Wellhead and Source Water Protection – Part 2: Wellhead Protection Plan Amendment

Prepared for

Coon Rapids Minnesota

November 2017

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Public Water Supply Profile

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General Information

UNIQUE WELL NUMBER(S) Primary: 202932, 202931, 202930, 202965, 161413, 110460, 110461, 150357, 110475, 420956, 474384, 674478, 674479; Seasonal: 202926, 202929, 202972, 202951, 202937, 202943, 168721, 168720, 110469, 474385, 463020

SIZE OF POPULATION SERVED 61,476 (2010 Census)

COUNTY Anoka

Documentation List

Step	Date Performed
Scoping Meeting 2 Held (4720.5340, subp. 1)	September 23, 2016
Scoping 2 Decision Notice Received (4720.5340, subp. 2)	October 19, 2016
Remaining Portion of Plan Submitted to Local Units of Government (LUGs) (4720.5350)	August 28, 2017
Review Received From Local Units of Government (4720.5350, subp. 2)	August 29, 2017 to October 28, 2017
Review Comments Considered (4720.5350, subp. 3)	August 29, 2017 to October 31, 2017
Public Hearing Conducted (4720.5350, subp.4)	November 8, 2017
Remaining Portion WHP Plan Submitted (4720.5360, subp. 1)	November 21, 2017
Final WHP Plan Review Received (4720.5360, subp. 4)	

Certification

I hereby certify that this plan, document, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Geologist under the laws of the state of Minnesota.

Digitally signed by John C. Greer
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Date: 2017.11.20 13:16:11 -06'00'

November 20, 2017

John C. Greer
PG #: 30347

Date

Acronyms

Acronym	Description
DWSMA	Drinking Water Supply Management Area
MGD	Million Gallons per Day
MGY	Million Gallons per Year
MDH	Minnesota Department of Health
MDNR	Minnesota Department of Natural Resources
MGS	Minnesota Geological Survey
MnOPS	Minnesota Office of Pipeline Safety
MPCA	Minnesota Pollution Control Agency
PCSI	Potential Contaminant Source Inventory
WHPA	Wellhead Protection Area
WHPP	Wellhead Protection Plan

Executive Summary

The Wellhead and Source Water Protection Plan (the Plan) for the City of Coon Rapids (the City) addresses the 24 municipal water supply wells operated by the City. The City's previous Wellhead Protection Plan amendment was approved by the Minnesota Department of Health in 2007. This Plan amendment was prepared in accordance with the applicable portions of the State of Minnesota Wellhead Protection Rules (Minnesota Rules 4720.5100 through 4720.5590) due to the age of the Plan.

The City is a founding member of the Anoka County Municipal Wellhead Protection Group (ACMWPG). As a member of the ACMWPG, the City participates in an advisory group along with neighboring public water suppliers to address and collaborate on common elements of wellhead protection plans.

The City's municipal water supply system includes 24 wells: Wells 8, 9, 10, 11, 13, 14, 15, 17, 19, 20, 21, 24, and 25 are primary water supply wells. Wells 1, 2, 4, 5, 6, 7, 12, 16, 18, 22, and 23 are seasonal wells used on an as needed basis to meet peak demands. In total, these wells pump from three different aquifers: the Mt. Simon Sandstone aquifer, the Tunnel City-Wonewoc aquifer, and an unconsolidated, Quaternary-age confined sand and gravel aquifer. In accordance with Minnesota Rules 4720.5550, Wells 1, 2, 4, 5, 8, 9 10, 12, 13, 14, 16, and 18 are classified as not vulnerable to contamination from the surface and Wells 6, 7, 11, 15, 17, 19, 20, 21, 22, 23, 24, and 25 are classified as vulnerable to contamination.

This Plan amendment consists of two parts. In Part 1 of the Plan amendment, wellhead protection areas (WHPAs) for the City's water supply wells were delineated as were the associated drinking water supply management areas (DWSMAs). Three DWSMAs were delineated for Coon Rapids. The West DWSMA encompasses the WHPAs for Wells 4, 6, 7, 11, 12, 14, 15, 17, 19, 20, 22, 23, 24, and 15. The Northeast DWSMA encompasses the WHPAs for Wells 1, 2, 8, 9, 10, 13, 16, 18, and 21. The Southeast DWSMA encompasses the DWSMA for Well 5. The Southeast DWSMA is contained entirely within the Coon Rapids city limits, while the Northeast DWSMA extends east into Blaine and the West DWSMA extends southwest into Champlin and Brooklyn Park (see Figure 1).

In Part 1 of this Plan amendment, assessment of geologic conditions in and around the City's DWSMAs and available water quality data for the City's wells was done to determine the vulnerability to contamination of the uppermost source water aquifer. The aquifer vulnerability is classified as Low in 100 percent of the Southeast DWSMA. The aquifer vulnerability in approximately 94.5 percent of the area in the West DWSMA was classified as Moderate. The aquifer vulnerability was classified as Low in approximately 5 percent of the West DWSMA and High in approximately 0.5 percent of the West DWSMA. In the Northeast DWSMA, approximately 99 percent of the area received an aquifer vulnerability classification of Moderate. The aquifer vulnerability was classified as Low in approximately 1 percent of the Northeast DWSMA.

This document comprises Part 2 of the Plan amendment and includes the following information:

- A review of data elements identified by the Minnesota Department of Health as applicable to the DWSMAs.

- Results of an inventory of potential contaminant sources within the DWSMAs.
- A review of changes, issues, problems, and opportunities related to the public water supply and the identified potential contaminant sources.
- A discussion of potential contaminant source management strategies and the goals, objectives, and action plans associated with these management strategies.
- A review of the Wellhead and Source Water Protection evaluation program and Coon Rapids' alternative water supply contingency strategy.

The types of potential contaminant sources that must be inventoried depends on the aquifer vulnerability classification within the DWSMAs. Potential contaminant sources identified in the DWSMAs include non-municipal wells, potential Class V well locations, chemical storage sites, and storage tanks.

The goals and objectives of this WHPP will focus on reducing the potential contaminant pathways to the source water aquifers that may be provided by private wells and educating property owners and water supply users to ensure proper management of the portions of the DWSMAs.

The following goals have been identified for implementation of this WHPP:

- The City will work to maintain or improve the current level of water quality so that the municipal water supply will continue to meet or exceed all applicable state and federal water quality standards.
- Work with other cities in the Anoka County Municipal Wellhead Protection Group along with Brooklyn Park and Champlin to protect the source water aquifers
- The City will provide information and promote activities that protect the source water aquifer that provides water to the municipal system. This will include increasing public awareness of the Wellhead and Source Water Protection Program and groundwater-related issues, and management of the identified potential contaminant sources within the DWSMAs.
- The City will continue to collect data to support future wellhead and source water protection efforts.

Actions identified to accomplish these goals include the following:

- Wells
    - Promoting proper management of existing active wells in the DWSMAs
    - Encouraging the proper sealing of all unused wells within the DWSMAs
    - Identification of new high capacity wells in or near the DWSMAs
    - Evaluation of City-owned observation wells and sealing of unneeded wells
- Potential contaminant source properties
    - Encouraging proper handling of chemicals/wastes
    - Encouraging proper operation and maintenance of storage tanks,
    - Periodically obtaining updated information on potential contaminant sources in the DWSMAs from the regulating agencies to maintain an up-to-date potential contaminant source database for the DWSMAs and allow timely recognition of potential issues that could affect the Coon Rapids municipal water supply or DWSMAs.

- Public education
    - Distribution of the Coon Rapids Annual Water Quality Report for the water supply system,
    - Posting Wellhead Protection Program information on the City of Coon Rapids website http://www.ci.coon-rapids.mn.us/ and provide a link to the *Know the Flow* website (http://www.knowtheflow.us/)
    - Inclusion of wellhead and source water protection in the City's planning process,
- Continued data collection
    - Recording static and pumping water levels in the Coon Rapids municipal wells,
    - Collection of additional local geologic and hydrogeologic data as it becomes available from public sources or from City-sponsored projects.

1.0 Introduction

1.1 Background

The City of Coon Rapids (City) currently has 24 municipal water supply wells: Wells 8, 9, 10, 11, 13, 14, 15, 17, 19, 20, 21, 24, and 25 are primary water supply wells. Wells 1, 2, 4, 5, 6, 7, 12, 16, 18, 22, and 23 are seasonal wells used on an as needed basis to meet peak demands. In total, these wells pump from three different aquifers: the Mt. Simon Sandstone aquifer, the Tunnel City-Wonewoc aquifer, and an unconsolidated, Quaternary-age confined sand and gravel aquifer. Minnesota unique well number along with well construction, status, aquifer, and well vulnerability classification for each of Coon Rapids' municipal water supply wells is presented in Table 1. Well locations and Drinking Water Supply Management Area (DWSMA) locations are shown on Figure 1. Minnesota Department of Health (MDH) well records for all the Coon Rapids municipal wells are presented in Appendix A.

The previous Coon Rapids Wellhead Protection Plan (WHPP) Parts 1 and 2 were prepared in 2006-2007. The MDH issued final approval of the previous Part 2 WHPP in 2007. In accordance with the Minnesota Wellhead Protection Rules (Minnesota Rules 4720.5100 through 4720.5590), amendment of the City's WHPP was initiated based on the age of the Plan. The Part 1 WHPP amendment (Barr, 2016) was approved by the Minnesota Department of Health (MDH) in March 2016 (MDH, 2016a). A public information meeting on the Part 1 WHPP amendment was held on May 3, 2016.

In the Part 1 WHPP amendment, three separate DWSMAs were delineated for Coon Rapids that encompass the wellhead protection areas (WHPAs) delineated for the Coon Rapids water supply wells. In addition to the delineation of the WHPAs and the DWSMAs, Part 1 of the WHPP amendment includes an assessment of the vulnerability to contamination of the Coon Rapids municipal wells and the source water aquifers in the associated DWSMAs. In accordance with Minnesota Rules 4720.5550, Wells 1, 2, 4, 5, 8, 9 10, 12, 13, 14, 16, and 18 are classified as not vulnerable to contamination from the surface and Wells 6, 7, 11, 15, 17, 19, 20, 21, 22, 23, 24, and 25 are classified as vulnerable to contamination (see Table 1 and Appendix B). In the Part 1 amendment report, the vulnerability to contamination of the uppermost source water aquifers within the DWSMAs was identified as ranging from Low to High (Barr, 2016). Figure 1 shows the aquifer vulnerability zones in the Coon Rapids DWSMAs. The Coon Rapids Part 1 WHPP amendment is presented in Appendix B.

1.2 Description of the Public Water Supply System

Coon Rapids is located in Anoka County. The City currently has 13 primary water supply wells and 11 seasonal-use wells in the municipal water supply and distribution system for Public Water Supply #1020017. Locations of the wells are shown on Figure 1 and general construction details for the Coon Rapids municipal wells are summarized in Table 1. Copies of the MDH well records for the Coon Rapids municipal wells are presented in Appendix A.

The 2010 census counted 61,476 people in Coon Rapids. The Metropolitan Council estimated the 2015 population of Coon Rapids to be 62,527. The Metropolitan Council projects Coon Rapids' population to reach 64,800 in 2020 and 68,400 in 2030 (Metropolitan Council, 2015a).

The City's Comprehensive Water System Plan (Bolton & Menk, 2014) projects the daily average water demand in 2029 using two different methodologies. The 2029 average day demand projections range from approximately 8.3 MGD to 9.05 MGD (approximately 5,800 gpm to 6,300 gpm). The Water System Plan also projects the 2029 maximum day water demand using the two methodologies. The 2029 maximum day demand projections range from approximately 23.75 MGD to 25.80 MGD (approximately 16,500 gpm to 17,900 gpm). Current daily water demand (based on the period 2010-2015) averages approximately 7.3 MGD. Maximum day demand (the largest daily water use in a given year) ranged from approximately 14.0 MGD to 20.8 MGD in the period 2010-2015. Coon Rapids' permitted annual appropriation volume is 3.2 BGY. The permitted instantaneous total pumping rate for the Coon Rapids system is 26,575 gpm.

As indicated in Table 1, Wells 1 through 7, 12, 16, 18, 22 and 23 are used only seasonally during peak demand periods. Annual pumping from Wells 16 and 18 is limited by a Compliance Agreement with the MDH as a result of radionuclide concentrations in the water pumped from these two wells.

The City has two water treatment plants that treat water from 15 of the City's wells for iron and manganese and add fluoride and disinfect the water before it enters the distribution system. Wells 8, 9, 10, 13, and 21 are connected to the East Water Treatment Plant. Wells 11, 14, 15, 17, 19, 20, 22, 23, 24, and 25 are connected to the West Water Treatment Plant. Wells 1, 2, 4, 5, 6, 7, 12, 16, and 18, which are used during high demand periods, are not connected to the treatment plants. Water from these nine wells is fluoridated and disinfected at the wellhead before it enters the distribution system.

Coon Rapids currently has five water storage facilities consisting of three elevated towers and two ground reservoirs. These facilities have a combined storage capacity of 14.5 million gallons. The Comprehensive Water System Plan (Bolton & Menk, 2014) recommends a new 1.5 million gallon elevated tower be constructed.

The City's Comprehensive Water System Plan (Bolton & Menk, 2014) does not indicate that any additional water supply wells will be needed to provide for projected future water demand.

As discussed by Barr (2016), pumping information from the City for the period 2010 through 2014 and City water use projections were used to develop pumping rate projections for use in delineating the WHPAs. Annual volume of water pumped by each of the City's municipal water supply wells during the period 2010 through 2014 is shown in Table 2.

1.3 DWSMAs

The DWSMAs delineated in the Part 1 WHPP amendment encompass the 10-year groundwater time of travel WHPAs around the City's wells. As shown on Figure 1, the Southeast DWSMA was delineated around Coon Rapids Well 5. The West DWSMA encompasses the WHPAs for Wells 4, 6, 7, 11, 12, 14, 15,

17, 19, 20, 22, 23, 24, and 15. The Northeast DWSMA encompasses the WHPAs for Wells 1, 2, 8, 9, 10, 13, 16, 18, and 21. The West DWSMA is found in Township 31N, Range 24W, Sections 8, 9, 14, 15, 16, 17, 18, 20, 22, 23, 26, 27, and 28; Township 119N, Range 21W, Sections 2, 4, 10, 28, and 34; and Township 120N, Range 21W, Sections 18, 20, 28, 32, and 34. The Northeast DWSMA is found in Township 31N, Range 23W, Sections 18 and 19 and Township 31N, Range 24W, Sections 1, 2, 11, 12, 13, 14, 23, and 24. The Southeast small DWSMA associated with Well 5 lies within Township 31N, Range 24W, Sections 24 and 25. As shown on Figure 1, the Southeast DWSMA is contained entirely within the Coon Rapids city limits while the Northeast DWSMA extends east into Blaine and the West DWSMA extends southwest into Champlin and Brooklyn Park in Hennepin County. The West DWSMA overlaps the Champlin 2 DWSMA while the Northeast DWSMA overlies portions of the Blaine West and Blaine NW DWSMAs (Figure 1).

In the Part 1 amendment report, the aquifer vulnerability in approximately 94.5 percent of the area in the West DWSMA was classified as Moderate. The aquifer vulnerability was classified as Low in approximately 5percent of the West DWSMA and High in approximately 0.5 percent of the West DWSMA. In the Northeast DWSMA, approximately 99 percent of the area received an aquifer vulnerability classification of Moderate. The aquifer vulnerability was classified as Low in approximately 1 percent of the Northeast DWSMA. The aquifer vulnerability within the entire Southeast DWSMA around Coon Rapids Well 5 was classified as Low.

2.0 Identification and Assessment of Data Elements

The Minnesota Wellhead Protection Rules specify data elements that must be addressed in wellhead protection plans. For the WHPP amendment, MDH staff met with City staff on two occasions to discuss the data elements that are specified in the Minnesota Rules 4720.5400. Results of these scoping meetings were transmitted to the City via two Scoping Decisions dated May 7, 2015 (MDH, 2015) and October 14, 2016 (MDH, 2016b).

The first Scoping Meeting was held on April 29, 2015. At this meeting, the data elements related to delineation of the WHPAs and DWSMAs and assessment of well and aquifer vulnerability were discussed. The second Scoping Meeting was held on September 23, 2016. At this meeting, the data elements required to support development of Part 2 of the WHPP amendment (this document) which identifies potential contaminant sources within the DWSMAs and identifies management strategies to help safeguard the municipal water supply from identified potential contaminants were discussed. An assessment of these data elements, as required by the Minnesota Wellhead Protection Rules, is presented in Appendix C.

3.0 Inventory of Potential Contaminant Sources

In Part 1 of this WHPP amendment, WHPAs and the DWSMAs were delineated. The DWSMAs encompass the 10-year groundwater time of travel WHPAs around the City's wells (Barr, 2016).The West DWSMA encompasses the WHPAs for Wells 4, 6, 7, 11, 12, 14, 15, 17, 19, 20, 22, 23, 24, and 15. The Northeast DWSMA encompasses the WHPAs for Wells 1, 2, 8, 9, 10, 13, 16, 18, and 21. The Southeast DWSMA encompasses the Well 5 WHPA. The Southeast DWSMA is contained entirely within the Coon Rapids city limits while the Northeast DWSMA extends east into Blaine and the West DWSMA extends southwest into Champlin and Brooklyn Park in Hennepin County (Figure 1).

As shown in Appendix C, the current land use (i.e., year 2010 data from the Metropolitan Council) numerous land uses are found within the DWSMAs. Land uses in the DWSMAs that cover 1 percent or more of the area in the DWSMAs include residential of various types, park/recreational/preserve, open water, institutional, retail and other commercial, undeveloped land, and major highways.

Per the October 14, 2016 Scoping 2 Decision Notice, the City performed a Potential Contaminant Source Inventory (PCSI) within the DWSMAs.

3.1 Inventory Process

At Scoping Meeting No. 2, the types of potential contaminant sources that must be inventoried in the Coon Rapids DWSMAs Area were discussed. As discussed in Appendix C, sources of data accessed for the potential contaminant source inventory include Anoka County, Minnesota Department of Agriculture (MDA), Minnesota Department of Health (MDH), Minnesota Department of Natural Resources (MDNR), Minnesota Department of Public Safety (MnDPS), Minnesota Geological Survey (MGS), Minnesota Office of Pipeline Safety (MnOPS), Minnesota Pollution Control Agency (MPCA), Metropolitan Council, Minnesota Geospatial Information Office (MGIO), National Pipeline Mapping System, and U.S. Environmental Protection Agency (USEPA) databases.

Aquifer vulnerability in the Coon Rapids DWSMAs varies (Figure 1). The aquifer vulnerability in the DWSMAs includes the following classifications: Low, Moderate, and High. In the West DWSMA, approximately 94.5 percent of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 5 percent of the West DWSMA and High in approximately 0.5 percent of the West DWSMA. In the Northeast DWSMA, approximately 99 percent of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 1 percent of the Northeast DWSMA. The aquifer vulnerability within the entire Southeast DWSMA around Coon Rapids Well 5 is classified as Low.

The potential contaminant source types that must be inventoried vary based on the aquifer vulnerability classification. In the areas where aquifer vulnerability is classified as High the types of potential contaminant point sources inventoried include chemical storage sites, potential Class V well locations (Class V wells are wells or other structures that facilitate injection of wastes into the subsurface), hazardous waste generators, individual sewage treatment systems (ISTS; a.k.a., septic systems), storage

tank sites (registered storage tanks and leaking underground storage tank sites), pipeline facilities, and wells. In areas where the aquifer vulnerability is classified as Moderate the types of potential contaminant point sources inventoried include above-ground and underground storage tanks, leaking underground storage tank (LUST) locations, potential Class V well locations, pipeline facilities, chemical storage locations, spills/potential contamination sites, and wells. In areas where the aquifer vulnerability is classified as Low the types of potential contaminant point sources inventoried include potential Class V well locations and wells.

The first step in the inventory was to determine if there were any potential contaminant sources in the Inner Wellhead Management Zone (IWMZ) or the Emergency Response Zone (ERZ) around each of the Coon Rapids wells. The IWMZ is defined as the area within a 200 foot radius of each municipal well. The most recent IWMZ inventory for each of the Coon Rapids municipal wells is presented in Appendix C. The ERZ is defined as the area within which the travel time of groundwater to a municipal well is one year or less. The inventory was then expanded out to the boundaries of the DWSMAs.

As shown in Table 3, potential contaminant sources were assigned a priority based on the relative risk they pose to the public water supply. The evaluation of risk related to a potential contaminant source type is based on the locations of potential contaminant sources of that type and the aquifer vulnerability classification. Higher priority was assigned to those potential contaminant sources that would pose the highest risk to the municipal water supply should a contaminant release occur.

3.2 Inventory Results

A more detailed discussion of the potential contaminant sources within the DWSMAs is presented in Appendix C. The inventory results are summarized in Table 3.

The Wellhead Protection rules require that at least 25 locations of each type of potential contaminant source identified during the PCSI be verified during preparation of the plan. The rules also require that if there are fewer than 25 of a particular potential contaminant source type that all locations of that type be verified. For WHPP amendments, MDH policy modifies this requirement by applying the "25 rule" only to those portions of the new DWSMA that are outside the limits of the original DWSMA. In addition, MDH requires that potential contaminant source locations identified within the original DWSMA limits during preparation of the original plan be verified prior to submittal of the Part 2 WHPP amendment to MDH for approval.

During the preparation of this Plan amendment, all identified potential contaminant source locations within the old Coon Rapids DWSMA limits were verified. Furthermore, all potential contaminant source locations identified in the areas between the boundaries of the old and new Coon Rapids DWSMAs were verified during preparation of this Plan amendment. Verification procedures used included matching mapped locations with addresses on MDH Well Records or State/County-issued permits or in County/State/Federal databases, published business addresses, and property parcel addresses (note that not all verification procedures were used for each type of potential contaminant source). Verified locations are identified in the tables in Appendix C. New information developed on contaminant sources in the future will be verified as they are discovered as part of the WHPP implementation.

4.0 Impact of Changes to the Public Water Supply Wells

In accordance with the requirements of Minnesota Rules 4720.5220, anticipated changes in the physical environment, land use, surface water, and groundwater in the DWSMAs within the next ten years and the impact of these changes on the source water aquifers are discussed in this section.

4.1 Potential Changes Identified

4.1.1 Physical Environment

Currently, significant or large-scale changes in the physical environment that might affect the DWSMAs, are not anticipated in the next ten years. Any changes are expected to be the result of development/redevelopment of properties or localized infrastructure changes. Such changes would not be expected to significantly affect the source water aquifers. Any minor changes to the physical environment will likely not affect the management strategies for the Coon Rapids DWSMAs presented in this WHPP.

The City of Coon Rapids' Water Comprehensive Plan (Bolton & Menk, 2014) does not anticipate the addition of new wells to meet projected future water demand.

The Southeast DWSMA is contained entirely within the Coon Rapids city limits while the Northeast DWSMA extends east into Blaine and the West DWSMA extends southwest into Champlin and Brooklyn Park in Hennepin County.

4.1.2 Land Use

The Metropolitan Council's 2015 System Statement indicates that Coon Rapids has the planning designation Suburban (Metropolitan Council, 2015b). Current land uses in the Coon Rapids DWSMAs include residential of various types, park/recreational/preserve, open water, institutional, retail and other commercial, undeveloped land, and major highways. Approximately 5% of the land in the DWSMAs is currently undeveloped (Figure 2). Projected future land uses within the City are anticipated to include many of the land uses currently present within the DWSMAs.

A land use map for the year 2010 and a projected year 2030 land use map are shown on Figures 2 and 3, respectively. Projected land use in Coon Rapids in 2030 is expected to be consistent with the City's current growth planning. Comparison of the year 2010 land use with the projected future land use indicates that, in general, the currently undeveloped properties within the main Coon Rapids DWSMAs will be developed.

All land uses anticipated during the next ten years within the DWSMAs are currently present in the areas covered by this WHPP. As a result, adjustments in the land use within the DWSMAs such as those projected for the year 2030 will be adequately addressed by the management strategies put forth in this WHPP.

4.1.3 Surface Water

There are surface water bodies and wetlands within the Coon Rapids DWSMAs. The City's Storm Water Pollution Prevention Plan City ordinances, and zoning address these surface water bodies and wetlands. Coon Rapids' management of surface water bodies and wetlands is not expected to adversely affect the management strategies for the DWSMAs. Rather, the City's management of surface water bodies and wetlands is consistent with the objectives of this Plan.

The City is not aware of any plans to alter the course or location of any surface water bodies currently present within the DWSMAs in the next ten years.

4.1.4 Groundwater

As the population of Coon Rapids grows, water demand in the City will grow. As indicated in the City's Water Comprehensive Plan (Bolton & Menk, 2014), it is not anticipated that additional municipal wells will need to be installed to meet projected future demand.

City staff inspect the municipal wells regularly. The MDH inspects all wells annually. This annual inspection includes sampling of the wells to ensure they comply with applicable regulatory standards. In addition, Coon Rapids uses a SCADA system to measure the volume of water pumped from a well, the instantaneous pumping rate for each well, and the water level (static or pumping) in each well. Upgrades to the City's SCADA system were completed in 2015-16.

Groundwater level data for the Mt. Simon Sandstone aquifer has been collected from an MDNR observation well (Observation Well 02028, Unique No. 209297) near Coon Rapids since May 1999. This observation well is located approximately 2.5 miles north-northwest of Coon Rapids Well 6. Water level data from the well indicates that potentiometric levels in the Mt. Simon Sandstone aquifer fluctuate seasonally but the data do not indicate any long term, downward trend over the monitoring period.

Groundwater level data for the deep, unconsolidated Quaternary aquifer in the vicinity of Coon Rapids has been collected from MDNR observation well 02016 (Unique No. 231864) since December 1980. This observation well is located approximately 0.7 miles north of Coon Rapids Well 16. . Water level data from the well indicates that potentiometric levels in the Quaternary aquifer fluctuate seasonally but the data do not indicate any long term, downward trend over the monitoring period.

The City supports water conservation. The City's water conservation program includes a tiered water rate structure and odd-even day sprinkling restrictions. The sprinkling restrictions are in place for the period June 1 through August 31. Under Title 13 Section 13-219 of the City Code the Emergency Board (which consists of the Mayor, City Manager, and Director of Public Services) can declare a Water Emergency and put in place measures over and above the City's odd-even day sprinkling restrictions to curtail water usage during periods of critical shortages. Allowable restrictions on water use during a Water Emergency are specified in Title 13 Section 13-220 of the City Code.

In the next ten years it is possible that new business or industrial developments in or near the Coon Rapids DWSMAs may seek to construct privately-owned high capacity wells completed in one of the City's

source water aquifers. Such wells could potentially affect the DWSMA boundaries, depending on their location and pumping rate. At the time this plan was prepared, the City was not aware of any proposed developments with plans for privately-owned high capacity wells within or near the DWSMAs.

Available information from the MPARS database indicates that there are 37 high capacity wells within a zone that includes the Coon Rapids DWSMAs and extends one mile beyond the DWSMA boundaries (this number does not include the 24 Coon Rapids municipal supply wells). High capacity wells are defined as wells that pump more than 1,000,000 gallons per year or more than 10,000 gallons per day. Owners of these wells are required to obtain a groundwater appropriation permit from the MDNR. High capacity wells outside of the DWSMAs were identified because changes in operation of these wells could, potentially, affect the DWSMA boundaries. Of these 37 non-Coon Rapids wells, nine are used for municipal water supply, 19 are used for some type of irrigation, six are used for industrial processing, two are used for water level maintenance, and one is identified as a construction dewatering well. The high capacity wells in the DWSMAs and within one mile of the boundaries of the DWSMAs are shown on Figure 4 and summarized in Table 4. Additional information on these wells can be found in Appendix C.

Beyond the possible installation/operation of additional high capacity wells in the vicinity of the Coon Rapids DWSMAs, no significant changes regarding groundwater use within or near the DWSMAs are anticipated to occur within the next ten years.

4.2 Impact of Changes

4.2.1 Water Use

The City's Comprehensive Water System Plan (Bolton & Menk, 2014) projects the 2029 maximum day water demand (the largest daily water use in a given year) to be approximately 16,500 to 17,900 gpm (approximately 23.75 to 25.80 MGD). For the period 2010-2015, the City's maximum day water demand ranged from approximately 14.0 to 20.8 MGD. During this same period, the City's average day water demand ranged from approximately 5.8 to 8.1 MGD. The City's water distribution system is currently supplied with water from 24 wells with a total permitted operating capacity of 26,575 gpm (38.3 MGD).

Based on current projections, the City does not anticipate the need to install additional wells to meet future water demand. If it would become necessary to install additional wells in the future, the City would have to review and, likely, update their WHPAs and DWSMAs to take into account the effects of pumping from the new wells.

The placement of an additional high capacity well in or near the DWSMAs or significant changes in current groundwater appropriations by existing wells could have an impact on the source water aquifers and local water supplies. Such changes could also affect the WHPAs and DWSMAs identified for the existing City of Coon Rapids wells or change the static water levels in the wells. The City will work with the MDH Source Water Protection Unit and the MDNR to identify proposed high capacity wells in the vicinity of the Coon Rapids DWSMAs and provide interaction, to the extent practicable, with the proposed well owner to minimize potential problems.

To conserve valuable water resources and to mitigate, to the extent possible, drought impacts, the City limits use of water from the municipal water supply system for lawn and garden sprinkling and irrigation to an odd-even schedule corresponding to property address from June 1 through August 31. In addition, City ordinances allow additional water use restrictions to be put in place during periods of critical shortages.

4.2.2 Influence of Existing Water and Land Government Programs and Regulations

As noted above, the City has controls on outdoor water usage and the ability to impose further restrictions on water use during periods of critical water shortages to conserve valuable water resources and address drought impacts. The City also provides water conservation information on their website and has a tiered billing structure for water use. These programs are designed to assist residents and businesses with water conservation strategies through incentives and educational information.

The City has a storm water management program. The goals of the program include maintaining or improving water quality in surface water bodies in or immediately downstream of the City. A storm water pollution prevention plan was developed as part of Coon Rapids' storm water management program. The City believes that the current program is sufficient to meet the objectives of this wellhead protection plan.

County and city ordinances, the MDNR Division of Waters' appropriations permitting program, the MPCA's storage tank permitting program and hazardous waste generator permitting program, the State of Minnesota Well Management and Drinking Water Supply Programs, State ISTS rules, State rules regarding chemical handling and storage, and the U.S. EPA's rules regarding Class V wells will be relied upon for assistance in regulating the installation of new wells, the operation of wells, water appropriation permitting, the proper sealing of unused wells, proper operation and maintenance of ISTS, proper maintenance and operation of storage tanks, proper storage of chemicals, proper handling of hazardous wastes, and addressing Class V wells. In addition, Coon Rapids is aware of and supports the low interest loan program offered by Anoka County Community Development that can be used for maintenance and sealing of private wells. Coon Rapids believes that the current level of regulations and oversight by various governmental entities are adequate to address these issues.

Land use control and land disturbing activities outside of the City of Coon Rapids will be governed by the local unit of government with jurisdiction in a particular area. This WHPP has been developed to protect the interests of the City of Coon Rapids and, to the extent practicable, to have no adverse effect on the plans and strategies developed for adjacent areas.

The City of Coon Rapids will continue to rely on Federal, State, County, and local agencies and regulations and programs to handle issues outside of the City's boundaries regarding water conservation, water appropriations, and well drilling. City staff will look to the MDH for continued regulation of the installation of wells and proper sealing and abandonment of old wells. In addition, The City recognizes that the MDNR plays a role in the approval of applications for construction of new high capacity wells as well as administering water appropriations.

The programs identified above have proven to be effective. City staff will cooperate with the appropriate agencies, to the extent practicable, if issues arise in the future.

4.2.3 Administrative, Technical, and Financial Considerations

The City expects to have adequate resources available over a multi-year period to manage their source water aquifers within their DWSMAs. Funds to support ongoing wellhead and source water protection efforts will come from the City's water utilities budget. Wellhead and source water protection activities will be evaluated periodically per MDH requirements and any changes in the focus of the tasks will also be evaluated to determine if additional funding will be necessary to accommodate the changes. When appropriate and to assist in funding of activities, the City may apply for grants from the MDH Source Water Protection Grant Program to fund implementation of management activities described later in this Plan.

For this WHPP to be effective, the City will need to keep the public aware of the issues affecting the public water supply. Therefore, the wellhead and source water protection actions described later in this Plan will include public education. Routine administrative duties will be directed or performed by the Wellhead Protection Manager. Specific tasks and strategies will be performed by the Wellhead Protection Manager or delegated by the Manager to City staff or outside resources.

The City believes that the current water supply system is sufficient to meet projected future water demands. The City has an ongoing maintenance program to ensure that the water supply system will continue to be sufficient to meet water demand in the future.

The installation and operation of any additional high capacity wells in the source water aquifers in or near the DWSMAs would have the potential to affect the size and shape of the Coon Rapids WHPAs and DWSMAs. At a minimum, the City will update its Wellhead Protection Plan every 10 years as required by the Wellhead Protection Rules. If new high capacity wells are installed in the area, the City will evaluate if operation of such new wells would make it necessary to update the WHPA and DWSMA delineations.

5.0 Issues, Problems, and Opportunities

In accordance with Minnesota Rules chapter 4720.5230, this section discusses issues, problems, and opportunities related to land use, comments from local units of government and the general public, the data elements and local, state, and federal programs and regulations.

5.1 Land Use Issues, Problems, and Opportunities

5.1.1 Source Water Aquifers

As shown on Figure 1, the aquifer vulnerability classification in the Coon Rapids DWSMAs ranges from Low to High. In the West DWSMA, approximately 94.5 percent of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 5 percent of the West DWSMA and High in approximately 0.5 percent of the West DWSMA. In the Northeast DWSMA, approximately 99 percent of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 1 percent of the Northeast DWSMA. The aquifer vulnerability within the entire Southeast DWSMA around Coon Rapids Well 5 is classified as Low.

The City currently has 24 water supply wells (Table 1). Thirteen of the wells are primary water supply wells and while the other 11 wells are used seasonally during periods of high demand.

The addition of high capacity wells within or near the DWSMAs (either municipal wells or private wells) could produce changes in the groundwater flow system (e.g., flow direction or static water level) which could result in changes to the shape and extent of the WHPAs and DWSMAs delineated for this WHPP. The City will work with the Wellhead Protection Consultant and MDH to evaluate the WHPA and DWSMA delineations and amend this WHPP as necessary if and when additional high capacity wells are installed within or near the DWSMAs.

As discussed elsewhere in this Plan amendment, potential sources of contamination that could affect the source water aquifer were identified during the PCSI. These potential contaminant sources include wells, storage tanks, properties where Class V wells may be or may have been present, and chemical storage locations. Table 3 indicates there are five chemical storage sites located within IWMZs around City water supply wells. As indicated in Appendix C, all of these storage sites are associated with City water treatment chemicals (i.e., stored at a water treatment plant or in a well house). As such, the City maintains control over these sites and manages them appropriately. Table 3 also indicates there are a total of four wells located within IWMZs around City water supply wells. These wells were installed as test wells prior to the installation of the nearby water supply wells. The test wells are under the control of the City and managed appropriately. No other no potential contaminant sources were identified in an IWMZ around a Coon Rapids municipal supply well. A small number of the identified potential contaminant source locations fall in the Emergency Response Zones (ERZs) around the municipal wells (Table 3).

The entities in the various potential contaminant source categories are regulated and tracked by County, State, or Federal programs. The lack of City jurisdiction over the potential contaminant source entities poses a potential problem for protection of the source water aquifers. However, the jurisdictional issues also provide the City of Coon Rapids with an opportunity to develop working relationships with County

and State agencies that regulate and track the potential contaminant source entities. Therefore, the City will work with the appropriate County and State programs, to the extent practicable, to address the potential contaminant sources within the DWSMAs.

Coon Rapids is a founding member of the Anoka County Municipal Wellhead Protection Group (ACMWPG). As such, the City has a vehicle established for working with surrounding communities and Anoka County to protect the source water aquifers, when mutually beneficial. The West DWSMA extends into Brooklyn Park and Champlin in Hennepin County. This provides the City with an opportunity to work with Brooklyn Park and Champlin to protect the source water aquifers, when mutually beneficial. Anoka County regulates some of the potential contaminant sources identified in the City's DWSMAs. Anoka County also provides household hazardous waste management services to residents to help prevent residential pollution of source water aquifers.

Coon Rapids has plans in place that include policies for managing growth of the City, the allowable land uses, water supplies, and wells (e.g., Coon Rapids, 2008; Bolton & Menk, 2014). Policies identified in these plans will protect the City's source water aquifers.

5.1.2 Groundwater Quality

Coon Rapids has always placed a high priority on the safety of the municipal water supply system. In order to safeguard the municipal water supply system, Coon Rapids strictly limits access to their wells and associated infrastructure to Coon Rapids staff.

Groundwater pumped from the source water aquifers by the Coon Rapids wells is currently free of pathogens and disease-causing organisms. In addition, no contaminants have been reported in water samples from the Coon Rapids wells at concentrations that exceed applicable Federal health-related standards, except for combined radium 226 and 228 in Wells 16 and 18. The City limits the volumes of water pumped from Wells 16 and 18 under a compliance agreement with the MDH to address the radium concentrations in the water pumped from these wells. Current system operations ensure that the water Coon Rapids supplies to its customers meets or exceeds the water quality requirements of the Federal Safe Drinking Water Act as documented in the City's annual Consumer Confidence Reports. The 2016 Consumer Confidence Report is presented in Appendix D. Consumer Confidence Reports from the past several years can be found on the City's website at http://www.ci.coon-rapids.mn.us/Archive.aspx?AMID=40.

As discussed in Appendix C, potential contaminant sources identified in the Coon Rapids DWSMAs include chemical storage sites, storage tanks, properties where Class V wells may be or may have been located, and wells. Table 3 provides a summary of the numbers of these potential contaminant sources identified in the DWSMAs during development of this Plan amendment. Development of this Plan amendment provides Coon Rapids with an opportunity to prepare and implement a program to track potential contaminant source locations within the DWSMAs and educate the public regarding source water protection.

5.1.3 DWSMAs

Current land uses within the DWSMAs include residential of various types, park/recreational/preserve, open water, institutional, retail and other commercial, undeveloped land, and major highways As indicated in Table 1, Coon Rapids Wells 6, 7, 11, 15, 17, 19, 20, 21, 22, 23, 24, and 25 have been classified as vulnerable to contamination. The vulnerability to contamination of the portions of the source water aquifers encompassed by the DWSMAs has been classified as ranging from Low to High. Current and future land uses could potentially affect the management strategies for Coon Rapids' DWSMAs.

As noted above, Coon Rapids is a founding member of the ACMWPG. As a member of the ACMWPG, the City participates in an advisory group along with neighboring public water suppliers to address and collaborate on common elements of wellhead protection plans.

No other issues, problems, or opportunities, beyond those discussed herein, have been identified regarding land uses in the DWSMAs.

Information gathered for this WHPP amendment provides the City with the basis for tracking potential contaminant sources within the DWSMAs. Thus, the City has an opportunity to catalog and track potential contaminant sources and stay informed of land use changes or potential future threats to the source water aquifers.

The presence of privately owned wells within the DWSMAs provides potential pathways for contaminants to reach the source water aquifers if they are not properly constructed, maintained, or, if unused, properly sealed. Locations of wells identified within the DWSMAs during the PCSI are shown in Appendix C.

5.2 Issues, Problems, and Opportunities Disclosed at Public Meetings and in Written Comments

At the beginning of this wellhead protection planning process, the City of Coon Rapids sent a notification to surrounding local units of government of its intention to initiate work on an amendment to its wellhead and source water protection plan. After approval by the MDH in March 2016 (MDH, 2016a), Coon Rapids sent information on the WHPAs, DWSMAs, and aquifer and well vulnerability to the local units of government whose jurisdictions overlay some portion of the Coon Rapids DWSMAs.

The City of Coon Rapids held a public information meeting on May 3, 2016 to receive comments from the general public regarding Part 1 of the WHPP. The local units of government whose jurisdictions overlay the DWSMAs were notified of the public information meeting. No comments on the Part 1 Wellhead Protection Plan were received from the local units of government or the general public at the Public Information Meeting.

As required by the Wellhead Protection Rules, the City provided local units of government whose jurisdictions overlap the DWSMAs a copy of the draft Part 2 Wellhead Protection Plan amendment. Written comments were received from the Metropolitan Council and the Anoka County Community Health and Environmental Service Department (ACCHESD) Copies of the written comments received from the local units of government are presented in Appendix E. The comments from Metropolitan Council and

ACCHESD were considered and minor modifications were made to this Plan amendment. The modifications included clarifying that the *Know the Flow* website is a collaborative water resources management website for the ACMWPG and clarifying that Anoka County prohibits disposal of hazardous waste in a Class V well.

The City of Coon Rapids held a Public Hearing on the WHPP amendment on November 8, 2017. The local units of government whose jurisdictions overlap the DWSMAs were notified of the Public Hearing date, time, and location. No comments on the WHPP amendment were received at the public hearing.

5.3 Issues, Problems, and Opportunities Related to the Data Elements

Beginning with the delineation of WHPAs and DWSMAs (i.e., Part 1 of the WHPP) and continuing in this document, the required data elements have been addressed. As discussed in Appendix C, available local and regional information was used in compiling and assessing the data elements. Coon Rapids intends to continue collecting data from the municipal wells as well as other applicable information from public data sources, as it becomes available, during the life of this Plan. At a minimum, this Plan will be revised/updated in ten years, as required by the Wellhead Protection Rules. Each time this Plan is revised/updated the most recent and accurate data available will be used.

5.4 Issues, Problems, and Opportunities Related to Local, State, and Federal Programs and Regulations

The State of Minnesota and local units of government currently enforce land use ordinances, zoning laws, sewer ordinances, well permitting regulations, and groundwater appropriation permit regulations. Coon Rapids will work to promote the use of best management practices for potential contaminant source properties within the DWSMAs. It is anticipated that local issues will be adequately addressed through these existing processes and adoption of best management practices.

6.0 Wellhead Protection Goals

In accordance with Minnesota Rules chapter 4720.5240, this section discusses the goals for present and future water use and land use to provide a framework for WHPP objectives and related actions.

Goals presented in this section were selected based on the information gathered and compiled from the data elements, delineations of the WHPAs and DWSMAs, results of the vulnerability assessments, results of the PCSI, expected changes in land and water uses, identified issues, problems, and opportunities, and evaluation of this information.

Through the years, the City has met water demands with a sufficient and safe water supply. Coon Rapids intends to continue providing a safe water supply to its residents and businesses and other customers into the future by implementing this WHPP. Implementation of this WHPP amendment will help ensure that the City will meet this goal.

As shown in Table 1, Coon Rapids Wells 6, 7, 11, 15, 17, 19, 20, 21, 22, 23, 24, and 25 are classified as being vulnerable to contamination. As shown on Figure 1, aquifer vulnerability classifications of the uppermost source water aquifer within the Coon Rapids DWSMAs ranges from Low to Moderate, except for a small area near Wells 15 and 25 in the West DWSMA in which the vulnerability is classified as High.

The goals and objectives of this WHPP will focus on reducing the potential contaminant pathways to the source water aquifers that may be provided by private wells, and educating property owners and water supply users and working with the neighboring jurisdictions, to the extent practicable, to ensure proper management of the portions of the DWSMAs with the neighboring jurisdictions.

Coon Rapids has identified the following goals for implementation of this WHPP:

- The City will work to maintain or improve the current level of water quality so that the municipal water supply will continue to meet or exceed all applicable state and federal water quality standards.
- Work with other cities in the Anoka County Municipal Wellhead Protection Group along with Brooklyn Park and Champlin to protect the source water aquifers
- The City will provide information and promote activities that protect the source water aquifer that provides water to the municipal system. This will include increasing public awareness of the Wellhead and Source Water Protection Program and groundwater-related issues, and management of the identified potential contaminant sources within the DWSMAs.
- The City will continue to collect data to support future wellhead and source water protection efforts.

7.0 Objectives and Plans of Action

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

7.1 Establishing Priorities

Within the DWSMAs, the vulnerability to contamination of the source water aquifer from which the City of Coon Rapids wells draw their water ranges from Low to High (Barr, 2016). The October 14, 2016 Scoping 2 Decision Notice from the MDH required Coon Rapids to evaluate the following types of potential contaminant sources in the PCSI:

- In areas where the aquifer vulnerability is classified as Moderate or High:
    - Above-ground and underground storage tanks
    - Leaking underground storage tank (LUST) locations
    - Potential Class V well locations
    - Pipeline facilities
    - Chemical storage locations
    - Spills/potential contamination sites
    - Wells
- In areas where the aquifer vulnerability is classified as Low
    - Potential Class V well locations
    - Wells

The number of each type of potential contaminant source in the DWSMAs is shown in Table 3.

The City of Coon Rapids has identified the objectives and corresponding actions described in the following sections for accomplishing the wellhead and source water protection goals discussed above in Section 6. These goals for the City of Coon Rapids' Wellhead and Source Water Protection Program will be achieved through the following existing and planned programs:

- Wells
    - Promoting proper management of existing active wells in the DWSMAs
    - Encouraging the proper sealing of all unused wells within the DWSMAs
    - Identification of new high capacity wells in or near the DWSMAs
    - Evaluation of City-owned observation wells and sealing of unneeded wells
- Potential contaminant source properties
    - Encouraging proper handling of chemicals/wastes
    - Encouraging proper operation and maintenance of storage tanks,
    - Periodically obtaining updated information on potential contaminant sources in the DWSMAs from the regulating agencies to maintain an up-to-date potential contaminant source database for the DWSMAs and allow timely recognition of potential issues that could affect the Coon Rapids municipal water supply or DWSMAs.

- Public education
    - Distribution of the Coon Rapids Annual Water Quality Report for the water supply system,
    - Posting Wellhead Protection Program information on the City of Coon Rapids website http://www.ci.coon-rapids.mn.us/ and provide a link to the *Know the Flow* website (http://www.knowtheflow.us/)
    - Inclusion of wellhead and source water protection in the City's planning process,
- Continued data collection
    - Recording static and pumping water levels in the Coon Rapids municipal wells,
    - Collection of additional local geologic and hydrogeologic data as it becomes available from public sources or from City-sponsored projects.

7.2 Well Management

The well management objectives outlined in this section consist of promoting the proper sealing of any unused, unmaintained, damaged, or abandoned wells, promoting proper management of active wells within the DWSMAs, and identification of new high capacity wells in or near the DWSMAs.

7.2.1 Distribution of Well Operation and Maintenance Information

The MDH has developed a handbook of information on proper well construction, operation, and maintenance titled "Well Owner's Handbook – A Consumer's Guide to Water Wells in Minnesota". This handbook is available on the MDH website. Coon Rapids will provide the handbook information to all owners of active wells within the DWSMAs. To accomplish this, a link to the MDH website page where the handbook can be found will be added to the City's website and the City will notify well owners within the DWSMAs via mail that the information is available through the City's website. Coon Rapids staff will track the number of well owners to whom they provide information regarding the Well Owner's Handbook.

7.2.1.1 Source of Action

Coon Rapids staff will obtain the website information for the handbook from the MDH. City staff will then mail the website information to appropriate addresses within the DWSMAs, include a link to the MDH website on the City's website and in the City's *Coon Rapids Connection* newsletter, and have a copy of the handbook available in a publicly accessible location in the Coon Rapids City offices.

7.2.1.2 Cooperators

None.

7.2.1.3 Time Frame

Distribution of the information to owners of will be done within one year after approval of this WHPP.

7.2.1.4 Estimated Cost

Approximately $500 - $1,000. Costs will include City staff time, mailer printing and postage costs, and handbook printing costs.

7.2.1.5 Goals Achieved

Through the MDH handbook, well owners will be educated concerning the proper operation and maintenance of wells. Proper operation and maintenance of wells will reduce the potential risk of these wells becoming pathways for contaminants to travel from the ground surface to the source water aquifer.

Success criterion: Notification of well owners in the DWSMAs by mail that information on the proper operation and maintenance of private wells is available through the City's website will be completed within one year of MDH approval of the WHPP and tracking of the number of well owners to whom the notification is sent.

7.2.2 Promote the Proper Sealing of Unused, Unmaintained, Damaged, or Abandoned Wells within the DWSMAs

City staff will promote the proper sealing of unused, privately owned wells within the DWSMAs. As indicated in Table 3, the highest priority will be placed on those wells that are completed in the source water aquifers from which the Coon Rapids municipal wells pump.

Proper sealing of unused wells can be promoted by periodically mailing a reminder to owners of wells that unused wells should be properly sealed and/or by posting a reminder on the City's website, in the *Coon Rapids Connection* newsletter, and working with the ACMWPG and ACCHESD to post reminders on the *Know the Flow* website. The reminder will include a notification of the low interest loan program available through Anoka County for the sealing of unused wells (https://www.anokacounty.us/2023/Well-and-Septic-Repair-Low-Interest-Loan) and a link to the section of the *Know the Flow* website that has information related to sealing of unused wells. Proper sealing of unused wells at properties on which new developments are built or as properties are redeveloped can be promoted as part of the City's development approval process.

7.2.2.1 Source of Action

City of Coon Rapids staff.

7.2.2.2 Cooperators

ACMWPG, ACCHESD.

7.2.2.3 Time Frame

The first reminders to owners of wells identified as high priority will occur within two years of approval of this Plan.

7.2.2.4 Estimated Cost

Approximately $1,000-$2,000 for each well sealing reminder mailing event. City staff time and costs for preparing and mailing reminders to well owners and for preparing reminders to be included in the City's newsletter, on the City's website, or on the *Know the Flow* website.

7.2.2.5 Goals Achieved

As this action is implemented, the City's goal of eliminating potential pathways for contaminants to travel from the ground surface to the source water aquifer will be realized.

Success criterion: The first reminder distributed to well owners in the DWSMAs within two years of MDH approval of this WHPP and subsequent reminders distributed every three years thereafter for the life of the Plan and tracking of the number of reminders distributed.

7.2.3 Evaluation of City-Owned Observation Wells and Sealing of Unneeded Wells

Results of the PCSI indicate that there are several City-owned observation wells in the vicinity of the City's water supply wells. City staff, potentially with the assistance of the Wellhead Protection Consultant, will evaluate these wells and determine if any of them should be sealed. Any wells determined to be unnecessary will be properly sealed. The highest priority will be placed on those wells that are completed in the source water aquifers from which the Coon Rapids municipal wells pump.

7.2.3.1 Source of Action

City of Coon Rapids staff.

7.2.3.2 Cooperators

Potentially the Wellhead Protection Consultant.

7.2.3.3 Time Frame

Evaluation of the observation wells will be completed within the first two years of Plan implementation. If it is determined that some or all of the wells should be sealed, a schedule for sealing of the wells will be developed at that time.

7.2.3.4 Estimated Cost

Approximately $1,000-$2,000 for evaluation of the wells. Costs include City staff time and, potentially, Wellhead Protection Consultant costs. Costs for properly sealing of wells will depend on the construction of each well (e.g., depth, diameter, and casing). It is estimated that the cost per well sealing is likely to be $3,000 to $5,000.

7.2.3.5 Goals Achieved

Unnecessary wells will be properly sealed so that they do not provide potential pathways for contaminants to travel from the ground surface to the source water aquifer.

Success criterion: Completion of evaluation of the wells in the time frame identified in Section 7.2.3.3 and sealing of any wells determined to be unnecessary.

7.2.4 Identify New High-Capacity Wells Within or Near the DWSMA

With assistance from the MDH and MDNR and, possibly, the Wellhead Protection Consultant, City staff will identify new high capacity wells that are proposed for construction in or near Coon Rapids' DWSMAs, and/or major changes to groundwater appropriations for existing high-capacity wells, to determine whether the pumping of said wells will affect the groundwater flow direction, static water level, or groundwater availability within the DWSMAs or alter the current boundaries of the DWSMA delineations or other portions of the City's WHPP.

7.2.4.1 Source of Action

City staff will request, or direct the Wellhead Protection Consultant to request, from the MDH and Regional MDNR office information on any newly proposed/constructed high capacity wells within or near the DWSMAs or any changes to existing appropriations permits for existing, nearby high capacity wells. City staff will also request assistance from the Wellhead Protection Consultant and the MDH to evaluate whether identified proposed pumping (or changes to pumping) will change the boundaries of the DWSMAs delineated for Coon Rapids' wells.

7.2.4.2 Cooperators

MDH, MDNR, and the Wellhead Protection Consultant.

7.2.4.3 Time Frame

Request information from the MDH and MDNR every two years; evaluation of potential changes to the DWSMA boundaries as needed.

7.2.4.4 Estimated Cost

Approximately $3,000-$10,000 for each event of identifying new wells or changes to existing appropriations permits and evaluating how the changes may affect the DWSMA boundaries. City staff time and, potentially, Wellhead Protection Consultant time. Actual costs will depend on the number of proposed/new high capacity wells and changes to existing appropriations permits are identified each request.

7.2.4.5 Goals Achieved

As this action is implemented, the City's WHPA/DWSMA delineations will remain current. New well owners will also be identified and educational materials identified/developed as part of other well management strategies can be provided to these new well owners.

Success criterion: Bi-annual determination of whether there are new high capacity wells in or near the DWSMAs and if there have been any major changes in permitted appropriations for existing high capacity wells in or near the DWSMAs.

7.3 Potential Contaminant Source Properties

The management objectives outlined in this section consist of providing to owners of properties where Class V wells may be present information on Class V wells, promoting proper operation of storage tanks, maintaining an up-to-date database of storage tank properties in the portions of the DWSMAs where aquifer vulnerability is classified as Moderate, promoting proper handling of chemicals and wastes, and maintaining the Inner Wellhead Management Zone (IWMZ) around each well so that potential contaminants are prevented from entering the IWMZs.

7.3.1 Potential Class V Well Properties

During the PCSI, 23 separate property parcels where Class V wells may be or may have been located were identified within the DWSMAs. The City will provide a fact sheet on Class V wells and reporting requirements to owners of properties where Class V wells may be or may have been located. The fact sheet will describe what a Class V well is and the impacts such wells can have on groundwater quality.

Anoka County Environmental Services regulates hazardous and solid waste disposal. Many of the 23 properties may also be regulated by the County. The County prohibits disposal of hazardous waste through a Class V well. The City will work with Anoka County Environmental Services to inspect those properties that the County permits as hazardous waste generators.

7.3.1.1 Source of Action

City staff, perhaps with the assistance of the MDH, U.S. EPA, and/or Wellhead Protection Consultant, will obtain or prepare a fact sheet that includes information on what constitutes a Class V well and what federal requirements are associated with Class V wells. City staff will mail the fact sheet to targeted property owners in the DWSMAs and, if necessary, work with staff of Blaine and Champlin to distribute the information to property owners within their cities.

City staff will work with Anoka County Environmental Services to inspect those properties that are permitted as hazardous waste generators by the County.

7.3.1.2 Cooperators

Anoka County Environmental Services, potentially staff from the Cities of Blaine and Champlin, MDH, U.S. EPA, and the Wellhead Protection Consultant.

7.3.1.3 Time Frame

Distribution of the fact sheet on Class V wells will occur within two years of approval of this Plan. Inspection of the properties with County hazardous waste generator permits will occur within four years of approval of this Plan.

7.3.1.4 Estimated Cost

Approximately $1,000 to $4,000. Estimated costs include Coon Rapids staff time, printing and postage costs and, potentially, Wellhead Protection Consultant costs.

7.3.1.5 Goals Achieved

Property owners will become aware of their responsibilities related to Class V wells. Compliance with the applicable regulations regarding Class V wells by the property owners will reduce the potential for groundwater contamination and impact to the source water aquifers. In addition, the City and County will be able to determine if Class V wells are present on the properties with County hazardous waste generator permits.

Success criterion: Distribution of fact sheet and inspection of the targeted properties completed according to the schedule outlined in section 7.3.1.3 and tracking of the number of fact sheets distributed.

7.3.2 Information for Registered Storage Tank Owners

The City, possibly with the assistance of the Wellhead Protection Consultant, will prepare and send a letter to owners of properties within the West and Northeast DWSMAs that have active registered storage tanks. The letter will not be sent to owners of properties for which available information indicates that the storage tanks have been removed. This letter will direct recipients to MPCA publications and guidance on proper operation and maintenance of storage tanks and include information on the City's Wellhead and Source Water Protection Program (the Program). Information in the letter will also be posted on the City's website. Copies of the letter will be available in a publically accessible location in City Hall.

7.3.2.1 Source of Action

City staff, possibly with the assistance of the Wellhead Protection Consultant, will prepare the letter to owners of storage tank properties. City staff will also post information contained in the letter to the City's website.

7.3.2.2 Cooperators

Wellhead Protection Consultant, if needed

7.3.2.3 Time Frame

The letter will be sent to owners of active tanks on properties where aquifer vulnerability is classified as Moderate within two years of approval of this Plan. In addition, letters will be sent to property owners as new storage tanks are identified in the Moderate vulnerability portions of the DWSMAs. A reminder letter will be sent to all storage tank property owners in Moderate vulnerability portions of the DWSMAs in year seven of Plan implementation.

7.3.2.4 Estimated Cost

Approximately $800-$1,500. Estimated costs include City staff time, letter production and postage costs, and Wellhead Protection Consultant costs (as necessary).

7.3.2.5 Goals Achieved

Targeted property owners will be educated concerning the Wellhead and Source Water Protection program and on where to find information on proper operation and maintenance of storage tanks and the requirements necessary to maintain a safe and secure system. Property owners will be encouraged to

use best management practices regarding their storage tanks, and report any releases of contaminants to the City in addition to any other actions required by applicable regulations. Planned distribution of this letter provides the City the opportunity to heighten the awareness of wellhead and source water protection with these property owners.

Success criterion: Distribution of the letter to owners of active storage tanks completed according to the schedule outlined in section 7.3.2.3 and tracking of the number of letters distributed.

7.3.3 Tracking of Registered Storage Tanks

Biannually, the City will request, or direct the Wellhead Protection Consultant to request, from the MPCA information on the status of registered storage tanks in the portions of the Coon Rapids DWSMAs in which the aquifer vulnerability is classified as Moderate or High. This information will allow the City of Coon Rapids to update the PCSI database and maintain current information regarding these potential contaminant sources in the DWSMAs. This activity should also identify new registered storage tanks in the DWSMAs.

7.3.3.1 Source of Action

City staff, or the Wellhead Protection Consultant on behalf of the City, will contact MPCA staff to obtain the information on the status of registered storage tanks.

7.3.3.2 Cooperators

MPCA and, potentially, the Wellhead Protection Consultant.

7.3.3.3 Time Frame

This information will be requested from the MPCA every two years starting two years after approval of this Plan.

7.3.3.4 Estimated Cost

Approximately $1,000-$2,000 for each review and update. Estimated costs include City staff time and Wellhead Protection Consultant time (as necessary). Costs may vary depending upon the number of new registered storage tank locations that must be added to the PCSI database.

7.3.3.5 Goals Achieved

By tracking the status of registered storage tanks within the target areas, the City will remain aware of the current status of these potential contaminant sources. This will allow the City to identify potential impacts to the municipal water supply and give the City time to determine the best response to any potential impacts before the municipal water supply is compromised.

Success criterion: Submittal of a biannual request to the MPCA for information regarding the status of registered storage tanks in the portions of the DWSMAs where aquifer vulnerability is classified as Moderate or High and completion of any updates to the PCSI database necessitated by the new information.

7.3.4 Information for Chemical Storage Properties

Through direct mail contact, the City will encourage the owners of the potential contaminant source properties associated with chemical storage within the Moderate and High aquifer vulnerability portions of the DWSMAs to participate in self-audits of their chemical storage and waste generation and handling. The direct mail contact from the City will also encourage these businesses to request a site visit from the Minnesota Technical Assistance Program (MnTAP). MnTAP helps Minnesota businesses implement industry-tailored solutions that maximize resource efficiency, prevent pollution, and reduce costs to improve public health and the environment.

MnTAP helps Minnesota businesses protect the environment and stay competitive by providing practical alternatives to prevent pollution of land, air, and water. By reducing waste and increasing efficiency, businesses can save on disposal and raw material costs, decrease the regulatory compliance burden, and make working conditions healthier and safer for their employees.

A copy of the letter and mailing list will also be sent to ACCHESD with a request that the County determine that the properties are compliant with the County hazardous waste management ordinance that requires proper management of potential pollutants.

7.3.4.1 Source of Action

City staff, perhaps with the assistance of the Wellhead Protection Consultant, will prepare and distribute the direct mail notice. City staff will also request the assistance identified above from ACCHESD staff.

7.3.4.2 Cooperators

ACCHESD and, potentially, the Wellhead Protection Consultant.

7.3.4.3 Time Frame

Distribution of the direct mail notice and forwarding a copy of the letter and mailing list to ACCHESD will occur within one year of approval of this Plan. Biannually thereafter the direct mail notice will be sent to owners of any newly identified properties within the Moderate and High aquifer vulnerability portions of the DWSMAs that are associated with chemical storage.

7.3.4.4 Estimated Cost

Approximately $800 to $1,800 for each direct mail notification. Costs for the preparation of the direct mail notice will include City staff time, printing, postage costs, and, potentially, Wellhead Protection Consultant costs.

7.3.4.5 Goals Achieved

Business owners will become aware of issues related to their chemical storage or waste generation and handling and learn of available assistance for identifying ways to minimize and properly dispose their waste.

Success criterion: Contact of property owners according to the schedule outlined in section 7.3.4.3.

7.3.5 Inner Wellhead Management Zone Management

The IWMZ is defined in the Minnesota Rules as that area within a 200-foot radius of a public water supply well. The City will monitor setbacks in the IWMZs, possibly with the assistance of the MDH, to ensure that the IWMZ around each Coon Rapids municipal well remains free of potential contaminant sources. City staff, possibly with the assistance of the MDH, will document each IWMZ inspection and any actions taken to remove potential contaminant sources from an IWMZ.

7.3.5.1 Source of Action

Coon Rapids staff.

7.3.5.2 Cooperators

Possibly the MDH

7.3.5.3 Time Frame

The monitoring of setbacks within the IWMZs will be done at lease biannually after approval of this Plan.

7.3.5.4 Estimated Cost

Costs for monitoring the IWMZ setbacks include Coon Rapids staff time estimated as $1,800.

7.3.5.5 Goals Achieved

By monitoring the IWMZ setbacks, Coon Rapids will be able to keep the IWMZ around each well free of potential contaminant sources and ensure that any new regulated activities will meet required setbacks.

Success criterion: Completion of IWMZ potential contaminant source inventories and keeping the IWMZs free of potential contaminant sources.

7.3.6 Transportation Corridors, Pipelines, and Emergency Response

Establish communication and create awareness among Coon Rapids city staff about transportation corridor and pipeline issues that may affect the public water supply and the procedures in place to address spills and prevent released contaminants from entering the municipal water supply. Transportation corridors include County and State highways, railroads, and pipelines (e.g., Figure C-12). The Wellhead Protection Manager will work with the City's Emergency Manager to ensure that emergency procedures that will protect the municipal water supply are part of the City's emergency response program.

The Wellhead Protection Manager will also provide copies of the WHPP to the Minnesota Pollution Control Agency (MPCA), Minnesota Office of Pipeline Safety (MnOPS), and owners of pipelines that cross the DWSMAs.

7.3.6.1 Source of Action

Coon Rapids staff

7.3.6.2 Cooperators

None

7.3.6.3 Time Frame

Meeting with the Emergency Manager will occur within two years of approval of this plan. Transmittal of the WHPP to the MPCA, MnOPS, and pipeline owners will occur within one year after approval of this Plan.

7.3.6.4 Estimated Cost

Costs for this action will include City staff time and production costs for WHPP copies. Estimated cost is $2,000 to $2,500.

7.3.6.5 Goals Achieved

The City's emergency responders will work with and assist County and State first responders in the handling of spills in transportation corridors or from pipelines to ensure, to the extent possible, released contaminants from entering the environment and impacting the municipal water supply.

State agencies and pipeline owners will be educated regarding the boundaries of the Coon Rapids DWSMAs and the management actions that are planned.

Success criterion: Emergency responder and pipeline owner awareness of the City's DWSMAs.

7.4 General Public Education

Public education concerning the DWSMAs associated with the City's municipal wells will include: inclusion of Wellhead and Source Water Protection Program information in the City's *Coon Rapids Connection* newsletter, distribution of the Coon Rapids Annual Water Quality Reports to residents of Coon Rapids, providing information on the City of Coon Rapids website (http://www.coonrapidsmn.gov/) and the *Know the Flow* website (http://www.knowtheflow.us/), and inclusion of wellhead and source water protection into the City's planning process. The *Know the Flow* website is a cooperative water resources management website established by the ACMWPG.

7.4.1 Wellhead Protection Information

The City will develop information regarding the Wellhead and Source Water Protection Program for inclusion in the City's *Coon Rapids Connection* newsletter. The newsletter is available to all City residents and businesses.

7.4.1.1 Source of Action

City staff will prepare information on wellhead protection for the City's newsletter one to two times per year. If necessary, the Wellhead Protection Consultant will be contacted for assistance in preparing this information for the newsletter. City staff may also draw on the ACMWPG and ACCHESD for wellhead and

source water protection educational materials. The newsletter is distributed to Coon Rapids residents and businesses four times per year and is available on the City's website.

7.4.1.2 Cooperators

ACMWPG, ACCHESD, Wellhead Protection Consultant, if necessary.

7.4.1.3 Time Frame

One to two times per year upon approval of this WHPP.

7.4.1.4 Estimated Cost

Approximately $500 - $2,500 each time information is prepared for the newsletter. Costs will include City staff time for preparing the information, and costs for Wellhead Protection Consultant assistance (as needed).

7.4.1.5 Goals Achieved

The information in the newsletter will be intended to educate owners of properties within the DWSMAs, and the general public, about the City's Wellhead and Source Water Protection Program, groundwater protection principles, and steps that everyone can take to protect the City's municipal water supply.

Success criterion: At least annual distribution of information related to groundwater and wellhead protection via the City's newsletter.

7.4.2 Drinking Water Quality Report

The City will continue to annually prepare and distribute the Annual Water Quality Report to all Coon Rapids residents. The report provides residents with information regarding the City's municipal water supply and its water quality.

7.4.2.1 Source of Action

City staff.

7.4.2.2 Cooperators

None.

7.4.2.3 Time Frame

Annually as required by Federal regulations.

7.4.2.4 Estimated Cost

Costs include City staff time for preparation of the report, including a notice in the City's newsletter that the report is available on the City's website, and posting the report on the City's website. Estimated annual cost for preparation of the report is $800 to $1,500

7.4.2.5 Goals Achieved

The residents of Coon Rapids will become more aware of the Federal water quality requirements for public water supplies. Residents will also become more aware of the overall quality of Coon Rapids' municipal water supply.

Success criterion: Annual publication/distribution of the Annual Water Quality Report.

7.4.3 City of Coon Rapids and *Know the Flow* Websites

The City will post information on the Wellhead and Source Water Protection Program on the City's website (http://www.coonrapidsmn.gov/) and on the ACMWPG's *Know the Flow* website (http://www.knowtheflow.us/). City staff may also the Wellhead Protection Consultant to assist with the preparation of information to be posted on the website or ask other members of the ACMWPG if they have wellhead and source water protection-related educational items that the City could disseminate via the website.

The City will also work with other members of the ACMWPG to maintain an up to date online DWSMA map and to notify residents of this resource. The map can be found at http://gis.anokacountymn.gov/dwsmas/.

7.4.3.1 Source of Action

City staff.

7.4.3.2 Cooperators

ACMWPG, Anoka County GIS, and, as needed, the Wellhead Protection Consultant.

7.4.3.3 Time Frame

To begin within one year of approval of this WHPP. Information on the websites will be updated periodically thereafter. Updates to the Anoka County online DWSMA map will be made as the City identifies new potential contaminant sources in the Coon Rapids DWSMAs.

7.4.3.4 Estimated Cost

Approximately $500-$2,500. City staff time and, potentially, Wellhead Protection Consultant costs.

7.4.3.5 Goals Achieved

The residents of Coon Rapids will become more aware of wellhead and source water protection issues and the actions Coon Rapids is taking to protect the municipal water supply. Education of the residents should lead to a better awareness of pollution prevention among the City's population.

Success criterion: Posting of Wellhead and Source Water Protection Program information on the City and County websites and periodic updating of the Anoka County online DWSMA map according to the schedule identified in section 7.4.3.3.

7.4.4 Inclusion of Wellhead and Source Water Protection in the Planning Process within the DWSMAs

Copies of this WHPP amendment will be supplied to the City's Planning and Economic Development Departments so that they have the most current information on the City's Wellhead Protection Program. The City has developed guidelines for infiltration of stormwater based on the location of a proposed project relative to the boundaries of the IWMZs, ERZs, and DWSMAs around the City's wells. The City will continue use these guidelines in the reviews of permit applications and proposed development/redevelopment projects. Use of these guidelines ensures that the development process is consistent with the goals of the City's Wellhead Protection Program.

7.4.4.1 Source of Action

City staff.

7.4.4.2 Cooperators

None.

7.4.4.3 Time Frame

Ongoing

7.4.4.4 Estimated Cost

City staff time for completing reviews. The costs will vary from year to year depending on the number applications reviewed and the size of proposed projects.

Success criterion: Continued incorporation of wellhead and source water protection into the City's development, zoning, and planning processes.

7.4.4.5 Goals Achieved

Wellhead and source water protection will be incorporated into future planning/development efforts. Potential pollution risks to the source water aquifers will be reduced.

7.5 Data Collection

Coon Rapids will continue to collect and maintain local geologic and hydrogeologic data as it becomes available in order to improve and augment current information and to provide additional data for future revisions of this WHPP. The City will also continue to collect information on potential contaminant sources within the DWSMAs.

7.5.1 Monitoring Static and Pumping Levels in Municipal Wells

The City will continue to routinely measure the static and pumping water levels in the municipal wells. These water levels will be recorded daily by the SCADA system and can be summarized in the reports obtained from the SCADA system.

The City intends to upgrade the transducers used to monitor water levels in the municipal wells as part of their ongoing well maintenance program. The objective will be to improve the accuracy of water level measurements in the municipal wells.

7.5.1.1 Source of Action

City staff.

7.5.1.2 Cooperators

None.

7.5.1.3 Time Frame

Ongoing.

7.5.1.4 Estimated Cost

Monitoring of water levels in the City's wells by the SCADA system is part of routine operations. Estimated cost for installing new transducers in City wells during scheduled well rehabilitation and connecting the new transducers to the SCADA system is approximately $2,000 to $3,000 per well.

7.5.1.5 Goals Achieved

Routine collection of groundwater levels in the municipal wells will provide data for the evaluation of groundwater elevation trends over time. Upgrading the accuracy of transducers used to measure the groundwater elevations will provide higher quality data.

Success criterion: Compilation of a long term groundwater elevation dataset that can be used to evaluate groundwater elevation trends in the source water aquifers.

7.5.2 Other Geologic and Hydrogeologic Data Collection

The City will attempt to obtain local geologic and hydrogeologic data for the Coon Rapids area as it becomes available from other public sources or through City-sponsored projects. The City will also support, whenever possible, future data collection efforts by other governmental entities (e.g., MGS, MDH, MDA, MDNR, MPCA, Coon Creek Watershed District, and Anoka County).

7.5.2.1 Source of Action

City staff.

7.5.2.2 Cooperators

State and Anoka County agencies conducting geologic and hydrogeologic studies, well drilling companies, Wellhead Protection Consultant, and others.

7.5.2.3 Time Frame

Ongoing beginning with approval of this WHPP.

7.5.2.4 Estimated Cost

Approximately $1,000 to $1,500 for compiling data from other public sources. Note that the cost could vary depending on the source and the amount of data and the level of effort needed to put the data into a usable format.

7.5.2.5 Goals Achieved

More accurate hydrogeologic data will be available for use in siting future wells and for future revisions of the delineated WHPAs and the DWSMAs for existing and proposed municipal wells. Updated and more accurate vulnerability assessments may be possible as a result of new information.

Success criterion: Compilation of a geologic/hydrogeologic dataset that can be used in the future.

7.5.3 Updating of the Groundwater Model Used in the WHPA Delineations

Any new local geologic and hydrogeologic data obtained for the Coon Rapids area will be periodically reviewed to determine if the groundwater model used in the WHPA delineations will need to be updated. In addition, pumping from high capacity wells often changes over time. Changes in pumping from high capacity wells in or near the Coon Rapids DWSMAs could affect the DWSMA boundaries. Therefore, the City will work with the Wellhead Protection Consultant to review available information and determine if the groundwater flow model should be updated so that future WHPA/DWSMA delineations will be consistent with available information.

7.5.3.1 Source of Action

City staff

7.5.3.2 Cooperators

Wellhead Protection Consultant

7.5.3.3 Time Frame

Five to seven years after approval of this Plan

7.5.3.4 Estimated Cost

Approximately $1,000 to $5,000 depending upon the magnitude of the revisions needed to make the groundwater flow model consistent with the most current available information.

7.5.3.5 Goals Achieved

The groundwater flow model for the Coon Rapids area used in the WHPA delineations will be consistent with available information. Since the groundwater flow model used to delineate the WHPAs will be consistent with current information updating of the WHPAs in the future can be done more efficiently.

Success criterion: An updated groundwater flow model that can be used for future updates to Part 1 of the City's WHPP, to evaluate the effect of new, non-City high capacity wells on the DWSMA boundaries, or to evaluate sites for new municipal wells.

7.5.4 Potential Contaminant Source Database

The City will periodically update the information on potential contaminant sources within the DWSMAs collected during the development of this WHPP amendment, with the assistance of the Wellhead Protection consultant – if needed. The City will add information to the potential contaminant source database as additional potential contaminant source sites are identified or as sites are closed through working with the MPCA, the MDH, the MDNR, the U.S. EPA, and Anoka County. New information for the PCSI database will be obtained by contacting appropriate MPCA, MDH, MDNR, U.S. EPA, and County programs on every two years regarding any new information on potential contaminant sources that may be available.

7.5.4.1 Source of Action

City staff.

7.5.4.2 Cooperators

MPCA, MDH, MDNR, U.S. EPA, Anoka County staff, City staff, and the Wellhead Protection Consultant, if needed.

7.5.4.3 Time Frame

Every two years after approval of this WHPP.

7.5.4.4 Estimated Cost

Approximately $500-$2,500 every two years. City staff time and, if needed, Wellhead Protection Consultant costs. Actual costs will depend upon the amount of new potential contaminant source location information that must be added to the potential contaminant source database and in any year could be higher than the estimated range shown.

7.5.4.5 Goals Achieved

This database will be a useful tool to track, catalog, and document the status of potential contaminant sources within the DWSMAs.

Success criterion: Maintaining an up to date potential contaminant source database.

7.5.5 Potential Contaminant Source Verification

Potential contaminant sources were identified within the DWSMAs during the PCSI. As part of the development of this WHPP, all locations of identified potential contaminant sources were verified by the Wellhead Protection Consultant to the extent possible based on the available data. Any new potential contaminant source locations identified during the implementation of this WHPP will be verified by the City with the assistance of the Wellhead Protection Consultant, if needed.

7.5.5.1 Source of Action

City staff.

7.5.5.2 Cooperators

City staff and the Wellhead Protection Consultant, if needed.

7.5.5.3 Time Frame

Every two years after approval of this WHPP if new potential contaminant sources in the DWSMAs are identified.

7.5.5.4 Estimated Cost

Approximately $500-$3,000. City staff time and Wellhead Protection Consultant, if needed. Actual costs will depend upon the number of new potential contaminant source locations that must be verified and in any update could be higher than the estimated range shown.

7.5.5.5 Goals Achieved

Verification of newly identified potential contaminant source locations within the DWSMAs will allow the City to remain in compliance with the requirements of the State of Minnesota's Wellhead and Source Water Protection Program. Verification of the newly identified locations will also ensure that the City uses the most accurate data on type and location of potential contaminant sources as implementation of this WHPP proceeds.

