	4930260
73	Rf-3	295337			0		250528	CWI	TW	U		3/17/2005 0:00	1000	330927	4930260
74	Rf-30	295330			0		250535	CWI	TW	U		3/17/2005 0:00	1000	332339	4928014
75	Rf-30	295330			0		250535	CWI	TW	U		3/17/2005 0:00	1000	332339	4928014
76	Rf-32	295333			0		250532	CWI	TW	U		3/17/2005 0:00	1000	329093	4928130
77	Rf-32	295333			0		250532	CWI	TW	U		3/17/2005 0:00	1000	329093	4928130
78	Rf-33	295367			0		250509	CWI	TW	U		3/17/2005 0:00	1000	333893	4928009
79	Rf-33	295367			0		250509	CWI	TW	U		3/17/2005 0:00	1000	333893	4928009
80	Rf-35	295325			0		250540	CWI	TW	U		3/17/2005 0:00	1000	331484	4926419
81	Rf-35	295325			0		250540	CWI	TW	U		3/17/2005 0:00	1000	331484	4926419
82	Rf-36	295335			0		250530	CWI	TW	U		3/17/2005 0:00	1000	331755	4929622
83	Rf-36	295335			0		250530	CWI	TW	U		3/17/2005 0:00	1000	331755	4929622
84	Rf-38	295329			0		250536	CWI	TW	U		3/17/2005 0:00	1000	331692	4927885
85	Rf-38	295329			0		250536	CWI	TW	U		3/17/2005 0:00	1000	331692	4927885
86	Rf-40	295328			0		250537	CWI	TW	U		3/17/2005 0:00	1000	331692	4927885
87	Rf-40	295328			0		250537	CWI	TW	U		3/17/2005 0:00	1000	331692	4927885
88	Rf-41	295327			0		250538	CWI	TW	U		3/17/2005 0:00	1000	331692	4927885
89	Rf-41	295327			0		250538	CWI	TW	U		3/17/2005 0:00	1000	331692	4927885
90	Stocker, Sean	326670	RR 1		0		545479	CWI	DO	A		3/17/2005 0:00	1000	330773.059	4932328.059
91	Stocker, Sean	326670	RR 1		0		545479	CWI	DO	A		3/17/2005 0:00	1000	330800	4932355
92	Stocker, Sean	326670	RR 1		0		545479	CWI	DO	A		3/17/2005 0:00	1000	330800	4932355
93	Tersteeg, Jim	297410			0		229604	CWI	IR	A		3/17/2005 0:00	1000	331382	4932519
94	Tersteeg, Jim	297410			0		229604	CWI	IR	A		3/17/2005 0:00	1000	331382	4932519
95	Tersteeg, Jim	447238			3.3	MGY	774164-1	SWUDS	1	A		10/6/2004 0:00	140	331401	4932509
96	Tersteeg, Jim	447238			0		7741641	SWUDS	1	A		10/6/2004 0:00	140	331401	4932509
97	Tiffany, J.c.	188130			0		209644	CWI		U	V	3/1/1997 0:00	25	330882	4931024
98	Tiffany, J.c.	188130			0		209644	CWI		U	V	3/1/1997 0:00	25	330882	4931024
99	Tiffany, John	286353			0		161632	CWI	DO	A		3/15/2005 0:00	1000	330896.52	4931111
100	Tiffany, John	286353			0		161632	CWI	DO	A		3/15/2005 0:00	1000	330927	4931111
101	Tiffany, John	286353			0		161632	CWI	DO	A		3/15/2005 0:00	1000	330927	4931111
102	Warner, Arthur	58331	Rte Q Box 107	Agricultural chemical	0		22451	ADAMS	FEED	A		4/4/2001 0:00	15000	332533.72	4929472

FID	FAC_NAME	MDH_FAC_ID	DEL_ADDR	DWS_ID	MAP_ID
52	Redwood Falls So. Ramsey	188421		453	0
53	Redwood Falls So. Ramsey	188421		453	10
54	Rf-1	295334		453	0
55	Rf-1	295334		453	25
56	Rf-17	295340		453	0
57	Rf-17	295340		453	29
58	Rf-18	295341		453	0
59	Rf-18	295341		453	30
60	Rf-2	295336		453	0
61	Rf-2	295336		453	27
62	Rf-23	295342		453	0
63	Rf-23	295342		453	31
64	Rf-24	295343		453	0
65	Rf-24	295343		453	32
66	Rf-26	295326		453	0
67	Rf-26	295326		453	17
68	Rf-27	295331		453	0
69	Rf-27	295331		453	22
70	Rf-29	295332		453	0
71	Rf-29	295332		453	23
72	Rf-3	295337		453	0
73	Rf-3	295337		453	28
74	Rf-30	295330		453	0
75	Rf-30	295330		453	21
76	Rf-32	295333		453	0
77	Rf-32	295333		453	24
78	Rf-33	295367		453	0
79	Rf-33	295367		453	33
80	Rf-35	295325		453	0
81	Rf-35	295325		453	16
82	Rf-36	295335		453	0
83	Rf-36	295335		453	26
84	Rf-38	295329		453	0
85	Rf-38	295329		453	20
86	Rf-40	295328		453	0
87	Rf-40	295328		453	19
88	Rf-41	295327		453	0
89	Rf-41	295327		453	18
90	Stocker, Sean	326670	RR 1	453	0
91	Stocker, Sean	326670	RR 1	453	0
92	Stocker, Sean	326670	RR 1	453	37
93	Tersteeg, Jim	297410		453	0
94	Tersteeg, Jim	297410		453	36
95	Tersteeg, Jim	447238		453	0
96	Tersteeg, Jim	447238		453	42
97	Tiffany, J.c.	188130		453	0
98	Tiffany, J.c.	188130		453	9
99	Tiffany, John	286353		453	0
100	Tiffany, John	286353		453	0
101	Tiffany, John	286353		453	15
102	Warner, Arthur	58331	Rte Q Box 107	453	3

APPENDIX F

CITY OF REDWOOD FALLS, MN.

Wellhead Protection Program Evaluation

Evaluation Completed By
(Wellhead Protection Manager): _____

Date Evaluation Completed: _____

Plan Evaluation Frequency (according to wellhead protection plan):

- ☐ **1 year**
- ☐ **2 years**

Copies of Evaluation Presented or Sent to:

- ☐ Minnesota Department of Health
  Environmental Health Division
  Source Water Protection Unit
  P.O. Box 64975
  St. Paul, MN 55164-0975
- ☐ Redwood Falls City Council
  Date: _____
- ☐ City's Wellhead Protection File

I. Changes to Water System, Delineations, or Contaminant Sources

A. List the unique number and locations of new wells installed since the last plan evaluation:

Unique Well Number	Date Online	Delineation Completed?

B. List any new facilities or changes in current facilities in the drinking water supply management area(s) that may be of concern with regard to groundwater quality (list the facility name and nature of concern):

Facility Name	Change	Distance to Well	Well Number	Date Change Made

C. Was any component of the contingency plan implemented by the system at any time since the last program evaluation?

☐ Yes (What was the reason?_____)
☐ No

List changes that are needed in the contingency plan and update the plan accordingly:

1.

2.

3.

II. Wellhead Protection Plan Evaluation Approaches

In letters A-D below, complete the sections that apply to the evaluation approaches that were specified in the wellhead protection plan (Chapter 6).

A. **Sampling the quality of groundwater throughout the drinking water supply management area.** *(Summarize efforts or attach report of sampling results and conclusions.)*

B. **Documenting inventory control of potential contaminants.** *(Summarize efforts.)*

C. **Documentation of the implementation of wellhead protection measures.** *(Summarize efforts.)*

D. **Using monitoring data that are required by existing laws and rules in effect at the time of plan adoption.** *(List data used and summarize conclusions made from data.)*

III. New Wellhead Protection Data

List any new data that relates to wellhead protection delineations or source management (i.e., groundwater study results, water quality monitoring data, well construction logs, etc.) that may be used during the next update of the wellhead protection plan:

Nature of Data	Source of Data

IV. Plan Implementation Administrative and Financial Concerns

A. Estimate the annual expense of plan implementation for each plan year including staff time and actual dollar amount spent.

Year	Annual Expense	Year	Annual Expense
1	$	6	$
2	$	7	$
3	$	8	$
4	$	9	$
5	$	10	$

B. Estimate full-time equivalency (FTE) spent on wellhead protection implementation in terms of percentage of FTE.

FTE = _____%

C. Has the wellhead protection budget been adequate to conduct wellhead protection implementation activities during the last evaluation period?

☐ Yes ☐ No

If no, where could it improve?

D. Difficulties incurred during plan implementation.

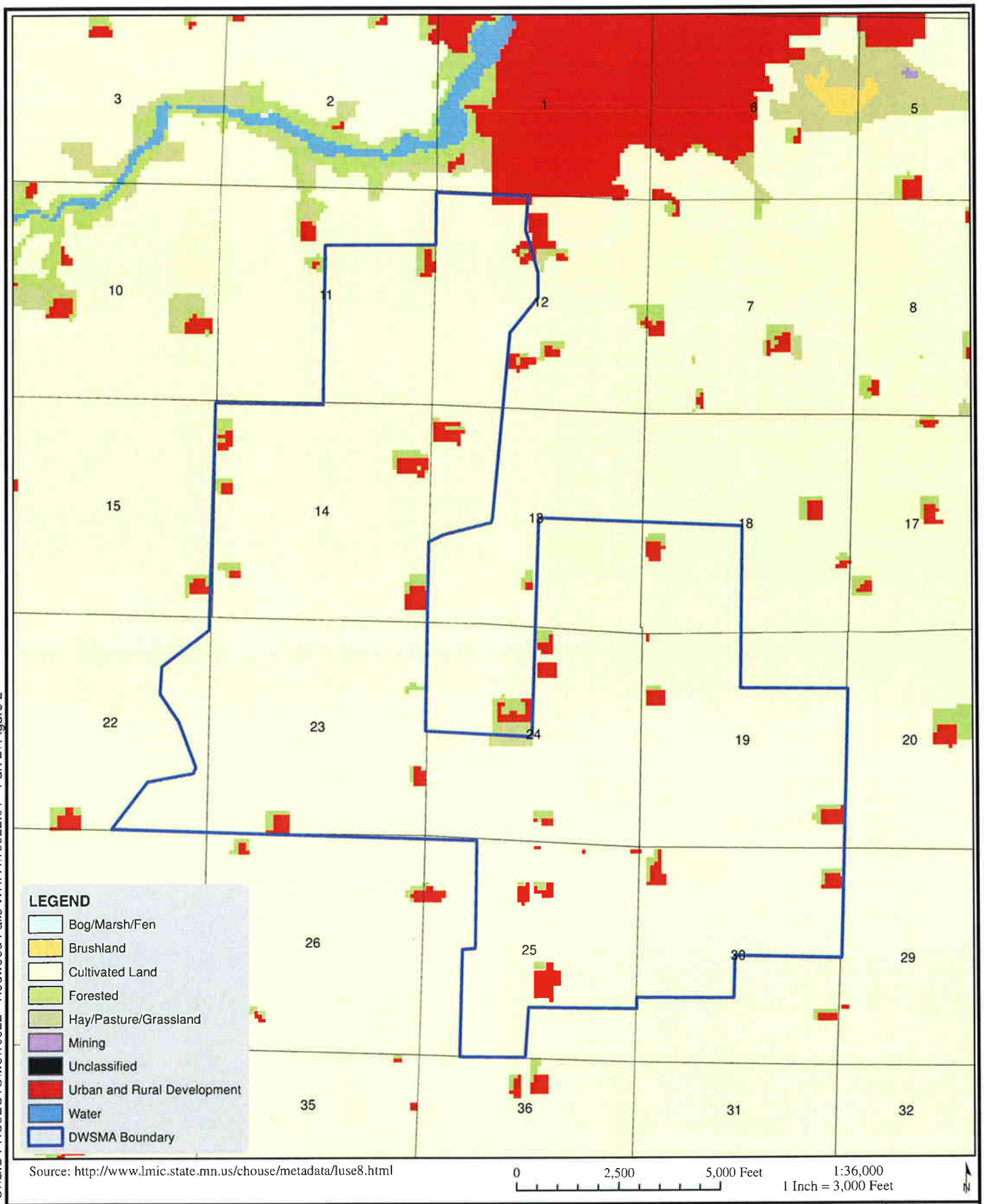
1.

2.

3.

4.

APPENDIX G



C:\GIS PROJECTS\ws\10922 - Redwood Falls WHPA\10922.01 - Part 2\ Figure 2

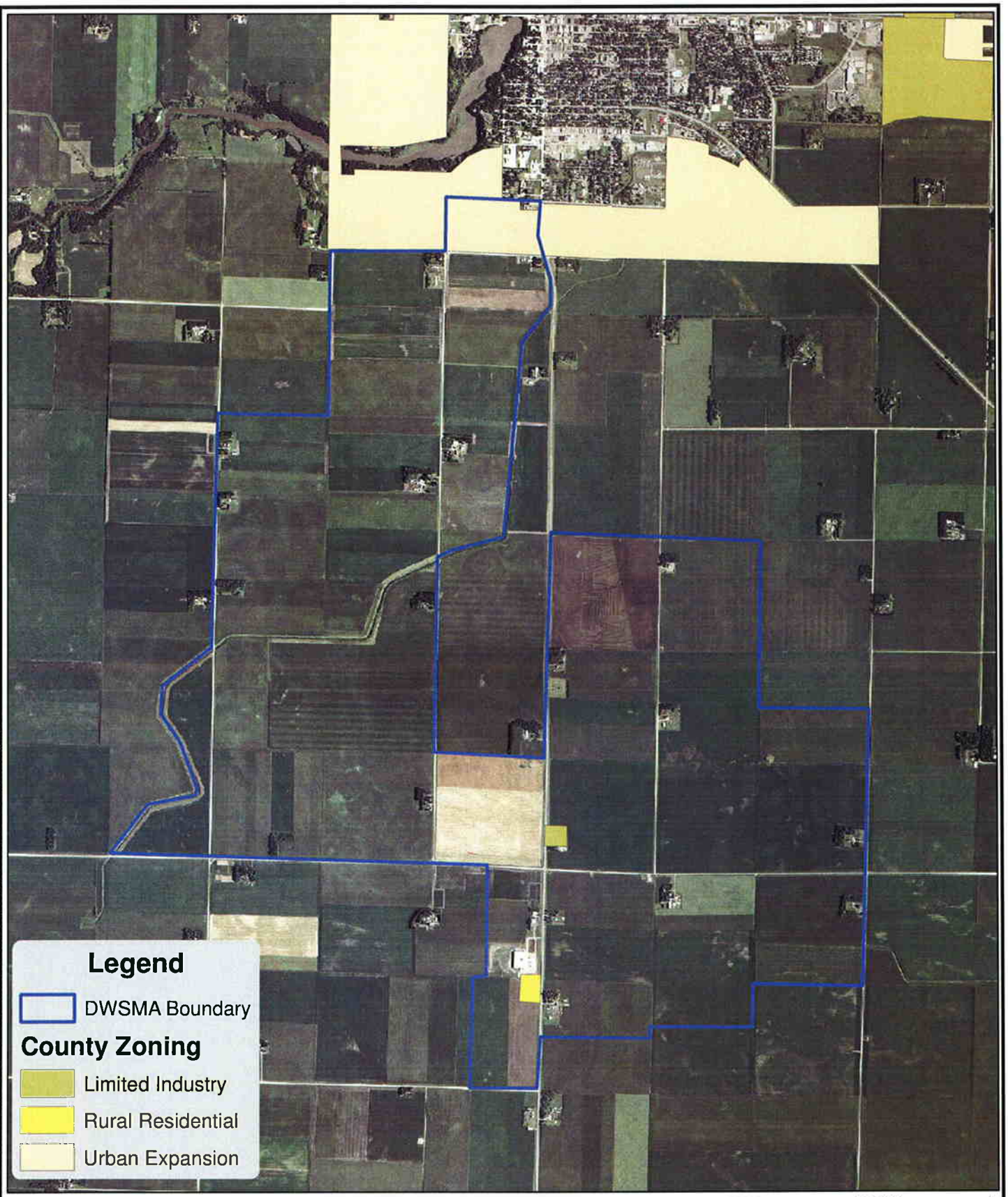
www.liesch.com

LIESCH Hydrogeologists • Engineers • Environmental Scientists

Minneapolis • Chicago • Los Angeles • Madison • Milwaukee • Phoenix

Redwood Falls - Wellhead Protection Program

Land Use Map



Source: Redwood County, MN

0 2,500 5,000 Feet

1:36,000
1 Inch = 3,000 Feet

N

C:\GIS PROJECTS\ws\10922 - Redwood Falls WHPA\10922.01 - Part 2\ Figure 3

www.liesch.com

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Minneapolis • Chicago • Los Angeles • Madison • Milwaukee • Phoenix

Redwood Falls - Wellhead Protection Program

Redwood County Zoning Map

443 Lafayette Road N.
St. Paul, Minnesota 55155
www.doli.state.mn.us

MINNESOTA DEPARTMENT OF LABOR & INDUSTRY

(651) 284-5067
1-800-DIAL-DLI
TTY: (651) 297-4198

Construction Codes and Licensing Division

Effects of 2008 Legislation – The Minnesota State Building Code

The 2008 Minnesota Legislature passed legislation that will have a significant positive impact on construction in Minnesota. In part, this legislation, carried by the Builders Association of Minnesota, has the following effects.

The statewide construction standard is now the Minnesota State Building Code

The Minnesota State Building Code has now been established as the minimum construction standard throughout all of Minnesota including all cities, townships, and counties. Although it is not enforceable by municipalities unless it is adopted by local ordinance, this law creates a level playing field for the construction industry by establishing the Minnesota State Building Code as the standard for the construction of all buildings in the state. Following are excerpts of the new law that will be contained in Minnesota Statute 16B.62 Subdivisions 1a and 1b:

Application (1a)

> The state building code is the standard that applies statewide for the construction, reconstruction, alteration, and repair of buildings and other structures of the type governed by the code. The State Building Code supersedes the building code of any municipality. The State Building Code does not apply to agricultural buildings except with respect to state inspections required or rulemaking authorized by sections 103F.141; 216C.19, subdivision 9; and 326.244."

Municipal enforcement (1b)

> (a) If, as of January 1, 2008, a municipality has in effect an ordinance adopting the State Building Code, that municipality must continue to administer and enforce the State Building Code within its jurisdiction. The municipality is prohibited from repealing its ordinance adopting the State Building Code. This paragraph does not apply to municipalities with a population of less than 2,500 according to the last federal census that are located outside of a metropolitan county, as defined in section 473.121, subdivision 4.
>
> (b) If a municipality is not required by paragraph (a) to administer and enforce the State Building Code, the municipality may choose to administer and enforce the State Building Code within its jurisdiction by adopting the code by ordinance [appointing a certified building official, and establishing a fee schedule]

Some existing state building code provisions remain where enforcement is still mandatory throughout the state. These include electrical, elevator, accessibility, high pressure piping, boiler, manufactured home, bleacher safety and commercial plumbing. With the exception of accessibility, these codes are enforced by the Construction Codes and Licensing Division in areas of the state where the code has not been adopted locally. The responsibility for enforcement of bleacher codes and the Accessibility Code rests with a statutory or home rule charter city or a county where there is no local ordinance in effect adopting the State Building Code.

Use of ungraded lumber

The Minnesota State Building Code currently controls the structural use of lumber used in the construction of buildings. Municipalities that have adopted the building code will continue to enforce the provisions for lumber use found in the code. However a provision was added by the legislature that addresses the use of lumber in areas of the state that had not adopted the state building code. It says, "The code must allow the use of ungraded lumber in geographic areas of the state where the code did not generally apply as of April 1, 2008, to the same extent that ungraded lumber could be used in that area before April 1, 2008."

Minnesota Rules, Table of Chapters

Table of contents for Chapter 4715

4715.1920 CROSS-CONNECTION CONTROL.

Cross-connections between potable water systems and other systems or equipment containing water or other substances of unknown or questionable safety are prohibited, except when and where, as approved by the authority having jurisdiction, suitable protective devices such as break tanks, reduced pressure zone backflow preventer, or equal, are installed, tested, and maintained to ensure proper operation on a continuing basis.

Cross-connections between an individual water supply and a potable public supply shall not be made unless specifically approved by the authority having jurisdiction.

STAT AUTH: MS s 144.12; 326.37 to 326.45

Current as of 11/20/01

APPENDIX H

David Lowell

From: Keith Muetzel-City of RWF [kmuetzel@ci.redwood-falls.mn.us]
Sent: Wednesday, July 29, 2009 4:00 PM
To: 'Terry Bovee'; David Lowell
Cc: 'Jim Doering'
Subject: FW: Comments on Wellhead Protection Plan
Attachments: MX-6200N_20090729_161820.pdf

Gentlemen,

Attached are the comments that we have received from the LGU's regarding Phase 2 of the Wellhead Protection Plan. This will also confirm that our public hearing has been scheduled for Tuesday, August 18 at 6:00 p.m. at City Hall. Thanks.

Keith Muetzel
City Administrator
City Redwood Falls
507-637-5755 voice
507-637-2417 fax

34076 300th. St.
Redwood Falls, MN 56283
July 4, 2009

Mr. James Doering
Public Works Project Coordinator
333 Washington Street
P.O. Box 526
Redwood Falls, MN 56283

We are writing with comments to the Wellhead Protection Plan for the City of Redwood Falls, Part 2.

Paxton Township concerns are basically the devaluing of property if any or all of the following were to happen because of your plan now or in the future.

Devaluing properties values in the Drinking Water Supply Management Area (DWSMA) due to but not all inclusive:

- Maybe could not fertilize area consistence with other land in the area.
- Maybe could not spread manure for fertilizing.
- Maybe could not sell manure rights to area livestock producers?
- Maybe could not drill personal wells.
  - Under current city policy, the land owner or tenant could not acquire water from the city without being annexed. Also, if that policy was changed, who would pay the extra expense to get the city water to their place of need?
- Maybe could not have septic system and drain fields, including cluster systems.
  - Property could be prevented from being developed into residential properties or to be sold to certain businesses.
- Maybe existing feedlots could not be expanded or new ones created.

Restricting land use and devaluing properties values is a concern without a plan in place to address these issues. Compensation needs to be address if people's rights are being taken away.

Mark Parker
Paxton Township Chair

Tammy Houle 7/22/09
Tammy Houle Date
Paxton Township Clerk

City of Redwood Falls DWSMA Part 2 Report Comment Sheet:

See attached sheet

And / Or Attach Comment Sheet and Submit With This Signature Page.

The PAXTON TOWNSHIP (LGU) understands **the City of Redwood Falls would appreciate my/our written comments by July 31, 2009 (30 days)** and the Wellhead Protection Rule (4720.5350, subpart 2) does allow up to 60 days for local government review and comment. Therefore, comments must be submitted no later than August 27, 2009. The submission of these listed and attached comments completes our review and waives any subsequent time remaining of the 60 day review period as referenced in the Wellhead Protection Rule (4720.5350, subpart 2).

MARK PARKER	PAXTON TOWNSHIP
Name: Print	Commenting LGU
CHAIRMAN	
Title: Print	
Mark Parker	7/22/09
Signature	Today's Date

redwood-cottonwood rivers control area

July 1, 2009

City of Redwood Falls, MN
Attn: James Doering
Public Works Coordinator
PO Box 526 – 333 Washington Street
Redwood Falls, MN 56283-2417

Re: Wellhead Protection Plan for the City of Redwood Falls, Part 2

Dear Mr. Doering,

We have reviewed the Draft Document for the Wellhead Protection Plan for the City of Redwood Falls, Part 2. We have no concerns or comments at this time.

Thank you for keeping RCRCA involved in this process by giving us the opportunity to review this portion of the proposed wellhead protection plan for Redwood Falls.

Sincerely,

Douglas A. Goodrich, Executive Director
Redwood-Cottonwood Rivers Control Area

1241 e. bridge st. • redwood falls, mn 56283
phone: 507/637-2142, ext. 4 • fax: 507/637-2134
web: www.rcrca.com • email: rcrca@rconnect.com

City of Redwood Falls DWSMA Part 2 Report Comment Sheet:

And / Or Attach Comment Sheet and Submit With This Signature Page.

The Redwood-Cottonwood Rivers Control Area (RCRCA) (LGU) understands **the City of Redwood Falls would appreciate my/our written comments by July 31, 2009 (30 days)** and the Wellhead Protection Rule (4720.5350, subpart 2) does allow up to 60 days for local government review and comment. Therefore, comments must be submitted no later than August 27, 2009. The submission of these listed and attached comments completes our review and waives any subsequent time remaining of the 60 day review period as referenced in the Wellhead Protection Rule (4720.5350, subpart 2).

Douglas A. Goodrich
Name: Print

RCRCA
Commenting LGU

Executive Director
Title: Print

Douglas A. Goodrich
Signature

07-1-2009
Today's Date

BOARD OF DIRECTORS AGENDA ANALYSIS FORM

AGENDA ITEM: 5 **MEETING DATE:** July 9, 2009

SUBJECT: Wellhead Protection Plan for the City of Redwood Falls

COMMITTEE ACTION _X_ **STATUS OR SCHEDULED REPORT** ___ **INFORMATION** ___

BACKGROUND/RATIONALE:

In 2002, the City of Redwood Falls provided notice of it's intent to develop a wellhead protection plan in accordance with requirements of state statute. The goal of these plans is to prevent human-caused contaminants from entering sources of the public water supply. In 2008 the City completed phase 1 of the Wellhead Protection Plan, including approval by the Minnesota Dept. of Health (MDH) of the delineation of wellhead protection areas, delineation of the Drinking Water Supply Management Area (DWSMA) and assessments of well and aquifer vulnerability. The assessment classified 2 of 5 wells as vulnerable due to elevated levels of elements indicating infiltration of surface water within the last 50 years. The remaining three wells have yet to be tested for this indication.

On 26 June 2009, the City of Redwood Falls issued phase 2 of the Wellhead Protection Plan for review and comment. This phase contains extensive information and analysis:

1. Data (physical environment, land use, water quantity, water quality)
2. Impact of Changes on the Public Water Supply Wells
3. Issues, Problems and Opportunities
4. Wellhead Protection Goals
5. Objectives and Plans of Action
6. Evaluation Program
7. Alternative Water Supply – Contingency Strategy

REGIONAL GOALS AND IMPACT/STAFF COMMENTS:

We have reviewed this project and found no specific issues of regional concern. SRDC has worked with many counties in the region on Local Water Management Plans, which are updated for the Minnesota Board of Water & Soil Resources (BWSR) at least every five-years. SRDC is currently working with Redwood County to update the All Hazards Mitigation Plan, which is required by the Federal Emergency Management Agency (FEMA) for eligibility for certain federal funding which may be useful for protection of the water supply. We would urge the City of Redwood Falls to continue participating actively in these efforts.

Time SRDC staff spent performing this review:

- 2 hours

Estimated income for the SRDC as a result of this review: $0

Staff Reviewer: John C. Shepard, AICP

PROJECT NUMBER

#2009 - 28

RECEIVED
JUL 14 2009
CITY OF REDWOOD FALLS

SOUTHWEST REGIONAL DEVELOPMENT COMMISSION
2401 BROADWAY AVENUE
SLAYTON MN 56172
PH: 507/836-8547

PROJECT APPLICANT
City of Redwood Falls

ADDRESS OF APPLICANT
Attention: James Doering, City of Redwood Falls
333 Washington Street, PO Box 526, Redwood Falls, MN 56283

PROJECT TITLE	PROJECT COST
Wellhead Protection Plan for the City of Redwood Falls, Part 2	N.A.

DATE PROJECT NOTIFICATION RECEIVED BY
June 29, 2009

DATE FINAL REVIEW SENT TO APPLICANT
July 13, 2009

CONSULTATION BETWEEN THE SRDC, APPLICANT, AND AFFECTED GOVERNMENT UNITS AND AGENCIES

WAS, (WAS NOT) (circle one) REQUIRED.

DATE OF CONSULTATION _____ PLACE CONSULTATION HELD _____

COMMENTS:

FINAL REVIEW COMMENTS:

The Full Commission of the SW Regional Development Commission, on July 9, 2009, reviewed the application from the City of Redwood Falls to the MN Dept of Health for their Wellhead Protection Plan (staff analysis of the project attached). The SRDC accepted the report in regards to this project.