Success criterion: All potential contaminant source locations in the database are verified to the extent possible.

7.5.6 Tritium and Oxygen Isotope Sampling

Tritium (^3H), a radioactive isotope of hydrogen, whose atmospheric concentrations rose in the 1950s and early 1960s due to atmospheric hydrogen bomb testing, has been used extensively to date groundwater. Tritium activities peaked during atmospheric hydrogen bomb testing of the 1950s and 1960s, and values of ^3H in precipitation reached a maximum of approximately 10,000 TU (tritium units) in 1963 (Mazor, 2004). Natural production of ^3H in the upper atmosphere introduces approximately 5 TU to precipitation each year (Mazor, 2004). The presence of tritium at concentrations above 1 tritium unit in a groundwater sample indicates the presence of a significant fraction of post-1954 (i.e., recently infiltrated) water in the sample.

The MDH sampled Wells 11, 17, 20, 23, and 24 in 2010 and Wells 2, 5, 6, 9, 14, 18, and 21 in 2015 for tritium. Other City water supply wells either have not been sampled for tritium or were last sampled for tritium prior to the year 2000. Sampling of City wells for tritium at regular intervals will allow for tracking of tritium concentrations over time. If a tritium concentration in a groundwater sample from a well is significantly higher than the concentration in a previous sample from the same well it could be an indication that there is a pathway such as a breech in the well casing or an unused, unsealed well in the vicinity that allows water to move from the surface to the source water aquifer faster than before the pathway became available. The City will ask the MDH to sample five of the municipal wells for tritium that were last sampled prior to 2010 or that have not been sampled for tritium within two years of approval of this Plan. Going forward, the City will then ask the MDH to sample five to seven of the municipal wells for

tritium every five years thereafter. Since the MDH already has a program to sample municipal wells for tritium the City would rely on the MDH to collect the samples and have them analyzed for tritium.

Per the recommendation in section 7.0 of the Part 1 WHPP amendment (Barr, 2016), the City will also work with the MDH to develop a program for oxygen isotope sampling of Wells 14, 15, 17, 20, 22, 23, and 25. The objective of the sampling would be to obtain data for determining if groundwater pumped from the wells nearest the region of High aquifer vulnerability and Quaternary wells whose capture zones extend under the Mississippi River is under the influence of surface water. This information would inform the next update of Part 1 of the WHPP regarding whether a conjunctive delineation (a.k.a., a surface water catchment area delineation) should be performed.

7.5.6.1 Source of Action

City and MDH staff.

7.5.6.2 Cooperators

MDH

7.5.6.3 Time Frame

Tritium sampling: Beginning within two years after approval of this Plan and then every five years thereafter.

Oxygen isotope sampling: The schedule would be determined during discussions with MDH staff with the goal of completing the sampling within seven years after approval of this Plan so that the data would be available for the next WHPP update.

7.5.6.4 Estimated Cost

At the time this plan was prepared, cities were not charged by the MDH for tritium or oxygen isotope sampling and analysis.

7.5.6.5 Goals Achieved

Tritium sampling will provide data for evaluating if pathways that allow for relatively rapid movement of water from the surface to the source water aquifers are present. Oxygen isotope sampling will provide data for determining if the wells nearest the region of High vulnerability and Quaternary wells whose capture zones extend under the Mississippi River is under the influence of surface water.

Success criterion: Collection of groundwater samples from the selected City wells and analysis of these samples for tritium on the schedule outlined in section 7.5.6.3. and for oxygen isotopes on the scheduled developed in conjunction with the MDH.

8.0 Evaluation Program

Per Minnesota Rule 4720.5270, the progress in implementing a WHPP must be evaluated routinely to determine the effectiveness of the WHPP in terms of accomplishment of goals. Monitoring and evaluation measures to ensure effectiveness of the management strategies are detailed below.

Evaluation activities discussed in this WHPP amendment include the following:

- Track the implementation of the objectives, activities, and tasks discussed above in Section 7.0.
- Determine the effectiveness of specific management strategies for the protection of the Coon Rapids municipal water supply.
- Identify possible changes to the management strategies to improve overall effectiveness.
- Determine the adequacy of financial resources and staff availability to perform and implement the management strategies planned each year.
- Update the WHPP in the event that new wells are added to the municipal water supply system.

The City of Coon Rapids will continue to cooperate with the MDH in the monitoring of the City's municipal water supply to determine if the management strategies presented in this WHPP are having a positive effect on water quality and to identify any water quality problems that may arise and need to be addressed.

The Coon Rapids Wellhead Protection Manager will strive to provide a report to the City Council every two years that summarizes the progress in implementing the management strategies and objectives in this WHPP. The report will be completed using the MDH Wellhead Protection Program Evaluation form (Appendix F). The City will retain a copy of the report in its Wellhead Protection file and send a copy of the report to the MDH Source Water Protection Unit in St. Paul. The intent of the biannual reports is to compile a comprehensive review of the implementation of the source management strategies for use when the City updates or revises this WHPP. As specified by the Wellhead Protection Rules, this WHPP will be updated a minimum of every 10 years, or more often as required due to changes to the municipal water supply system.

9.0 Alternative Water Supply Contingency Strategy

The purpose of a contingency plan is to establish, provide, and keep updated certain emergency response procedures and information for the public water supply, which may become vital in the event of a partial or total loss of public water supply services as a result of natural disaster, chemical contamination, civil disorder, or human-caused disruptions.

The City's water supply contingency plan that will be implemented in the event of a water emergency is presented in Appendix G. At the time this Plan amendment was prepared the City was in the process of developing a new Water Supply Plan to address water emergencies and water conservation. Once the new Water Supply Plan is approved by the MDNR and adopted by the City it will replace the contingency plan presented in Appendix G. The City will provide documentation of MDNR approval and City adoption of the new Water Supply Plan to the MDH at that time.

10.0 References

Barr Engineering Company (Barr), 2016. City of Coon Rapids Wellhead Protection Plan Amendment – Part 1: Delineation of the Wellhead Protection Area (WHPA), Drinking Water Supply Management Area (DWSMA) and Assessments of Well and DWSMA Vulnerability, prepared for the City of Coon Rapids, March 2016.

Bolton & Menk, 2014. Comprehensive Water System Plan, prepared for City of Coon Rapids, project no. N21.107935, October 2014.

City of Coon Rapids (Coon Rapids), 2008. 2030 Comprehensive Plan.

Mazor, E. 2004. Chemical and Isotopic Groundwater Hydrology, 3rd ed., New York: Marcel Dekker Inc.

Metropolitan Council, 2015a. Coon Rapids Water Supply Profile in Appendix 1 of Master Water Supply Plan, September 23, 2015.

Metropolitan Council, 2015b. 2015 System Statement – City of Coon Rapids, System Statement issue date September 17, 2015.

Minnesota Department of Health (MDH), 2015. Scoping Decision Notice No. 1 for the City of Coon Rapids, PWSID 1020017, for Amending the Wellhead Protection Plan, Letter from Amal Djerrari of the MDH to City of Coon Rapids, May 7, 2015.

Minnesota Department of Health (MDH), 2016a. Letter from Amal M. Djerrari of the MDH to Kory Jorgensen of the City of Coon Rapids approving the Part 1 Wellhead Protection Plan Amendment, dated March 24, 2016.

Minnesota Department of Health (MDH), 2016b. Scoping 2 Decision Notice and Meeting Summary – City of Coon Rapids – PWSID 1020017, Letter from John Freitag of the MDH to Kory Jorgensen of the City of Coon Rapids, October 14, 2016.

Tables

Table 1

Municipal Well Construction Summary
City of Coon Rapids WHPP Amendment

Local Well ID	Unique Number	Use/ Status[1]	Casing Diameter (in.)	Casing Depth (ft.)	Well Depth (ft.)	Year Constructed	Aquifer	Well Vulnerability
1	202926	S	12	220	462	1957	CTCW	Not Vulnerable
2	202929	S	12	226	788	1957	CTCG-CMTS	Not Vulnerable
4	202972	S	20 x 16	233	605	1960	CTCG-CMTS	Not Vulnerable
5	202951	S	24 x 16	242	695	1961	CTCG-CMTS	Not Vulnerable
6	202937	S	20	118	158	1960	CTCG	Vulnerable
7	202943	S	24 x 16	189	632	1964	CTCG-CMTS	Vulnerable
8	202932	P	24 x 16	283	700	1965	CTCG-CMTS	Not Vulnerable
9	202931	P	24 x 16	294	500	1969	CTCW	Not Vulnerable
10	202930	P	30 x 24 x 16	272	684	1970	CTCG-CMTS	Not Vulnerable
11	202965	P	24	157	627	1972	CTCG-CMTS	Vulnerable
12	168721	S	24 x 16	208	604	1975	CTCG-CMTS	Not Vulnerable
13	168720	P	24 x 16	395	693	1977	CTCG-CMTS	Not Vulnerable
14	110460	P	30 x 20	328	613	1977	CTCG-CMTS	Not Vulnerable
15	110461	P	30 x 20	225	615	1976	CTCG-CMTS	Vulnerable
16	161413	S	30 x 24 x 18	395	653	1981	CWON-CMTS	Not Vulnerable
17	150357	P	30	81	121	1981	QBAA	Vulnerable
18	110469	S	36 x 30 x 24	575	637	1986	CMTS	Not Vulnerable
19	110475	P	30 x 20	115	135	1987	QBAA	Vulnerable
20	420956	P	30 x 20	95	135	1988	QBAA	Vulnerable
21	474384	P	24 x 18	170	203	1990	QBAA	Vulnerable
22	474385	S	24	80	105	1990	QBAA	Vulnerable
23	463020	S	30 x 24	93	128	1991	QBAA	Vulnerable
24	674478	P	36 x 30 x 24	241	388	2003	CTCW	Vulnerable
25	674479	P	36 x 24	229	388	2003	CTCW	Vulnerable

[1] P = Primary , S = Seasonal

Aquifer Codes:

CTCW = Tunnel City Group-Wonewoc Sandstone
CMTS = Mt. Simon Sandstone
CTCG = Tunnel City Group
CMSH = Mt. Simon and Hinckley Sandstones
CWON = Wonewoc Sandstone
QBAA = Quaternary Buried Artesian Aquifer
QWTA = Quaternary Water Table Aquifer

Table 2

Annual Volume of Water Pumped
City of Coon Rapids WHPP Amendment

		Total Annual Withdrawal (gal/yr)				
Unique Number	**Well Name**	**2010**	**2011**	**2012**	**2013**	**2014**
202926	1	2,474,000	2,056,000	5,603,000	11,794,000	3,625,000
202929	2	2,510,000	2,107,000	5,257,000	16,688,000	3,438,000
202972	4	454,000	237,000	328,000	4,995,000	2,330,000
202951	5	11,664,000	10,940,000	18,240,000	23,187,000	2,019,000
202937	6	11,404,000	14,692,000	18,891,000	28,209,000	2,022,000
202943	7	8,143,000	15,479,000	19,480,000	36,111,000	2,966,000
202932	8	266,464,000	146,631,000	124,262,000	87,333,000	153,358,000
202931	9	154,980,000	279,287,000	296,930,000	240,707,000	234,551,000
202930	10	289,927,000	321,549,000	329,619,000	260,648,000	48,304,000
202965	11	292,273,000	335,685,000	301,213,000	227,880,000	230,392,000
168721	12	8,107,000	13,305,000	19,113,000	26,242,000	1,961,000
168720	13	26,545,000	79,698,000	42,333,000	56,801,000	84,661,000
110460	14	82,530,000	65,386,000	104,955,000	97,452,000	89,025,000
110461	15	141,580,000	132,889,000	284,911,000	279,754,000	341,462,000
161413	16	6,637,000	268,000	1,340,000	1,462,000	859,000
150357	17	166,967,000	324,602,000	238,277,000	210,720,000	263,843,000
110469	18	1,461,000	1,264,000	1,103,000	3,664,000	2,340,000
110475	19	309,781,000	333,579,000	206,674,000	222,999,000	190,172,000
420956	20	348,896,000	275,096,000	157,449,000	146,620,000	161,888,000
474384	21	300,898,000	327,105,000	300,839,000	218,424,000	227,594,000
474385	22	2,315,000	33,171,000	34,297,000	23,168,000	45,768,000
463020	23	1,482,000	7,167,000	16,255,000	12,440,000	18,061,000
674478	24	229,680,000	20,193,000	218,647,000	220,698,000	160,699,000
674479	25	210,722,000	18,157,000	213,137,000	204,520,000	161,852,000
	Totals	2,877,894,000	2,760,543,000	2,959,153,000	2,662,516,000	2,433,190,000

Source: City water use records

DRAFT

Table 3

Summary of Potential Sources of Contaminants and Assigned Management Priority
City of Coon Rapids WHPP Amendment

Potential Contaminant Source Category	Total Number in DWSMAs[1]	Number Within IWMZ (Priority Assigned)	Number Within ERZ (Priority Assigned)	Number Within Remainder of the DWSMAs (Priority Assigned)
Chemical Storage Sites	22	MVZ – 5[3] (Mod.) HVZ - 0	MVZ - 4(High) HVZ – 1[3](Mod.)	MVZ – 12(Mod.) HVZ -0
Leaking Tank Sites				
Closed	31	MVZ - 0 HVZ - 0	MVZ – 4(Low) HVZ - 0	MVZ – 27(Low) HVZ - 0
Registered Storage Tank Sites				
Status = Active	33	MVZ - 0 HVZ - 0	MVZ – 8(High) HVZ - 0	MVZ – 25(Mod.) HVZ - 0
Status = Inactive or Unknown	38	MVZ - 0 HVZ - 0	MVZ – 5(Mod.) HVZ - 0	MVZ – 33(Low) HVZ - 0
Wells (status = Active, Inactive, or Unknown)				
Completed in a source water aquifer	65[2]	LVZ - 0 MVZ – 2[3](Mod.) HVZ - 0	LVZ - 0 MVZ – 10(High[4]) HVZ - 0	LVZ – 1(High) MVZ – 51(High) HVZ – 1(High)
Not completed in or penetrating source water aquifer	116	LVZ - 0 MVZ – 1(Mod.) HVZ – 1(Mod.)	LVZ - 0 MVZ – 3(Mod.) HVZ - 0	LVZ - 8(Mod.) MVZ – 103(Mod.) HVZ - 0
Potential Class V Wells	23	LVZ - 0 MVZ - 0 HVZ - 0	LVZ - 0 MVZ – 7(Mod.) HVZ - 0	LVZ – 1(Low) MVZ – 15(Mod.) HVZ - 0

HVZ High aquifer vulnerability zone MVZ Moderate aquifer vulnerability zone LVZ Low aquifer vulnerability zone
ERZ Emergency Response Zone: defined as portion of the WHPA within the 1-year groundwater time of travel area.
IWMZ Inner Wellhead Management Zone: defined in MR4720.5100 subpart 19 as the area within 200 feet of a public water supply well.
[1] Total number of each potential contaminant source type identified during the PCSI.
[2] Total number does not include the 24 Coon Rapids municipal water supply wells.
[3] Sites are under City control so priority is set as moderate.
[4] Three of these wells are under City control and priority for the wells would be considered moderate.

Table 4

High Capacity Wells within One Mile of the DWSMAs
City of Coon Rapids WHPP Amendment

PCSI ID[1]	Unique ID	Status	Permittee	Use	Aquifer	Permitted Volume MGY
1	202926	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCW	3200
2	202929	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
4	202972	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
5	202951	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
6	202937	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG	3200
7	202943	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
8	202932	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
9	202931	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCW	3200
10	202930	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
11	202965	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
12	168721	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
13	168720	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
14	110460	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
15	110461	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCG-CMTS	3200
16	161413	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CWON-CMTS	3200
17	150357	Active	Coon Rapids, City Of	Municipal/Public Water Supply	QBAA	3200
18	110469	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CMTS	3200
19	110475	Active	Coon Rapids, City Of	Municipal/Public Water Supply	QBAA	3200
20	420956	Active	Coon Rapids, City Of	Municipal/Public Water Supply	QBAA	3200
21	474384	Active	Coon Rapids, City Of	Municipal/Public Water Supply	QBAA	3200
22	474385	Active	Coon Rapids, City Of	Municipal/Public Water Supply	QBAA	3200
23	463020	Active	Coon Rapids, City Of	Municipal/Public Water Supply	QWTA	3200
24	674478	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCW	3200
25	674479	Active	Coon Rapids, City Of	Municipal/Public Water Supply	CTCW	3200
42	228438	Active	Champlin, City of	Municipal/Public Water Supply	CTCG-CMTS	1131

Table 4

High Capacity Wells Within One Mile of the DWSMAs
City of Coon Rapids

PCSI ID[1]	Unique ID	Status	Permittee	Use	Aquifer	Permitted Volume MGY
59	420970	Active	Brooklyn Park, City of - Public Works Dept	Municipal/Public Water Supply	CMTS	3560
121	686058	Active	Pheasant Ridge Townhomes Association	Landscaping/Athletic Field Irrigation	CTCG	1.4
133	503723	Active	Reisling Park North Iii	Landscaping/Athletic Field Irrigation	CTCG	4.1
165	706843	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	CTCW	9.2
167	778604	Active	Natureview Vista Association	Landscaping/Athletic Field Irrigation	CTCG	5
173	473464	Active	Mnscu Anoka-Ramsey Community College	Landscaping/Athletic Field Irrigation	QBAA	15
151587	151587	Active	Blaine, City of	Municipal/Public Water Supply	CTCW	3337
191909	191909	Active	Brooklyn Park, City of - Public Works Dept	Landscaping/Athletic Field Irrigation	CTCW	15
202971	202971	Active	Anoka, City Of	Municipal/Public Water Supply	CTCG-CMTS	1200
208611	208611	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	CTCW	16
208615	208615	Active	Blaine, City of	Municipal/Public Water Supply	CTCG-CMTS	3337
208616	208616	Active	Blaine, City of	Municipal/Public Water Supply	CTCW	3337
208628	208628	Active	Blaine, City of	Municipal/Public Water Supply	CTCG-CMTS	3337
208629	208629	Active	Blaine, City of	Municipal/Public Water Supply	CTCG-CMTS	3337
208630	208630	Active	Blaine, City of	Municipal/Public Water Supply	CTCW	3337
209305	209305	Active	Federal Cartridge Co	Non-metallic Processing (rubber, plastic, glass, concrete)	CTCW	158.5
209305	209305	Active	Federal Cartridge Co	Other Industrial Processing	CTCW	158.5
209306	209306	Active	Federal Cartridge Co	Non-metallic Processing (rubber, plastic, glass, concrete)	CTCW	158.5
209306	209306	Active	Federal Cartridge Co	Other Industrial Processing	CTCW	158.5
209308	209308	Active	Federal Cartridge Co	Non-metallic Processing (rubber, plastic, glass, concrete)	CTCW	159
209308	209308	Active	Federal Cartridge Co	Other Industrial Processing	CTCW	159
231864	231864	Active	Bunker Hills Golf Club	Golf Course Irrigation	QBAA	195
231866	231866	Active	Bunker Hills Golf Club	Golf Course Irrigation	QBAA	195
431681	431681	Active	Anoka County Parks And Recreation	Basin (Lake) Level Maintenance	CTCW	7

Table 4

High Capacity Wells Within One Mile of the DWSMAs
City of Coon Rapids

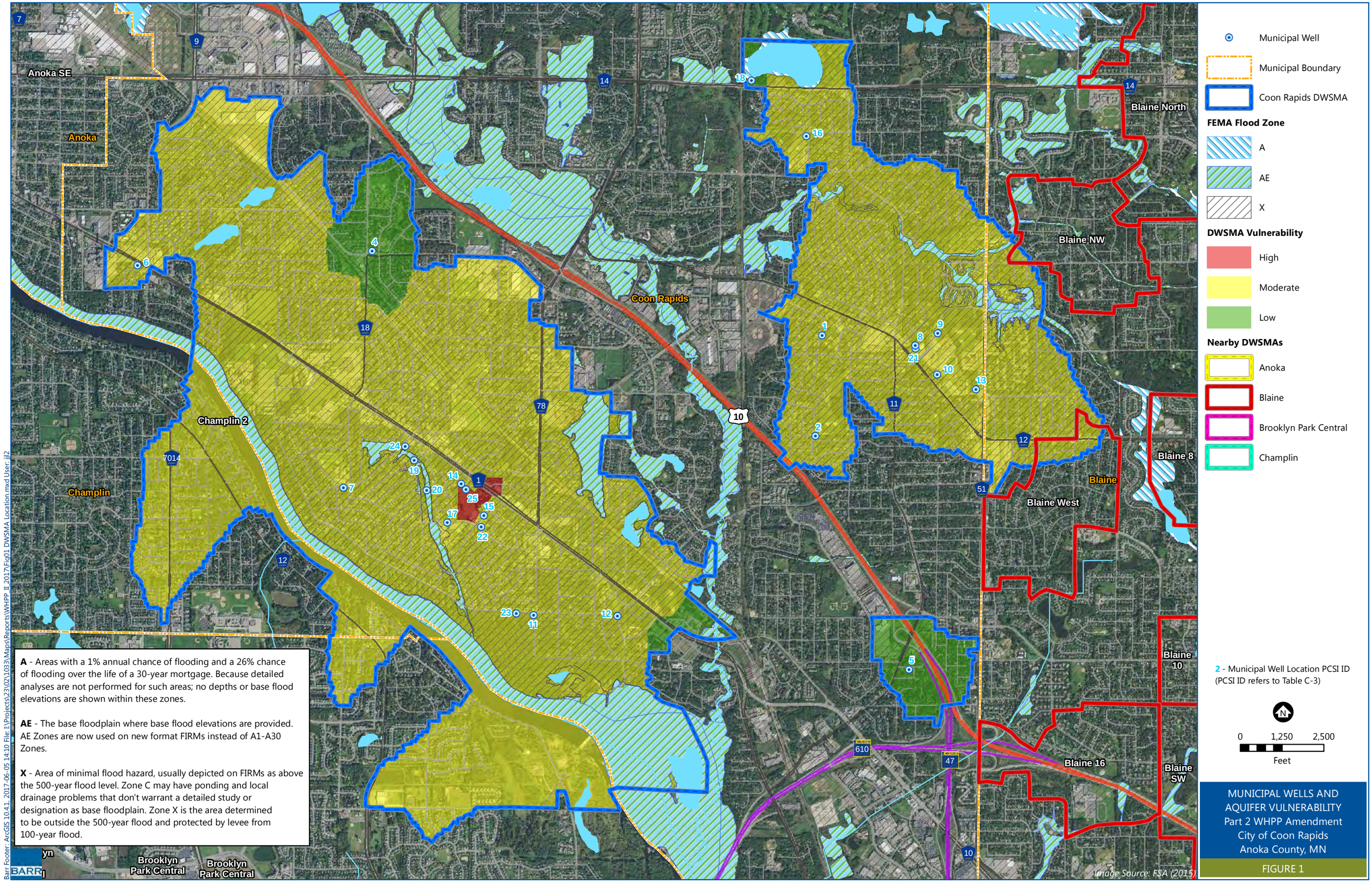
PCSI ID[1]	Unique ID	Status	Permittee	Use	Aquifer	Permitted Volume MGY
431681	431681	Active	Anoka County Parks And Recreation	Other Water Level Maintenance	CTCW	7
462964	462964	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	QWTA	6
462967	462967	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	QBUA	20
482893	482893	Active	Champlin, City of	Landscaping/Athletic Field Irrigation	CTCW	24
500696	500696	Active	Bunker Hills Golf Club	Golf Course Irrigation	QBAA	195
503670	503670	Active	Pheasant Ridge Townhomes Association	Landscaping/Athletic Field Irrigation	CTCG	1.4
674482	674482	Active	Brooklyn Park, City of - Public Works Dept	Landscaping/Athletic Field Irrigation	CTCW	22.8
676414	676414	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	CTCW	23
676448	676448	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	CTCW	9
711531	711531	Active	Realife Cooperative of Coon Rapids	Landscaping/Athletic Field Irrigation	QBAA	3
768685	768685	Active	Saint Therese At Oxbow Lake Inc	Landscaping/Athletic Field Irrigation	QBAA	5
NA1	Not Available	Active	Centerpoint Energy	Construction Dewatering	Not Available	13

[1] PCSI ID refers to Figure 4

Aquifer/Formation Codes:

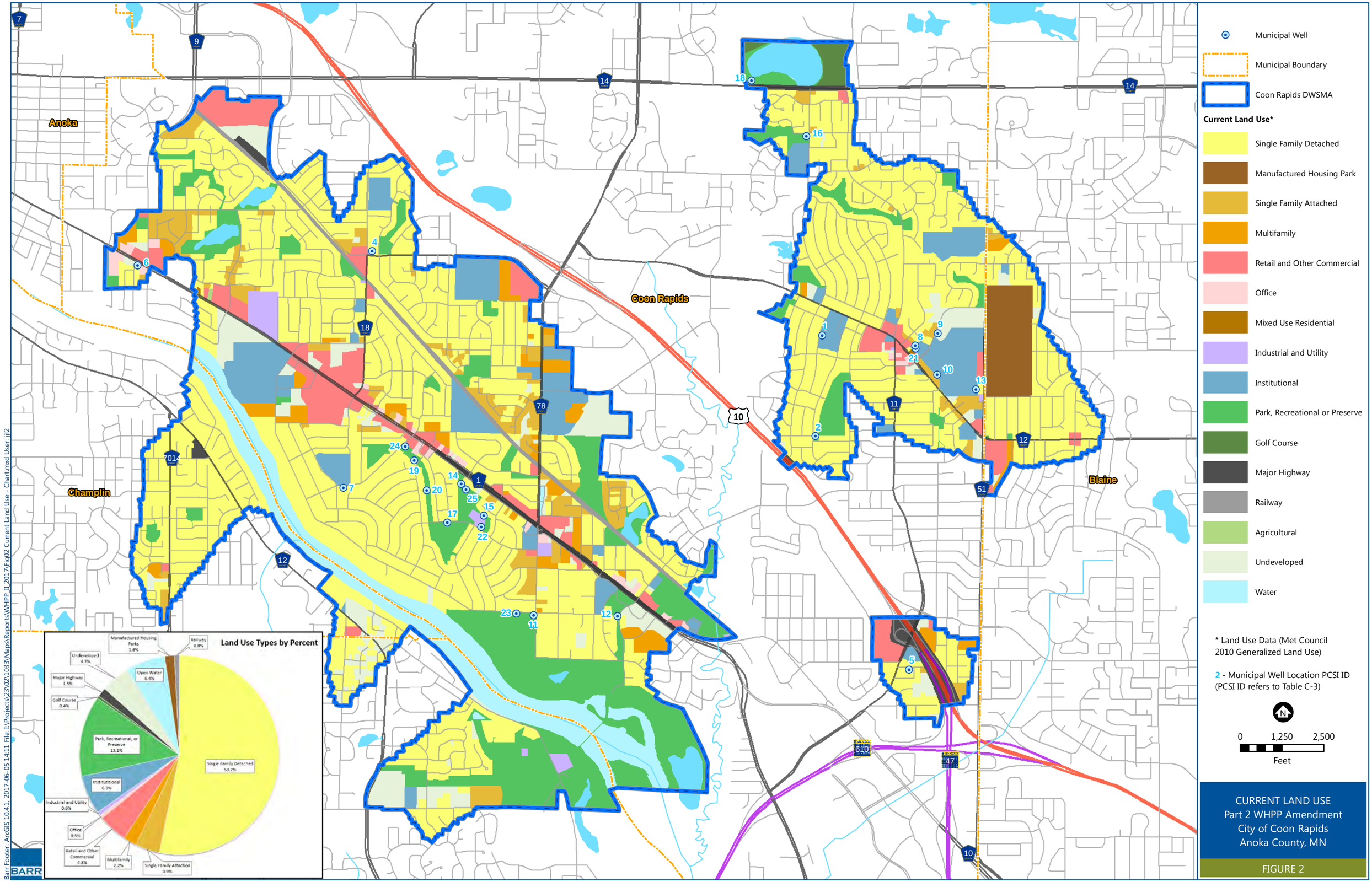
CTCW = Tunnel City Group-Wonewoc Sandstone
CMTS = Mt. Simon Sandstone
CTCG = Tunnel City Group
QBAA = Quaternary Buried Artesian Aquifer
QBUA = Quaternary Buried Unconfined Aquifer
QWTA = Quaternary Water Table Aquifer

Figures



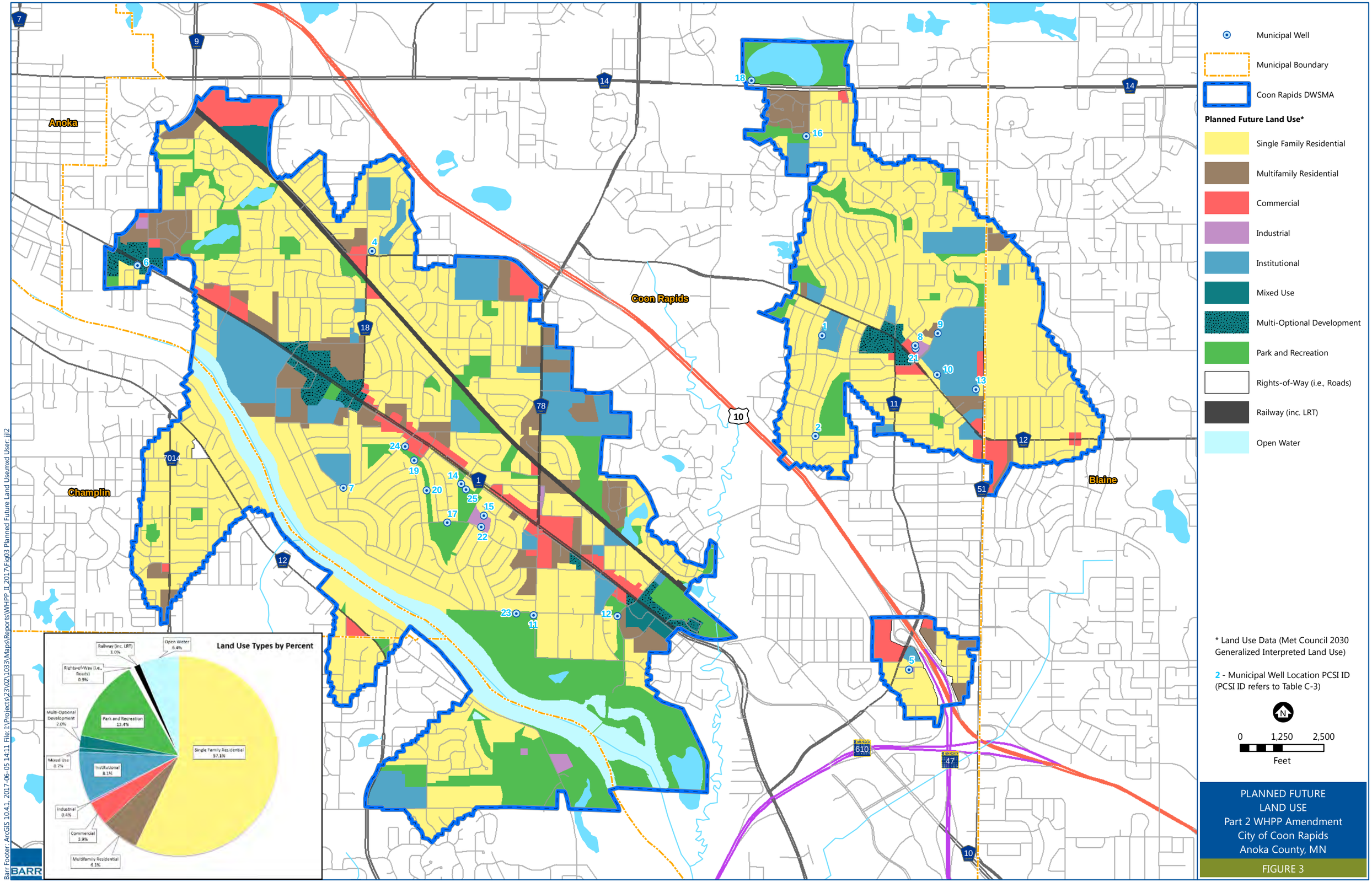
MUNICIPAL WELLS AND AQUIFER VULNERABILITY
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE 1



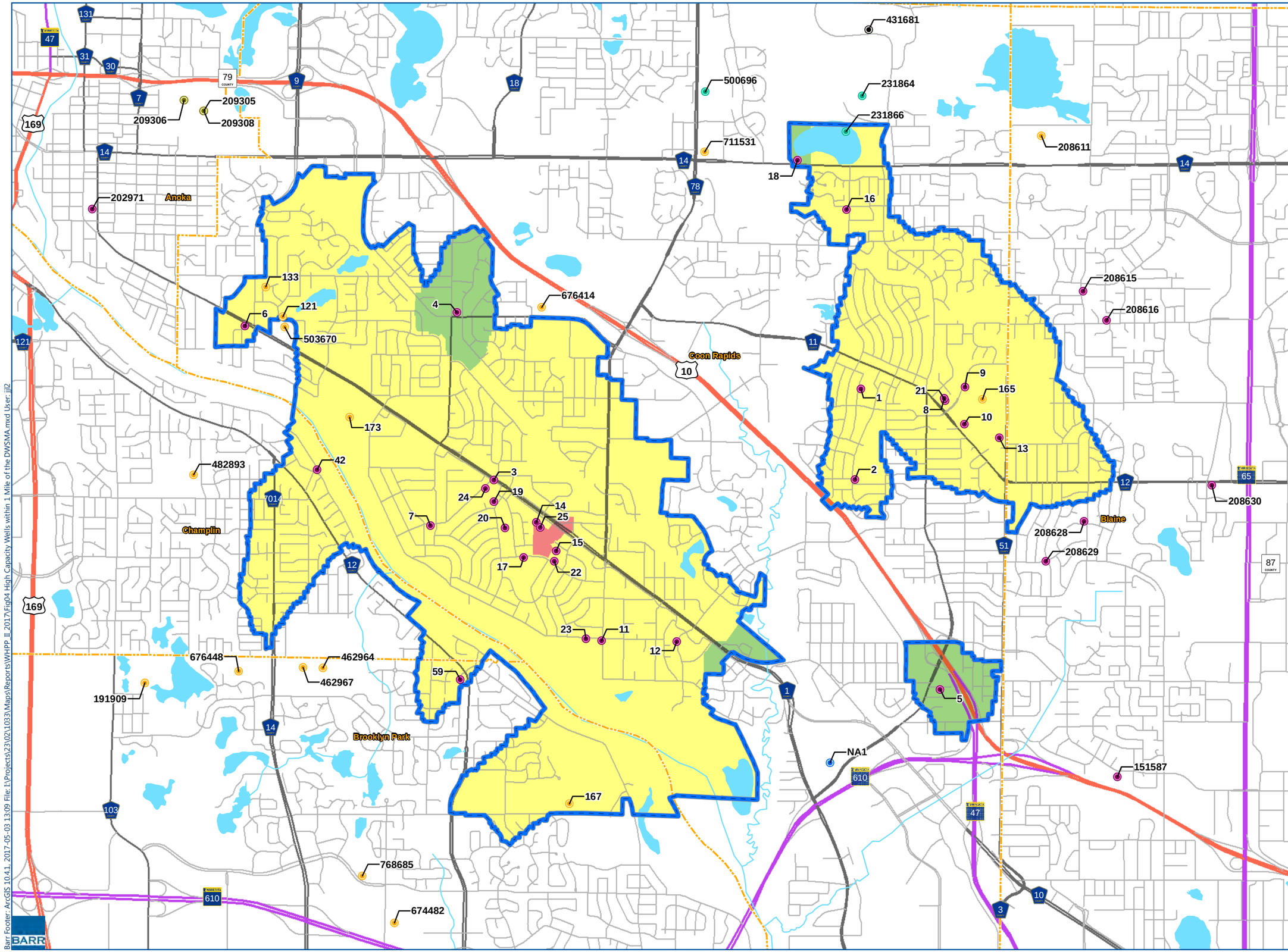
CURRENT LAND USE
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE 2



PLANNED FUTURE LAND USE
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE 3



Permitted Water Appropriations (MPARS) Within 1 Mile of DWSMA

- Basin (Lake) Level Maintenance
- Construction Dewatering
- Golf Course Irrigation
- Landscaping/Athletic Field Irrigation
- Municipal/Public Water Supply
- Non-metallic Processing
- Other Industrial Processing
- Other Water Level Maintenance
- Municipal Boundary
- Coon Rapids DWSMA

DWSMA Vulnerability

- High
- Moderate
- Low

3 - MPARS Location PCSI ID (PCSI ID refers to Table C-7)

0 1,500 3,000
Feet

HIGH CAPACITY WELLS WITHIN ONE MILE OF THE DWSMAs
City of Coon Rapids
Anoka County, MN

FIGURE 4

Barr Footer: ArcGIS 10.4.1, 2017-05-03 13:09 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_IL_2017\Fig04 High Capacity Wells within 1 Mile of the DWSMA.mxd User: jjl2

Appendix A

Well Construction Records

Unique No. 00202926	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/06
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	BCCABD

Well Depth	Depth Completed	Date Well Completed
462 ft.	462 ft.	1957/09/00

Well Name COON RAPIDS 1

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 1
11349 NORWAY NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
0 in. t 462 ft

Casing Diameter **Weight(lbs/ft)**
12 in. t 220 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	35
CLAY	BLUE		35	50
SANDY CLAY			50	91
HARDPAN			91	114
SAND			114	135
SAND & CLAY			135	138
SAND & GRAVEL			138	158
HARDPAN			158	167
SANDROCK		SOFT	167	173
SANDROCK		SOFT	173	197
SANDROCK & SHALE			197	213
SANDROCK & SHALE			213	242
SANDROCK & SHALE			242	355
CLAY RED			355	360
SHALE & SANDROCK			360	385
SHALE & SANDROCK			385	386
SANDROCK WITH SOME SH			386	398
SANDROCK VERY SOFT			398	434
SANDROCK WITH SOME SH			434	458
SHALE			458	462

Screen N

Open Hole From 220 ft. to 462 ft.

Make Type

Static Water Level 28 ft. from Land surface Date 1957/09/00

PUMPING LEVEL (below land surface)
78 ft. after hrs. pumping 880 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam FAIRBANKS MORSE
Model HP 50 Volts 220
Drop Pipe Length ft. Capacity 600 g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED & TV 5-15-1995. LOGGED & TV BY GEOSHPERE.

USGS Quad Coon Rapids Elevation 891
Aquifer: MTPL Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012
License Business Name
Name of Driller BRANDON, J.

Report Copy

Unique No.	00202926	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	BCCABD	462	ft.	462	ft.	1957/09/00

Well Name	COON RAPIDS 1	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	891	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	35	QFUU	SAND		
QFUU = Sand	SAND = Sand							
CLAY	BLUE		35	50	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
SANDY CLAY			50	91	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
HARDPAN			91	114	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
SAND			114	135	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND & CLAY			135	138	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand		CLAY = Clay					
SAND & GRAVEL			138	158	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
HARDPAN			158	167	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
SANDROCK		SOFT	167	173	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDROCK		SOFT	173	197	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
SANDROCK & SHALE			197	213	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
SANDROCK & SHALE			213	242	CSTL	SLSN	DLMT	
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite					
SANDROCK & SHALE			242	355	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
CLAY RED			355	360	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		

Unique No.	00202926	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	BCCABD	462	ft.	462	ft.	1957/09/00

Well Name	COON RAPIDS 1	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	891	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE & SANDROCK			360	385	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SHALE & SANDROCK			385	386	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK WITH SOME SHALE			386	398	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK VERY SOFT			398	434	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK WITH SOME SHALE			434	458	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE			458	462	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No. 00202929

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/06

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	CCCCAD

Well Depth	Depth Completed	Date Well Completed
788 ft.	788 ft.	1957/06/00

Well Name COON RAPIDS 2

Drilling Method Cable Tool

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Drilling Fluid

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

Well Owner's Name COON RAPIDS 2
10911 MAGNOLIA ST
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
in. t 704 ft
in. t 788 ft

Casing Diameter **Weight(lbs/ft)**
12 in. t 226 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	36
CLAY			36	48
CLAY & GRAVEL			48	136
HARDPAN			136	145
CLAY & SAND			145	163
SAND			163	175
SAND & GRAVEL			175	218
SHALE			218	219
LIMEROCK & SHALE			219	221
LIMEROCK & SHALE			221	243
LIMEROCK & SHALE			243	258
SANDROCK & SHALE			258	391
SANDROCK & SHALE			391	439
SANDROCK & SHALE			439	472
SHALE			472	498
SANDROCK & SHALE			498	545
SANDROCK & SHALE			545	594
SANDROCK			594	670
CAVING RED SHALE			670	704
RED ROCK & SHALE			704	726
RED ROCK			726	770
SHALE			770	778
RED ROCK			778	788

Screen N

Open Hole From 226 ft. to 788 ft.

Make Type

Static Water Level 24 ft. from Land surface Date 1957/06/00

PUMPING LEVEL (below land surface)
33.5 ft. after hrs. pumping 302 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam FAIRBANKS MORSE
Model HP 30 Volts 220
Drop Pipe Length 187 ft. Capacity 500 g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

TWO OTHER PUM TESTS AT DEPTHS OF 673 & 466 FT.

PUMPING TEST NO. 3 RECORDED AT 685 FT.

M.G.S. NO. 156. GAMMA LOGGED & TV 5-15-1995. OLD PA. NO. 61-0225.

WELL WAS BACK FILLED TO 685 FT.

LOGGED & TV BY GEOSPHERE.

USGS Quad	Coon Rapids	Elevation	885
Aquifer:	MTPL	Alt Id:	80-6139

Report Copy

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012

License Business Name

Name of Driller BRANDON, J.

HE-01205-06 (Rev. 9/96)

Unique No.	00202929	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	CCCCAD	788	ft.	788	ft.	1957/06/00

Well Name	COON RAPIDS 2	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	885	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	36	QFUU	SAND		
QFUU = Sand	SAND = Sand							
CLAY			36	48	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
CLAY & GRAVEL			48	136	QPUU	CLAY	GRVL	
QPUU = Pebbly sand/silt/clay	CLAY = Clay		GRVL = Gravel					
HARDPAN			136	145	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
CLAY & SAND			145	163	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
SAND			163	175	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND & GRAVEL			175	218	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
SHALE			218	219	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
LIMEROCK & SHALE			219	221	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
LIMEROCK & SHALE			221	243	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
LIMEROCK & SHALE			243	258	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK & SHALE			258	391	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK & SHALE			391	439	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK & SHALE			439	472	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No.	00202929	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	CCCCAD	788	ft.	788	ft.	1957/06/00

Well Name	COON RAPIDS 2	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	885	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE			472	498	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK & SHALE			498	545	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK & SHALE			545	594	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SANDROCK			594	670	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
CAVING RED SHALE			670	704	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
RED ROCK & SHALE			704	726	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
RED ROCK			726	770	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
SHALE			770	778	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
RED ROCK			778	788	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							

Unique No. 00202972	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/03/12
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	9	DCCCCD

Well Depth	Depth Completed	Date Well Completed
605 ft.	605 ft.	1960/08/19

Well Name COON RAPIDS 4

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 4
2731 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

20	in. t	158	ft
16	in. t	233	ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	158
DOLOMITE		HARD	158	170
JORDAN SANDSTONE			170	220
SHALE	GREE		220	310
SANDSTONE WITH THIN SH			310	369
SANDY SHALE			369	425
HARD SANDSTONE, SHALE			425	435
HARD SANDSTONE, SHALE			435	475
SHALEY SANDSTONE			475	520
HARD SANDSTONE, COARS			520	587
SHALE			587	605

Screen N

Open Hole From 233 ft. to 605 ft.

Make Type

Static Water Level 23 ft. from Land surface Date 1960/08/19

PUMPING LEVEL (below land surface)
142 ft. after 24 hrs. pumping 1000 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
	0	233	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam FAIRBANKS MORSE
Model 6977 HP 100 Volts 240
Drop Pipe Length 180 ft. Capacity g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 168. GAMMA LOGGED 3-31-1998. LOGGED BY JIM TRAEN.

OLD PA. NO. 60-0350.

USGS Quad Coon Rapids Elevation 869
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27118
License Business Name
Name of Driller BENEKE, R.

Report Copy

Unique No.	00202972	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/03/12
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	9	DCCCCD	605	ft.	605	ft.	1960/08/19

Well Name	COON RAPIDS 4	**Lic. Or Reg. No.**	27118	**Name of Driller**	BENEKE, R.		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DRIFT			0	158	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
DOLOMITE		HARD	158	170	CSTL	DLMT	SNDS	
CSTL = St.Lawrence	DLMT = Dolomite		SNDS = Sandstone					
JORDAN SANDSTONE			170	220	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					
SHALE	GREEN		220	310	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SANDSTONE WITH THIN SHALE LENSES			310	369	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			369	425	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD SANDSTONE, SHALE LENSES			425	435	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD SANDSTONE, SHALE LENSES			435	475	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALEY SANDSTONE			475	520	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HARD SANDSTONE, COARSE			520	587	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE			587	605	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00202951

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	25	ACBBDD

Well Depth 695 ft. **Depth Completed** 695 ft. **Date Well Completed** 1961/09/00

Well Name COON RAPIDS 5

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 5
99TH NW LA
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
0 in. t 695 ft

Casing Diameter **Weight(lbs/ft)**
24 in. t 200 ft
16 in. t 242 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND, GRAVEL, SHALE			0	190
SHALE, SANDROCK			190	200
SANDROCK		HARD	200	201
SANDROCK		HARD	201	215
SHALE			215	225
HARD SANDROCK & SHALE			225	248
HARD SANDROCK & SHALE			248	255
HARD SHALE & LIMEROCK			255	279
SANDROCK			279	293
LIMEROCK			293	295
HARD GREEN SHALE & LIM			295	374
SHALE			374	387
LIMEROCK			387	390
SHALE, LAYERS OF LIME	GREE	HARD	390	404
SHALE, LAYERS OF LIME	GREE	HARD	404	410
SANDROCK & SHALE			410	424
SANDROCK			424	449
HARD SANDROCK & SHALE			449	454
HARD SHALE, LAYERS OF L			454	459
HARD SHALE, LAYERS OF L			459	465
STICK GREEN SHALE			465	477
SHALE	RED		477	497
BLUE-GREEN SHALE			497	525
HARD GRAY SHALE, SOME			525	529
HARD GRAY SHALE, SOME			529	555
HARD SHALE & SANDROCK			555	625
SANDROCK			625	685
RED CLASTICS			685	695
GNEISS AT 695'			695	695

Screen N

Open Hole From 242 ft. to 695 ft.

Make Type

Static Water Level 68 ft. from Land surface Date 1961/07/11

PUMPING LEVEL (below land surface)
188 ft. after 26 hrs. pumping 1200 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP Volts

Drop Pipe Length ft. Capacity g.p.m
Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

SAMPLES INDICATE BASALT AT 695 FT.

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

M.G.S. NO. 199. 190-203 FT. LOOKS LIKE REWORKED JORDAN.

GAMMA LOGGED 2-13-2006 TO 580 FT BY JIM TRAEN.

USGS Quad	Coon Rapids	Elevation	910
Aquifer:	CFMS	Alt Id:	80-6139

Report Copy

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27058

License Business Name

Name of Driller

HE-01205-06 (Rev. 9/96)

Unique No.	00202951	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	25	ACBBDD	695	ft.	695	ft.	1961/09/00

Well Name	COON RAPIDS 5	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	910	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND, GRAVEL, SHALE			0	190	QPUU	SAND	GRVL	CLAY
QPUU = Pebbly sand/silt/clay	SAND = Sand		GRVL = Gravel				CLAY = Clay	
SHALE, SANDROCK			190	200	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
SANDROCK		HARD	200	201	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDROCK		HARD	201	215	CSTL	DLMT	SNDS	
CSTL = St.Lawrence	DLMT = Dolomite		SNDS = Sandstone					
SHALE			215	225	CSTL	SHLE	SLSN	
CSTL = St.Lawrence	SHLE = Shale		SLSN = Siltstone					
HARD SANDROCK & SHALE			225	248	CSTL	DLMT	SNDS	
CSTL = St.Lawrence	DLMT = Dolomite		SNDS = Sandstone					
HARD SANDROCK & SHALE			248	255	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
HARD SHALE & LIMEROCK			255	279	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK			279	293	CFRN	SNDS		
CFRN = Franconia	SNDS = Sandstone							
LIMEROCK			293	295	CFRN	DLMT		
CFRN = Franconia	DLMT = Dolomite							
HARD GREEN SHALE & LIMEROCK			295	374	CFRN	SHLE	DLMT	
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite					
SHALE			374	387	CFRN	SHLE		
CFRN = Franconia	SHLE = Shale							
LIMEROCK			387	390	CFRN	DLMT		
CFRN = Franconia	DLMT = Dolomite							
SHALE, LAYERS OF LIME	GREEN	HARD	390	404	CFRN	SHLE	DLMT	
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite					

Unique No.	00202951	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	25	ACBBDD	695	ft.	695	ft.	1961/09/00

Well Name	COON RAPIDS 5	Lic. Or Reg. No.	27058	Name of Driller	
USGS Quad	Coon Rapi	Elevation	910	Aquifer	CFMS	Alternative Id	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE, LAYERS OF LIME	GREEN	HARD	404	410	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK & SHALE			410	424	CIGL	SNDS	SHLE	
CIGL = Ironton-Galesville	SNDS = Sandstone		SHLE = Shale					
SANDROCK			424	449	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD SANDROCK & SHALE			449	454	CIGL	SNDS	SHLE	
CIGL = Ironton-Galesville	SNDS = Sandstone		SHLE = Shale					
HARD SHALE, LAYERS OF LIME			454	459	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD SHALE, LAYERS OF LIME			459	465	CECR	SHLE	SNDS	DLMT
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
STICK GREEN SHALE			465	477	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE	RED		477	497	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
BLUE-GREEN SHALE			497	525	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD GRAY SHALE, SOME SANDROCK			525	529	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD GRAY SHALE, SOME SANDROCK			529	555	CMTS	SHLE	SNDS	
CMTS = Mt.Simon	SHLE = Shale		SNDS = Sandstone					
HARD SHALE & SANDROCK			555	625	CMTS	SHLE	SNDS	
CMTS = Mt.Simon	SHLE = Shale		SNDS = Sandstone					
SANDROCK			625	685	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
RED CLASTICS			685	695	PMRC	SHLE	SNDS	
PMRC = Red Clastic Series	SHLE = Shale		SNDS = Sandstone					

Unique No.	00202951	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	25	ACBBDD	695	ft.	695	ft.	1961/09/00

Well Name	COON RAPIDS 5	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	910	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
GNEISS AT 695'			695	695	PAUD	BSLT		

PAUD = Archean Rocks Undivided BSLT = Basalt

Unique No. 00202937

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2010/03/15

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	17	BBAACC

Well Depth	Depth Completed	Date Well Completed
158 ft.	158 ft.	1960/11/00

Well Name COON RAPIDS 6

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 6
11611 YUCCA NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
0 in. t 158 ft

Casing Diameter **Weight(lbs/ft)**
20 in. t 118 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL			0	57
CLAY			57	67
SAND & GRAVEL			67	82
HARDPAN			82	94
HARDPAN			94	102
SANDROCK			102	158

Screen N

Open Hole From 118 ft. to 158 ft.

Make Type

Static Water Level 22 ft. from Land surface Date 1960/11/00

PUMPING LEVEL (below land surface)
24.5 ft. after hrs. pumping 151 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

BASED ON SAMPLES AIR LIFTED FROM WELL 5-6-1993 FRANCONIA FM. PRESENT.

GAMMA LOGGED 12-1-1992.

GAMMA LOGGED 5-6-1993. LOGGED BY GEOSPHERE.

OLD P.A. 60-0743.

USGS Quad Coon Rapids Elevation 870
Aquifer: CFRN Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012
License Business Name
Name of Driller KEMPER, R

Report Copy

Unique No.	00202937	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2010/03/15
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	17	BBAACC	158	ft.	158	ft.	1960/11/00

Well Name	COON RAPIDS 6	**Lic. Or Reg. No.**	62012	**Name of Driller**	KEMPER, R.		
USGS Quad	Coon Rapi	**Elevation**	870	**Aquifer**	CFRN	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL			0	57	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
CLAY			57	67	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
SAND & GRAVEL			67	82	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
HARDPAN			82	94	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
HARDPAN			94	102	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					
SANDROCK			102	158	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	

Unique No. 00202943

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2008/12/30

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	BDACBB

Well Depth	Depth Completed	Date Well Completed
632 ft.	632 ft.	1964/04/00

Well Name COON RAPIDS 7

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 7
10617 DIRECT RIVER DR
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

24 in. t 163 ft

16 in. t 189 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & CLAY			0	78
CLAY			78	90
FINE SAND			90	130
SANDSTONE			130	161
GREENSHALE	GREE		161	165
DOLOMITIC CLAY			165	190
SHALE & SANDSTONE			190	295
GRAY SHALE	GRAY		295	300
BROWN SHALE	BROW		300	315
SHALE	RED		315	325
SHALE	GRAY		325	330
SHALE	GRAY		330	345
SANDSTONE	GRAY		345	380
GRAY SHALE	GRAY		380	398
SHALE	GRAY		398	400
RED ROCK	RED		400	425
GRAY & RED SHALE	GRY/R		425	440
GRAY & BROWN ROCK	GRY/B		440	475
COARSE SAND	GRAY		475	477
COARSE SAND	GRAY		477	480
FINE SAND	GRAY		480	520
FINE SAND	GRAY		520	560
COARSE SAND	WHITE		560	590
HARD GOLD GRAINS COAR	WHITE		590	600
SHALE	RED		600	610
RED & GRAY SHALE	RED/G		610	615
SHALE	RED		615	632

Screen N

Open Hole From 189 ft. to 632 ft.

Make Type

Static Water Level 31 ft. from Land surface Date 1964/04/00

PUMPING LEVEL (below land surface)

71 ft. after hrs. pumping 1600 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

JIM TRAEN HAS TWO DATES ON LOG 1-18-04 AND 1-18-05.

GAMMA LOGGED 1-18-04 BY JIM TRAEN

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

USGS Quad Coon Rapids Elevation 868

Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 96460

Unique No.	00202943	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	BDACBB	632	ft.	632	ft.	1964/04/00

Well Name	COON RAPIDS 7	**Lic. Or Reg. No.**	96460	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	868	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & CLAY			0	78	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand		CLAY = Clay					
CLAY			78	90	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
FINE SAND			90	130	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDSTONE			130	161	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
GREENSHALE	GREEN		161	165	CSTL	SHLE	SLSN	
CSTL = St.Lawrence	SHLE = Shale		SLSN = Siltstone					
DOLOMITIC CLAY			165	190	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
SHALE & SANDSTONE			190	295	CFRN	SHLE	SNDS	
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone					
GRAY SHALE	GRAY		295	300	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
BROWN SHALE	BROWN		300	315	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	RED		315	325	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	GRAY		325	330	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	GRAY		330	345	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE	GRAY		345	380	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
GRAY SHALE	GRAY		380	398	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							

Unique No.	00202943	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	BDACBB	632	ft.	632	ft.	1964/04/00

Well Name	COON RAPIDS 7	**Lic. Or Reg. No.**	96460	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	868	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE	GRAY		398	400	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
RED ROCK	RED		400	425	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
GRAY & RED SHALE	GRY/RED		425	440	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
GRAY & BROWN ROCK	GRY/BRN		440	475	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
COARSE SAND	GRAY		475	477	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
COARSE SAND	GRAY		477	480	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
FINE SAND	GRAY		480	520	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
FINE SAND	GRAY		520	560	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
COARSE SAND	WHITE		560	590	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HARD GOLD GRAINS COARSE SAND	WHITE		590	600	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE	RED		600	610	PMSU	SHLE		
PMSU = Mid.Proterozoic Sedimentary	SHLE = Shale							
RED & GRAY SHALE	RED/GRY		610	615	PMSU	SHLE		
PMSU = Mid.Proterozoic Sedimentary	SHLE = Shale							
SHALE	RED		615	632	PMSU	SHLE		
PMSU = Mid.Proterozoic Sedimentary	SHLE = Shale							

Unique No. 00202932	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/06
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	ACCDBD

Well Depth	Depth Completed	Date Well Completed
700 ft.	700 ft.	1965/05/07

Well Name COON RAPIDS 8

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 8
269 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
in. t 700 ft

Casing Diameter **Weight(lbs/ft)**
24 in. t 258 ft
16 in. t 283 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	212
SANDROCK, SHALE, GRAV			212	243
LIMEROCK, SHALE			243	249
LIMEROCK, SHALE			249	263
SANDROCK, SHALE			263	409
SANDROCK, SHALE			409	418
SANDROCK			418	445
SHALEY SANDROCK			445	469
SHALEY SANDROCK			469	473
SHALE			473	518
SHALE & SANDROCK			518	533
SHALEY SANDROCK			533	545
SHALE			545	549
SANDROCK			549	594
SHALE			594	598
SANDROCK			598	694
SHALE			694	700

Screen N

Open Hole From 283 ft. to 700 ft.

Make Type

Static Water Level 42 ft. from Land surface Date 1965/05/07

PUMPING LEVEL (below land surface)
132.3 ft. after hrs. pumping 922 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	283	24	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

OLD PA. NO. 65-0095.

GAMMA LOGGED 2-6-2004 BY JIM TRAEN

USGS Quad Coon Rapids Elevation 897
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012
License Business Name
Name of Driller O'BRIEN, F.

Report Copy

Unique No.	00202932	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDBD	700	ft.	700	ft.	1965/05/07

Well Name	COON RAPIDS 8	**Lic. Or Reg. No.**	62012	**Name of Driller**	O'BRIEN, F.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DRIFT			0	212	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
SANDROCK, SHALE, GRAVEL			212	243	QPUU	SAND	CLAY	GRVL
QPUU = Pebbly sand/silt/clay	SAND = Sand		CLAY = Clay				GRVL = Gravel	
LIMEROCK, SHALE			243	249	QUUU	COBL		
QUUU = Unknown deposit type	COBL = Cobble							
LIMEROCK, SHALE			249	263	CFRN	SHLE	DLMT	SNDS
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite				SNDS = Sandstone	
SANDROCK, SHALE			263	409	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK, SHALE			409	418	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK			418	445	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALEY SANDROCK			445	469	CIGL	SNDS	SHLE	
CIGL = Ironton-Galesville	SNDS = Sandstone		SHLE = Shale					
SHALEY SANDROCK			469	473	CECR	SNDS	SHLE	
CECR = Eau Claire	SNDS = Sandstone		SHLE = Shale					
SHALE			473	518	CECR	SHLE		
CECR = Eau Claire	SHLE = Shale							
SHALE & SANDROCK			518	533	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALEY SANDROCK			533	545	CECR	SNDS		
CECR = Eau Claire	SNDS = Sandstone							
SHALE			545	549	CECR	SHLE	SLSN	
CECR = Eau Claire	SHLE = Shale		SLSN = Siltstone					
SANDROCK			549	594	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No.	00202932	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDBD	700	ft.	700	ft.	1965/05/07

Well Name	COON RAPIDS 8	**Lic. Or Reg. No.**	62012	**Name of Driller**	O'BRIEN, F.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE			594	598	CMTS	SHLE	SNDS	
CMTS = Mt.Simon	SHLE = Shale		SNDS = Sandstone					
SANDROCK			598	694	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE			694	700	PMRC	SLSN	SHLE	
PMRC = Red Clastic Series	SLSN = Siltstone		SHLE = Shale					

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	ACDAAB

Well Depth	Depth Completed	Date Well Completed
500 ft.	500 ft.	1969/04/07

Well Name COON RAPIDS 9

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 9
11399 DOGWOOD NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

24 in. t 268 ft
16 in. t 294 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	20
SAND	RED		20	39
CLAY	BLUE		39	63
SAND	RED		63	83
SAND	RED		83	89
CLAY	GREE		89	98
CLAY	BLUE		98	109
GRAVEL			109	123
GRAVEL	GRAY		123	135
GRAVEL & ROCKS			135	140
SAND	GREE		140	146
CLAY & ROCKS			146	166
GREEN CLAY & ROCKS			166	173
CLAY	RED		173	235
RED CLAY & ROCK	RED		235	245
RED CLAY & SAND	RED		245	250
RED CLAY & SAND	RED		250	252
SHALE	GREE		252	255
LIMEROCK & SHALE			255	263
LIMEROCK & SHALE			263	265
LIMEROCK & SHALE			265	266
LIMEROCK & SHALE			266	271
SANDSTONE & SHALE			271	275
HARD SHALE & SAND			275	302
HARD SHALE & SAND			302	316
SANDSTONE		HARD	316	320
SANDSTONE & SHALE			320	353
SANDSTONE			353	356
SHALE SOME SAND			356	371
SHALE & SANDSTONE			371	388
SHALE			388	396
SHALE & SANDSTONE			396	405

Screen N

Open Hole From 294 ft. to 500 ft.

Make Type

Static Water Level 47 ft. from Land surface Date 1969/04/07

PUMPING LEVEL (below land surface)

ft. after hrs. pumping g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G			24	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr nam

Model HP Volts

SANDY SHALE	405	410
SANDY SHALE	410	415
SANDY SHALE	415	425
SANDY SHALE	425	454
SANDY SHALE	454	458
SANDY SHALE	458	462
BLUE & RED SHALE	462	475
SANDY SHALE	475	478
SANDY SHALE	478	482
SANDY SHALE	482	492
RED & GREEN SHALE	492	500

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 459.

GAMMA LOGGED 2-13-2004. LOGGED BY JIM TRAEN.

USGS Quad	Coon Rapids	Elevation	897
Aquifer:	CFIE	Alt Id:	80-6139

Report Copy

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller OLZESKE, T.

HE-01205-06 (Rev. 9/96)

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	20	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND	RED		20	39	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY	BLUE		39	63	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
SAND	RED		63	83	QFUR	SAND		
QFUR = Sand	SAND = Sand							
SAND	RED		83	89	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY	GREEN		89	98	QCUL	CLAY		
QCUL = Clay	CLAY = Clay							
CLAY	BLUE		98	109	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
GRAVEL			109	123	QGUU	GRVL		
QGUU = Gravel (+larger)	GRVL = Gravel							
GRAVEL	GRAY		123	135	QGUG	GRVL		
QGUG = Gravel (+larger)	GRVL = Gravel							
GRAVEL & ROCKS			135	140	QGUU	GRVL	COBL	
QGUU = Gravel (+larger)	GRVL = Gravel		COBL = Cobble					
SAND	GREEN		140	146	QFUL	SAND		
QFUL = Sand	SAND = Sand							
CLAY & ROCKS			146	166	QPUU	CLAY	COBL	
QPUU = Pebbly sand/silt/clay	CLAY = Clay		COBL = Cobble					
GREEN CLAY & ROCKS			166	173	QPUL	CLAY	COBL	
QPUL = Pebbly sand/silt/clay	CLAY = Clay		COBL = Cobble					
CLAY	RED		173	235	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
RED CLAY & ROCK	RED		235	245	QPUR	CLAY	COBL	
QPUR = Pebbly sand/silt/clay	CLAY = Clay		COBL = Cobble					
RED CLAY & SAND	RED		245	250	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay		SAND = Sand					
RED CLAY & SAND	RED		250	252	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay		SAND = Sand					
SHALE	GREEN		252	255	QCUL	CLAY		
QCUL = Clay	CLAY = Clay							
LIMEROCK & SHALE			255	263	QPUU	COBL	CLAY	
QPUU = Pebbly sand/silt/clay	COBL = Cobble		CLAY = Clay					
LIMEROCK & SHALE			263	265	QPUU	COBL	CLAY	
QPUU = Pebbly sand/silt/clay	COBL = Cobble		CLAY = Clay					
LIMEROCK & SHALE			265	266	QPUU	COBL	CLAY	
QPUU = Pebbly sand/silt/clay	COBL = Cobble		CLAY = Clay					
LIMEROCK & SHALE			266	271	CFRN	DLMT	SHLE	SNDS
CFRN = Franconia	DLMT = Dolomite		SHLE = Shale				SNDS = Sandstone	
SANDSTONE & SHALE			271	275	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
HARD SHALE & SAND			275	302	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
HARD SHALE & SAND			302	316	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SANDSTONE		HARD	316	320	CFRN	SNDS	DLMT	
CFRN = Franconia	SNDS = Sandstone		DLMT = Dolomite					
SANDSTONE & SHALE			320	353	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE			353	356	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE SOME SAND			356	371	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
SHALE & SANDSTONE			371	388	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
SHALE			388	396	CFRN	SHLE	SNDS	
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone					
SHALE & SANDSTONE			396	405	CFRN	SHLE	SNDS	
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			405	410	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SANDY SHALE			410	415	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			415	425	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			425	454	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			454	458	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			458	462	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
BLUE & RED SHALE			462	475	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			475	478	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			478	482	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			482	492	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
RED & GREEN SHALE			492	500	CECR	SHLE	SNDS	

CECR = Eau Claire SHLE = Shale SNDS = Sandstone

Unique No.	00202930	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	1991/04/15

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	DBADDC

Well Depth	Depth Completed	Date Well Completed
684 ft.	684 ft.	1970/05/05

Well Name COON RAPIDS 10

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 10
203 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter		Weight(lbs/ft)	
30 in. t	80 ft		
24 in. t	259 ft		
16 in. t	272 ft		

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
GLACIAL DRIFT			0	250
SANDY LIMESTONE			250	262
SANDY LIMESTONE			262	295
SANDSTONE WITH BEDS O			295	375
SANDSTONE SLATE	BROW		375	396
SANDSTONE SLATE	BROW		396	442
SANDSTONE SLATE BROW	BROW		442	455
HARD RED SHALE			455	457
HARD RED SHALE			457	495
SANDSTONE, SLATE	BROW		495	522
SANDSTONE, SLATE	BROW		522	662
SANDSTONE			662	679
RED SHALE			679	684

Screen N

Open Hole From 272 ft. to 684 ft.

Make Type

Static Water Level 51 ft. from Land surface Date 1970/05/05

PUMPING LEVEL (below land surface)
185 ft. after 49 hrs. pumping 1875 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	0	272	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam
Model HP 100 Volts
Drop Pipe Length ft. Capacity g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 558. OLD PA. NO. 71-0825.

GAMMA LOGGED 5-3-2004. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 899
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27118
License Business Name
Name of Driller BENEKE, R.

Report Copy

Unique No.	00202930	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	DBADDC	684	ft.	684	ft.	1970/05/05

Well Name	COON RAPIDS 10	**Lic. Or Reg. No.**	27118	**Name of Driller**	BENEKE, R.		
USGS Quad	Coon Rapi	**Elevation**	899	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
GLACIAL DRIFT			0	250	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
SANDY LIMESTONE			250	262	CSTL	SLSN	DLMT	
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite					
SANDY LIMESTONE			262	295	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE WITH BEDS OF GREEN SHAL			295	375	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE SLATE	BROWN		375	396	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE SLATE	BROWN		396	442	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE SLATE BROWN	BROWN		442	455	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD RED SHALE			455	457	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD RED SHALE			457	495	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE, SLATE	BROWN		495	522	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE, SLATE	BROWN		522	662	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SANDSTONE			662	679	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
RED SHALE			679	684	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00202965	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2008/12/30
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	27	BAAAAA

Well Depth	Depth Completed	Date Well Completed
627 ft.	627 ft.	1972/05/11

Well Name COON RAPIDS 11

Drilling Method Non-specified Rotary

Well Owner's Name COON RAPIDS 11

COON RAPIDS MN 55433

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Contact's Name CITY OF COON RAPIDS

11155 ROBINSON NW DR

COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

in. t 157 ft

in. t 627 ft

Casing Diameter **Weight(lbs/ft)**

24 in. t 157 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	18
SANDY CLAY			18	58
SAND, GRAVEL & BOULDE			58	142
SAND, GRAVEL & BOULDE			142	146
LIME, SHALE			146	199
LIME, SHALE			199	305
SHALEY SANDSTONE			305	318
SHALEY SANDSTONE			318	352
SANDSTONE		SOFT	352	362
SANDSTONE		HARD	362	410
SANDSTONE		HARD	410	423
SHALE			423	434
SANDSTONE-SOME SHALE			434	478
SANDSTONE-SOME SHALE			478	530
SANDSTONE			530	622
SHALE			622	627

Screen N

Open Hole From 157 ft. to 627 ft.

Make Type

Static Water Level 25 ft. from Land surface Date 1972/05/11

PUMPING LEVEL (below land surface)

110 ft. after hrs. pumping 1820 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	157	20	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 776

GAMMA LOGGED 9-12-1983 BY MGS AND 4-26-2002. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 860

Aquifer: CFMS Alt Id: 80-6139

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012

License Business Name

Name of Driller GIBSON, E.

Report Copy

Unique No.	00202965	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	BAAAAA	627	ft.	627	ft.	1972/05/11

Well Name	COON RAPIDS 11	Lic. Or Reg. No.	62012	Name of Driller	GIBSON, E.
USGS Quad	Coon Rapi	Elevation	860	Aquifer	CFMS	Alternative Id	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	18	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDY CLAY			18	58	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
SAND, GRAVEL & BOULDERS			58	142	QHUU	SAND	GRVL	BLDR
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel				BLDR = Boulder	
SAND, GRAVEL & BOULDERS			142	146	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
LIME, SHALE			146	199	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
LIME, SHALE			199	305	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALEY SANDSTONE			305	318	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALEY SANDSTONE			318	352	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE		SOFT	352	362	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE		HARD	362	410	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE		HARD	410	423	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE			423	434	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE-SOME SHALE			434	478	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE-SOME SHALE			478	530	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No.	00202965	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	BAAAAA	627	ft.	627	ft.	1972/05/11

Well Name	COON RAPIDS 11	**Lic. Or Reg. No.**	62012	**Name of Driller**	GIBSON, E.		
USGS Quad	Coon Rapi	**Elevation**	860	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SANDSTONE			530	622	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE			622	627	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00168721

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	27	AAAAAD

Well Depth		Depth Completed		Date Well Completed
604	ft.	604	ft.	1975/05/14

Well Name COON RAPIDS 12

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 12

COON RAPIDS MN 55433

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Contact's Name CITY OF COON RAPIDS

11155 ROBINSON NW DR

COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter		Weight(lbs/ft)		
24	in. t	124	ft	94.62
16	in. t	208	ft	62.58

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND FILL	YELLO		0	9
SAND	GRAY		9	20
CLAY	GRAY		20	30
CLAY	RED/B		30	65
SANDY MUCK	BROW		65	100
SHALE	GRAY		100	120
JORDAN SANDROCK	WHITE		120	123
JORDAN SANDROCK	WHITE		123	135
ST. LAWRANCE SANDSTON	YELLO		135	140
ST. LAWRANCE SANDSTON	WHITE		140	170
ST. LAWRENCE SANDSTON	BLU/G		170	171
ST. LAWRANCE SANDSTON	BLU/G		171	180
ST. LAWRANCE SANDSTON	BLU/G		180	185
ST. LAWRANCE SANDSTON	PINK		185	195
ST. LAWRANCE SANDSTON	VARIE		195	208
ST. LAWRANCE SANDSTON	GREE		208	264
HARD LAYER OF SHALE	GREE		264	270
SHALE ROCK	GREE		270	286
SHALE SANDROCK	GREE		286	300
SANDROCK	TAN/G		300	316
SANDROCK	TAN/G		316	385
SHALE SANDSTONE	LIGHT		385	386
SHALE SANDSTONE	LIGHT		386	407
SHALE ROCK	TAN/B		407	420
SHALE	BRN/G		420	458
SHALE	BRN/G		458	480
SHALEY SANDSTONE	WHITE		480	550
SANDSTONE	TAN		550	600
SHALE	RED		600	604

Screen N

Open Hole From 208 ft. to 604 ft.

Make

Type

Static Water Level 47 ft. from Land surface Date 1975/05/14

PUMPING LEVEL (below land surface)

146 ft. after 8 hrs. pumping 1800 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G			

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.985.

GAMMA LOGGED 1-18-05. LOGGED BY JIM TRAEN.

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

USGS Quad	Coon Rapids	Elevation	852
Aquifer:	CFMS	Alt Id:	80-6139

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 02015

License Business Name

Name of Driller SIGAFOOS, G.

Report Copy

HE-01205-06 (Rev. 9/96)

Unique No.	00168721	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	AAAAAD	604	ft.	604	ft.	1975/05/14

Well Name	COON RAPIDS 12	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	852	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND FILL	YELLOW		0	9	RMMF	SAND	FILL	
RMMF = Man-made fill	SAND = Sand		FILL = Fill					
SAND	GRAY		9	20	QFUG	SAND		
QFUG = Sand	SAND = Sand							
CLAY	GRAY		20	30	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
CLAY	RED/BRN		30	65	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
SANDY MUCK	BROWN		65	100	QNUB	SAND	MUCK	
QNUB = Sand & silt	SAND = Sand		MUCK = Muck					
SHALE	GRAY		100	120	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
JORDAN SANDROCK	WHITE		120	123	QFUU	SAND		
QFUU = Sand	SAND = Sand							
JORDAN SANDROCK	WHITE		123	135	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
ST. LAWRANCE SANDSTONE	YELLOW		135	140	CSTL	SLSN	DLMT	SNDS
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite				SNDS = Sandstone	
ST. LAWRANCE SANDSTONE	WHITE		140	170	CSTL	SLSN	DLMT	SNDS
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite				SNDS = Sandstone	
ST. LAWRENCE SANDSTONE	BLU/GRN		170	171	CSTL	SLSN	DLMT	SNDS
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite				SNDS = Sandstone	
ST. LAWRANCE SANDSTONE	BLU/GRN		171	180	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
ST. LAWRANCE SANDSTONE	BLU/GRN		180	185	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
ST. LAWRANCE SANDSTONE	PINK		185	195	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	

Unique No.	00168721	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	AAAAAD	604	ft.	604	ft.	1975/05/14

Well Name	COON RAPIDS 12	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	852	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
ST. LAWRANCE SANDSTONE	VARIED		195	208	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
ST. LAWRANCE SANDSTONE	GREEN		208	264	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
HARD LAYER OF SHALE	GREEN		264	270	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SHALE ROCK	GREEN		270	286	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SHALE SANDROCK	GREEN		286	300	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SANDROCK	TAN/GRN		300	316	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SANDROCK	TAN/GRN		316	385	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE SANDSTONE	LIGHT		385	386	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE SANDSTONE	LIGHT		386	407	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE ROCK	TAN/BRN		407	420	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE	BRN/GRN		420	458	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE	BRN/GRN		458	480	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALEY SANDSTONE	WHITE		480	550	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SANDSTONE	TAN		550	600	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No.	00168721	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	AAAAAD	604	ft.	604	ft.	1975/05/14

Well Name	COON RAPIDS 12	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	852	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE	RED		600	604	PMSU	SHLE		

PMSU = Mid.Proterozoic Sedimentary SHLE = Shale

Unique No. 00168720

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	DADDBC

Well Depth	Depth Completed	Date Well Completed
693 ft.	693 ft.	1977/03/25

Well Name COON RAPIDS 13

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 13
11100 UNIVERSITY AV
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter		Weight(lbs/ft)
24 in. t	252 ft	94.62
16 in. t	395 ft	62.58

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW		0	55
SANDY CLAY	GRAY		55	75
FINE SAND	GRAY	HARD	75	85
FINE SAND	RED		85	105
CLAY STICKY	RED		105	135
CLAY & STONE	GRAY	HARD	135	160
FINE SAND	RED		160	175
CLAY	GRAY		175	195
SAND & STONES & CLAY	GRAY		195	205
STONES & SAND	DARK		205	215
SHALE & STONES	TAN		215	220
SHALE	TAN		220	245
SANDSTONE SHALE	GRAY		245	250
SHALE	RED		250	257
ST. LAWRANCE GREEN, RE	VARIE		257	260
HARDROCK	TAN		260	267
HARDROCK	TAN		267	268
SANDROCK	LIGHT	HARD	268	298
SANDY ROCK, SHALE	GREE		298	312
SANDROCK, SHALE	LIGHT		312	338
SANDSTONE GREEN-GRAY-			338	403
SANDSTONE GREEN-GRAY-			403	453
SANDSTONE GREEN-GRAY-			453	525
SANDSTONE GREEN-GRAY-			525	672
HINCKLEY SANDSTONE	RED		672	691
HINCKLEY SANDSTONE			691	693

Screen N

Open Hole From 395 ft. to 693 ft.