This Form is in compliance with Executive Order 12372

RECEIVED
JUL 24 2009
CITY OF REDWOOD FALLS

City of Redwood Falls DWSMA Part 2 Report Comment Sheet:

After reviewing the local Wellhead Protection Plan, I find the plan has addressed all of Redwood County's concerns.

And / Or Attach Comment Sheet and Submit With This Signature Page.

The Redwood County Environmental office (LGU) understands **the City of Redwood Falls would appreciate my/our written comments by July 31, 2009 (30 days)** and the Wellhead Protection Rule (4720.5350, subpart 2) does allow up to 60 days for local government review and comment. Therefore, comments must be submitted no later than August 27, 2009. The submission of these listed and attached comments completes our review and waives any subsequent time remaining of the 60 day review period as referenced in the Wellhead Protection Rule (4720.5350, subpart 2).

Jon Mitchell
Name: Print

Redwood County
Commenting LGU

Director, Redwood County Environmental Office
Title: Print

Jon Mitchell
Signature

7-21-09
Today's Date

City of Redwood Falls DWSMA Part 2 Report Comment Sheet:

The County Board reviewed the plan on July 7, 2009 and has no comments to submit.

And / Or Attach Comment Sheet and Submit With This Signature Page.

The Redwood County Board of Commissioners (LGU) understands **the City of Redwood Falls would appreciate my/our written comments by July 31, 2009 (30 days)** and the Wellhead Protection Rule (4720.5350, subpart 2) does allow up to 60 days for local government review and comment. Therefore, comments must be submitted no later than August 27, 2009. The submission of these listed and attached comments completes our review and waives any subsequent time remaining of the 60 day review period as referenced in the Wellhead Protection Rule (4720.5350, subpart 2).

Vicki Knobloch
Name: Print

Redwood County
Commenting LGU

County Administrator
Title: Print

Vicki Knobloch
Signature

July 7, 2009
Today's Date

RECEIVED
JUL 02 2009
CITY OF REDWOOD FALLS

City of Redwood Falls DWSMA Part 2 Report Comment Sheet:

We have no comments on plan.

And / Or Attach Comment Sheet and Submit With This Signature Page.

The Redwood SWCD (LGU) understands **the City of Redwood Falls would appreciate my/our written comments by July 31, 2009 (30 days)** and the Wellhead Protection Rule (4720.5350, subpart 2) does allow up to 60 days for local government review and comment. Therefore, comments must be submitted no later than August 27, 2009. The submission of these listed and attached comments completes our review and waives any subsequent time remaining of the 60 day review period as referenced in the Wellhead Protection Rule (4720.5350, subpart 2).

Marilyn Bernhardson
Name: Print

Redwood SWCD
Commenting LGU

District Administrator
Title: Print

Marilyn Bernhardson
Signature

July 2, 2009
Today's Date

City of Redwood Falls DWSMA Part 2 Report Comment Sheet:

Redwood Falls Townships does not receive any information concerning any new wells or the abandonment of existing wells within our boundaries.

And / Or Attach Comment Sheet and Submit With This Signature Page.

The Township of Redwood Falls (LGU) understands **the City of Redwood Falls would appreciate my/our written comments by July 31, 2009 (30 days)** and the Wellhead Protection Rule (4720.5350, subpart 2) does allow up to 60 days for local government review and comment. Therefore, comments must be submitted no later than August 27, 2009. The submission of these listed and attached comments completes our review and waives any subsequent time remaining of the 60 day review period as referenced in the Wellhead Protection Rule (4720.5350, subpart 2).

STEPHEN J. NELSON
Name: Print

REDWOOD FALLS TOWNSHIP
Commenting LGU

CHAIRMAN
Title: Print

Stephen J. Nelson
Signature

6-30-09
Today's Date

APPENDIX I

Minnesota Department of Natural Resources

261 Highway 15 South, New Ulm MN 56073
(507) 359-6053

February 1, 2010

City of Redwood Falls
c/o Tom Stough, Water & Wastewater Superintendent
333 South Washington Street
Redwood Falls, MN 56283

RE: WATER SUPPLY PLAN APPROVAL, CITY OF REDWOOD FALLS, REDWOOD COUNTY

Dear Mr. Stough:

Thank you for submitting your updated water supply plan for the City of Redwood Falls. Your plan is hereby being approved in accordance with Minnesota Statutes, Section 103G.291, Subdivision 3. This approval is effective upon the Department's receipt of a completed copy of the attached "Certification of Adoption" form. Please return the form to DNR Waters, PO Box 111, Marshall, MN 56258 as soon as the City Council officially adopts the plan.

Also, please note approval of your water supply plan is contingent upon submission of a monitoring plan which includes monitoring static water levels in 5 production wells and an observation well monitoring is to occur on a bi-weekly basis. Also, please update the frequency column in Table 6 on Page 6.

Listed below are our comments and recommendations on your water supply plan.

- Water Use - We commend the City for the low average per capita water use of 53.4 gallons per day.

- Unaccounted for Water - The reductions in unaccounted for water volume over the past few years is admirable, and we encourage your efforts to continue to seek reductions in volume of unaccounted for water.

- Education - We encourage you to expand your educational efforts for enhanced water conservation with your users.

- Monitoring – Please utilize the reporting spreadsheet found on our website under the Water Level Monitoring Section on the following page: http://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/permits.html and submit the data electronically to the Ground Water Level Coordinator at: gwlevelcoor.dnr@state.mn.us.

Thank you for your work to help to ensure the sustainability of Redwood Fall's water supply. Please call Area Hydrologist, Lucas Youngsma at (507) 537-7258 if you have any questions.

Sincerely,

DNR WATERS

Skip Wright

Skip Wright
Regional Hydrologist

Enclosure

ec: Lucas Youngsma, Area Hydrologist
Jay Frischman, Groundwater Hydrologist
Joe Richter, Hydrologist
Jim Doering, Redwood Falls Project Coordinator

CERTIFICATION OF ADOPTION
WATER SUPPLY PLAN

City or Water System Name:

Name of Person Authorized to Sign
Certification on Behalf of the System:

Title:

Address:

Telephone: Fax:

E-mail:

I certify that the Water Supply Plan approved by the Department of Natural Resources has been adopted by the city council or utility board that has authority over water supply services.

Signed: Date:

Mail this certification to: **Dept of Natural Resources - Waters**
PO Box 111
Marshall MN 56258

DEPARTMENT OF NATURAL RESOURCES - DIVISION OF WATERS and METROPOLITAN COUNCIL
WATER SUPPLY PLANS

These guidelines are divided into four parts. The first three parts, Water Supply System Description and Evaluation, Emergency Response Procedures and Water Conservation Planning apply statewide. Part IV, relates to comprehensive plan requirements that apply only to communities in the Seven-County Twin Cities Metropolitan Area. If you have questions regarding water supply plans, please call (651) 259-5703 or (651) 259-5647 or e-mail your question to wateruse@dnr.state.mn.us. Metro Communities can also direct questions to the Metropolitan Council at watersupply@metc.state.mn.us or (651) 602-1066.

DNR Water Appropriation Permit Number(s)	540268
Name of Water Supplier	Redwood Falls Public Utilities
Address	333 S. Washington St., Redwood Falls, MN 56283
Contact Person	Tom Stough
Title	Water and Wastewater Superintendent
Phone Number	507-637-5755
E-Mail Address	rfwater@newulmtel.net

PART I. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION

The first step in any water supply analysis is to assess the current status of demand and supplies. Information in Part I, can be used in the development of Emergency Response Procedures and Conservation Plans.

A. ANALYSIS OF WATER DEMAND.

Fill in Table 1 for the past 10 years water demand. If your customer categories are different than the ones listed in Table 1, please note the changes below.
The Commercial/Industrial/Institutional water sold includes 5.2 MGY used at the Water Treatement Plant for the backwashing of the sand gravity filters.

TABLE 1 Historic Water Demand

Year	Total Population	Population Served	Total Connections	Residential Water Sold (MG)	C/I/I Water Sold (MG)	Wholesale Deliveries (MG)	Total Water Sold (MG)	Total Water Pumped (MG)	Percent Unmetered/ Unaccounted	Average Demand (MGD)	Maximum Demand (MGD)	Residential gallons/ capita/day	Total gallons/ capita/day
2007	5327	5327	2288	108.4	81.6	0	190.0	203.1	6.45	0.556	1.07	55.8	104.5
2006	5327	5327	2308	94.3	85.8	0	180.1	205.5	12.36	0.563	1.26	48.5	105.7
2005	5348	5348	2351	103.8	77.9	0	181.7	200.0	9.15	0.548	1.09	53.2	102.5
2004	5495	5495	2327	105.0	81.4	0	186.4	210.6	11.49	0.577	1.10	52.4	105.0
2003	5459	5459	2179	113.7	88.1	0	201.8	225.3	10.43	0.617	1.01	57.1	113.1
2002	5459	5459	2279	110.7	94.4	0	205.1	213.9	4.11	0.586	0.99	55.2	106.6
2001	5459	5459	2253	121.2	82.4	0	203.6	226.5	10.11	0.621	1.21	60.4	112.9
2000	5220	5220	2242	119.4	81.1	0	200.5	220.2	8.95	0.603	1.15	62.7	115.6
1999	5226	5226	2215	122.2	81.4	0	203.6	218.9	6.99	0.600	1.29	64.1	114.8
1998	5164	5164	2220	120.0	80.6	0	200.6	216.0	7.13	0.592	1.06	63.7	114.6

MG – Million Gallons **MGD** – Million Gallons per Day **C/I/I**- Commercial, Industrial, Institutional

Residential. Water used for normal household purposes, such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens.

Institutional. Hospitals, nursing homes, day care centers, and other facilities that use water for essential domestic requirements. This includes public facilities and public metered uses. You may want to maintain separate institutional water use records for emergency planning and allocation purposes.

Commercial. Water used by motels, hotels, restaurants, office buildings, commercial facilities, both civilian and military.

Industrial. Water used for thermoelectric power (electric utility generation) and other industrial uses such as steel, chemical and allied products, food processing, paper and allied products, mining, and petroleum refining.

Wholesale Deliveries. Bulk water sales to other public water suppliers.

Unaccounted. Unaccounted for water is the volume of water withdrawn from all sources minus the volume sold.

Residential Gallons per Capita per Day = total residential sales in gallons/population served/365 days **Total Gallons per Capita per Day =** total water withdrawals/population served/365 days

NOTE: Non-essential water uses defined by Minnesota Statutes 103G.291, include lawn sprinkling, vehicle washing, golf course and park irrigation and other non-essential uses. Some of the above categories also include non-essential uses of water.

Water Use Trends. Discuss factors that influence trends in water demand (i.e. growth, weather, industry, conservation). If appropriate, include a discussion of other factors that affect daily water use, such as use by non-resident commuter employees or large water consuming industry.
Water demand is most influenced by seasonal variations of weather. The City of Redwood Falls has awarded bids to develop a 1,500 gpm iron and manganese water treatment plant with sulfate and total dissolved solids reduction through a planned inline reverse osmosis system. Total plant output is projected to be 1.8 MGD to meet current and future (20-year growth) water demands. Added to this document is Part II of the City of Redwood Falls Draft Well Head Protection Plan that outlines in furthure detail the usage trends(estimated as static), and implementation goals and stratigies to reduce the vulnerability to the current well field and enhance source water protection.

TABLE 2 Large Volume Users - List the top 10 largest users.

Customer	Gallons per year	% of total annual use
City Swimming Pool	5,454,940	3.1
Redwood Area Hospital	2,931,906	1.7
Redwood Falls Nursery	2,792,060	1.6
Ricky'J's Car Wash	2,645,175	1.5
Buller, Menno	2,201,514	1.2
Pembco - Westfalls	2,131,800	1.2
Normandale LLC	1,950,410	1.1
Redwood Valley ISD 2897	1,774,780	1.0
Redwood Valley Lodge	1,753,028	1.0
Garnette Gardens	1,738,337	1.0

B. TREATMENT AND STORAGE CAPACITY.

TABLE 3(A) Water Treatment

Water Treatment Plant Capacity	Design Capacity 2.0 M Gallons per day
Describe the treatment process used (i.e., softening, chlorination, fluoridation, Fe/Mn removal, reverse osmosis, coagulation, sedimentation, filtration, others). Also, describe the annual amount and method of disposal of treatment residuals, if any.	
The current treatment of the groundwater includes chlorine injection for the oxidation of iron followed by potassium permanganate injection to primarily oxidize manganese. Gravity sand filters then remove the oxidized iron and manganese. Fluoride and chlorine are added to the finished water, which is then pumped to the ground storage reservoir. The WTP discharges the filter backwash water directly to the sanitary sewer system at a rate of about 5.2 MGY. The City of Redwood Falls has recently awarded bids to build a new water treatment facility to come on line Spring of 2011. The current water treatment system described above will remain	

online until that time and then demolished. The new water treatment facility will be a combination of iron mananese filtration with membrane softening and sulfate removal. The water treatment process would include the folloiwng major components: aeration and detention system, gravity sand filters, reverse osmosis membrane treatment, backwash water reclamation system (90,000 approx. gallons), clear well (524,000 approx. gallons), chemical feed systems, high service pumps and automated controls. The design capacity would be approx 1,500 gpm iron and managanese only, 1,200 gpm with RO. The new system is designed to treat iron, manganese and sulfates to below secondary treatment requirments and will reduce hardness within a range of 5-20 grains.

TABLE 3(B) Storage Capacity - List all storage structures and capacities.

Total Storage Capacity	**Average Day Demand** (average of last 5 years)
1,775,000 Gallons	572,200 Gallons per day

Type of Structure	Number of Structures	Gallons
Elevated Storage	1	500,000
Ground Storage	2	1,250,000
Other:Clear Well at WTP	1	25,000

C. WATER SOURCES. List all groundwater, surface water and interconnections that supply water to the system. Add or delete lines to the tables as needed.

TABLE 4(A) Total Water Source Capacity for System (excluding emergency connections)

Total Capacity of Sources	2,890	Gallons per minute
Firm Capacity (largest pump out of service)	1,940	Gallons per minute

1.**TABLE 4(B) Groundwater Sources** - Copies of water well records and well maintenance information should be included with the public water supplier's copy of the plan in Attachment A. If there are more wells than space provided or multiple well fields, please use the List of Wells template (see Resources) and include as Attachment -NA-.

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Well # or name	Unique Well Number	Year Installed	Well & Casing Depth (ft)	Well Diameter (in)	Capacity (GPM)	Geologic Unit	Status
1	00209660	1954	182	12	400	Drift	Active Use
2	00209659	1988	184	12	450	Drift	Active Use
3	00403955	1985	274	16	890	Drift	Active Use
5	00403995	1984	240	16	950	Drift	Active Use
South Ramsey	00241414	1950	94	12	200	Drift	Active Use

Status: Active use, Emergency, Standby, Seasonal, Peak use, etc. GPM – Gallons per Minute
Geologic Unit: Name of formation(s), which supplies water to the well

TABLE 4(C) Surface Water Sources

Intake ID	Resource name	Capacity (GPM/MGD)
NA		

GPM – Gallons per Minute MGD – Million Gallons per Day

TABLE 4(D) Wholesale or Retail Interconnections - List interconnections with neighboring suppliers that are used to supply water on a **regular basis** either wholesale or retail.

Water Supply System	Capacity (GPM/MGD)	Wholesale or retail
NA		

GPM – Gallons per Minute MGD – Million Gallons per Day

TABLE 4(E) Emergency Interconnections - List interconnections with neighboring suppliers or private sources that can be used to supply water on an emergency or occasional basis. Suppliers that serve less than 3,300 people can leave this section blank, but must provide this information in Section II C.

Water Supply System	Capacity (GPM/MGD)	Note any limitations on use
NA		

GPM – Gallons per Minute MGD – Million Gallons per Day

D. DEMAND PROJECTIONS.

TABLE 5 Ten Year Demand Projections

Year	Population Served	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Projected Demand (MGY)
2008	5307	0.572	1.20	209
2009	5340	0.575	1.21	210
2010	5370	0.578	1.21	211
2011	5400	0.581	1.22	212
2012	5430	0.584	1.22	213
2013	5460	0.586	1.23	214
2014	5490	0.589	1.23	215
2015	5520	0.592	1.24	216
2016	5550	0.595	1.24	217
2017	5580	0.598	1.25	218

MGD – Million Gallons per Day MGY – Million Gallons per Year

Projection Method. Describe how projections were made, (assumptions for per capita, per household, per acre or other methods used).

The Average and Maximum Day Demand are based on historical records and an estimated population and associated water demand increase of 0.5% per year.

D.E. RESOURCE SUSTAINABILITY

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Sustainable water use: use of water to provide for the needs of society, now and in the future, without unacceptable social, economic, or environmental consequences.

Monitoring. Records of water levels should be maintained for all production wells and source water reservoirs/basins. Water level readings should be taken monthly for a production well or observation well that is representative of the wells completed in each water source formation. **If water levels are not currently measured each year, a monitoring plan that includes a schedule for water level readings must be submitted as Attachment NA.**

TABLE 6 Monitoring Wells - List all wells being measured.

Unique well number	Type of well (production, observation)	Frequency of Measurement (daily, monthly etc.)	Method of Measurement (steel tape, SCADA etc.)
00209660	Production	Monthly/bi-weekly	M-Scope/SCADA
00209659	Production	Monthly/bi-weekly	M-Scope/SCADA
00403955	Production	Monthly/bi-weekly	M-Scope/SCADA
00403995	Production	Monthly/bi-weekly	M-Scope/SCADA
00241414	Production	Monthly/bi-weekly	M-Scope/SCADA

Water Level Data. Summarize water level data including seasonal and long-term trends for each ground and/or surface water source. If water levels are not measured and recorded on a routine basis then provide the static water level (SWL) when the well was constructed and a current water level measurement for each production well. Also include all water level data taken during well and pump maintenance.

Attachment B: Provide monitoring data (graph or table) for as many years as possible.

Ground Water Level Monitoring – DNR Waters in conjunction with federal and local units of government maintain and measure approximately 750 observation wells around the state. Ground water level data are available online www.dnr.state.mn.us/waters. Information is also available by contacting the Ground Water Level Monitoring Manager, DNR Waters, 500 Lafayette Road, St. Paul, MN 55155-4032 or call (651) 259-5700.

Natural Resource Impacts. Indicate any natural resource features such as calcareous fens, wetlands, trout streams, rivers or surface water basins that are or could be influenced by water withdrawals from municipal production wells. Also indicate if resource protection thresholds have been established and if mitigation measures or management plans have been developed.
There are no anticipated impacts on surface water basins at this time. Page 1, of part 2 in the City of Redwood Falls draft Wellhead protection plan indicates there is no direct hydraulic connection between surface waters and the aquifer serving this water supply system. Therefore this section would not be applicable.

Sustainability. Evaluate the adequacy of the resource to sustain current and projected demands. Describe any modeling conducted to determine impacts of projected demands on the resource.
The projected Average Day Demand for the 10-year planning period is approximately 0.6 MGD and the projected Maximum Day Demand is approximately 1.3 MGD. The current Firm Well Capacity is 1940 GPM or more than 2.0 MGD. The current high firm well capacity is more than adequate to meet the water needs for the City of Redwood Falls during the 10-year planning period and beyond. Page 2, section 1.3.1 Groundwater Quantitiy of the City of Redwood Falls draft Wellhead Protection Plan indicates that ground water levels are adequate for the volumes which Redwood Falls is currently permitted under the the groundwater appropriations program that is administered by the MN Departement of Natural Resources (DNR). Currently the City of Redwood Falls is in the process of developing a new Drinking Water Treatment Facility with a maximum production capacity of 1.8 MGD which is lower than the maximum production capacity of its current system.

Source Water Protection Plans. The emergency procedures in this plan are intended to comply with the contingency plan provisions required in the Minnesota Department of Health's (MDH) Wellhead Protection (WHP) Plan and Surface Water Protection (SWP) Plan.	
Date WHP Plan Adopted:	Phase 1 is complete and Phase 2 is in process with completion to be achieved on or before August, 2009.
Date for Next WHP Update:	
SWP Plan:	☐ In Process ☐ Completed ☒ Not Applicable

F. CAPITAL IMPROVEMENT PLAN (CIP)

Adequacy of Water Supply System. Are water supply installations, treatment facilities and distribution systems adequate to sustain current and projected demands? ☐ Yes ☒ No If no, describe any potential capital improvements over the next ten years and state the reasons for the proposed changes (CIP Attachment - None attached, general plan is described below).
The existing water treatment facility is 33-years old and is at the end of its design life. The water treatement plant (WTP) is scheduled for replacement within the 10-year planning period. The raw water lines connecting the wells to the WTP are in process of being replaced in annual half mile increments. The completion of the comprehensive raw water line system replacement is scheduled for completion within the 10-year planning period. Portions of the water distribution system are aged, undersized and in need of replacement. Within the next 10-year period, isolated portions of the water distribution system will be replaced in conjunction with other street and utility improvement projects.

Proposed Water Sources. Does your current CIP include the addition of new wells or intakes? ☐ Yes ☒ No If yes, list the number of new installations and projected water demands from each for the next ten years. Plans for new production wells must include the geologic source formation, well location, and proposed pumping capacity.
NA

Proposed Water Source Alternatives. If new water sources are being proposed, describe alternative sources that were considered and any possibilities of joint efforts with neighboring communities for development of supplies.
No new water source is proposed.

Preventative Maintenance. Long-term preventative programs and measures will help reduce the risk of emergency situations. Identify sections of the system that are prone to failure due to age, materials or other problems. This information should be used to prioritize capital improvements, preventative maintenance, and to determine the types of materials (pipes, valves, couplings, etc.) to have in stock to reduce repair time.
The Water Utility maintains a comprehensive map of the water distribution system. When information is available, the map includes pipe diameters, pipe material and year of installation. The Water Utility also maintains records of watermain breaks. Problem areas are considered as part of the Capital Improvement Process with priority given to areas having a history of repairs. The Water Utility has established system wide material and installation standards for pipe and fittings; and service pipe, corporations, curb stops and curb boxes. The Water Utility maintains a stock of the standard materials and non-standard materials. Water Utility staff is trained, equiped and capable of performing repairs to the water system.

PART II. EMERGENCY RESPONSE PROCEDURES

Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failures, drought, flooding, and other natural disasters. The purpose of emergency planning is to develop emergency response procedures and to identify actions needed to improve emergency preparedness. In the case of a municipality, these procedures should be in support of, and part of, an all-hazard emergency operations plan. If your community already has written procedures dealing with water emergencies we recommend that you use these guidelines to review and update existing procedures and water supply protection measures.

Federal Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV – Drinking Water Security and Safety) requires community water suppliers serving over 3,300 people to prepare an Emergency Response Plan. **Community water suppliers that have completed the Federal Emergency Response Plan and submitted the required certification to the U.S. Environmental Protection Agency have satisfied Part II, Sections A, B, and C of these guidelines and need only provide the information below regarding the emergency response plan and source water protection plan and complete Sections D (Allocation and Demand Reduction Procedures), and E (Enforcement).**

Provide the following information regarding your completed Federal Emergency Response Plan:

Emergency Response Plan	Contact Person	Contact Number
Emergency Response Lead	Water Supt. Tom Stough	507-430-0166
Alternate Emergency Response Lead	On Call Operator	507-430-1396
Emergency Response Plan Certification Date	NA	

Operational Contingency Plan. An operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance is recommended for all utilities. Check here ☒ if the utility has an operational contingency plan. At a minimum a contact list for contractors and supplies should be included in a water emergency telephone list.

Communities that have completed Federal Emergency Response Plans should skip to Section D.

EMERGENCY RESPONSE PROCEDURES

A. Emergency Telephone List. A telephone list of emergency contacts must be included as Attachment C to the plan (complete template or use your own list). The list should include key utility and community personnel, contacts in adjacent communities, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list on a regular basis (once each year recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Responsibilities and services for each contact should be defined.

B. Current Water Sources and Service Area. Quick access to concise and detailed information on water sources, water treatment, and the distribution system may be needed in an emergency. System operation, water well and maintenance records should be maintained in a central secured location so that the records are accessible for emergency purposes and preventative maintenance. A detailed map of the system showing the treatment plants, water sources, storage facilities, supply lines, interconnections, and other information that would be useful in an emergency should also be readily available. Check here ☒ if these records and maps exist and staff can access the documents in the event of an emergency.

C. Procedure for Augmenting Water Supplies. List all available sources of water that can be used to augment or replace existing sources in an emergency. In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Copies of cooperative agreements should be maintained with your copy of the plan and include in Attachment NA. Be sure to include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MN Department of Health are required for interconnections and reuse of water.

TABLE 7 (A) Public Water Supply Systems – List interconnections with other public water supply systems that can supply water in an emergency.

Water Supply System	Capacity (GPM/MGD)	Note any limitations on use
None		

GPM – Gallons per Minute MGD – Million Gallons per Day

TABLE 7 (B) - Private Water Sources – List other sources of water available in an emergency.

Name	Capacity (GPM/MGD)	Note any limitations on use
None		

GPM – Gallons per Minute MGD – Million Gallons per Day

D. Allocation and Demand Reduction Procedures. The plan must include procedures to

address gradual decreases in water supply as well as emergencies and the sudden loss of water due to line breaks, power failures, sabotage, etc. During periods of limited water supplies public water suppliers are required to allocate water based on the priorities established in Minnesota Statutes 103G.261.

Water Use Priorities (Minnesota Statutes 103G.261)

First Priority. Domestic water supply, excluding industrial and commercial uses of municipal water supply, and use for power production that meets contingency requirements.

NOTE: Domestic use is defined (MN Rules 6115.0630, Subp. 9), as use for general household purposes for human needs such as cooking, cleaning, drinking, washing, and waste disposal, and uses for on-farm livestock watering excluding commercial livestock operations which use more than 10,000 gallons per day or one million gallons per year.

Second Priority. Water uses involving consumption of less than 10,000 gallons per day.

Third Priority. Agricultural irrigation and processing of agricultural products.

Fourth Priority. Power production in excess of the use provided for in the contingency plan under first priority.

Fifth Priority. Uses, other than agricultural irrigation, processing of agricultural products, and power production.

Sixth Priority. Non-essential uses. These uses are defined by Minnesota Statutes 103G.291 as lawn sprinkling, vehicle washing, golf course and park irrigation, and other non-essential uses.

List the statutory water use priorities along with any local priorities (hospitals, nursing homes, etc.) in Table 8. Water used for human needs at hospitals, nursing homes and similar types of facilities should be designated as a high priority to be maintained in an emergency. Local allocation priorities will need to address water used for human needs at other types of facilities such as hotels, office buildings, and manufacturing plants. The volume of water and other types of water uses at these facilities must be carefully considered. After reviewing the data, common sense should dictate local allocation priorities to protect domestic requirements over certain types of economic needs. In Table 8, list the priority ranking, average day demand and demand reduction potential for each customer category (modify customer categories if necessary).

Table 8 Water Use Priorities

Customer Category	Allocation Priority	Average Day Demand (GPD)	Demand Reduction Potential (GPD)
Residential	1	111,870	Winter Months- Minimal Summer Months - 10%
Institutional			
Commercial	2	78,270	Similar to Residential
Industrial			
Irrigation			
Wholesale			
Non-essential	6		
	TOTALS	190,140	

GPD – Gallons per Day

Demand Reduction Potential. The demand reduction potential for residential use will typically be the base demand during the winter months when water use for non-essential uses such as lawn watering do not occur. The difference between summer and winter demands typically defines the demand reduction that can be achieved by eliminating non-essential uses. In extreme emergency situations lower priority water uses must be restricted or eliminated to protect first priority domestic water requirements. Short-term demand reduction potential should be based on average day demands for customer categories within each priority class.

Triggers for Allocation and Demand Reduction Actions. Triggering levels must be defined for implementing emergency responses, including supply augmentation, demand reduction, and water allocation. Examples of triggers include: water demand >100% of storage, water level in well(s) below a certain elevation, treatment capacity reduced 10% etc. Each trigger should have a quantifiable indicator and actions can have multiple stages such as mild, moderate and severe responses. Check each trigger below that is used for implementing emergency responses and for each trigger indicate the actions to be taken at various levels or stages of severity in Table 9.