Make Type

Static Water Level 75 ft. from Land surface Date 1977/03/25

PUMPING LEVEL (below land surface)
158 ft. after 10 hrs. pumping 1000 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G			

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP Volts

Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.1124.

GAMMA LOGGED 2-6-04. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 900
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 02015
License Business Name

Report Copy

Unique No.	00168720	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	DADDBC	693	ft.	693	ft.	1977/03/25

Well Name	COON RAPIDS 13	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	900	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN		0	55	QFUB	SAND		
QFUB = Sand	SAND = Sand							
SANDY CLAY	GRAY		55	75	QLUG	CLAY	SAND	
QLUG = Clay & sand	CLAY = Clay			SAND = Sand				
FINE SAND	GRAY	HARD	75	85	QFUG	SAND		
QFUG = Sand	SAND = Sand							
FINE SAND	RED		85	105	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY STICKY	RED		105	135	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							
CLAY & STONE	GRAY	HARD	135	160	QPUG	CLAY	PEBL	
QPUG = Pebbly sand/silt/clay	CLAY = Clay			PEBL = Pebbles				
FINE SAND	RED		160	175	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY	GRAY		175	195	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
SAND & STONES & CLAY	GRAY		195	205	QPUG	SAND	PEBL	CLAY
QPUG = Pebbly sand/silt/clay	SAND = Sand			PEBL = Pebbles			CLAY = Clay	
STONES & SAND	DARK		205	215	QHUU	PEBL	SAND	
QHUU = Sand & larger	PEBL = Pebbles			SAND = Sand				
SHALE & STONES	TAN		215	220	QPUU	CLAY	PEBL	
QPUU = Pebbly sand/silt/clay	CLAY = Clay			PEBL = Pebbles				
SHALE	TAN		220	245	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
SANDSTONE SHALE	GRAY		245	250	QLUG	SAND	CLAY	
QLUG = Clay & sand	SAND = Sand			CLAY = Clay				
SHALE	RED		250	257	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							

Unique No.	00168720	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	DADDBC	693	ft.	693	ft.	1977/03/25

Well Name	COON RAPIDS 13			**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.
USGS Quad	Coon Rapi	**Elevation**	900	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
ST. LAWRANCE GREEN, RED, BLACK	VARIED		257	260	QUUU	SAND	CLAY	COBL
QUUU = Unknown deposit type	SAND = Sand		CLAY = Clay				COBL = Cobble	
HARDROCK	TAN		260	267	QBUU	BLDR		
QBUU = Boulder or boulders	BLDR = Boulder							
HARDROCK	TAN		267	268	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
SANDROCK	LIGHT	HARD	268	298	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDY ROCK, SHALE	GREEN		298	312	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK, SHALE	LIGHT		312	338	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE GREEN-GRAY-RED			338	403	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE GREEN-GRAY-RED			403	453	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE GREEN-GRAY-RED			453	525	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE GREEN-GRAY-RED			525	672	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HINCKLEY SANDSTONE	RED		672	691	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HINCKLEY SANDSTONE			691	693	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00110460	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/07
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	BCBBDD

Well Depth	Depth Completed	Date Well Completed
613 ft.	613 ft.	1977/03/22

Well Name COON RAPIDS 14

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 14
2344 COON RAPIDS BL
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

30 in. t 222 ft

20 in. t 328 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL			0	60
SAND	LT. BR		60	130
SAND W/SHALE STREAKS	GREE		130	167
SHALE-SANDY	GREE		167	170
SHALE-SANDY	GREE		170	218
SANDSTONE			218	250
SANDY SHALE			250	305
DOLOMITE/SHALE			305	330
SHALE	RED		330	339
SHALE	RED		339	340
SAND	WHITE		340	385
SHALE W/LIMESTONE SEA	VARIE		385	391
SHALE W/LIMESTONE SEA	VARIE		391	450
SANDSTONE W/SHALE	VARIE		450	456
SANDSTONE W/SHALE	VARIE		456	520
SHALE-STICKY			520	570
SHALE W/SAND LAYERS			572	610
SHALE	RED		610	613

Screen N

Open Hole From 328 ft. to 613 ft.

Make Type

Static Water Level 120 ft. from Land surface Date 1977/03/21

PUMPING LEVEL (below land surface)

196 ft. after 8 hrs. pumping 1600 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	328	28	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed Y

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 2-6-1997 & 10-17-2001. M.G.S. NO. 1108.

LOGGED BOTH TIMES BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 869

Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller LINDEKE, W.

Report Copy

Unique No.	00110460	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCBBDD	613	ft.	613	ft.	1977/03/22

Well Name	COON RAPIDS 14	**Lic. Or Reg. No.**	27010	**Name of Driller**	LINDEKE, W.		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL			0	60	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
SAND	LT. BRN		60	130	QFUB	SAND		
QFUB = Sand	SAND = Sand							
SAND W/SHALE STREAKS	GREEN		130	167	QLUL	SAND	CLAY	
QLUL = Clay & sand	SAND = Sand		CLAY = Clay					
SHALE-SANDY	GREEN		167	170	QLUL	CLAY	SAND	
QLUL = Clay & sand	CLAY = Clay		SAND = Sand					
SHALE-SANDY	GREEN		170	218	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE			218	250	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					
SANDY SHALE			250	305	CFRN	SNDS	SLSN	DLMT
CFRN = Franconia	SNDS = Sandstone		SLSN = Siltstone				DLMT = Dolomite	
DOLOMITE/SHALE			305	330	CFRN	SNDS	DLMT	SHLE
CFRN = Franconia	SNDS = Sandstone		DLMT = Dolomite				SHLE = Shale	
SHALE	RED		330	339	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	RED		339	340	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SAND	WHITE		340	385	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE W/LIMESTONE SEAMS	VARIED		385	391	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE W/LIMESTONE SEAMS	VARIED		391	450	CECR	SLSN	SHLE	
CECR = Eau Claire	SLSN = Siltstone		SHLE = Shale					
SANDSTONE W/SHALE	VARIED		450	456	CECR	SNDS	SLSN	
CECR = Eau Claire	SNDS = Sandstone		SLSN = Siltstone					

Unique No.	00110460	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCBBDD	613	ft.	613	ft.	1977/03/22

Well Name	COON RAPIDS 14	**Lic. Or Reg. No.**	27010	**Name of Driller**	LINDEKE, W.		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SANDSTONE W/SHALE	VARIED		456	520	CMTS	SNDS	SLSN	
CMTS = Mt.Simon	SNDS = Sandstone		SLSN = Siltstone					
SHALE-STICKY			520	570	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE W/SAND LAYERS			572	610	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE	RED		610	613	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No.	00110461	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	1991/04/15

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	BCDDCA

Well Depth	Depth Completed	Date Well Completed
615 ft.	615 ft.	1976/09/13

Well Name COON RAPIDS 15

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 15
2231 105TH AV
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

30 in. t 184 ft
20 in. t 225 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DIRT	BLACK		0	3
FINE SAND			3	25
SAND & ROCKS			25	35
CLAY		HARD	35	40
CLAY & FINE SAND			40	87
SAND, TRACE OF CLAY			87	97
SAND/GRAVEL/TRACES OF			97	121
FINE SAND, TRACE OF CLA			121	145
SANDSTONE		SOFT	145	160
SHALE	BLUE		160	170
RED SHALE & SANDROCK	RED		170	178
SAND/GRAVEL/TRACE OF S	GREE		178	183
GREEN SHALE & ROCK	GREE		183	194
FRANCONIA SANDSTONE			194	295
FRANCONIA SHALE STREA			295	340
FRANCONIA SHALE STREA			340	348
RED & BLUE SHALE STREA			348	352
IRONTON GALESVILLE SAN			352	405
EAU CLAIRE SHALE			405	485
MT. SIMON			485	510
MT. SIMON, TRACE OF SHA			510	540
MT. SIMON		HARD	540	610
SHALE	RED		610	615

Screen N

Open Hole From 225 ft. to 615 ft.

Make Type

Static Water Level 50 ft. from Land surface Date 1976/09/10

PUMPING LEVEL (below land surface)
148 ft. after 15 hrs. pumping 2400 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G			15	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 4-26-2002. M.G.S. NO. 1105. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 870
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
License Business Name
Name of Driller HOLLEN, G.

Report Copy

Unique No.	00110461	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCDDCA	615	ft.	615	ft.	1976/09/13

Well Name	COON RAPIDS 15	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	870	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DIRT	BLACK		0	3	RUUK	SOIL	ORGD	
RUUK = Recent Deposit	SOIL = Soil			ORGD = Organic Deposits				
FINE SAND			3	25	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND & ROCKS			25	35	QHUU	SAND	COBL	
QHUU = Sand & larger	SAND = Sand			COBL = Cobble				
CLAY		HARD	35	40	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
CLAY & FINE SAND			40	87	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay			SAND = Sand				
SAND, TRACE OF CLAY			87	97	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand			CLAY = Clay				
SAND/GRAVEL/TRACES OF CLAY			97	121	QPUU	SAND	GRVL	CLAY
QPUU = Pebbly sand/silt/clay	SAND = Sand			GRVL = Gravel			CLAY = Clay	
FINE SAND, TRACE OF CLAY			121	145	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand			CLAY = Clay				
SANDSTONE		SOFT	145	160	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SHALE	BLUE		160	170	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
RED SHALE & SANDROCK	RED		170	178	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay			SAND = Sand				
SAND/GRAVEL/TRACE OF SHALE	GREEN		178	183	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				
GREEN SHALE & ROCK	GREEN		183	194	CFRN	SHLE	DLMT	
CFRN = Franconia	SHLE = Shale			DLMT = Dolomite				
FRANCONIA SANDSTONE			194	295	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone			SHLE = Shale				

Unique No.	00110461	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCDDCA	615	ft.	615	ft.	1976/09/13

Well Name	COON RAPIDS 15	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	870	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
FRANCONIA SHALE STREAKS			295	340	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
FRANCONIA SHALE STREAKS			340	348	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
RED & BLUE SHALE STREAKS			348	352	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
IRONTON GALESVILLE SANDSTONE			352	405	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
EAU CLAIRE SHALE			405	485	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
MT. SIMON			485	510	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
MT. SIMON, TRACE OF SHALE			510	540	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
MT. SIMON		HARD	540	610	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE	RED		610	615	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No.	00161413	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	1991/04/15

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	11	ADAAAA

Well Depth	Depth Completed	Date Well Completed
653 ft.	653 ft.	1981/04/10

Well Name COON RAPIDS 16

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 16
12280 OLIVE ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPID
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter				Weight(lbs/ft)
30	in. t	169	ft	118
24	in. t	270	ft	94.62
18	in. t	395	ft	70.59

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	73
CLAY SAND & GRAVEL			73	112
CLAY & SAND			112	130
WATER, SAND & GRAVEL			130	166
BOULDERS			166	176
GRAVEL W/SANDROCK			176	181
GRAVEL W/SANDROCK			181	187
SHALE			187	239
SHALE			239	252
SANDROCK		SOFT	252	270
SHALE & SANDROCK			270	376
SHALE & SANDROCK			376	435
SANDROCK			435	441
SANDROCK			441	455
SHALE (EAU CLAIRE)			455	517
SANDROCK			517	518
SANDROCK			518	653

Screen N

Open Hole From 395 ft. to 653 ft.

Make Type

Static Water Level 109 ft. from Land surface Date 1981/04/10

PUMPING LEVEL (below land surface)
190 ft. after 34 hrs. pumping 2000 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	0	395	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 1608 & 1705. GAMMA LOGGED10-17-2001 BY SUMMIT ENVIRON.

USGS Quad Coon Rapids Elevation 889
Aquifer: CIGM Alt Id: 80-6187

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27058
License Business Name
Name of Driller

Report Copy

Unique No.	00161413	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	11	ADAAAA	653	ft.	653	ft.	1981/04/10

Well Name	COON RAPIDS 16	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	889	**Aquifer**	CIGM	**Alternative Id**	80-6187

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	73	QFUU	SAND		
QFUU = Sand	SAND = Sand							
CLAY SAND & GRAVEL			73	112	QPUU	CLAY	SAND	GRVL
QPUU = Pebbly sand/silt/clay	CLAY = Clay		SAND = Sand				GRVL = Gravel	
CLAY & SAND			112	130	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
WATER, SAND & GRAVEL			130	166	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
BOULDERS			166	176	QBUU	BLDR		
QBUU = Boulder or boulders	BLDR = Boulder							
GRAVEL W/SANDROCK			176	181	QGUU	SAND	COBL	
QGUU = Gravel (+larger)	SAND = Sand		COBL = Cobble					
GRAVEL W/SANDROCK			181	187	CSTL	SHLE	DLMT	SNDS
CSTL = St.Lawrence	SHLE = Shale		DLMT = Dolomite				SNDS = Sandstone	
SHALE			187	239	CSTL	SHLE	DLMT	SNDS
CSTL = St.Lawrence	SHLE = Shale		DLMT = Dolomite				SNDS = Sandstone	
SHALE			239	252	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK		SOFT	252	270	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALE & SANDROCK			270	376	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALE & SANDROCK			376	435	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK			435	441	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK			441	455	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No.	00161413	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	11	ADAAAA	653	ft.	653	ft.	1981/04/10

Well Name	COON RAPIDS 16	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	889	**Aquifer**	CIGM	**Alternative Id**	80-6187

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE (EAU CLAIRE)			455	517	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK			517	518	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK			518	653	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No. 00150357

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	DAAAAA

Well Depth	Depth Completed	Date Well Completed
121 ft.	121 ft.	1981/12/18

Well Name COON RAPIDS 17

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 17
2400 105TH NW AV
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter
in. t 121 ft

Casing Diameter **Weight(lbs/ft)**
30 in. t 81 ft 118.6

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DIRT	BLACK		0	3
SAND & GRAVEL & SOME C			3	59
SANDY CLAY		SOFT	59	70
CLEAN COARSE GRAVEL &	RED		70	98
CLEAN COARSE SAND & G			98	108
MEDIUM GRAVEL SAND &			108	113
COARSE SAND & GRAVEL			113	121

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
30	20	40	81	ft. to 121 ft	

Static Water Level 15 ft. from Land surface Date 1981/12/18

PUMPING LEVEL (below land surface)
72 ft. after 4 hrs. pumping 2000 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☑ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 10-23-2001 BY SUMMIT ENVIR.

USGS Quad Coon Rapids Elevation 855
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
License Business Name
Name of Driller KAUITSON, K.

Report Copy

Unique No.	00150357	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	DAAAAA	121	ft.	121	ft.	1981/12/18

Well Name	COON RAPIDS 17			**Lic. Or Reg. No.**	27010	**Name of Driller**	KAUITSON, K.
USGS Quad	Coon Rapi	**Elevation**	855	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DIRT	BLACK		0	3	RUUK	SOIL	ORGD	
RUUK = Recent Deposit	SOIL = Soil			ORGD = Organic Deposits				
SAND & GRAVEL & SOME CLAY			3	59	QPUU	SAND	GRVL	CLAY
QPUU = Pebbly sand/silt/clay	SAND = Sand			GRVL = Gravel			CLAY = Clay	
SANDY CLAY		SOFT	59	70	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay			SAND = Sand				
CLEAN COARSE GRAVEL & SAND	RED		70	98	QHUR	GRVL	SAND	
QHUR = Sand & larger	GRVL = Gravel			SAND = Sand				
CLEAN COARSE SAND & GRAVEL			98	108	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				
MEDIUM GRAVEL SAND & GRAVEL			108	113	QHUU	GRVL	SAND	
QHUU = Sand & larger	GRVL = Gravel			SAND = Sand				
COARSE SAND & GRAVEL			113	121	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				

Unique No. 00110469	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2008/12/29
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection	Well Depth	Depth Completed	Date Well Completed
	31	24	W	2	DCDCDB	637 ft.	637 ft.	1986/05/00

Well Name COON RAPIDS 18

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS

COON RAPIDS MN 55448

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

36 in. t 135 ft

30 in. t 195 ft

24 in. t 575 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW		0	14
PEAT	BLK/B		14	17
SAND MEDIUM	BROW		17	67
CLAY			67	120
CLAY-SHALE	RED		120	142
CLAY & SAND	RED		142	194
CLAY & SAND	RED		194	198
SHALE & SAND	GRN/G		198	226
SHALE & SAND			226	228
FRANCONIA	GREE		228	367
GALESVILLE			367	429
GALESVILLE			429	432
SHALE			432	486
MT. SIMON			486	509
MT. SIMON			509	593
SHALEY SANDSTON			593	616
MIXED SHALE & SANDSTO			616	631
SANDSTONE	RED		631	637

Screen N

Open Hole From 575 ft. to 637 ft.

Make Type

Static Water Level 140 ft. from Land surface Date 1986/05/00

PUMPING LEVEL (below land surface)

248 ft. after 36 hrs. pumping 1400 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	575	67.5	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed N

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.2048. GAMMA LOGGED 8-28-1985.

GAMMA LOGGED 1-11-2005 BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 890

Aquifer: CMTS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller HOLLEN, G.

Report Copy

Unique No.	00110469	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/29
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	2	DCDCDB	637	ft.	637	ft.	1986/05/00

Well Name	COON RAPIDS 18	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	890	**Aquifer**	CMTS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN		0	14	QFUB	SAND		
QFUB = Sand	SAND = Sand							
PEAT	BLK/BRN		14	17	QSUU	PEAT		
QSUU = Peat	PEAT = Peat							
SAND MEDIUM	BROWN		17	67	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY			67	120	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
CLAY-SHALE	RED		120	142	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							
CLAY & SAND	RED		142	194	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay		SAND = Sand					
CLAY & SAND	RED		194	198	CSTL	DLMT	SLSN	SHLE
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone			SHLE = Shale		
SHALE & SAND	GRN/GRY		198	226	CSTL	DLMT	SLSN	SHLE
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone			SHLE = Shale		
SHALE & SAND			226	228	CFRN	SHLE	DLMT	SNDS
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite			SNDS = Sandstone		
FRANCONIA	GREEN		228	367	CFRN	SHLE	DLMT	SNDS
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite			SNDS = Sandstone		
GALESVILLE			367	429	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
GALESVILLE			429	432	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE			432	486	CECR	SHLE	SNDS	DLMT
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
MT. SIMON			486	509	CECR	SHLE	SNDS	DLMT
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		

Unique No.	00110469	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/29
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	2	DCDCDB	637	ft.	637	ft.	1986/05/00

Well Name	COON RAPIDS 18	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	890	**Aquifer**	CMTS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
MT. SIMON			509	593	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALEY SANDSTON			593	616	CMTS	SNDS	SHLE	
CMTS = Mt.Simon	SNDS = Sandstone		SHLE = Shale					
MIXED SHALE & SANDSTONE			616	631	CMTS	SNDS	SHLE	
CMTS = Mt.Simon	SNDS = Sandstone		SHLE = Shale					
SANDSTONE	RED		631	637	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No. 00110475

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2009/07/16

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	AACBDB

Well Depth	Depth Completed	Date Well Completed
143 ft.	135 ft.	1987/10/14

Well Name COON RAPIDS 19

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 19

COON RAPIDS MN 55433

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS

11155 ROBINSON NW DR

COON RAPIDS MN 55433

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

30 in. t 30 ft

20 in. t 115 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
TOPSOIL	BLACK		0	3
FINE SAND	BROW		3	25
CLAY & SAND MIX	BROW		25	35
CLAY WITH GRAVEL	BROW		35	83
STICKY CLAY	BLUE		83	105
STICKY CLAY	RED	HARD	105	115
COARSE SAND/GRAVEL			115	138
CLAY		HARD	138	143

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
20	70	20	115	ft. to 135	ft

Static Water Level 15 ft. from Land surface Date 1987/10/14

PUMPING LEVEL (below land surface)

84 ft. after 24 hrs. pumping 1200 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	6	25	0

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed N

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.2878.

USGS Quad Coon Rapids Elevation 850

Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller HOLLEN, G.

Report Copy

Unique No.	00110475	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2009/07/16
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	AACBDB	143	ft.	135	ft.	1987/10/14

Well Name	COON RAPIDS 19	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	850	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
TOPSOIL	BLACK		0	3	RUUK	SOIL	ORGD	
RUUK = Recent Deposit	SOIL = Soil			ORGD = Organic Deposits				
FINE SAND	BROWN		3	25	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY & SAND MIX	BROWN		25	35	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
CLAY WITH GRAVEL	BROWN		35	83	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
STICKY CLAY	BLUE		83	105	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
STICKY CLAY	RED	HARD	105	115	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							
COARSE SAND/GRAVEL			115	138	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				
CLAY		HARD	138	143	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							

Unique No. 00420956

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2008/12/30

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	ADBDAB

Well Depth	Depth Completed	Date Well Completed
135 ft.	135 ft.	1988/04/26

Well Name COON RAPIDS 20

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 20
XAVIS NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter
0 in. t 135 ft

Casing Diameter **Weight(lbs/ft)**
30 in. t 95 ft
20 in. t 95 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
TOPSOIL-SAND	BROW		0	14
CLAY WITH GRAVEL	RED		14	18
MIXED LAYERS SAND & CL	BROW		18	40
CLAY	GRAY		40	43
LAYERED SAND & CLAY	GRAY		43	70
STICKY CLAY	BLUE		70	82
COARSE SAND	YELLO		82	93
SAND/GRAVEL	YELLO		93	135

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
20		40.8	95	ft. to 135 ft	

Static Water Level 15 ft. from Land surface Date 1988/04/26

PUMPING LEVEL (below land surface)
90 ft. after 8 hrs. pumping 1560 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	40	6	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

SAME AS NO.420957. 420957 PAPERS ARE LOST.

GAMMA LOGGED 11-14-2002. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 850
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
License Business Name
Name of Driller HOLLEN, G.

Report Copy

Unique No.	00420956	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	ADBDAB	135	ft.	135	ft.	1988/04/26

Well Name	COON RAPIDS 20	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	850	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
TOPSOIL-SAND	BROWN		0	14	RUUB	SOIL	ORGD	SAND
RUUB = Recent Deposit-brown	SOIL = Soil			ORGD = Organic Deposits			SAND = Sand	
CLAY WITH GRAVEL	RED		14	18	QPUR	CLAY	GRVL	
QPUR = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
MIXED LAYERS SAND & CLAY	BROWN		18	40	QLUB	SAND	CLAY	
QLUB = Clay & sand	SAND = Sand			CLAY = Clay				
CLAY	GRAY		40	43	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
LAYERED SAND & CLAY	GRAY		43	70	QLUG	SAND	CLAY	
QLUG = Clay & sand	SAND = Sand			CLAY = Clay				
STICKY CLAY	BLUE		70	82	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
COARSE SAND	YELLOW		82	93	QFUY	SAND		
QFUY = Sand	SAND = Sand							
SAND/GRAVEL	YELLOW		93	135	QHUY	SAND	GRVL	
QHUY = Sand & larger	SAND = Sand			GRVL = Gravel				

Unique No. 00474384	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/06
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1992/06/22
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	ACCDDD

Well Depth	Depth Completed	Date Well Completed
207 ft.	203 ft.	1990/01/26

Well Name COON RAPIDS 21

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 21
269 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

24	in. t	103	ft
18	in. t	170	ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
FINE SAND	BROW	SOFT	0	25
FINE SAND	GRAY	SOFT	25	30
SAND & CLAY	GRAY	SOFT	30	32
FINE SAND	BROW	SOFT	32	35
FINE SAND	GRAY	SOFT	35	38
SANDY CLAY	GRAY	SOFT	38	50
CLAY	GRY/B	MEDIUM	50	66
ROCKS & GRAVEL	GRAY	HARD	66	69
FINE SAND & CLAY	BROW	MEDIUM	69	92
CLAY/TRACES OF GRAVEL	BROW	SOFT	92	103
FINE SAND	BROW	SOFT	103	105
COARSE GRAVEL & CLAY	BRN/R	MEDIUM	105	110
MEDIUM GRAVEL & CLAY	BROW	MEDIUM	110	127
MEDIUM TO FINE SAND	BROW	SOFT	127	136
GRAVEL & CLAY	GRAY	SOFT	136	148
CLAY AND ROCKS	LT. YE	SFT-MED	148	150
CLAY/GRAVEL & ROCKS	BLUE	SOFT	150	160
NO RECORD			160	207
CLAY			207	207

Screen Y **Open Hole** From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
12	70	33	170	ft. to 203	ft

Static Water Level 66 ft. from Land surface Date 1990/01/26

PUMPING LEVEL (below land surface)
126 ft. after hrs. pumping 1300 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	0	103	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 1-11-04. LOGGED BY JIM TRAEN

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

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

USGS Quad Coon Rapids Elevation 899
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71536
License Business Name
Name of Driller TOM/ROGER

Report Copy

Unique No.	00474384	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDDD	207	ft.	203	ft.	1990/01/26

Well Name	COON RAPIDS 21			**Lic. Or Reg. No.**	71536	**Name of Driller**	TOM/ROGER
USGS Quad	Coon Rapi	**Elevation**	899	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
FINE SAND	BROWN	SOFT	0	25	QFUB	SAND		
QFUB = Sand	SAND = Sand							
FINE SAND	GRAY	SOFT	25	30	QFUG	SAND		
QFUG = Sand	SAND = Sand							
SAND & CLAY	GRAY	SOFT	30	32	QLUG	SAND	CLAY	
QLUG = Clay & sand	SAND = Sand			CLAY = Clay				
FINE SAND	BROWN	SOFT	32	35	QFUB	SAND		
QFUB = Sand	SAND = Sand							
FINE SAND	GRAY	SOFT	35	38	QFUG	SAND		
QFUG = Sand	SAND = Sand							
SANDY CLAY	GRAY	SOFT	38	50	QLUG	CLAY	SAND	
QLUG = Clay & sand	CLAY = Clay			SAND = Sand				
CLAY	GRY/BLU	MEDIUM	50	66	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
ROCKS & GRAVEL	GRAY	HARD	66	69	QGUG	GRVL	COBL	
QGUG = Gravel (+larger)	GRVL = Gravel			COBL = Cobble				
FINE SAND & CLAY	BROWN	MEDIUM	69	92	QLUB	SAND	CLAY	
QLUB = Clay & sand	SAND = Sand			CLAY = Clay				
CLAY/TRACES OF GRAVEL	BROWN	SOFT	92	103	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
FINE SAND	BROWN	SOFT	103	105	QFUB	SAND		
QFUB = Sand	SAND = Sand							
COARSE GRAVEL & CLAY	BRN/RED	MEDIUM	105	110	QPUU	GRVL	CLAY	
QPUU = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
MEDIUM GRAVEL & CLAY	BROWN	MEDIUM	110	127	QPUB	GRVL	CLAY	
QPUB = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
MEDIUM TO FINE SAND	BROWN	SOFT	127	136	QFUB	SAND		
QFUB = Sand	SAND = Sand							

Unique No.	00474384	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDDD	207	ft.	203	ft.	1990/01/26

Well Name	COON RAPIDS 21	**Lic. Or Reg. No.**	71536	**Name of Driller**	TOM/ROGER		
USGS Quad	Coon Rapi	**Elevation**	899	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
GRAVEL & CLAY	GRAY	SOFT	136	148	QPUG	GRVL	CLAY	
QPUG = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
CLAY AND ROCKS	LT. YEL	SFT-MED	148	150	QPUY	CLAY	COBL	
QPUY = Pebbly sand/silt/clay	CLAY = Clay			COBL = Cobble				
CLAY/GRAVEL & ROCKS	BLUE	SOFT	150	160	QPUG	CLAY	GRVL	COBL
QPUG = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel			COBL = Cobble	
NO RECORD			160	207	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
CLAY			207	207	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							

Unique No. 00474385

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2008/12/30

Entry Date 1992/06/22

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	CBABAD

Well Depth	Depth Completed	Date Well Completed
108 ft.	105 ft.	1990/03/15

Well Name COON RAPIDS 22

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 22
2220 105TH NW AV
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**
24 in. t 80 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW	SOFT	0	19
ROCKS & BOULDERS	BROW	HARD	19	21
SANDY CLAY	BROW	MEDIUM	21	28
SANDY CLAY/GRAVEL	GRAY	SOFT	28	57
GRAVEL & CLAY	BROW	SOFT	57	70
SANDY CLAY	BROW	SOFT	70	73
FINE SAND	BROW	SOFT	73	83
COARSE SAND	BROW	SOFT	83	93
SAND & GRAVEL	BROW	SOFT	93	98
GRAVEL	BROW	SOFT	98	105
CLAY	BROW	SOFT	105	108

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
18	120	25	80	ft. to 105 ft	

Static Water Level 32 ft. from Land surface Date 1990/03/15

PUMPING LEVEL (below land surface)
105 ft. after 1 hrs. pumping 250 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	20	1.5	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 11-14-2002. LOGGED BY JIM TRAEN.

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

USGS Quad Coon Rapids Elevation 869
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71536
License Business Name
Name of Driller TOM/ROGER

Report Copy

Unique No.	00474385	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	CBABAD	108	ft.	105	ft.	1990/03/15

Well Name	COON RAPIDS 22	**Lic. Or Reg. No.**	71536	**Name of Driller**	TOM/ROGER		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN	SOFT	0	19	QFUB	SAND		
QFUB = Sand	SAND = Sand							
ROCKS & BOULDERS	BROWN	HARD	19	21	QBUB	COBL	BLDR	
QBUB = Boulder or boulders	COBL = Cobble			BLDR = Boulder				
SANDY CLAY	BROWN	MEDIUM	21	28	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
SANDY CLAY/GRAVEL	GRAY	SOFT	28	57	QPUG	CLAY	SAND	GRVL
QPUG = Pebbly sand/silt/clay	CLAY = Clay			SAND = Sand			GRVL = Gravel	
GRAVEL & CLAY	BROWN	SOFT	57	70	QPUB	GRVL	CLAY	
QPUB = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
SANDY CLAY	BROWN	SOFT	70	73	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
FINE SAND	BROWN	SOFT	73	83	QFUB	SAND		
QFUB = Sand	SAND = Sand							
COARSE SAND	BROWN	SOFT	83	93	QFUB	SAND		
QFUB = Sand	SAND = Sand							
SAND & GRAVEL	BROWN	SOFT	93	98	QHUB	SAND	GRVL	
QHUB = Sand & larger	SAND = Sand			GRVL = Gravel				
GRAVEL	BROWN	SOFT	98	105	QGUB	GRVL		
QGUB = Gravel (+larger)	GRVL = Gravel							
CLAY	BROWN	SOFT	105	108	QCUB	CLAY		
QCUB = Clay	CLAY = Clay							

Unique No. 00463020

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1992/06/22

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	27	BAABBB

Well Depth		Depth Completed		Date Well Completed
151	ft.	128	ft.	1991/12/16

Well Name COON RAPIDS 23

Well Owner's Name COON RAPIDS, CITY OF
2100 COON RAPIDS NW BL
COON RAPIDS MN 55433

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON DR
COON RAPIDS MN 55433

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW		0	10
CLAY/SAND	BROW		10	34
SAND/GRAVEL	GRAY		34	38
SANDY CLAY	GRAY		38	67
SAND	BROW		67	95
GRAVEL	BROW		95	122
CLAY	GRAY		122	123
GRAVEL	BROW		123	126
SAND	BROW		126	151
CLAY	BROW		151	151

Drilling Method Cable Tool

Drilling Fluid Water

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

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter				Weight(lbs/ft)
30	in. t	92	ft	118.6
24	in. t	93	ft	94.6

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
24	50		94	ft. to	ft
16	70			ft. to 123	ft

Static Water Level 24 ft. from Land surface Date 1991/12/16

PUMPING LEVEL (below land surface)
70 ft. after 8 hrs. pumping 500 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G		91	114 S

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 11-14-2002 BY DOWNHOLE WELL SERVICES.

USGS Quad Coon Rapids Elevation 855
Aquifer: QBAA Alt Id: 1020017S24

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71015
License Business Name
Name of Driller FULTON, W.

Report Copy

Unique No.	00463020	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	BAABBB	151	ft.	128	ft.	1991/12/16

Well Name	COON RAPIDS 23	**Lic. Or Reg. No.**	71015	**Name of Driller**	FULTON, W.		
USGS Quad	Coon Rapi	**Elevation**	855	**Aquifer**	QBAA	**Alternative Id**	1020017S24

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN		0	10	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY/SAND	BROWN		10	34	QLUB	SAND	CLAY	
QLUB = Clay & sand	SAND = Sand			CLAY = Clay				
SAND/GRAVEL	GRAY		34	38	QHUG	SAND	GRVL	
QHUG = Sand & larger	SAND = Sand			GRVL = Gravel				
SANDY CLAY	GRAY		38	67	QLUG	CLAY	SAND	
QLUG = Clay & sand	CLAY = Clay			SAND = Sand				
SAND	BROWN		67	95	QFUB	SAND		
QFUB = Sand	SAND = Sand							
GRAVEL	BROWN		95	122	QGUB	GRVL		
QGUB = Gravel (+larger)	GRVL = Gravel							
CLAY	GRAY		122	123	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
GRAVEL	BROWN		123	126	QGUB	GRVL		
QGUB = Gravel (+larger)	GRVL = Gravel							
SAND	BROWN		126	151	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY	BROWN		151	151	QCUB	CLAY		
QCUB = Clay	CLAY = Clay							

Unique No.	00674478	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/05/18
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	/ / 0

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	ABADAB

Well Depth	Depth Completed	Date Well Completed
388 ft.	388 ft.	2003/12/19

Well Name COON RAPIDS 24

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 24
10845 DIRECT RIVER DR
COON RAPIDS MN 55433

Drilling Fluid Bentonite

Well Hydrofractured? ☐ Yes ☑ No
From ft. to ft.

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

in. t	85	ft	
in. t	388	ft	
in. t	323	ft	

Casing Diameter **Weight(lbs/ft)**

30	in. t	191	ft	118.65
24	in. t	241	ft	94.62
36	in. t	90	ft	142.68

Screen N

Open Hole From 232 ft. to 388 ft.

Make Type

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL	BROW	SOFT	0	29
CLAY & GRAVEL	BROW	HARD	29	82
SANDY CLAY	BROW	SOFT	82	87
SAND	BROW	SOFT	87	112
JORDAN S.S.	TAN	MEDIUM	132	149
FRANCONIA S.S.	GRN/B	MED-HRD	149	354
IRONTON/GALESVILLE	GRAY	MEDIUM	354	385
EAU CLAIRE SHALE	GRY/G	HARD	385	388

Static Water Level 60 ft. from Land surface Date 2003/09/18

PUMPING LEVEL (below land surface)
112 ft. after 8 hrs. pumping 1560 g.p.m.

Well Head Completion
Pitless adapter mfr BAKER Model 12.5PS2426
Casing Protection ☑ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G		85	10	Y
G		232.5	10	Y

Nearest Known Source of Contamination
200 ft. direction N type SDF
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam GOULD
Model 14RLJC-7 HP 75 Volts 480
Drop Pipe Length 165 ft. Capacity E+03 g.p.m
Type S

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

Was a variance granted from the MDH for this Well? ☐ Yes ☑ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 6-17-2003. M.G.S. NO. 4242. LOGGED BY JIM TRAEN.

ROGER E. RENNER, MGWC, N-291.

MR. CHRIS CATLIN (651)644-4389.

USGS Quad Coon Rapids Elevation 861
Aquifer: CFIG Alt Id: 4242

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71015
License Business Name
Name of Driller COX, A.

Report Copy

Unique No.	00674478	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/05/18
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	/ / 0

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	ABADAB	388	ft.	388	ft.	2003/12/19

Well Name	COON RAPIDS 24	**Lic. Or Reg. No.**	71015	**Name of Driller**	COX, A.		
USGS Quad	Coon Rapi	**Elevation**	861	**Aquifer**	CFIG	**Alternative Id**	4242

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL	BROWN	SOFT	0	29	QHUB	SAND	GRVL	
QHUB = Sand & larger	SAND = Sand			GRVL = Gravel				
CLAY & GRAVEL	BROWN	HARD	29	82	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
SANDY CLAY	BROWN	SOFT	82	87	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
SAND	BROWN	SOFT	87	112	QFUB	SAND		
QFUB = Sand	SAND = Sand							
JORDAN S.S.	TAN	MEDIUM	132	149	QFUB	SAND		
QFUB = Sand	SAND = Sand							
FRANCONIA S.S.	GRN/BRN	MED-HRD	149	354	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone			SHLE = Shale			DLMT = Dolomite	
IRONTON/GALESVILLE	GRAY	MEDIUM	354	385	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
EAU CLAIRE SHALE	GRY/GRN	HARD	385	388	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				

Unique No. 00674479

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/01/09

Entry Date 2004/10/11

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	BCBDBA

Well Depth	Depth Completed	Date Well Completed
388 ft.	388 ft.	2003/12/19

Well Name COON RAPIDS 25

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 25
2324 COON RAPIDS NW BL
COON RAPIDS MN 55433

Drilling Fluid Bentonite

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter
in. t 388 ft
in. t 227 ft

Casing Diameter **Weight(lbs/ft)**
36 in. t 196 ft 142.68
24 in. t 229 ft 94.62

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL	BROW	SOFT	0	29
CLAY & GRAVEL	BROW	HARD	29	82
SANDY CLAY	BROW	SOFT	82	87
SAND	BROW	SOFT	87	112
JORDAN S.S.	TAN	MEDIUM	112	162
ST. LAWRENCE	BRN/G	MEDIUM	162	193
FRANCONIA S.S.	GRN/B	MED-HRD	193	359
IRONTON/GALESVILLE	GRAY	MEDIUM	359	388

Screen N

Open Hole From 225 ft. to 388 ft.

Make Type

Static Water Level 51 ft. from Land surface Date 2003/12/01

PUMPING LEVEL (below land surface)
121.37 ft. after 48 hrs. pumping 1560 g.p.m.

Well Head Completion
Pitless adapter mfr BAKER Model 9.5PS2426
Casing Protection ☑ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G		225	45 Y

Nearest Known Source of Contamination
200 ft. direction N type SDF
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam GOULDS
Model 14RLJC-7 HP 75 Volts 480
Drop Pipe Length 165 ft. Capacity E+03 g.p.m
Type S

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

Was a variance granted from the MDH for this Well? ☐ Yes ☑ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 8-29-2003. M.G.S. NO. 4280. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 871
Aquifer: CFIG Alt Id: 80-6137

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71015
License Business Name
Name of Driller COX, A.

Report Copy

Unique No.	00674479	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/01/09
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	2004/10/11

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCBDBA	388	ft.	388	ft.	2003/12/19

Well Name	COON RAPIDS 25	**Lic. Or Reg. No.**	71015	**Name of Driller**	COX, A.		
USGS Quad	Coon Rapi	**Elevation**	871	**Aquifer**	CFIG	**Alternative Id**	80-6137

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL	BROWN	SOFT	0	29	QHUB	SAND	GRVL	
QHUB = Sand & larger	SAND = Sand			GRVL = Gravel				
CLAY & GRAVEL	BROWN	HARD	29	82	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
SANDY CLAY	BROWN	SOFT	82	87	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
SAND	BROWN	SOFT	87	112	QFUB	SAND		
QFUB = Sand	SAND = Sand							
JORDAN S.S.	TAN	MEDIUM	112	162	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
ST. LAWRENCE	BRN/GRN	MEDIUM	162	193	CSTL	SLSN	DLMT	
CSTL = St.Lawrence	SLSN = Siltstone			DLMT = Dolomite				
FRANCONIA S.S.	GRN/BRN	MED-HRD	193	359	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone			SHLE = Shale			DLMT = Dolomite	
IRONTON/GALESVILLE	GRAY	MEDIUM	359	388	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							

Appendix B

Part 1 Wellhead Protection Plan Amendment

City of Coon Rapids Wellhead Protection Plan Amendment

Part I:

Delineation of the Wellhead Protection Area (WHPA), Drinking Water Supply Management Area (DWSMA), and Assessments of Well and DWSMA Vulnerability

Prepared for

March 2016

City of Coon Rapids Wellhead Protection Plan Amendment

Part I:

Delineation of the Wellhead Protection Area (WHPA), Drinking Water Supply Management Area (DWSMA), and Assessments of Well and DWSMA Vulnerability

Prepared for

March 2016

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Minneapolis, MN 55435
Phone: 952.832.2600
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City of Coon Rapids Wellhead Protection Plan Amendment

March 2016

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Certifications

I hereby certify that this plan, document, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Geologist under the laws of the state of Minnesota.

	March 2, 2016
John C. Greer	Date
PG #: 30347	

Public Water Supply Profile

The following persons are the contacts for the Coon Rapids Wellhead Protection Plan:

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General Information

UNIQUE WELL NUMBER(S) Primary: 202932, 202931, 202930, 202965, 161413, 110460, 110461, 150357, 110475, 420956, 474384, 674478, 674479; Seasonal: 202926, 202929, 202972, 202951, 202937, 202943, 168721, 168720, 110469, 474385, 463020

SIZE OF POPULATION SERVED 61,476 (2010 Census)

COUNTY Anoka

1.0 Introduction

In compliance with the Minnesota Wellhead Protection Rules (MN Rules 4720.5100 through 4720.5590), wellhead protection areas (WHPAs) and Drinking Water Supply Management Areas (DWSMAs) were delineated for the City of Coon Rapids in 2003 (Wells 1-23) (MDH, 2003) and in 2006 (Wells 4, 7, 11, 12, 14, 15, 24, 25) (Bonestroo, 2006). Minnesota Rule 4720.5570 states that wellhead protection plans must be reviewed and amended at least every ten years. In addition, the Minnesota Department of Health (MDH) has instituted requirements for inclusion of fracture-flow analysis in the delineation of WHPAs since the last delineation of the City's WHPAs and DWSMAs.

As required by Minnesota Rule 4720.5570, new WHPAs and new DWSMAs have been delineated for the City of Coon Rapids. This report summarizes work completed to update the delineation of the Coon Rapids WHPAs and DWSMAs in compliance with the Minnesota Wellhead Protection Rules and to meet the current MDH requirements. Data elements used in preparation of the report are presented in Table 1.

The City of Coon Rapids currently has 13 primary municipal water supply wells. Wells 9, 24, and 25 (unique numbers 202931, 674478, and 674479, respectively) are completed in the Tunnel City Group-Wonewoc Sandstone (TCW) aquifer (formerly known as the Franconia-Ironton-Galesville, or FIG, aquifer). The open interval of Well 9 also extends into the Eau Claire Formation. Wells 8, 10, 11, 13, 14, and 15 (unique numbers 202932, 202930, 202965, 168720, 110460, and 110461, respectively) are completed in both the TCW and Mt. Simon Sandstone aquifers. Wells 17, 19, 20, and 21 (unique numbers 150357, 110475, 420956, and 474384, respectively) are completed in the confined Quaternary glacial drift aquifer.

The City also has 11 seasonal wells. Well 1 (unique number 202926) is completed in the Tunnel City-Wonewoc aquifer. Wells 2, 4, 5, 7, and 12 (unique numbers 202929, 202972, 202951, 202943, and 168721, respectively) are completed in both the TCW and Mt. Simon Sandstone aquifers. The open intervals of Wells 1 and 2 also intersect the St. Lawrence Formation, and the open interval of Well 1 also intersects the Eau Claire Formation. Well 6 (unique number 202937) is completed in the Tunnel City Group aquifer. Well 16 (unique number 161413) is completed in the Wonewoc Sandstone and Mt. Simon Sandstone aquifers. Well 18 (unique number 110469) is completed in the Mt. Simon Sandstone aquifer. Wells 22 and 23 (unique numbers 474385 and 463020, respectively) are completed in the confined Quaternary glacial drift aquifer.

Well locations are shown on Figure 1. Table 2 summarizes construction, use, and vulnerability information for the Coon Rapids water supply wells. Well logs for the City's wells are presented in Appendix A.

While compiling data for this report, a database discrepancy was identified for Wells 13 and 16. The Minnesota Well Index (MWI) listed unique numbers 168720 for Well 13 and 161413 for Well 16; the Minnesota Department of Natural Resources (MnDNR) Permitting And Reporting System (MPARS) database had unique numbers 161413 for Well 13 and 168720 for Well 16. A check of the unique number tags on the physical wells showed unique number 161413 on Well 13 and 168720 on Well 16; however, through discussions with the MDH and examination of their records it was determined that the unique

number tags for Wells 13 and 16 were transposed when they were installed on the wells (MDH, 2015a). The MWI database was correct; Well 13 is unique number 168720 and Well 16 is unique number 161413.

2.0 Criteria for Wellhead Protection Area Delineation

The following criteria were used to ensure accurate delineation of the WHPAs.

2.1 Time of Travel

A minimum 10-year groundwater time of travel criterion must be used to delineate a WHPA (MN Rule 4720.5510) so there is sufficient reaction time to remediate potential health impacts in the event of contamination of the aquifer. A groundwater time of travel of ten years was considered in this study. As required by the Wellhead Protection Rules, the one-year groundwater time of travel was also determined for each well addressed in this study.

2.2 Aquifer Transmissivity

For this study, transmissivities of the Quaternary glacial drift aquifer, the Tunnel City Group, the Wonewoc Sandstone, and the Mt. Simon Sandstone were estimated using pumping tests conducted at Coon Rapids Wells 19 and 20 (Quaternary), specific capacity data at Well 21 (Quaternary), specific capacity data at Coon Rapids Wells 24 and 25 (Tunnel City and Wonewoc), specific capacity data at Coon Rapids Well 18 (Mt. Simon, and pumping tests at Andover Well 3 (Mt. Simon). Summaries of the aquifer tests are included in Appendix B. See Section 2.5 below for details regarding how these transmissivity values were included in the groundwater model.

A pumping test conducted at Well 19 in 2002 estimated a range of transmissivities from 8,120 ft^2/day (754.4 m^2/day) to 9,420 ft^2/day (875.1 m^2/day) with a geometric mean of 8,700 ft^2/day (808.3 m^2/day) for the confined Quaternary glacial drift aquifer. Pumping tests conducted at Coon Rapids Well 20 in 1999 and 2002 estimated a range of transmissivities from 27,000 ft^2/day (2,508.4 m^2/day) to 66,700 ft^2/day (6,196.6 m^2/day) with a geometric mean of 45,210 ft^2/day (4,200.1 m^2/day) for the confined Quaternary glacial drift aquifer. Coon Rapids Well 21 is located far from the City's other Quaternary wells, and available Quaternary stratigraphy mapping (Meyer et al., 2013) appears to indicate that the confined Quaternary aquifer is not continuous throughout the City. Specific capacity data for Well 21 was used to estimate a transmissivity of 5,750 ft^2/day (534.2 m^2/day) for the confined Quaternary glacial drift aquifer near Well 21.

Analysis of specific capacity data for Wells 24 and 25 using the TGuess Method (Bradbury and Rothschild, 1985) estimated a range of transmissivities from 6,400 ft^2/day (594.6 m^2/day) to 9,400 ft^2/day (873.3 m^2/day) with a geometric mean of 7,700 ft^2/day (715.4 m^2/day) for the combined Tunnel City Group-Wonewoc Sandstone aquifer. The geometric mean value was allocated between the two formations using a ratio determined by comparing mean transmissivities for the two formations in the vicinity of Coon Rapids; see the aquifer test plan for the TCW aquifer in Appendix B for more details. A transmissivity of 5,470 ft^2/day (508.2 m^2/day) was used for the Tunnel City and a transmissivity of 2,230 ft^2/day (207.2 m^2/day) was used for the Wonewoc.

Four single-well pumping tests were conducted at Andover Well 3 in 1987. Mt. Simon Sandstone transmissivities estimated by these tests ranged from 1,600 ft^2/day (148.6 m^2/day) to 2,200 ft^2/day

(204.4 m^2/day). Analysis of specific capacity data at Coon Rapids Well 18 using the TGuess Method (Bradbury and Rothschild, 1985) estimated a transmissivity of 4,700 ft^2/day (436.6 m^2/day) for the Mt. Simon Sandstone. The geometric mean value of 2,310 ft^2/day (214.6 m^2/day) from these tests was used in the model.

2.3 Daily Volume of Water Pumped

Pumping data for the City of Coon Rapids for the period 2010 through 2014 are summarized in Table 3. The largest annual withdrawal for 2010-2014 was 2,959,153,000 gallons in 2012. The City's Comprehensive Water System Plan (Bolton & Menk, 2014) includes projected average daily demands of 8.11 and 8.67 million gallons per year (MGD) for 2019 and 2024, respectively. These values were used to interpolate a 2020 projected average daily demand of 8.22 MGD (3,001,030,000 gallons per year). Projected 2020 pumping rates for each well were calculated by multiplying the total 2020 projected demand by the 2010-2014 average percentage of total withdrawal for each well. The pumping rate used in the model for each Coon Rapids well for the WHPA delineation was either this 2020 projection or the historical maximum for the period 2010-2014, whichever was greater. The maximum 2010-2014 rates were greater than the 2020 projected rates for all wells. Table 3 summarizes the pumping rates used in the model for delineation of the WHPAs. Unaccounted water (the difference between the total volume pumped annually by the City's wells and the total amount billed to users) averaged 12% annually from 2004-2013 (Bolton & Menk, 2014).

2.4 Conceptual Hydrogeologic Model

The regional hydrogeologic conceptual model is presented in Metropolitan Council (2014). Additional geological information is included below, along with discussion of groundwater flow boundaries and flow directions specific to the Coon Rapids area.

2.4.1 Regional Bedrock Geology

A bedrock map derived from the Twin Cities ten-county metropolitan area geologic map (Mossler, 2013) is shown on Figure 1. Locations of three geologic cross sections through the study area are also shown on Figure 1. Geologic cross sections A-A' (Figure 2) and C-C' (Figure 4) are roughly parallel northwest to southeast sections that cross west to east cross section B-B' (Figure 3) at Coon Rapids Well 14 and Well 8, respectively.

The hydrostratigraphic units of importance for this study are described in more detail below.

Mt. Simon Sandstone

The Cambrian-aged Mt. Simon Sandstone consists of multiple beds of medium- to coarse-grained quartz sandstone intermixed with beds of siltstone and feldspathic sandstone (Mossler, 2012). The formation is 125-200 feet thick in Anoka County. The Mt. Simon Sandstone is overlain by the Eau Claire Formation (a confining unit) throughout Coon Rapids.

Eau Claire Formation

The Cambrian-aged Eau Claire Formation is comprised of very fine feldspathic sandstone, siltstone, and shale, and is 75-80 feet thick in Anoka County (Mossler, 2012). It is overlain by the Wonewoc Sandstone throughout Coon Rapids but is the uppermost bedrock just to the northwest of the City in Andover and Anoka. The Eau Claire Formation functions as a regional confining unit where present.

Wonewoc Sandstone (formerly Ironton and Galesville Sandstones)

The Cambrian-aged Wonewoc Sandstone is fine- to coarse-grained, quartzose sandstone, with its upper part coarser-grained than its lower part (Mossler, 2012). It is 50-60 feet thick in Anoka County and is the uppermost bedrock in far northwestern Coon Rapids.

Tunnel City Group (formerly Franconia Formation)

The Cambrian-aged Tunnel City Group is divided into two formations: the Mazomanie Formation and the Lone Rock Formation. The Mazomanie Formation is mostly a fine- to medium-grained friable, quartz sandstone. The Lone Rock Formation underlies the Mazomanie Formation and consists of fine grained glauconitic, feldspathic sandstone and shale with dolostone interclasts (Mossler, 2012). The Tunnel City Group is the uppermost bedrock in northern Coon Rapids and in the bedrock valleys in the central part of the City. It is 135 to 180 feet thick where not eroded. The Mazomanie Formation is present in the uppermost 60-80 feet of the unit.

Quaternary Glacial Drift

The Quaternary-aged sediments that overlie the bedrock in Coon Rapids were deposited by multiple glacial advances during the Pleistocene Epoch (Meyer et al., 2013) and vary in thickness from approximately 90 feet thick where the Jordan Sandstone is the uppermost bedrock to nearly 300 feet thick where the Tunnel City Group is the uppermost bedrock. As shown on Figures 2-4, the upper 30-50 feet of the Quaternary sediments are typically comprised of sand and gravel. The deeper sediments are comprised of discontinuous sequences of fine-grained sediments (i.e., clays and silts) and sands and gravels. Away from the Mississippi River in northeastern Coon Rapids, Figures 3 and 4 indicate a continuous clay unit separating the shallow sands and gravels from discontinuous deeper confined sand and gravel aquifers. Closer to the river, Figures 2 and 3 show a sandier profile overall with more discontinuous local confining units.

2.4.2 Flow Boundaries

The Mississippi River to the southwest of Coon Rapids is a groundwater flow boundary, though not necessarily for all of the hydrostratigraphic units detailed in the previous section. See Section 2.6 below for more discussion.

2.5 Model Description

To accurately delineate the WHPAs, it is necessary to assess how nearby wells, rivers, lakes, and variations in geologic conditions affect groundwater flow directions and velocities in the aquifer. A groundwater model constructed using the finite difference code MODFLOW-NWT (Niswonger, et al., 2011) was used

for this study to simulate groundwater flow in the hydrostratigraphic units from the Quaternary aquifer down to the Mt. Simon Sandstone. MODFLOW-NWT is public domain software that is available at no cost from the United States Geological Survey. The pre- and post-processor Groundwater Vistas (version 6) (Environmental Simulations, Inc., 2011) was used to create the model data files and evaluate the model results.

2.5.1 Base Model

Since the previous Coon Rapids Wellhead Protection Plan was prepared, the Twin Cities Metropolitan Area Regional Groundwater Flow Model, Version 3.0 (Metropolitan Council, 2014) was developed by Barr Engineering for the Metropolitan Council. This regional model includes Coon Rapids and, per discussions at the Pre-Delineation Meeting (MDH, 2015), Metro Model 3 was used as the base model for the new Coon Rapids WHPA delineations.

Metro Model 3 is divided into 9 layers to represent the major hydrostatigraphic units in the Twin Cities Metropolitan Area. In Coon Rapids, the model layers represent the following (ordered from youngest to oldest; i.e., shallowest to deepest):

- Layer 1: Quaternary glacial drift
- Layer 2: St. Peter Sandstone or Quaternary glacial drift (where present)
- Layer 3: Prairie du Chien Group or Quaternary glacial drift (where present)
- Layer 4: Jordan Sandstone or Quaternary glacial drift (where present)
- Layer 5: St. Lawrence Formation or Quaternary glacial drift (where present)
- Layer 6: Tunnel City Group or Quaternary glacial drift (where present)
- Layer 7: Wonewoc Sandstone
- Layer 8: Eau Claire Formation
- Layer 9: Mt. Simon Sandstone

Major rivers near Coon Rapids (i.e., the Mississippi and Rum Rivers) as well as lakes in the area are simulated using the River Package within MODFLOW-NWT. Baseflow measurements for rivers and streams in the area were used during calibration of Metro Model 3.

Recharge for the groundwater flow model was determined using the SWB recharge model (Westenbroek et al., 2010) for the Twin Cities metropolitan area as described in Metropolitan Council (2012).

Modifications made to Metro Model 3 for the Coon Rapids WHPA delineations are discussed in the following section.

2.5.2 Model Modifications and Updates

The following modifications and updates were made to the base model:

- A smaller sub-model centered on Coon Rapids was cut from the full Metro Model 3 using the telescopic mesh refinement (TMR) functionality in Groundwater Vistas. The boundaries of this model are approximately 10 miles from Coon Rapids in all directions. Constant-flux boundary conditions derived from the full Metro Model 3 results were applied to the outer boundaries of

the sub-model. A map of the sub-model domain is shown on Figure C1 in Appendix C. The sub-model will be referred to as "the model" hereafter in this report.

- It was determined at the Pre-delineation Meeting (MDH, 2015b) that several of the Coon Rapids well locations were incorrect in the County Well Index (CWI) (MGS, 2015). With information from the City, the locations of Wells 4, 5, 7, 8, 10, 15, 18, 19, 21, 24, and 25 were adjusted based on aerial photos to better reflect their actual locations (MDH, 2015a).
- The pumping rates for the City's wells were changed to the model input rates shown in Table 3.
- The model grid was refined from the 500-m square cells of the base model down to 125-m square cells within the Coon Rapids city limits. The grid was further refined to 7.81-m square cells in the immediate vicinity of the Coon Rapids wells.
- Edges of partially eroded bedrock units in Coon Rapids (e.g., Jordan Sandstone, St. Lawrence Formation, Tunnel City Group) were re-mapped onto the refined grid using boundaries from the Twin Cities Metro bedrock map (Mossler, 2013).
- Slight differences in model layer contact elevations versus well open intervals noted on the well logs resulted in some of the City's wells drawing water from inappropriate layers in the model. These issues were corrected for the following wells (well name followed by current open layer(s) in the model, followed in parentheses by the original open layers in the model):
    - Well 11, 5 through 9 (6 through 9)
    - Well 13, 7 through 9 (6 through 9)
    - Well 14, 7 through 9 (6 through 9)
    - Well 20, 4 (3 and 4)
    - Well 21, 4 (4 and 5)
    - Well 22, 3 (2 and 3)
    - Well 23, 4 (3 and 4)
- Horizontal hydraulic conductivity values (Kx) were updated so that model layer transmissivities in the vicinity of the Coon Rapids wells match aquifer test transmissivities (Section 2.2; Appendix B) as described below. The ratio of horizontal to vertical hydraulic conductivity (Kx/Kz) in the base Metro Model 3 was preserved when making these changes up to a maximum ratio of 1,000; i.e., new Kz values were calculated from the updated Kx values. (Values of Kx/Kz greater than 1,000 did not seem reasonable, except for the Layer 2 clay unit described below.) See Appendix C for maps of model hydraulic conductivity fields. Since several of Coon Rapids' wells are located close to the eastern city limits, some of the areas of updated hydraulic conductivity had to extend east into Blaine in order to encompass the entire well capture zones. This extended modification boundary has its eastern limit approximately 5 km to the east of the Coon Rapids/Blaine line.
    - <u>Quaternary</u>. Detailed mapping of sand and glacial till units from the Anoka County Geologic Atlas (Meyer et al., 2013) was utilized in the model edits.
        - <u>Layer 2</u>: Layer 2 represents a clayey glacial till unit at most Coon Rapids wells, but some of the Metro Model 3 K values were too high to represent this material. Till unit Ce from the Anoka County Atlas appeared to correspond to the till unit observed on the City's well logs, so the Kx and Kz values for cells representing this till within the extended boundary described above were set

to the Metro Model 3 values in Layer 2 at Well 21 - 2 ft/day and 0.001 ft/day (0.623 m/day and 0.00016 m/day), respectively – which are reasonable for the till.

- Layers 3 and 4: Sand unit Sr appeared to represent the aquifer in which Well 19 is screened. Sand unit Sr also appeared to represent the shallow portion of the sand aquifer in Layer 3 at Well 20. Layer 3 should be clay at Well 19, and till unit Xt appeared to represent this material. Wells 17, 22, and 23 appeared to be screened in sand unit Sx, which overlaped Sr and Sp in the area of the primary Coon Rapids Quaternary well field. Well 21 appeared to be screened in overlapping Sx and Sr units in Layer 4. This information was accounted for in the model as follows:
    - The Layer 3 Kx and Kz values within the till unit Xt extent were set to the values used for till unit Ce in Layer 2.
    - The transmissivity determined from the pumping test at Well 19 was 8,700 ft^2/day (808.3 m^2/day) and the model Layer 4 thickness at Well 19 was 37.4 feet (11.4 m), resulting in an effective Kx of 233 ft/day (71.1 m/day). The Layer 4 Kx values within the "hole" in sand unit Sp around Well 19 were set to this value.
    - Layer 3 Kx values in the sand unit Sr extents that did not overlap till unit Xt were set to 233 ft/day (71.1 m/day).
    - The transmissivity determined from the pumping test at Well 20 was 45,210 ft^2/day (4,200.1 m^2/day), the model Layer 3 thickness at Well 20 was 31.8 ft (9.7 m), and the model Layer 4 thickness at Well 20 was 36.7 ft (11.2 m). Combining this information with the Sr Kx of 71.1 m/day in Layer 3 resulted in an effective Layer 4 Kx of 1,030 ft/day (314.4 m/day) to match the Well 20 transmissivity in Layers 3 and 4. This K value was applied to the combined Sp and Sx extent in Layer 4 that includes Wells 17, 20, 22, and 23.
    - The transmissivity determined from the specific capacity measurement in Well 21 was 5,750 ft^2/day (534.2 m^2/day). The thickness of Layer 4 at Well 21 was 44.9 ft (13.7 m), resulting in an effective Layer 4 Kx of 128 ft/day (39.1 m/day). This value was uniformly assigned to Layer 4 cells within the combined Sr and Sx extents near Well 21.

- St. Lawrence. As noted above, Layer 5 represents the St. Lawrence formation, a regional confining unit, over much of Coon Rapids. Partially due to the remapping of bedrock units described above, some cells representing St. Lawrence Formation in the model ended up with horizontal hydraulic conductivities greater than the largest measured Kx value for the St. Lawrence (46 ft/day or 14 m/day) in Runkel et al. (2003). The Kx was set to 14 m/day in all St. Lawrence cells within the extended boundary described above with original Kx values greater than 14 m/day.
- Tunnel City and Wonewoc. As discussed above in Section 2.2, a transmissivity of 5,470 ft^2/day (508.2 m^2/day) was estimated for the Tunnel City Group and a

transmissivity of 2,230 ft^2/day (207.2 m^2/day) was estimated for the Wonewoc Sandstone. The model thicknesses at Well 24 in Layers 6 and 7 were 113 ft (34.4 m) and 61.0 ft (18.6 m), respectively. Dividing the pumping test T values by these model thicknesses gave effective K values of 48.6 ft/day (14.8 m/day) for the Tunnel City Group and 36.4 ft/day (11.1 m/day) for the Wonewoc sandstone. These K values were uniformly applied to cells representing the Tunnel City Group or Wonewoc Sandstone, respectively, within the extended boundary described above.

- Mt. Simon. Dividing the pumping test transmissivity value of 2,310 ft^2/day (214.6 m^2/day) by the model Layer 9 thickness at Well 18 of 195 ft (59.5 m) gave an effective Mt. Simon K of 11.8 ft/day (3.6 m/day). The Layer 9 Kx values within the extended boundary described above were uniformly set to the calculated effective K.

As discussed at the Pre-Delineation Meeting, no additional recalibration of the model was deemed necessary. Calibration summary plots for the updated model are included in Appendix C (Figures C9 and C10). Full discussion of the Metro Model 3 calibration is presented in Metropolitan Council (2014). MODFLOW files for the updated model are included in Appendix G.

2.6 Groundwater Flow Field

The groundwater flow field used for delineation of the WHPAs was determined by the groundwater flow model; modeled contours for the confined Quaternary glacial drift (model layers 3 and 4), Tunnel City Group, Wonewoc Sandstone, and Mt. Simon Sandstone are shown on Figures 5, 6, 7, 8, and 9, respectively.

In general, Figures 5-8 show southerly to westerly flow directions in the confined Quaternary and Tunnel City-Wonewoc aquifers. No published groundwater contours are known for these aquifers in Anoka County, but the modeled contours seem reasonable since they indicate groundwater flow towards the Mississippi River. Based on this modeled flow toward the regional groundwater discharge zones and the acceptable calibration of the groundwater model, the groundwater flow field was determined to be of acceptable accuracy.

As shown on Figures 5-8, the cones of depression from the western Coon Rapids well field extend under the Mississipppi River, which results in capture zones crossing the river into Champlin and Brooklyn Park (Figure 10). See Section 3.2 below for more discussion.

As expected due to the presence of the Eau Claire Formation aquitard, flow in the Mt. Simon Sandstone is less influenced by the Mississippi River and more dependent on high capacity pumping. Figure 9 shows flow in the Mt. Simon in Coon Rapids to be primarily directed towards the south and southwest. The southerly flow is consistent with the large cone of depression centered on southeastern Hennepin County depicted on the Mt. Simon groundwater contour map included in the Hennepin County Geologic Atlas (Kanivetsky, 1989). In northwestern Coon Rapids, flow directions in the Mt. Simon are influenced by the Champlin well field to the west.

3.0 Delineation of the Wellhead Protection Areas

Delineation of the WHPAs for the Coon Rapids wells involved the evaluation of porous media flow only. Per discussions at the Pre-Delineation Meeting (MDH, 2015b), a fracture flow evaluation was deemed unnecessary.

3.1 Porous Media Flow Evaluation

The groundwater flow model discussed above in Section 2 was used to simulate the groundwater flow field in the vicinity of Coon Rapids. The porous media capture zone for the Coon Rapids well field was delineated using the software program MODPATH (Version 5) with the modeled groundwater flow field. A minimum of 180 particles were tracked from each well. The particles were released from 6 vertical points in each layer along the open interval of each well. These particles were tracked backwards in time for both one and ten years. In plan view, the areas encompassed by the particle traces were then outlined as the 1-year and 10-year porous media time of travel zones for the well field.

Porosity values used for the porous media flow evaluation were as follows (Norvitch et al., 1974, Schwartz and Zhang, 2003):

- Quaternary Glacial Drift = 0.25
- Tunnel City Group = 0.2
- Wonewoc Sandstone = 0.2
- Mt. Simon Sandstone = 0.2

3.1.1 Sensitivity Analysis

A sensitivity analysis was performed to test the sensitivity of the model results to varying hydraulic conductivity in the confined Quaternary glacial drift, TCW, and Mt. Simon aquifers. The ranges of transmissivities estimated for the various aquifers by the pumping test analyses and specific capacity calculations (Appendix B) were used to calculate upper bounds on hydraulic conductivity for the model sensitivity analysis. The original Metro Model 3 hydraulic conductivities in these aquifers were smaller than the values calculated from the lower bounds of the transmissivity ranges, so the Metro Model 3 values were used as the lower bounds for the sensitivity analysis. The ratio of horizontal to vertical hydraulic conductivity in the base Metro Model 3 was preserved for each sensitivity run except where modified as discussed above in Section 2.5.2. The model was most sensitive to lowering the hydraulic conductivity of the TCW and confined Quaternary aquifers. A plot of the sensitivity analysis results is included in Appendix C.

Multiple particle tracking simulations were conducted to account for uncertainty in the groundwater flow model. In addition to the base model run, particle tracking simulations were conducted for the upper and lower conductivity bounds of each sensitivity run. Particle traces from all simulations were used to delineate the 1-year and 10-year porous media capture zones for each well (Figure 10).

3.2 WHPA Delineations

The composite 10-year porous media capture zones define the WHPAs. There are seven distinct WHPAs due to the spacing of the City's wells. The Emergency Response Area (ERA) is delineated for each well by the composite 1-year porous media capture zones. The WHPAs and ERAs are shown on Figure 10.

As mentioned above in Section 2.6, portions of the Coon Rapids WHPA extend under the Mississippi River into Champlin and Brooklyn Park. The particle traces that crossed beneath the River originated at confined Quaternary Wells 17, 20, and 23 and TCW-Mt. Simon Wells 7 and 11. While the traces from the Quaternary wells originated where Layer 4 represents Quaternary sediments, they crossed the River where Layer 4 represents the Jordan Sandstone. The degree of connection between the bedrock aquifers (Jordan and TCW) and the Mississippi River does not appear to be strong enough to prevent the aquifer stress from concentrated high-capacity pumping in Coon Rapids from extending to the west of the River.

3.3 Conjunctive Delineation

As discussed below in section 6.0, a region of High vulnerability is present within one of the Coon Rapids DWSMAs; however, there is no water quality data available that definitively indicates that groundwater pumped from this region is under the influence of surface water. Therefore, delineation of a surface water capture area (i.e., a conjunctive delineation) was not performed. Section 7.0 below discusses recommendations to address this data gap for the next WHPP amendment.

4.0 Delineation of the Drinking Water Supply Management Areas

The Coon Rapids DWSMAs encompass the WHPAs with boundaries that correspond to geographically identifiable features (e.g., roads, parcel boundaries, quarter-quarter section lines). Anoka County 2015 parcel data and Hennepin County 2011 parcel data were used to delineate the DWSMAs. There are three distinct DWSMAs: the West DWSMA encompasses the WHPAs for Wells 4, 6, 7, 11, 12, 14, 15, 17, 19, 20, 22, 23, 24, and 15; the Northeast DWSMA encompasses the WHPAs for Wells 1, 2, 8, 9, 10, 13, 16, 18, and 21; and the Southeast DWSMA encompasses the Well 5 WHPA. The Southeast DWSMA is contained entirely within the Coon Rapids city limits, while the Northeast DWSMA extends east into Blaine and the West DWSMA extends southwest into Champlin and Brooklyn Park. The Coon Rapids DWSMAs are shown on Figure 10. To satisfy Minnesota Rule 4720.5500, Subpart 2, 1:24,000 scale maps of the DWSMAs are included in Appendix D.

5.0 Well Vulnerability Assessment

MDH evaluated the vulnerability of the Coon Rapids municipal wells to contamination from contaminants released at the surface. The evaluation parameters include geology, well construction, pumping rate, and water quality. Coon Rapids Wells 6, 7, 11, 15, 17, 19, 20, 21, 22, 23, and 24 are classified as “vulnerable” and Wells 1, 2, 4, 5, 8, 9, 10, 12, 13, 14, 16, 18, and 25 are classified as “not vulnerable.” Copies of the MDH well vulnerability scoring sheets for the Coon Rapids wells are presented in Appendix E.

6.0 Drinking Water Supply Management Area Vulnerability Assessment

The vulnerabilities of the Quaternary glacial drift, Tunnel City Group, Wonewoc Sandstone, and Mt. Simon Sandstone within the DWSMAs associated with the Coon Rapids wells were evaluated in a manner consistent with MDH guidance for assessing aquifer vulnerability (MDH, 1997) using geologic sensitivities based on L scores computed from boring log data and water quality data for the Coon Rapids wells.

The first step in the assessment is to determine the geologic sensitivity rating of the aquifer. The Minnesota Department of Natural Resources (MnDNR) defines geologic sensitivity based on the travel time of water moving vertically from the surface to the aquifer of interest as follows (see MnDNR, 1991):

- Sensitivity = Very High: vertical travel time is hours to months
- Sensitivity = High: vertical travel time is weeks to years
- Sensitivity = Moderate: vertical travel time is years to decades
- Sensitivity = Low: vertical travel time is several decades to a century
- Sensitivity = Very Low: vertical travel time is more than a century

Geologic logs listed in the CWI for wells in the vicinity of the WHPAs were reviewed and "L scores" based on the thickness of low permeability units at each well location were assigned to each well. [See MnDNR (1991) for a discussion of how to determine L scores]. The MDH L score tool was used to compute the L scores and assign geologic sensitivity ratings. Well logs lacking detail in the Quaternary stratigraphy were excluded from the L score calculations. L score calculations were performed for the uppermost aquifer in each composite WHPA. Figure F1 in Appendix F shows geologic sensitivity for the regions of the WHPAs where the confined Quaternary aquifer is the uppermost aquifer, and Figure F2 shows geologic sensitivity for the regions of the WHPAs where bedrock aquifers (e.g., TCW, Mt. Simon) are the uppermost aquifers.

Quaternary geologic sensitivity in the Coon Rapids WHPAs is primarily Low or Moderate, though there is a region of High geologic sensitivity between Wells 15 and 25. Quaternary Wells 17, 22, and 23 are located in areas of Moderate geologic sensitivity, and Quaternary Wells 19, 20, and 21 are located in areas of Low geologic sensitivity.

Bedrock geologic sensitivity is Low except for approximately the northern two-thirds of the Well 6 WHPA where the geologic sensitivity of the TCW aquifer is Moderate.

The second step in the assessment is to refine the geologic sensitivity using water quality data from the water supply wells. Recent tritium sampling was conducted in summer 2010 at Coon Rapids Wells 11, 17, 20, 23, and 24 (see Appendix E) and in July 2015 at Wells 2, 5, 6, 9, 14, 18, and 21 (MDH, 2015c). Tritium (^3H), a radioactive isotope of hydrogen, has been used extensively to date groundwater. Tritium activities peaked during atmospheric hydrogen bomb testing of the 1950s and 1960s, and values of ^3H in precipitation reached a maximum of approximately 10,000 T.U. (tritium units) in 1963 (Mazor, 2004). Natural production of ^3H in the upper atmosphere introduces approximately 5 T.U. to precipitation each

year (Mazor, 2004). Because ^{3}H has a relatively short half-life of 12.43 years, radioactive decay since the bomb peak has reduced tritium activities to near background levels and ^{3}H is used mostly for relative age dating today. Groundwater that has little or no detectible ^{3}H is stated to be "vintage" or pre-bomb. Groundwater with detectable values of ^{3}H is stated to be "young" or post-bomb. The presence of tritium at concentrations above 1 tritium unit indicates the presence of a significant fraction of post-1954 (i.e., recently infiltrated) water in the groundwater sample. Table 4 summarizes the results of the 2010 and 2015 tritium sampling events. Tritium was not detected in the samples collected at Wells 5 and 18. Tritium was detected at similar concentrations of 2.6, 2.9, 2.7, 1.8, and 2.0 NTU at Wells 2, 9, 11, 14, and 17, respectively, and at higher concentrations of 6.8, 6.9, 8.6, 7.7, and 7.7 NTU at Wells 6, 20, 21, 23, and 24, respectively.

When water quality data does not indicate the presence of tritium or other constituents that are consistent with contamination from the surface the aquifer vulnerability classification and the geologic sensitivity rating can be the same. The presence of tritium in groundwater samples from a well suggests that the water traveled vertically from the ground surface to the aquifer in less than about 50 years. When tritium has been detected in a well, geologic sensitivity ratings of low or very low would not be consistent with water quality data, unless groundwater flow information would indicate a nearby connection to an area of rapid vertical movement of water (e.g., a buried bedrock valley filled with sand and gravel) where water could travel from the surface to the aquifer quickly enough that tritium could be detected in a well with a geologic sensitivity rating of low or very low. If there is no hydraulic connection to an area of rapid vertical movement of water the aquifer vulnerability would need to be classified as moderate to explain the presence of tritium in the well.

Figure 11 shows the final aquifer vulnerability map for the uppermost aquifer supplying water to municipal wells in each of the Coon Rapids DWSMAs. Within the West DWSMA, tritium was detected at Wells 6, 11, 14, 17, 20, 23, and 24. The parcels intersected by the Well 6 WHPA were assigned Moderate vulnerability; while the geologic sensitivity at Well 6 itself was Low, a Moderate vulnerability at minimum must be assigned to this region due to the tritium detection at Well 6. Wells 11, 14, 17, 23, 24, and 25 are located within regions of Moderate geologic sensitivity. The geologic sensitivity is Low at Well 20. Due to the tritium detections at multiple wells, most of the West DWSMA was assigned Moderate vulnerability. The area of High geologic sensitivity near Wells 15 and 25 was assigned High vulnerability; mapping of the boundaries of the High vulnerability area to correspond to geographically identifiable features resulted in Wells 14 and 25 being located in the High vulnerability area. In the absence of recent water quality data for Wells 4 and 12, Low geologic sensitivity was mapped to Low vulnerability where the Well 4 and Well 12 capture zone are the uppermost capture zones in the DWSMA.

The Southeast DWSMA was assigned Low vulnerability due to Low geologic sensitivity in the Well 5 WHPA and a tritium non-detect at Well 5.