- ☒ Water Demand
- ☐ Treatment Capacity
- ☐ Storage Capacity
- ☐ Groundwater Levels
- ☐ Surface Water Flows or Levels
- ☒ Pump, Booster Station or Well Out of Service
- ☐ Water Main Break
- ☒ Loss of Production
- ☐ Security Breach
- ☐ Contamination
- ☐ Other (list in Table 9)
- ☒ Governor's Executive Order – Critical Water Deficiency (required by statute)

Table 9 Demand Reduction Procedures

Condition	Trigger(s)	Actions
Stage 1 (Mild)	WTP operates for 20 or more hours for 3 consecutive days.	Outdoor use of water will be restricted year-round between the hours of 10:00 am to 6:00 pm. The use of outdoor water supply will be limited to an even/odd day basis. Only limited use of outdoor water will be permitted.
Stage 2 (Moderate)	WTP operates for 20 or more hours for 5 consective days.	The use of outdoor water is permitted as described in Stage 1 except that the permitted days and hours are set by the Public Works Project Coordinator. No recreational use of outdoor water will be permitted.
Stage 3 (Severe)	WTP operates for 20 or more hours for 7 consecutive days.	A total ban of outdoor water use will be implemented within the municipal water service area.
Critical Water Deficiency (M.S. 103G.291)	Executive Order by Governor & as provided in above triggers	Stage 1: Restrict lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses Stage 2: Suspend lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses

Note: The potential for water availability problems during the onset of a drought are almost impossible to predict. Significant increases in demand should be balanced with preventative measures to conserve supplies in the event of prolonged drought conditions.

Notification Procedures. List methods that will be used to inform customers regarding conservation requests, water use restrictions, and suspensions. Customers should be aware of emergency procedures and responses that they may need to implement.
A notice containing the provisions of the upgraded level will be delivered to each water customer within the municipal water service area. The notice will also be posted at City Hall and other municipal buildings. The notice will also be broadcast on the local radio station.

E. Enforcement. Minnesota Statutes require public water supply authorities to adopt and enforce water conservation restrictions during periods of critical water shortages.

Public Water Supply Appropriation During Deficiency.
Minnesota Statutes 103G.291, Subdivision 1.

Declaration and conservation.
(a) If the governor determines and declares by executive order that there is a critical water deficiency, public water supply authorities appropriating water must adopt and enforce water conservation restrictions within their jurisdiction that are consistent with rules adopted by the commissioner.
(b) The restrictions must limit lawn sprinkling, vehicle washing, golf course and park irrigation, and other nonessential uses, and have appropriate penalties for failure to comply with the restrictions.

An ordinance that has been adopted or a draft ordinance that can be quickly adopted to comply with the critical water deficiency declaration must be included in the plan (include with other ordinances in Attachment 7 for Part III, Item 4). Enforcement responsibilities and penalties for non-compliance should be addressed in the critical water deficiency ordinance.
Sample regulations are available at www.dnr.state.mn.us/waters

Authority to Implement Water Emergency Responses. Emergency responses could be delayed if city council or utility board actions are required. Standing authority for utility or city managers to implement water restrictions can improve response times for dealing with emergencies. Who has authority to implement water use restrictions in an emergency?

☒ Utility Manager ☒ City Manager ☐ City Council or Utility Board
☒ Other (describe): Public Works Project Coordinator

Emergency Preparedness. If city or utility managers do not have standing authority to implement water emergency responses, please indicate any intentions to delegate that authority. Also indicate any other measures that are being considered to reduce delays for implementing emergency responses.
NA

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PART III. WATER CONSERVATION PLAN

Water conservation programs are intended to reduce demand for water, improve the efficiency in use and reduce losses and waste of water. Long-term conservation measures that improve overall water use efficiencies can help reduce the need for short-term conservation measures. Water conservation is an important part of water resource management and can also help utility managers satisfy the ever-increasing demands being placed on water resources.

Minnesota Statutes 103G.291, requires public water suppliers to implement demand reduction measures before seeking approvals to construct new wells or increases in authorized volumes of water. Minnesota Rules 6115.0770, require water users to employ the best available means and practices to promote the efficient use of water. Conservation programs can be cost effective when compared to the generally higher costs of developing new sources of supply or expanding water and/or wastewater treatment plant capacities.

A. Conservation Goals. The following section establishes goals for various measures of water demand. The programs necessary to achieve the goals will be described in the following section.

Unaccounted Water (calculate five year averages with data from Table 1)		
Average annual volume unaccounted water for the last 5 years	20.9 M	gallons
Average percent unaccounted water for the last 5 years	10.0	percent
AWWA recommends that unaccounted water not exceed 10%. Describe goals to reduce unaccounted water if the average of the last 5 years exceeds 10%.		
The raw water supply is high in iron, manganese and total hardness. An aggressive annual flushing program has been implemented to facilitate suspended solids removal for the more than 7-mile long raw watermain. The Water Utility will consider recording the volume of raw water that is utilized for the flushing of the raw water lines. The Water Utility implemented a large water meter inspection/calibration program in 2007. The program has identified and remidied meter inacurracies at the wells and at points of sale. The program will be ongoing. The Water Utility has implemented an annual leak detection program for the water distribution system.		

Residential Gallons Per Capita Demand (GPCD)		
Average residential GPCD use for the last 5 years (use data from Table 1)	53.36	GPCD
In 2002, average residential GPCD use in the Twin Cities Metropolitan Area was 75 GPCD. Describe goals to reduce residential demand if the average for the last 5 years exceeds 75 GPCD.		
NA		

Total Per Capita Demand: From Table 1, is the trend in overall per capita demand over the past 10 years ☐ increasing or ☒ decreasing? If total GPCD is increasing, describe the goals to lower overall per capita demand or explain the reasons for the increase.

NA

Peak Demands (calculate average ratio for last five years using data from Table 1)	
Average maximum day to average day ratio	1.93
If peak demands exceed a ratio of 2.6, describe the goals for lowering peak demands.	
NA	

B. Water Conservation Programs. Describe all short-term conservation measures that are available for use in an emergency and long-term measures to improve water use efficiencies for each of the six conservation program elements listed below. Short-term demand reduction measures must be included in the emergency response procedures and must be in support of, and part of, a community all-hazard emergency operation plan.

1. **Metering.** The American Water Works Association (AWWA) recommends that every water utility meter all water taken into its system and all water distributed from its system at its customer's point of service. An effective metering program relies upon periodic performance testing, repair, repair and maintenance of all meters. AWWA also recommends that utilities conduct regular water audits to ensure accountability. Complete Table 10 (A) regarding the number and maintenance of customer meters.

TABLE 10 (A) Customer Meters

	Number of Connections	Number of Metered Connections	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Residential	1894	1894	In response to problems or unusual reading	15-20 / As needed
Institutional				/
Commercial	394	394	5-year average	15-20 / Re-built or replaced in response to testing. 5-7 years between rebuild is typ.
Industrial				/
Public Facilities				/
Other				/
TOTALS				

Unmetered Systems. Provide an estimate of the cost to install meters and the projected water savings from metering water use. Also indicate any plans to install meters.
The estimated cost to install a new residential water meter is approximately $100 and the estimated cost to install a new commercial meter varies with size and can be more than $2,000.

Replacing water meters has the potential to make the water meter reading more accurate resulting in a reduction in the total amount of unaccounted water. Meter replacement and rebuilding is done on an as needed basis.

TABLE 10 (B) Water Source Meters

	Number of Meters	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Water Source (wells/intakes)	5	Every Other	10 + / Rebuilt about every 5-years.
Treatment Plant	None		/

2. **Unaccounted Water.** Water audits are intended to identify, quantify, and verify water and revenue losses. The volume of unaccounted-for water should be evaluated each billing cycle. The AWWA recommends a goal of ten percent or less for unaccounted-for water. Water audit procedures are available from the AWWA and MN Rural Water Association.

Frequency of water audits: ☒ each billing cycle ☐ yearly ☐ other:

Leak detection and survey: ☒every year ☐ every years ☐ periodic as needed
Year last leak detection survey completed:

Reducing Unaccounted Water. List potential sources and efforts being taken to reduce unaccounted water. If unaccounted water exceeds 10% of total withdrawals, include the timeframe for completing work to reduce unaccounted water to 10% or less.
See Response under Paragraph A. The Water Utility will consider metering the filter backwash water used at the WTP. The metering of the backwash water is anticipated to bring the unaccounted water total to 10% or less of the total withdrawl.The new 2011 water treatment plant desings includes both metering backwash and RO reject water.

3. **Conservation Water Rates.** Plans must include the current rate structure for all customers and provide information on any proposed rate changes. Discuss the basis for current price levels and rates, including cost of service data, and the impact current rates have on conservation.

Billing Frequency: ☒ Monthly ☐ Bimonthly ☐ Quarterly
☐ Other (describe):

Volume included in base rate or service charge: gallons or 0 cubic feet

Conservation Rate Structures
- ☐ Increasing block rate: rate per unit increases as water use increases
- ☐ Seasonal rate: higher rates in summer to reduce peak demands
- ☐ Service charge or base fee that does not include a water volume

Conservation Neutral Rate Structure
- ☒ Uniform rate: rate per unit is the same regardless of volume

Non-conserving Rate Structures
- ☐ Service charge or base fee that includes a large volume of water
- ☐ Declining block rate: rate per unit decreases as water use increases
- ☐ Flat rate: one fee regardless of how much water is used (unmetered)

Other (describe):

Water Rates Evaluated: ☒ every year ☐ every years ☐ no schedule
Date of last rate change: 2007

Declining block (the more water used, the cheaper the rate) and flat (one fee for an unlimited volume of water) rates should be phased out and replaced with conservation rates. Incorporating a seasonal rate structure and the benefits of a monthly billing cycle should also be considered along with the development of an emergency rate structure that could be quickly implemented to encourage conservation in an emergency.

Current Water Rates. Include a copy of the actual rate structure in Attachment NA or list current water rates including base/service fees and volume charges below.
Monthly Usage Charge - $2.70 per 100 Cubic Feet Monthly Infrastructure Replacement/Availability Charge - $6.00 per Service

Non-conserving Rate Structures. Provide justification for the rate structure and its impact on reducing demands or indicate intentions including the timeframe for adopting a conservation rate structure.

4. **Regulation.** Plans should include regulations for short-term reductions in demand and long-term improvements in water efficiencies. Sample regulations are available from DNR Waters. Copies of adopted regulations or proposed restrictions should be included in Attachment D of the plan. Indicate any of the items below that are required by local regulations and also indicate if the requirement is applied each year or just in emergencies.

☒ Time of Day: no watering between 10 am am/pm and 6 pm am/pm
(reduces evaporation) ☐ year around ☐ seasonal ☒ emergency only
☒ Odd/Even: (helps reduce peak demand) ☐ year around ☐ seasonal ☒ emergency only
☐ Water waste prohibited (no runoff from irrigation systems)
Describe ordinance:
☐ Limitations on turf areas for landscaping (reduces high water use turf areas)
Describe ordinance:
☐ Soil preparation (such as 4"-6" of organic soil on new turf areas with sandy soil)
Describe ordinance:
☐ Tree ratios (plant one tree for every square feet to reduce turf evapotranspiration)
Describe ordinance:
☐ Prohibit irrigation of medians or areas less than 8 feet wide
Describe ordinance:
☐ Permit required to fill swimming pool ☐ every year ☐ emergency only
☒ Other (describe): Seeding, sodding and other plantings restrictions during emergencies.

State and Federal Regulations (mandated)

☒ Rainfall sensors on landscape irrigation systems. Minnesota Statute 103G.298 requires "All automatically operated landscape irrigation systems shall have furnished and installed technology that inhibits or interrupts operation of the landscape irrigation system during periods of sufficient moisture. The technology must be adjustable either by the end user or the professional practitioner of landscape irrigation services."

☒ Water Efficient Plumbing Fixtures. The 1992 Federal Energy Policy Act established manufacturing standards for water efficient plumbing fixtures, including toilets, urinals, faucets, and aerators.

Enforcement. Are ordinances enforced? ☒ Yes ☐ No If yes, indicate how ordinances are enforced along with any penalties for non-compliance.
The rainfall sensor and water efficient plumbing fixture regulations are enforced through the building permit and associated plan review process. Enforcement is achieved by approval or denial of the permit application. Any member of City Staff may be appointed by the Water Superintendent or Chief of Police to enforce the ordinance.

5. **Education and Information Programs.** Customers should be provided information on how to improve water use efficiencies a minimum of two times per year. Information should be provided at appropriate times to address peak demands. Emergency notices and educational materials on how to reduce water use should be available for quick distribution during an emergency. If any of the methods listed in the table below are used to provide water conservation tips, indicate the number of times that information is provided each year and attach a list of education efforts used for the last three years.

Current Education Programs	**Times/Year**
Billing inserts or tips printed on the actual bill	Quarterly
Consumer Confidence Reports	Annual
Local news papers	
Community news letters	Quarterly
Direct mailings (water audit/retrofit kits, showerheads, brochures)	Annual
Information at utility and public buildings	On-going
Public Service Announcements	
Cable TV Programs	
Demonstration projects (landscaping or plumbing)	
K-12 Education programs (Project Wet, Drinking Water Institute)	
School presentations	
Events (children's water festivals, environmental fairs)	
Community education	
Water Week promotions	
Information provided to groups that tour the water treatment plant	Annual
Website (include address:)	
Targeted efforts (large volume users, users with large increases)	On-going
Notices of ordinances (include tips with notices)	
Emergency conservation notices (recommended)	
Other:	

List education efforts for the last three years in Attachment E of the plan. Be sure to indicate whether educational efforts are on-going and which efforts were initiated as an emergency or drought management effort.

Proposed Education Programs. Describe any additional efforts planned to provide conservation information to customers a minimum of twice per year (required if there are no current efforts).
As part of Phase II of the Well Head Projection Plan additional educational programming for the WPA will be added with the Area Hydrologist also being added to the mailing list.

A packet of conservation tips and information can be obtained by contacting DNR Waters or the Minnesota Rural Water Association (MRWA). The American Water Works Association (AWWA) www.awwa.org or www.waterwiser.org also has excellent materials on water conservation that are available in a number of formats. You can contact the MRWA 800/367-6792, the AWWA bookstore 800/926-7337 or DNR Waters 651/259-5703 for information regarding educational materials and formats that are available.

6. **Retrofitting Programs.** Education and incentive programs aimed at replacing inefficient plumbing fixtures and appliances can help reduce per capita water use as well as energy costs. It is recommended that communities develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and that the benefits of retrofitting be included in public education programs. You may also want to contact local electric or gas suppliers to see if they are interested in developing a showerhead distribution program for customers in your service area.