Low vulnerability was assigned to the parcels within the Northeast DWSMA that intersect the Well 18 WHPA because the geologic sensitivity of the Mt. Simon Sandstone is Low and no tritium was detected at Well 18. The remainder of the Northeast DWSMA was assigned Moderate vulnerability. Although the geologic sensitivity of this region is primarily low, tritium was detected at Wells 2, 9, and 21, requiring a

minimum Moderate vulnerability. While the tritium value of 8.6 NTU at Well 21 is high, this value is not inconsistent with the definition of Moderate vulnerability (travel times from years to decades) and the Quaternary stratigraphy near Well 21 (Figures 3 and 4) includes some confining units.

7.0 Recommendations

It is recommended that the City work with the MDH to conduct tritium sampling of the municipal wells at least every ten years in order to have current data available when updating the aquifer vulnerability assessment as part of the required decennial wellhead protection plan amendments.

A conjunctive delineation was not performed due to the absence of water quality data that definitively indicate groundwater under the influence of surface water. Per current MDH policy, it is recommended that additional water quality sampling (e.g., oxygen isotopes) be conducted at the City wells nearest the region of High vulnerability and Quaternary wells whose capture zones extend under the Mississippi River (e.g., Wells 14, 15, 17, 20, 22, 23, and 25) during the life of this WHPP in order to assess the need for a conjunctive delineation in the next WHPP amendment.

8.0 Supporting Data Files

The groundwater model files and GIS files are included in Appendix G. (Appendix G can be found in the "Part1" folder on the CD.)

The groundwater model can be reviewed using MODFLOW-NWT (Niswonger et al., 2011). MODPATH files can be reviewed using MODPATH Version 5.

All coordinates in the modeling files are based on UTM NAD 83 Zone 15 N datum. Elevations are in meters above mean sea level (m MSL). Time units are days. Length units are meters.

The GIS files have been named according to the MDH conventions. Shapefiles are in UTM NAD83 Zone 15 N datum.

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Tables

Table 1

Assessment of Data Elements
Coon Rapids WHPP Amendment

Data Element	Present and Future Implications				Data Source
	Use of the Well s	Delineation Criteria	Quality and Quantity of Well Water	Land and Groundwater Use in DWSMA	
Precipitation	M	L	M	M	Minnesota Climatology Working Group
Geology					
Maps and geologic descriptions	M	H	H	H	MGS, CWI
Subsurface data	M	H	H	H	MGS, MDH, CWI
Borehole geophysics	M	M	M	M	MGS
Surface geophysics	L	L	L	L	Not Available
Maps and soil descriptions	L	M	M	M	MGS, NRCS
Eroding lands					
Water Resources					
Watershed units	L	L	L	L	DNR
List of public waters	L	L	L	L	DNR
Shoreland classifications					
Wetlands map					
Floodplain map					
Land Use					
Parcel boundaries map	L	H	L	L	Metropolitan Council, Anoka County
Political boundaries map	L	L	L	L	MNGEO
PLS map	L	L	L	L	DNR
Land use map and inventory					
Comprehensive land use map					
Zoning map					
Public Utility Services					
Transportation routes and corridors	L	M	L	L	MNDOT
Storm/sanitary sewers and PWS system map	L	L	L	L	City of Coon Rapids
Oil and gas pipelines map					

Definitions Used for Assessing Data Elements:

High (H) - the data element has a direct impact
Moderate (M) - the data element has an indirect or marginal impact
Low (L) - the data element has little if any impact
Shaded - the data element was not required by MDH for preparing the WHP plan

CWI – Minnesota County Well Index
DNR – Minnesota Department of Natural Resources
MNGEO - Minnesota Geospatial Information Office
MDH – Minnesota Department of Health
MNDOT – Minnesota Department of Transportation
MPCA – Minnesota Pollution Control Agency
NRCS – Natural Resources Conservation Service
SSURGO – Soil Survey Geographic Database
USGS – United States Geological Survey

Table 1

Assessment of Data Elements (Continued)

Data Element	Present and Future Implications				Data Source
	Use of the Well s	Delineation Criteria	Quality and Quantity of Well Water	Land and Groundwater Use in DWSMA	
Public drainage systems map/lis	L	L	L	L	City of Coon Rapids
Records of well construction, maintenance, and use	H	H	L	L	City of Coon Rapids, CWI, MDH files
Surface Water Quantity					
Stream flow data	L	L	L	L	DNR
Ordinary high water mark data	L	L	L	L	DNR
Permitted withdrawals	L	L	L	L	DNR
Protected levels/flows	L	L	L	L	DNR
Water use conflicts	L	L	L	L	DNR
Groundwater Quantity					
Permitted withdrawals	H	H	H	H	DNR
Groundwater use conflicts	L	L	L	L	DNR
Water levels	H	H	H	H	CWI, MDH
Surface Water Quality					
Stream and lake water quality management classification					
Monitoring data summary	L	L	L	L	MPCA, MDH
Groundwater Quality					
Monitoring data	H	H	H	H	MDH
Isotopic data	H	H	H	H	MDH
Tracer studies	L	L	L	L	Not Available
Contamination site data	L	L	M	M	MPCA, MDH
Property audit data from contamination sites					
MPCA and MDA spills/release reports	L	L	L	L	MDH, MPCA

Definitions Used for Assessing Data Elements:

High (H) - the data element has a direct impact
Moderate (M) - the data element has an indirect or marginal impact
Low (L) - the data element has little if any impact
Shaded - the data element was not required by MDH for preparing the WHP plan

CWI – Minnesota County Well Index
DNR – Minnesota Department of Natural Resources
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MDH – Minnesota Department of Health
MNDOT – Minnesota Department of Transportation
MPCA – Minnesota Pollution Control Agency
NRCS – Natural Resources Conservation Service
SSURGO – Soil Survey Geographic Database
USGS – United States Geological Survey

Table 2

Water Supply Well Information
Coon Rapids WHPP Amendment

Local Well ID	Unique Number	Use/ Status[1]	Casing Diameter (in.)	Casing Depth (ft.)	Well Depth (ft.)	Year Constructed	Aquifer	Well Vulnerability
1	202926	S	12	220	462	1957	St. Lawrence – Eau Claire	Not Vulnerable
2	202929	S	12	226	788	1957	St. Lawrence – Mt. Simon	Not Vulnerable
4	202972	S	20 x 16	233	605	1960	Tunnel City – Mt. Simon	Not Vulnerable
5	202951	S	24 x 16	242	695	1961	Tunnel City – Mt. Simon	Not Vulnerable
6	202937	S	20	118	158	1960	Tunnel City	Vulnerable
7	202943	S	24 x 16	189	632	1964	Tunnel City – Mt. Simon	Vulnerable
8	202932	P	24 x 16	283	700	1965	Tunnel City – Mt. Simon	Not Vulnerable
9	202931	P	24 x 16	294	500	1969	Tunnel City – Eau Claire	Not Vulnerable
10	202930	P	30 x 24 x 16	272	684	1970	Tunnel City – Mt. Simon	Not Vulnerable
11	202965	P	24	157	627	1972	Tunnel City – Mt. Simon	Vulnerable
12	168721	S	24 x 16	208	604	1975	Tunnel City – Mt. Simon	Not Vulnerable
13	168720	P	24 x 16	395	693	1977	Tunnel City – Mt. Simon	Not Vulnerable
14	110460	P	30 x 20	328	613	1977	Tunnel City – Mt. Simon	Not Vulnerable
15	110461	P	30 x 20	225	615	1976	Tunnel City – Mt. Simon	Vulnerable
16	161413	S	30 x 24 x 18	395	653	1981	Wonewoc – Mt. Simon	Not Vulnerable

[1] P = Primary, S = Seasonal

Table 2

Water Supply Well Information (continued)
Coon Rapids WHPP Amendment

Local Well ID	Unique Number	Use/ Status[1]	Casing Diameter (in.)	Casing Depth (ft.)	Well Depth (ft.)	Year Constructed	Aquifer	Well Vulnerability
17	150357	P	30	81	121	1981	Confined Quaternary	Vulnerable
18	110469	S	36 x 30 x 24	575	637	1986	Mt. Simon	Not Vulnerable
19	110475	P	30 x 20	115	135	1987	Confined Quaternary	Vulnerable
20	420956	P	30 x 20	95	135	1988	Confined Quaternary	Vulnerable
21	474384	P	24 x 18	170	203	1990	Confined Quaternary	Vulnerable
22	474385	S	24	80	105	1990	Confined Quaternary	Vulnerable
23	463020	S	30 x 24	93	128	1991	Confined Quaternary	Vulnerable
24	674478	P	36 x 30 x 24	241	388	2003	Tunnel City – Wonewoc	Vulnerable
25	674479	P	36 x 24	229	388	2003	Tunnel City – Wonewoc	Vulnerable

[1] P = Primary, S = Seasonal

Table 3

Annual and Projected Pumping Rates for Coon Rapids Wells
Coon Rapids WHPP Amendment

		Total Annual Withdrawal (gal/yr)				
Unique Number	**Well Name**	**2010**	**2011**	**2012**	**2013**	**2014**
202926	1	2,474,000	2,056,000	5,603,000	11,794,000	3,625,000
202929	2	2,510,000	2,107,000	5,257,000	16,688,000	3,438,000
202972	4	454,000	237,000	328,000	4,995,000	2,330,000
202951	5	11,664,000	10,940,000	18,240,000	23,187,000	2,019,000
202937	6	11,404,000	14,692,000	18,891,000	28,209,000	2,022,000
202943	7	8,143,000	15,479,000	19,480,000	36,111,000	2,966,000
202932	8	266,464,000	146,631,000	124,262,000	87,333,000	153,358,000
202931	9	154,980,000	279,287,000	296,930,000	240,707,000	234,551,000
202930	10	289,927,000	321,549,000	329,619,000	260,648,000	48,304,000
202965	11	292,273,000	335,685,000	301,213,000	227,880,000	230,392,000
168721	12	8,107,000	13,305,000	19,113,000	26,242,000	1,961,000
168720	13	26,545,000	79,698,000	42,333,000	56,801,000	84,661,000
110460	14	82,530,000	65,386,000	104,955,000	97,452,000	89,025,000
110461	15	141,580,000	132,889,000	284,911,000	279,754,000	341,462,000
161413	16	6,637,000	268,000	1,340,000	1,462,000	859,000
150357	17	166,967,000	324,602,000	238,277,000	210,720,000	263,843,000
110469	18	1,461,000	1,264,000	1,103,000	3,664,000	2,340,000
110475	19	309,781,000	333,579,000	206,674,000	222,999,000	190,172,000
420956	20	348,896,000	275,096,000	157,449,000	146,620,000	161,888,000
474384	21	300,898,000	327,105,000	300,839,000	218,424,000	227,594,000
474385	22	2,315,000	33,171,000	34,297,000	23,168,000	45,768,000
463020	23	1,482,000	7,167,000	16,255,000	12,440,000	18,061,000
674478	24	229,680,000	20,193,000	218,647,000	220,698,000	160,699,000
674479	25	210,722,000	18,157,000	213,137,000	204,520,000	161,852,000
	Totals	2,877,894,000	2,760,543,000	2,959,153,000	2,662,516,000	2,433,190,000

Source: City water use records

Table 3

Annual and Projected Pumping Rates for Coon Rapids Wells
Coon Rapids WHPP Amendment

		Percentage of Annual Withdrawal					
Unique Number	Well Name	2010	2011	2012	2013	2014	Average Annual % of Withdrawal
202926	1	0.1%	0.1%	0.2%	0.4%	0.1%	0.2%
202929	2	0.1%	0.1%	0.2%	0.6%	0.1%	0.2%
202972	4	0.0%	0.0%	0.0%	0.2%	0.1%	0.1%
202951	5	0.4%	0.4%	0.6%	0.9%	0.1%	0.5%
202937	6	0.4%	0.5%	0.6%	1.1%	0.1%	0.5%
202943	7	0.3%	0.6%	0.7%	1.4%	0.1%	0.6%
202932	8	9.3%	5.3%	4.2%	3.3%	6.3%	5.7%
202931	9	5.4%	10.1%	10.0%	9.0%	9.6%	8.8%
202930	10	10.1%	11.6%	11.1%	9.8%	2.0%	8.9%
202965	11	10.2%	12.2%	10.2%	8.6%	9.5%	10.1%
168721	12	0.3%	0.5%	0.6%	1.0%	0.1%	0.5%
168720	13	0.9%	2.9%	1.4%	2.1%	3.5%	2.2%
110460	14	2.9%	2.4%	3.5%	3.7%	3.7%	3.2%
110461	15	4.9%	4.8%	9.6%	10.5%	14.0%	8.8%
161413	16	0.2%	0.0%	0.0%	0.1%	0.0%	0.1%
150357	17	5.8%	11.8%	8.1%	7.9%	10.8%	8.9%
110469	18	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%
110475	19	10.8%	12.1%	7.0%	8.4%	7.8%	9.2%
420956	20	12.1%	10.0%	5.3%	5.5%	6.7%	7.9%
474384	21	10.5%	11.8%	10.2%	8.2%	9.4%	10.0%
474385	22	0.1%	1.2%	1.2%	0.9%	1.9%	1.0%
463020	23	0.1%	0.3%	0.5%	0.5%	0.7%	0.4%
674478	24	8.0%	0.7%	7.4%	8.3%	6.6%	6.2%
674479	25	7.3%	0.7%	7.2%	7.7%	6.7%	5.9%

Table 3

Annual and Projected Pumping Rates for Coon Rapids Wells
Coon Rapids WHPP Amendment

		Projected Water Use (2020)			Maximum Total Pumping for Model Input[3]		
Unique Number	Well Name	Total[1] (gal/yr)	% of Total Projected Water Use Well[2]	Projected Well Pumpage Based on % (gal/yr)	gal/yr	gal/day	m^3/day
202926	1		0.2%	6,002,060	11,794,000	32,312	122
202929	2		0.2%	6,002,060	16,688,000	45,721	173
202972	4		0.1%	3,001,030	4,995,000	13,685	52
202951	5		0.5%	15,005,150	23,187,000	63,526	240
202937	6		0.5%	15,005,150	28,209,000	77,285	293
202943	7		0.6%	18,006,180	36,111,000	98,934	375
202932	8		5.7%	171,058,710	266,464,000	730,038	2,764
202931	9		8.8%	264,090,640	296,930,000	813,507	3,080
202930	10		8.9%	267,091,670	329,619,000	903,066	3,419
202965	11		10.1%	303,104,030	335,685,000	919,685	3,482
168721	12		0.5%	15,005,150	26,242,000	71,896	272
168720	13		2.2%	66,022,660	84,661,000	231,948	878
110460	14		3.2%	96,032,960	104,955,000	287,548	1,089
110461	15		8.8%	264,090,640	341,462,000	935,512	3,542
161413	16		0.1%	3,001,030	6,637,000	18,184	69
150357	17		8.9%	267,091,670	324,602,000	889,321	3,367
110469	18		0.1%	3,001,030	3,664,000	10,038	38
110475	19		9.2%	276,094,760	333,579,000	913,915	3,460
420956	20		7.9%	237,081,370	348,896,000	955,879	3,619
474384	21		10.0%	300,103,000	327,105,000	896,178	3,393
474385	22		1.0%	30,010,300	45,768,000	125,392	475
463020	23		0.4%	12,004,120	18,061,000	49,482	187
674478	24		6.2%	186,063,860	229,680,000	629,260	2,382
674479	25		5.9%	177,060,770	213,137,000	583,937	2,211
	Totals	3,001,030,000		3,001,030,000	3,758,131,000	10,296,249	38,978

Appropriation 3,200,000,000

[1] 2020 projected average daily demand interpolated from land use-based projections in Coon Rapids Comprehensive Water System Plan (Bolton & Menk, 2014) for 2019 (8.11 MGD) and 2024 (8.67 MGD).

[2] Percentages for all wells are based the average % of annual withdrawal for the period 2010 through 2014

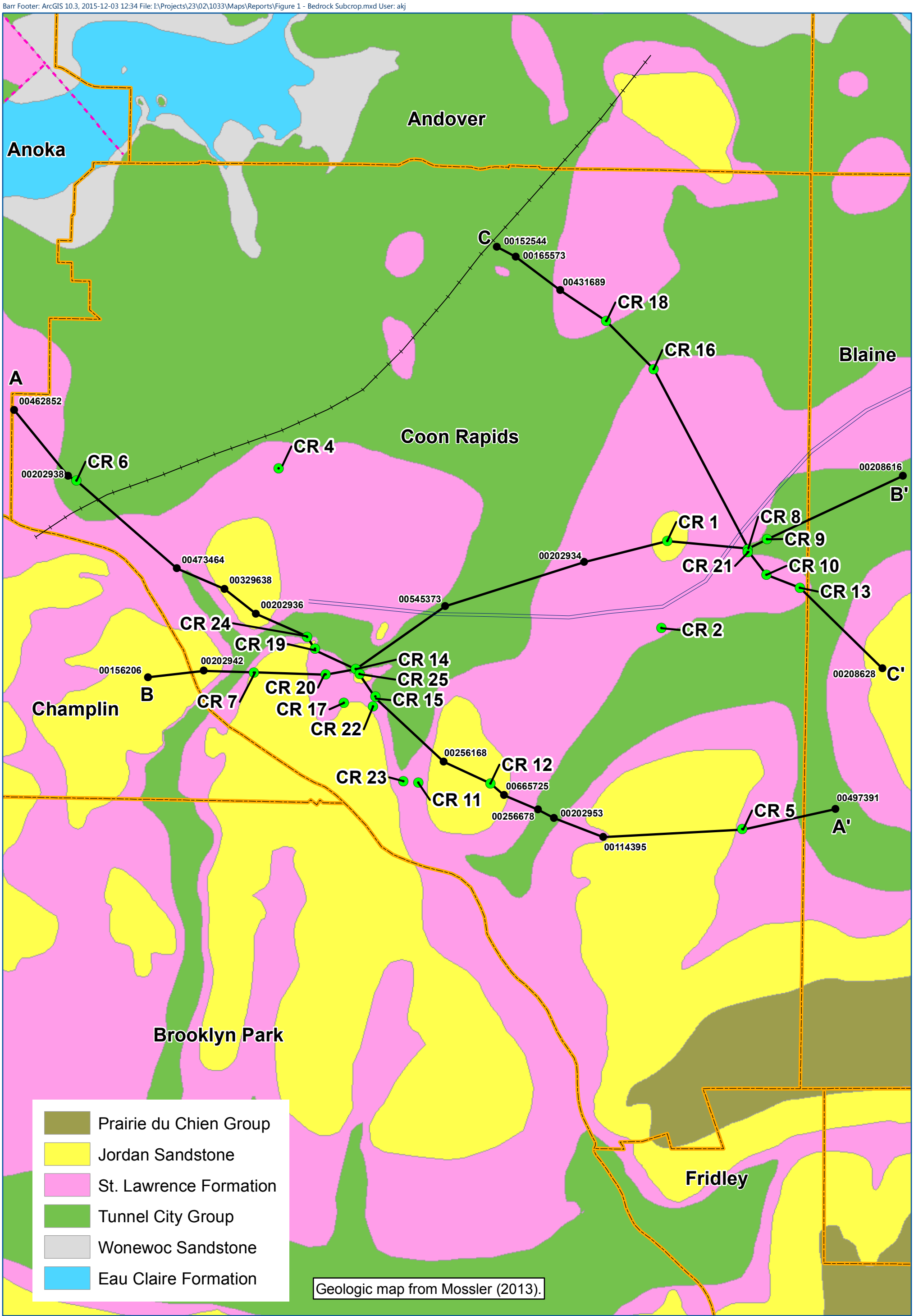
[3] For each well, the greater of the estimated pumpage based on projected 2020 withdrawal and actual annual pumpage for 2010 - 2014.

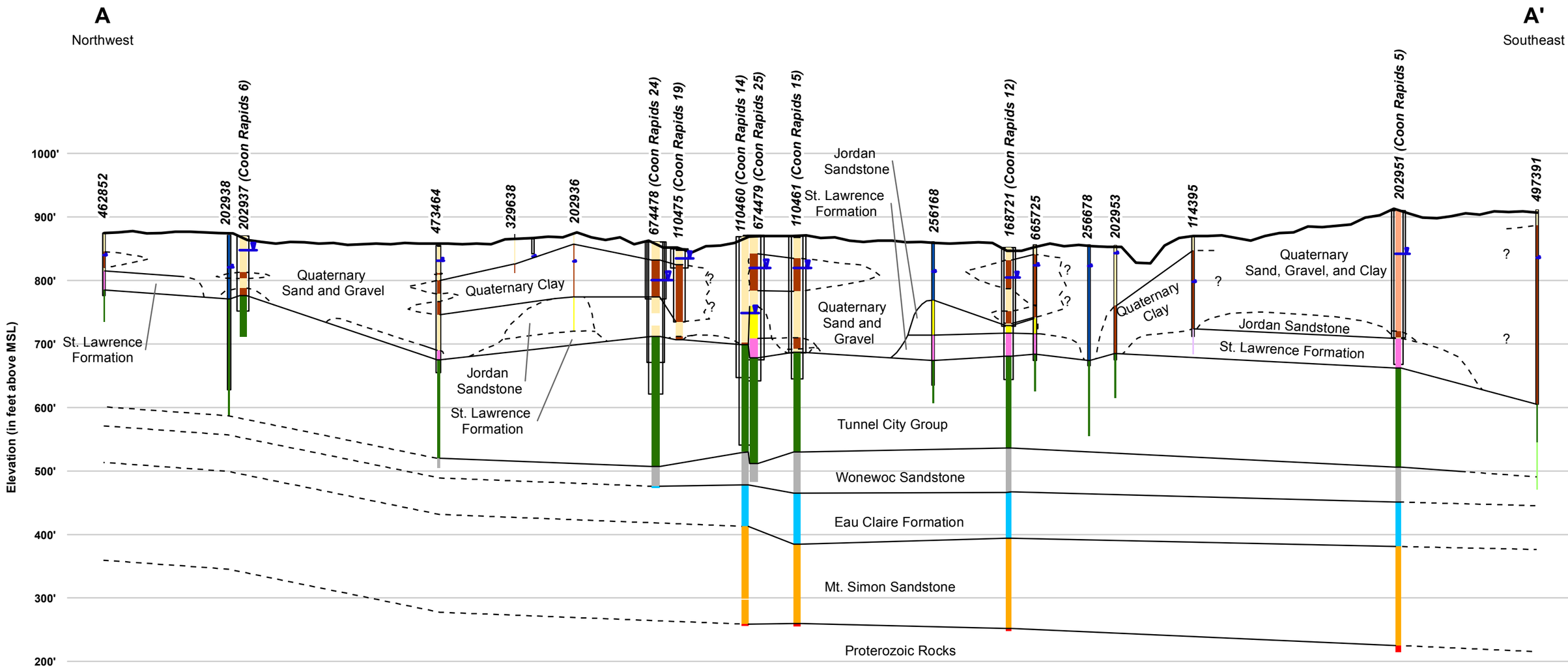
Table 4

Tritium Sampling Results
Coon Rapids WHPP Amendment

Local Well ID	Unique Number	Aquifer	Sample Date	Tritium Concentration (NTU)
2	202929	St. Lawrence – Mt. Simon	7/9/2015	2.6
5	202951	Tunnel City – Mt. Simon	7/9/2015	<.8
6	202937	Tunnel City	7/9/2015	6.8
9	202931	Tunnel City – Eau Claire	7/9/2015	2.9
11	202965	Tunnel City – Mt. Simon	6/8/2010	2.7
14	110460	Tunnel City – Mt. Simon	7/9/2015	1.8
17	150357	Confined Quaternary	6/8/2010	2.0
18	110469	Mt. Simon	7/9/2015	<.8
20	420956	Confined Quaternary	6/8/2010	6.9
21	474384	Confined Quaternary	7/9/2015	8.6
23	463020	Confined Quaternary	6/8/2010	7.7
24	674478	Tunnel City - Wonewoc	7/15/2010	7.7

Figures


Anoka
Andover
Blaine
Coon Rapids
Champlin
Brooklyn Park
Fridley
A
A'
B
B'
C
C'
00462852
00202938
00473464
00329638
00202936
00156206
00202942
00545373
00202934
00152544
00165573
00431689
00208616
00208628
00256168
00665725
00256678
00202953
00114395
00497391
CR 1
CR 2
CR 4
CR 5
CR 6
CR 7
CR 8
CR 9
CR 10
CR 11
CR 12
CR 13
CR 14
CR 15
CR 16
CR 17
CR 18
CR 19
CR 20
CR 21
CR 22
CR 23
CR 24
CR 25
Prairie du Chien Group
Jordan Sandstone
St. Lawrence Formation
Tunnel City Group
Wonewoc Sandstone
Eau Claire Formation
Geologic map from Mossler (2013).
Coon Rapids Municipal Well
Cross Section Well
Cross Section Trace
Municipal Boundary
Monocline
Syncline
Fault
N
0
3,000
6,000
Feet
BARR
BEDROCK SUBCROP
Coon Rapids WHPP Amendment
City of Coon Rapids, MN
FIGURE 1



Static Water Level
Ground Surface
Well Casing

Quaternary Sand and Gravel
Quaternary Clay
Fill and Topsoil
Quaternary Sand, Gravel, and Clay
Undifferentiated Quaternary
Jordan Sandstone
St. Lawrence Formation

St. Lawrence Formation - Tunnel City Group
Tunnel City Group
Tunnel City Group - Wonewoc Sandstone
Wonewoc Sandstone
Eau Claire Formation
Mt. Simon Sandstone
Proterozoic Rocks

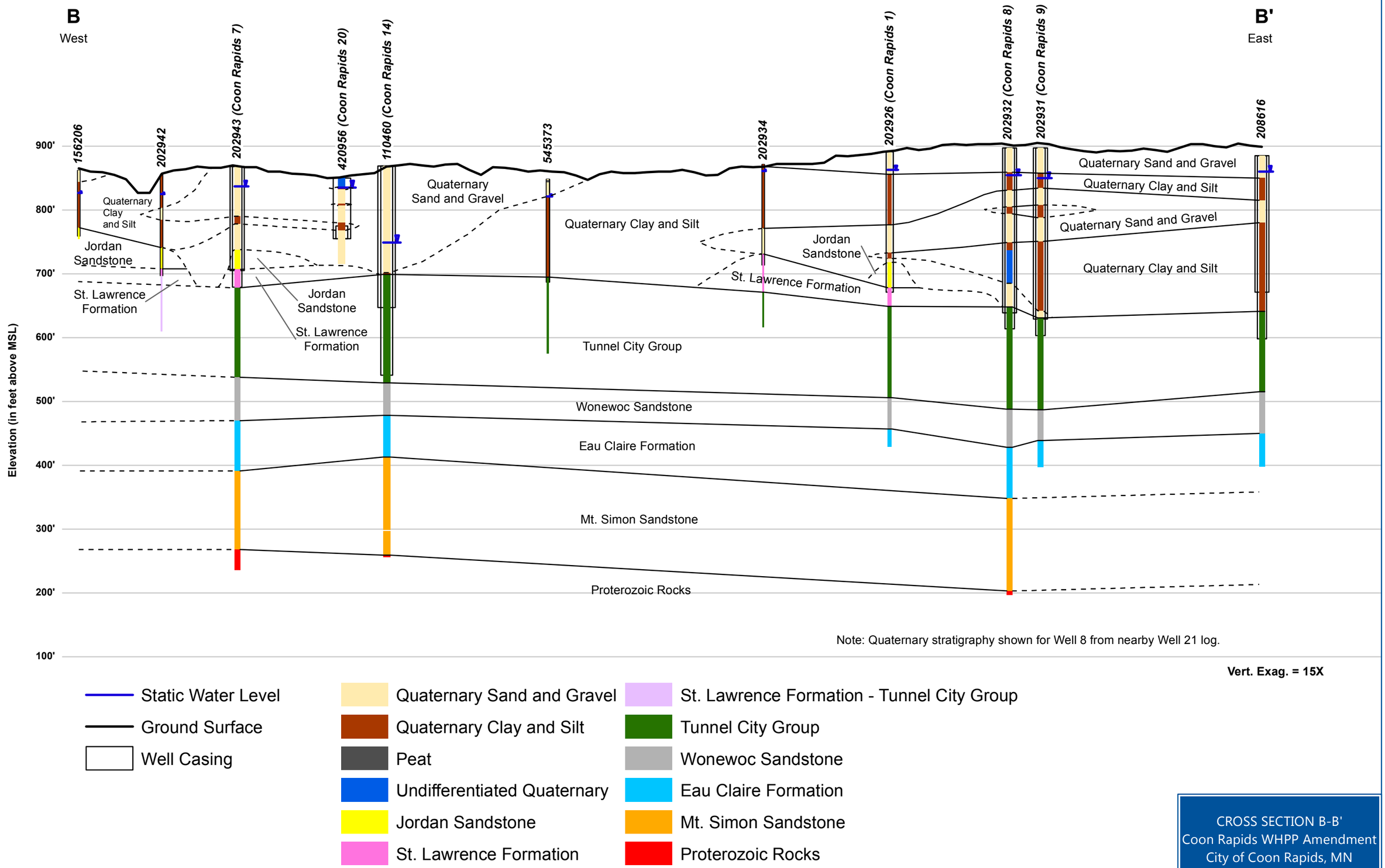
Vert. Exag. = 15X

BARR

CROSS SECTION A-A'
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE 2

Barr Footer: ArcGIS 10.3, 2015-12-02 08:08 File: I:\Projects\23\02\1033\Maps\Reports\Figure 2 - Cross Section A-A.mxd User: akj

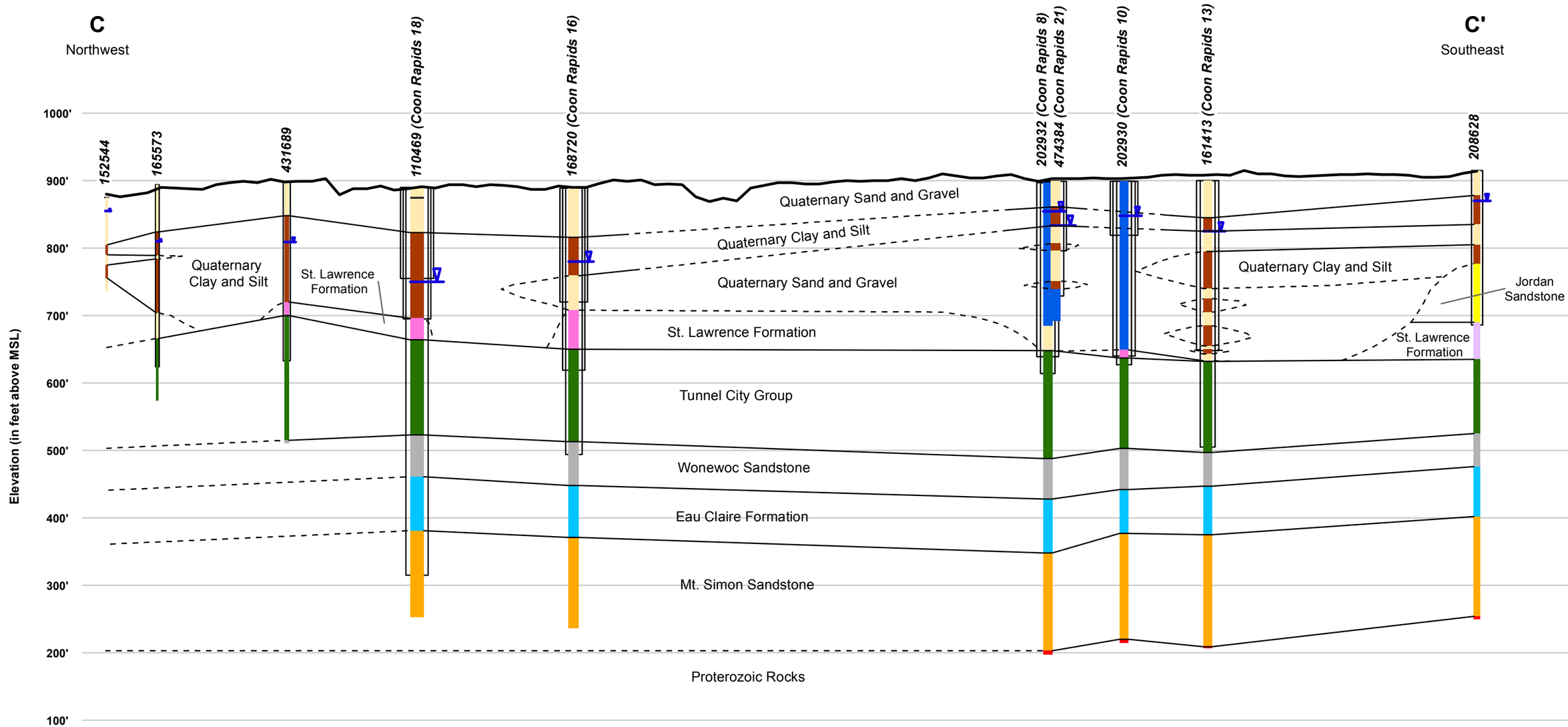


CROSS SECTION B-B'
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE 3

BARR

Barr Footer: ArcGIS 10.3, 2015-12-02 09:42 File: I:\Projects\23\02\1033\Maps\Reports\Figure 3 - Cross Section B-B.mxd User: akj



Static Water Level
Ground Surface
Well Casing

Quaternary Sand and Gravel
Quaternary Clay and Silt
Peat
Undifferentiated Quaternary
Jordan Sandstone
St. Lawrence Formation

St. Lawrence Formation - Tunnel City Group
Tunnel City Group
Wonewoc Sandstone
Eau Claire Formation
Mt. Simon Sandstone
Proterozoic Rocks

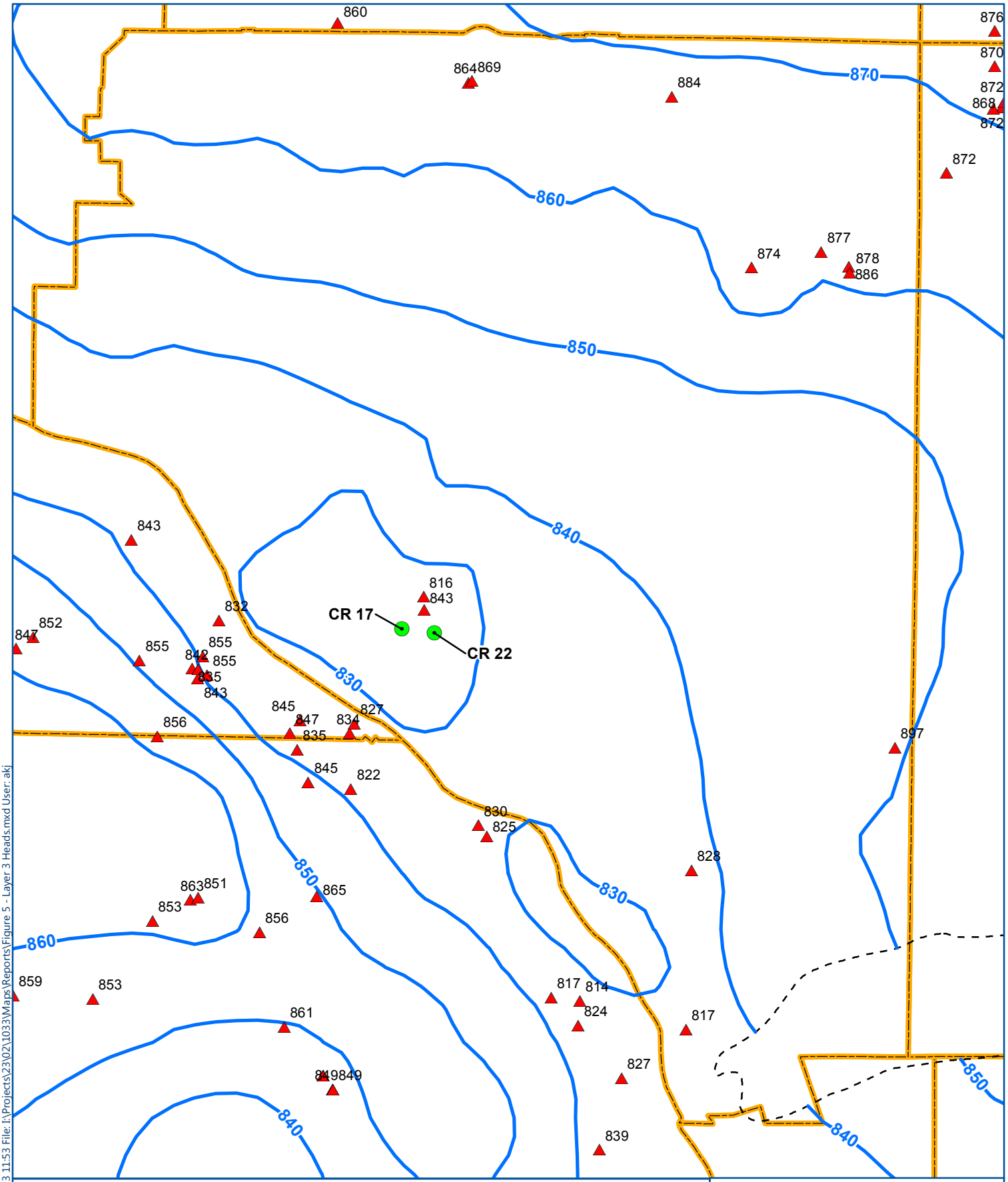
Vert. Exag. = 10X

CROSS SECTION C-C'
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE 4

BARR

Barr Footer: ArcGIS 10.3, 2015-12-02 09:01 File: I:\Projects\23\02\1033\Maps\Reports\Figure 4 - Cross Section C-C.mxd User: akj



Coon Rapids Municipal Well open to Layer 3

Layer 3 Quaternary Target

Modeled Head (ft MSL)

Prairie du Chien Group Extent

Municipal Boundary

0 4,000

Feet

BARR

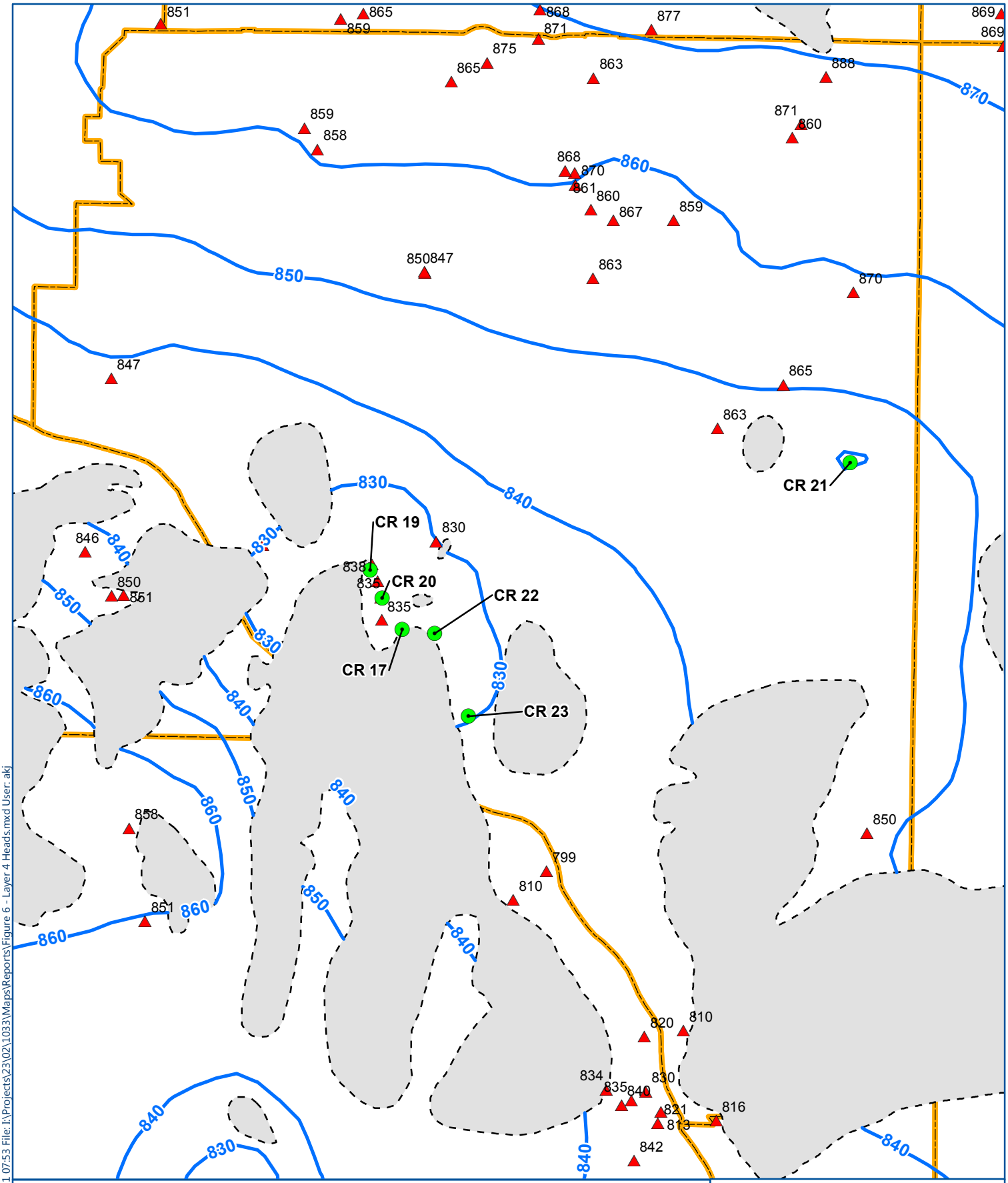
MODELED HEADS IN QUATERNARY GLACIAL DRIFT LAYER 3

Coon Rapids WHPP Amendment

City of Coon Rapids, MN

FIGURE 5

Barr Footer: ArcGIS 10.3, 2015-12-03 11:53 File: I:\Projects\23\02\1033\Maps\Reports\Figure 5 - Layer 3 Heads.mxd User: akj



Coon Rapids Municipal Well open to Layer 4

Layer 4 Quaternary Target

Modeled Head (ft MSL)

Jordan Sandstone Extent

Municipal Boundary

0 4,000 Feet

BARR

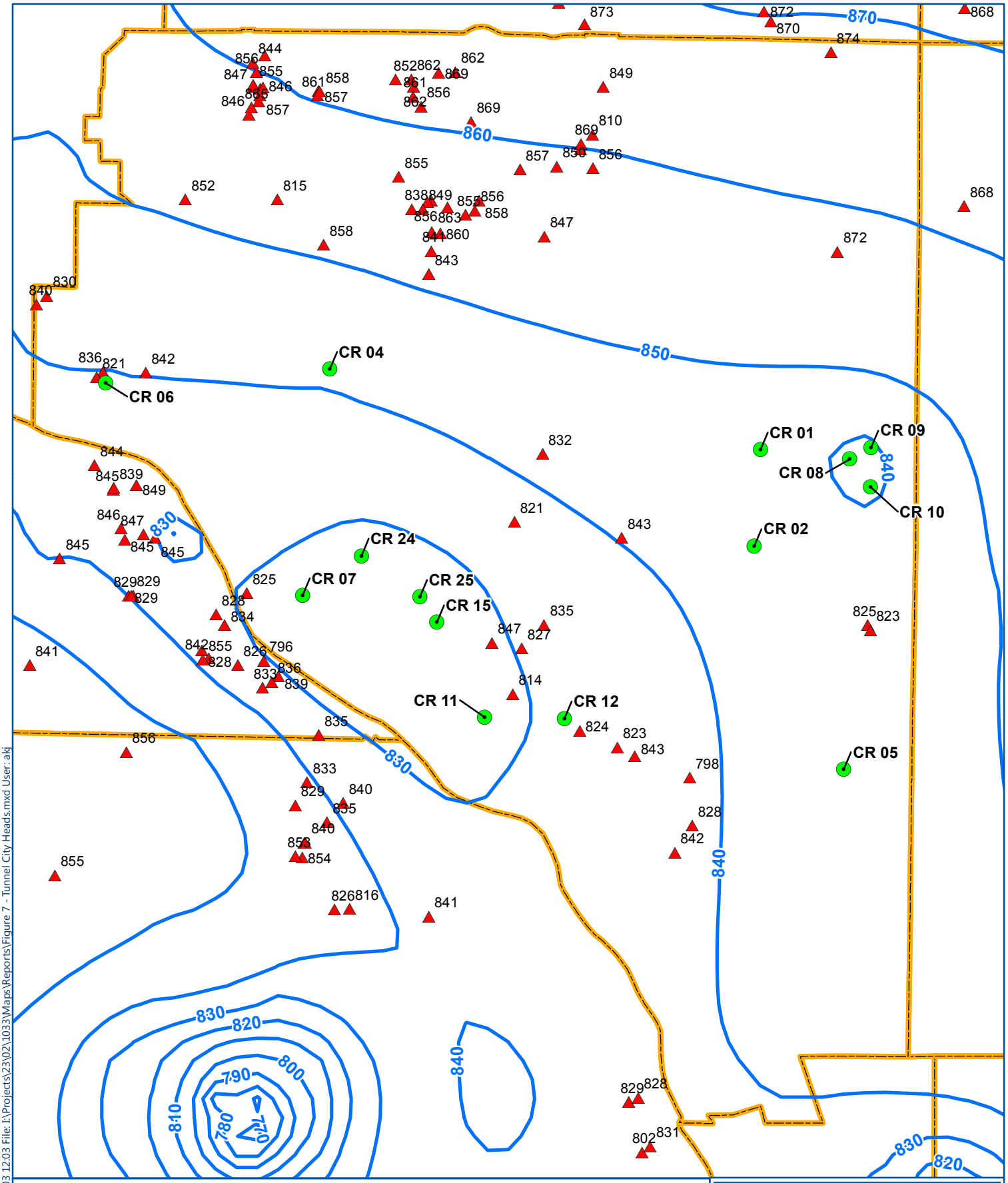
MODELED HEADS IN QUATERNARY GLACIAL DRIFT LAYER 4

Coon Rapids WHPP Amendment

City of Coon Rapids, MN

FIGURE 6

Barr Footer: ArcGIS 10.3, 2016-03-01 07:53 File: I:\Projects\23\02\1033\Maps\Reports\Figure 6 - Layer 4 Heads.mxd User: akj



Coon Rapids Municipal Well open to Tunnel City Group

Layer 6 Tunnel City Target

Modeled Head (ft MSL)

Municipal Boundary

0 4,000 Feet

BARR

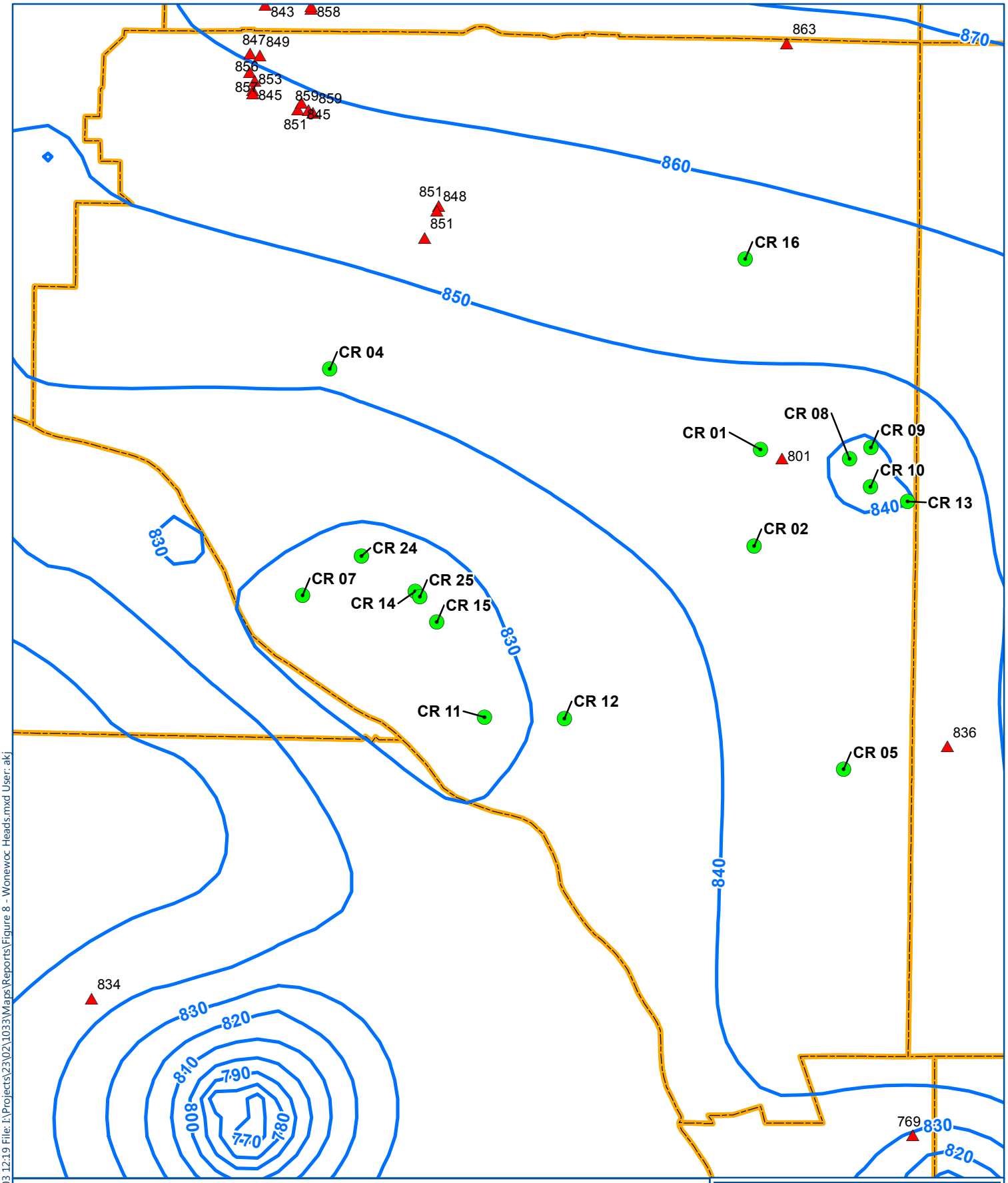
MODELED HEADS IN TUNNEL CITY GROUP LAYER 6

Coon Rapids WHPP Amendment

City of Coon Rapids, MN

FIGURE 7

Barr Footer: ArcGIS 10.3, 2015-12-03 12:03 File: I:\Projects\23\02\1033\Maps\Reports\Figure 7 - Tunnel City Heads.mxd User: akj



Coon Rapids Municipal Well open to Wonewoc Sandstone

Layer 7 Wonewoc Target

Modeled Head (ft MSL)

Municipal Boundary

0 4,000

Feet

BARR

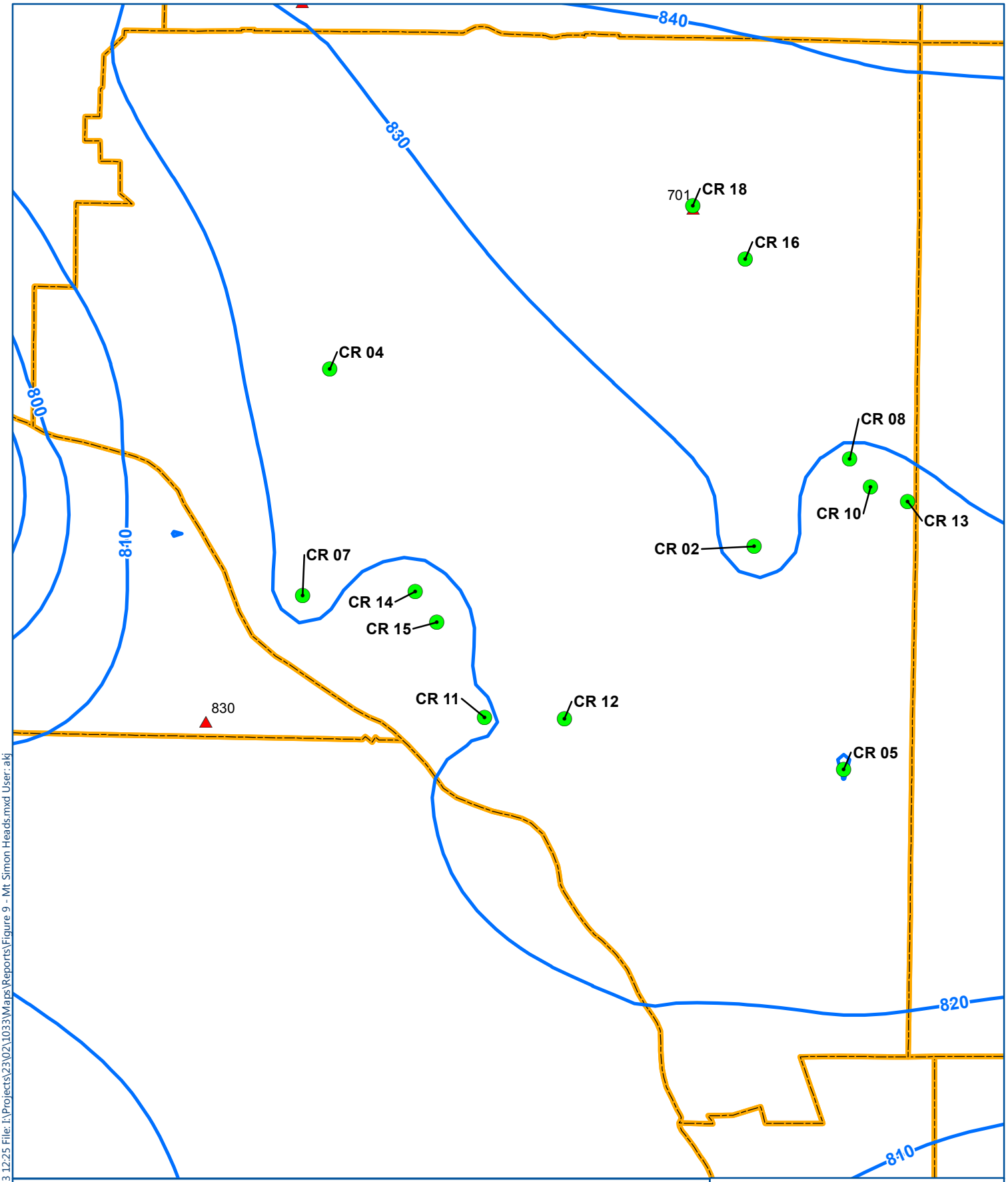
MODELED HEADS IN WONEWOC SANDSTONE LAYER 7

Coon Rapids WHPP Amendment

City of Coon Rapids, MN

FIGURE 8

Barr Footer: ArcGIS 10.3, 2015-12-03 12:19 File: I:\Projects\23\02\1033\Maps\Reports\Figure 8 - Wonewoc Heads.mxd User: akj



Coon Rapids Municipal Well open to Mt. Simon Sandstone

Layer 9 Mt. Simon Target

Modeled Head (ft MSL)

Municipal Boundary

0 4,000

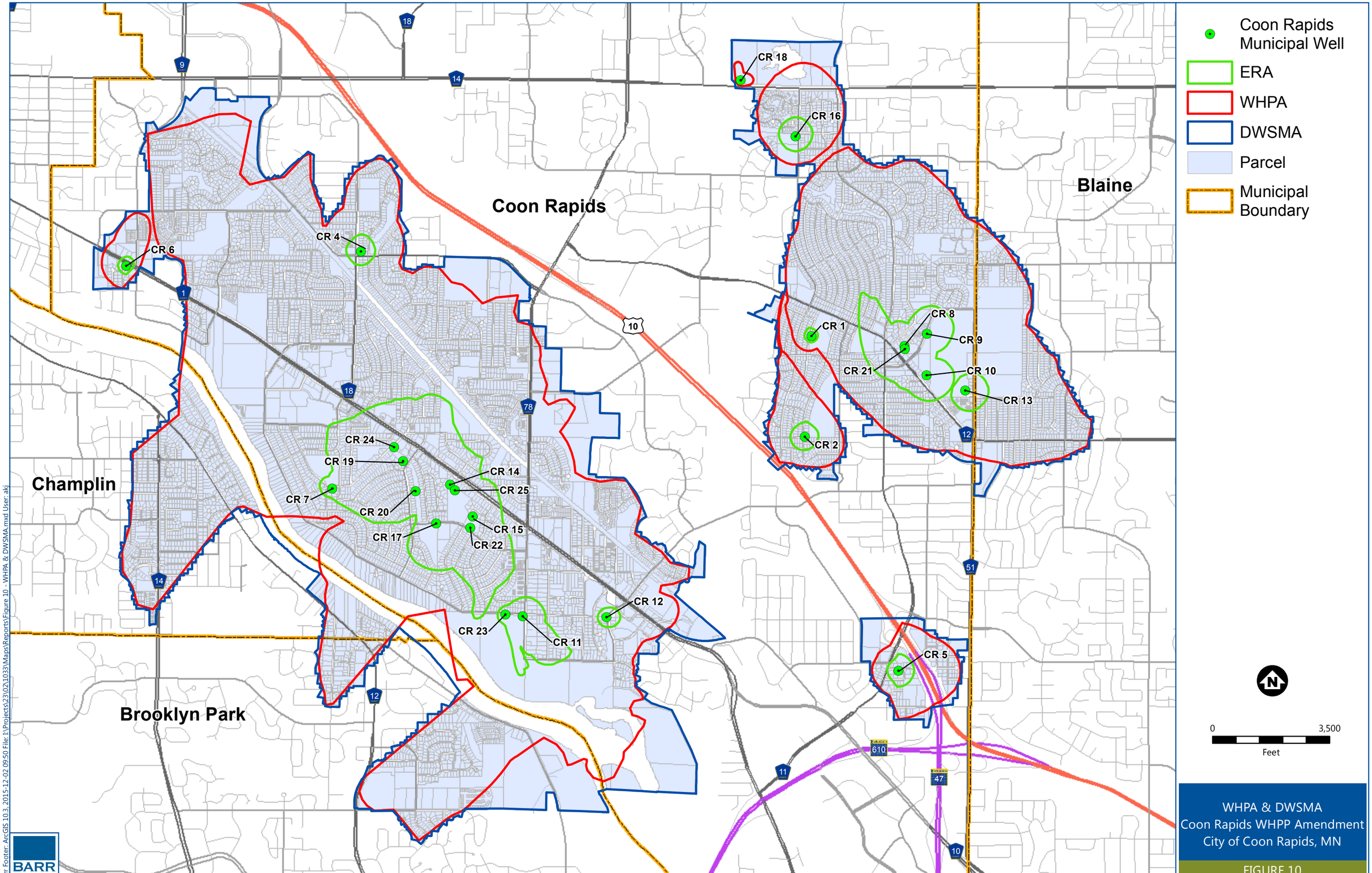
Feet

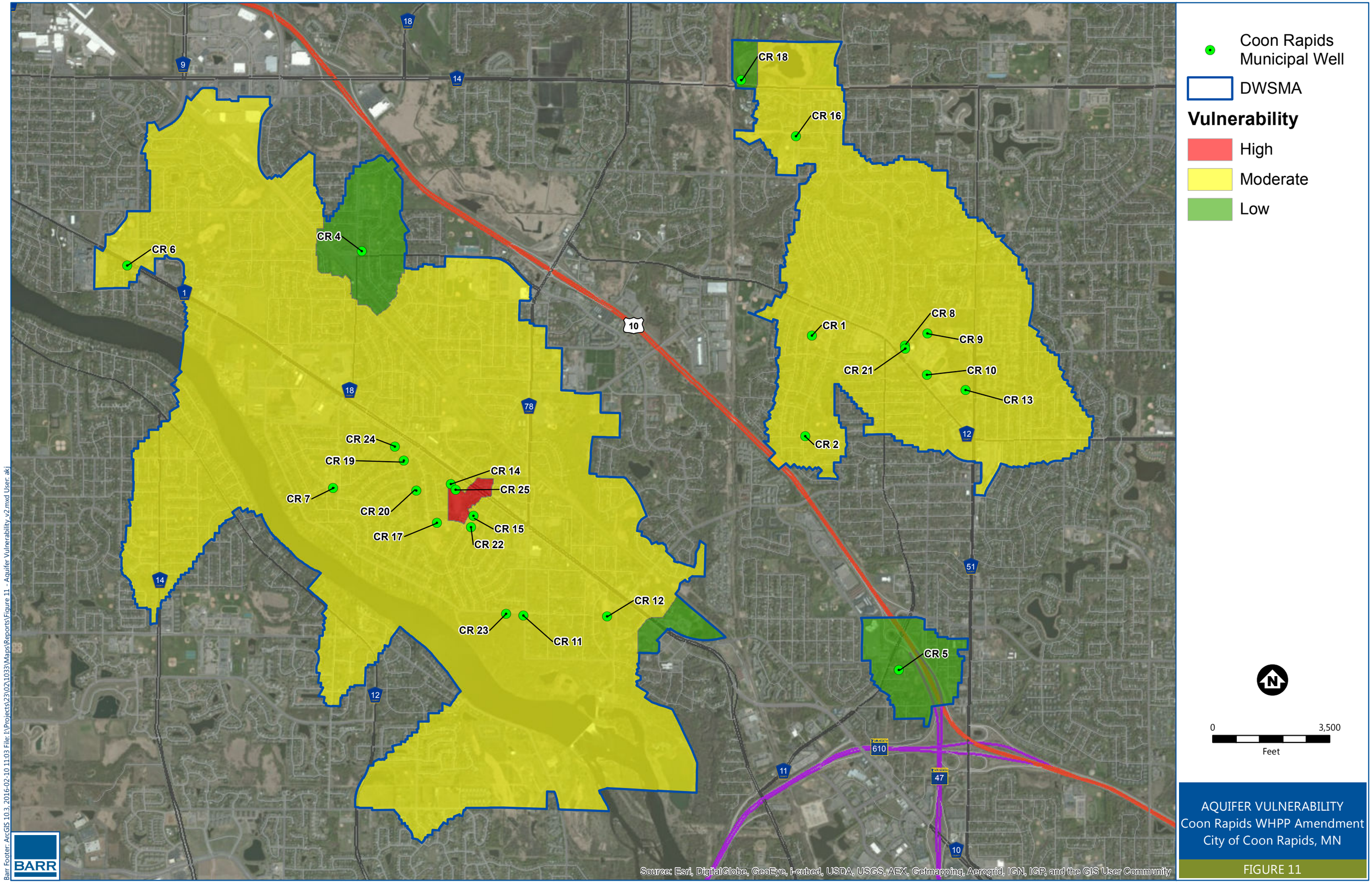
BARR

MODELED HEADS IN
MT. SIMON SANDSTONE
LAYER 9
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE 9

Barr Footer: ArcGIS 10.3, 2015-12-03 12:25 File: I:\Projects\23\02\1033\Maps\Reports\Figure 9 - Mt Simon Heads.mxd User: akj


Coon Rapids Municipal Well
ERA
WHPA
DWSMA
Parcel
Municipal Boundary
Coon Rapids
Blaine
Champlin
Brooklyn Park
CR 18
CR 16
CR 4
CR 6
CR 1
CR 8
CR 9
CR 21
CR 10
CR 13
CR 2
CR 24
CR 19
CR 14
CR 25
CR 7
CR 20
CR 15
CR 17
CR 22
CR 12
CR 23
CR 11
CR 5
0
3,500
Feet
WHPA & DWSMA
Coon Rapids WHPP Amendment
City of Coon Rapids, MN
FIGURE 10
BARR
Barr Footer: ArcGIS 10.3, 2015-12-02 09:50 File: I:\Projects\23\02\1033\Maps\Reports\Figure 10 - WHPA & DWSMA.mxd User: akj



AQUIFER VULNERABILITY
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE 11

Barr Footer: ArcGIS 10.3, 2016-02-10 11:03 File: I:\Projects\23\02\1033\Maps\Reports\Figure 11 - Aquifer Vulnerability_v2.mxd User: akj

Appendix A

Well Construction Records

Unique No. 00202926	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/06
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	BCCABD

Well Depth	Depth Completed	Date Well Completed
462 ft.	462 ft.	1957/09/00

Well Name COON RAPIDS 1

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 1
11349 NORWAY NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
0 in. t 462 ft

Casing Diameter **Weight(lbs/ft)**
12 in. t 220 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	35
CLAY	BLUE		35	50
SANDY CLAY			50	91
HARDPAN			91	114
SAND			114	135
SAND & CLAY			135	138
SAND & GRAVEL			138	158
HARDPAN			158	167
SANDROCK		SOFT	167	173
SANDROCK		SOFT	173	197
SANDROCK & SHALE			197	213
SANDROCK & SHALE			213	242
SANDROCK & SHALE			242	355
CLAY RED			355	360
SHALE & SANDROCK			360	385
SHALE & SANDROCK			385	386
SANDROCK WITH SOME SH			386	398
SANDROCK VERY SOFT			398	434
SANDROCK WITH SOME SH			434	458
SHALE			458	462

Screen N

Open Hole From 220 ft. to 462 ft.

Make Type

Static Water Level 28 ft. from Land surface Date 1957/09/00

PUMPING LEVEL (below land surface)
78 ft. after hrs. pumping 880 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam FAIRBANKS MORSE
Model HP 50 Volts 220
Drop Pipe Length ft. Capacity 600 g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED & TV 5-15-1995. LOGGED & TV BY GEOSHPERE.

USGS Quad Coon Rapids Elevation 891
Aquifer: MTPL Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012
License Business Name
Name of Driller BRANDON, J.

Report Copy

Unique No.	00202926	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	BCCABD	462	ft.	462	ft.	1957/09/00

Well Name	COON RAPIDS 1	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	891	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	35	QFUU	SAND		
QFUU = Sand	SAND = Sand							
CLAY	BLUE		35	50	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
SANDY CLAY			50	91	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
HARDPAN			91	114	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
SAND			114	135	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND & CLAY			135	138	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand		CLAY = Clay					
SAND & GRAVEL			138	158	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
HARDPAN			158	167	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
SANDROCK		SOFT	167	173	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDROCK		SOFT	173	197	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
SANDROCK & SHALE			197	213	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
SANDROCK & SHALE			213	242	CSTL	SLSN	DLMT	
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite					
SANDROCK & SHALE			242	355	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
CLAY RED			355	360	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		

Unique No.	00202926	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	BCCABD	462	ft.	462	ft.	1957/09/00

Well Name	COON RAPIDS 1	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	891	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE & SANDROCK			360	385	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SHALE & SANDROCK			385	386	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK WITH SOME SHALE			386	398	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK VERY SOFT			398	434	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK WITH SOME SHALE			434	458	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE			458	462	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No. 00202929

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/06

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	CCCCAD

Well Depth	Depth Completed	Date Well Completed
788 ft.	788 ft.	1957/06/00

Well Name COON RAPIDS 2

Drilling Method Cable Tool

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Drilling Fluid

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

Well Owner's Name COON RAPIDS 2
10911 MAGNOLIA ST
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
in. t 704 ft
in. t 788 ft

Casing Diameter **Weight(lbs/ft)**
12 in. t 226 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	36
CLAY			36	48
CLAY & GRAVEL			48	136
HARDPAN			136	145
CLAY & SAND			145	163
SAND			163	175
SAND & GRAVEL			175	218
SHALE			218	219
LIMEROCK & SHALE			219	221
LIMEROCK & SHALE			221	243
LIMEROCK & SHALE			243	258
SANDROCK & SHALE			258	391
SANDROCK & SHALE			391	439
SANDROCK & SHALE			439	472
SHALE			472	498
SANDROCK & SHALE			498	545
SANDROCK & SHALE			545	594
SANDROCK			594	670
CAVING RED SHALE			670	704
RED ROCK & SHALE			704	726
RED ROCK			726	770
SHALE			770	778
RED ROCK			778	788

Screen N

Open Hole From 226 ft. to 788 ft.

Make Type

Static Water Level 24 ft. from Land surface Date 1957/06/00

PUMPING LEVEL (below land surface)
33.5 ft. after hrs. pumping 302 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam FAIRBANKS MORSE
Model HP 30 Volts 220
Drop Pipe Length 187 ft. Capacity 500 g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

TWO OTHER PUM TESTS AT DEPTHS OF 673 & 466 FT.

PUMPING TEST NO. 3 RECORDED AT 685 FT.

M.G.S. NO. 156. GAMMA LOGGED & TV 5-15-1995. OLD PA. NO. 61-0225.

WELL WAS BACK FILLED TO 685 FT.

LOGGED & TV BY GEOSPHERE.

USGS Quad	Coon Rapids	Elevation	885
Aquifer:	MTPL	Alt Id:	80-6139

Report Copy

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012

License Business Name

Name of Driller BRANDON, J.

HE-01205-06 (Rev. 9/96)

Unique No.	00202929	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	CCCCAD	788	ft.	788	ft.	1957/06/00

Well Name	COON RAPIDS 2	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	885	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	36	QFUU	SAND		
QFUU = Sand	SAND = Sand							
CLAY			36	48	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
CLAY & GRAVEL			48	136	QPUU	CLAY	GRVL	
QPUU = Pebbly sand/silt/clay	CLAY = Clay		GRVL = Gravel					
HARDPAN			136	145	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
CLAY & SAND			145	163	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
SAND			163	175	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND & GRAVEL			175	218	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
SHALE			218	219	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
LIMEROCK & SHALE			219	221	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
LIMEROCK & SHALE			221	243	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
LIMEROCK & SHALE			243	258	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK & SHALE			258	391	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK & SHALE			391	439	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK & SHALE			439	472	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No.	00202929	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	CCCCAD	788	ft.	788	ft.	1957/06/00

Well Name	COON RAPIDS 2	**Lic. Or Reg. No.**	62012	**Name of Driller**	BRANDON, J.		
USGS Quad	Coon Rapi	**Elevation**	885	**Aquifer**	MTPL	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE			472	498	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK & SHALE			498	545	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK & SHALE			545	594	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SANDROCK			594	670	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
CAVING RED SHALE			670	704	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
RED ROCK & SHALE			704	726	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
RED ROCK			726	770	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
SHALE			770	778	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							
RED ROCK			778	788	PMSC	SHLE		
PMSC = Solor Church Formation	SHLE = Shale							

Unique No. 00202972	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/03/12
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	9	DCCCCD

Well Depth	Depth Completed	Date Well Completed
605 ft.	605 ft.	1960/08/19

Well Name COON RAPIDS 4

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 4
2731 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

20	in. t	158	ft
16	in. t	233	ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	158
DOLOMITE		HARD	158	170
JORDAN SANDSTONE			170	220
SHALE	GREE		220	310
SANDSTONE WITH THIN SH			310	369
SANDY SHALE			369	425
HARD SANDSTONE, SHALE			425	435
HARD SANDSTONE, SHALE			435	475
SHALEY SANDSTONE			475	520
HARD SANDSTONE, COARS			520	587
SHALE			587	605

Screen N

Open Hole From 233 ft. to 605 ft.

Make Type

Static Water Level 23 ft. from Land surface Date 1960/08/19

PUMPING LEVEL (below land surface)
142 ft. after 24 hrs. pumping 1000 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
	0	233	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam FAIRBANKS MORSE
Model 6977 HP 100 Volts 240
Drop Pipe Length 180 ft. Capacity g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 168. GAMMA LOGGED 3-31-1998. LOGGED BY JIM TRAEN.

OLD PA. NO. 60-0350.

USGS Quad Coon Rapids Elevation 869
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27118
License Business Name
Name of Driller BENEKE, R.

Report Copy

Unique No.	00202972	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/03/12
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	9	DCCCCD	605	ft.	605	ft.	1960/08/19

Well Name	COON RAPIDS 4	**Lic. Or Reg. No.**	27118	**Name of Driller**	BENEKE, R.		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DRIFT			0	158	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
DOLOMITE		HARD	158	170	CSTL	DLMT	SNDS	
CSTL = St.Lawrence	DLMT = Dolomite		SNDS = Sandstone					
JORDAN SANDSTONE			170	220	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					
SHALE	GREEN		220	310	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SANDSTONE WITH THIN SHALE LENSES			310	369	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			369	425	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD SANDSTONE, SHALE LENSES			425	435	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD SANDSTONE, SHALE LENSES			435	475	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALEY SANDSTONE			475	520	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HARD SANDSTONE, COARSE			520	587	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE			587	605	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00202951

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	25	ACBBDD

Well Depth 695 ft. **Depth Completed** 695 ft. **Date Well Completed** 1961/09/00

Well Name COON RAPIDS 5

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 5
99TH NW LA
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
0 in. t 695 ft

Casing Diameter **Weight(lbs/ft)**
24 in. t 200 ft
16 in. t 242 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND, GRAVEL, SHALE			0	190
SHALE, SANDROCK			190	200
SANDROCK		HARD	200	201
SANDROCK		HARD	201	215
SHALE			215	225
HARD SANDROCK & SHALE			225	248
HARD SANDROCK & SHALE			248	255
HARD SHALE & LIMEROCK			255	279
SANDROCK			279	293
LIMEROCK			293	295
HARD GREEN SHALE & LIM			295	374
SHALE			374	387
LIMEROCK			387	390
SHALE, LAYERS OF LIME	GREE	HARD	390	404
SHALE, LAYERS OF LIME	GREE	HARD	404	410
SANDROCK & SHALE			410	424
SANDROCK			424	449
HARD SANDROCK & SHALE			449	454
HARD SHALE, LAYERS OF L			454	459
HARD SHALE, LAYERS OF L			459	465
STICK GREEN SHALE			465	477
SHALE	RED		477	497
BLUE-GREEN SHALE			497	525
HARD GRAY SHALE, SOME			525	529
HARD GRAY SHALE, SOME			529	555
HARD SHALE & SANDROCK			555	625
SANDROCK			625	685
RED CLASTICS			685	695
GNEISS AT 695'			695	695

Screen N

Open Hole From 242 ft. to 695 ft.

Make Type

Static Water Level 68 ft. from Land surface Date 1961/07/11

PUMPING LEVEL (below land surface)
188 ft. after 26 hrs. pumping 1200 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP Volts

Drop Pipe Length ft. Capacity g.p.m
Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

SAMPLES INDICATE BASALT AT 695 FT.

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

M.G.S. NO. 199. 190-203 FT. LOOKS LIKE REWORKED JORDAN.

GAMMA LOGGED 2-13-2006 TO 580 FT BY JIM TRAEN.

USGS Quad	Coon Rapids	Elevation	910
Aquifer:	CFMS	Alt Id:	80-6139

Report Copy

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27058

License Business Name

Name of Driller

HE-01205-06 (Rev. 9/96)

Unique No.	00202951	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	25	ACBBDD	695	ft.	695	ft.	1961/09/00

Well Name	COON RAPIDS 5	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	910	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND, GRAVEL, SHALE			0	190	QPUU	SAND	GRVL	CLAY
QPUU = Pebbly sand/silt/clay	SAND = Sand		GRVL = Gravel				CLAY = Clay	
SHALE, SANDROCK			190	200	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
SANDROCK		HARD	200	201	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDROCK		HARD	201	215	CSTL	DLMT	SNDS	
CSTL = St.Lawrence	DLMT = Dolomite		SNDS = Sandstone					
SHALE			215	225	CSTL	SHLE	SLSN	
CSTL = St.Lawrence	SHLE = Shale		SLSN = Siltstone					
HARD SANDROCK & SHALE			225	248	CSTL	DLMT	SNDS	
CSTL = St.Lawrence	DLMT = Dolomite		SNDS = Sandstone					
HARD SANDROCK & SHALE			248	255	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
HARD SHALE & LIMEROCK			255	279	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK			279	293	CFRN	SNDS		
CFRN = Franconia	SNDS = Sandstone							
LIMEROCK			293	295	CFRN	DLMT		
CFRN = Franconia	DLMT = Dolomite							
HARD GREEN SHALE & LIMEROCK			295	374	CFRN	SHLE	DLMT	
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite					
SHALE			374	387	CFRN	SHLE		
CFRN = Franconia	SHLE = Shale							
LIMEROCK			387	390	CFRN	DLMT		
CFRN = Franconia	DLMT = Dolomite							
SHALE, LAYERS OF LIME	GREEN	HARD	390	404	CFRN	SHLE	DLMT	
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite					

Unique No.	00202951	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	25	ACBBDD	695	ft.	695	ft.	1961/09/00

Well Name	COON RAPIDS 5	Lic. Or Reg. No.	27058	Name of Driller	
USGS Quad	Coon Rapi	Elevation	910	Aquifer	CFMS	Alternative Id	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE, LAYERS OF LIME	GREEN	HARD	404	410	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK & SHALE			410	424	CIGL	SNDS	SHLE	
CIGL = Ironton-Galesville	SNDS = Sandstone		SHLE = Shale					
SANDROCK			424	449	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD SANDROCK & SHALE			449	454	CIGL	SNDS	SHLE	
CIGL = Ironton-Galesville	SNDS = Sandstone		SHLE = Shale					
HARD SHALE, LAYERS OF LIME			454	459	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD SHALE, LAYERS OF LIME			459	465	CECR	SHLE	SNDS	DLMT
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
STICK GREEN SHALE			465	477	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE	RED		477	497	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
BLUE-GREEN SHALE			497	525	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD GRAY SHALE, SOME SANDROCK			525	529	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
HARD GRAY SHALE, SOME SANDROCK			529	555	CMTS	SHLE	SNDS	
CMTS = Mt.Simon	SHLE = Shale		SNDS = Sandstone					
HARD SHALE & SANDROCK			555	625	CMTS	SHLE	SNDS	
CMTS = Mt.Simon	SHLE = Shale		SNDS = Sandstone					
SANDROCK			625	685	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
RED CLASTICS			685	695	PMRC	SHLE	SNDS	
PMRC = Red Clastic Series	SHLE = Shale		SNDS = Sandstone					

Unique No.	00202951	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	25	ACBBDD	695	ft.	695	ft.	1961/09/00

Well Name	COON RAPIDS 5	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	910	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
GNEISS AT 695'			695	695	PAUD	BSLT		

PAUD = Archean Rocks Undivided BSLT = Basalt

Unique No. 00202937

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2010/03/15

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	17	BBAACC

Well Depth	Depth Completed	Date Well Completed
158 ft.	158 ft.	1960/11/00

Well Name COON RAPIDS 6

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 6
11611 YUCCA NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
0 in. t 158 ft

Casing Diameter **Weight(lbs/ft)**
20 in. t 118 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL			0	57
CLAY			57	67
SAND & GRAVEL			67	82
HARDPAN			82	94
HARDPAN			94	102
SANDROCK			102	158

Screen N

Open Hole From 118 ft. to 158 ft.

Make Type

Static Water Level 22 ft. from Land surface Date 1960/11/00

PUMPING LEVEL (below land surface)
24.5 ft. after hrs. pumping 151 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

BASED ON SAMPLES AIR LIFTED FROM WELL 5-6-1993 FRANCONIA FM. PRESENT.

GAMMA LOGGED 12-1-1992.

GAMMA LOGGED 5-6-1993. LOGGED BY GEOSPHERE.

OLD P.A. 60-0743.

USGS Quad Coon Rapids Elevation 870
Aquifer: CFRN Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012
License Business Name
Name of Driller KEMPER, R

Report Copy

Unique No.	00202937	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2010/03/15
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	17	BBAACC	158	ft.	158	ft.	1960/11/00

Well Name	COON RAPIDS 6	**Lic. Or Reg. No.**	62012	**Name of Driller**	KEMPER, R.		
USGS Quad	Coon Rapi	**Elevation**	870	**Aquifer**	CFRN	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL			0	57	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
CLAY			57	67	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
SAND & GRAVEL			67	82	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
HARDPAN			82	94	QPUU	HDPN		
QPUU = Pebbly sand/silt/clay	HDPN = Hardpan							
HARDPAN			94	102	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					
SANDROCK			102	158	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	

Unique No. 00202943

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2008/12/30

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	BDACBB

Well Depth	Depth Completed	Date Well Completed
632 ft.	632 ft.	1964/04/00

Well Name COON RAPIDS 7

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 7
10617 DIRECT RIVER DR
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

24 in. t 163 ft

16 in. t 189 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & CLAY			0	78
CLAY			78	90
FINE SAND			90	130
SANDSTONE			130	161
GREENSHALE	GREE		161	165
DOLOMITIC CLAY			165	190
SHALE & SANDSTONE			190	295
GRAY SHALE	GRAY		295	300
BROWN SHALE	BROW		300	315
SHALE	RED		315	325
SHALE	GRAY		325	330
SHALE	GRAY		330	345
SANDSTONE	GRAY		345	380
GRAY SHALE	GRAY		380	398
SHALE	GRAY		398	400
RED ROCK	RED		400	425
GRAY & RED SHALE	GRY/R		425	440
GRAY & BROWN ROCK	GRY/B		440	475
COARSE SAND	GRAY		475	477
COARSE SAND	GRAY		477	480
FINE SAND	GRAY		480	520
FINE SAND	GRAY		520	560
COARSE SAND	WHITE		560	590
HARD GOLD GRAINS COAR	WHITE		590	600
SHALE	RED		600	610
RED & GRAY SHALE	RED/G		610	615
SHALE	RED		615	632

Screen N

Open Hole From 189 ft. to 632 ft.

Make Type

Static Water Level 31 ft. from Land surface Date 1964/04/00

PUMPING LEVEL (below land surface)

71 ft. after hrs. pumping 1600 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

JIM TRAEN HAS TWO DATES ON LOG 1-18-04 AND 1-18-05.

GAMMA LOGGED 1-18-04 BY JIM TRAEN

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

USGS Quad Coon Rapids Elevation 868

Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 96460

Unique No.	00202943	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	BDACBB	632	ft.	632	ft.	1964/04/00

Well Name	COON RAPIDS 7	**Lic. Or Reg. No.**	96460	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	868	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & CLAY			0	78	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand		CLAY = Clay					
CLAY			78	90	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
FINE SAND			90	130	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDSTONE			130	161	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
GREENSHALE	GREEN		161	165	CSTL	SHLE	SLSN	
CSTL = St.Lawrence	SHLE = Shale		SLSN = Siltstone					
DOLOMITIC CLAY			165	190	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
SHALE & SANDSTONE			190	295	CFRN	SHLE	SNDS	
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone					
GRAY SHALE	GRAY		295	300	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
BROWN SHALE	BROWN		300	315	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	RED		315	325	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	GRAY		325	330	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	GRAY		330	345	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE	GRAY		345	380	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
GRAY SHALE	GRAY		380	398	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							

Unique No.	00202943	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	BDACBB	632	ft.	632	ft.	1964/04/00

Well Name	COON RAPIDS 7	**Lic. Or Reg. No.**	96460	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	868	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE	GRAY		398	400	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
RED ROCK	RED		400	425	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
GRAY & RED SHALE	GRY/RED		425	440	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
GRAY & BROWN ROCK	GRY/BRN		440	475	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
COARSE SAND	GRAY		475	477	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				
COARSE SAND	GRAY		477	480	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
FINE SAND	GRAY		480	520	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
FINE SAND	GRAY		520	560	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
COARSE SAND	WHITE		560	590	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HARD GOLD GRAINS COARSE SAND	WHITE		590	600	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE	RED		600	610	PMSU	SHLE		
PMSU = Mid.Proterozoic Sedimentary	SHLE = Shale							
RED & GRAY SHALE	RED/GRY		610	615	PMSU	SHLE		
PMSU = Mid.Proterozoic Sedimentary	SHLE = Shale							
SHALE	RED		615	632	PMSU	SHLE		
PMSU = Mid.Proterozoic Sedimentary	SHLE = Shale							

Unique No. 00202932	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/06
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	ACCDBD

Well Depth	Depth Completed	Date Well Completed
700 ft.	700 ft.	1965/05/07

Well Name COON RAPIDS 8

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 8
269 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter
in. t 700 ft

Casing Diameter **Weight(lbs/ft)**
24 in. t 258 ft
16 in. t 283 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	212
SANDROCK, SHALE, GRAV			212	243
LIMEROCK, SHALE			243	249
LIMEROCK, SHALE			249	263
SANDROCK, SHALE			263	409
SANDROCK, SHALE			409	418
SANDROCK			418	445
SHALEY SANDROCK			445	469
SHALEY SANDROCK			469	473
SHALE			473	518
SHALE & SANDROCK			518	533
SHALEY SANDROCK			533	545
SHALE			545	549
SANDROCK			549	594
SHALE			594	598
SANDROCK			598	694
SHALE			694	700

Screen N

Open Hole From 283 ft. to 700 ft.

Make Type

Static Water Level 42 ft. from Land surface Date 1965/05/07

PUMPING LEVEL (below land surface)
132.3 ft. after hrs. pumping 922 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	283	24	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

OLD PA. NO. 65-0095.

GAMMA LOGGED 2-6-2004 BY JIM TRAEN

USGS Quad Coon Rapids Elevation 897
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012
License Business Name
Name of Driller O'BRIEN, F.

Report Copy

Unique No.	00202932	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDBD	700	ft.	700	ft.	1965/05/07

Well Name	COON RAPIDS 8	**Lic. Or Reg. No.**	62012	**Name of Driller**	O'BRIEN, F.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DRIFT			0	212	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
SANDROCK, SHALE, GRAVEL			212	243	QPUU	SAND	CLAY	GRVL
QPUU = Pebbly sand/silt/clay	SAND = Sand		CLAY = Clay				GRVL = Gravel	
LIMEROCK, SHALE			243	249	QUUU	COBL		
QUUU = Unknown deposit type	COBL = Cobble							
LIMEROCK, SHALE			249	263	CFRN	SHLE	DLMT	SNDS
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite				SNDS = Sandstone	
SANDROCK, SHALE			263	409	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK, SHALE			409	418	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK			418	445	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALEY SANDROCK			445	469	CIGL	SNDS	SHLE	
CIGL = Ironton-Galesville	SNDS = Sandstone		SHLE = Shale					
SHALEY SANDROCK			469	473	CECR	SNDS	SHLE	
CECR = Eau Claire	SNDS = Sandstone		SHLE = Shale					
SHALE			473	518	CECR	SHLE		
CECR = Eau Claire	SHLE = Shale							
SHALE & SANDROCK			518	533	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALEY SANDROCK			533	545	CECR	SNDS		
CECR = Eau Claire	SNDS = Sandstone							
SHALE			545	549	CECR	SHLE	SLSN	
CECR = Eau Claire	SHLE = Shale		SLSN = Siltstone					
SANDROCK			549	594	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No.	00202932	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDBD	700	ft.	700	ft.	1965/05/07

Well Name	COON RAPIDS 8	**Lic. Or Reg. No.**	62012	**Name of Driller**	O'BRIEN, F.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE			594	598	CMTS	SHLE	SNDS	
CMTS = Mt.Simon	SHLE = Shale		SNDS = Sandstone					
SANDROCK			598	694	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE			694	700	PMRC	SLSN	SHLE	
PMRC = Red Clastic Series	SLSN = Siltstone		SHLE = Shale					

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	ACDAAB

Well Depth	Depth Completed	Date Well Completed
500 ft.	500 ft.	1969/04/07

Well Name COON RAPIDS 9

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 9
11399 DOGWOOD NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

24 in. t 268 ft
16 in. t 294 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	20
SAND	RED		20	39
CLAY	BLUE		39	63
SAND	RED		63	83
SAND	RED		83	89
CLAY	GREE		89	98
CLAY	BLUE		98	109
GRAVEL			109	123
GRAVEL	GRAY		123	135
GRAVEL & ROCKS			135	140
SAND	GREE		140	146
CLAY & ROCKS			146	166
GREEN CLAY & ROCKS			166	173
CLAY	RED		173	235
RED CLAY & ROCK	RED		235	245
RED CLAY & SAND	RED		245	250
RED CLAY & SAND	RED		250	252
SHALE	GREE		252	255
LIMEROCK & SHALE			255	263
LIMEROCK & SHALE			263	265
LIMEROCK & SHALE			265	266
LIMEROCK & SHALE			266	271
SANDSTONE & SHALE			271	275
HARD SHALE & SAND			275	302
HARD SHALE & SAND			302	316
SANDSTONE		HARD	316	320
SANDSTONE & SHALE			320	353
SANDSTONE			353	356
SHALE SOME SAND			356	371
SHALE & SANDSTONE			371	388
SHALE			388	396
SHALE & SANDSTONE			396	405

Screen N

Open Hole From 294 ft. to 500 ft.

Make Type

Static Water Level 47 ft. from Land surface Date 1969/04/07

PUMPING LEVEL (below land surface)

ft. after hrs. pumping g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G			24	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr nam

Model HP Volts

SANDY SHALE	405	410
SANDY SHALE	410	415
SANDY SHALE	415	425
SANDY SHALE	425	454
SANDY SHALE	454	458
SANDY SHALE	458	462
BLUE & RED SHALE	462	475
SANDY SHALE	475	478
SANDY SHALE	478	482
SANDY SHALE	482	492
RED & GREEN SHALE	492	500

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 459.

GAMMA LOGGED 2-13-2004. LOGGED BY JIM TRAEN.

USGS Quad	Coon Rapids	Elevation	897
Aquifer:	CFIE	Alt Id:	80-6139

Report Copy

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller OLZESKE, T.

HE-01205-06 (Rev. 9/96)

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	20	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND	RED		20	39	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY	BLUE		39	63	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
SAND	RED		63	83	QFUR	SAND		
QFUR = Sand	SAND = Sand							
SAND	RED		83	89	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY	GREEN		89	98	QCUL	CLAY		
QCUL = Clay	CLAY = Clay							
CLAY	BLUE		98	109	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
GRAVEL			109	123	QGUU	GRVL		
QGUU = Gravel (+larger)	GRVL = Gravel							
GRAVEL	GRAY		123	135	QGUG	GRVL		
QGUG = Gravel (+larger)	GRVL = Gravel							
GRAVEL & ROCKS			135	140	QGUU	GRVL	COBL	
QGUU = Gravel (+larger)	GRVL = Gravel		COBL = Cobble					
SAND	GREEN		140	146	QFUL	SAND		
QFUL = Sand	SAND = Sand							
CLAY & ROCKS			146	166	QPUU	CLAY	COBL	
QPUU = Pebbly sand/silt/clay	CLAY = Clay		COBL = Cobble					
GREEN CLAY & ROCKS			166	173	QPUL	CLAY	COBL	
QPUL = Pebbly sand/silt/clay	CLAY = Clay		COBL = Cobble					
CLAY	RED		173	235	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
RED CLAY & ROCK	RED		235	245	QPUR	CLAY	COBL	
QPUR = Pebbly sand/silt/clay	CLAY = Clay		COBL = Cobble					
RED CLAY & SAND	RED		245	250	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay		SAND = Sand					
RED CLAY & SAND	RED		250	252	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay		SAND = Sand					
SHALE	GREEN		252	255	QCUL	CLAY		
QCUL = Clay	CLAY = Clay							
LIMEROCK & SHALE			255	263	QPUU	COBL	CLAY	
QPUU = Pebbly sand/silt/clay	COBL = Cobble		CLAY = Clay					
LIMEROCK & SHALE			263	265	QPUU	COBL	CLAY	
QPUU = Pebbly sand/silt/clay	COBL = Cobble		CLAY = Clay					
LIMEROCK & SHALE			265	266	QPUU	COBL	CLAY	
QPUU = Pebbly sand/silt/clay	COBL = Cobble		CLAY = Clay					
LIMEROCK & SHALE			266	271	CFRN	DLMT	SHLE	SNDS
CFRN = Franconia	DLMT = Dolomite		SHLE = Shale				SNDS = Sandstone	
SANDSTONE & SHALE			271	275	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
HARD SHALE & SAND			275	302	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
HARD SHALE & SAND			302	316	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SANDSTONE		HARD	316	320	CFRN	SNDS	DLMT	
CFRN = Franconia	SNDS = Sandstone		DLMT = Dolomite					
SANDSTONE & SHALE			320	353	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE			353	356	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE SOME SAND			356	371	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
SHALE & SANDSTONE			371	388	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
SHALE			388	396	CFRN	SHLE	SNDS	
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone					
SHALE & SANDSTONE			396	405	CFRN	SHLE	SNDS	
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			405	410	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SANDY SHALE			410	415	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			415	425	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			425	454	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			454	458	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDY SHALE			458	462	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
BLUE & RED SHALE			462	475	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			475	478	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			478	482	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDY SHALE			482	492	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No.	00202931	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACDAAB	500	ft.	500	ft.	1969/04/07

Well Name	COON RAPIDS 9	**Lic. Or Reg. No.**	27010	**Name of Driller**	OLZESKE, T.		
USGS Quad	Coon Rapi	**Elevation**	897	**Aquifer**	CFIE	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
RED & GREEN SHALE			492	500	CECR	SHLE	SNDS	

CECR = Eau Claire SHLE = Shale SNDS = Sandstone

Unique No.	00202930	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	1991/04/15

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	DBADDC

Well Depth	Depth Completed	Date Well Completed
684 ft.	684 ft.	1970/05/05

Well Name COON RAPIDS 10

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 10
203 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter		Weight(lbs/ft)	
30 in. t	80 ft		
24 in. t	259 ft		
16 in. t	272 ft		

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
GLACIAL DRIFT			0	250
SANDY LIMESTONE			250	262
SANDY LIMESTONE			262	295
SANDSTONE WITH BEDS O			295	375
SANDSTONE SLATE	BROW		375	396
SANDSTONE SLATE	BROW		396	442
SANDSTONE SLATE BROW	BROW		442	455
HARD RED SHALE			455	457
HARD RED SHALE			457	495
SANDSTONE, SLATE	BROW		495	522
SANDSTONE, SLATE	BROW		522	662
SANDSTONE			662	679
RED SHALE			679	684

Screen N

Open Hole From 272 ft. to 684 ft.

Make Type

Static Water Level 51 ft. from Land surface Date 1970/05/05

PUMPING LEVEL (below land surface)
185 ft. after 49 hrs. pumping 1875 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	0	272	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr nam
Model HP 100 Volts
Drop Pipe Length ft. Capacity g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 558. OLD PA. NO. 71-0825.

GAMMA LOGGED 5-3-2004. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 899
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27118
License Business Name
Name of Driller BENEKE, R.

Report Copy

Unique No.	00202930	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	DBADDC	684	ft.	684	ft.	1970/05/05

Well Name	COON RAPIDS 10	**Lic. Or Reg. No.**	27118	**Name of Driller**	BENEKE, R.		
USGS Quad	Coon Rapi	**Elevation**	899	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
GLACIAL DRIFT			0	250	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
SANDY LIMESTONE			250	262	CSTL	SLSN	DLMT	
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite					
SANDY LIMESTONE			262	295	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE WITH BEDS OF GREEN SHAL			295	375	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE SLATE	BROWN		375	396	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE SLATE	BROWN		396	442	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE SLATE BROWN	BROWN		442	455	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD RED SHALE			455	457	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
HARD RED SHALE			457	495	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE, SLATE	BROWN		495	522	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE, SLATE	BROWN		522	662	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SANDSTONE			662	679	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
RED SHALE			679	684	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00202965	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2008/12/30
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	27	BAAAAA

Well Depth	Depth Completed	Date Well Completed
627 ft.	627 ft.	1972/05/11

Well Name COON RAPIDS 11

Drilling Method Non-specified Rotary

Well Owner's Name COON RAPIDS 11

COON RAPIDS MN 55433

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Contact's Name CITY OF COON RAPIDS

11155 ROBINSON NW DR

COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

in. t 157 ft

in. t 627 ft

Casing Diameter **Weight(lbs/ft)**

24 in. t 157 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	18
SANDY CLAY			18	58
SAND, GRAVEL & BOULDE			58	142
SAND, GRAVEL & BOULDE			142	146
LIME, SHALE			146	199
LIME, SHALE			199	305
SHALEY SANDSTONE			305	318
SHALEY SANDSTONE			318	352
SANDSTONE		SOFT	352	362
SANDSTONE		HARD	362	410
SANDSTONE		HARD	410	423
SHALE			423	434
SANDSTONE-SOME SHALE			434	478
SANDSTONE-SOME SHALE			478	530
SANDSTONE			530	622
SHALE			622	627

Screen N

Open Hole From 157 ft. to 627 ft.

Make Type

Static Water Level 25 ft. from Land surface Date 1972/05/11

PUMPING LEVEL (below land surface)

110 ft. after hrs. pumping 1820 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	157	20	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 776

GAMMA LOGGED 9-12-1983 BY MGS AND 4-26-2002. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 860

Aquifer: CFMS Alt Id: 80-6139

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012

License Business Name

Name of Driller GIBSON, E.

Report Copy

Unique No.	00202965	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	BAAAAA	627	ft.	627	ft.	1972/05/11

Well Name	COON RAPIDS 11	Lic. Or Reg. No.	62012	Name of Driller	GIBSON, E.
USGS Quad	Coon Rapi	Elevation	860	Aquifer	CFMS	Alternative Id	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	18	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SANDY CLAY			18	58	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
SAND, GRAVEL & BOULDERS			58	142	QHUU	SAND	GRVL	BLDR
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel				BLDR = Boulder	
SAND, GRAVEL & BOULDERS			142	146	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
LIME, SHALE			146	199	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
LIME, SHALE			199	305	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALEY SANDSTONE			305	318	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALEY SANDSTONE			318	352	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE		SOFT	352	362	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE		HARD	362	410	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE		HARD	410	423	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE			423	434	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE-SOME SHALE			434	478	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE-SOME SHALE			478	530	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No.	00202965	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	BAAAAA	627	ft.	627	ft.	1972/05/11

Well Name	COON RAPIDS 11	**Lic. Or Reg. No.**	62012	**Name of Driller**	GIBSON, E.		
USGS Quad	Coon Rapi	**Elevation**	860	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SANDSTONE			530	622	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE			622	627	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00168721

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	27	AAAAAD

Well Depth		Depth Completed		Date Well Completed
604	ft.	604	ft.	1975/05/14

Well Name COON RAPIDS 12

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 12

COON RAPIDS MN 55433

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Contact's Name CITY OF COON RAPIDS

11155 ROBINSON NW DR

COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter		Weight(lbs/ft)		
24	in. t	124	ft	94.62
16	in. t	208	ft	62.58

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND FILL	YELLO		0	9
SAND	GRAY		9	20
CLAY	GRAY		20	30
CLAY	RED/B		30	65
SANDY MUCK	BROW		65	100
SHALE	GRAY		100	120
JORDAN SANDROCK	WHITE		120	123
JORDAN SANDROCK	WHITE		123	135
ST. LAWRANCE SANDSTON	YELLO		135	140
ST. LAWRANCE SANDSTON	WHITE		140	170
ST. LAWRENCE SANDSTON	BLU/G		170	171
ST. LAWRANCE SANDSTON	BLU/G		171	180
ST. LAWRANCE SANDSTON	BLU/G		180	185
ST. LAWRANCE SANDSTON	PINK		185	195
ST. LAWRANCE SANDSTON	VARIE		195	208
ST. LAWRANCE SANDSTON	GREE		208	264
HARD LAYER OF SHALE	GREE		264	270
SHALE ROCK	GREE		270	286
SHALE SANDROCK	GREE		286	300
SANDROCK	TAN/G		300	316
SANDROCK	TAN/G		316	385
SHALE SANDSTONE	LIGHT		385	386
SHALE SANDSTONE	LIGHT		386	407
SHALE ROCK	TAN/B		407	420
SHALE	BRN/G		420	458
SHALE	BRN/G		458	480
SHALEY SANDSTONE	WHITE		480	550
SANDSTONE	TAN		550	600
SHALE	RED		600	604

Screen N

Open Hole From 208 ft. to 604 ft.

Make

Type

Static Water Level 47 ft. from Land surface Date 1975/05/14

PUMPING LEVEL (below land surface)

146 ft. after 8 hrs. pumping 1800 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G			

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.985.

GAMMA LOGGED 1-18-05. LOGGED BY JIM TRAEN.

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

USGS Quad	Coon Rapids	Elevation	852
Aquifer:	CFMS	Alt Id:	80-6139

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

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 02015

License Business Name

Name of Driller SIGAFOOS, G.

Report Copy

HE-01205-06 (Rev. 9/96)

Unique No.	00168721	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	AAAAAD	604	ft.	604	ft.	1975/05/14

Well Name	COON RAPIDS 12	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	852	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND FILL	YELLOW		0	9	RMMF	SAND	FILL	
RMMF = Man-made fill	SAND = Sand		FILL = Fill					
SAND	GRAY		9	20	QFUG	SAND		
QFUG = Sand	SAND = Sand							
CLAY	GRAY		20	30	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
CLAY	RED/BRN		30	65	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
SANDY MUCK	BROWN		65	100	QNUB	SAND	MUCK	
QNUB = Sand & silt	SAND = Sand		MUCK = Muck					
SHALE	GRAY		100	120	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
JORDAN SANDROCK	WHITE		120	123	QFUU	SAND		
QFUU = Sand	SAND = Sand							
JORDAN SANDROCK	WHITE		123	135	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
ST. LAWRANCE SANDSTONE	YELLOW		135	140	CSTL	SLSN	DLMT	SNDS
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite				SNDS = Sandstone	
ST. LAWRANCE SANDSTONE	WHITE		140	170	CSTL	SLSN	DLMT	SNDS
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite				SNDS = Sandstone	
ST. LAWRENCE SANDSTONE	BLU/GRN		170	171	CSTL	SLSN	DLMT	SNDS
CSTL = St.Lawrence	SLSN = Siltstone		DLMT = Dolomite				SNDS = Sandstone	
ST. LAWRANCE SANDSTONE	BLU/GRN		171	180	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
ST. LAWRANCE SANDSTONE	BLU/GRN		180	185	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
ST. LAWRANCE SANDSTONE	PINK		185	195	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	

Unique No.	00168721	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	AAAAAD	604	ft.	604	ft.	1975/05/14

Well Name	COON RAPIDS 12	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	852	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
ST. LAWRANCE SANDSTONE	VARIED		195	208	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
ST. LAWRANCE SANDSTONE	GREEN		208	264	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
HARD LAYER OF SHALE	GREEN		264	270	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SHALE ROCK	GREEN		270	286	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SHALE SANDROCK	GREEN		286	300	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SANDROCK	TAN/GRN		300	316	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
SANDROCK	TAN/GRN		316	385	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE SANDSTONE	LIGHT		385	386	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE SANDSTONE	LIGHT		386	407	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE ROCK	TAN/BRN		407	420	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE	BRN/GRN		420	458	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE	BRN/GRN		458	480	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALEY SANDSTONE	WHITE		480	550	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SANDSTONE	TAN		550	600	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No.	00168721	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	AAAAAD	604	ft.	604	ft.	1975/05/14

Well Name	COON RAPIDS 12	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	852	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE	RED		600	604	PMSU	SHLE		

PMSU = Mid.Proterozoic Sedimentary SHLE = Shale

Unique No. 00168720

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	DADDBC

Well Depth	Depth Completed	Date Well Completed
693 ft.	693 ft.	1977/03/25

Well Name COON RAPIDS 13

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 13
11100 UNIVERSITY AV
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter		Weight(lbs/ft)
24 in. t	252 ft	94.62
16 in. t	395 ft	62.58

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW		0	55
SANDY CLAY	GRAY		55	75
FINE SAND	GRAY	HARD	75	85
FINE SAND	RED		85	105
CLAY STICKY	RED		105	135
CLAY & STONE	GRAY	HARD	135	160
FINE SAND	RED		160	175
CLAY	GRAY		175	195
SAND & STONES & CLAY	GRAY		195	205
STONES & SAND	DARK		205	215
SHALE & STONES	TAN		215	220
SHALE	TAN		220	245
SANDSTONE SHALE	GRAY		245	250
SHALE	RED		250	257
ST. LAWRANCE GREEN, RE	VARIE		257	260
HARDROCK	TAN		260	267
HARDROCK	TAN		267	268
SANDROCK	LIGHT	HARD	268	298
SANDY ROCK, SHALE	GREE		298	312
SANDROCK, SHALE	LIGHT		312	338
SANDSTONE GREEN-GRAY-			338	403
SANDSTONE GREEN-GRAY-			403	453
SANDSTONE GREEN-GRAY-			453	525
SANDSTONE GREEN-GRAY-			525	672
HINCKLEY SANDSTONE	RED		672	691
HINCKLEY SANDSTONE			691	693

Screen N

Open Hole From 395 ft. to 693 ft.

Make Type

Static Water Level 75 ft. from Land surface Date 1977/03/25

PUMPING LEVEL (below land surface)
158 ft. after 10 hrs. pumping 1000 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G			

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP Volts

Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.1124.

GAMMA LOGGED 2-6-04. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 900
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 02015
License Business Name

Report Copy

Unique No.	00168720	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	DADDBC	693	ft.	693	ft.	1977/03/25

Well Name	COON RAPIDS 13	**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.		
USGS Quad	Coon Rapi	**Elevation**	900	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN		0	55	QFUB	SAND		
QFUB = Sand	SAND = Sand							
SANDY CLAY	GRAY		55	75	QLUG	CLAY	SAND	
QLUG = Clay & sand	CLAY = Clay			SAND = Sand				
FINE SAND	GRAY	HARD	75	85	QFUG	SAND		
QFUG = Sand	SAND = Sand							
FINE SAND	RED		85	105	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY STICKY	RED		105	135	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							
CLAY & STONE	GRAY	HARD	135	160	QPUG	CLAY	PEBL	
QPUG = Pebbly sand/silt/clay	CLAY = Clay			PEBL = Pebbles				
FINE SAND	RED		160	175	QFUR	SAND		
QFUR = Sand	SAND = Sand							
CLAY	GRAY		175	195	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
SAND & STONES & CLAY	GRAY		195	205	QPUG	SAND	PEBL	CLAY
QPUG = Pebbly sand/silt/clay	SAND = Sand			PEBL = Pebbles			CLAY = Clay	
STONES & SAND	DARK		205	215	QHUU	PEBL	SAND	
QHUU = Sand & larger	PEBL = Pebbles			SAND = Sand				
SHALE & STONES	TAN		215	220	QPUU	CLAY	PEBL	
QPUU = Pebbly sand/silt/clay	CLAY = Clay			PEBL = Pebbles				
SHALE	TAN		220	245	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
SANDSTONE SHALE	GRAY		245	250	QLUG	SAND	CLAY	
QLUG = Clay & sand	SAND = Sand			CLAY = Clay				
SHALE	RED		250	257	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							

Unique No.	00168720	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	DADDBC	693	ft.	693	ft.	1977/03/25

Well Name	COON RAPIDS 13			**Lic. Or Reg. No.**	02015	**Name of Driller**	SIGAFOOS, G.
USGS Quad	Coon Rapi	**Elevation**	900	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
ST. LAWRANCE GREEN, RED, BLACK	VARIED		257	260	QUUU	SAND	CLAY	COBL
QUUU = Unknown deposit type	SAND = Sand		CLAY = Clay				COBL = Cobble	
HARDROCK	TAN		260	267	QBUU	BLDR		
QBUU = Boulder or boulders	BLDR = Boulder							
HARDROCK	TAN		267	268	CSTL	DLMT	SLSN	
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone					
SANDROCK	LIGHT	HARD	268	298	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDY ROCK, SHALE	GREEN		298	312	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK, SHALE	LIGHT		312	338	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE GREEN-GRAY-RED			338	403	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE GREEN-GRAY-RED			403	453	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDSTONE GREEN-GRAY-RED			453	525	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDSTONE GREEN-GRAY-RED			525	672	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HINCKLEY SANDSTONE	RED		672	691	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
HINCKLEY SANDSTONE			691	693	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No. 00110460	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/07
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	BCBBDD

Well Depth	Depth Completed	Date Well Completed
613 ft.	613 ft.	1977/03/22

Well Name COON RAPIDS 14

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 14
2344 COON RAPIDS BL
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

30 in. t 222 ft

20 in. t 328 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL			0	60
SAND	LT. BR		60	130
SAND W/SHALE STREAKS	GREE		130	167
SHALE-SANDY	GREE		167	170
SHALE-SANDY	GREE		170	218
SANDSTONE			218	250
SANDY SHALE			250	305
DOLOMITE/SHALE			305	330
SHALE	RED		330	339
SHALE	RED		339	340
SAND	WHITE		340	385
SHALE W/LIMESTONE SEA	VARIE		385	391
SHALE W/LIMESTONE SEA	VARIE		391	450
SANDSTONE W/SHALE	VARIE		450	456
SANDSTONE W/SHALE	VARIE		456	520
SHALE-STICKY			520	570
SHALE W/SAND LAYERS			572	610
SHALE	RED		610	613

Screen N

Open Hole From 328 ft. to 613 ft.

Make Type

Static Water Level 120 ft. from Land surface Date 1977/03/21

PUMPING LEVEL (below land surface)

196 ft. after 8 hrs. pumping 1600 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	328	28	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed Y

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 2-6-1997 & 10-17-2001. M.G.S. NO. 1108.

LOGGED BOTH TIMES BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 869

Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller LINDEKE, W.

Report Copy

Unique No.	00110460	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCBBDD	613	ft.	613	ft.	1977/03/22

Well Name	COON RAPIDS 14	**Lic. Or Reg. No.**	27010	**Name of Driller**	LINDEKE, W.		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL			0	60	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
SAND	LT. BRN		60	130	QFUB	SAND		
QFUB = Sand	SAND = Sand							
SAND W/SHALE STREAKS	GREEN		130	167	QLUL	SAND	CLAY	
QLUL = Clay & sand	SAND = Sand		CLAY = Clay					
SHALE-SANDY	GREEN		167	170	QLUL	CLAY	SAND	
QLUL = Clay & sand	CLAY = Clay		SAND = Sand					
SHALE-SANDY	GREEN		170	218	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDSTONE			218	250	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale					
SANDY SHALE			250	305	CFRN	SNDS	SLSN	DLMT
CFRN = Franconia	SNDS = Sandstone		SLSN = Siltstone				DLMT = Dolomite	
DOLOMITE/SHALE			305	330	CFRN	SNDS	DLMT	SHLE
CFRN = Franconia	SNDS = Sandstone		DLMT = Dolomite				SHLE = Shale	
SHALE	RED		330	339	CFRN	SHLE	SNDS	DLMT
CFRN = Franconia	SHLE = Shale		SNDS = Sandstone				DLMT = Dolomite	
SHALE	RED		339	340	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SAND	WHITE		340	385	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE W/LIMESTONE SEAMS	VARIED		385	391	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SHALE W/LIMESTONE SEAMS	VARIED		391	450	CECR	SLSN	SHLE	
CECR = Eau Claire	SLSN = Siltstone		SHLE = Shale					
SANDSTONE W/SHALE	VARIED		450	456	CECR	SNDS	SLSN	
CECR = Eau Claire	SNDS = Sandstone		SLSN = Siltstone					

Unique No.	00110460	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCBBDD	613	ft.	613	ft.	1977/03/22

Well Name	COON RAPIDS 14	**Lic. Or Reg. No.**	27010	**Name of Driller**	LINDEKE, W.		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SANDSTONE W/SHALE	VARIED		456	520	CMTS	SNDS	SLSN	
CMTS = Mt.Simon	SNDS = Sandstone		SLSN = Siltstone					
SHALE-STICKY			520	570	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE W/SAND LAYERS			572	610	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE	RED		610	613	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No.	00110461	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	1991/04/15

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	BCDDCA

Well Depth	Depth Completed	Date Well Completed
615 ft.	615 ft.	1976/09/13

Well Name COON RAPIDS 15

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 15
2231 105TH AV
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

30 in. t 184 ft
20 in. t 225 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DIRT	BLACK		0	3
FINE SAND			3	25
SAND & ROCKS			25	35
CLAY		HARD	35	40
CLAY & FINE SAND			40	87
SAND, TRACE OF CLAY			87	97
SAND/GRAVEL/TRACES OF			97	121
FINE SAND, TRACE OF CLA			121	145
SANDSTONE		SOFT	145	160
SHALE	BLUE		160	170
RED SHALE & SANDROCK	RED		170	178
SAND/GRAVEL/TRACE OF S	GREE		178	183
GREEN SHALE & ROCK	GREE		183	194
FRANCONIA SANDSTONE			194	295
FRANCONIA SHALE STREA			295	340
FRANCONIA SHALE STREA			340	348
RED & BLUE SHALE STREA			348	352
IRONTON GALESVILLE SAN			352	405
EAU CLAIRE SHALE			405	485
MT. SIMON			485	510
MT. SIMON, TRACE OF SHA			510	540
MT. SIMON		HARD	540	610
SHALE	RED		610	615

Screen N

Open Hole From 225 ft. to 615 ft.

Make Type

Static Water Level 50 ft. from Land surface Date 1976/09/10

PUMPING LEVEL (below land surface)
148 ft. after 15 hrs. pumping 2400 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G			15	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 4-26-2002. M.G.S. NO. 1105. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 870
Aquifer: CFMS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
License Business Name
Name of Driller HOLLEN, G.

Report Copy

Unique No.	00110461	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCDDCA	615	ft.	615	ft.	1976/09/13

Well Name	COON RAPIDS 15	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	870	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DIRT	BLACK		0	3	RUUK	SOIL	ORGD	
RUUK = Recent Deposit	SOIL = Soil			ORGD = Organic Deposits				
FINE SAND			3	25	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SAND & ROCKS			25	35	QHUU	SAND	COBL	
QHUU = Sand & larger	SAND = Sand			COBL = Cobble				
CLAY		HARD	35	40	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
CLAY & FINE SAND			40	87	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay			SAND = Sand				
SAND, TRACE OF CLAY			87	97	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand			CLAY = Clay				
SAND/GRAVEL/TRACES OF CLAY			97	121	QPUU	SAND	GRVL	CLAY
QPUU = Pebbly sand/silt/clay	SAND = Sand			GRVL = Gravel			CLAY = Clay	
FINE SAND, TRACE OF CLAY			121	145	QLUU	SAND	CLAY	
QLUU = Clay & sand	SAND = Sand			CLAY = Clay				
SANDSTONE		SOFT	145	160	QFUU	SAND		
QFUU = Sand	SAND = Sand							
SHALE	BLUE		160	170	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
RED SHALE & SANDROCK	RED		170	178	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay			SAND = Sand				
SAND/GRAVEL/TRACE OF SHALE	GREEN		178	183	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				
GREEN SHALE & ROCK	GREEN		183	194	CFRN	SHLE	DLMT	
CFRN = Franconia	SHLE = Shale			DLMT = Dolomite				
FRANCONIA SANDSTONE			194	295	CFRN	SNDS	SHLE	
CFRN = Franconia	SNDS = Sandstone			SHLE = Shale				

Unique No.	00110461	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCDDCA	615	ft.	615	ft.	1976/09/13

Well Name	COON RAPIDS 15	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	870	**Aquifer**	CFMS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
FRANCONIA SHALE STREAKS			295	340	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale			DLMT = Dolomite		
FRANCONIA SHALE STREAKS			340	348	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
RED & BLUE SHALE STREAKS			348	352	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
IRONTON GALESVILLE SANDSTONE			352	405	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
EAU CLAIRE SHALE			405	485	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
MT. SIMON			485	510	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
MT. SIMON, TRACE OF SHALE			510	540	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
MT. SIMON		HARD	540	610	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALE	RED		610	615	PMRC	SHLE		
PMRC = Red Clastic Series	SHLE = Shale							

Unique No.	00161413	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	1991/04/15

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	11	ADAAAA

Well Depth	Depth Completed	Date Well Completed
653 ft.	653 ft.	1981/04/10

Well Name COON RAPIDS 16

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 16
12280 OLIVE ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPID
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter				Weight(lbs/ft)
30	in. t	169	ft	118
24	in. t	270	ft	94.62
18	in. t	395	ft	70.59

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND			0	73
CLAY SAND & GRAVEL			73	112
CLAY & SAND			112	130
WATER, SAND & GRAVEL			130	166
BOULDERS			166	176
GRAVEL W/SANDROCK			176	181
GRAVEL W/SANDROCK			181	187
SHALE			187	239
SHALE			239	252
SANDROCK		SOFT	252	270
SHALE & SANDROCK			270	376
SHALE & SANDROCK			376	435
SANDROCK			435	441
SANDROCK			441	455
SHALE (EAU CLAIRE)			455	517
SANDROCK			517	518
SANDROCK			518	653

Screen N

Open Hole From 395 ft. to 653 ft.

Make Type

Static Water Level 109 ft. from Land surface Date 1981/04/10

PUMPING LEVEL (below land surface)
190 ft. after 34 hrs. pumping 2000 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	0	395	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO. 1608 & 1705. GAMMA LOGGED10-17-2001 BY SUMMIT ENVIRON.

USGS Quad Coon Rapids Elevation 889
Aquifer: CIGM Alt Id: 80-6187

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27058
License Business Name
Name of Driller

Report Copy

Unique No.	00161413	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	11	ADAAAA	653	ft.	653	ft.	1981/04/10

Well Name	COON RAPIDS 16	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	889	**Aquifer**	CIGM	**Alternative Id**	80-6187

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND			0	73	QFUU	SAND		
QFUU = Sand	SAND = Sand							
CLAY SAND & GRAVEL			73	112	QPUU	CLAY	SAND	GRVL
QPUU = Pebbly sand/silt/clay	CLAY = Clay		SAND = Sand				GRVL = Gravel	
CLAY & SAND			112	130	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay		SAND = Sand					
WATER, SAND & GRAVEL			130	166	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand		GRVL = Gravel					
BOULDERS			166	176	QBUU	BLDR		
QBUU = Boulder or boulders	BLDR = Boulder							
GRAVEL W/SANDROCK			176	181	QGUU	SAND	COBL	
QGUU = Gravel (+larger)	SAND = Sand		COBL = Cobble					
GRAVEL W/SANDROCK			181	187	CSTL	SHLE	DLMT	SNDS
CSTL = St.Lawrence	SHLE = Shale		DLMT = Dolomite				SNDS = Sandstone	
SHALE			187	239	CSTL	SHLE	DLMT	SNDS
CSTL = St.Lawrence	SHLE = Shale		DLMT = Dolomite				SNDS = Sandstone	
SHALE			239	252	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SANDROCK		SOFT	252	270	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALE & SANDROCK			270	376	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone		SHLE = Shale				DLMT = Dolomite	
SHALE & SANDROCK			376	435	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK			435	441	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
SANDROCK			441	455	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					

Unique No.	00161413	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	11	ADAAAA	653	ft.	653	ft.	1981/04/10

Well Name	COON RAPIDS 16	**Lic. Or Reg. No.**	27058	**Name of Driller**			
USGS Quad	Coon Rapi	**Elevation**	889	**Aquifer**	CIGM	**Alternative Id**	80-6187

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SHALE (EAU CLAIRE)			455	517	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK			517	518	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SANDROCK			518	653	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No. 00150357

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	DAAAAA

Well Depth	Depth Completed	Date Well Completed
121 ft.	121 ft.	1981/12/18

Well Name COON RAPIDS 17

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 17
2400 105TH NW AV
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter
in. t 121 ft

Casing Diameter **Weight(lbs/ft)**
30 in. t 81 ft 118.6

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DIRT	BLACK		0	3
SAND & GRAVEL & SOME C			3	59
SANDY CLAY		SOFT	59	70
CLEAN COARSE GRAVEL &	RED		70	98
CLEAN COARSE SAND & G			98	108
MEDIUM GRAVEL SAND &			108	113
COARSE SAND & GRAVEL			113	121

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
30	20	40	81	ft. to 121 ft	

Static Water Level 15 ft. from Land surface Date 1981/12/18

PUMPING LEVEL (below land surface)
72 ft. after 4 hrs. pumping 2000 g.p.m.

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

Grouting Information Well grouted? ☐ Yes ☑ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 10-23-2001 BY SUMMIT ENVIR.

USGS Quad Coon Rapids Elevation 855
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
License Business Name
Name of Driller KAUITSON, K.

Report Copy

Unique No.	00150357	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	DAAAAA	121	ft.	121	ft.	1981/12/18

Well Name	COON RAPIDS 17			**Lic. Or Reg. No.**	27010	**Name of Driller**	KAUITSON, K.
USGS Quad	Coon Rapi	**Elevation**	855	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
DIRT	BLACK		0	3	RUUK	SOIL	ORGD	
RUUK = Recent Deposit	SOIL = Soil			ORGD = Organic Deposits				
SAND & GRAVEL & SOME CLAY			3	59	QPUU	SAND	GRVL	CLAY
QPUU = Pebbly sand/silt/clay	SAND = Sand			GRVL = Gravel			CLAY = Clay	
SANDY CLAY		SOFT	59	70	QLUU	CLAY	SAND	
QLUU = Clay & sand	CLAY = Clay			SAND = Sand				
CLEAN COARSE GRAVEL & SAND	RED		70	98	QHUR	GRVL	SAND	
QHUR = Sand & larger	GRVL = Gravel			SAND = Sand				
CLEAN COARSE SAND & GRAVEL			98	108	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				
MEDIUM GRAVEL SAND & GRAVEL			108	113	QHUU	GRVL	SAND	
QHUU = Sand & larger	GRVL = Gravel			SAND = Sand				
COARSE SAND & GRAVEL			113	121	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				

Unique No. 00110469	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2008/12/29
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1991/04/15
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection	Well Depth	Depth Completed	Date Well Completed
	31	24	W	2	DCDCDB	637 ft.	637 ft.	1986/05/00

Well Name COON RAPIDS 18

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS

COON RAPIDS MN 55448

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

36 in. t 135 ft

30 in. t 195 ft

24 in. t 575 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW		0	14
PEAT	BLK/B		14	17
SAND MEDIUM	BROW		17	67
CLAY			67	120
CLAY-SHALE	RED		120	142
CLAY & SAND	RED		142	194
CLAY & SAND	RED		194	198
SHALE & SAND	GRN/G		198	226
SHALE & SAND			226	228
FRANCONIA	GREE		228	367
GALESVILLE			367	429
GALESVILLE			429	432
SHALE			432	486
MT. SIMON			486	509
MT. SIMON			509	593
SHALEY SANDSTON			593	616
MIXED SHALE & SANDSTO			616	631
SANDSTONE	RED		631	637

Screen N

Open Hole From 575 ft. to 637 ft.

Make Type

Static Water Level 140 ft. from Land surface Date 1986/05/00

PUMPING LEVEL (below land surface)

248 ft. after 36 hrs. pumping 1400 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	575	67.5	Y

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed N

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.2048. GAMMA LOGGED 8-28-1985.

GAMMA LOGGED 1-11-2005 BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 890

Aquifer: CMTS Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller HOLLEN, G.

Report Copy

Unique No.	00110469	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/29
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	2	DCDCDB	637	ft.	637	ft.	1986/05/00

Well Name	COON RAPIDS 18	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	890	**Aquifer**	CMTS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN		0	14	QFUB	SAND		
QFUB = Sand	SAND = Sand							
PEAT	BLK/BRN		14	17	QSUU	PEAT		
QSUU = Peat	PEAT = Peat							
SAND MEDIUM	BROWN		17	67	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY			67	120	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							
CLAY-SHALE	RED		120	142	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							
CLAY & SAND	RED		142	194	QLUR	CLAY	SAND	
QLUR = Clay & sand	CLAY = Clay		SAND = Sand					
CLAY & SAND	RED		194	198	CSTL	DLMT	SLSN	SHLE
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone			SHLE = Shale		
SHALE & SAND	GRN/GRY		198	226	CSTL	DLMT	SLSN	SHLE
CSTL = St.Lawrence	DLMT = Dolomite		SLSN = Siltstone			SHLE = Shale		
SHALE & SAND			226	228	CFRN	SHLE	DLMT	SNDS
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite			SNDS = Sandstone		
FRANCONIA	GREEN		228	367	CFRN	SHLE	DLMT	SNDS
CFRN = Franconia	SHLE = Shale		DLMT = Dolomite			SNDS = Sandstone		
GALESVILLE			367	429	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
GALESVILLE			429	432	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone					
SHALE			432	486	CECR	SHLE	SNDS	DLMT
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		
MT. SIMON			486	509	CECR	SHLE	SNDS	DLMT
CECR = Eau Claire	SHLE = Shale		SNDS = Sandstone			DLMT = Dolomite		

Unique No.	00110469	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/29
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	2	DCDCDB	637	ft.	637	ft.	1986/05/00

Well Name	COON RAPIDS 18	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	890	**Aquifer**	CMTS	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
MT. SIMON			509	593	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							
SHALEY SANDSTON			593	616	CMTS	SNDS	SHLE	
CMTS = Mt.Simon	SNDS = Sandstone		SHLE = Shale					
MIXED SHALE & SANDSTONE			616	631	CMTS	SNDS	SHLE	
CMTS = Mt.Simon	SNDS = Sandstone		SHLE = Shale					
SANDSTONE	RED		631	637	CMTS	SNDS		
CMTS = Mt.Simon	SNDS = Sandstone							

Unique No. 00110475

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2009/07/16

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	AACBDB

Well Depth	Depth Completed	Date Well Completed
143 ft.	135 ft.	1987/10/14

Well Name COON RAPIDS 19

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 19

COON RAPIDS MN 55433

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS

11155 ROBINSON NW DR

COON RAPIDS MN 55433

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

30 in. t 30 ft

20 in. t 115 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
TOPSOIL	BLACK		0	3
FINE SAND	BROW		3	25
CLAY & SAND MIX	BROW		25	35
CLAY WITH GRAVEL	BROW		35	83
STICKY CLAY	BLUE		83	105
STICKY CLAY	RED	HARD	105	115
COARSE SAND/GRAVEL			115	138
CLAY		HARD	138	143

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
20	70	20	115	ft. to 135	ft

Static Water Level 15 ft. from Land surface Date 1987/10/14

PUMPING LEVEL (below land surface)

84 ft. after 24 hrs. pumping 1200 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	6	25	0

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed N

Mfr nam

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

M.G.S. NO.2878.

USGS Quad Coon Rapids Elevation 850

Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010

License Business Name

Name of Driller HOLLEN, G.

Report Copy

Unique No.	00110475	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2009/07/16
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	AACBDB	143	ft.	135	ft.	1987/10/14

Well Name	COON RAPIDS 19	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	850	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
TOPSOIL	BLACK		0	3	RUUK	SOIL	ORGD	
RUUK = Recent Deposit	SOIL = Soil			ORGD = Organic Deposits				
FINE SAND	BROWN		3	25	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY & SAND MIX	BROWN		25	35	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
CLAY WITH GRAVEL	BROWN		35	83	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
STICKY CLAY	BLUE		83	105	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
STICKY CLAY	RED	HARD	105	115	QCUR	CLAY		
QCUR = Clay	CLAY = Clay							
COARSE SAND/GRAVEL			115	138	QHUU	SAND	GRVL	
QHUU = Sand & larger	SAND = Sand			GRVL = Gravel				
CLAY		HARD	138	143	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							

Unique No. 00420956

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2008/12/30

Entry Date 1991/04/15

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	ADBDAB

Well Depth	Depth Completed	Date Well Completed
135 ft.	135 ft.	1988/04/26

Well Name COON RAPIDS 20

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 20
XAVIS NW ST
COON RAPIDS MN 55433

Drilling Fluid

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter
0 in. t 135 ft

Casing Diameter **Weight(lbs/ft)**
30 in. t 95 ft
20 in. t 95 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
TOPSOIL-SAND	BROW		0	14
CLAY WITH GRAVEL	RED		14	18
MIXED LAYERS SAND & CL	BROW		18	40
CLAY	GRAY		40	43
LAYERED SAND & CLAY	GRAY		43	70
STICKY CLAY	BLUE		70	82
COARSE SAND	YELLO		82	93
SAND/GRAVEL	YELLO		93	135

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
20		40.8	95	ft. to 135 ft	

Static Water Level 15 ft. from Land surface Date 1988/04/26

PUMPING LEVEL (below land surface)
90 ft. after 8 hrs. pumping 1560 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	40	6	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

SAME AS NO.420957. 420957 PAPERS ARE LOST.

GAMMA LOGGED 11-14-2002. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 850
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
License Business Name
Name of Driller HOLLEN, G.

Report Copy

Unique No.	00420956	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1991/04/15

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	ADBDAB	135	ft.	135	ft.	1988/04/26

Well Name	COON RAPIDS 20	**Lic. Or Reg. No.**	27010	**Name of Driller**	HOLLEN, G.		
USGS Quad	Coon Rapi	**Elevation**	850	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
TOPSOIL-SAND	BROWN		0	14	RUUB	SOIL	ORGD	SAND
RUUB = Recent Deposit-brown	SOIL = Soil			ORGD = Organic Deposits			SAND = Sand	
CLAY WITH GRAVEL	RED		14	18	QPUR	CLAY	GRVL	
QPUR = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
MIXED LAYERS SAND & CLAY	BROWN		18	40	QLUB	SAND	CLAY	
QLUB = Clay & sand	SAND = Sand			CLAY = Clay				
CLAY	GRAY		40	43	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
LAYERED SAND & CLAY	GRAY		43	70	QLUG	SAND	CLAY	
QLUG = Clay & sand	SAND = Sand			CLAY = Clay				
STICKY CLAY	BLUE		70	82	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
COARSE SAND	YELLOW		82	93	QFUY	SAND		
QFUY = Sand	SAND = Sand							
SAND/GRAVEL	YELLOW		93	135	QHUY	SAND	GRVL	
QHUY = Sand & larger	SAND = Sand			GRVL = Gravel				

Unique No. 00474384	MINNESOTA DEPARTMENT OF HEALTH	Update Date 2007/02/06
County Name Anoka	**WELL AND BORING RECORD**	Entry Date 1992/06/22
	Minnesota Statutes Chapter 1031	

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	13	ACCDDD

Well Depth	Depth Completed	Date Well Completed
207 ft.	203 ft.	1990/01/26

Well Name COON RAPIDS 21

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 21
269 NORTHDALE BL
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

24	in. t	103	ft
18	in. t	170	ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
FINE SAND	BROW	SOFT	0	25
FINE SAND	GRAY	SOFT	25	30
SAND & CLAY	GRAY	SOFT	30	32
FINE SAND	BROW	SOFT	32	35
FINE SAND	GRAY	SOFT	35	38
SANDY CLAY	GRAY	SOFT	38	50
CLAY	GRY/B	MEDIUM	50	66
ROCKS & GRAVEL	GRAY	HARD	66	69
FINE SAND & CLAY	BROW	MEDIUM	69	92
CLAY/TRACES OF GRAVEL	BROW	SOFT	92	103
FINE SAND	BROW	SOFT	103	105
COARSE GRAVEL & CLAY	BRN/R	MEDIUM	105	110
MEDIUM GRAVEL & CLAY	BROW	MEDIUM	110	127
MEDIUM TO FINE SAND	BROW	SOFT	127	136
GRAVEL & CLAY	GRAY	SOFT	136	148
CLAY AND ROCKS	LT. YE	SFT-MED	148	150
CLAY/GRAVEL & ROCKS	BLUE	SOFT	150	160
NO RECORD			160	207
CLAY			207	207

Screen Y **Open Hole** From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
12	70	33	170	ft. to 203	ft

Static Water Level 66 ft. from Land surface Date 1990/01/26

PUMPING LEVEL (below land surface)
126 ft. after hrs. pumping 1300 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G	0	103	

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 1-11-04. LOGGED BY JIM TRAEN

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

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

USGS Quad Coon Rapids Elevation 899
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71536
License Business Name
Name of Driller TOM/ROGER

Report Copy

Unique No.	00474384	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDDD	207	ft.	203	ft.	1990/01/26

Well Name	COON RAPIDS 21			**Lic. Or Reg. No.**	71536	**Name of Driller**	TOM/ROGER
USGS Quad	Coon Rapi	**Elevation**	899	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
FINE SAND	BROWN	SOFT	0	25	QFUB	SAND		
QFUB = Sand	SAND = Sand							
FINE SAND	GRAY	SOFT	25	30	QFUG	SAND		
QFUG = Sand	SAND = Sand							
SAND & CLAY	GRAY	SOFT	30	32	QLUG	SAND	CLAY	
QLUG = Clay & sand	SAND = Sand			CLAY = Clay				
FINE SAND	BROWN	SOFT	32	35	QFUB	SAND		
QFUB = Sand	SAND = Sand							
FINE SAND	GRAY	SOFT	35	38	QFUG	SAND		
QFUG = Sand	SAND = Sand							
SANDY CLAY	GRAY	SOFT	38	50	QLUG	CLAY	SAND	
QLUG = Clay & sand	CLAY = Clay			SAND = Sand				
CLAY	GRY/BLU	MEDIUM	50	66	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
ROCKS & GRAVEL	GRAY	HARD	66	69	QGUG	GRVL	COBL	
QGUG = Gravel (+larger)	GRVL = Gravel			COBL = Cobble				
FINE SAND & CLAY	BROWN	MEDIUM	69	92	QLUB	SAND	CLAY	
QLUB = Clay & sand	SAND = Sand			CLAY = Clay				
CLAY/TRACES OF GRAVEL	BROWN	SOFT	92	103	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
FINE SAND	BROWN	SOFT	103	105	QFUB	SAND		
QFUB = Sand	SAND = Sand							
COARSE GRAVEL & CLAY	BRN/RED	MEDIUM	105	110	QPUU	GRVL	CLAY	
QPUU = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
MEDIUM GRAVEL & CLAY	BROWN	MEDIUM	110	127	QPUB	GRVL	CLAY	
QPUB = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
MEDIUM TO FINE SAND	BROWN	SOFT	127	136	QFUB	SAND		
QFUB = Sand	SAND = Sand							

Unique No.	00474384	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/06
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	13	ACCDDD	207	ft.	203	ft.	1990/01/26

Well Name	COON RAPIDS 21	**Lic. Or Reg. No.**	71536	**Name of Driller**	TOM/ROGER		
USGS Quad	Coon Rapi	**Elevation**	899	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
GRAVEL & CLAY	GRAY	SOFT	136	148	QPUG	GRVL	CLAY	
QPUG = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
CLAY AND ROCKS	LT. YEL	SFT-MED	148	150	QPUY	CLAY	COBL	
QPUY = Pebbly sand/silt/clay	CLAY = Clay			COBL = Cobble				
CLAY/GRAVEL & ROCKS	BLUE	SOFT	150	160	QPUG	CLAY	GRVL	COBL
QPUG = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel			COBL = Cobble	
NO RECORD			160	207	QUUU	DRFT		
QUUU = Unknown deposit type	DRFT = Drift							
CLAY			207	207	QCUU	CLAY		
QCUU = Clay	CLAY = Clay							

Unique No. 00474385

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2008/12/30

Entry Date 1992/06/22

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	CBABAD

Well Depth	Depth Completed	Date Well Completed
108 ft.	105 ft.	1990/03/15

Well Name COON RAPIDS 22

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 22
2220 105TH NW AV
COON RAPIDS MN 55433

Drilling Fluid

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

Use Community Supply (municipal)

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON NW DR
COON RAPIDS MN 55433

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**
24 in. t 80 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW	SOFT	0	19
ROCKS & BOULDERS	BROW	HARD	19	21
SANDY CLAY	BROW	MEDIUM	21	28
SANDY CLAY/GRAVEL	GRAY	SOFT	28	57
GRAVEL & CLAY	BROW	SOFT	57	70
SANDY CLAY	BROW	SOFT	70	73
FINE SAND	BROW	SOFT	73	83
COARSE SAND	BROW	SOFT	83	93
SAND & GRAVEL	BROW	SOFT	93	98
GRAVEL	BROW	SOFT	98	105
CLAY	BROW	SOFT	105	108

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
18	120	25	80	ft. to 105 ft	

Static Water Level 32 ft. from Land surface Date 1990/03/15

PUMPING LEVEL (below land surface)
105 ft. after 1 hrs. pumping 250 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	20	1.5	Y

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 11-14-2002. LOGGED BY JIM TRAEN.

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

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

USGS Quad Coon Rapids Elevation 869
Aquifer: QBAA Alt Id: 80-6139

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71536
License Business Name
Name of Driller TOM/ROGER

Report Copy

Unique No.	00474385	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2008/12/30
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	CBABAD	108	ft.	105	ft.	1990/03/15

Well Name	COON RAPIDS 22	**Lic. Or Reg. No.**	71536	**Name of Driller**	TOM/ROGER		
USGS Quad	Coon Rapi	**Elevation**	869	**Aquifer**	QBAA	**Alternative Id**	80-6139

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN	SOFT	0	19	QFUB	SAND		
QFUB = Sand	SAND = Sand							
ROCKS & BOULDERS	BROWN	HARD	19	21	QBUB	COBL	BLDR	
QBUB = Boulder or boulders	COBL = Cobble			BLDR = Boulder				
SANDY CLAY	BROWN	MEDIUM	21	28	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
SANDY CLAY/GRAVEL	GRAY	SOFT	28	57	QPUG	CLAY	SAND	GRVL
QPUG = Pebbly sand/silt/clay	CLAY = Clay			SAND = Sand			GRVL = Gravel	
GRAVEL & CLAY	BROWN	SOFT	57	70	QPUB	GRVL	CLAY	
QPUB = Pebbly sand/silt/clay	GRVL = Gravel			CLAY = Clay				
SANDY CLAY	BROWN	SOFT	70	73	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
FINE SAND	BROWN	SOFT	73	83	QFUB	SAND		
QFUB = Sand	SAND = Sand							
COARSE SAND	BROWN	SOFT	83	93	QFUB	SAND		
QFUB = Sand	SAND = Sand							
SAND & GRAVEL	BROWN	SOFT	93	98	QHUB	SAND	GRVL	
QHUB = Sand & larger	SAND = Sand			GRVL = Gravel				
GRAVEL	BROWN	SOFT	98	105	QGUB	GRVL		
QGUB = Gravel (+larger)	GRVL = Gravel							
CLAY	BROWN	SOFT	105	108	QCUB	CLAY		
QCUB = Clay	CLAY = Clay							

Unique No. 00463020

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/02/07

Entry Date 1992/06/22

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	27	BAABBB

Well Depth		Depth Completed		Date Well Completed
151	ft.	128	ft.	1991/12/16

Well Name COON RAPIDS 23

Well Owner's Name COON RAPIDS, CITY OF
2100 COON RAPIDS NW BL
COON RAPIDS MN 55433

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON DR
COON RAPIDS MN 55433

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND	BROW		0	10
CLAY/SAND	BROW		10	34
SAND/GRAVEL	GRAY		34	38
SANDY CLAY	GRAY		38	67
SAND	BROW		67	95
GRAVEL	BROW		95	122
CLAY	GRAY		122	123
GRAVEL	BROW		123	126
SAND	BROW		126	151
CLAY	BROW		151	151

Drilling Method Cable Tool

Drilling Fluid Water

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

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

Casing Diameter				Weight(lbs/ft)
30	in. t	92	ft	118.6
24	in. t	93	ft	94.6

Screen Y

Open Hole From ft. to ft.

Make JOHNSON Type L

Diameter	Slot	Length	Set		Fitting
24	50		94	ft. to	ft
16	70			ft. to 123	ft

Static Water Level 24 ft. from Land surface Date 1991/12/16

PUMPING LEVEL (below land surface)
70 ft. after 8 hrs. pumping 500 g.p.m.

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

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G		91	114 S

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☑ Not Installed Date Installed N
Mfr nam
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

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

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 11-14-2002 BY DOWNHOLE WELL SERVICES.

USGS Quad Coon Rapids Elevation 855
Aquifer: QBAA Alt Id: 1020017S24

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71015
License Business Name
Name of Driller FULTON, W.

Report Copy

Unique No.	00463020	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/02/07
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	1992/06/22

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	27	BAABBB	151	ft.	128	ft.	1991/12/16

Well Name	COON RAPIDS 23	**Lic. Or Reg. No.**	71015	**Name of Driller**	FULTON, W.		
USGS Quad	Coon Rapi	**Elevation**	855	**Aquifer**	QBAA	**Alternative Id**	1020017S24

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND	BROWN		0	10	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY/SAND	BROWN		10	34	QLUB	SAND	CLAY	
QLUB = Clay & sand	SAND = Sand			CLAY = Clay				
SAND/GRAVEL	GRAY		34	38	QHUG	SAND	GRVL	
QHUG = Sand & larger	SAND = Sand			GRVL = Gravel				
SANDY CLAY	GRAY		38	67	QLUG	CLAY	SAND	
QLUG = Clay & sand	CLAY = Clay			SAND = Sand				
SAND	BROWN		67	95	QFUB	SAND		
QFUB = Sand	SAND = Sand							
GRAVEL	BROWN		95	122	QGUB	GRVL		
QGUB = Gravel (+larger)	GRVL = Gravel							
CLAY	GRAY		122	123	QCUG	CLAY		
QCUG = Clay	CLAY = Clay							
GRAVEL	BROWN		123	126	QGUB	GRVL		
QGUB = Gravel (+larger)	GRVL = Gravel							
SAND	BROWN		126	151	QFUB	SAND		
QFUB = Sand	SAND = Sand							
CLAY	BROWN		151	151	QCUB	CLAY		
QCUB = Clay	CLAY = Clay							

Unique No.	00674478	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/05/18
County Name	Anoka	**WELL AND BORING RECORD**	Entry Date	/ / 0

Minnesota Statutes Chapter 1031

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	21	ABADAB

Well Depth	Depth Completed	Date Well Completed
388 ft.	388 ft.	2003/12/19

Well Name COON RAPIDS 24

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 24
10845 DIRECT RIVER DR
COON RAPIDS MN 55433

Drilling Fluid Bentonite

Well Hydrofractured? ☐ Yes ☑ No
From ft. to ft.

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter

in. t	85	ft	
in. t	388	ft	
in. t	323	ft	

Casing Diameter **Weight(lbs/ft)**

30	in. t	191	ft	118.65
24	in. t	241	ft	94.62
36	in. t	90	ft	142.68

Screen N

Open Hole From 232 ft. to 388 ft.

Make Type

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL	BROW	SOFT	0	29
CLAY & GRAVEL	BROW	HARD	29	82
SANDY CLAY	BROW	SOFT	82	87
SAND	BROW	SOFT	87	112
JORDAN S.S.	TAN	MEDIUM	132	149
FRANCONIA S.S.	GRN/B	MED-HRD	149	354
IRONTON/GALESVILLE	GRAY	MEDIUM	354	385
EAU CLAIRE SHALE	GRY/G	HARD	385	388

Static Water Level 60 ft. from Land surface Date 2003/09/18

PUMPING LEVEL (below land surface)
112 ft. after 8 hrs. pumping 1560 g.p.m.

Well Head Completion
Pitless adapter mfr BAKER Model 12.5PS2426
Casing Protection ☑ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G		85	10	Y
G		232.5	10	Y

Nearest Known Source of Contamination
200 ft. direction N type SDF
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam GOULD
Model 14RLJC-7 HP 75 Volts 480
Drop Pipe Length 165 ft. Capacity E+03 g.p.m
Type S

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

Was a variance granted from the MDH for this Well? ☐ Yes ☑ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 6-17-2003. M.G.S. NO. 4242. LOGGED BY JIM TRAEN.

ROGER E. RENNER, MGWC, N-291.

MR. CHRIS CATLIN (651)644-4389.

USGS Quad Coon Rapids Elevation 861
Aquifer: CFIG Alt Id: 4242

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71015
License Business Name
Name of Driller COX, A.

Report Copy

Unique No.	00674478	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/05/18
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	/ / 0

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	21	ABADAB	388	ft.	388	ft.	2003/12/19

Well Name	COON RAPIDS 24	**Lic. Or Reg. No.**	71015	**Name of Driller**	COX, A.		
USGS Quad	Coon Rapi	**Elevation**	861	**Aquifer**	CFIG	**Alternative Id**	4242

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL	BROWN	SOFT	0	29	QHUB	SAND	GRVL	
QHUB = Sand & larger	SAND = Sand			GRVL = Gravel				
CLAY & GRAVEL	BROWN	HARD	29	82	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
SANDY CLAY	BROWN	SOFT	82	87	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
SAND	BROWN	SOFT	87	112	QFUB	SAND		
QFUB = Sand	SAND = Sand							
JORDAN S.S.	TAN	MEDIUM	132	149	QFUB	SAND		
QFUB = Sand	SAND = Sand							
FRANCONIA S.S.	GRN/BRN	MED-HRD	149	354	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone			SHLE = Shale			DLMT = Dolomite	
IRONTON/GALESVILLE	GRAY	MEDIUM	354	385	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							
EAU CLAIRE SHALE	GRY/GRN	HARD	385	388	CECR	SHLE	SNDS	
CECR = Eau Claire	SHLE = Shale			SNDS = Sandstone				

Unique No. 00674479

County Name Anoka

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2007/01/09

Entry Date 2004/10/11

Township Name	Township	Range	Dir	Section	Subsection
	31	24	W	22	BCBDBA

Well Depth	Depth Completed	Date Well Completed
388 ft.	388 ft.	2003/12/19

Well Name COON RAPIDS 25

Drilling Method Cable Tool

Well Owner's Name COON RAPIDS 25
2324 COON RAPIDS NW BL
COON RAPIDS MN 55433

Drilling Fluid Bentonite

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

Contact's Name CITY OF COON RAPIDS
11155 ROBINSON DR
COON RAPIDS MN 55433

Use Community Supply (municipal)

Casing **Drive Shoe?** ☑ Yes ☐ N

Hole Diameter
in. t 388 ft
in. t 227 ft

Casing Diameter **Weight(lbs/ft)**
36 in. t 196 ft 142.68
24 in. t 229 ft 94.62

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL	BROW	SOFT	0	29
CLAY & GRAVEL	BROW	HARD	29	82
SANDY CLAY	BROW	SOFT	82	87
SAND	BROW	SOFT	87	112
JORDAN S.S.	TAN	MEDIUM	112	162
ST. LAWRENCE	BRN/G	MEDIUM	162	193
FRANCONIA S.S.	GRN/B	MED-HRD	193	359
IRONTON/GALESVILLE	GRAY	MEDIUM	359	388

Screen N

Open Hole From 225 ft. to 388 ft.

Make Type

Static Water Level 51 ft. from Land surface Date 2003/12/01

PUMPING LEVEL (below land surface)
121.37 ft. after 48 hrs. pumping 1560 g.p.m.

Well Head Completion
Pitless adapter mfr BAKER Model 9.5PS2426
Casing Protection ☑ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)
G		225	45 Y

Nearest Known Source of Contamination
200 ft. direction N type SDF
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr nam GOULDS
Model 14RLJC-7 HP 75 Volts 480
Drop Pipe Length 165 ft. Capacity E+03 g.p.m
Type S

Any not in use and not sealed well(s) on property? ☐ Yes ☑ No

Was a variance granted from the MDH for this Well? ☐ Yes ☑ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 8-29-2003. M.G.S. NO. 4280. LOGGED BY JIM TRAEN.

USGS Quad Coon Rapids Elevation 871
Aquifer: CFIG Alt Id: 80-6137

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 71015
License Business Name
Name of Driller COX, A.

Report Copy

Unique No.	00674479	MINNESOTA DEPARTMENT OF HEALTH	Update Date	2007/01/09
County Name	Anoka	**WELL AND BORING RECORD** *Minnesota Statutes Chapter 1031*	Entry Date	2004/10/11

Township Name	Township	Range	Dir	Section	Subsection	Well Depth		Depth Completed		Date Well Completed
	31	24	W	22	BCBDBA	388	ft.	388	ft.	2003/12/19

Well Name	COON RAPIDS 25	**Lic. Or Reg. No.**	71015	**Name of Driller**	COX, A.		
USGS Quad	Coon Rapi	**Elevation**	871	**Aquifer**	CFIG	**Alternative Id**	80-6137

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO	STRAT	LITH PRIM	LITH SEC	LITH MINOR
SAND & GRAVEL	BROWN	SOFT	0	29	QHUB	SAND	GRVL	
QHUB = Sand & larger	SAND = Sand			GRVL = Gravel				
CLAY & GRAVEL	BROWN	HARD	29	82	QPUB	CLAY	GRVL	
QPUB = Pebbly sand/silt/clay	CLAY = Clay			GRVL = Gravel				
SANDY CLAY	BROWN	SOFT	82	87	QLUB	CLAY	SAND	
QLUB = Clay & sand	CLAY = Clay			SAND = Sand				
SAND	BROWN	SOFT	87	112	QFUB	SAND		
QFUB = Sand	SAND = Sand							
JORDAN S.S.	TAN	MEDIUM	112	162	CJDN	SNDS		
CJDN = Jordan	SNDS = Sandstone							
ST. LAWRENCE	BRN/GRN	MEDIUM	162	193	CSTL	SLSN	DLMT	
CSTL = St.Lawrence	SLSN = Siltstone			DLMT = Dolomite				
FRANCONIA S.S.	GRN/BRN	MED-HRD	193	359	CFRN	SNDS	SHLE	DLMT
CFRN = Franconia	SNDS = Sandstone			SHLE = Shale			DLMT = Dolomite	
IRONTON/GALESVILLE	GRAY	MEDIUM	359	388	CIGL	SNDS		
CIGL = Ironton-Galesville	SNDS = Sandstone							

Appendix B

Aquifer Test Data and Analysis

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
Source Water Protection Unit
P.O. Box 64975
St. Paul, Minnesota 55164-0975

Determination of Aquifer Properties and Aquifer Test Plan (DAP-ATP) Form

Public Water Supply ID:	1020017	PWS Name:	Coon Rapids

Contact Information for Person Completing this Form

Name:	John Greer
Address:	Barr Engineering Company
	4700 West 77th Street, Suite 200
City, State, Zip:	Edina, MN 55435
Phone, Fax, e-mail:	(952) 832-2691

Aquifer Properties Determination Methods

- [x] 1) An existing pumping test that meets the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on a well connected to the public water supply system.
- [ ] 2) An existing pumping test that meets the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on another well in a hydrogeologic setting determined by the department to be equivalent.
- [ ] 3) A proposed new test to be conducted on a new or existing well connected to the public water supply system and that meets the requirements for larger-sized water systems (wellhead protection rule part 4720.5520). A test plan must be approved before conducting the test.
- [ ] 4) A proposed new test to be conducted on a new or existing public well connected to the public water supply system and that meets the requirements for smaller-sized water systems (wellhead protection rule part 4720.5530). A test plan must be approved before conducting the test.
- [ ] 5) An existing pumping test that does not meet the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on: 1) a public water supply well or 2) another well in a hydrogeologic setting determined by the department to be equivalent.
- [ ] 6) Existing specific capacity test(s) conducted on the public water supply well(s) or specific capacity tests conducted on other wells in a hydrogeologic setting determined by the department to be equivalent.
- [ ] 7) An existing published transmissivity value.

- Include all test data and analysis documentation with the estimated transmissivity, ft^2/day, when the aquifer properties determination method is; 1, 2, 5, 6, or 7, listed above.
- Attach detailed aquifer test plan for methods 3 or 4.

Submitted by: John Greer	Prof. License: 30347	Date: 7/31/2015

To request this document in another format, please call our Section Receptionist (651/201-4700) or Division TTY (651/201-5797).

Rationale for: 1) Aquifer Properties Determination or 2) Proposed New Test

Briefly describe the rationale for: 1) selected method to determine aquifer properties from existing data, **or** 2) a new aquifer test to be conducted on the pumped well referenced below. Include unique well numbers of all wells that were (or will be) monitored during data collection. How does the existing or proposed test deviate from the ideal. (e.g. rate, duration, no. of obwells, interfering wells, etc.) Attach documentation as necessary.

Aquifer Name:	Confined Quaternary Aquifer	☑ Confined	☐ Unconfined	☐ Fractured Rock

The MDH conducted a 24.3-hour pumping test at Coon Rapids Well 20 (Unique Number 420956) on March 11-12, 1999. The pumping rate was 1,150 gallons per minute (gpm). Coon Rapids Well 17 (Unique Number 150357) was used as an observation well. Analysis of the pumping and recovery data from the observation well using the Theis and Jacob methods produced a range of transmissivities from 31,800 ft**2/day to 66,700 ft**2/day (see attached).