A study by the AWWA Research Foundation (Residential End Uses of Water, 1999) found that the average indoor water use for a non-conserving home is 69.3 gallons per capita per day (gpcd). The average indoor water use in a conserving home is 45.2 gpcd and most of the decrease in water use is related to water efficient plumbing fixtures and appliances that can reduce water, sewer and energy costs. In Minnesota, certain electric and gas providers are required (Minnesota Statute 216B.241) to fund programs that will conserve energy resources and some utilities have distributed water efficient showerheads to customers to help reduce energy demands required to supply hot water.

Retrofitting Programs. Describe any education or incentive programs to encourage the retrofitting of inefficient plumbing fixtures (toilets, showerheads, faucets, and aerators) or appliances (washing machines).
None

Plan Approval. Water Supply Plans must be approved by the Department of Natural Resources (DNR) every ten years. Please submit plans for approval to the following address:

DNR Waters
Water Permit Programs Supervisor
500 Lafayette Road
St. Paul, MN 55155-4032

or Submit electronically to wateruse@dnr.state.mn.us.

Adoption of Plan. All DNR plan approvals are contingent on the formal adoption of the plan by the city council or utility board. Please submit a certificate of adoption (example available) or other action adopting the plan.

Metropolitan Area communities are also required to submit these plans to the Metropolitan Council. Please see PART IV. ITEMS FOR METROPOLITAN AREA PUBLIC SUPPLIERS.

METROPOLITAN COUNCIL

PART IV. ITEMS FOR METROPOLITAN AREA PUBLIC SUPPLIERS

Minnesota Statute 473.859 requires water supply plans to be completed for all local units of government in the seven-county Metropolitan Area as part of the local comprehensive planning process. Much of the required information is contained in Parts I-III of these guidelines. However, the following additional information is necessary to make the water supply plans consistent with the Metropolitan Land Use Planning Act upon which local comprehensive plans are based. Communities should use the information collected in the development of their plans to evaluate whether or not their water supplies are being developed consistent with the Council's Water Resources Management Policy Plan.

Policies. Provide a statement(s) on the principles that will dictate operation of the water supply utility: for example, "It is the policy of the city to provide good quality water at an affordable rate, while assuring this use does not have a long-term negative resource impact."

Impact on the Local Comprehensive Plan. Identify the impact that the adoption of this water supply plan has on the rest of the local comprehensive plan, including implications for future growth of the community, economic impact on the community and changes to the comprehensive plan that might result.

Demand Projections

Year	Total Community Population	Population Served	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Projected Demand (MGY)
2010					
2020					
2030					
Ultimate					

Population projections should be consistent with those in the Metropolitan Council's *2030 Regional Development Framework* or the Communities 2008 Comprehensive Plan update**.** If population served differs from total population, explain in detail why the difference (i.e., service to other communities, not complete service within community etc.).

PLAN SUBMITTAL AND REVIEW OF THE PLAN

The plan will be reviewed by the Council according to the sequence outlined in Minnesota Statutes 473.175. **Prior to submittal to the Council, the plan must be submitted to adjacent governmental units for a 60-day review period.** Following submittal, the Council determines

if the plan is complete for review within 15 days. If incomplete, the Council will notify the community and request the necessary information. When complete the Council will complete its review within 60 days or a mutually agreed upon extension. The community officially adopts the plan after the Council provides its comments.

Plans can be submitted electronically to the Council; however, the review process will not begin until the Council receives a paper copy of the materials. Electronic submissions can be via a CD, 3 ½" floppy disk or to the email address below. Metropolitan communities should submit their plans to:

Reviews Coordinator	electronically to:
Metropolitan Council	watersupply@metc.state.mn.us
390 Robert St,	
St. Paul, MN 55101	

Attachment A

Water Well Records
And
Well Maintenance Information

Minnesota Unique Well No.
209660

County Redwood
Quad Clements
Quad ID 79A

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 103I

Entry Date 04/17/1988
Update Date 12/30/2004
Received Date

Well Name REDWOOD FALLS 1
Township Range Dir Section Subsections Elevation
112 36 W 25 ABBBBD Elevation Method 1051 ft. Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
182 ft.	180 ft.	00/00/1954

Drilling Method –

Drilling Fluid –

Well Hydrofractured? ☐ Yes ☐ No From Ft. to Ft.

Use: Community Supply PWS ID 1640068 Source S02

Casing Type Steel (black or low carbon) Joint No information Drive Shoe? ☐ Yes ☐ No Above/Below 2.5 ft.

Casing Diameter	Weight	Hole Diameter
12 in. to 140 ft.	lbs./ft.	

Well Address
REDWOOD FALLS MN

Open Hole from ft. to ft.

Screen YES Make JOHNSON Type

Diameter	Slot/Gauze	Length	Set Between
12	40	40	140 ft. and 180 ft.

Geological Material	Color	Hardness	From	To
TOPSOIL	BLACK		0	2
CLAY	YELLOW		2	22
CLAY	BLUE		22	52
COARSE SAND & GRAVEL			52	54
CLAY	BLUE		54	122
COARSE SAND & GRAVEL			122	182
CLAY	BLUE		182	182

Static Water Level
66 ft. from Land surface Date Measured 1984

PUMPING LEVEL (below land surface)
74 ft. after hrs. pumping g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

REMARKS
NURE NO. 601013.

Grouting Information Well Grouted? ☐ Yes ☐ No

Located Minnesota Geological Survey Method GPS SA On (averaged)
Unique Number Verification Information from owner Date 04/07/1999
System *UTM - Nad83, Zone15, Meters* X: 331641 Y: 4927919

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed
Manufacturer's name Model number __ HP _ Volts
Length of drop Pipe _ft. Capacity 400 g.p.m Type Turbine Material

Abandoned Wells Does property have any not in usa and not sealed well(s)? ☐ Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

First Bedrock
Last Strat Clay-gray
Aquifer Quat. Buried Artes. Aquifer
Depth to Bedrock ft.

Well Contractor Certification

License Business Name	Lic. Or Reg. No.	Name of Driller
Fredrickson's	08317	FREDERICKSON

Minnesota Unique Well No.
209659

County Redwood
Quad Clements
Quad ID 79A

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 103I

Entry Date 04/17/1988
Update Date 01/08/2002
Received Date

Well Name REDWOOD FALLS 2
Township Range Dir Section Subsections Elevation 1043 ft. 7.5 minute topographic map (+/- 5 feet)
112 36 W 25 AAAAAC Elevation Method

Well Depth	Depth Completed	Date Well Completed
184 ft.	170 ft.	00/00/1957

Drilling Method --

Drilling Fluid --

Well Hydrofractured? ☐ Yes ☐ No From Ft. to Ft.

Use Municipal

Casing Type Steel (black or low carbon) Joint No Information Drive Shoe? ☐ Yes ☐ No Above/Below 1 ft.

Casing Diameter	Weight	Hole Diameter
12 in. to 130 ft.	lbs./ft.	

Open Hole from ft. to ft.

Screen YES Make JOHNSON Type brass

Diameter	Slot/Gauze	Length	Set Between
10	40	40	130 ft. and 170 ft.

Static Water Level
50 ft. from Land surface Date Measured 1957

PUMPING LEVEL (below land surface)
ft. after hrs. pumping g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Well Address
REDWOOD FALLS MN

Geological Material	Color	Hardness	From	To
TOPSOIL	BLACK		0	2
CLAY	YELLOW		2	18
CLAY	BLUE		18	100
SANDY CLAY	BLUE		100	118
SAND			118	172
CLAY	BLUE		172	184

NO REMARKS

Grouting Information Well Grouted? ☐ Yes ☐ No

Located Minnesota Geological Survey
Method Digitized - scale 1:24,000 or larger (Digitizing Table)

Unique Number Verification Information from owner
Date N/A

System *UTM - Nad83, Zone15, Meters* X: 332340 Y: 4927866

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed
Manufacturer's name Model number __ HP _ Volts
Length of drop Pipe _ft. Capacity 300 g.p.m Type Submersible Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

First Bedrock
Last Strat Clay-gray
Aquifer Quat. Buried Artes. Aquifer
Depth to Bedrock ft.

Well Contractor Certification

License Business Name	Lic. Or Reg. No.	Name of Driller
Fredrickson's	08317	FREDERICKSON,

County Well Index Online Report 209659 Printed 6/6/2008 HE-01205-07

Minnesota Unique Well No.
403955

County Redwood
Quad Clements
Quad ID 79A

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 103I

Entry Date 08/25/1992
Update Date 06/29/2005
Received Date

Well Name REDWOOD FALLS 3
Township Range Dir Section Subsections Elevation 1047 ft.
112 35 W 18 Elevation Method Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
274 ft.	268 ft.	05/16/1984

Drilling Method Non-specified Rotary

Drilling Fluid --

Well Hydrofractured? ☐ Yes ☐ No
From Ft. to Ft.

Use Community Supply PWS ID 1640008 Source S05

Casing Type Steel (black or low carbon) Joint Welded Drive Shoe? ☐
Yes ☑ No Above/Below ft.

Casing Diameter	Weight	Hole Diameter
16 in. to 220 ft.	lbs./ft.	22 in. to 215 ft.

Open Hole from ft. to ft.

Screen YES Make JOHNSON Type stainless steel

Diameter	Slot/Gauze	Length	Set Between
12	60	54	220 ft. and 270 ft.

Static Water Level
46.6 ft. from Land surface Date Measured 05/16/1984

PUMPING LEVEL (below land surface)
60 ft. after 19 hrs. pumping 1090 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☑ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Well Address
REDWOOD FALLS MN 56283

Geological Material	Color	Hardness	From	To
TOPSOIL	BLACK	SOFT	0	2
CLAY	YELLOW	SOFT	2	14
SANDY CLAY	BLUE	SOFT	14	69
FINE SAND		M.SOFT	69	76
ROCK		HARD	76	77
SANDY CLAY	GRAY	M.SOFT	77	81
CLAY	BLUE	SOFT	81	91
SAND & GRAVEL		SOFT	91	95
CLAY	GRAY	M.HARD	95	183
GRAVEL & CLAY	GRAY	M.SOFT	183	190
FINE SAND		M.SOFT	190	202
CLAY & GRAVEL	GRAY	M.SOFT	202	215
SAND & GRAVEL		M.SOFT	215	270
DECOMPOSED GRANITE			270	274

NO REMARKS

Grouting Information Well Grouted? ☑ Yes ☐ No

Grout Material: Neat Cement from 0 to 215 ft. 11 yrds.

Located Minnesota Department of Health Method GPS SA On (averaged)
Unique Number Verification N/A Date N/A
System *UTM - Nad83, Zone15, Meters* X: 331947 Y: 4927898

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Manufacturer's name Model number __ HP _ Volts
Length of drop Pipe _ft. Capacity _g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐
Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

Well Contractor Certification

Ervin Well Co.	65252	ERVIN, D.
License Business Name	Lic. Or Reg. No.	Name of Driller

First Bedrock
Last Strat
Aquifer Quat. Buried Artes. Aquifer
Depth to Bedrock ft.

Minnesota Unique Well No.
403995

County Redwood
Quad Clements
Quad ID 79A

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 103I

Entry Date 08/25/1992
Update Date 02/16/2005
Received Date

Well Name REDWOOD FALLS 5
Township Range Dir Section Subsections Elevation 1040 ft.
112 36 W 25 Elevation Method Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
240 ft.	230 ft.	05/21/1985

Drilling Method Non-specified Rotary

Drilling Fluid --

Well Hydrofractured? ☐ Yes ☐ No
From Ft. to Ft.

Well Address
REDWOOD FALLS MN 56283

Use Community Supply PWS ID 1640008 Source S04

Casing Type Steel (black or low carbon) Joint Welded Drive Shoe? ☐
Yes ☑ No Above/Below ft.

Geological Material	Color	Hardness	From	To
TOPSOIL	BLACK	SOFT	0	1
CLAY	GRY/YEL	SOFT	1	12
CLAY	YEL/GRN	SOFT	12	15
CLAY STICKY	GRN/BRN	SOFT	15	18
CLAY	BLUE	SOFT	18	27
CLAY & GRAVEL	BLUE	SOFT	27	30
SANDY CLAY	DK. BLU	M.SOFT	30	60
SANDY CLAY	BLU/GRY	M.HARD	60	64
GRAVEL		M.SOFT	64	66
CLAY	BLU/GRY	M.HARD	66	92
ROCKY CLAY		HARD	92	93
SILT	GRAY	M.HARD	93	105
GRAVEL & SAND		SOFT	105	115
SAND & GRAVEL		SOFT	115	132
FINE SILTY SAND STICKY		SOFT	132	146
SILT SILT CLAY STICKY		SOFT	146	157
SANDY CLAY	GRAY	M.HARD	157	181
SAND & CLAY FINE			181	218
SAND & GRAVEL COARSE		MEDIUM	218	231
CLAY	YELLOW	M.HARD	231	240

Casing Diameter	Weight	Hole Diameter
12 in. to 189 ft.	49.56 lbs./ft.	

Open Hole from ft. to ft.

Screen YES Make JOHNSON Type stainless steel

Diameter	Slot/Gauze	Length	Set Between
10	20	47	187 ft. and 230 ft.

Static Water Level
49 ft. from Land surface Date Measured 05/28/1985

PUMPING LEVEL (below land surface)
103.1 ft. after 76 hrs. pumping 1050 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☑ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

NO REMARKS

Grouting Information Well Grouted? ☑ Yes ☐ No

Grout Material: Neat Cement from 0 to 187 ft. 7 yrds.

Located Minnesota Department of Health
Method GPS SA On (averaged)
Unique Number Verification N/A
Date N/A
System *UTM - Nad83, Zone15, Meters*
X: 332477 Y: 4929538

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Manufacturer's name Model number __ HP _ Volts
Length of drop Pipe _ft. Capacity _g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐
Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

First Bedrock
Last Strat
Aquifer Qual. Buried Artes. Aquifer
Depth to Bedrock ft.