The MDH conducted pumping tests at Wells 19 (Unique Number 110475) and Well 20 on August 29 - September 2, 2002. Wells 673418 and 673420 were used as observation wells. Well 19 was pumped for approximately 24 hours at 1,220 gpm followed by an approximately 24-hour recovery period, and then Well 20 was pumped at 1,000 gpm for approximately 24 hours followed by a second 24-hour recovery period. Data were analyzed using the Theis and Hantush-Jacob methods. The analysis concluded that the Quaternary aquifer is less transmissive near Well 19 and observation well 673418 (T range 8,120 ft**2day to 9,420 ft**2/day) than near Well 20 and 673420 (T range 27,000 ft**2/day to 55,000 ft**2/day) (see attached).

T values for groundwater model:

Region including Well 19 (2002 test data for 673418):
Geometric mean T = 8,700 ft**2/day
Sensitivity analysis range = 8,120 - 9,420 ft**2/day

Region including Well 20 (1999 data from 150357 and 2002 data from 673418 and 673420):
Geometric mean T = 45,210 ft**2/day
Sensitivity analysis range = 27,000 - 66,700 ft**2/day

Proposed New Test Information Summary

Pumped Well Name (Unique Number):	420956, 110475	**Test Duration (Hours):**	24
Location: X, Y (meters) UTM-Z15N or Lat-Lon (decimal degrees) datum: NAD83	473997, 5001192 (420956) 473885, 5001449 (110475)	**Pump Type:**	unknown
		Discharge Rate:	1150, 1220, 1000 gpm
Number of Observation Wells:	3	**Flow Rate Measuring Device Type:**	flowmeter

- A map showing the location of the pumping well and observation well(s) must be included.

List the unique number of each public water supply well to which this DAP-ATP Form applies

150357					
110475					
420956					
474384					
474385					
463020					

Reviewed by: Amal Djerrari	**Approved:** ◉ Yes ○ No	**Approval Date:** 8/3/2015

Analysis of the Coon Rapids #20 (420956) Aquifer Test
March 11, 1999
Confined Drift Aquifer

Introduction

The MDH is assisting in the delineation of wellhead protection areas by the City of Coon Rapids, Minnesota, around the public water supply wells serving the community. An important part of the delineation process is to determine aquifer properties at the well site as accurately as possible. This is normally accomplished by performing a pumping test.

The pumping test at the Coon Rapids Well #20 was conducted by the MDH as described below. The results were analyzed using standard nonequilibrium and semisteady-state methods, cited in references. Data plots are included in Appendix 1, field data sheets in Appendix2, well logs in Appendix 3, and test results are summarized on Table 1. The analysis shows that the aquifer responds as generally expected from the geologic setting.

Description of the Test

A pressure transducer was placed in the pumping well on March 10, 1999 at about 15:30 to collect background readings prior to the test. The well was pumping at the time the transducer was installed and was turned off at about 22:00 providing an eighteen hour resting period before the start of the test. There were no other nearby wells to cause interference for this test. A transducer was installed in a nearby public water supply well, #17 (150357), to serve as an observation well.

The test started at 11:49:53 on March 11, 1999. Well #20 was pumped at an average rate of 1150 gallons per minute. The flowmeter on the well was used to monitor the discharge. The pumping rate remained fairly constant through out the test. However, there were three short periods of time, possibly one minute or so in length, that the pump discharge decreased or even stopped during the test. This caused small variations in water level that did not cause the data to be unusable.

The pump was turned off at 12:09:00.2 on March 12, 1999 to start the recovery period. The recovery period was carried out 1450 minutes and the wells recovered above static levels caused by recharge from snow melt. There also was an anomalous flattening of the water levels during very early recovery possibly the result of pressure surge prevention equipment.

Summary of Results

A transmissivity value of 38,300 ft^2/day and a storativity value of 0.00094 are chosen as being representative of aquifer properties in the area of these two wells for the capture zone analysis. The aquifer is semi-confined but the leakiness is not large and was obscured by recharge during late recovery.

The test results are fairly consistent between the pumping and observation wells, particularly during the late-time pumping period. The results are also consistent with the conceptual model of a leaky confined drift aquifer.

Problems with the Analysis

Problems not withstanding, the data acquired for this test are of high quality and the results are consistent and representative of the aquifer in the area of the well.

References:

Jacob, C. E. and Lohman, S. W., (1952) Nonsteady Flow to a Well of Constant Drawdown in an Extensive Aquifer, Trans. American Geophysical Union, Vol. 33, No. 4, August, 1952, pp. 559-69.

Theis, C. V., (1935) The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage, Trans. American Geophysical Union, 16th Annual Meeting, April, 1935, pp. 519-24.

Table 1.

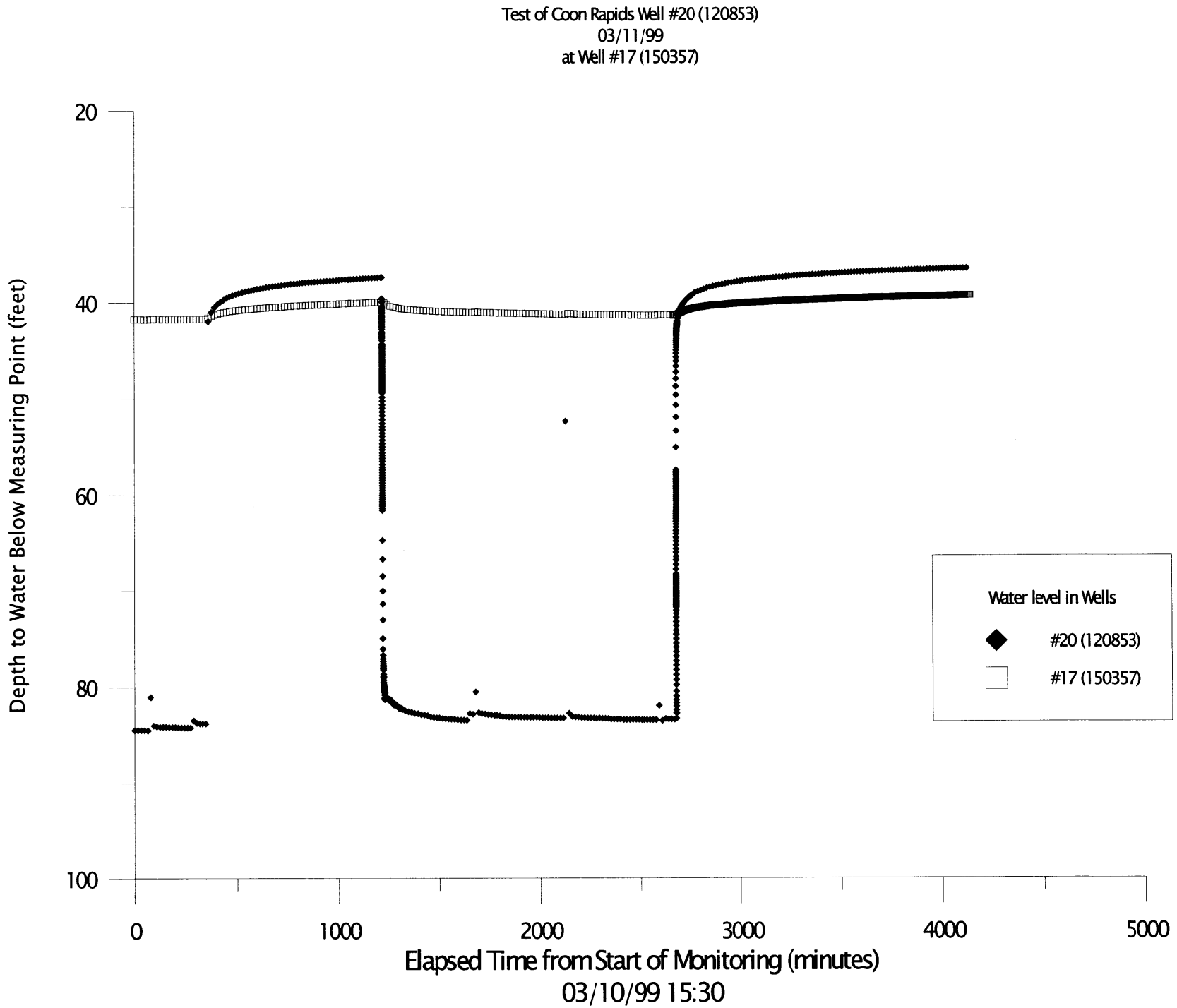
Coon Rapids #20 Aquifer Test
March 11, 1999

	Transmisivity T (ft^2/day)	Storage Coefficient S	Time Period Emphasized	Analysis Method
Pumping Well #20 (420956)	1,470	NA	Early Pumping	Theis
	60,700	NA	Late Pumping	Jacob
	1,470	NA	Early Recovery	Theis
	15,400	NA	Late Recovery	Jacob t/t'
Observation Well #17 (150357)	47,600	1.08e-3	Early Pumping	Theis
	66,700	6.32e-4	Late Pumping	Jacob
	38,300	9.4e-4	Early Recovery	Theis
	31,800	1.5e-4	Late Recovery	Jacob t/t'

Representative aquifer values are best shown by the early-time recovery values for the observation well, giving an average T of 38,300 and S of 0.00094.

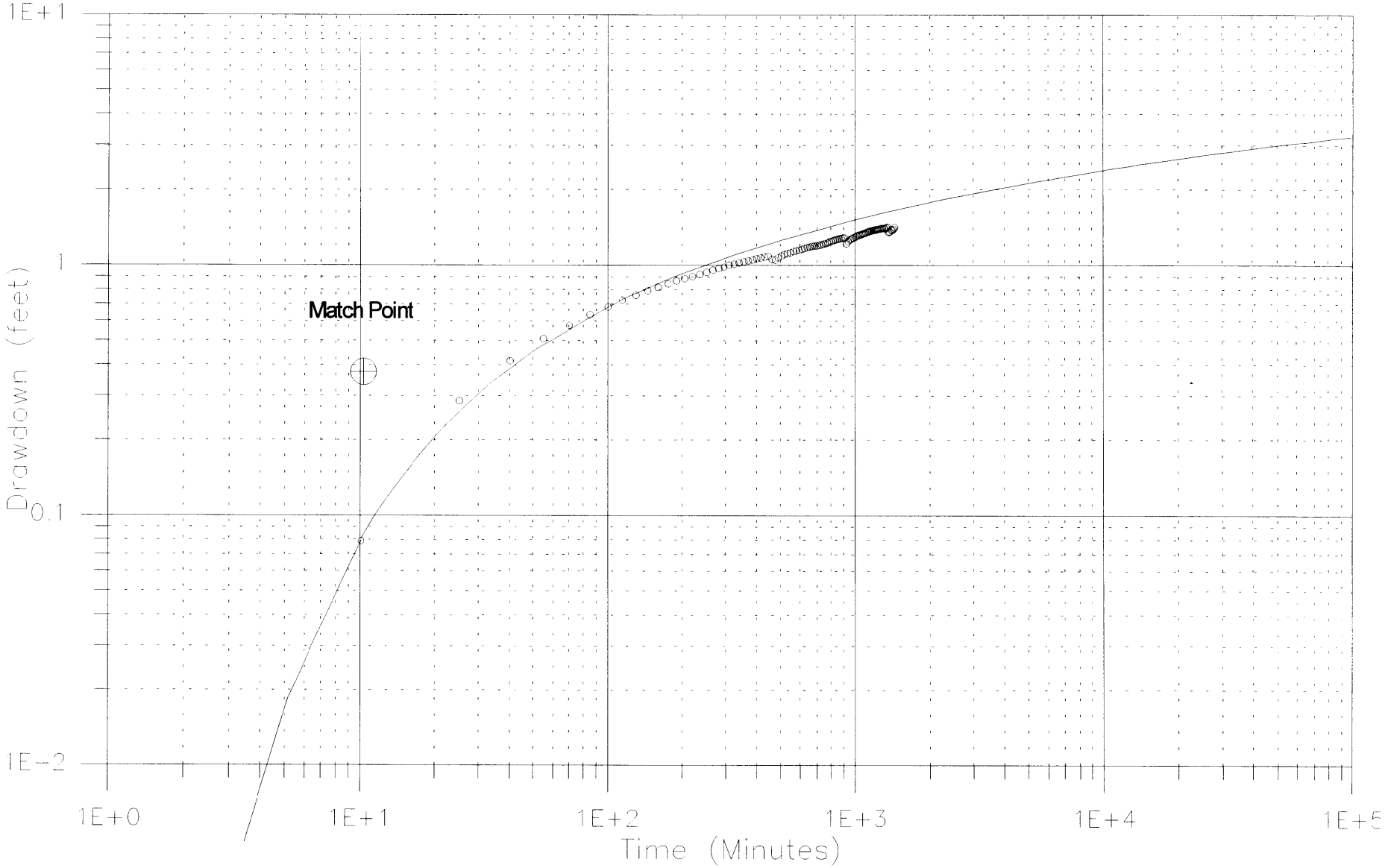
Appendix 1.

Graphical Analysis


Test of Coon Rapids Well #20 (120853)
03/11/99
at Well #17 (150357)
Depth to Water Below Measuring Point (feet)
20
40
60
80
100
0
1000
2000
3000
4000
5000
Elapsed Time from Start of Monitoring (minutes)
03/10/99 15:30
Water level in Wells
#20 (120853)
#17 (150357)

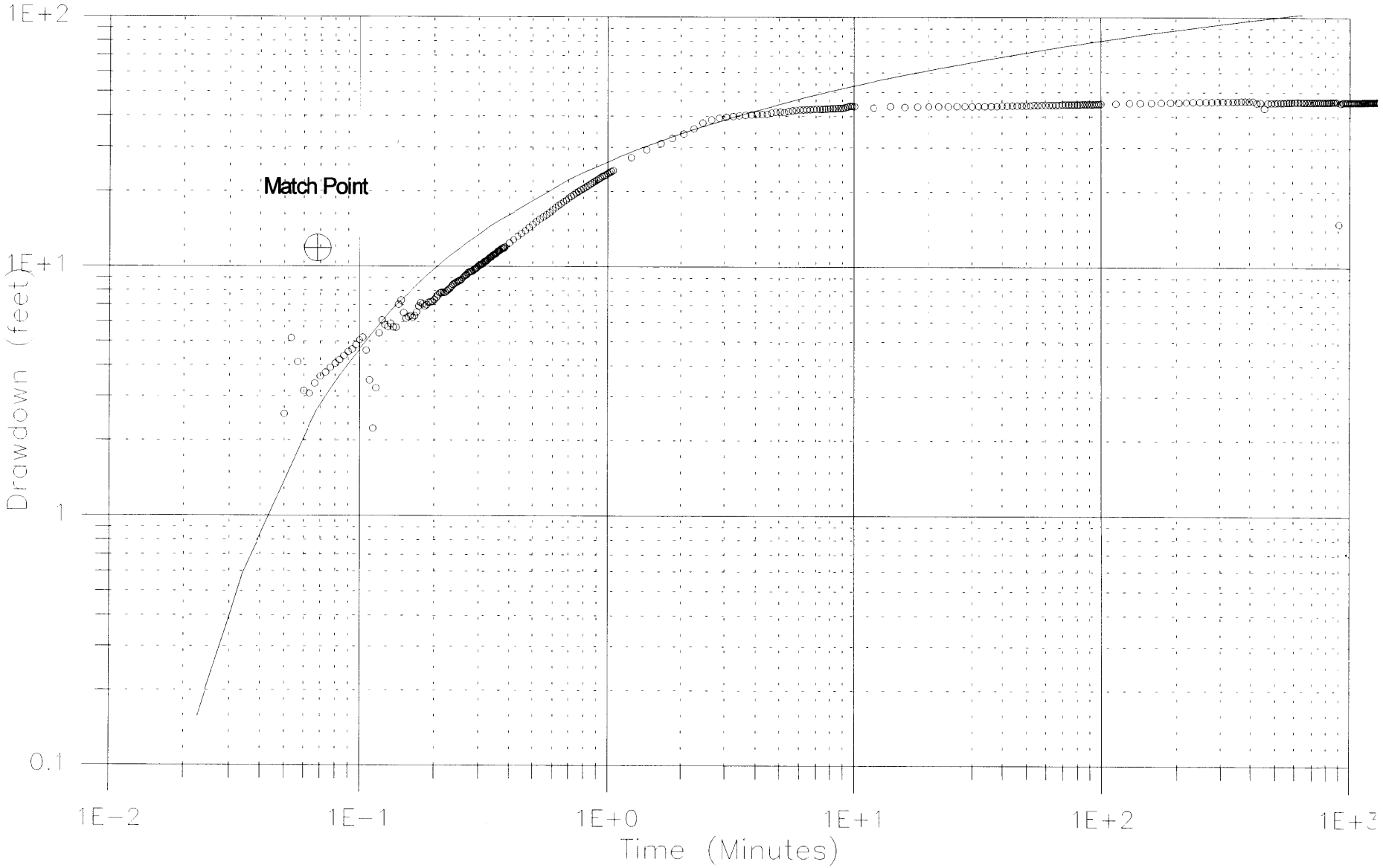
Test of Coon Rapids Well #20 (120853)
03/11/99
at Well #17 (150357)
Pumping

T = 15.3 1152 / 0.37 = 47,600 ft^2/day
S = 47,600 11 / 1163^2 360 = 1.08e-3



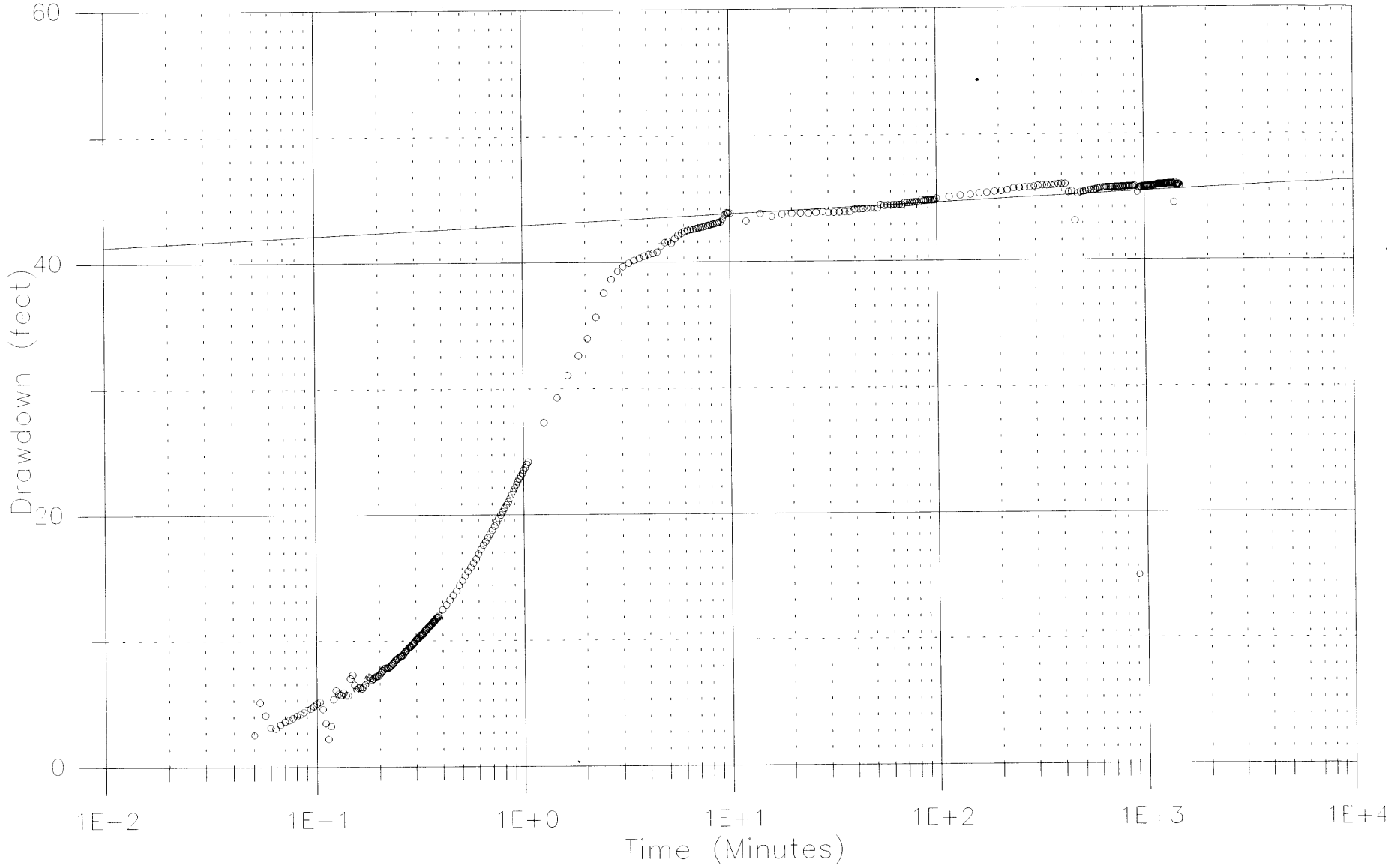
Test of Coon Rapids Well #20 (120853)
03/11/99
Pumping

T = 15.3 1152 / 12 = 1,470 ft^2/day



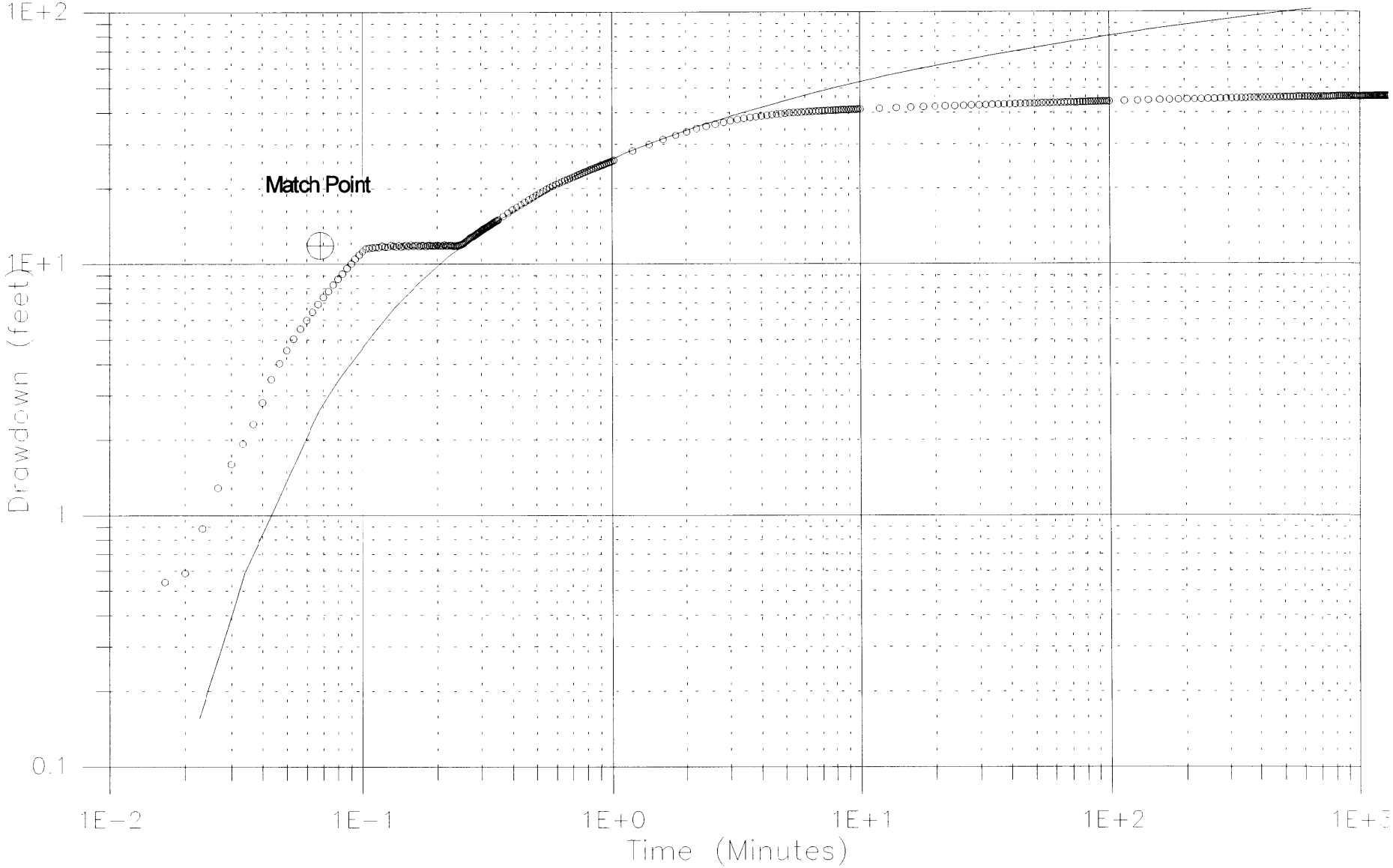
Test of Coon Rapids Well #20 (120853)
03/11/99
Pumping

T = 35.3 1152 / 0.67 = 60,700 ft^2/day



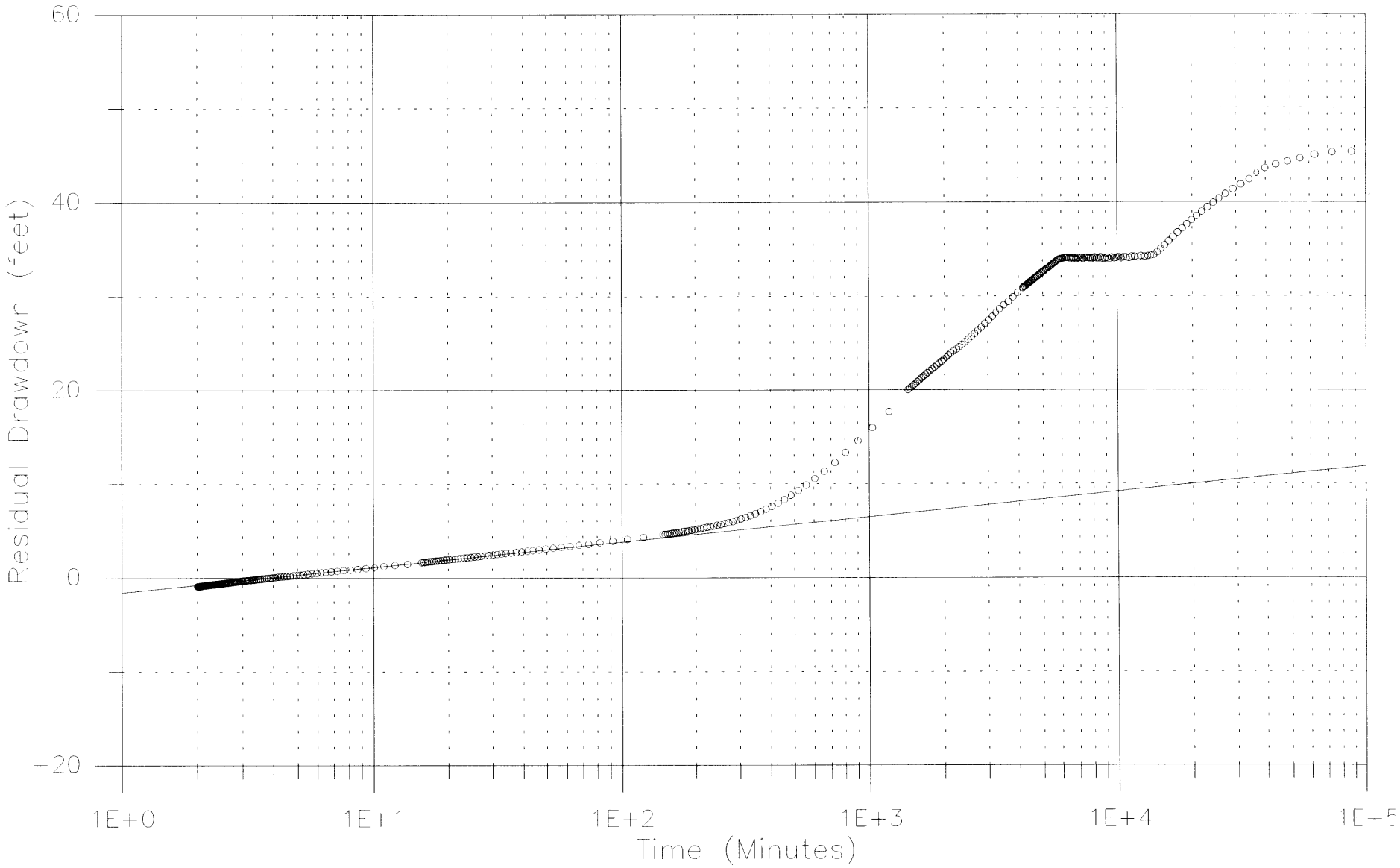
Test of Coon Rapids Well #20 (120853)
03/11/99
Recovery

T = 15.3 1152 / 12 = 1,470 ft^2/day



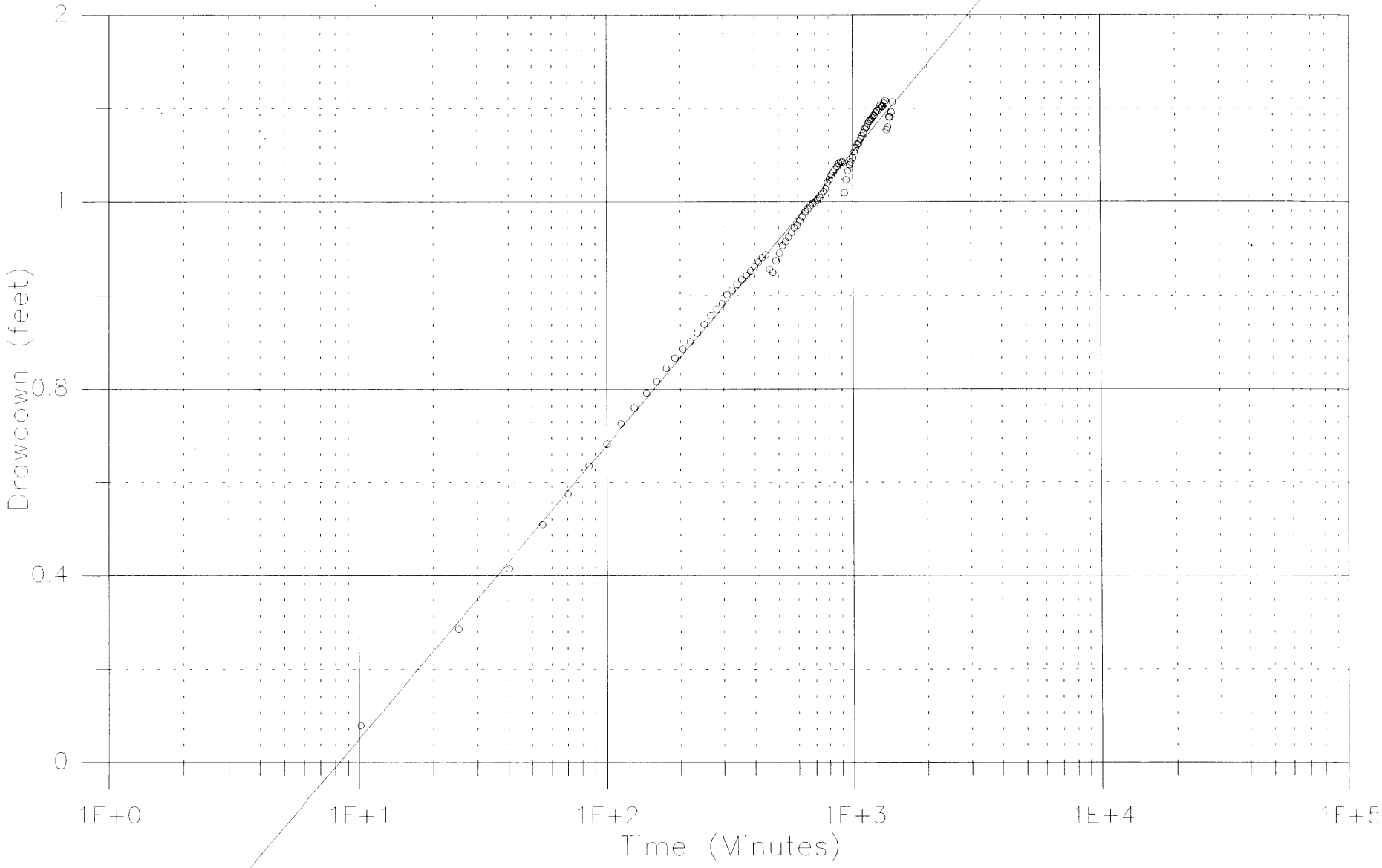
Test of Coon Rapids Well #20 (120853)
03/11/99
Recovery

T = 35.3 1152 / 2.64 = 15,400 ft^2/day



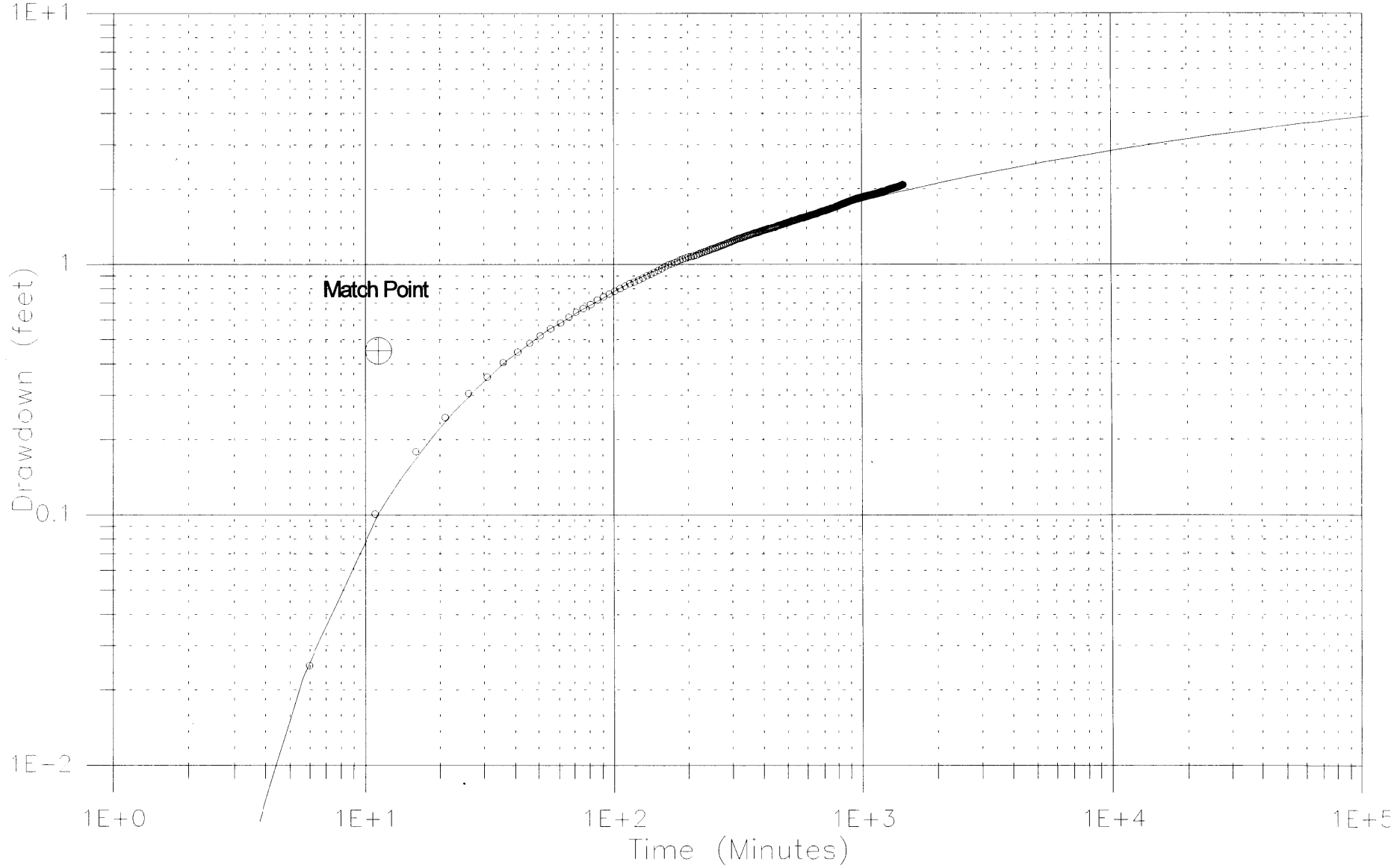
Test of Coon Rapids Well #20 (120853)
03/11/99
at Well #17 (150357)
Pumping

T = 35.3 1152 / 0.61 = 66,700 ft^2/day
S = 66,700 8.2 / 1163^2 640 = 6.32e-4



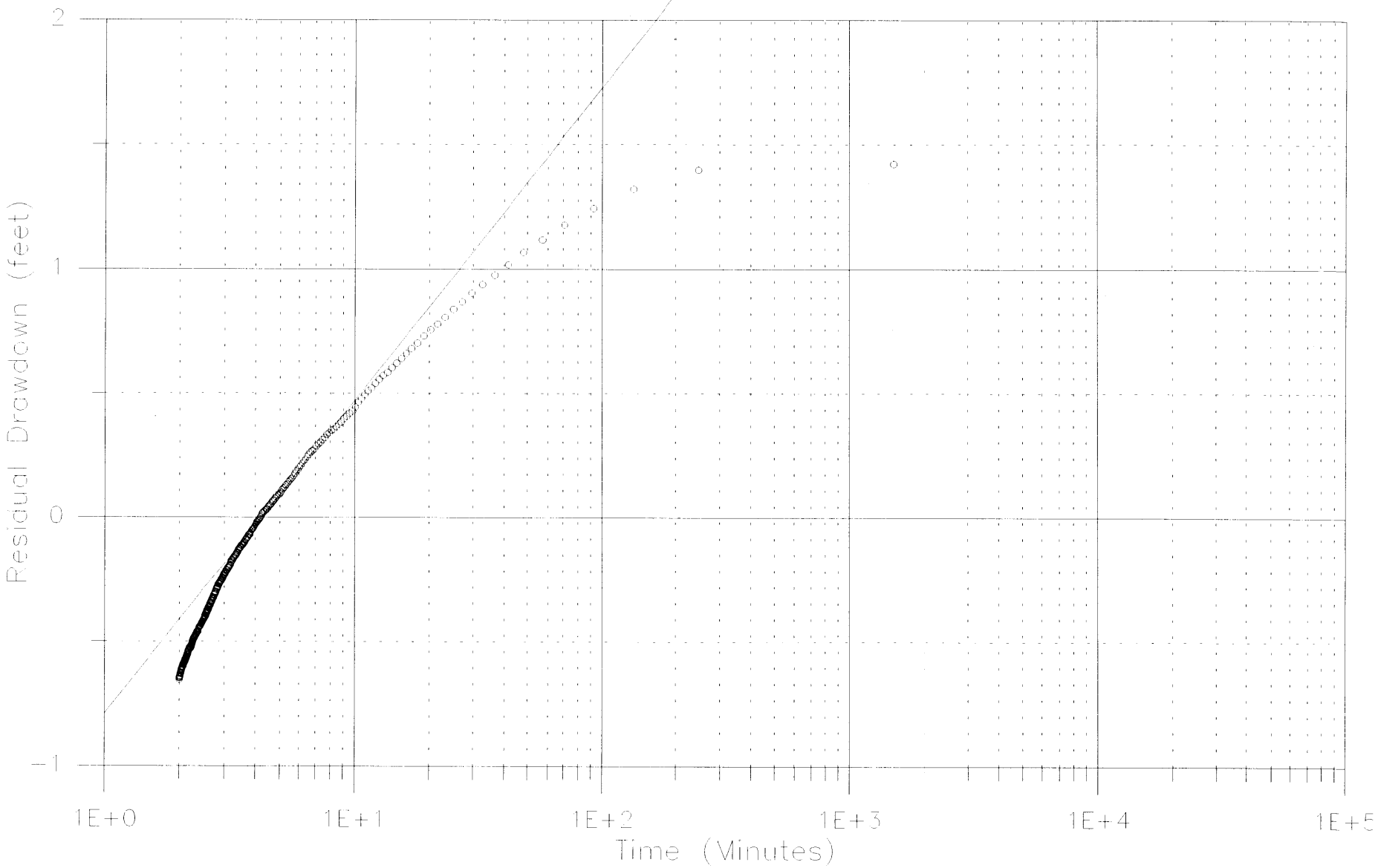
Test of Coon Rapids Well #20 (120853)
03/11/99
at Well #17 (150357)
Recovery

T = 15.3 1152 / 0.46 = 38,300 ft^2/day
S = 38,300 12 / 1163^2 360 = 9.44e-4



Test of Coon Rapids Well #20 (120853)
03/11/99
at Well #17 (150357)
Recovery

T = 35.3 1152 / 1.28 = 31,800 ft^2/day
S = 31,800 4.1 / 1163^2 640 = 1.5e-4



Appendix 2.

Field Data Sheets

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

Test No.

Aquifer Test Information

Test Location Coon Rapids # 20	Well Owner City of Coon Rapids	Test Conducted By J. Blum
Date/Time Test Start 3/11/99 11:49:53.0	Flow Rate (Units) 1152 gpm	Pump Type Turbine
Date/Time Recovery Start 3/12/99 12:09:02	Flow Rate Measuring Device Flowmeter	Pump Intake Depth
Date/Time Test Finish 3/13/99 12:35	Totalizer: End 711442.4 X 1000	Pumped Well Inner Casing Diameter
Notes pre lube ~ 90 sec.	Totalizer: Start 709762	Confined/Unconfined semi confined
	Total Pumped (Units) 1690,460 gallons	Quad Sheet Name/Number 120A Coon Rapids

Unique Well Numbers	Location T, R, S, Quarters	Location N, E	Radial Distance	Open Depth	Transducer Setting	Measuring Point Location	Elevation, Datum
Pumped Well #20 (120853)		N E			~91 ft XD 4.23	vent pipe	
Observation Wells #17 (150357)		N E	1163'		51.85 XD 10.12		
		N E					
		N E					
		N E					
		N E					

Sketch Map of Well Locations

Aquifer Test Data Form

Test: Coon Rapids #20	By: J. Blum	Test Date: 3/11/99	Page 2 of 3

Location (Unique Well No.)	Date Month	Date Day	Date Year	Time Hour	Time Minute	Time Sec.	Elapsed Time (Minutes)	Depth to Water	Drawdown/ Recovery	Discharge	Remarks
#17 (150357)	03	10	99	14	15			41.73			XD 10.12
#20 (120853)				14	20			87.32			on to ~ 925 gpm
											XD 4.23
#17	03	11	99					41.36			
#20											XD 81.17
#20	03	13	99	12	30			39.44			XD 36.46
~~#17~~				12	40			39.30			XD 39.28

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

Notes:

IC #140-0523 (5/96)

Aquifer Test Data Form

Test: Coon Rapids #20	By: J. Blim	Test Date: 3/11/99	Page 3 of 3

Location (Unique Well No.)	Date Month	Date Day	Date Year	Time Hour	Time Minute	Time Sec.	Elapsed Time (Minutes)	Depth to Water	Drawdown/ Recovery	Discharge	Remarks
#20 (120853)	03	11	99	11	49	53	0			0	709,762,000
					55		5			1230	768.1
				12			10			1230	774.0
					05		15			1190	780.0
					10		20			1200	- 786.9
					15		25			1190	793.05
					20		30			1180	- 797.8
					25		35			1180	- 803.6
					30		40			1180	- 809.5
					35		45			1180	815.4
					40		50			1180	821.3
					45		55			1170	827.3
					50		60			1180	833.0
				13	50		120			1180	905.1
				14	50		180			1180	977.7
				17	50		360			1180	710018.9
	03	12	99	07	50		1140			1160	711149.9
				12	04		1454			1160	711436.6
				12	09	02	1459			1160	711442.4

Notes:

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

IC #140-0523 (5/96)

Coon Rapids #19
Coon Rapids #14
Coon Rapids #7
Coon Rapids #20
Coon Rapids #15
Coon Rapids #17
Coon Rapids #22

SF-00006-05 (4/86)

DEPARTMENT :Health

STATE OF MINNESOTA

Office Memorandum

DATE : October 8, 2002

TO : City of Coon Rapids WHP File

FROM : Steve Robertson, Source Water Protection Unit, MDH

PHONE : 651-215-1322

SUBJECT : Aquifer Tests at Coon Rapids Well Nos. 19 (110475) and 20 (420956): August 29 - September 3, 2002

INTRODUCTION

The Minnesota Department of Health (MDH) assisted the City of Coon Rapids, Minnesota, by helping to conduct aquifer tests to determine aquifer properties near proposed new well sites. The results of these aquifer tests can be used for many purposes, including providing some of the aquifer characterization information required by MDH for wellhead protection planning.

The pumping test at Coon Rapids Well Nos. 19 and 20 were conducted by the City of Coon Rapids with assistance from H.R. Green and MDH as described below. The results were analyzed using standard nonequilibrium methods, cited in the references. Data plots and associated quantitative analyses are included in Appendix A, field data sheets in Appendix B, well logs in Appendix C. Table 1 summarizes the pumping schedule during the monitoring period and analysis results are summarized on Table 2.

The analysis shows that the aquifer responds in a manner consistent with the geologic setting.

DESCRIPTION OF THE TEST

Water level readings were monitored using pressure transducers in Wells 673418 and 673420 (monitoring wells installed during summer of 2002 for the City). Municipal Well Nos. 17, 19, and 20 are completed in deep buried Quaternary materials, as are the two monitoring wells.

Scheduling prevented gathering pre-test monitoring data over a long period. Collection of monitoring data began on August 29, 2002 and ended September 3, 2002. The test pumping program was conducted using a constant pumping rate, allowing MDH to use the collected data for quantitative aquifer analysis. Figure 1 shows the effects of the pumping on water levels in Well Nos. 673418 and 673420 over the duration of the monitoring period.

Monitoring Wells 673418 and 673420 are located about 551 and 1860 feet, respectively, from Well No. 19. Likewise, Well No. 673418 is 1493 feet and Well No. 673420 is 1289 feet from Coon Rapids Well No. 20. Locations of all wells were established using GPS technology.

The test started at 11:00:32 on August 29, 2002. Well No. 19 was pumped at an average rate of 1218.8 gallons per minute. A flowmeter on the discharge line was used to monitor the discharge. City staff maintained the pumping rate at a relatively constant rate for the duration of the test. Well discharge was pumped into the municipal distribution system.

The pump in Well No. 19 was turned off at 11:04:25 on August 30, 2002, to start the recovery period. After initiating recovery, water levels had mostly recovered after 52 minutes. After a recovery period of approximately 24 hours, pumping commenced in Coon Rapids Well No. 20, which was pumped for 24 hours starting at about 11 a.m. on August 31, 2002. Well No. 20 was also pumped for approximately 24 hours, ending at about 11 a.m. on September 1, 2002. A 24-hour recovery period followed this pumping, after which Well Nos. 17, 19, 20, and 22 were pumped simultaneously. Table 1 presents the pumping chronology.

SUMMARY OF RESULTS

The principal tests of the series were conducted for a period of 24 hours. The available geologic record and static water level information from Well No. 19, Well No. 20, and the test wells indicate the aquifer in the area of these wells is likely confined (Appendix C), although there may be nearby areas in which the deep Quaternary Aquifer is unconfined (i.e., near Coon Rapids Well No. 14 *cf.* 110460; H.R. Green Company, August, 2002).

Pumping Test of Coon Rapids Well No. 19 (110475)

Coon Rapids Well No. 19: No water levels were recorded in the pumping well.

Test Well No. 673418: The water levels in test Well No. 673418 dropped by more than 8 feet during the pumping portion of the Coon Rapids Well No. 19 test. A log-log plot of the response from this well during pumping is shown in Appendix A. The Theis drawdown analysis method was applied to the drawdown data from this well. Data emphasized in the analysis are those collected early in the pumping phase of the test because the late time data appear to be affected by leakage. The Hantush-Jacob method (Hantush, 1956), which accounts for leakage, was also applied to the drawdown data collected in the test well. The results of these analyses are presented in Table 2.

Recovery data from test Well No. 673418 also provide estimates of transmissivity. Water levels during recovery rebounded above the levels observed prior to pumping, probably because antecedent hydraulic conditions in the aquifer probably had not equilibrated prior to the start of the test. Portions of the response curve that were subjected to the Theis recovery analysis are the portions of the curve with T/T' values in the range of 2 to 20. The recovery data analysis is shown on the figures in Appendix A. Table 2 summarizes the quantitative analysis of the results from Well No. 673418.

Test Well No. 473420: The water level data from this well show virtually no response to pumping at Well No. 19 (Figure 1, Appendix A). This could be a result of antecedent pumping conditions, but will be difficult to establish given that background monitoring data are lacking. Data from this well do, however, show a measurable recovery response. Portions of the response curve that were subjected to the Theis recovery analysis are the portions of the curve with T/T' values of 2.5 to 6. Attempts to quantify the recovery data yield results that do not agree with those obtained from the other test well (Table 2), not surprising given the greater radial distance to the pumping well and the leaky conditions in the aquifer. The recovery analysis method does not account for leaky conditions, the presence of which can give rise to overestimates of T at large radial distances. The recovery data analysis are shown on the figure presented in Appendix A. Table 2 summarizes the quantitative analysis of the results from Well No. 673420.

Pumping Test of Coon Rapids Well No. 20 (420956)

Coon Rapids Well No. 20: No water levels were recorded in the pumping well.

Test Well No. 673418: The water levels in test Well No. 673418 dropped by a little less than 1 foot during the pumping portion of the Coon Rapids Well No. 20 test. A log-log plot of the response from this well during pumping is shown in Appendix A. The Theis drawdown analysis method was applied to the drawdown data from this well. Data emphasized in the analysis are those collected early in the pumping phase of the test (i.e., minutes 10 to 200) because the late time data appear to be affected by leakage. The Hantush-Jacob method (Hantush, 1956), which accounts for leakage, was also applied to the drawdown data collected in the test well. The results of these analyses are presented in Table 2.

Recovery data from test Well No. 673418 also provide estimates of transmissivity. Water levels during recovery rebounded above the levels observed prior to pumping, as observed in the test of Coon Rapids Well No. 19. Antecedent hydraulic conditions in the aquifer probably had not equilibrated prior to the start of the test, although it is also possible that the recovery data could reflect external influences that changed during the pumping. Portions of the response curve that were subjected to the Theis recovery analysis are the portions of the curve with T/T' values in the range of 4.2 to 18. The recovery data analysis are shown on the figure in Appendix A. Table 2 summarizes the quantitative analysis of the results from Well No. 673418.

Test Well No. 673420: Unlike during the test of Well No. 19, this test well showed a definite response to pumping of Well No. 20 (Figure 1, Appendix A). A log-log plot of the response from this well during pumping is shown in Appendix A. The Theis drawdown analysis method was applied to the drawdown data from this well. Data emphasized in the analysis are those collected early in the pumping phase of the test (i.e., minutes 40 to 250) because the late time data appear to be affected by leakage. The Hantush-Jacob method (Hantush, 1956), which accounts for leakage, was also applied to the drawdown data collected in the test well. The results of these analyses are presented in Table 2.

Recovery data from test Well No. 673420 also provide estimates of transmissivity. Water levels during recovery rebounded above the levels observed prior to pumping, as observed in Well No. 673418 during both tests. Portions of the response curve that were subjected to the Theis recovery analysis are the portions of the curve with T/T' values of 5.5 to 10. Attempts to quantify the recovery data yield results that do not agree with those obtained from the other test well (Table 2), not surprising given the greater radial distance to the pumping well and the leaky conditions in the aquifer. The recovery data analysis are shown on the figure in Appendix A. Table 2 summarizes the quantitative analysis of the results from Well No. 673420.

Discussion

The principal reason for collecting water level data from the wells was to assess qualitatively the aquifer response to various pumping conditions. That the data could be subjected to quantitative analysis to estimate aquifer hydraulic properties is an incidental benefit. While the results of these analyses are generally fair to good, they suffer from a few problems. First, it is likely that equilibrium hydraulic conditions did not exist prior to the onset of pumping at Coon Rapids Well Nos. 19 and 20. The lack of background data do not allow this to be established conclusively, but the recovery data infer it. Second, the water level data, especially those collected in Well No. 673420, are noisy, suggesting other aquifer

influences nearby. Each of these problems may contribute uncertainty to the analysis results, but the drawdown and recovery responses from the municipal pumping are generally large in comparison to the other influences. Improved results could be obtained by instrumenting the pumping wells and arranging for stable antecedent hydraulic conditions in the aquifer. Moreover, should other monitoring wells exist in the area, it may be worthwhile to measure water level responses during future pumping tests to get a good sense of variations over the scale of the well field and the likely capture zone of the wells.

H.R. Green (2002) and earlier reports prepared for the city of Coon Rapids (i.e., Hickok and Associates, 1986, 1989; Donahue and Associates, 1991) discuss the complex stratigraphic relationships within the unconsolidated materials above bedrock in the Coon Rapids area. The general relationship is of shallow sands, below which there is a fine-grained till which, in turn, covers deep sand and gravel materials. The deep sand and gravel comprise the deep Quaternary materials in which many of the Coon Rapids Quaternary wells are completed. It is clear from the information presented in Hickok (1986, 1989), Donahue (1991) and H.R. Green (2002) that the composition, distribution and geometry of the deep Quaternary Aquifer system is quite variable. From the data presented in those reports, it appears that Well No. 20 (420956), and Well No. 14 (110460) are in the area in which the deep Quaternary Aquifer is at its thickest, but that Well No. 19 (110475) and test Well No. 673418 are in areas where the aquifer begins to thin. This variability likely affected the results obtained in the pumping tests.

The analysis results (Table 2) show that the estimated T values for the aquifer vary from about 8000 to 110,000 ft^2/day. Previous MDH tests on Coon Rapids Well No. 20 (MDH, 1999) concluded the aquifer transmissivity is on the order of 38,300 ft^2/day (and S=0.00094), while Hickok (1989) reports results of 5080 ft^2/day in an area further north in Coon Rapids. For the current tests,, the Hantush-Jacob method, which accounts for leaky conditions in the pumped aquifer, gives transmissivity estimates that are on the low end of the range of the results using other techniques but that are likely the most reliable. The lower T values obtained from Well No. 673418 relative to those estimated from the data collected in Well No. 473420 suggest that the hydraulic properties of the aquifer vary, becoming less transmissive to the northwest. Storage values range from 0.00025 to 0.001. Leakage values from the Hantush-Jacob analyses suggest leakage factors of 725 to 900 feet.

The monitoring period also captured over 10 and nearly 20 feet of drawdown in Well Nos. 673418 and 673420, respectively, during concurrent pumping of Coon Rapids Well Nos. 17, 19, 20 and 22. No recovery from this pumping was recorded.

CONCLUSION

Transmissivity values of the aquifer likely vary over the study area. Evidence suggests the area to the northwest near Well No. 673418 is less transmissive than areas to the east and south. Accordingly, transmissivity values in the range of 8120 ft^2/day to 9420 ft^2/day are probably appropriate for the aquifer in the northwest near Coon Rapids Well No. 19 and testwell 673418, while values of 27,000 ft^2/day to 55,000 ft^2/day may be appropriate near Coon Rapids Well No. 20 and test Well No. 673420. These results compare well with the pumping test results obtained in 1999 from Coon Rapids Well No. 20. Storativity values are about 0.00025 to 0.0007.

References:

Donahue and Associates, 1991, letter to Scott Erickson, P.E., from Stephen D. Pettit, March 4, 1991.

Hantush, M.S., 1956, "Analysis of Data from Pumping Tests in Leaky Aquifers," American Geophysical Union Trans., v. 37, pp. 702-714.

Hickok and Associates, 1986, "Background Hydrogeological Report for the City of Coon Rapids," technical memorandum prepared for the city of Coon Rapids.

Hickok and Associates, 1989, "Coon Rapids Community Water Supply," letter to Tom Marthison, P.E., from Stephen D. Pettit, April 5, 1989.

H.R. Green Company, 2002, (Draft) "Well Siting Report Proposal for the City of Coon Rapids."

Kruseman, G.P. and N.A. de Ridder, 1991, *Analysis and Evaluation of Pumping Test Data*, International Institute for Land Reclamation and Improvement, Wageningen, The Netherlands, p. 377.

Minnesota Department of Health, 1999, "Analysis of the Coon Rapids No. 20 (420956) Aquifer Test."

Theis, C. V., 1935, "The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage," Trans. American Geophysical Union, 16th Annual Meeting, April, 1935, pp. 519-24.

Figure 1. Groundwater Fluctuations, August 29 - Sept. 3, 2002
Coon Rapids Test Wells 673418, 673420

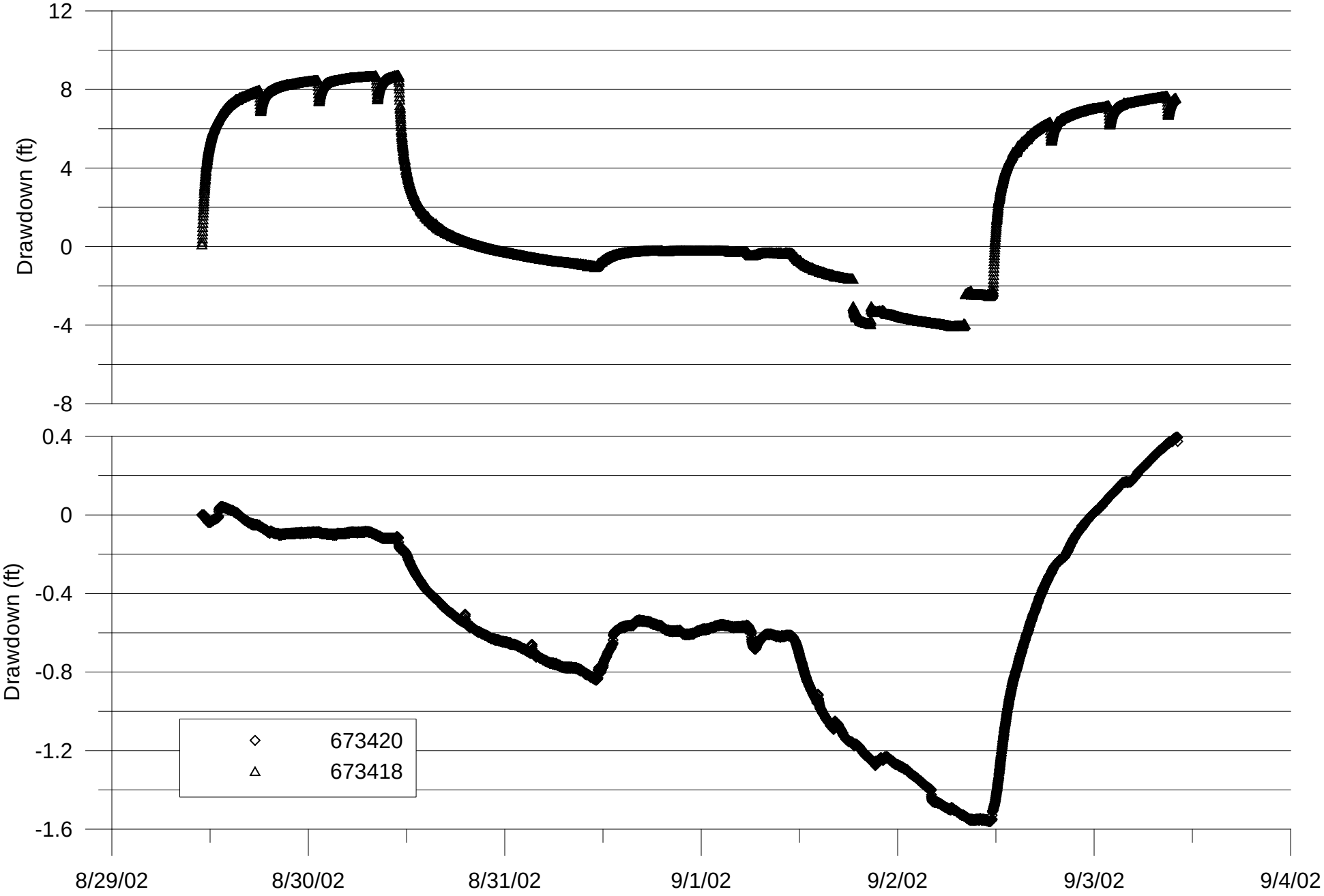


Table 1. Pumping Chronology
(Times approximate)

Date	Time	Action
August 29, 2002	11 am	Coon Rapids Well No 19 (110475) started. Beginning meter reading 201,963,000.
August 30, 2002	11 am	Coon Rapids Well No 19 (110475) stopped. Ending meter reading 203,718,000.
August 31, 2002	11 am	Coon Rapids Well No 20 (420956) started. Beginning meter reading 184,074,000.
September 1, 2002	11 am	Coon Rapids Well No 20 (420956) stopped. Ending meter reading 185,520,000.
September 2, 2002	11 am	Coon Rapids Well Nos. 17 (150357), 19 (110475), 20 (420956), and 22 (474385) started. Beginning meter readings of 90,970,000, 203,728,000, and 185,834,000 in Well Nos. 17, 19, and 20, respectively. No readings for Well No. 22.
September 3, 2002	11 am	Coon Rapids Well Nos. 17 (150357), 19 (110475), 20 (420956), and 22 (474385) stopped. Ending meter readings of 92,745,000, 205,437,000, and 187,521,000 in wells 17, 19, and 20, respectively. No readings for Well No. 22. Well No. 22 reportedly pumps at about 300 gpm.

Note: Information per Dick Dwyer, City of Coon Rapids.

Table 2. Pumping Test Results

Coon Rapids No. 19 (110475) Aquifer Test
August 29-31, 2002

	Transmissivity T (ft^2/day)	Storage Coefficient S	Time Period Emphasized	Analysis Method
	---	---	---	---
Test Well	8,120	0.00026	Minutes 4 - 140	Theis
No. 673418	9,420	NA	T/T' 2-10	Theis Recovery
	8,610	0.00025	Late pumping	Hantush-Jacob
Test Well				
No. 673420	66,000	NA	Minutes 1.5-6	Theis Recovery

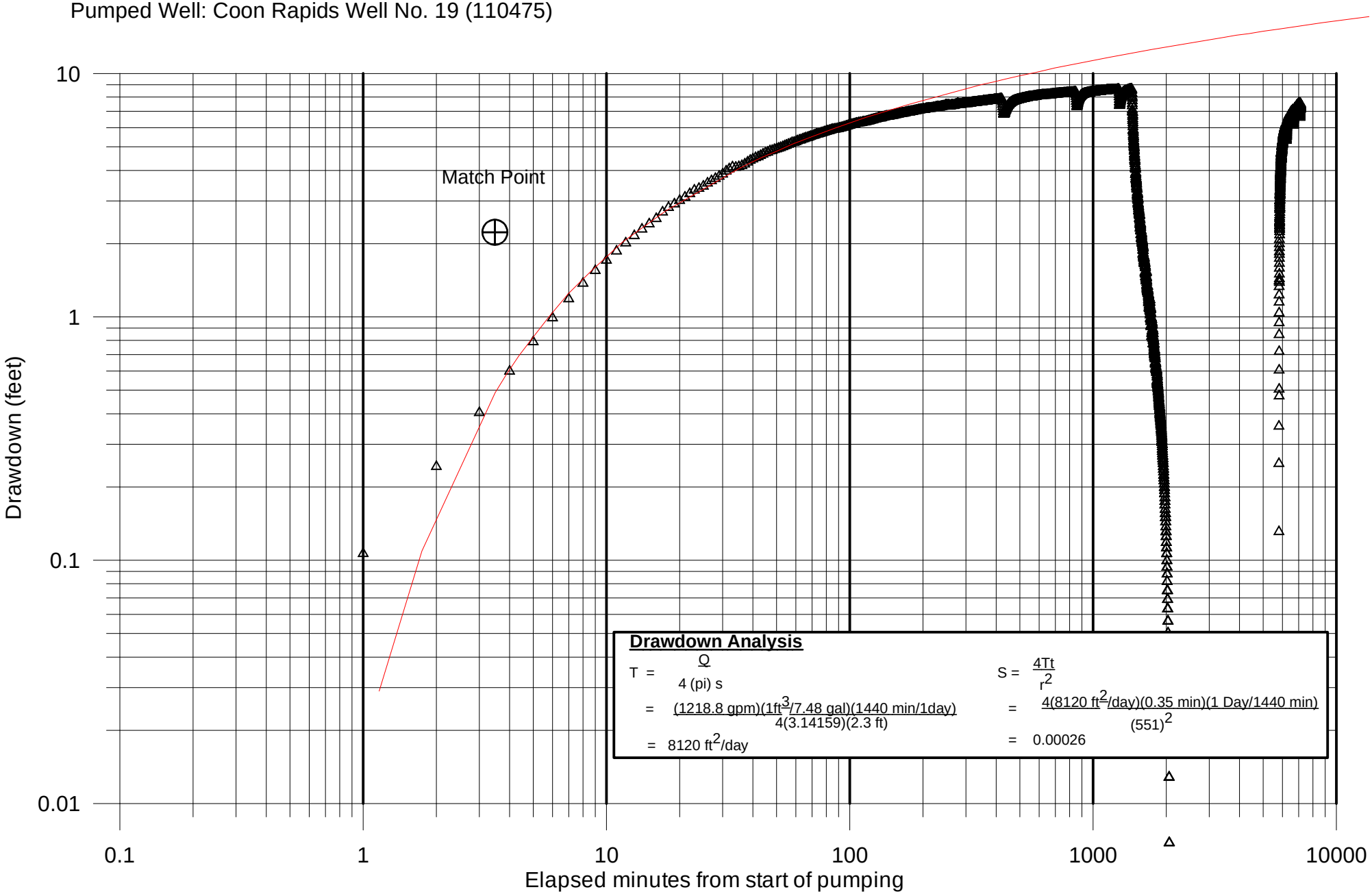
Coon Rapids No. 20 (420956) Aquifer Test
August 31- September 1, 2002

	Transmissivity T (ft^2/day)	Storage Coefficient S	Time Period Emphasized	Analysis Method
	---	---	---	---
Test Well	40,500	0.00067	Minutes 10-200	Theis
No. 673418	27,330	NA	T/T' 4.2-18	Theis Recovery
	26,900	0.0007	Late pumping	Hantush-Jacob
Test Well	110,000	0.00078	Minutes 40-250	Theis
No. 673420	51,350	NA	T/T' 5.5- 10	Theis Recovery
	54,900	0.001	Late Pumping	Hantush-Jacob

Aquifer Test Report Appendix A

Data Analysis

Observed Drawdown in 673418
Pumped Well: Coon Rapids Well No. 19 (110475)



Drawdown Analysis

$$T = \frac{Q}{4\,(pi)\,s} = \frac{(1218.8\ gpm)(1ft^3/7.48\ gal)(1440\ min/1day)}{4(3.14159)(2.3\ ft)} = 8120\ ft^2/day$$

$$S = \frac{4Tt}{r^2} = \frac{4(8120\ ft^2/day)(0.35\ min)(1\ Day/1440\ min)}{(551)^2} = 0.00026$$

UNSTEADY FLOW TO A WELL IN A SEMI-CONFINED AQUIFER WITH NO STORAGE IN OVERLYING AQUITARDS (HANTUSH-JACOB)

This document reads a set of time-drawdown data from disk, calculates a theoretical time-drawdown curve using user-specified parameters, and plots them both in a way that the user can interactively adjust the theoretical curve to obtain a match with the field data. Applied to Monitoring Well 673418 during pumping of Coon Rapids Well No. 19 (110475). Results presented below.