Well Contractor Certification

Ervin Well Co.	65252	ERVIN, D.
License Business Name	Lic. Or Reg. No.	Name of Driller

County Well Index Online Report **403995** Printed 6/6/2008
HE-01205-07

Minnesota Unique Well No.
241414

County Redwood
Quad Redwood Falls
Quad ID 96D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes Chapter 103I

Entry Date 08/25/1992
Update Date 02/19/2008
Received Date

Well Name REDWOOD FALLS SO. RAMSEY
Township Range Dir Section Subsections Elevation 1045 ft.
112 36 W 11 Elevation Method Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
94 ft.	94 ft.	00/00/1950

Drilling Method –

Drilling Fluid –

Well Hydrofractured? ☐ Yes ☐ No
From Ft. to Ft.

Use Community Supply PWS ID 1640008 Source S01

Casing Type Joint No Information Drive Shoe? ☐ Yes ☐ No Above/Below ft.

Casing Diameter	Weight	Hole Diameter

Open Hole from ft. to ft.

Screen Make Type

Diameter	Slot/Gauze	Length	Set Between

Well Address
REDWOOD FALLS MN 56283

Geological Material	Color	Hardness	From	To
NO RECORDS			0	94

Static Water Level
ft. from Date Measured

PUMPING LEVEL (below land surface)
ft. after hrs. pumping g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

NO REMARKS

Grouting Information Well Grouted? ☐ Yes ☐ No

Located Minnesota Department of Health Method GPS SA On (averaged)
Unique Number Verification N/A Date N/A
System *UTM - Nad83, Zone15, Meters* X: 331273 Y: 4932460

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Manufacturer's name Model number __ HP _ Volts
Length of drop Pipe _ft. Capacity _g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

First Bedrock
Last Strat
Aquifer Quat. Buried Artes. Aquifer
Depth to Bedrock ft.

Well Contractor Certification
Minnesota Department of Health | MDH
License Business Name | Lic. Or Reg. No. | Name of Driller

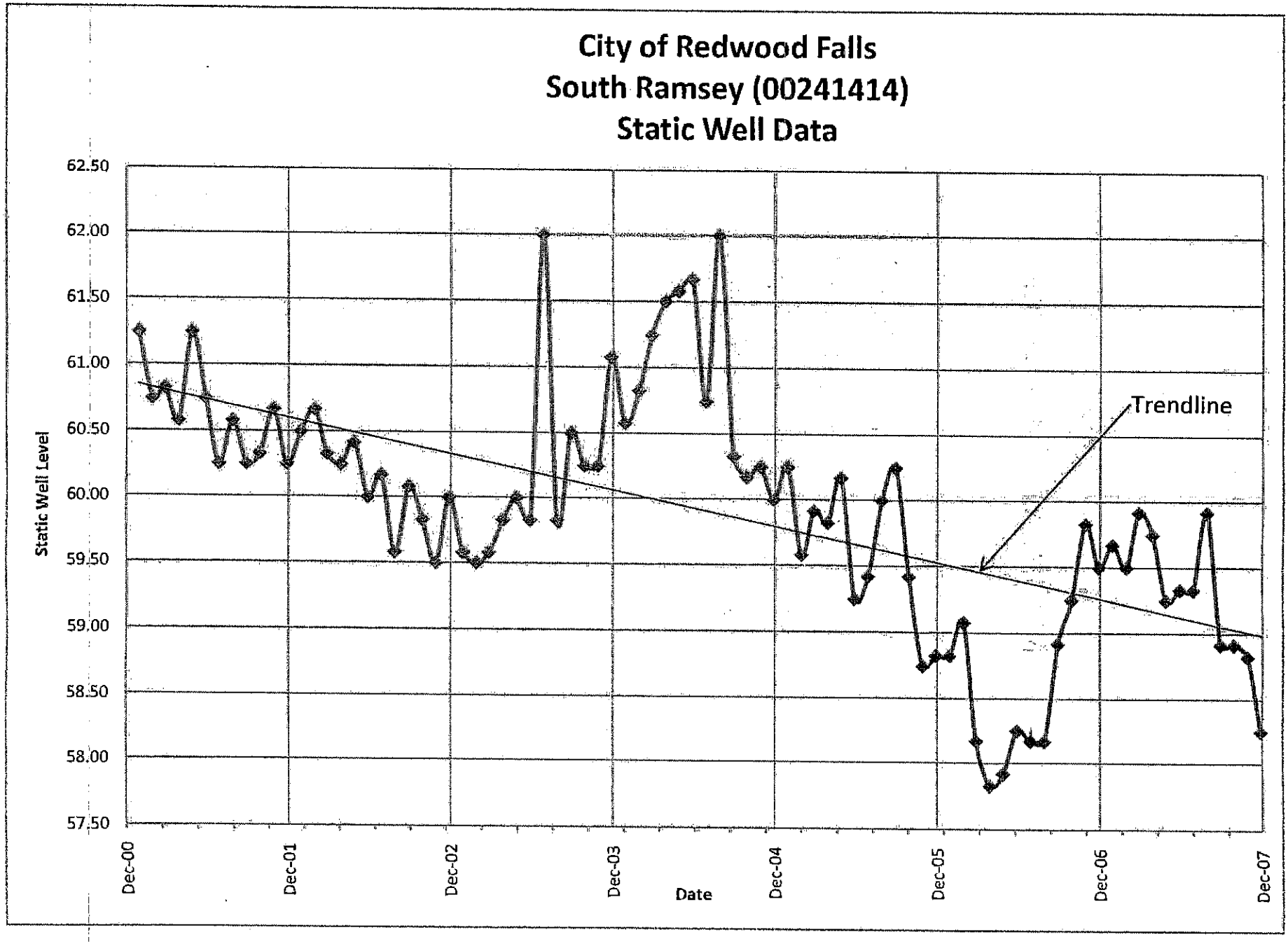
Schaefer Well Co
1101 N State St
New Ulm, MN 56073
(507) 354-2614
Contact: Steven or Willis Schaefer

Attachment B

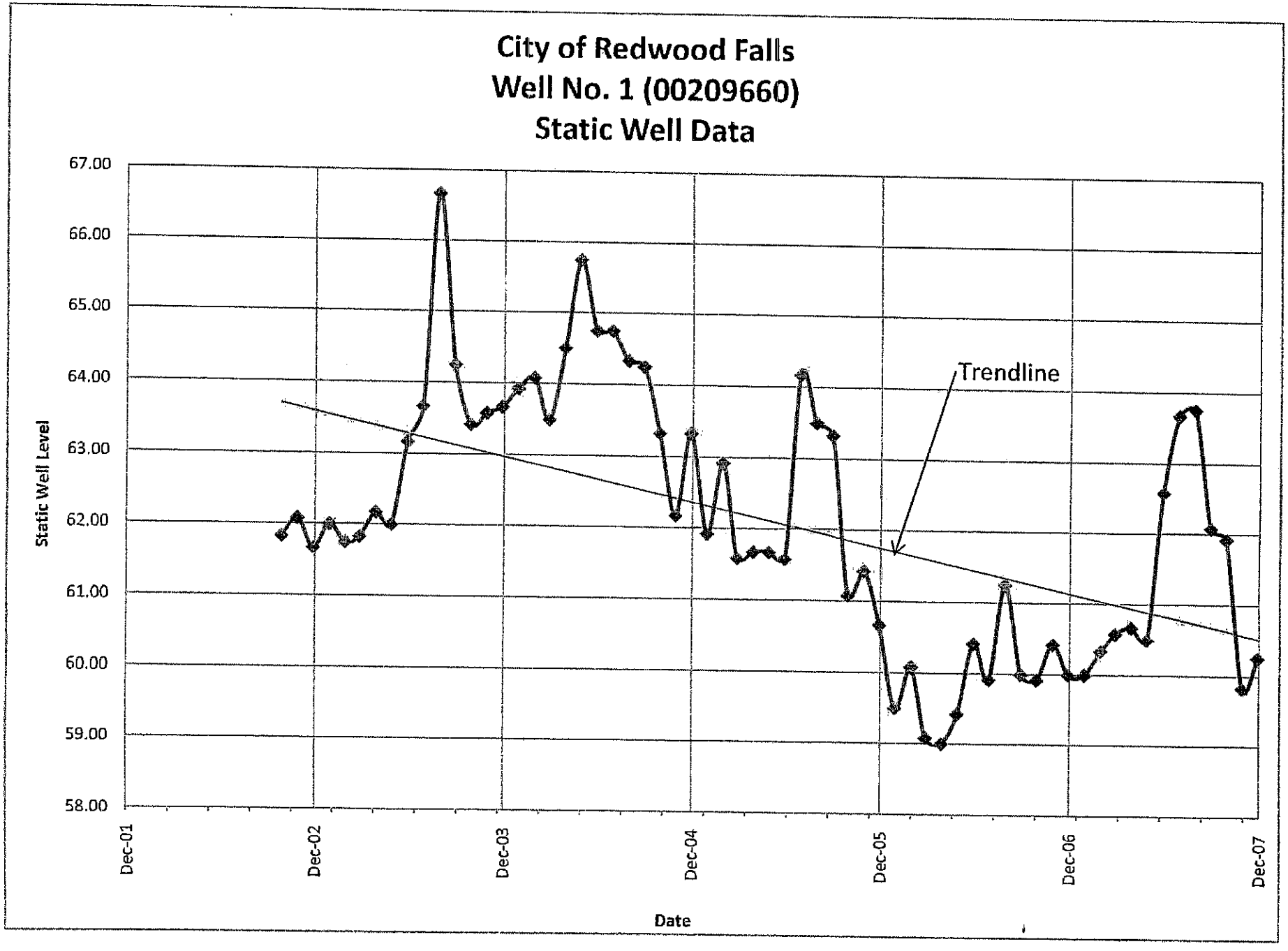
Water Level Data
Monitoring Data Graphs
For Wells:

Well No. 1 (00209660)
Well No. 2 (00209659)
Well No. 3 (00403955)
Well No. 5 (00403995)
South Ramsey (00241414)

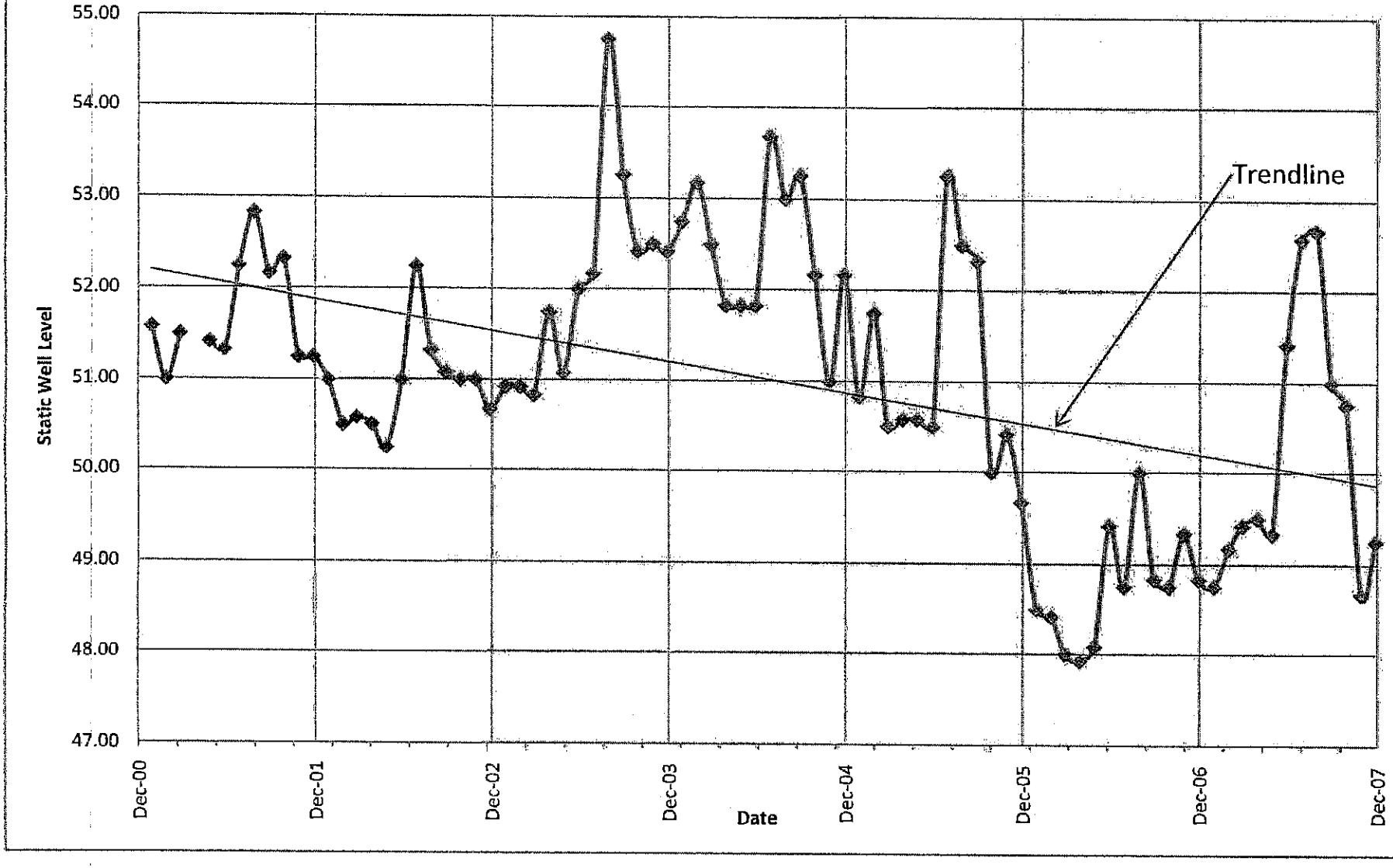
City of Redwood Falls
South Ramsey (00241414)
Static Well Data



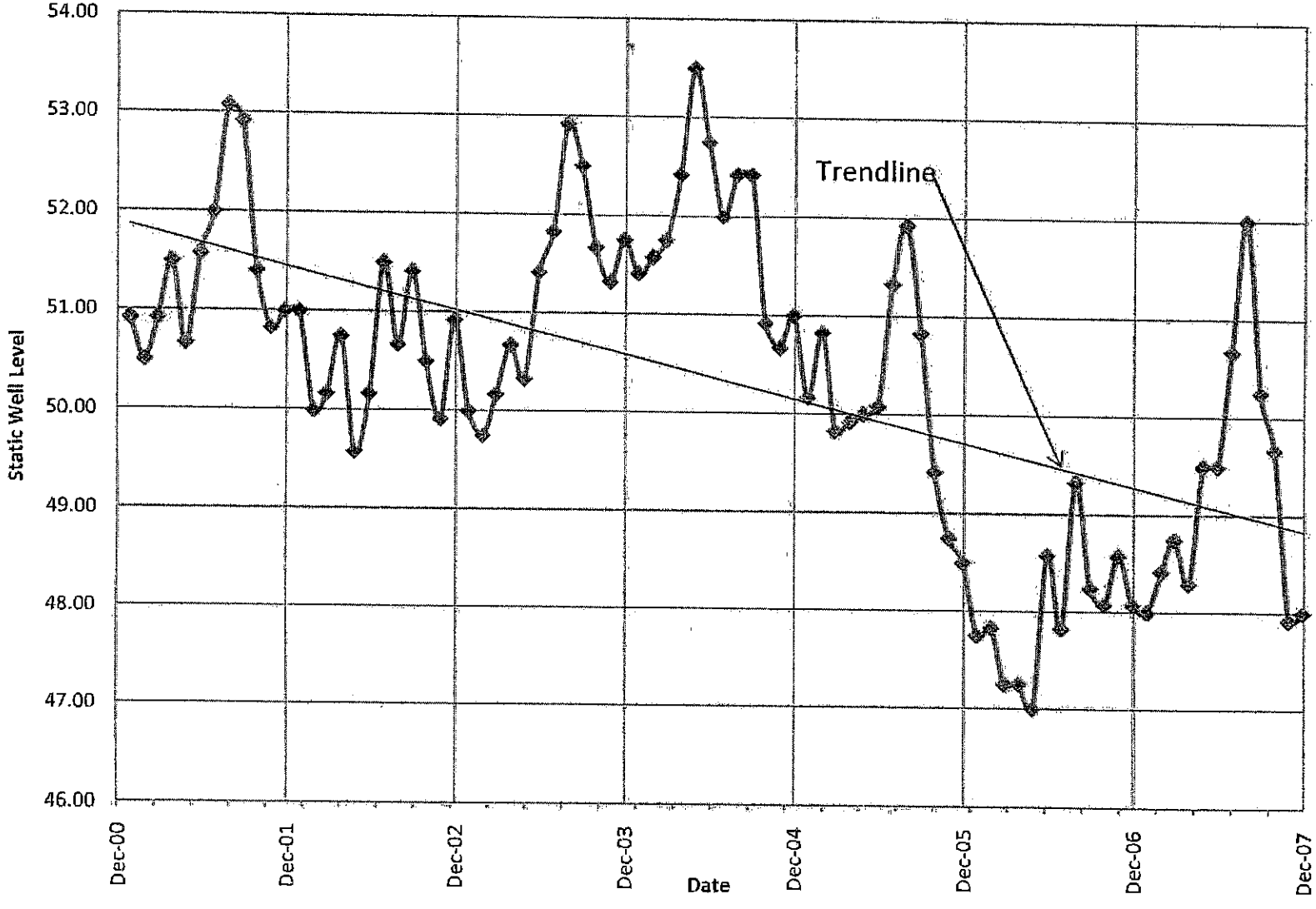
City of Redwood Falls
Well No. 1 (00209660)
Static Well Data

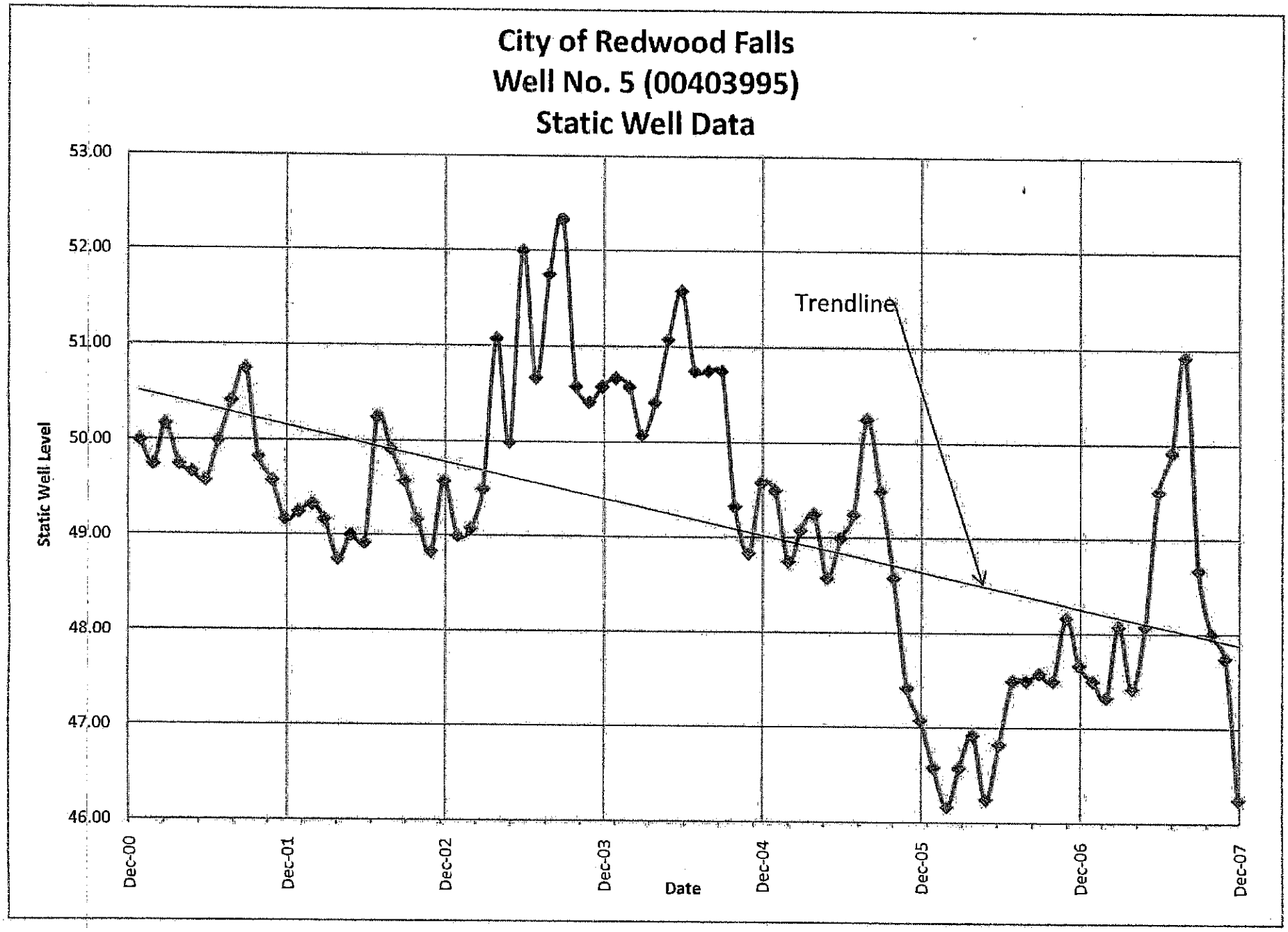


City of Redwood Falls
Well No. 2 (00209659)
Static Well Data



City of Redwood Falls
Well No. 3 (00403955)
Static Well Data




City of Redwood Falls
Well No. 5 (00403995)
Static Well Data
Static Well Level
53.00
52.00
51.00
50.00
49.00
48.00
47.00
46.00
Trendline
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Date

Attachment C

Operational Contingency Plan
And
Emergency Contacts

Plans for watermain break, leak, or signifigant water system failure.

Get the water shut off. Notify important users (hospital, schools, nursing homes, etc.)

Notify City Adm. Keith Muetzel – 627-6979 Home 430-2683 Cell or
Mayor Gary Revier 627-5985 home 430-1525 cell
(Other numbers so you don't have to look them up -
Sheriff's Off. 637-4036 – KLGR Radio 637-2989
NUTC – 627-4111 Mike – 507-276-4152 Tyler 507-276-2035 Julie 627-3261
Mediacomm 637-7095 Brent Ford 637-3037 home 507-461-1016 cell)

If situation involves total shutdown of system, contamination, chemicals, etc. or unsure of what state agency to call for help or assitance 24/7:
MN Duty Officer 1-800-422-0798 or 651-649-5451
Dept of Health water system number is 1640008
MPCA permit number is MN0020401

Mark the area to excavate.

Call for an emergency locate 1-800-252-1166. Our ID# is 5152.

If work is out of our scope for equipment call:
Schmidt Construction – 644-5596 Jeff's cell – 430-2743
or TNT Construction – 249-3182 Tim's cell – 829-8017

Street Dept – on call phone 430-3816
Shop – Cell 430-3817 – Wade 430-0391
Power Plant - 627-8430
County Engineer – Ernie Fiala 637-4056 off. 430-3600 cell 637-2492 home
Mike Heib 430-3590 Mike Panitzke 430-3594

Technical Advice/MN Rural Water Assn/quick leak detection/operations questions
Jeff Dale 800-367-6792 Jeff's cell 320-760-0552

Southwest MN Dept of Health issues/questions
John Blomme 507-537-7308 office 507-8297145

MPCA – Marshall
Contamination, spills that effect water/city operations, Duty Officer
Local contact: Craig Schafer 507-537-6378 off. 800-620-5065 cell
Brad Gillingham 507-537-6381 off 500-370-4672 cell

Bolton & Menk - Sleepy Eye Office 507-794-5541
Andy Kehren 507-380-1158 cell Craig Labat 507-317-3831

Boonestro Dale Swanson 320-267-7134 or 320-259-4387
Don Broberg 320-251-4553 or 320-761-5947 or 651-271-9345

Scada system – T.P.C.
Tom Edison 651-430-0435 Dan Edison 612-747-1688 cell

Pipe/fitting/material for repairs:
Henry's Waterworks – Sauk Rapinds
Jim Henry 800-950-2119 or 320-259-4134 - 320-248-2248 Jim cell
Jim-home – 320-259-5727 Kurt Brambrink cell 320-761-1444

Pump questions – Quality Flow – New Prague
Pete Reardon 952-758-9445 off. 612-308-5552 cell

Emergency Generators – large - 24/7
Ziegler Power Systems – Shakopee – 1-888-320-4292 or 952-445-4292

Situations in MNDOT roads or right of ways: 800-657-3748
Marhsall – 507-537-3604 or 6146 or Willmar 320-214-3776

Attachment D

Water Conservation Ordinance

Water Conservation Ordinance

WATER CONSERVATION

(A) The City Council finds that water conservation is critical to the city's welfare and to the efficient and economical provision of safe water. When necessary and in its sole discretion, the City shall enforce restriction on the use of water outside of any residence or business, other than on permitted days and hours.

(B) During periods of normal water supply and use, no specific water conservation regulations shall be enforced. In response to water supply concern and at the discretion of the Water Superintendent, City Administrator or Public Works Project Coordinator, water conservation restrictions may be imposed by implementing Level 1, Level 2 or Level 3 water use restrictions. A notice containing the provisions of the upgraded level shall be delivered to each property within the water service area and shall be posted in the lobby at City Hall. The notice shall include the dates and times that the upgraded level shall commence.

1) *Level 1*

a. There will be no outside use of water during the hours between 10:00 a.m. and 6:00 p.m. year round. In addition, the use of outside water will only be permitted on an odd/even basis. A total ban shall be in effect for properties on the odd side of the street on even numbered days of the month, and for properties on the even side of the street on odd days of the month.

b. The use of outside water between 10:00 a.m. and 6:00 p.m. daily will be permitted for the watering of shrubs, flowers and plants, and the watering of new sod or seed planted with in the previous 30 days. The property owner must provide evidence of the date of planting. The use of outside water is permitted for the cleaning of vehicles when needed specifically for sanitary purposes. Reasonable recreational use of outside water will be permitted. The Fire Department is exempt from these restrictions when used in the performance of their duties for the city.

2) *Level 2*

The use of outside water is permitted as listed above, except the permitted days and hours of use shall be set by the Water Superintendent. The exceptions listed in Level 1 will be permitted. No recreational use of outside water will be permitted.

3) *Level 3*

Level 3 implements a total ban of the use of outside water within the water service area. The exceptions listed in Level 1 will be permitted. No recreational use of outside water will be permitted.

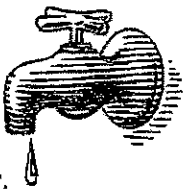
The planting of shrubs, flowers, plants, trees and grass seed; and the placement of sod shall not be allowed within the water service area while Level 3 is in effect.

(C) Any member of the City of Redwood Falls staff may be appointed by the Water Superintendant or Chief of Police to enforce this section. City personnel not in uniform shall upon request, show identification as a City of Redwood Falls employee. The civil administrative penalty for violation of this ordinance will be set by the City Council in the fee schedule, and reviewed on a yearly basis. This penalty may be added to the property owner's water bill.

Attachment E

Water Conservation Education Efforts

Water *consumption history*



While the City of Redwood Falls population has been relatively stable the past ten years, our water usage has been on the decline.

People are using water more wisely, along with appliances that are designed to conserve water. With the electronic detection available today, the City has the entire water system evaluated for leaks once a year.

	1997	2002	2007
Gallons pumped at wells	225,600,000	213,900,000	203,100,000
Average gallons per day	618,000	586,000	556,000

All of these efforts combined will keep our water source plentiful for years to come.

KEEP UP THE GOOD WORK!

American Water Works Association

The Authoritative Resource on Safe Water

WaterWiser®

The Water Efficiency Clearinghouse

***WaterWiser® Drip Calculator** - Measure and Estimate Water Wasted Due to Leaks*

Drips per Minute

For smaller/slower leaks . . . simply count the number of drips in one minute from the leaky fixture. Note: 5 drips per second amounts to a steady stream.

↳ Enter # of drops per minute: ☐

Bucket & Stopwatch Method

For larger/more rapid leaks . . . hold an 8 ounce cup under the dripping fixture and time, in seconds, how long it takes to fill the cup.

↳ Enter your time in seconds: ☐

Now Calculate Water Waste in Gallons

DAILY WASTE	MONTHLY WASTE (30 days)	YEARLY WASTE

It is only a small drip, so what. That small drip may be costing you more than you think. If you go to www.awwa.org/awwa/waterwiser/dripcalc.cfm, you will find the above table to help you calculate how those drips add up. Now think of all the drips in your house or a running stool. May be it is time to save some bucks with completing some maintenance work.

Information Source: Water Audits and Leak Detection 2008 American Water Works Association