Read the field data and perform the data initialization:

Read data from disk: $A := \mathrm{READPRN}(\text{"673418.prn"})$

Data initializations: $nrows := rows(A)$

$nrows = 1.442 \cdot 10^3$

$i := 0, 1 .. nrows - 1$

$t := A^{<0>} \cdot min$

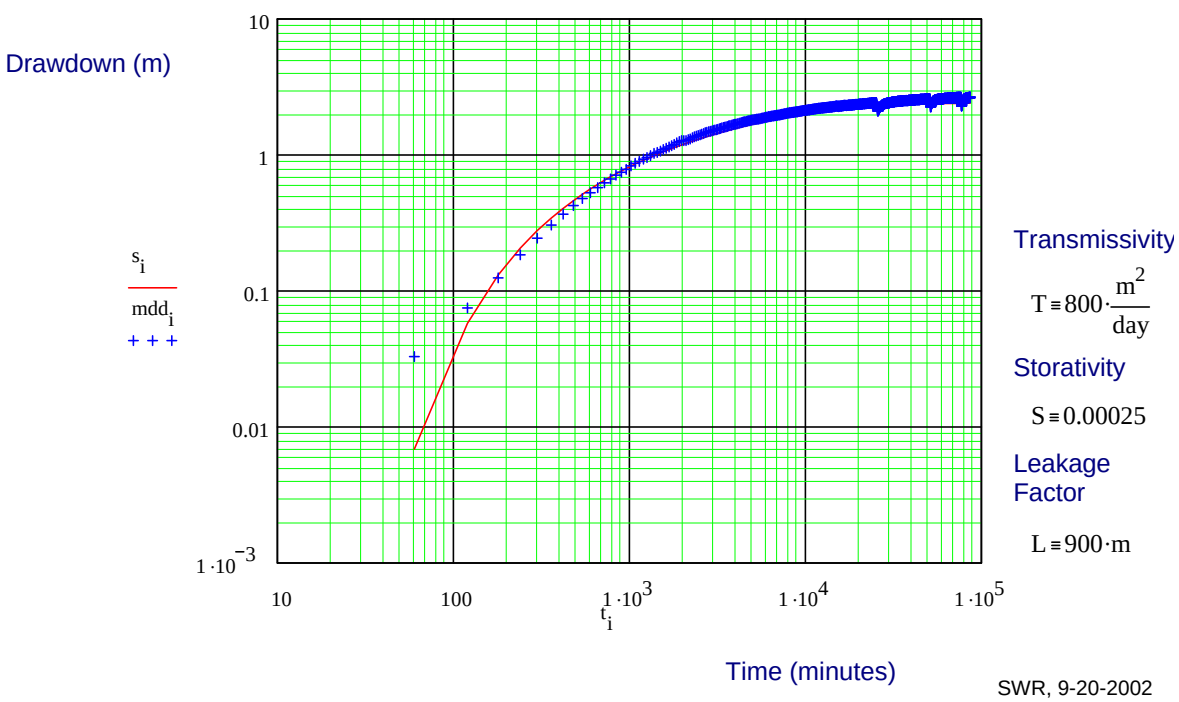
$mdd := A^{<1>} \cdot m$

Enter test parameters:

Well discharge (L^3/T): $Q := 6644.1 \cdot \frac{m^3}{day}$

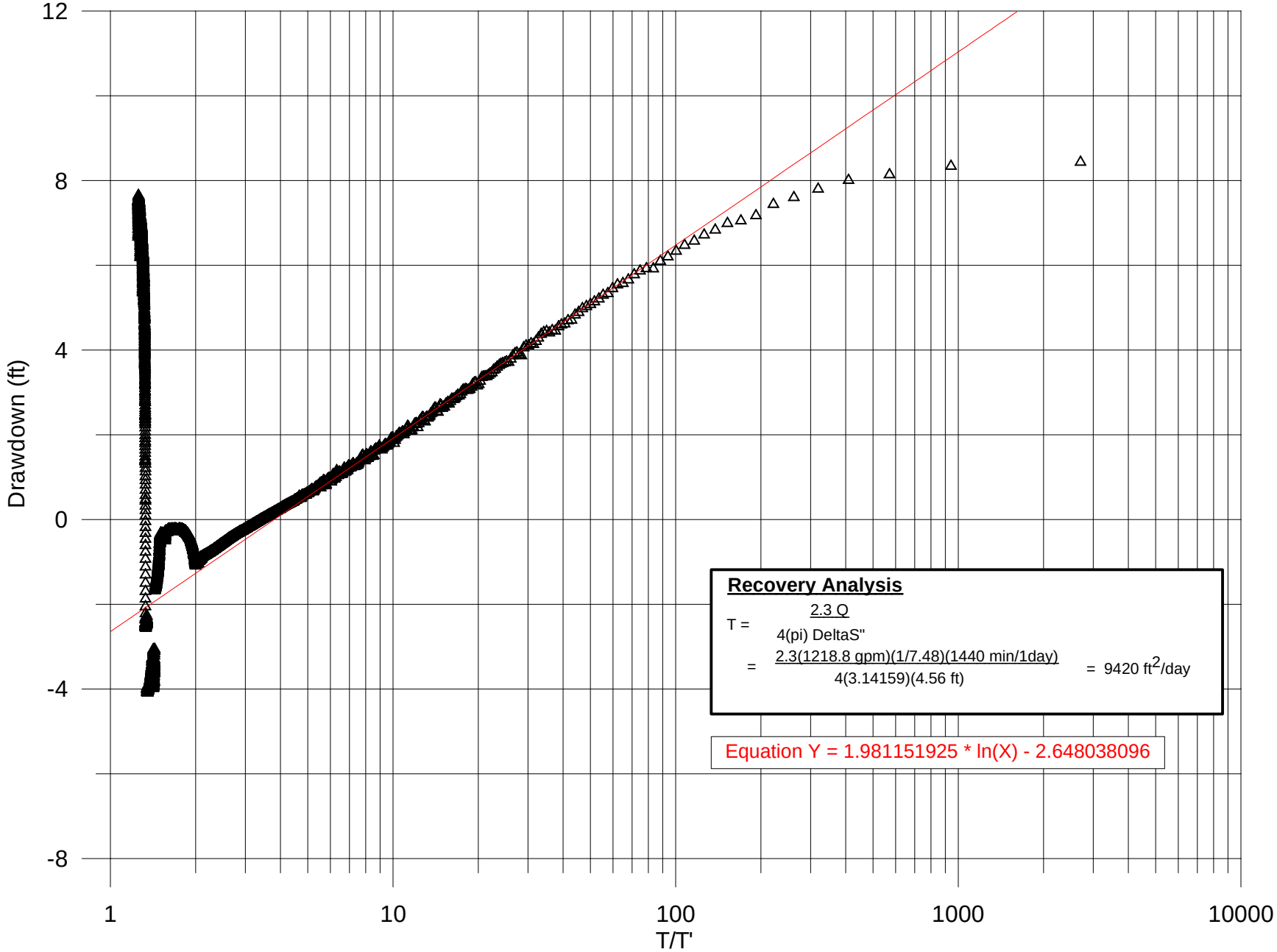
Radial distance from pumping to observation well (L): $r := 168 \cdot m$

Comparison of Observed and Theoretical Drawdowns (Hantush-Jacob Method)



SWR, 9-20-2002

Observed Recovery in Well 673418
Pumped Well: Coon Rapids Well No. 19 (110475)



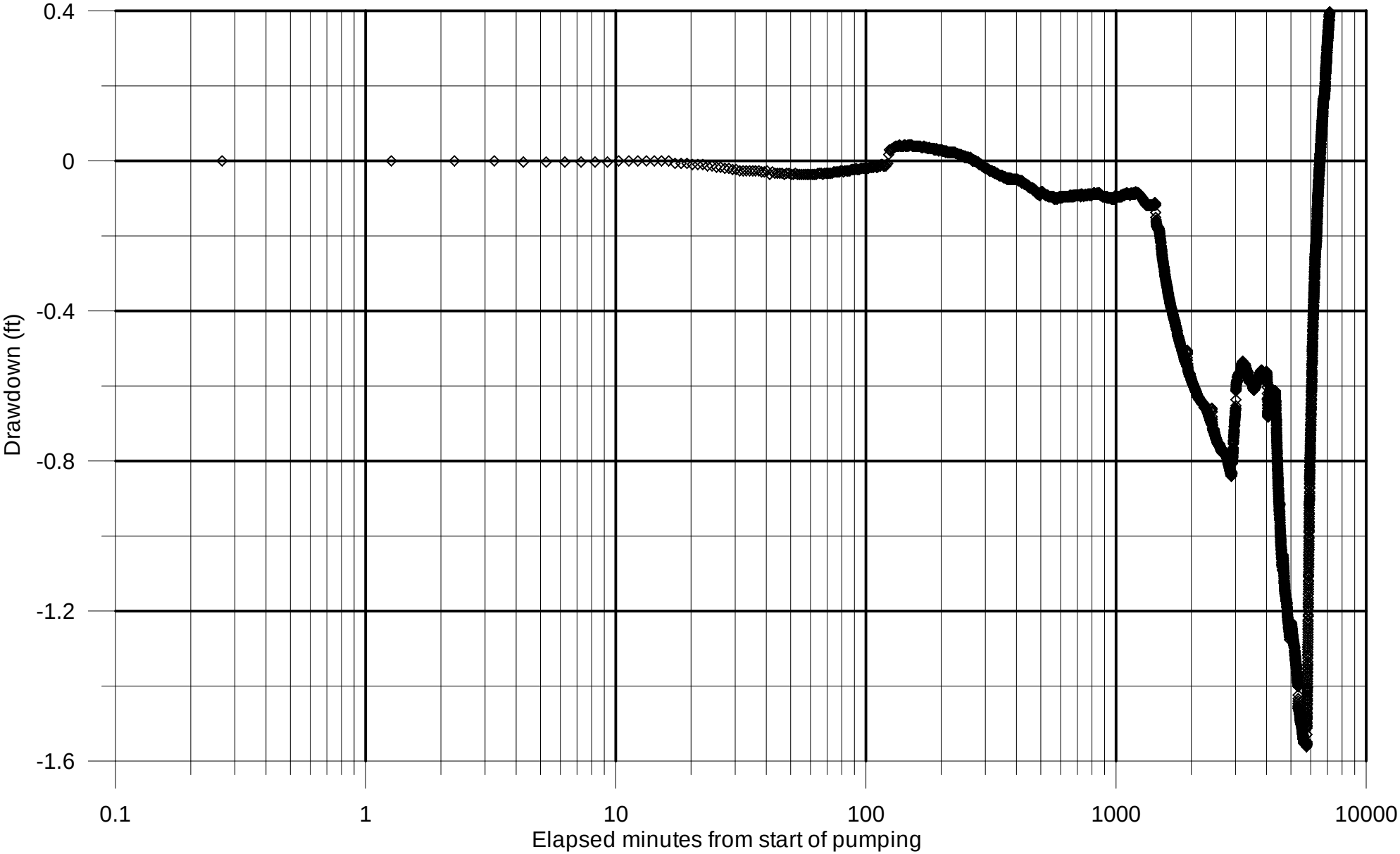
Recovery Analysis

$$T = \frac{2.3\,Q}{4(\pi)\,\text{DeltaS''}}$$

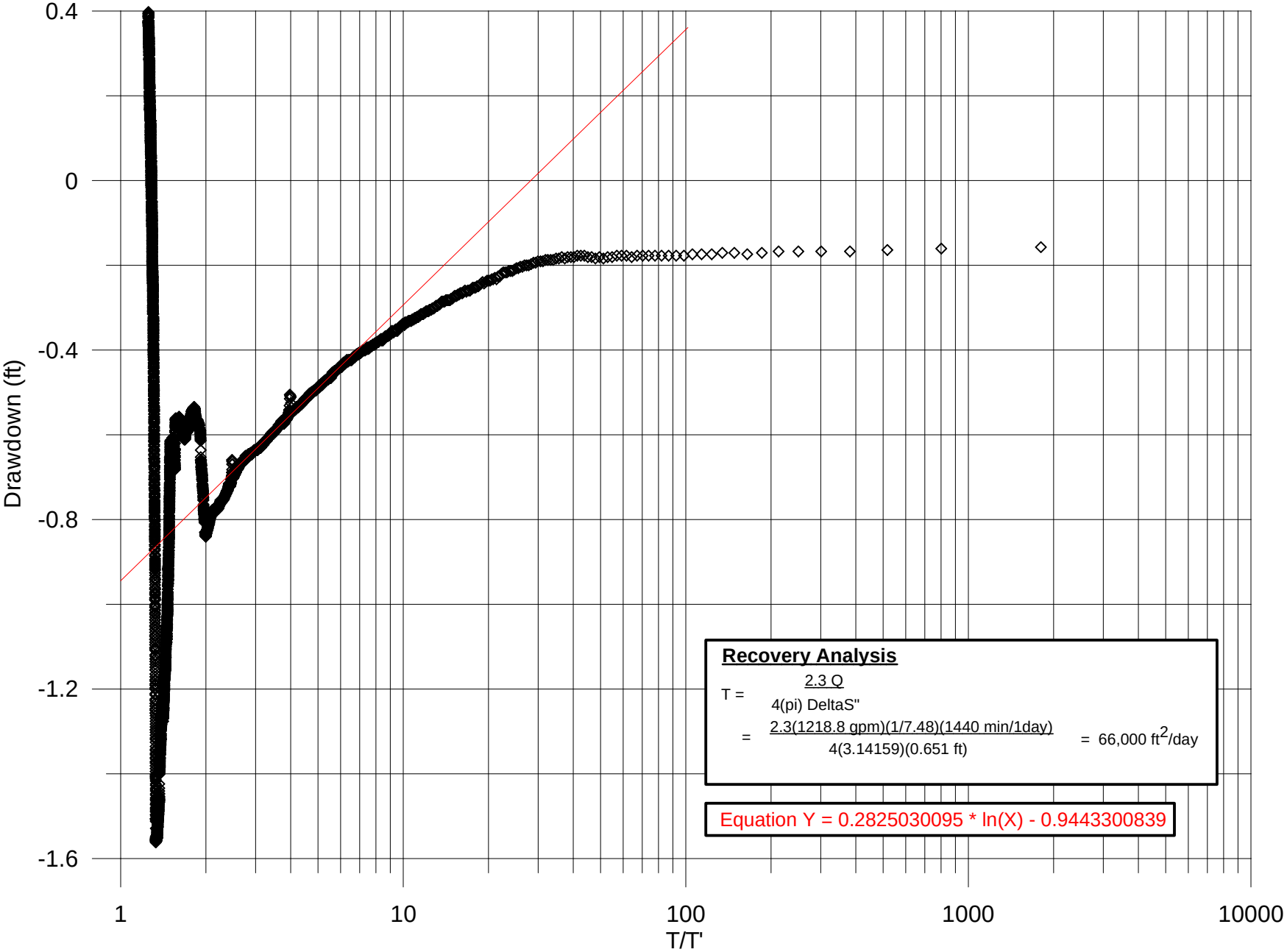
$$= \frac{2.3(1218.8\text{ gpm})(1/7.48)(1440\text{ min}/1\text{day})}{4(3.14159)(4.56\text{ ft})} = 9420\text{ ft}^2/\text{day}$$

Equation Y = 1.981151925 * ln(X) - 2.648038096

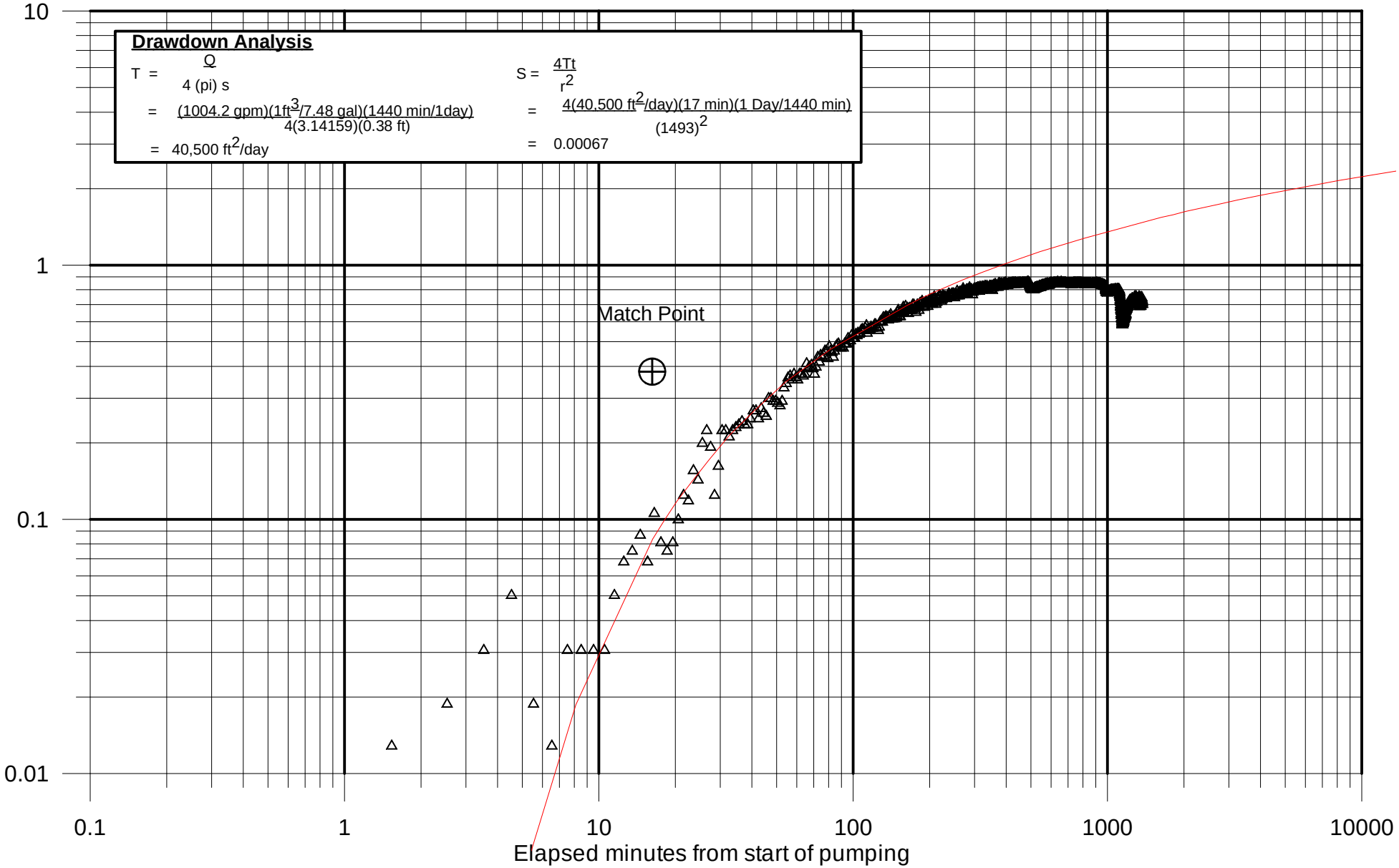
Observed Drawdown in well 673420
Pumped Well: Coon Rapids Well No. 19 (110475)



Observed Recovery in 673420
Pumped Well: Coon Rapids Well No. 19 (110475)



Observed Drawdown in Test Well 673418
Pumped Well: Coon Rapids No. 20 (420956)
Test Date: August 31 - September 1, 2002



UNSTEADY FLOW TO A WELL IN A SEMI-CONFINED AQUIFER WITH NO STORAGE IN OVERLYING AQUITARDS (HANTUSH-JACOB)

This document reads a set of time-drawdown data from disk, calculates a theoretical time-drawdown curve using user-specified parameters, and plots them both in a way that the user can interactively adjust the theoretical curve to obtain a match with the field data. Applied to Monitoring Well 673418 during pumping of Coon Rapids Well No. 20 (420956). Results presented below.

Read the field data and perform the data initialization:

Read data from disk: $A := \mathrm{READPRN}(\text{"673418_cr20dd.txt"})$

Data initializations: $nrows := \mathrm{rows}(A)$

$nrows = 1.441 \cdot 10^3$

$i := 0, 1 .. nrows - 1$

$t := A^{<0>} \cdot min$

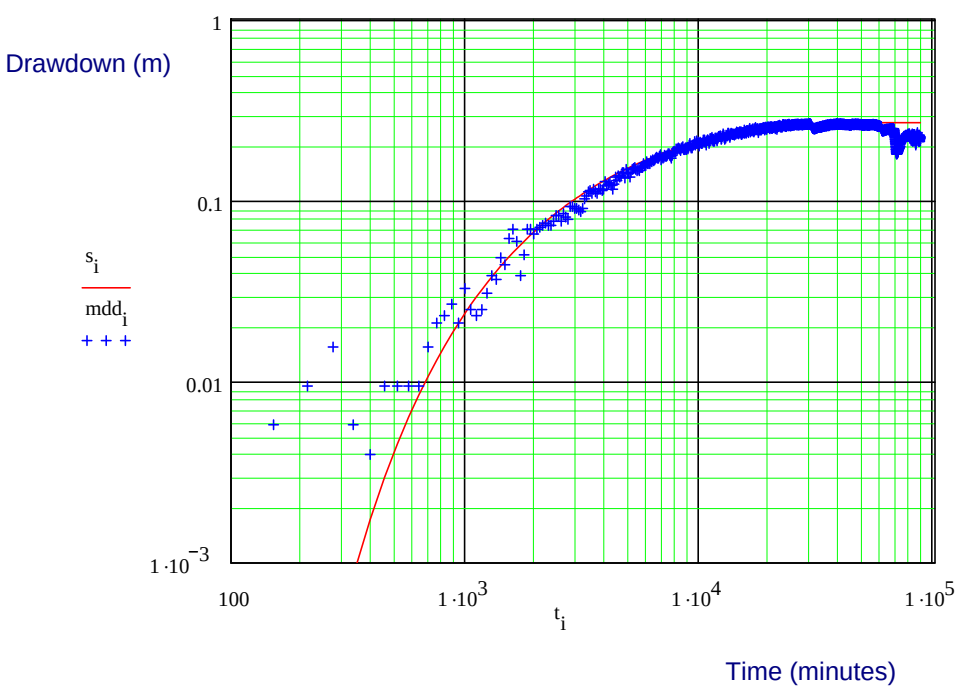
$mdd := A^{<1>} \cdot m$

Enter test parameters:

Well discharge (L^3/T): $Q := 5474.1 \cdot \frac{m^3}{day}$

Radial distance from pumping to observation well (L): $r := 455 \cdot m$

Comparison of Observed and Theoretical Drawdowns (Hantush-Jacob Method)



Transmissivity

$T \equiv 2500 \cdot \frac{m^2}{day}$

Storativity

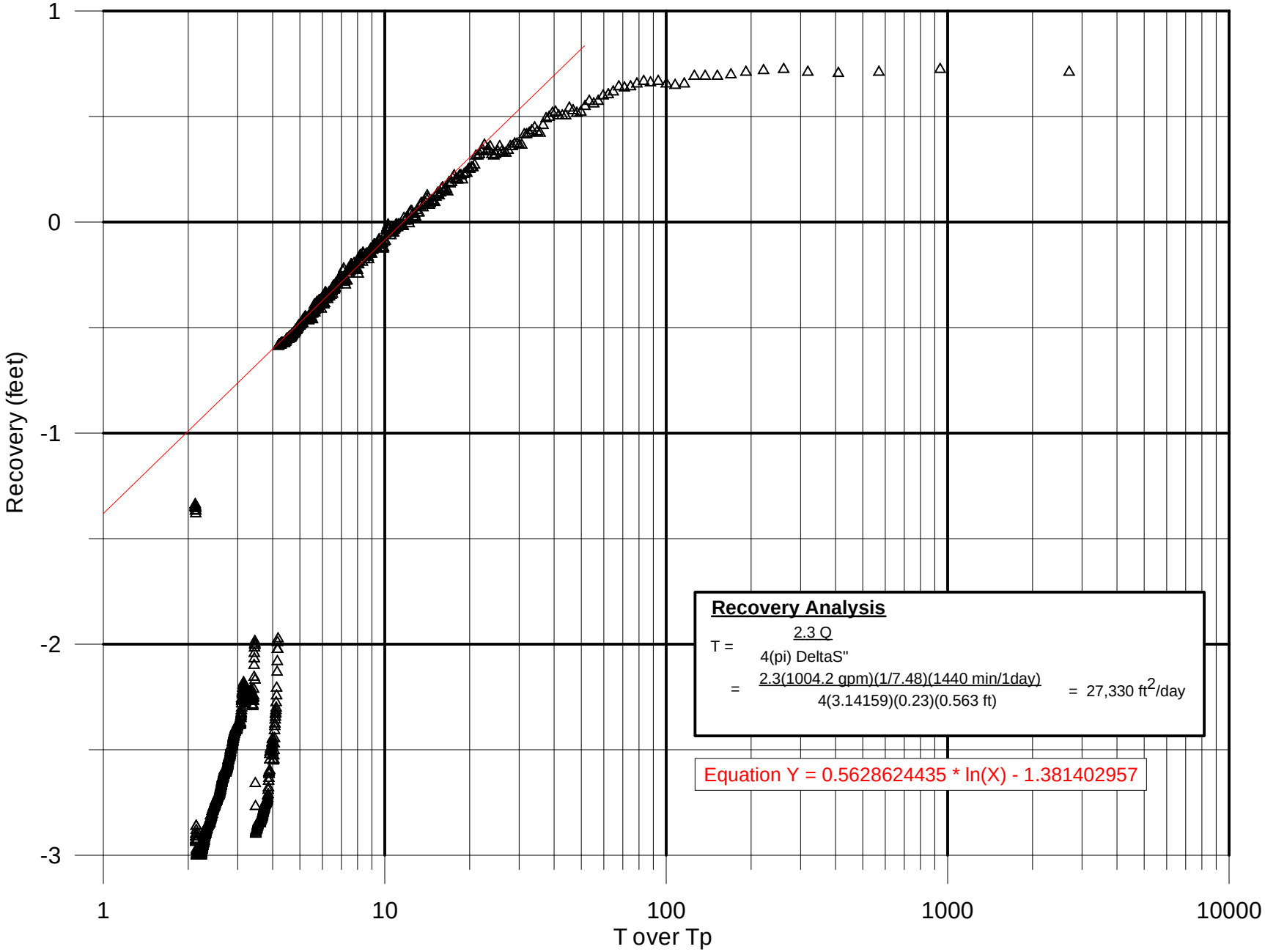
$S \equiv 0.0007$

Leakage Factor

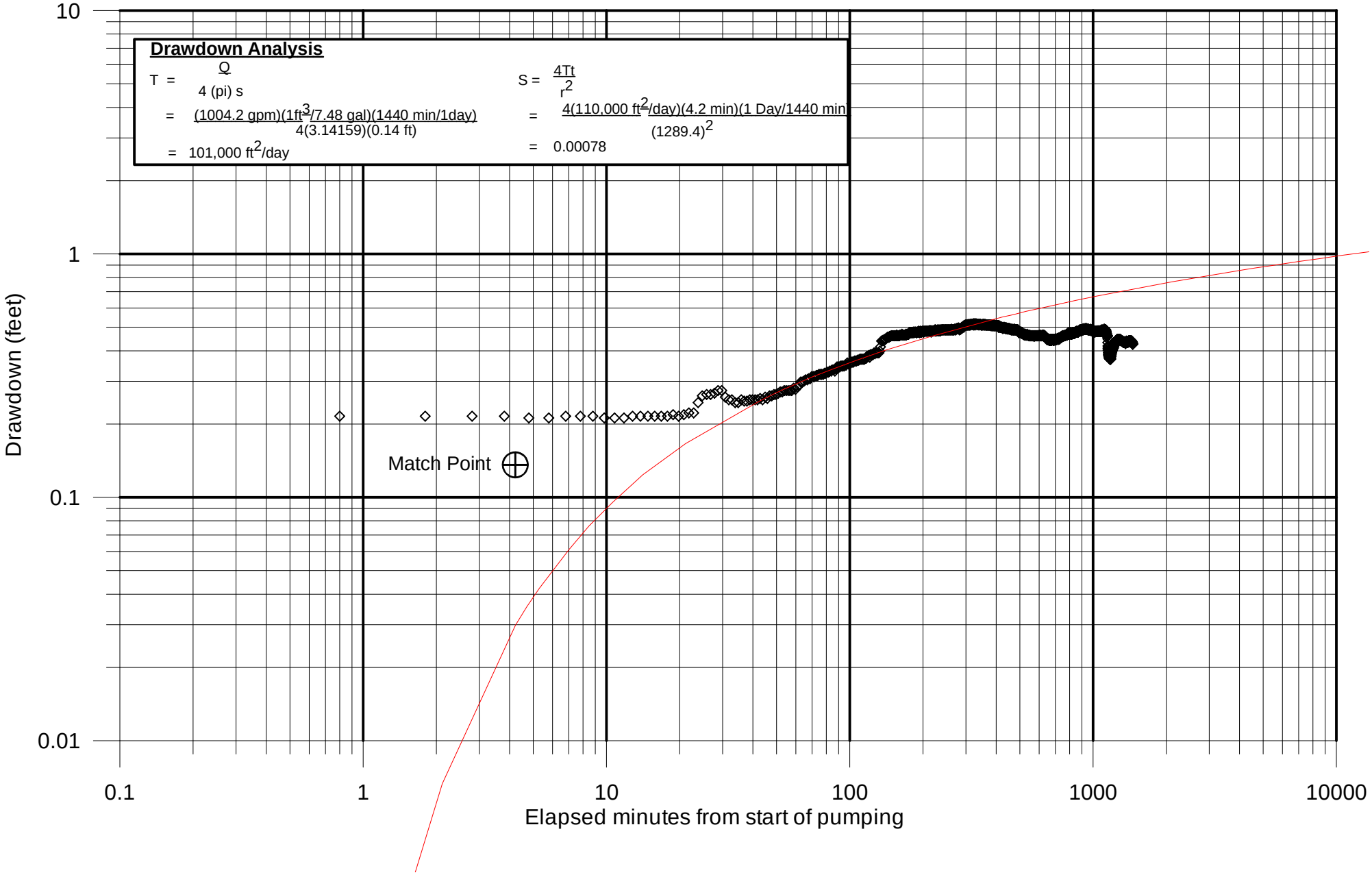
$L \equiv 750 \cdot m$

SWR, 9-26-2002

Observed Recovery in Test Well 673418
Pumped Well: Coon Rapids Well No. 20 (420956)
Test Date: August 31 - September 1, 2002



Observed Drawdown in Test Well 673420
Pumped Well: Coon Rapids No. 20 (420956)
Test Date: August 31 - September 1, 2002



UNSTEADY FLOW TO A WELL IN A SEMI-CONFINED AQUIFER WITH NO STORAGE IN OVERLYING AQUITARDS (HANTUSH-JACOB)

This document reads a set of time-drawdown data from disk, calculates a theoretical time-drawdown curve using user-specified parameters, and plots them both in a way that the user can interactively adjust the theoretical curve to obtain a match with the field data. Applied to Monitoring Well 673420 during pumping of Coon Rapids Well No. 20 (420956). Results presented below.

Read the field data and perform the data initialization:

Read data from disk: $A := \mathrm{READPRN}(\text{"673420_dd_cr20_.prn"})$

Data initializations: $nrows := rows(A)$

$nrows = 2.371 \cdot 10^3$

$i := 0, 1 .. nrows - 1$

$t := A^{<0>} \cdot min$

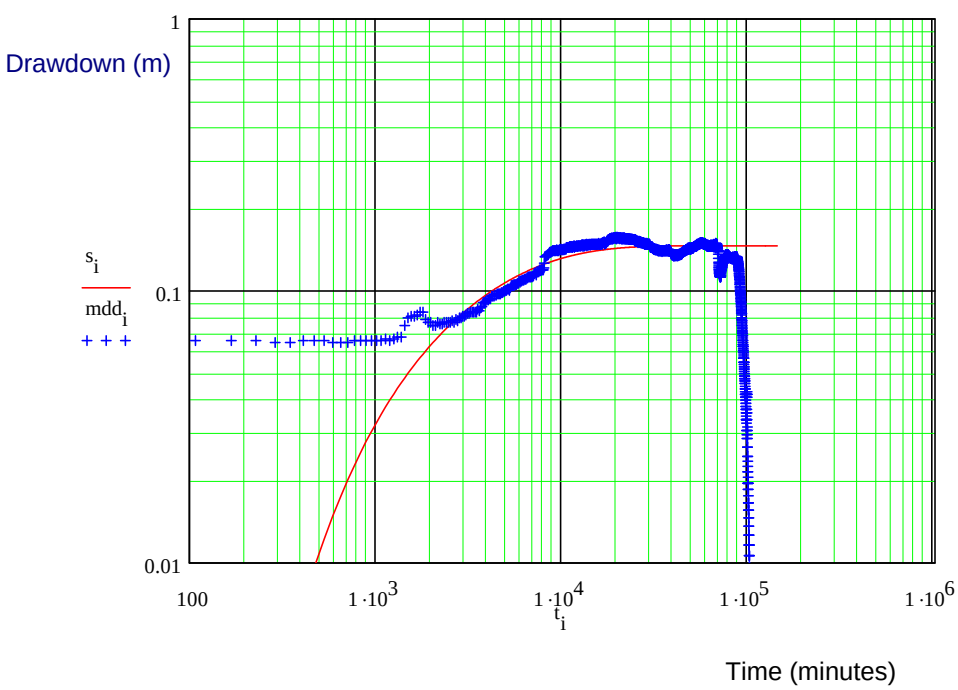
$mdd := A^{<1>} \cdot m$

Enter test parameters:

Well discharge (L^3/T): $Q := 5474 \cdot \frac{m^3}{day}$

Radial distance from pumping to observation well (L): $r := 393 \cdot m$

Comparison of Observed and Theoretical Drawdowns (Hantush-Jacob Method)



Transmissivity

$T \equiv 5100 \cdot \frac{m^2}{day}$

Storativity

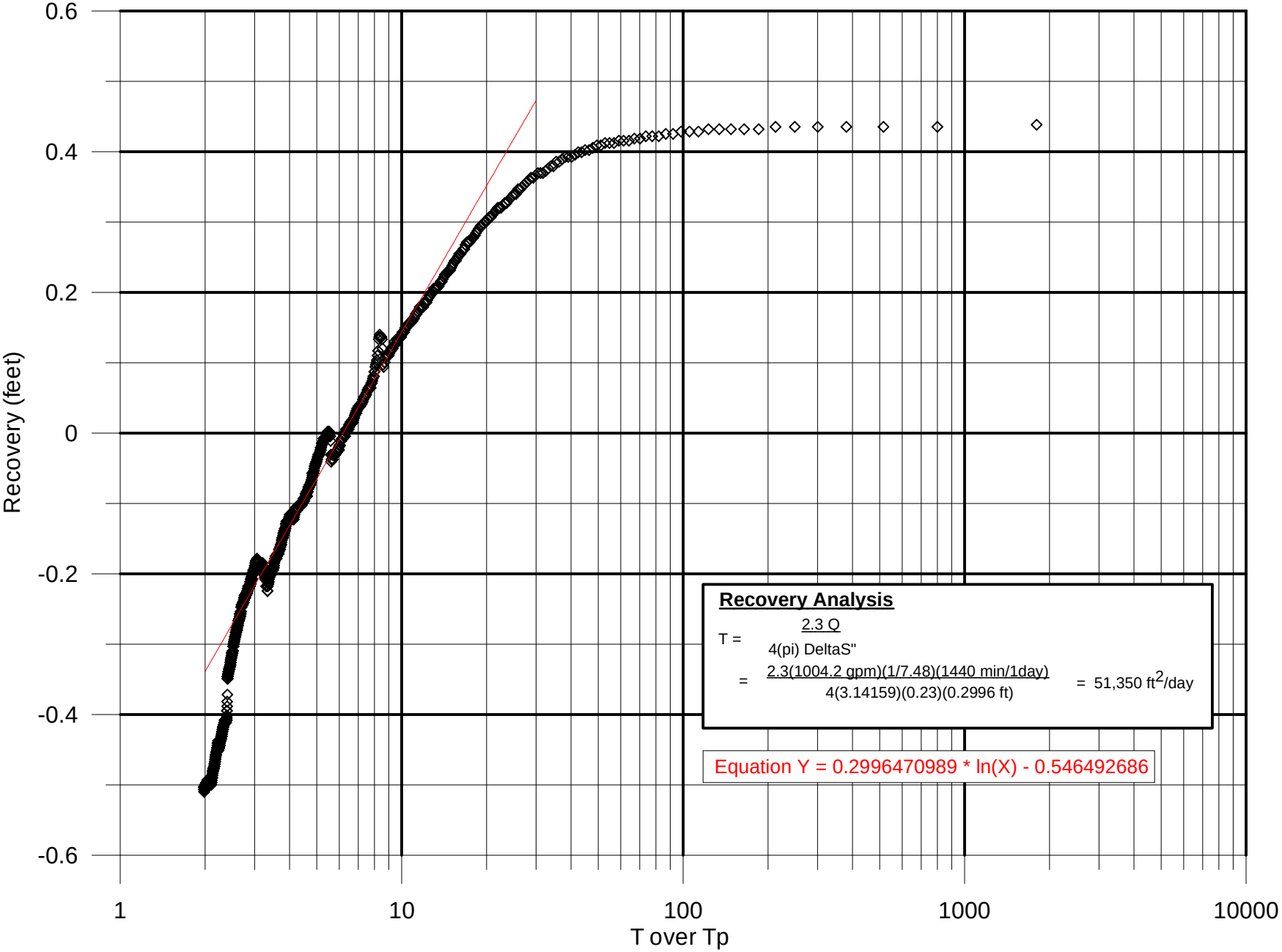
$S \equiv 0.001$

Leakage Factor

$L \equiv 725 \cdot m$

SWR, 9-26-2002

Observed Recovery in Test Well 673420
Pumped Well: Coon Rapids Well No. 20 (420956)
Test Date: August 31-September 1, 2002



Aquifer Test Report Appendix B

Field Data Sheets

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

Test No.

Aquifer Test Information

Test Location	Well Owner	Test Conducted By
CR #19	COON RAPIDS	SCWR/HR GREEN/City Clk
Date/Time Test Start	**Flow Rate (Units)**	**Pump Type**
8/29/02 11 am	VARIABLE	
Date/Time Recovery Start	**Flow Rate Measuring Device**	**Pump Intake Depth**
8/30/02 11 am	Flow meter	
Date/Time Test Finish	**Totalizer: End**	**Pumped Well Inner Casing Diameter**
9/3/02	203,718,000	
Notes	**Totalizer: Start**	**Confined/Unconfined**
	201963,000	CONF
	Total Pumped (Units)	**Quad Sheet Name/Number**
	1755,000 gals [1218.89 gpm]	

Unique Well Numbers	Location T, R, S, Quarters	Location N, E	Radial Distance	Open Depth	Transducer Setting	Measuring Point Location	Elevation, Datum
Pumped Well ~~VARIES~~ CR #19 110475		N E					
Observation Wells		N E					
OB Well # 673418		N (well 19) E 0208291	168m 551.2 ft	BTW	52.29 59.92	———	8-29-02 9:37 9-3-02 10:06
673420		N (well 19) E 0208291	566.8 m 1860 ft well 14		61.96 62.37		10:31 8-29 9-3-02
		N E	94 m				
		N E					

Sketch Map of Well Locations

0209032.txt

MINNESOTA MDH DEPARTMENT OF HEALTH
Environmental Health Division
Drinking Water Protection Section
Source Water Protection Unit
P.O. Box 64975
St. Paul, Minnesota 55164-0975

Determination of Aquifer Properties and Aquifer Test Plan (DAP-ATP) Form

Public Water Supply ID:	1020017	PWS Name:	Coon Rapids

Contact Information for Person Completing this Form

Name:	John Greer
Address:	Barr Engineering Company
	4700 West 77th Street, Suite 200
City, State, Zip:	Edina, MN 55435
Phone, Fax, e-mail:	(952) 832-2691

Aquifer Properties Determination Methods

☐ 1) An existing pumping test that meets the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on a well connected to the public water supply system.

☐ 2) An existing pumping test that meets the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on another well in a hydrogeologic setting determined by the department to be equivalent.

☐ 3) A proposed new test to be conducted on a new or existing well connected to the public water supply system and that meets the requirements for larger-sized water systems (wellhead protection rule part 4720.5520). A test plan must be approved before conducting the test.

☐ 4) A proposed new test to be conducted on a new or existing public well connected to the public water supply system and that meets the requirements for smaller-sized water systems (wellhead protection rule part 4720.5530). A test plan must be approved before conducting the test.

☐ 5) An existing pumping test that does not meet the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on: 1) a public water supply well or 2) another well in a hydrogeologic setting determined by the department to be equivalent.

☑ 6) Existing specific capacity test(s) conducted on the public water supply well(s) or specific capacity tests conducted on other wells in a hydrogeologic setting determined by the department to be equivalent.

☐ 7) An existing published transmissivity value.

- Include all test data and analysis documentation with the estimated transmissivity, ft^2/day, when the aquifer properties determination method is; 1, 2, 5, 6, or 7, listed above.
- ▪▪ Attach detailed aquifer test plan for methods 3 or 4.

Submitted by: John Greer	Prof. License: 30347	Date: 7/31/2015

To request this document in another format, please call our Section Receptionist (651/201-4700) or Division TTY (651/201-5797).

Rationale for: 1) Aquifer Properties Determination or 2) Proposed New Test

Briefly describe the rationale for: 1) selected method to determine aquifer properties from existing data, **or** 2) a new aquifer test to be conducted on the pumped well referenced below. Include unique well numbers of all wells that were (or will be) monitored during data collection. How does the existing or proposed test deviate from the ideal. (e.g. rate, duration, no. of obwells, interfering wells, etc.) Attach documentation as necessary.

Aquifer Name:	Tunnel City Group - Wonewoc Sandstone	✓ Confined	☐ Unconfined	☐ Fractured Rock

Specific capacity data on the CWI logs for Coon Rapids Wells 24 (Unique Number 674478) and 25 (Unique Number 674479) were analyzed using the TGuess Method (Bradbury and Rothschild, 1985) to obtain a geometric mean transmissivity of 7,700 ft**2/day for the combined Tunnel City-Wonewoc aquifer (see attached).

The Tunnel City Group (CTCG) and Wonewoc Sandstone (CWOC) are represented as separate layers in the groundwater model, so this combined transmissivity must be apportioned between the two units. A search of the CWI within 5 km of Coon Rapids found 418 wells with sufficient data completed only in the CTCG and 42 wells with sufficient data completed only the CWOC. Average formation thicknesses of 149 feet for the CTCG and 57 feet for the CWOC were determined from the logs for the City of Coon Rapids wells that completely penetrate both units. The CTCG and CWOC data were analyzed using the TGuess method to obtain geometric mean T values of 1,300 ft**2/day for the CTCG and 530 ft**2/day for the CWOC. From these results, a ratio of 2.45:1 was used to apportion the combined Tunnel City-Wonewoc T of 7,700 ft**2/day to the CTCG and CWOC; the base case CTCG for the groundwater model was 5,470 ft**2/day and the base case CWOC T was 2,230 ft**2/day.

For the sensitivity analysis, the minimum T of 6,400 ft**2/day from Well 25 and the maximum T of 9,400 ft**2/day from Well 24 will be used as the lower and upper bounds, respectively, on Tunnel City-Wonewoc transmissivity. These values will be apportioned between layers using the 2.45:1 ratio as detailed above for the base model.

Proposed New Test Information Summary

Pumped Well Name (Unique Number):	674478, 674479	**Test Duration (Hours):**	varies
Location: X, Y (meters) UTM-Z15N or Lat-Lon (decimal degrees) datum: NAD83	473799, 5001596 (674478) 474351, 5001197 (674479)	**Pump Type:**	unknown
		Discharge Rate:	1560 gpm
Number of Observation Wells:	0	**Flow Rate Measuring Device Type:**	unknown

- A map showing the location of the pumping well and observation well(s) must be included.

List the unique number of each public water supply well to which this DAP-ATP Form applies

202926	202932	110460			
202929	202931	110461			
202972	202930	168720			
202951	202965	674478			
202937	168721	674479			
202943	161413				

Reviewed by: Amal Djerrari	**Approved:** ● Yes ○ No	**Approval Date:** 8/3/2015

Tunnel City - Wonewoc

Worksheet for Estimating Transmissivity and Hydraulic Conductivity from Specific Capacity Test Data

Explanation and notes attached.

Maximum iterations	100
Error tolerance (as drawdown)	0.001 feet

Field Data								*Estimated Parameters*			*Calculated Results*								*Diagnostics*					
		Depth to Water				Screened Interval													*Solution Integrity*			*Sensitivity of T:*		
Location	Well Diam.	Initial	Final	Test Duration	Mean Pumping Rate	Depth to Top	Depth to Bottom	Storage Coeff. (S)	Well loss Coeff. (C)	Aquifer Thickness (b)	Measured Drawdown (s_m)	Saturated Screen Length (L)	Well loss (s_w)	Partial Penetration Parameter (s_p)	Specific Capacity	**Transmissivity (T)**	**T (ft^2/day)**	**Conductivity (K)**	Calculated Drawdown	Error as Drawdown	Well Bore Storage Test	to S at ± 1 factor of 10	to s_w at 10% of s_m	to b at ± 25%
	inches	feet	feet	hours	gpm	feet	feet	-	sec^2/ft^5	feet	feet	feet	feet	-	gpm/ft	**sq ft/sec**		**ft/day**	feet			sq ft/sec	sq ft/sec	sq ft/sec
00674478 (Coon Rapids 24)	24	60.2	112	8	1560	240.5	388.0	0.001	0	236.0	51.80	147.5	0.0E+00	2.27	30.12	**1.1E-01**	**9.4E+03**	**39.7**	51.80	0.00%	pass	1.3E-02	1.3E-02	4.0E-02
00674479 (Coon Rapids 25)	24	51.4	121.4	48	1560	229.0	388.0	0.001	0	195.0	70.00	159.0	0.0E+00	0.74	22.29	**7.4E-02**	**6.4E+03**	**32.6**	70.00	0.00%	pass	9.6E-03	8.7E-03	1.9E-02

Geometric Mean **7.7E+03**

References:

Bradbury, K.B., and E.R. Rothschild, 1985. A computerized technique for estimating the hydraulic conductivity of aquifer from specific capacity data: Ground Water vol. 23, No. 2, pp. 240-246.

ASTM International, 2004. Standard Test Method for Determining Specific Capacity and Estimating Transmissivity at the Control Well, Standard D 5472-93, in Annual Book of ASTM Standards, Vol. 04.08 pp. 1279-1282.

Tunnel City Group

Worksheet for Estimating Transmissivity and Hydraulic Conductivity from Specific Capacity Test Data

Explanation and notes attached.

Maximum iterations	100
Error tolerance (as drawdown)	0.001 feet

	Field Data							*Estimated Parameters*			*Calculated Results*								*Diagnostics*					
		Depth to Water				Screened Interval													*Solution Integrity*			*Sensitivity of T:*		
Location	Well Diam.	Initial	Final	Test Duration	Mean Pumping Rate	Depth to Top	Depth to Bottom	Storage Coeff. (S)	Well loss Coeff. (C)	Aquifer Thickness (b)	Measured Drawdown (s_m)	Saturated Screen Length (L)	Well loss (s_w)	Partial Penetrameter Parameter (s_p)	Specific Capacity	**Transmissivity (T)**	**T (ft^2/day)**	**Conductivity (K)**	Calculated Drawdown	Error as Drawdown	Well Bore Storage Test	to S at ± 1 factor of 10	to s_w at 10% of s_m	to b at ± 25%
	inches	feet	feet	hours	gpm	feet	feet	-	sec^2/ft^5	feet	feet	feet	feet	-	gpm/ft	**sq ft/sec**		**ft/day**	feet			sq ft/sec	sq ft/sec	sq ft/sec
00104713	4	40	55	4	60	173.0	187.0	0.001	0	149.0	15.00	14.0	0.0E+00	42.84	4.00	**7.4E-02**	**6.4E+03**	**42.7**	15.00	0.00%	pass	1.6E-03	8.3E-03	3.7E-02
00104723	4	30	40	3	30	150.0	188.0	0.001	0	149.0	10.00	38.0	0.0E+00	14.78	3.00	**2.5E-02**	**2.1E+03**	**14.3**	10.00	0.00%	pass	1.3E-03	2.8E-03	1.1E-02
00104753	4	20	30	3	60	161.0	188.0	0.001	0	149.0	10.00	27.0	0.0E+00	21.84	6.00	**6.5E-02**	**5.7E+03**	**38.0**	10.00	0.00%	pass	2.5E-03	7.4E-03	3.1E-02
00104788	4	12	30	4	45	171.0	188.0	0.001	0	149.0	18.00	17.0	0.0E+00	35.30	2.50	**3.9E-02**	**3.4E+03**	**22.7**	18.00	0.00%	pass	1.0E-03	4.4E-03	1.9E-02
00104846	4	25	60	3	90	152.0	167.0	0.001	0	149.0	35.00	15.0	0.0E+00	40.00	2.57	**4.4E-02**	**3.8E+03**	**25.8**	35.00	0.00%	pass	1.1E-03	5.0E-03	2.2E-02
00104866	4	20	50	4	60	149.0	172.0	0.001	0	149.0	30.00	23.0	0.0E+00	25.91	2.00	**2.4E-02**	**2.1E+03**	**14.2**	30.00	0.00%	pass	8.3E-04	2.8E-03	1.2E-02
00104898	4	20	50	6	60	150.0	200.0	0.001	0	149.0	30.00	50.0	0.0E+00	10.31	2.00	**1.3E-02**	**1.2E+03**	**7.7**	30.00	0.00%	pass	8.4E-04	1.5E-03	6.1E-03
00104899	4	40	65	3	30	213.0	223.0	0.001	0	149.0	25.00	10.0	0.0E+00	59.65	1.20	**2.9E-02**	**2.5E+03**	**16.8**	25.00	0.00%	pass	4.9E-04	3.2E-03	1.5E-02
00105116	4	50	60	3	40	141.0	156.0	0.001	0	149.0	10.00	15.0	0.0E+00	40.00	4.00	**6.9E-02**	**6.0E+03**	**40.3**	10.00	0.00%	pass	1.6E-03	7.8E-03	3.5E-02
00105327	4	30	40	3	20	158.0	201.0	0.001	0	149.0	10.00	43.0	0.0E+00	12.65	2.00	**1.5E-02**	**1.3E+03**	**8.6**	10.00	0.00%	pass	8.4E-04	1.7E-03	6.9E-03
00105384	4	30	40	3	30	197.0	214.0	0.001	0	149.0	10.00	17.0	0.0E+00	35.30	3.00	**4.7E-02**	**4.1E+03**	**27.2**	10.00	0.01%	pass	1.2E-03	5.3E-03	2.3E-02
00107147	4	60	80	2	20	311.0	335.0	0.001	0	149.0	20.00	24.0	0.0E+00	24.77	1.00	**1.2E-02**	**1.0E+03**	**6.7**	20.00	0.00%	pass	4.1E-04	1.3E-03	5.7E-03
00111261	4	22	50	4	40	105.0	156.0	0.001	0	149.0	28.00	51.0	0.0E+00	10.02	1.43	**9.2E-03**	**7.9E+02**	**5.3**	28.00	0.00%	pass	6.0E-04	1.0E-03	4.3E-03
00111269	4	23	54	4	50	108.0	160.0	0.001	0	149.0	31.00	52.0	0.0E+00	9.74	1.61	**1.0E-02**	**8.8E+02**	**5.9**	31.00	0.00%	pass	6.8E-04	1.2E-03	4.8E-03
00114342	4	35	37	3	20	137.0	175.0	0.001	0	149.0	2.00	38.0	0.0E+00	14.78	10.00	**8.5E-02**	**7.3E+03**	**49.0**	2.00	0.01%	pass	4.2E-03	9.6E-03	3.8E-02
00114417	10	89	120	10	300	240.0	383.0	0.001	0	149.0	31.00	143.0	0.0E+00	0.15	9.68	**2.9E-02**	**2.5E+03**	**16.6**	31.00	0.00%	pass	4.2E-03	3.4E-03	7.2E-03
00121670	4	12	30	3	30	144.0	200.0	0.001	0	149.0	18.00	56.0	0.0E+00	8.71	1.67	**9.9E-03**	**8.5E+02**	**5.7**	18.00	0.00%	pass	7.0E-04	1.1E-03	4.6E-03
00122176	4	17	40	2	30	119.0	129.0	0.001	0	149.0	23.00	10.0	0.0E+00	59.65	1.30	**3.1E-02**	**2.7E+03**	**18.2**	23.00	0.00%	pass	5.4E-04	3.5E-03	1.7E-02
00122201	4	22	45	6	20	188.0	201.0	0.001	0	149.0	23.00	13.0	0.0E+00	46.09	0.87	**1.7E-02**	**1.5E+03**	**9.8**	23.00	0.00%	pass	3.6E-04	1.9E-03	8.7E-03
00122215	6	18	42	4	100	127.0	181.0	0.001	0	149.0	24.00	54.0	0.0E+00	8.50	4.17	**2.5E-02**	**2.1E+03**	**14.3**	24.00	0.00%	pass	1.8E-03	2.8E-03	1.1E-02
00122231	6	22	48	5	100	141.0	241.0	0.001	0	149.0	26.00	100.0	0.0E+00	2.27	3.85	**1.4E-02**	**1.2E+03**	**8.1**	26.00	0.00%	pass	1.7E-03	1.6E-03	5.6E-03
00122451	4	28	40	2	30	148.0	172.0	0.001	0	149.0	12.00	24.0	0.0E+00	24.77	2.50	**2.9E-02**	**2.5E+03**	**17.0**	12.00	0.00%	pass	1.0E-03	3.3E-03	1.4E-02
00122464	4	38	45	2	25	159.0	230.0	0.001	0	149.0	7.00	71.0	0.0E+00	5.78	3.57	**1.8E-02**	**1.5E+03**	**10.2**	7.00	0.01%	pass	1.5E-03	2.0E-03	8.1E-03
00122534	4	27	40	2	25	163.0	215.0	0.001	0	149.0	13.00	52.0	0.0E+00	9.74	1.92	**1.2E-02**	**1.0E+03**	**7.0**	13.00	0.00%	pass	8.1E-04	1.4E-03	5.7E-03
00122886	4	15	32	4	12	155.0	200.0	0.001	0	149.0	17.00	45.0	0.0E+00	11.92	0.71	**4.9E-03**	**4.3E+02**	**2.9**	17.00	0.00%	pass	3.0E-04	5.6E-04	2.3E-03
00124102	4	13	20	5	30	108.0	117.0	0.001	0	149.0	7.00	9.0	0.0E+00	66.14	4.29	**1.1E-01**	**9.9E+03**	**66.6**	7.00	0.00%	pass	1.8E-03	1.3E-02	6.1E-02
00124136	4	35	50	4	50	180.0	197.0	0.001	0	149.0	15.00	17.0	0.0E+00	35.30	3.33	**5.2E-02**	**4.5E+03**	**30.3**	15.00	0.00%	pass	1.4E-03	5.9E-03	2.6E-02
00124136	4	35	50	2	50	180.0	197.0	0.001	0	149.0	15.00	17.0	0.0E+00	35.30	3.33	**5.2E-02**	**4.5E+03**	**30.1**	15.00	0.00%	pass	1.4E-03	5.8E-03	2.6E-02
00124971	4	35	55	4	30	127.0	132.0	0.001	0	149.0	20.00	5.0	0.0E+00	117.56	1.50	**6.7E-02**	**5.8E+03**	**39.1**	20.00	0.00%	pass	6.1E-04	7.5E-03	3.8E-02
00124998	4	16	30	4	100	172.0	204.0	0.001	0	149.0	14.00	32.0	0.0E+00	18.09	7.14	**6.9E-02**	**6.0E+03**	**39.9**	14.00	0.00%	pass	3.0E-03	7.8E-03	3.1E-02
00126388	4	50	60	3	30	216.0	246.0	0.001	0	149.0	10.00	30.0	0.0E+00	19.45	3.00	**3.0E-02**	**2.6E+03**	**17.3**	10.00	0.00%	pass	1.2E-03	3.4E-03	1.4E-02
00126472	4	50	60	3	40	151.0	186.0	0.001	0	149.0	10.00	35.0	0.0E+00	16.31	4.00	**3.5E-02**	**3.1E+03**	**20.5**	10.00	0.00%	pass	1.7E-03	4.0E-03	1.6E-02
00126500	4	30	40	3	30	136.0	170.0	0.001	0	149.0	10.00	34.0	0.0E+00	16.87	3.00	**2.7E-02**	**2.3E+03**	**15.6**	10.00	0.00%	pass	1.2E-03	3.1E-03	1.3E-02
00126601	4	40	63	3	12	132.0	200.0	0.001	0	149.0	23.00	68.0	0.0E+00	6.28	0.52	**2.5E-03**	**2.2E+02**	**1.5**	23.00	0.00%	pass	2.2E-04	2.9E-04	1.2E-03
00126606	4	22	42	3	12	110.0	145.0	0.001	0	149.0	20.00	35.0	0.0E+00	16.31	0.60	**5.1E-03**	**4.4E+02**	**3.0**	20.00	0.00%	pass	2.5E-04	5.8E-04	2.4E-03
00126611	4	40	63	3	12	156.0	215.0	0.001	0	149.0	23.00	59.0	0.0E+00	8.02	0.52	**2.8E-03**	**2.5E+02**	**1.7**	23.00	0.00%	pass	2.2E-04	3.3E-04	1.4E-03
00126695	4	20	50	1	60	179.0	235.0	0.001	0	149.0	30.00	56.0	0.0E+00	8.71	2.00	**1.2E-02**	**9.9E+02**	**6.7**	30.00	0.00%	pass	8.4E-04	1.3E-03	5.6E-03
00126782	4	20	42	3	12	132.0	185.0	0.001	0	149.0	22.00	53.0	0.0E+00	9.47	0.55	**3.3E-03**	**2.8E+02**	**1.9**	22.00	0.00%	pass	2.3E-04	3.7E-04	1.6E-03
00126814	4	20	30	3	30	125.0	185.0	0.001	0	149.0	10.00	60.0	0.0E+00	7.80	3.00	**1.7E-02**	**1.5E+03**	**9.9**	10.00	0.01%	pass	1.3E-03	2.0E-03	7.9E-03
00127218	4	22	32	3	30	132.0	172.0	0.001	0	149.0	10.00	40.0	0.0E+00	13.87	3.00	**2.4E-02**	**2.0E+03**	**13.8**	10.00	0.00%	pass	1.3E-03	2.7E-03	1.1E-02
00127250	4	50	60	3	40	108.0	141.0	0.001	0	149.0	10.00	33.0	0.0E+00	17.46	4.00	**3.7E-02**	**3.2E+03**	**21.5**	10.00	0.00%	pass	1.7E-03	4.2E-03	1.7E-02
00128107	4	19	22	3	50	134.0	155.0	0.001	0	149.0	3.00	21.0	0.0E+00	28.47	16.67	**2.2E-01**	**1.9E+04**	**130.3**	3.00	0.01%	pass	6.9E-03	2.5E-02	1.1E-01
00128150	4	24	26	3	20	197.0	201.0	0.001	0	149.0	2.00	4.0	0.0E+00	146.35	10.00	**5.5E-01**	**4.8E+04**	**321.5**	2.00	0.00%	pass	4.1E-03	6.2E-02	3.2E-01
00131212	4	20	40	2	40	112.0	180.0	0.001	0	149.0	20.00	68.0	0.0E+00	6.28	2.00	**1.0E-02**	**8.6E+02**	**5.8**	20.00	0.00%	pass	8.5E-04	1.2E-03	4.7E-03
00131265	4	28	45	2	30	125.0	130.0	0.001	0	149.0	17.00	5.0	0.0E+00	117.56	1.76	**7.9E-02**	**6.8E+03**	**45.9**	17.00	0.00%	pass	7.2E-04	8.8E-03	4.5E-02
00131278	4	16	35	2	30	151.0	180.0	0.001	0	149.0	19.00	29.0	0.0E+00	20.20	1.58	**1.6E-02**	**1.4E+03**	**9.2**	19.00	0.00%	pass	6.6E-04	1.8E-03	7.6E-03
00132007	4	43	55	3	50	191.0	236.0	0.001	0	149.0	12.00	45.0	0.0E+00	11.92	4.17	**3.0E-02**	**2.6E+03**	**17.5**	12.00	0.00%	pass	1.7E-03	3.4E-03	1.4E-02
00132021	4	27	33	3	50	209.0	280.0	0.001	0	149.0	6.00	71.0	0.0E+00	5.78	8.33	**4.3E-02**	**3.7E+03**	**24.8**	6.00	0.00%	pass	3.5E-03	4.9E-03	1.9E-02
00135310	4	40	84	2	20	169.0	209.0	0.001	0	149.0	44.00	40.0	0.0E+00	13.87	0.45	**3.4E-03**	**2.9E+02**	**2.0**	44.00	0.00%	pass	1.9E-04	3.9E-04	1.7E-03
00135845	4	30	45	2	30	142.0	166.0	0.001	0	149.0	15.00	24.0	0.0E+00	24.77	2.00	**2.3E-02**	**2.0E+03**	**13.6**	15.00	0.00%	pass	8.3E-04	2.6E-03	1.1E-02
00136071	4	15	40	4	60	190.0	239.0	0.001	0	149.0	25.00	49.0	0.0E+00	10.61	2.40	**1.6E-02**	**1.4E+03**	**9.4**	25.00	0.00%	pass	1.0E-03	1.8E-03	7.4E-03
00136093	4	20	40	4	60	147.0	201.0	0.001	0	149.0	20.00	54.0	0.0E+00	9.21	3.00	**1.9E-02**	**1.6E+03**	**10.9**	20.00	0.00%	pass	1.3E-03	2.2E-03	8.6E-03
00137742	4	25	80	2	100	169.0	215.0	0.001	0	149.0	55.00	46.0	0.0E+00	11.57	1.82	**1.3E-02**	**1.1E+03**	**7.3**	55.00	0.00%	pass	7.6E-04	1.4E-03	5.9E-03
00137742	4	25	60	2	25	169.0	215.0	0.001	0	149.0	35.00	46.0	0.0E+00	11.57	0.71	**4.8E-03**	**4.2E+02**	**2.8**	35.00	0.00%	pass	3.0E-04	5.5E-04	2.3E-03
00139715	4	20	40	3	50	150.0	200.0	0.001	0	149.0	20.00	50.0	0.0E+00	10.31	2.50	**1.6E-02**	**1.4E+03**	**9.5**	20.00	0.00%	pass	1.0E-03	1.9E-03	7.6E-03
00139715	4	20	40	2	50	150.0	200.0	0.001	0	149.0	20.00	50.0	0.0E+00	10.31	2.50	**1.6E-02**	**1.4E+03**	**9.4**	20.00	0.00%	pass	1.0E-03	1.9E-03	7.6E-03
00140015	4	32	42	3	50	123.0	173.0	0.001	0	149.0	10.00	50.0	0.0E+00	10.31	5.00	**3.4E-02**	**2.9E+03**	**19.4**	10.00	0.00%	pass	2.1E-03	3.8E-03	1.5E-02
00140127	4	25	40	4	30	178.0	187.0	0.001	0	149.0	15.00	9.0	0.0E+00	66.14	2.00	**5.3E-02**	**4.6E+03**	**30.9**	15.00	0.00%	pass	8.2E-04	6.0E-03	2.9E-02
00140134	4	12	25	4	50	180.0	215.0	0.001	0	149.0	13.00	35.0	0.0E+00	16.31	3.85	**3.4E-02**	**3.0E+03**	**19.8**	13.00	0.00%	pass	1.6E-03	3.9E-03	1.6E-02
00140142	4	20	40	4	60	181.0	205.0	0.001	0	149.0	20.00	24.0	0.0E+00	24.77	3.00	**3.6E-02**	**3.1E+03**	**20.7**	20.00	0.00%	pass	1.2E-03	4.0E-03	1.7E-02
00140156	4	45	60	4	45	169.0	242.0	0.001	0	149.0	15.00	73.0	0.0E+00	5.47	3.00	**1.5E-02**	**1.3E+03**	**8.5**	15.00	0.00%	pass	1.3E-03	1.7E-03	6.6E-03
00143228	4	20	40	2	30	137.0	186.0	0.001	0	149.0	20.00	49.0	0.0E+00	10.61	1.50	**9.8E-03**	**8.4E+02**	**5.7**	20.00	0.00%	pass	6.3E-04	1.1E-03	4.6E-03
00144029	4	22	36	3	30	100.0	130.0	0.001	0	149.0	14.00	30.0	0.0E+00	19.45	2.14	**2.1E-02**	**1.8E+03**	**12.3**	14.00	0.00%	pass	8.9E-04	2.4E-03	1.0E-02
00144196	4	35	55	2	25	121.0	126.0	0.001	0	149.0	20.00	5.0	0.0E+00	117.56	1.25	**5.6E-02**	**4.8E+03**	**32.4**	20.00	0.00%	pass	5.1E-04	6.2E-03	3.2E-02
00145410	4	33	50	5	30	133.0	179.0	0.001	0	149.0	17.00	46.0	0.0E+00	11.57	1.76	**1.2E-02**	**1.1E+03**	**7.2**	17.00	0.00%	pass	7.4E-04	1.4E-03	5.7E-03

00147116	4	19	63	4	100	107.0	136.0	0.001	0	149.0	44.00	29.0	0.0E+00	20.20	2.27	**2.3E-02**	**2.0E+03**	**13.4**	44.00	0.00%	pass	9.4E-04	2.6E-03	1.1E-02
00147142	4	20	50	3	20	80.0	120.0	0.001	0	149.0	30.00	40.0	0.0E+00	13.87	0.67	**5.1E-03**	**4.4E+02**	**3.0**	30.00	0.00%	pass	2.8E-04	5.8E-04	2.4E-03
00147143	4	31	63	8	80	190.0	261.0	0.001	0	149.0	32.00	71.0	0.0E+00	5.78	2.50	**1.3E-02**	**1.1E+03**	**7.4**	32.00	0.00%	pass	1.1E-03	1.5E-03	5.6E-03
00147155	4	15	50	3	65	168.0	210.0	0.001	0	149.0	35.00	42.0	0.0E+00	13.04	1.86	**1.4E-02**	**1.2E+03**	**8.1**	35.00	0.00%	pass	7.8E-04	1.6E-03	6.5E-03
00149422	4	10	20	3	40	150.0	171.0	0.001	0	149.0	10.00	21.0	0.0E+00	28.47	4.00	**5.3E-02**	**4.6E+03**	**30.7**	10.00	0.00%	pass	1.7E-03	6.0E-03	2.6E-02
00155121	4	17	32	3	50	166.0	216.0	0.001	0	149.0	15.00	50.0	0.0E+00	10.31	3.33	**2.2E-02**	**1.9E+03**	**12.8**	15.00	0.00%	pass	1.4E-03	2.5E-03	1.0E-02
00155266	4	25	35	3	35	126.0	173.0	0.001	0	149.0	10.00	47.0	0.0E+00	11.24	3.50	**2.4E-02**	**2.1E+03**	**14.2**	10.00	0.00%	pass	1.5E-03	2.8E-03	1.1E-02
00155907	4	25	35	3	20	150.0	171.0	0.001	0	149.0	10.00	21.0	0.0E+00	28.47	2.00	**2.6E-02**	**2.3E+03**	**15.2**	10.00	0.00%	pass	8.3E-04	3.0E-03	1.3E-02
00156559	4	10	30	2	30	119.0	138.0	0.001	0	149.0	20.00	19.0	0.0E+00	31.54	1.50	**2.1E-02**	**1.8E+03**	**12.2**	20.00	0.00%	pass	6.2E-04	2.4E-03	1.0E-02
00156561	4	20	40	2	30	144.0	201.0	0.001	0	149.0	20.00	57.0	0.0E+00	8.48	1.50	**8.6E-03**	**7.4E+02**	**5.0**	20.00	0.00%	pass	6.3E-04	9.9E-04	4.1E-03
00156570	4	30	70	2	50	155.0	195.0	0.001	0	149.0	40.00	40.0	0.0E+00	13.87	1.25	**9.6E-03**	**8.3E+02**	**5.6**	40.00	0.00%	pass	5.2E-04	1.1E-03	4.6E-03
00158324	4	15	50	4	50	178.0	200.0	0.001	0	149.0	35.00	22.0	0.0E+00	27.13	1.43	**1.8E-02**	**1.6E+03**	**10.4**	35.00	0.00%	pass	5.9E-04	2.0E-03	8.7E-03
00158324	4	15	50	2	50	178.0	200.0	0.001	0	149.0	35.00	22.0	0.0E+00	27.13	1.43	**1.8E-02**	**1.5E+03**	**10.3**	35.00	0.00%	pass	5.9E-04	2.0E-03	8.7E-03
00158330	4	20	40	3	40	134.0	156.0	0.001	0	149.0	20.00	22.0	0.0E+00	27.13	2.00	**2.5E-02**	**2.2E+03**	**14.6**	20.00	0.00%	pass	8.3E-04	2.8E-03	1.2E-02
00158330	4	20	40	2	40	134.0	156.0	0.001	0	149.0	20.00	22.0	0.0E+00	27.13	2.00	**2.5E-02**	**2.2E+03**	**14.6**	20.00	0.00%	pass	8.3E-04	2.8E-03	1.2E-02
00158334	4	20	40	4	40	135.0	188.0	0.001	0	149.0	20.00	53.0	0.0E+00	9.47	2.00	**1.3E-02**	**1.1E+03**	**7.3**	20.00	0.00%	pass	8.4E-04	1.4E-03	5.8E-03
00158334	4	20	40	2	40	135.0	188.0	0.001	0	149.0	20.00	53.0	0.0E+00	9.47	2.00	**1.2E-02**	**1.1E+03**	**7.1**	20.00	0.00%	pass	8.4E-04	1.4E-03	5.8E-03
00159327	4	12	95	4	65	197.0	231.0	0.001	0	149.0	83.00	34.0	0.0E+00	16.87	0.78	**6.9E-03**	**6.0E+02**	**4.0**	83.00	0.00%	pass	3.3E-04	7.8E-04	3.3E-03
00159563	4	15	25	4	30	144.0	187.0	0.001	0	149.0	10.00	43.0	0.0E+00	12.65	3.00	**2.3E-02**	**1.9E+03**	**13.1**	10.00	0.00%	pass	1.3E-03	2.6E-03	1.0E-02
00159631	4	30	33	4	45	138.0	171.0	0.001	0	149.0	3.00	33.0	0.0E+00	17.46	15.00	**1.4E-01**	**1.2E+04**	**83.0**	3.00	0.01%	pass	6.2E-03	1.6E-02	6.4E-02
00161441	14	9.5	24	24	500	243.0	323.0	0.001	0	149.0	14.50	80.0	0.0E+00	3.43	34.48	**1.5E-01**	**1.3E+04**	**89.1**	14.50	0.00%	pass	1.5E-02	1.8E-02	5.5E-02
00161813	4	32	50	2	30	209.0	260.0	0.001	0	149.0	18.00	51.0	0.0E+00	10.02	1.67	**1.1E-02**	**9.1E+02**	**6.1**	18.00	0.00%	pass	7.0E-04	1.2E-03	5.0E-03
00165893	4	25	40	4.5	30	150.0	197.0	0.001	0	149.0	15.00	47.0	0.0E+00	11.24	2.00	**1.4E-02**	**1.2E+03**	**8.1**	15.00	0.00%	pass	8.4E-04	1.6E-03	6.4E-03
00166870	4	27	75	3	30	112.0	160.0	0.001	0	149.0	48.00	48.0	0.0E+00	10.92	0.63	**4.1E-03**	**3.5E+02**	**2.4**	48.00	0.00%	pass	2.6E-04	4.7E-04	2.0E-03
00166889	4	32	60	3	40	98.0	150.0	0.001	0	149.0	28.00	52.0	0.0E+00	9.74	1.43	**9.0E-03**	**7.7E+02**	**5.2**	28.00	0.00%	pass	6.0E-04	1.0E-03	4.2E-03
00169239	4	15	25	3.5	35	181.0	185.0	0.001	0	149.0	10.00	4.0	0.0E+00	146.35	3.50	**1.9E-01**	**1.7E+04**	**112.2**	10.00	0.00%	pass	1.4E-03	2.2E-02	1.1E-01
00169240	4	20	30	3.5	25	169.0	173.0	0.001	0	149.0	10.00	4.0	0.0E+00	146.35	2.50	**1.4E-01**	**1.2E+04**	**80.1**	10.00	0.00%	pass	1.0E-03	1.5E-02	8.0E-02
00170412	4	35	60	3	40	150.0	201.0	0.001	0	149.0	25.00	51.0	0.0E+00	10.02	1.60	**1.0E-02**	**8.8E+02**	**5.9**	25.00	0.00%	pass	6.7E-04	1.2E-03	4.8E-03
00170412	4	35	60	2	40	150.0	201.0	0.001	0	149.0	25.00	51.0	0.0E+00	10.02	1.60	**1.0E-02**	**8.7E+02**	**5.9**	25.00	0.00%	pass	6.7E-04	1.2E-03	4.8E-03
00170415	4	25	60	3	50	118.0	152.0	0.001	0	149.0	35.00	34.0	0.0E+00	16.87	1.43	**1.3E-02**	**1.1E+03**	**7.3**	35.00	0.00%	pass	6.0E-04	1.4E-03	6.0E-03
00170415	4	25	60	2	50	118.0	152.0	0.001	0	149.0	35.00	34.0	0.0E+00	16.87	1.43	**1.3E-02**	**1.1E+03**	**7.3**	35.00	0.00%	pass	6.0E-04	1.4E-03	6.0E-03
00170429	4	15	40	4	40	138.0	156.0	0.001	0	149.0	25.00	18.0	0.0E+00	33.32	1.60	**2.4E-02**	**2.1E+03**	**13.8**	25.00	0.00%	pass	6.6E-04	2.7E-03	1.2E-02
00170429	4	15	40	2	40	138.0	156.0	0.001	0	149.0	25.00	18.0	0.0E+00	33.32	1.60	**2.4E-02**	**2.0E+03**	**13.7**	25.00	0.00%	pass	6.6E-04	2.7E-03	1.2E-02
00170445	4	25	60	3	30	190.0	246.0	0.001	0	149.0	35.00	56.0	0.0E+00	8.71	0.86	**5.0E-03**	**4.3E+02**	**2.9**	35.00	0.00%	pass	3.6E-04	5.7E-04	2.4E-03
00170445	4	25	60	2	30	190.0	246.0	0.001	0	149.0	35.00	56.0	0.0E+00	8.71	0.86	**4.9E-03**	**4.2E+02**	**2.8**	35.00	0.00%	pass	3.6E-04	5.6E-04	2.4E-03
00174572	4	20	30	4	40	60.0	112.0	0.001	0	149.0	10.00	52.0	0.0E+00	9.74	4.00	**2.6E-02**	**2.2E+03**	**15.1**	10.00	0.00%	pass	1.7E-03	3.0E-03	1.2E-02
00174862	4	18	100	3	65	138.0	153.0	0.001	0	149.0	82.00	15.0	0.0E+00	40.00	0.79	**1.4E-02**	**1.2E+03**	**7.8**	82.00	0.00%	pass	3.3E-04	1.5E-03	6.9E-03
00175606	4	12	30	2	30	114.0	127.0	0.001	0	149.0	18.00	13.0	0.0E+00	46.09	1.67	**3.2E-02**	**2.8E+03**	**18.7**	18.00	0.00%	pass	6.9E-04	3.6E-03	1.7E-02
00175608	4	20	40	2	30	175.0	246.0	0.001	0	149.0	20.00	71.0	0.0E+00	5.78	1.50	**7.1E-03**	**6.2E+02**	**4.1**	20.00	0.00%	pass	6.4E-04	8.2E-04	3.4E-03
00178931	4	25	50	3	30	152.0	175.0	0.001	0	149.0	25.00	23.0	0.0E+00	25.91	1.20	**1.5E-02**	**1.3E+03**	**8.4**	25.00	0.00%	pass	5.0E-04	1.6E-03	7.0E-03
00179360	4	7	20	3	50	191.0	245.0	0.001	0	149.0	13.00	54.0	0.0E+00	9.21	3.85	**2.4E-02**	**2.1E+03**	**14.0**	13.00	0.00%	pass	1.6E-03	2.8E-03	1.1E-02
00183172	4	35	45	2	30	185.0	211.0	0.001	0	149.0	10.00	26.0	0.0E+00	22.75	3.00	**3.3E-02**	**2.9E+03**	**19.2**	10.00	0.00%	pass	1.2E-03	3.7E-03	1.6E-02
00183178	4	23	40	2	30	142.0	178.0	0.001	0	149.0	17.00	36.0	0.0E+00	15.77	1.76	**1.5E-02**	**1.3E+03**	**8.6**	17.00	0.00%	pass	7.4E-04	1.7E-03	7.0E-03
00183460	4	13	25	3	60	192.0	218.0	0.001	0	149.0	12.00	26.0	0.0E+00	22.75	5.00	**5.6E-02**	**4.8E+03**	**32.5**	12.00	0.00%	pass	2.1E-03	6.3E-03	2.6E-02
00183465	4	13	25	3	60	174.0	198.0	0.001	0	149.0	12.00	24.0	0.0E+00	24.77	5.00	**6.0E-02**	**5.2E+03**	**34.6**	12.00	0.00%	pass	2.1E-03	6.7E-03	2.8E-02
00184772	4	20	40	1	50	175.0	220.0	0.001	0	149.0	20.00	45.0	0.0E+00	11.92	2.50	**1.7E-02**	**1.5E+03**	**10.1**	20.00	0.00%	pass	1.0E-03	2.0E-03	8.3E-03
00190449	4	50	100	3	30	225.0	298.0	0.001	0	149.0	50.00	73.0	0.0E+00	5.47	0.60	**2.7E-03**	**2.4E+02**	**1.6**	50.00	0.00%	pass	2.5E-04	3.2E-04	1.3E-03
00193457	4	40	45	2	35	142.0	192.0	0.001	0	149.0	5.00	50.0	0.0E+00	10.31	7.00	**4.7E-02**	**4.0E+03**	**27.2**	5.00	0.00%	pass	2.9E-03	5.4E-03	2.1E-02
00193762	4	30	60	4	40	214.0	261.0	0.001	0	149.0	30.00	47.0	0.0E+00	11.24	1.33	**9.1E-03**	**7.9E+02**	**5.3**	30.00	0.00%	pass	5.6E-04	1.0E-03	4.3E-03
00193762	4	30	60	2	40	214.0	261.0	0.001	0	149.0	30.00	47.0	0.0E+00	11.24	1.33	**9.0E-03**	**7.8E+02**	**5.2**	30.00	0.00%	pass	5.6E-04	1.0E-03	4.3E-03
00193769	4	10	60	4	40	203.0	261.0	0.001	0	149.0	50.00	58.0	0.0E+00	8.25	0.80	**4.5E-03**	**3.9E+02**	**2.6**	50.00	0.00%	pass	3.4E-04	5.2E-04	2.2E-03
00193769	4	10	60	2	40	203.0	261.0	0.001	0	149.0	50.00	58.0	0.0E+00	8.25	0.80	**4.4E-03**	**3.8E+02**	**2.6**	50.00	0.00%	pass	3.4E-04	5.1E-04	2.2E-03
00194968	4	25	100	5	45	241.0	283.0	0.001	0	149.0	75.00	42.0	0.0E+00	13.04	0.60	**4.4E-03**	**3.8E+02**	**2.6**	75.00	0.00%	pass	2.5E-04	5.1E-04	2.1E-03
00197403	4	20	75	1	100	214.0	230.0	0.001	0	149.0	55.00	16.0	0.0E+00	37.51	1.82	**2.9E-02**	**2.5E+03**	**17.0**	55.00	0.00%	pass	7.5E-04	3.3E-03	1.5E-02
00197403	4	20	40	2	50	214.0	230.0	0.001	0	149.0	20.00	16.0	0.0E+00	37.51	2.50	**4.1E-02**	**3.5E+03**	**23.6**	20.00	0.00%	pass	1.0E-03	4.6E-03	2.1E-02
00197571	4	38	52	3	40	169.0	200.0	0.001	0	149.0	14.00	31.0	0.0E+00	18.75	2.86	**2.8E-02**	**2.4E+03**	**16.0**	14.00	0.00%	pass	1.2E-03	3.1E-03	1.3E-02
00199985	4	30	50	2	30	241.0	290.0	0.001	0	149.0	20.00	49.0	0.0E+00	10.61	1.50	**9.8E-03**	**8.4E+02**	**5.7**	20.00	0.00%	pass	6.3E-04	1.1E-03	4.6E-03
00199993	4	20	40	2	30	218.0	260.0	0.001	0	149.0	20.00	42.0	0.0E+00	13.04	1.50	**1.1E-02**	**9.6E+02**	**6.4**	20.00	0.00%	pass	6.3E-04	1.3E-03	5.3E-03
00199998	4	34	50	2	30	212.0	265.0	0.001	0	149.0	16.00	53.0	0.0E+00	9.47	1.88	**1.2E-02**	**1.0E+03**	**6.7**	16.00	0.00%	pass	7.9E-04	1.3E-03	5.4E-03
00248810	4	32	55	3	20	147.0	188.0	0.001	0	149.0	23.00	41.0	0.0E+00	13.45	0.87	**6.5E-03**	**5.7E+02**	**3.8**	23.00	0.00%	pass	3.6E-04	7.5E-04	3.1E-03
00251821	4	46	48	1	25	226.0	270.0	0.001	0	149.0	2.00	44.0	0.0E+00	12.28	12.50	**9.2E-02**	**8.0E+03**	**53.5**	2.00	0.00%	pass	5.2E-03	1.1E-02	4.2E-02
00257095	4	20	40	3	80	151.0	215.0	0.001	0	149.0	20.00	64.0	0.0E+00	7.00	4.00	**2.2E-02**	**1.9E+03**	**12.7**	20.00	0.00%	pass	1.7E-03	2.5E-03	9.9E-03
00270121	4	14	46	2	16	132.0	165.0	0.001	0	149.0	32.00	33.0	0.0E+00	17.46	0.50	**4.4E-03**	**3.8E+02**	**2.6**	32.00	0.00%	pass	2.1E-04	5.0E-04	2.1E-03
00404152	4	40	60	3	35	148.0	170.0	0.001	0	149.0	20.00	22.0	0.0E+00	27.13	1.75	**2.2E-02**	**1.9E+03**	**12.8**	20.00	0.00%	pass	7.2E-04	2.5E-03	1.1E-02
00404503	4	21	30	3	60	161.0	190.0	0.001	0	149.0	9.00	29.0	0.0E+00	20.20	6.67	**6.9E-02**	**6.0E+03**	**40.0**	9.00	0.01%	pass	2.8E-03	7.8E-03	3.2E-02
00404541	4	8	20	3	60	154.0	176.0	0.001	0	149.0	12.00	22.0	0.0E+00	27.13	5.00	**6.4E-02**	**5.5E+03**	**37.1**	12.00	0.00%	pass	2.1E-03	7.2E-03	3.1E-02
00404543	4	23	30	3	30	117.0	185.0	0.001	0	149.0	7.00	68.0	0.0E+00	6.28	4.29	**2.2E-02**	**1.9E+03**	**12.9**	7.00	0.01%	pass	1.8E-03	2.6E-03	1.0E-02
00404703	4	18	35	3	20	147.0	157.0	0.001	0	149.0	17.00	10.0	0.0E+00	59.65	1.18	**2.8E-02**	**2.5E+03**	**16.5**	17.00	0.00%	pass	4.8E-04	3.2E-03	1.5E-02
00404761	4	20	100	60	15	175.0	215.0	0.001	0	149.0	80.00	40.0	0.0E+00	13.87	0.19	**1.5E-03**	**1.3E+02**	**0.9**	80.00	0.00%	pass	7.8E-05	1.7E-04	6.8E-04
00405736	4	13	40	1	45	136.0	146.0	0.001	0	149.0	27.00	10.0	0.0E+00	59.65	1.67	**4.0E-02**	**3.5E+03**	**23.2**	27.00	0.00%	pass	6.9E-04	4.5E-03	2.2E-02
00405804	4	30	100	1	100	203.0	236.0	0.001	0	149.0	70.00	33.0	0.0E+00	17.46	1.43	**1.3E-02**	**1.1E+03**	**7.4**	70.00	0.00%	pass	6.0E-04	1.4E-03	6.1E-03
00405804	4	30	50	2	35	203.0	236.0	0.001	0	149.0	20.00	33.0	0.0E+00	17.46	1.75	**1.6E-02**	**1.4E+03**	**9.2**	20.00	0.00%	pass	7.3E-04	1.8E-03	7.5E-03
00405868	4	10	60	1	60	111.0	155.0	0.001	0	149.0	50.00	44.0	0.0E+00	12.28	1.20	**8.4E-03**	**7.2E+02**	**4.8**	50.00	0.00%	pass	5.0E-04	9.5E-04	4.1E-03
00405868	4	10	30	3	40	111.0	155.0	0.001	0	149.0	20.00	44.0	0.0E+00	12.28	2.00	**1.5E-02**	**1.3E+03**	**8.4**	20.00	0.00%	pass	8.4E-04	1.7E-03	6.8E-03
00406253	4	36	100	2	40	147.0	217.0	0.001	0	149.0	64.00	70.0	0.0E+00	5.94	0.63	**2.9E-03**	**2.5E+02**	**1.7**	64.00	0.00%	pass	2.7E-04	3.4E-04	1.4E-03
00406265	4	25	100	2	40	220.0	257.0	0.001	0	149.0	75.00	37.0	0.0E+00	15.26	0.53	**4.3E-03**	**3.7E+02**	**2.5**	75.00	0.00%	pass	2.2E-04	4.9E-04	2.1E-03
00406273	4	30	40	2	40	126.0	200.0	0.001	0	149.0	10.00	74.0	0.0E+00	5.32	4.00	**1.9E-02**	**1.6E+03**	**11.1**	10.00	0.01%	pass	1.7E-03	2.2E-03	8.7E-03
00406286	4	20	100	1	50	147.0	220.0	0.001	0	149.0	80.00	73.0	0.0E+00	5.47	0.63	**2.7E-03**	**2.3E+02**	**1.6**	80.00	0.00%	pass	2.7E-04	3.2E-04	1.4E-03

00406298	4	10	100	1	50	147.0	219.0	0.001	0	149.0	90.00	72.0	0.0E+00	5.63	0.56	**2.4E-03**	**2.1E+02**	**1.4**	90.00	0.00%	pass	2.4E-04	2.8E-04	1.2E-03
00406323	4	25	100	2	50	190.0	220.0	0.001	0	149.0	75.00	30.0	0.0E+00	19.45	0.67	**6.4E-03**	**5.5E+02**	**3.7**	75.00	0.00%	pass	2.8E-04	7.2E-04	3.1E-03
00406327	4	20	80	2.5	50	109.0	160.0	0.001	0	149.0	60.00	51.0	0.0E+00	10.02	0.83	**5.2E-03**	**4.5E+02**	**3.0**	60.00	0.00%	pass	3.5E-04	6.0E-04	2.5E-03
00406332	4	25	100	2	60	147.0	223.0	0.001	0	149.0	75.00	76.0	0.0E+00	5.04	0.80	**3.5E-03**	**3.0E+02**	**2.0**	75.00	0.00%	pass	3.4E-04	4.1E-04	1.7E-03
00406341	4	30	100	1	50	131.0	203.0	0.001	0	149.0	70.00	72.0	0.0E+00	5.63	0.71	**3.2E-03**	**2.7E+02**	**1.8**	70.00	0.00%	pass	3.0E-04	3.7E-04	1.6E-03
00406342	4	18	100	1	50	155.0	183.0	0.001	0	149.0	82.00	28.0	0.0E+00	20.99	0.61	**6.1E-03**	**5.3E+02**	**3.5**	82.00	0.00%	pass	2.5E-04	6.9E-04	3.0E-03
00406344	4	20	80	3	50	105.0	168.0	0.001	0	149.0	60.00	63.0	0.0E+00	7.19	0.83	**4.4E-03**	**3.8E+02**	**2.5**	60.00	0.00%	pass	3.5E-04	5.0E-04	2.1E-03
00406347	4	50	80	4	40	210.0	283.0	0.001	0	149.0	30.00	73.0	0.0E+00	5.47	1.33	**6.3E-03**	**5.5E+02**	**3.7**	30.00	0.00%	pass	5.7E-04	7.3E-04	2.9E-03
00408566	4	25	30	2	40	110.0	180.0	0.001	0	149.0	5.00	70.0	0.0E+00	5.94	8.00	**4.1E-02**	**3.5E+03**	**23.7**	5.00	0.00%	pass	3.4E-03	4.7E-03	1.8E-02
00408570	4	20	25	2	40	126.0	176.0	0.001	0	149.0	5.00	50.0	0.0E+00	10.31	8.00	**5.4E-02**	**4.6E+03**	**31.2**	5.00	0.00%	pass	3.4E-03	6.1E-03	2.4E-02
00408573	4	7	50	3	20	240.0	260.0	0.001	0	149.0	43.00	20.0	0.0E+00	29.94	0.47	**6.2E-03**	**5.4E+02**	**3.6**	43.00	0.00%	pass	1.9E-04	7.0E-04	3.1E-03
00408596	4	15	100	2	20	153.0	220.0	0.001	0	149.0	85.00	67.0	0.0E+00	6.45	0.24	**1.1E-03**	**9.5E+01**	**0.6**	85.00	0.00%	pass	1.0E-04	1.3E-04	5.6E-04
00408954	4	25	60	3	20	162.0	167.0	0.001	0	149.0	35.00	5.0	0.0E+00	117.56	0.57	**2.6E-02**	**2.2E+03**	**14.8**	35.00	0.00%	pass	2.3E-04	2.8E-03	1.5E-02
00408954	4	25	60	2	20	162.0	167.0	0.001	0	149.0	35.00	5.0	0.0E+00	117.56	0.57	**2.5E-02**	**2.2E+03**	**14.8**	35.00	0.00%	pass	2.3E-04	2.8E-03	1.5E-02
00409450	4	30	75	1	100	217.0	250.0	0.001	0	149.0	45.00	33.0	0.0E+00	17.46	2.22	**2.0E-02**	**1.7E+03**	**11.5**	45.00	0.00%	pass	9.3E-04	2.3E-03	9.5E-03
00409450	4	30	45	1	15	217.0	250.0	0.001	0	149.0	15.00	33.0	0.0E+00	17.46	1.00	**8.8E-03**	**7.6E+02**	**5.1**	15.00	0.00%	pass	4.2E-04	1.0E-03	4.3E-03
00409517	4	13	26	3	20	126.0	175.0	0.001	0	149.0	13.00	49.0	0.0E+00	10.61	1.54	**1.0E-02**	**8.8E+02**	**5.9**	13.00	0.00%	pass	6.5E-04	1.2E-03	4.8E-03
00410627	4	14	25	4	50	185.0	232.0	0.001	0	149.0	11.00	47.0	0.0E+00	11.24	4.55	**3.2E-02**	**2.8E+03**	**18.7**	11.00	0.00%	pass	1.9E-03	3.7E-03	1.5E-02
00410646	4	23	30	4	35	137.0	168.0	0.001	0	149.0	7.00	31.0	0.0E+00	18.75	5.00	**4.9E-02**	**4.2E+03**	**28.5**	7.00	0.00%	pass	2.1E-03	5.6E-03	2.3E-02
00410958	4	22	26	2	40	130.0	160.0	0.001	0	149.0	4.00	30.0	0.0E+00	19.45	10.00	**1.0E-01**	**8.7E+03**	**58.4**	4.00	0.01%	pass	4.2E-03	1.1E-02	4.6E-02
00411515	4	20	40	3	30	125.0	130.0	0.001	0	149.0	20.00	5.0	0.0E+00	117.56	1.50	**6.7E-02**	**5.8E+03**	**39.0**	20.00	0.00%	pass	6.1E-04	7.5E-03	3.8E-02
00415857	4	17	25	3	60	123.0	165.0	0.001	0	149.0	8.00	42.0	0.0E+00	13.04	7.50	**5.8E-02**	**5.0E+03**	**33.8**	8.00	0.00%	pass	3.1E-03	6.6E-03	2.6E-02
00415885	4	22	28	3	80	138.0	180.0	0.001	0	149.0	6.00	42.0	0.0E+00	13.04	13.33	**1.0E-01**	**9.1E+03**	**60.9**	6.00	0.00%	pass	5.6E-03	1.2E-02	4.7E-02
00415951	4	20	35	3	40	178.0	255.0	0.001	0	149.0	15.00	77.0	0.0E+00	4.90	2.67	**1.2E-02**	**1.1E+03**	**7.1**	15.00	0.00%	pass	1.1E-03	1.4E-03	5.6E-03
00415960	4	15	29	3	60	110.0	160.0	0.001	0	149.0	14.00	50.0	0.0E+00	10.31	4.29	**2.9E-02**	**2.5E+03**	**16.6**	14.00	0.00%	pass	1.8E-03	3.3E-03	1.3E-02
00415968	4	20	41	3	50	126.0	160.0	0.001	0	149.0	21.00	34.0	0.0E+00	16.87	2.38	**2.1E-02**	**1.8E+03**	**12.4**	21.00	0.00%	pass	9.9E-04	2.4E-03	9.9E-03
00416097	4	10	23	5	45	172.0	223.0	0.001	0	149.0	13.00	51.0	0.0E+00	10.02	3.46	**2.3E-02**	**2.0E+03**	**13.3**	13.00	0.00%	pass	1.5E-03	2.6E-03	1.0E-02
00416167	4	35	55	3	60	130.0	180.0	0.001	0	149.0	20.00	50.0	0.0E+00	10.31	3.00	**2.0E-02**	**1.7E+03**	**11.5**	20.00	0.00%	pass	1.3E-03	2.3E-03	9.1E-03
00416420	4	35	60	3	30	143.0	245.0	0.001	0	149.0	25.00	102.0	0.0E+00	2.31	1.20	**4.2E-03**	**3.6E+02**	**2.4**	25.00	0.00%	pass	5.2E-04	4.9E-04	1.8E-03
00416448	4	9	25	2	30	145.0	155.0	0.001	0	149.0	16.00	10.0	0.0E+00	59.65	1.88	**4.5E-02**	**3.9E+03**	**26.3**	16.00	0.00%	pass	7.7E-04	5.1E-03	2.4E-02
00417466	4	25	100	2	55	168.0	239.0	0.001	0	149.0	75.00	71.0	0.0E+00	5.78	0.73	**3.4E-03**	**2.9E+02**	**2.0**	75.00	0.00%	pass	3.1E-04	3.9E-04	1.7E-03
00417474	4	20	100	1	50	168.0	243.0	0.001	0	149.0	80.00	75.0	0.0E+00	5.18	0.63	**2.7E-03**	**2.3E+02**	**1.5**	80.00	0.00%	pass	2.7E-04	3.1E-04	1.4E-03
00417483	4	20	80	2	60	242.0	283.0	0.001	0	149.0	60.00	41.0	0.0E+00	13.45	1.00	**7.5E-03**	**6.5E+02**	**4.3**	60.00	0.00%	pass	4.2E-04	8.5E-04	3.6E-03
00417497	4	20	100	4	60	115.0	203.0	0.001	0	149.0	80.00	88.0	0.0E+00	3.58	0.75	**3.0E-03**	**2.6E+02**	**1.7**	80.00	0.00%	pass	3.2E-04	3.4E-04	1.4E-03
00418362	4	25	100	3	40	175.0	203.0	0.001	0	149.0	75.00	28.0	0.0E+00	20.99	0.53	**5.4E-03**	**4.7E+02**	**3.1**	75.00	0.00%	pass	2.2E-04	6.1E-04	2.6E-03
00418365	4	25	100	3	35	129.0	134.0	0.001	0	149.0	75.00	5.0	0.0E+00	117.56	0.47	**2.1E-02**	**1.8E+03**	**12.1**	75.00	0.00%	pass	1.9E-04	2.3E-03	1.2E-02
00418391	4	25	100	4	55	189.0	283.0	0.001	0	149.0	75.00	94.0	0.0E+00	2.99	0.73	**2.7E-03**	**2.4E+02**	**1.6**	75.00	0.00%	pass	3.1E-04	3.2E-04	1.2E-03
00418393	4	32	100	2.5	40	189.0	243.0	0.001	0	149.0	68.00	54.0	0.0E+00	9.21	0.59	**3.5E-03**	**3.0E+02**	**2.0**	68.00	0.00%	pass	2.5E-04	4.0E-04	1.7E-03
00418432	4	10	25	4	40	154.0	216.0	0.001	0	149.0	15.00	62.0	0.0E+00	7.39	2.67	**1.5E-02**	**1.3E+03**	**8.6**	15.00	0.01%	pass	1.1E-03	1.7E-03	6.8E-03
00418451	4	25	100	6	75	210.0	263.0	0.001	0	149.0	75.00	53.0	0.0E+00	9.47	1.00	**6.2E-03**	**5.4E+02**	**3.6**	75.00	0.00%	pass	4.2E-04	7.1E-04	2.9E-03
00419515	4	9	20	3	45	143.0	168.0	0.001	0	149.0	11.00	25.0	0.0E+00	23.72	4.09	**4.7E-02**	**4.1E+03**	**27.3**	11.00	0.00%	pass	1.7E-03	5.3E-03	2.2E-02
00419531	4	15	25	3	60	245.0	288.0	0.001	0	149.0	10.00	43.0	0.0E+00	12.65	6.00	**4.6E-02**	**3.9E+03**	**26.4**	10.00	0.00%	pass	2.5E-03	5.2E-03	2.1E-02
00419532	4	28	45	3	40	152.0	185.0	0.001	0	149.0	17.00	33.0	0.0E+00	17.46	2.35	**2.2E-02**	**1.9E+03**	**12.5**	17.00	0.00%	pass	9.8E-04	2.4E-03	1.0E-02
00421010	4	10	147	2	75	147.0	157.0	0.001	0	149.0	137.00	10.0	0.0E+00	59.65	0.55	**1.3E-02**	**1.1E+03**	**7.6**	137.00	0.00%	pass	2.3E-04	1.5E-03	7.1E-03
00425078	4	23	40	3.5	30	157.0	161.0	0.001	0	149.0	17.00	4.0	0.0E+00	146.35	1.76	**9.7E-02**	**8.4E+03**	**56.4**	17.00	0.00%	pass	7.2E-04	1.1E-02	5.6E-02
00425090	4	17	30	4	30	148.0	153.0	0.001	0	149.0	13.00	5.0	0.0E+00	117.56	2.31	**1.0E-01**	**9.0E+03**	**60.2**	13.00	0.00%	pass	9.5E-04	1.2E-02	5.9E-02
00425350	4	30	50	3	40	176.0	245.0	0.001	0	149.0	20.00	69.0	0.0E+00	6.11	2.00	**1.0E-02**	**8.6E+02**	**5.8**	20.00	0.00%	pass	8.5E-04	1.2E-03	4.6E-03
00425350	4	30	50	2	40	176.0	245.0	0.001	0	149.0	20.00	69.0	0.0E+00	6.11	2.00	**9.8E-03**	**8.5E+02**	**5.7**	20.00	0.00%	pass	8.5E-04	1.1E-03	4.6E-03
00425716	4	8	100	3	100	105.0	141.0	0.001	0	149.0	92.00	36.0	0.0E+00	15.77	1.09	**9.1E-03**	**7.9E+02**	**5.3**	92.00	0.00%	pass	4.5E-04	1.0E-03	4.3E-03
00425719	4	30	100	6	80	175.0	223.0	0.001	0	149.0	70.00	48.0	0.0E+00	10.92	1.14	**7.8E-03**	**6.7E+02**	**4.5**	70.00	0.00%	pass	4.8E-04	8.9E-04	3.6E-03
00425730	4	25	100	3	60	168.0	223.0	0.001	0	149.0	75.00	55.0	0.0E+00	8.96	0.80	**4.7E-03**	**4.1E+02**	**2.7**	75.00	0.00%	pass	3.4E-04	5.4E-04	2.3E-03
00425748	4	20	56	1	30	69.0	75.0	0.001	0	149.0	36.00	6.0	0.0E+00	98.34	0.83	**3.1E-02**	**2.7E+03**	**18.2**	36.00	0.00%	pass	3.4E-04	3.5E-03	1.8E-02
00425749	4	22	84	2	60	123.0	143.0	0.001	0	149.0	62.00	20.0	0.0E+00	29.94	0.97	**1.3E-02**	**1.1E+03**	**7.5**	62.00	0.00%	pass	4.0E-04	1.5E-03	6.5E-03
00425789	4	33	100	4	50	116.0	123.0	0.001	0	149.0	67.00	7.0	0.0E+00	84.57	0.75	**2.5E-02**	**2.1E+03**	**14.3**	67.00	0.00%	pass	3.1E-04	2.8E-03	1.4E-02
00425830	4	30	50	2	30	226.0	276.0	0.001	0	149.0	20.00	50.0	0.0E+00	10.31	1.50	**9.6E-03**	**8.3E+02**	**5.6**	20.00	0.00%	pass	6.3E-04	1.1E-03	4.6E-03
00425845	4	20	40	2	30	214.0	260.0	0.001	0	149.0	20.00	46.0	0.0E+00	11.57	1.50	**1.0E-02**	**8.9E+02**	**6.0**	20.00	0.00%	pass	6.3E-04	1.2E-03	4.9E-03
00425849	4	53	75	2	50	230.0	300.0	0.001	0	149.0	22.00	70.0	0.0E+00	5.94	2.27	**1.1E-02**	**9.6E+02**	**6.4**	22.00	0.00%	pass	9.6E-04	1.3E-03	5.2E-03
00426475	4	25	45	3	25	170.0	201.0	0.001	0	149.0	20.00	31.0	0.0E+00	18.75	1.25	**1.2E-02**	**1.0E+03**	**6.9**	20.00	0.00%	pass	5.2E-04	1.3E-03	5.6E-03
00428503	4	15	50	3	45	167.0	200.0	0.001	0	149.0	35.00	33.0	0.0E+00	17.46	1.29	**1.2E-02**	**1.0E+03**	**6.7**	35.00	0.00%	pass	5.4E-04	1.3E-03	5.5E-03
00429075	4	30	50	3	30	165.0	200.0	0.001	0	149.0	20.00	35.0	0.0E+00	16.31	1.50	**1.3E-02**	**1.1E+03**	**7.5**	20.00	0.00%	pass	6.3E-04	1.5E-03	6.1E-03
00430212	4	20	84	1.75	75	101.0	123.0	0.001	0	149.0	64.00	22.0	0.0E+00	27.13	1.17	**1.5E-02**	**1.3E+03**	**8.4**	64.00	0.00%	pass	4.9E-04	1.6E-03	7.2E-03
00430262	4	14	40	32	50	109.0	163.0	0.001	0	149.0	26.00	54.0	0.0E+00	9.21	1.92	**1.3E-02**	**1.1E+03**	**7.3**	26.00	0.00%	pass	8.1E-04	1.4E-03	5.5E-03
00430268	4	12	100	5	50	154.0	192.0	0.001	0	149.0	88.00	38.0	0.0E+00	14.78	0.57	**4.6E-03**	**3.9E+02**	**2.6**	88.00	0.00%	pass	2.4E-04	5.2E-04	2.2E-03
00430281	4	31	120	5	50	175.0	228.0	0.001	0	149.0	89.00	53.0	0.0E+00	9.47	0.56	**3.4E-03**	**3.0E+02**	**2.0**	89.00	0.00%	pass	2.4E-04	3.9E-04	1.6E-03
00430332	4	51	100	1	30	147.0	159.0	0.001	0	149.0	49.00	12.0	0.0E+00	49.88	0.61	**1.2E-02**	**1.1E+03**	**7.2**	49.00	0.00%	pass	2.5E-04	1.4E-03	6.6E-03
00430510	4	20	150	2	20	179.0	215.0	0.001	0	149.0	130.00	36.0	0.0E+00	15.77	0.15	**1.2E-03**	**1.1E+02**	**0.7**	130.00	0.00%	pass	6.4E-05	1.4E-04	6.1E-04
00431418	4	25	35	4	30	178.0	215.0	0.001	0	149.0	10.00	37.0	0.0E+00	15.26	3.00	**2.5E-02**	**2.2E+03**	**14.7**	10.00	0.00%	pass	1.3E-03	2.9E-03	1.2E-02
00431425	4	30	40	4	30	162.0	187.0	0.001	0	149.0	10.00	25.0	0.0E+00	23.72	3.00	**3.5E-02**	**3.0E+03**	**20.0**	10.00	0.00%	pass	1.2E-03	3.9E-03	1.6E-02
00431428	4	25	35	3	30	127.0	144.0	0.001	0	149.0	10.00	17.0	0.0E+00	35.30	3.00	**4.7E-02**	**4.1E+03**	**27.2**	10.00	0.01%	pass	1.2E-03	5.3E-03	2.3E-02
00431624	4	20	50	3	30	137.0	246.0	0.001	0	149.0	30.00	109.0	0.0E+00	1.81	1.00	**3.3E-03**	**2.8E+02**	**1.9**	30.00	0.00%	pass	4.3E-04	3.9E-04	1.4E-03
00431667	4	14	44	3	90	152.0	185.0	0.001	0	149.0	30.00	33.0	0.0E+00	17.46	3.00	**2.8E-02**	**2.4E+03**	**16.0**	30.00	0.00%	pass	1.2E-03	3.1E-03	1.3E-02
00431690	4	15	40	3	80	141.0	180.0	0.001	0	149.0	25.00	39.0	0.0E+00	14.31	3.20	**2.6E-02**	**2.2E+03**	**15.0**	25.00	0.00%	pass	1.3E-03	2.9E-03	1.2E-02
00432991	6	31	36	2	85	220.0	260.0	0.001	0	149.0	5.00	40.0	0.0E+00	12.76	17.00	**1.3E-01**	**1.1E+04**	**74.9**	5.00	0.01%	pass	7.1E-03	1.5E-02	5.7E-02
00434618	4	5	100	3	85	122.0	168.0	0.001	0	149.0	95.00	46.0	0.0E+00	11.57	0.89	**6.1E-03**	**5.3E+02**	**3.6**	95.00	0.00%	pass	3.7E-04	7.0E-04	2.9E-03
00434621	4	15	100	4	50	133.0	203.0	0.001	0	149.0	85.00	70.0	0.0E+00	5.94	0.59	**2.8E-03**	**2.4E+02**	**1.6**	85.00	0.00%	pass	2.5E-04	3.2E-04	1.4E-03
00434631	4	11	30	2	30	148.0	216.0	0.001	0	149.0	19.00	68.0	0.0E+00	6.28	1.58	**7.8E-03**	**6.7E+02**	**4.5**	19.00	0.00%	pass	6.7E-04	9.0E-04	3.7E-03
00434670	4	15	50	3	40	110.0	150.0	0.001	0	149.0	35.00	40.0	0.0E+00	13.87	1.14	**8.8E-03**	**7.6E+02**	**5.1**	35.00	0.00%	pass	4.8E-04	1.0E-03	4.2E-03
00434670	4	15	50	2	40	110.0	150.0	0.001	0	149.0	35.00	40.0	0.0E+00	13.87	1.14	**8.8E-03**	**7.6E+02**	**5.1**	35.00	0.00%	pass	4.8E-04	1.0E-03	4.2E-03

00435725	4	16	35	3	30	203.0	238.0	0.001	0	149.0	19.00	35.0	0.0E+00	16.31	1.58	**1.4E-02**	**1.2E+03**	**7.9**	19.00	0.00%	pass	6.6E-04	1.6E-03	6.4E-03
00435808	4	16	25	3.5	40	217.0	230.0	0.001	0	149.0	9.00	13.0	0.0E+00	46.09	4.44	**8.7E-02**	**7.5E+03**	**50.5**	9.00	0.00%	pass	1.8E-03	9.8E-03	4.4E-02
00437679	4	24	29	3	30	225.0	260.0	0.001	0	149.0	5.00	35.0	0.0E+00	16.31	6.00	**5.3E-02**	**4.6E+03**	**31.0**	5.00	0.00%	pass	2.5E-03	6.1E-03	2.4E-02
00439015	4	28	120	1	60	168.0	203.0	0.001	0	149.0	92.00	35.0	0.0E+00	16.31	0.65	**5.4E-03**	**4.7E+02**	**3.1**	92.00	0.00%	pass	2.7E-04	6.2E-04	2.7E-03
00439015	4	28	100	3	50	168.0	203.0	0.001	0	149.0	72.00	35.0	0.0E+00	16.31	0.69	**5.9E-03**	**5.1E+02**	**3.4**	72.00	0.00%	pass	2.9E-04	6.7E-04	2.8E-03
00439885	4	26	60	3	80	167.0	197.0	0.001	0	149.0	34.00	30.0	0.0E+00	19.45	2.35	**2.3E-02**	**2.0E+03**	**13.5**	34.00	0.00%	pass	9.8E-04	2.6E-03	1.1E-02
00439933	4	40	50	3	50	143.0	175.0	0.001	0	149.0	10.00	32.0	0.0E+00	18.09	5.00	**4.8E-02**	**4.1E+03**	**27.6**	10.00	0.00%	pass	2.1E-03	5.4E-03	2.2E-02
00439961	4	22	32	3	70	143.0	170.0	0.001	0	149.0	10.00	27.0	0.0E+00	21.84	7.00	**7.7E-02**	**6.6E+03**	**44.4**	10.00	0.01%	pass	2.9E-03	8.7E-03	3.6E-02
00439965	4	30	40	3	40	154.0	215.0	0.001	0	149.0	10.00	61.0	0.0E+00	7.59	4.00	**2.3E-02**	**2.0E+03**	**13.2**	10.00	0.00%	pass	1.7E-03	2.6E-03	1.0E-02
00440811	4	30	50	2	30	149.0	154.0	0.001	0	149.0	20.00	5.0	0.0E+00	117.56	1.50	**6.7E-02**	**5.8E+03**	**39.0**	20.00	0.00%	pass	6.1E-04	7.5E-03	3.8E-02
00440839	4	25	45	2	40	228.0	245.0	0.001	0	149.0	20.00	17.0	0.0E+00	35.30	2.00	**3.1E-02**	**2.7E+03**	**18.0**	20.00	0.00%	pass	8.3E-04	3.5E-03	1.6E-02
00446002	4	30	40	3	40	197.0	265.0	0.001	0	149.0	10.00	68.0	0.0E+00	6.28	4.00	**2.1E-02**	**1.8E+03**	**12.0**	10.00	0.01%	pass	1.7E-03	2.4E-03	9.4E-03
00448052	4	12	25	3	60	166.0	190.0	0.001	0	149.0	13.00	24.0	0.0E+00	24.77	4.62	**5.5E-02**	**4.8E+03**	**31.9**	13.00	0.00%	pass	1.9E-03	6.2E-03	2.6E-02
00448069	4	35	43	3	60	135.0	166.0	0.001	0	149.0	8.00	31.0	0.0E+00	18.75	7.50	**7.4E-02**	**6.4E+03**	**42.8**	8.00	0.01%	pass	3.1E-03	8.4E-03	3.4E-02
00448237	4	20	150	2	40	261.0	306.0	0.001	0	149.0	130.00	45.0	0.0E+00	11.92	0.31	**2.1E-03**	**1.8E+02**	**1.2**	130.00	0.00%	pass	1.3E-04	2.4E-04	1.0E-03
00448838	4	56	63	3	30	200.0	260.0	0.001	0	149.0	7.00	60.0	0.0E+00	7.80	4.29	**2.5E-02**	**2.1E+03**	**14.3**	7.00	0.00%	pass	1.8E-03	2.8E-03	1.1E-02
00448864	4	16	25	3	35	110.0	180.0	0.001	0	149.0	9.00	70.0	0.0E+00	5.94	3.89	**2.0E-02**	**1.7E+03**	**11.4**	9.00	0.01%	pass	1.6E-03	2.3E-03	8.9E-03
00449100	4	30	50	3	80	124.0	170.0	0.001	0	149.0	20.00	46.0	0.0E+00	11.57	4.00	**2.8E-02**	**2.5E+03**	**16.5**	20.00	0.00%	pass	1.7E-03	3.3E-03	1.3E-02
00453431	4	17	25	3	75	142.0	184.0	0.001	0	149.0	8.00	42.0	0.0E+00	13.04	9.38	**7.3E-02**	**6.3E+03**	**42.5**	8.00	0.00%	pass	3.9E-03	8.3E-03	3.3E-02
00453436	4	35	45	3	60	131.0	144.0	0.001	0	149.0	10.00	13.0	0.0E+00	46.09	6.00	**1.2E-01**	**1.0E+04**	**68.2**	10.00	0.00%	pass	2.5E-03	1.3E-02	6.0E-02
00456501	4	18	40	3	30	223.0	255.0	0.001	0	149.0	22.00	32.0	0.0E+00	18.09	1.36	**1.3E-02**	**1.1E+03**	**7.3**	22.00	0.00%	pass	5.7E-04	1.4E-03	6.0E-03
00456968	4	15	63	1	100	131.0	159.0	0.001	0	149.0	48.00	28.0	0.0E+00	20.99	2.08	**2.1E-02**	**1.8E+03**	**12.3**	48.00	0.00%	pass	8.7E-04	2.4E-03	1.0E-02
00457058	4	30	120	4	50	147.0	206.0	0.001	0	149.0	90.00	59.0	0.0E+00	8.02	0.56	**3.1E-03**	**2.6E+02**	**1.8**	90.00	0.00%	pass	2.3E-04	3.5E-04	1.5E-03
00457058	4	30	100	3.5	45	147.0	206.0	0.001	0	149.0	70.00	59.0	0.0E+00	8.02	0.64	**3.6E-03**	**3.1E+02**	**2.1**	70.00	0.00%	pass	2.7E-04	4.1E-04	1.7E-03
00457910	4	45	75	4	50	151.0	190.0	0.001	0	149.0	30.00	39.0	0.0E+00	14.31	1.67	**1.3E-02**	**1.2E+03**	**7.7**	30.00	0.00%	pass	7.0E-04	1.5E-03	6.2E-03
00457910	4	45	75	2	50	151.0	190.0	0.001	0	149.0	30.00	39.0	0.0E+00	14.31	1.67	**1.3E-02**	**1.1E+03**	**7.6**	30.00	0.00%	pass	7.0E-04	1.5E-03	6.2E-03
00458906	4	20	140	3	50	158.0	203.0	0.001	0	149.0	120.00	45.0	0.0E+00	11.92	0.42	**2.8E-03**	**2.5E+02**	**1.7**	120.00	0.00%	pass	1.7E-04	3.3E-04	1.4E-03
00458906	4	20	80	1	40	158.0	203.0	0.001	0	149.0	60.00	45.0	0.0E+00	11.92	0.67	**4.5E-03**	**3.9E+02**	**2.6**	60.00	0.00%	pass	2.8E-04	5.1E-04	2.2E-03
00460905	4	30	55	2	30	198.0	245.0	0.001	0	149.0	25.00	47.0	0.0E+00	11.24	1.20	**8.1E-03**	**7.0E+02**	**4.7**	25.00	0.00%	pass	5.0E-04	9.2E-04	3.8E-03
00460917	4	12	35	2	30	197.0	245.0	0.001	0	149.0	23.00	48.0	0.0E+00	10.92	1.30	**8.6E-03**	**7.4E+02**	**5.0**	23.00	0.00%	pass	5.5E-04	9.9E-04	4.1E-03
00461866	4	25	45	3	25	200.0	245.0	0.001	0	149.0	20.00	45.0	0.0E+00	11.92	1.25	**8.8E-03**	**7.6E+02**	**5.1**	20.00	0.00%	pass	5.2E-04	1.0E-03	4.1E-03
00462852	4	35	55	3	30	99.0	140.0	0.001	0	149.0	20.00	41.0	0.0E+00	13.45	1.50	**1.1E-02**	**9.9E+02**	**6.6**	20.00	0.00%	pass	6.3E-04	1.3E-03	5.4E-03
00463713	4	22	40	3	35	198.0	201.0	0.001	0	149.0	18.00	3.0	0.0E+00	194.25	1.94	**1.4E-01**	**1.2E+04**	**81.4**	18.00	0.00%	pass	8.0E-04	1.6E-02	8.3E-02
00464187	4	25	42	3	30	203.0	261.0	0.001	0	149.0	17.00	58.0	0.0E+00	8.25	1.76	**1.0E-02**	**8.8E+02**	**5.9**	17.00	0.00%	pass	7.4E-04	1.2E-03	4.8E-03
00467605	4	30	40	3	40	195.0	260.0	0.001	0	149.0	10.00	65.0	0.0E+00	6.81	4.00	**2.2E-02**	**1.9E+03**	**12.5**	10.00	0.01%	pass	1.7E-03	2.5E-03	9.8E-03
00470381	4	18	28	3	50	180.0	214.0	0.001	0	149.0	10.00	34.0	0.0E+00	16.87	5.00	**4.5E-02**	**3.9E+03**	**26.3**	10.00	0.00%	pass	2.1E-03	5.2E-03	2.1E-02
00471042	4	20	60	1	40	158.0	201.0	0.001	0	149.0	40.00	43.0	0.0E+00	12.65	1.00	**7.1E-03**	**6.1E+02**	**4.1**	40.00	0.00%	pass	4.2E-04	8.1E-04	3.4E-03
00472736	4	22	30	3	49	145.0	173.0	0.001	0	149.0	8.00	28.0	0.0E+00	20.99	6.13	**6.5E-02**	**5.6E+03**	**37.7**	8.00	0.01%	pass	2.5E-03	7.3E-03	3.0E-02
00472741	4	14	23	3	49	145.0	172.0	0.001	0	149.0	9.00	27.0	0.0E+00	21.84	5.44	**5.9E-02**	**5.1E+03**	**34.4**	9.00	0.00%	pass	2.3E-03	6.7E-03	2.8E-02
00473106	4	15	27	2	18	195.0	205.0	0.001	0	149.0	12.00	10.0	0.0E+00	59.65	1.50	**3.6E-02**	**3.1E+03**	**21.0**	12.00	0.01%	pass	6.2E-04	4.1E-03	1.9E-02
00473144	4	32	38	2	20	135.0	145.0	0.001	0	149.0	6.00	10.0	0.0E+00	59.65	3.33	**8.1E-02**	**7.0E+03**	**46.9**	6.00	0.00%	pass	1.4E-03	9.1E-03	4.3E-02
00474088	4	20	30	3	60	79.0	140.0	0.001	0	149.0	10.00	61.0	0.0E+00	7.59	6.00	**3.4E-02**	**3.0E+03**	**20.0**	10.00	0.00%	pass	2.5E-03	4.0E-03	1.5E-02
00475371	4	15	47	3	20	160.0	172.0	0.001	0	149.0	32.00	12.0	0.0E+00	49.88	0.63	**1.3E-02**	**1.1E+03**	**7.5**	32.00	0.00%	pass	2.6E-04	1.4E-03	6.8E-03
00475396	4	20	80	3	60	211.0	240.0	0.001	0	149.0	60.00	29.0	0.0E+00	20.20	1.00	**1.0E-02**	**8.6E+02**	**5.8**	60.00	0.00%	pass	4.2E-04	1.1E-03	4.8E-03
00477331	4	10	20	3	30	123.0	133.0	0.001	0	149.0	10.00	10.0	0.0E+00	59.65	3.00	**7.3E-02**	**6.3E+03**	**42.3**	10.00	0.00%	pass	1.2E-03	8.2E-03	3.9E-02
00478543	3	18	36	2	30	250.0	280.0	0.001	0	149.0	18.00	30.0	0.0E+00	20.59	1.67	**1.7E-02**	**1.5E+03**	**9.9**	18.00	0.00%	pass	6.9E-04	1.9E-03	8.2E-03
00478544	3	6	18	2	30	250.0	270.0	0.001	0	149.0	12.00	20.0	0.0E+00	31.79	2.50	**3.6E-02**	**3.1E+03**	**20.8**	12.00	0.00%	pass	1.0E-03	4.0E-03	1.8E-02
00479448	4	30	130	4	50	155.0	160.0	0.001	0	149.0	100.00	5.0	0.0E+00	117.56	0.50	**2.2E-02**	**1.9E+03**	**13.0**	100.00	0.00%	pass	2.0E-04	2.5E-03	1.3E-02
00479933	4	29	40	2	30	187.0	247.0	0.001	0	149.0	11.00	60.0	0.0E+00	7.80	2.73	**1.5E-02**	**1.3E+03**	**8.9**	11.00	0.01%	pass	1.1E-03	1.8E-03	7.1E-03
00479938	4	55	80	4	35	275.0	336.0	0.001	0	149.0	25.00	61.0	0.0E+00	7.59	1.40	**7.7E-03**	**6.7E+02**	**4.5**	25.00	0.00%	pass	5.9E-04	8.9E-04	3.6E-03
00487507	4	14	50	3	80	240.0	255.0	0.001	0	149.0	36.00	15.0	0.0E+00	40.00	2.22	**3.8E-02**	**3.3E+03**	**22.2**	36.00	0.00%	pass	9.2E-04	4.3E-03	1.9E-02
00487802	4	20	140	1	70	168.0	220.0	0.001	0	149.0	120.00	52.0	0.0E+00	9.74	0.58	**3.4E-03**	**3.0E+02**	**2.0**	120.00	0.00%	pass	2.5E-04	4.0E-04	1.7E-03
00487802	4	20	80	1	40	168.0	220.0	0.001	0	149.0	60.00	52.0	0.0E+00	9.74	0.67	**4.0E-03**	**3.4E+02**	**2.3**	60.00	0.00%	pass	2.8E-04	4.5E-04	2.0E-03
00489003	4	22	30	3.5	35	208.0	276.0	0.001	0	149.0	8.00	68.0	0.0E+00	6.28	4.38	**2.3E-02**	**2.0E+03**	**13.3**	8.00	0.01%	pass	1.8E-03	2.6E-03	1.0E-02
00489043	4	10	25	3	35	184.0	247.0	0.001	0	149.0	15.00	63.0	0.0E+00	7.19	2.33	**1.3E-02**	**1.1E+03**	**7.3**	15.00	0.00%	pass	9.9E-04	1.5E-03	5.9E-03
00490089	4	30	55	3	40	216.0	275.0	0.001	0	149.0	25.00	59.0	0.0E+00	8.02	1.60	**9.1E-03**	**7.8E+02**	**5.3**	25.00	0.00%	pass	6.7E-04	1.0E-03	4.3E-03
00494232	4	12	20	3	49	142.0	177.0	0.001	0	149.0	8.00	35.0	0.0E+00	16.31	6.13	**5.5E-02**	**4.7E+03**	**31.7**	8.00	0.00%	pass	2.6E-03	6.2E-03	2.5E-02
00494236	4	20	30	3	49	151.0	182.0	0.001	0	149.0	10.00	31.0	0.0E+00	18.75	4.90	**4.8E-02**	**4.1E+03**	**27.7**	10.00	0.00%	pass	2.0E-03	5.4E-03	2.2E-02
00496370	4	20	40	2	30	133.0	158.0	0.001	0	149.0	20.00	25.0	0.0E+00	23.72	1.50	**1.7E-02**	**1.5E+03**	**9.8**	20.00	0.00%	pass	6.2E-04	1.9E-03	8.2E-03
00498147	4	15	25	3	30	201.0	211.0	0.001	0	149.0	10.00	10.0	0.0E+00	59.65	3.00	**7.3E-02**	**6.3E+03**	**42.3**	10.00	0.00%	pass	1.2E-03	8.2E-03	3.9E-02
00498218	4	12	50	3	60	137.0	168.0	0.001	0	149.0	38.00	31.0	0.0E+00	18.75	1.58	**1.5E-02**	**1.3E+03**	**8.7**	38.00	0.00%	pass	6.6E-04	1.7E-03	7.1E-03
00500462	4	35	80	3	30	220.0	260.0	0.001	0	149.0	45.00	40.0	0.0E+00	13.87	0.67	**5.1E-03**	**4.4E+02**	**3.0**	45.00	0.00%	pass	2.8E-04	5.8E-04	2.4E-03
00500561	4	43	53	3	50	117.0	155.0	0.001	0	149.0	10.00	38.0	0.0E+00	14.78	5.00	**4.2E-02**	**3.6E+03**	**24.1**	10.00	0.00%	pass	2.1E-03	4.7E-03	1.9E-02
00500568	4	7	17	3	30	182.0	187.0	0.001	0	149.0	10.00	5.0	0.0E+00	117.56	3.00	**1.3E-01**	**1.2E+04**	**78.3**	10.00	0.00%	pass	1.2E-03	1.5E-02	7.7E-02
00500594	4	15	25	3	60	204.0	240.0	0.001	0	149.0	10.00	36.0	0.0E+00	15.77	6.00	**5.2E-02**	**4.5E+03**	**30.3**	10.00	0.00%	pass	2.5E-03	5.9E-03	2.4E-02
00500679	4	50	70	3	40	224.0	264.0	0.001	0	149.0	20.00	40.0	0.0E+00	13.87	2.00	**1.6E-02**	**1.4E+03**	**9.1**	20.00	0.00%	pass	8.4E-04	1.8E-03	7.3E-03
00503661	4	15	100	3	60	147.0	181.0	0.001	0	149.0	85.00	34.0	0.0E+00	16.87	0.71	**6.2E-03**	**5.3E+02**	**3.6**	85.00	0.00%	pass	2.9E-04	7.0E-04	2.9E-03
00503673	4	70	140	2.25	35	256.0	301.0	0.001	0	149.0	70.00	45.0	0.0E+00	11.92	0.50	**3.4E-03**	**2.9E+02**	**2.0**	70.00	0.00%	pass	2.1E-04	3.9E-04	1.7E-03
00503723	6	24	98	3	100	113.0	177.0	0.001	0	149.0	74.00	64.0	0.0E+00	6.46	1.35	**6.6E-03**	**5.7E+02**	**3.8**	74.00	0.00%	pass	5.7E-04	7.7E-04	3.1E-03
00505353	4	40	145	2	45	275.0	281.0	0.001	0	149.0	105.00	6.0	0.0E+00	98.34	0.43	**1.6E-02**	**1.4E+03**	**9.4**	105.00	0.00%	pass	1.8E-04	1.8E-03	9.2E-03
00506377	4	25	40	3	50	170.0	240.0	0.001	0	149.0	15.00	70.0	0.0E+00	5.94	3.33	**1.7E-02**	**1.4E+03**	**9.7**	15.00	0.00%	pass	1.4E-03	1.9E-03	7.6E-03
00506521	4	52	92	3	60	193.0	228.0	0.001	0	149.0	40.00	35.0	0.0E+00	16.31	1.50	**1.3E-02**	**1.1E+03**	**7.5**	40.00	0.00%	pass	6.3E-04	1.5E-03	6.1E-03
00506527	4	10	20	3	30	148.0	153.0	0.001	0	149.0	10.00	5.0	0.0E+00	117.56	3.00	**1.3E-01**	**1.2E+04**	**78.3**	10.00	0.00%	pass	1.2E-03	1.5E-02	7.7E-02
00506541	4	20	30	3	50	123.0	170.0	0.001	0	149.0	10.00	47.0	0.0E+00	11.24	5.00	**3.5E-02**	**3.0E+03**	**20.4**	10.00	0.00%	pass	2.1E-03	4.0E-03	1.6E-02
00511963	4	10	25	3	45	162.0	214.0	0.001	0	149.0	15.00	52.0	0.0E+00	9.74	3.00	**1.9E-02**	**1.7E+03**	**11.1**	15.00	0.00%	pass	1.3E-03	2.2E-03	8.8E-03
00511972	4	25	40	4	45	148.0	172.0	0.001	0	149.0	15.00	24.0	0.0E+00	24.77	3.00	**3.6E-02**	**3.1E+03**	**20.7**	15.00	0.00%	pass	1.2E-03	4.0E-03	1.7E-02
00512762	4	15	40	3	50	172.0	226.0	0.001	0	149.0	25.00	54.0	0.0E+00	9.21	2.00	**1.2E-02**	**1.1E+03**	**7.1**	25.00	0.00%	pass	8.4E-04	1.4E-03	5.7E-03
00514721	4	20	35	2	20	140.0	150.0	0.001	0	149.0	15.00	10.0	0.0E+00	59.65	1.33	**3.2E-02**	**2.8E+03**	**18.7**	15.00	0.01%	pass	5.5E-04	3.6E-03	1.7E-02

00518967	4	22	32	3	49	102.0	139.0	0.001	0	149.0	10.00	37.0	0.0E+00	15.26	4.90	**4.2E-02**	**3.6E+03**	**24.1**	10.00	0.00%	pass	2.0E-03	4.7E-03	1.9E-02
00521348	4	50	293	1	100	278.0	293.0	0.001	0	149.0	243.00	15.0	0.0E+00	40.00	0.41	**6.9E-03**	**6.0E+02**	**4.0**	243.00	0.00%	pass	1.7E-04	7.7E-04	3.6E-03
00521868	4	20	80	3	40	189.0	215.0	0.001	0	149.0	60.00	26.0	0.0E+00	22.75	0.67	**7.2E-03**	**6.2E+02**	**4.2**	60.00	0.00%	pass	2.8E-04	8.2E-04	3.5E-03
00523638	4	27	39	2	20	140.0	150.0	0.001	0	149.0	12.00	10.0	0.0E+00	59.65	1.67	**4.0E-02**	**3.5E+03**	**23.4**	12.00	0.00%	pass	6.9E-04	4.5E-03	2.2E-02
00523961	4	26	41	3	50	112.0	202.0	0.001	0	149.0	15.00	90.0	0.0E+00	3.38	3.33	**1.4E-02**	**1.2E+03**	**7.9**	15.00	0.00%	pass	1.4E-03	1.6E-03	5.9E-03
00523970	4	15	35	3	40	147.0	187.0	0.001	0	149.0	20.00	40.0	0.0E+00	13.87	2.00	**1.6E-02**	**1.4E+03**	**9.1**	20.00	0.00%	pass	8.4E-04	1.8E-03	7.3E-03
00524214	4	30	80	3	30	244.0	254.0	0.001	0	149.0	50.00	10.0	0.0E+00	59.65	0.60	**1.4E-02**	**1.2E+03**	**8.4**	50.00	0.00%	pass	2.5E-04	1.6E-03	7.7E-03
00524565	4	20	22	1	40	128.0	138.0	0.001	0	149.0	2.00	10.0	0.0E+00	59.65	20.00	**4.9E-01**	**4.2E+04**	**283.9**	2.00	0.01%	pass	8.2E-03	5.5E-02	2.6E-01
00524571	4	20	22	1	12	97.0	140.0	0.001	0	149.0	2.00	43.0	0.0E+00	12.65	6.00	**4.4E-02**	**3.8E+03**	**25.7**	2.00	0.05%	pass	2.5E-03	5.1E-03	2.1E-02
00525523	4	23	33	3	49	141.0	184.0	0.001	0	149.0	10.00	43.0	0.0E+00	12.65	4.90	**3.7E-02**	**3.2E+03**	**21.5**	10.00	0.00%	pass	2.0E-03	4.2E-03	1.7E-02
00525533	4	40	50	3	49	91.0	152.0	0.001	0	149.0	10.00	61.0	0.0E+00	7.59	4.90	**2.8E-02**	**2.4E+03**	**16.2**	10.00	0.00%	pass	2.1E-03	3.2E-03	1.3E-02
00527970	4	45	80	3	30	113.0	155.0	0.001	0	149.0	35.00	42.0	0.0E+00	13.04	0.86	**6.3E-03**	**5.5E+02**	**3.7**	35.00	0.00%	pass	3.6E-04	7.2E-04	3.0E-03
00531399	4	15	60	3	30	194.0	266.0	0.001	0	149.0	45.00	72.0	0.0E+00	5.63	0.67	**3.1E-03**	**2.7E+02**	**1.8**	45.00	0.00%	pass	2.8E-04	3.6E-04	1.5E-03
00531833	4	18	40	2	25	263.0	281.0	0.001	0	149.0	22.00	18.0	0.0E+00	33.32	1.14	**1.7E-02**	**1.4E+03**	**9.7**	22.00	0.00%	pass	4.7E-04	1.9E-03	8.4E-03
00533014	4	10	15	4	50	156.0	201.0	0.001	0	149.0	5.00	45.0	0.0E+00	11.92	10.00	**7.5E-02**	**6.5E+03**	**43.3**	5.00	0.02%	pass	4.2E-03	8.5E-03	3.3E-02
00533492	4	21	41	3	40	197.0	231.0	0.001	0	149.0	20.00	34.0	0.0E+00	16.87	2.00	**1.8E-02**	**1.5E+03**	**10.3**	20.00	0.00%	pass	8.3E-04	2.0E-03	8.4E-03
00533519	4	30	50	3	30	165.0	225.0	0.001	0	149.0	20.00	60.0	0.0E+00	7.80	1.50	**8.4E-03**	**7.2E+02**	**4.8**	20.00	0.00%	pass	6.3E-04	9.6E-04	3.9E-03
00536770	4	20	30	2	18	194.0	198.0	0.001	0	149.0	10.00	4.0	0.0E+00	146.35	1.80	**9.9E-02**	**8.6E+03**	**57.5**	10.00	0.00%	pass	7.3E-04	1.1E-02	5.8E-02
00538061	4	20	40	3	40	208.0	250.0	0.001	0	149.0	20.00	42.0	0.0E+00	13.04	2.00	**1.5E-02**	**1.3E+03**	**8.7**	20.00	0.00%	pass	8.4E-04	1.7E-03	7.0E-03
00538080	4	20	40	3	40	103.0	150.0	0.001	0	149.0	20.00	47.0	0.0E+00	11.24	2.00	**1.4E-02**	**1.2E+03**	**8.0**	20.00	0.00%	pass	8.4E-04	1.6E-03	6.4E-03
00538127	4	35	55	3	40	154.0	225.0	0.001	0	149.0	20.00	71.0	0.0E+00	5.78	2.00	**9.8E-03**	**8.4E+02**	**5.7**	20.00	0.00%	pass	8.5E-04	1.1E-03	4.5E-03
00540065	4	12	20	3	40	112.0	142.0	0.001	0	149.0	8.00	30.0	0.0E+00	19.45	5.00	**5.0E-02**	**4.3E+03**	**29.0**	8.00	0.00%	pass	2.1E-03	5.7E-03	2.3E-02
00540437	4	15	40	3	50	144.0	185.0	0.001	0	149.0	25.00	41.0	0.0E+00	13.45	2.00	**1.5E-02**	**1.3E+03**	**8.9**	25.00	0.00%	pass	8.4E-04	1.7E-03	7.2E-03
00541761	4	30	55	3	30	141.0	171.0	0.001	0	149.0	25.00	30.0	0.0E+00	19.45	1.20	**1.2E-02**	**1.0E+03**	**6.8**	25.00	0.00%	pass	5.0E-04	1.3E-03	5.6E-03
00546162	4	25	90	6	80	105.0	175.0	0.001	0	149.0	65.00	70.0	0.0E+00	5.94	1.23	**6.1E-03**	**5.3E+02**	**3.6**	65.00	0.00%	pass	5.2E-04	7.1E-04	2.8E-03
00547598	4	12	25	3	35	196.0	245.0	0.001	0	149.0	13.00	49.0	0.0E+00	10.61	2.69	**1.8E-02**	**1.6E+03**	**10.5**	13.00	0.00%	pass	1.1E-03	2.1E-03	8.3E-03
00547605	4	10	60	3	40	193.0	246.0	0.001	0	149.0	50.00	53.0	0.0E+00	9.47	0.80	**4.9E-03**	**4.2E+02**	**2.8**	50.00	0.00%	pass	3.4E-04	5.6E-04	2.3E-03
00551256	4	15	60	3	45	126.0	146.0	0.001	0	149.0	45.00	20.0	0.0E+00	29.94	1.00	**1.4E-02**	**1.2E+03**	**7.8**	45.00	0.00%	pass	4.1E-04	1.5E-03	6.7E-03
00554759	4	40	70	4	30	166.0	200.0	0.001	0	149.0	30.00	34.0	0.0E+00	16.87	1.00	**8.8E-03**	**7.6E+02**	**5.1**	30.00	0.00%	pass	4.2E-04	1.0E-03	4.2E-03
00554780	4	12	30	3	50	187.0	240.0	0.001	0	149.0	18.00	53.0	0.0E+00	9.47	2.78	**1.7E-02**	**1.5E+03**	**10.1**	18.00	0.00%	pass	1.2E-03	2.0E-03	8.1E-03
00556695	4	12	45	3	30	169.0	212.0	0.001	0	149.0	33.00	43.0	0.0E+00	12.65	0.91	**6.6E-03**	**5.7E+02**	**3.8**	33.00	0.00%	pass	3.8E-04	7.5E-04	3.1E-03
00556715	4	20	60	3	40	182.0	232.0	0.001	0	149.0	40.00	50.0	0.0E+00	10.31	1.00	**6.4E-03**	**5.5E+02**	**3.7**	40.00	0.00%	pass	4.2E-04	7.3E-04	3.0E-03
00557440	4	10	30	2	20	163.0	180.0	0.001	0	149.0	20.00	17.0	0.0E+00	35.30	1.00	**1.5E-02**	**1.3E+03**	**8.9**	20.00	0.00%	pass	4.1E-04	1.7E-03	7.8E-03
00559043	4	30	60	5	50	244.0	305.0	0.001	0	149.0	30.00	61.0	0.0E+00	7.59	1.67	**9.3E-03**	**8.1E+02**	**5.4**	30.00	0.00%	pass	7.0E-04	1.1E-03	4.3E-03
00559384	4	25	55	30	40	154.0	225.0	0.001	0	149.0	30.00	71.0	0.0E+00	5.78	1.33	**7.0E-03**	**6.0E+02**	**4.0**	30.00	0.00%	pass	5.6E-04	8.0E-04	3.0E-03
00559391	4	20	40	3	40	168.0	205.0	0.001	0	149.0	20.00	37.0	0.0E+00	15.26	2.00	**1.7E-02**	**1.4E+03**	**9.7**	20.00	0.00%	pass	8.3E-04	1.9E-03	7.8E-03
00559397	4	35	55	3	40	225.0	262.0	0.001	0	149.0	20.00	37.0	0.0E+00	15.26	2.00	**1.7E-02**	**1.4E+03**	**9.7**	20.00	0.00%	pass	8.3E-04	1.9E-03	7.8E-03
00559406	4	10	20	3	40	90.0	150.0	0.001	0	149.0	10.00	60.0	0.0E+00	7.80	4.00	**2.3E-02**	**2.0E+03**	**13.3**	10.00	0.00%	pass	1.7E-03	2.6E-03	1.0E-02
00559410	4	48	68	3	40	167.0	220.0	0.001	0	149.0	20.00	53.0	0.0E+00	9.47	2.00	**1.2E-02**	**1.1E+03**	**7.2**	20.00	0.00%	pass	8.4E-04	1.4E-03	5.8E-03
00559424	4	22	42	3	40	210.0	250.0	0.001	0	149.0	20.00	40.0	0.0E+00	13.87	2.00	**1.6E-02**	**1.4E+03**	**9.1**	20.00	0.00%	pass	8.4E-04	1.8E-03	7.3E-03
00559446	4	20	30	2	10	170.0	200.0	0.001	0	149.0	10.00	30.0	0.0E+00	19.45	1.00	**9.7E-03**	**8.3E+02**	**5.6**	10.00	0.00%	pass	4.2E-04	1.1E-03	4.6E-03
00559498	4	22	50	2	50	210.0	276.0	0.001	0	149.0	28.00	66.0	0.0E+00	6.63	1.79	**9.1E-03**	**7.9E+02**	**5.3**	28.00	0.00%	pass	7.6E-04	1.0E-03	4.3E-03
00562970	4	28	48	3	40	207.0	250.0	0.001	0	149.0	20.00	43.0	0.0E+00	12.65	2.00	**1.5E-02**	**1.3E+03**	**8.6**	20.00	0.00%	pass	8.4E-04	1.7E-03	6.9E-03
00563498	4	20	40	3	30	186.0	196.0	0.001	0	149.0	20.00	10.0	0.0E+00	59.65	1.50	**3.6E-02**	**3.1E+03**	**21.1**	20.00	0.00%	pass	6.2E-04	4.1E-03	1.9E-02
00564172	4	30	42	3	25	265.0	292.0	0.001	0	149.0	12.00	27.0	0.0E+00	21.84	2.08	**2.2E-02**	**1.9E+03**	**13.0**	12.00	0.00%	pass	8.6E-04	2.5E-03	1.1E-02
00566171	4	10	25	3	50	191.0	240.0	0.001	0	149.0	15.00	49.0	0.0E+00	10.61	3.33	**2.2E-02**	**1.9E+03**	**13.0**	15.00	0.00%	pass	1.4E-03	2.6E-03	1.0E-02
00572022	4	15	40	3	50	180.0	220.0	0.001	0	149.0	25.00	40.0	0.0E+00	13.87	2.00	**1.6E-02**	**1.4E+03**	**9.1**	25.00	0.00%	pass	8.4E-04	1.8E-03	7.3E-03
00576749	4	30	50	3	30	196.0	231.0	0.001	0	149.0	20.00	35.0	0.0E+00	16.31	1.50	**1.3E-02**	**1.1E+03**	**7.5**	20.00	0.00%	pass	6.3E-04	1.5E-03	6.1E-03
00577032	4	60	100	1	30	136.0	200.0	0.001	0	149.0	40.00	64.0	0.0E+00	7.00	0.75	**3.7E-03**	**3.2E+02**	**2.2**	40.00	0.00%	pass	3.2E-04	4.3E-04	1.9E-03
00580587	4	20	60	6	25	155.0	185.0	0.001	0	149.0	40.00	30.0	0.0E+00	19.45	0.63	**6.1E-03**	**5.3E+02**	**3.5**	40.00	0.00%	pass	2.6E-04	6.9E-04	2.9E-03
00580648	4	26	150	2.5	40	190.0	215.0	0.001	0	149.0	124.00	25.0	0.0E+00	23.72	0.32	**3.6E-03**	**3.1E+02**	**2.1**	124.00	0.00%	pass	1.3E-04	4.0E-04	1.8E-03
00582672	4	35	80	2	30	272.0	316.0	0.001	0	149.0	45.00	44.0	0.0E+00	12.28	0.67	**4.7E-03**	**4.0E+02**	**2.7**	45.00	0.00%	pass	2.8E-04	5.3E-04	2.3E-03
00582855	4	40	50	3	60	150.0	198.0	0.001	0	149.0	10.00	48.0	0.0E+00	10.92	6.00	**4.2E-02**	**3.6E+03**	**24.2**	10.00	0.00%	pass	2.5E-03	4.8E-03	1.9E-02
00584416	4	25	60	10	30	230.0	287.0	0.001	0	149.0	35.00	57.0	0.0E+00	8.48	0.86	**5.1E-03**	**4.4E+02**	**2.9**	35.00	0.00%	pass	3.6E-04	5.8E-04	2.3E-03
00584430	4	6	40	4	50	148.0	215.0	0.001	0	149.0	34.00	67.0	0.0E+00	6.45	1.47	**7.5E-03**	**6.5E+02**	**4.4**	34.00	0.00%	pass	6.2E-04	8.7E-04	3.5E-03
00588556	4	25	50	4	40	200.0	260.0	0.001	0	149.0	25.00	60.0	0.0E+00	7.80	1.60	**9.0E-03**	**7.8E+02**	**5.2**	25.00	0.00%	pass	6.7E-04	1.0E-03	4.2E-03
00588563	4	12	40	5	50	159.0	220.0	0.001	0	149.0	28.00	61.0	0.0E+00	7.59	1.79	**1.0E-02**	**8.7E+02**	**5.8**	28.00	0.00%	pass	7.5E-04	1.2E-03	4.6E-03
00588572	4	30	50	3	30	239.0	291.0	0.001	0	149.0	20.00	52.0	0.0E+00	9.74	1.50	**9.4E-03**	**8.1E+02**	**5.5**	20.00	0.00%	pass	6.3E-04	1.1E-03	4.4E-03
00592879	4	20	60	4	50	204.0	260.0	0.001	0	149.0	40.00	56.0	0.0E+00	8.71	1.25	**7.4E-03**	**6.4E+02**	**4.3**	40.00	0.00%	pass	5.3E-04	8.5E-04	3.5E-03
00595671	4	35	60	5	50	180.0	240.0	0.001	0	149.0	25.00	60.0	0.0E+00	7.80	2.00	**1.1E-02**	**9.9E+02**	**6.6**	25.00	0.00%	pass	8.4E-04	1.3E-03	5.2E-03
00595673	4	30	50	5	50	212.0	260.0	0.001	0	149.0	20.00	48.0	0.0E+00	10.92	2.50	**1.7E-02**	**1.5E+03**	**10.0**	20.00	0.00%	pass	1.0E-03	2.0E-03	7.9E-03
00596673	4	23	120	2	50	133.0	150.0	0.001	0	149.0	97.00	17.0	0.0E+00	35.30	0.52	**7.9E-03**	**6.8E+02**	**4.6**	97.00	0.00%	pass	2.1E-04	8.8E-04	4.0E-03
00599174	4	30	50	5	50	239.0	280.0	0.001	0	149.0	20.00	41.0	0.0E+00	13.45	2.50	**2.0E-02**	**1.7E+03**	**11.3**	20.00	0.00%	pass	1.0E-03	2.2E-03	8.9E-03
00602052	4	25	60	4	50	191.0	290.0	0.001	0	149.0	35.00	99.0	0.0E+00	2.55	1.43	**5.3E-03**	**4.5E+02**	**3.0**	35.00	0.00%	pass	6.1E-04	6.1E-04	2.3E-03
00602087	4	25	60	3	30	233.0	283.0	0.001	0	149.0	35.00	50.0	0.0E+00	10.31	0.86	**5.5E-03**	**4.7E+02**	**3.2**	35.00	0.00%	pass	3.6E-04	6.3E-04	2.6E-03
00606054	4	20	40	5	50	139.0	180.0	0.001	0	149.0	20.00	41.0	0.0E+00	13.45	2.50	**2.0E-02**	**1.7E+03**	**11.3**	20.00	0.00%	pass	1.0E-03	2.2E-03	8.9E-03
00606064	4	25	50	6	50	155.0	200.0	0.001	0	149.0	25.00	45.0	0.0E+00	11.92	2.00	**1.4E-02**	**1.3E+03**	**8.4**	25.00	0.00%	pass	8.4E-04	1.7E-03	6.6E-03
00609853	4	25	60	8	50	220.0	300.0	0.001	0	149.0	35.00	80.0	0.0E+00	4.51	1.43	**6.5E-03**	**5.6E+02**	**3.8**	35.00	0.00%	pass	6.1E-04	7.5E-04	2.9E-03
00613573	4	35	80	10	50	212.0	275.0	0.001	0	149.0	45.00	63.0	0.0E+00	7.19	1.11	**6.1E-03**	**5.3E+02**	**3.6**	45.00	0.00%	pass	4.7E-04	7.0E-04	2.8E-03
00621007	4	15	60	2	100	114.0	155.0	0.001	0	149.0	45.00	41.0	0.0E+00	13.45	2.22	**1.7E-02**	**1.5E+03**	**9.8**	45.00	0.00%	pass	9.3E-04	1.9E-03	7.9E-03
00624973	4	30	210	4	40	239.0	250.0	0.001	0	149.0	180.00	11.0	0.0E+00	54.33	0.22	**4.9E-03**	**4.2E+02**	**2.8**	180.00	0.00%	pass	9.1E-05	5.5E-04	2.6E-03
00627861	4	25	50	8	40	153.0	220.0	0.001	0	149.0	25.00	67.0	0.0E+00	6.45	1.60	**8.4E-03**	**7.3E+02**	**4.9**	25.00	0.00%	pass	6.8E-04	9.7E-04	3.8E-03
00631742	4	20	60	2	150	155.0	200.0	0.001	0	149.0	40.00	45.0	0.0E+00	11.92	3.75	**2.7E-02**	**2.3E+03**	**15.6**	40.00	0.00%	pass	1.6E-03	3.1E-03	1.2E-02
00632756	4	20	60	3	50	142.0	192.0	0.001	0	149.0	40.00	50.0	0.0E+00	10.31	1.25	**8.1E-03**	**7.0E+02**	**4.7**	40.00	0.00%	pass	5.2E-04	9.2E-04	3.8E-03
00636919	4	20	60	3	30	169.0	216.0	0.001	0	149.0	40.00	47.0	0.0E+00	11.24	0.75	**5.0E-03**	**4.3E+02**	**2.9**	40.00	0.00%	pass	3.1E-04	5.7E-04	2.4E-03
00636924	4	30	60	5	50	180.0	220.0	0.001	0	149.0	30.00	40.0	0.0E+00	13.87	1.67	**1.3E-02**	**1.1E+03**	**7.6**	30.00	0.00%	pass	7.0E-04	1.5E-03	6.1E-03
00638287	4	25	50	6	50	139.0	180.0	0.001	0	149.0	25.00	41.0	0.0E+00	13.45	2.00	**1.6E-02**	**1.3E+03**	**9.1**	25.00	0.00%	pass	8.4E-04	1.8E-03	7.1E-03
00641208	4	30	240	1	50	215.0	240.0	0.001	0	149.0	210.00	25.0	0.0E+00	23.72	0.24	**2.6E-03**	**2.2E+02**	**1.5**	210.00	0.00%	pass	9.9E-05	2.9E-04	1.3E-03

00641250	4	38	140	1	80	205.0	240.0	0.001	0	149.0	102.00	35.0	0.0E+00	16.31	0.78	**6.5E-03**	**5.7E+02**	**3.8**	102.00	0.00%	pass	3.3E-04	7.4E-04	3.2E-03
00642607	4	40	70	1	20	210.0	232.0	0.001	0	149.0	30.00	22.0	0.0E+00	27.13	0.67	**8.1E-03**	**7.0E+02**	**4.7**	30.00	0.00%	pass	2.8E-04	9.2E-04	4.1E-03
00642640	4	40	60	1	20	210.0	235.0	0.001	0	149.0	20.00	25.0	0.0E+00	23.72	1.00	**1.1E-02**	**9.6E+02**	**6.4**	20.00	0.00%	pass	4.1E-04	1.3E-03	5.5E-03
00643796	4	18	60	2	30	215.0	272.0	0.001	0	149.0	42.00	57.0	0.0E+00	8.48	0.71	**4.0E-03**	**3.5E+02**	**2.3**	42.00	0.00%	pass	3.0E-04	4.6E-04	2.0E-03
00644640	4	30	60	5	50	160.0	260.0	0.001	0	149.0	30.00	100.0	0.0E+00	2.47	1.67	**6.2E-03**	**5.4E+02**	**3.6**	30.00	0.00%	pass	7.1E-04	7.2E-04	2.6E-03
00645655	4	21	30	3	60	179.0	211.0	0.001	0	149.0	9.00	32.0	0.0E+00	18.09	6.67	**6.4E-02**	**5.5E+03**	**37.0**	9.00	0.00%	pass	2.8E-03	7.2E-03	2.9E-02
00645658	4	24	32	3	60	172.0	210.0	0.001	0	149.0	8.00	38.0	0.0E+00	14.78	7.50	**6.3E-02**	**5.4E+03**	**36.5**	8.00	0.00%	pass	3.1E-03	7.2E-03	2.9E-02
00648511	4	19	60	3	30	152.0	202.0	0.001	0	149.0	41.00	50.0	0.0E+00	10.31	0.73	**4.6E-03**	**4.0E+02**	**2.7**	41.00	0.00%	pass	3.1E-04	5.3E-04	2.2E-03
00648828	4	45	255	1	70	234.0	255.0	0.001	0	149.0	210.00	21.0	0.0E+00	28.47	0.33	**4.2E-03**	**3.6E+02**	**2.4**	210.00	0.00%	pass	1.4E-04	4.7E-04	2.1E-03
00649217	4	10	30	4	30	93.0	110.0	0.001	0	149.0	20.00	17.0	0.0E+00	35.30	1.50	**2.3E-02**	**2.0E+03**	**13.5**	20.00	0.00%	pass	6.2E-04	2.6E-03	1.2E-02
00650703	4	37	80	1	30	154.0	200.0	0.001	0	149.0	43.00	46.0	0.0E+00	11.57	0.70	**4.6E-03**	**4.0E+02**	**2.7**	43.00	0.00%	pass	2.9E-04	5.3E-04	2.3E-03
00659787	4	35	55	1	20	210.0	231.0	0.001	0	149.0	20.00	21.0	0.0E+00	28.47	1.00	**1.3E-02**	**1.1E+03**	**7.4**	20.00	0.00%	pass	4.1E-04	1.4E-03	6.4E-03
00661125	4	20	50	8	40	191.0	340.0	0.001	0	149.0	30.00	149.0	0.0E+00	0.00	1.33	**3.8E-03**	**3.3E+02**	**2.2**	30.00	0.00%	pass	5.8E-04	4.5E-04	1.2E-03
00669166	4	22	60	2	30	137.0	198.0	0.001	0	149.0	38.00	61.0	0.0E+00	7.59	0.79	**4.2E-03**	**3.6E+02**	**2.4**	38.00	0.00%	pass	3.3E-04	4.8E-04	2.0E-03
00670224	4	15	50	8	50	160.0	190.0	0.001	0	149.0	35.00	30.0	0.0E+00	19.45	1.43	**1.4E-02**	**1.2E+03**	**8.3**	35.00	0.00%	pass	5.9E-04	1.6E-03	6.6E-03
00681481	4	45	80	1	20	136.0	156.0	0.001	0	149.0	35.00	20.0	0.0E+00	29.94	0.57	**7.5E-03**	**6.5E+02**	**4.4**	35.00	0.00%	pass	2.4E-04	8.5E-04	3.8E-03
00693255	4	30	120	1	60	209.0	240.0	0.001	0	149.0	90.00	31.0	0.0E+00	18.75	0.67	**6.1E-03**	**5.3E+02**	**3.6**	90.00	0.00%	pass	2.8E-04	7.0E-04	3.0E-03
00693865	4	25	50	8	50	218.0	240.0	0.001	0	149.0	25.00	22.0	0.0E+00	27.13	2.00	**2.6E-02**	**2.2E+03**	**14.8**	25.00	0.00%	pass	8.3E-04	2.9E-03	1.2E-02
00706703	4	20	60	2	25	211.0	246.0	0.001	0	149.0	40.00	35.0	0.0E+00	16.31	0.63	**5.3E-03**	**4.6E+02**	**3.1**	40.00	0.00%	pass	2.6E-04	6.0E-04	2.5E-03
00707655	4	15	50	8	70	240.0	300.0	0.001	0	149.0	35.00	60.0	0.0E+00	7.80	2.00	**1.2E-02**	**1.0E+03**	**6.7**	35.00	0.00%	pass	8.4E-04	1.3E-03	5.2E-03
00707857	4	29	50	8	70	169.0	300.0	0.001	0	149.0	21.00	131.0	0.0E+00	0.64	3.33	**1.1E-02**	**9.4E+02**	**6.3**	21.00	0.00%	pass	1.4E-03	1.3E-03	3.5E-03
00707875	4	25	50	8	60	217.0	260.0	0.001	0	149.0	25.00	43.0	0.0E+00	12.65	2.40	**1.8E-02**	**1.6E+03**	**10.6**	25.00	0.00%	pass	1.0E-03	2.1E-03	8.2E-03
00707896	4	20	50	8	60	175.0	296.0	0.001	0	149.0	30.00	121.0	0.0E+00	1.11	2.00	**6.7E-03**	**5.8E+02**	**3.9**	30.00	0.00%	pass	8.6E-04	7.8E-04	2.4E-03
00707897	4	26	60	8	60	183.0	320.0	0.001	0	149.0	34.00	137.0	0.0E+00	0.40	1.76	**5.4E-03**	**4.6E+02**	**3.1**	34.00	0.00%	pass	7.7E-04	6.3E-04	1.7E-03
00716797	4	25	260	1	30	232.0	260.0	0.001	0	149.0	235.00	28.0	0.0E+00	20.99	0.13	**1.2E-03**	**1.1E+02**	**0.7**	235.00	0.00%	pass	5.3E-05	1.4E-04	6.3E-04
00716799	4	22	220	1	100	216.0	220.0	0.001	0	149.0	198.00	4.0	0.0E+00	146.35	0.51	**2.8E-02**	**2.4E+03**	**16.0**	198.00	0.00%	pass	2.1E-04	3.1E-03	1.6E-02
00735706	4	18	165	1	60	168.0	186.0	0.001	0	149.0	147.00	18.0	0.0E+00	33.32	0.41	**5.9E-03**	**5.1E+02**	**3.4**	147.00	0.00%	pass	1.7E-04	6.6E-04	3.0E-03
00735706	4	18	75	2	40	168.0	186.0	0.001	0	149.0	57.00	18.0	0.0E+00	33.32	0.70	**1.0E-02**	**8.8E+02**	**5.9**	57.00	0.00%	pass	2.9E-04	1.2E-03	5.2E-03
00739556	4	15	50	8	80	163.0	188.0	0.001	0	149.0	35.00	25.0	0.0E+00	23.72	2.29	**2.6E-02**	**2.3E+03**	**15.4**	35.00	0.00%	pass	9.5E-04	3.0E-03	1.2E-02
00742803	4	70	240	1	30	263.0	300.0	0.001	0	149.0	170.00	37.0	0.0E+00	15.26	0.18	**1.4E-03**	**1.2E+02**	**0.8**	170.00	0.00%	pass	7.4E-05	1.5E-04	6.9E-04
00748035	4	27	80	2	100	167.0	196.0	0.001	0	149.0	53.00	29.0	0.0E+00	20.20	1.89	**1.9E-02**	**1.6E+03**	**11.0**	53.00	0.00%	pass	7.8E-04	2.1E-03	9.0E-03
00756072	4	15	35	45	55	160.0	190.0	0.001	0	149.0	20.00	30.0	0.0E+00	19.45	2.75	**2.9E-02**	**2.5E+03**	**16.6**	20.00	0.00%	pass	1.1E-03	3.2E-03	1.3E-02
00761478	4	30	90	2	75	173.0	220.0	0.001	0	149.0	60.00	47.0	0.0E+00	11.24	1.25	**8.4E-03**	**7.3E+02**	**4.9**	60.00	0.00%	pass	5.2E-04	9.6E-04	4.0E-03
00765325	4	20	60	3	30	80.0	175.0	0.001	0	149.0	40.00	95.0	0.0E+00	2.90	0.75	**2.7E-03**	**2.4E+02**	**1.6**	40.00	0.00%	pass	3.2E-04	3.2E-04	1.3E-03
00776889	4	24	220	1.5	25	219.0	245.0	0.001	0	149.0	196.00	26.0	0.0E+00	22.75	0.13	**1.3E-03**	**1.1E+02**	**0.8**	196.00	0.00%	pass	5.3E-05	1.5E-04	6.7E-04
00778026	4	24	100	6	50	199.0	245.0	0.001	0	149.0	76.00	46.0	0.0E+00	11.57	0.66	**4.6E-03**	**3.9E+02**	**2.6**	76.00	0.00%	pass	2.8E-04	5.2E-04	2.1E-03
00778031	6	20	27.75	2.5	100	161.0	260.0	0.001	0	149.0	7.75	99.0	0.0E+00	2.35	12.90	**4.9E-02**	**4.2E+03**	**28.2**	7.75	0.01%	pass	5.5E-03	5.7E-03	1.9E-02
00778073	4	22	44	1	20	126.0	171.0	0.001	0	149.0	22.00	45.0	0.0E+00	11.92	0.91	**6.2E-03**	**5.3E+02**	**3.6**	22.00	0.00%	pass	3.8E-04	7.0E-04	3.0E-03
00779162	4	13	50	5	70	194.0	235.0	0.001	0	149.0	37.00	41.0	0.0E+00	13.45	1.89	**1.5E-02**	**1.3E+03**	**8.5**	37.00	0.00%	pass	7.9E-04	1.7E-03	6.8E-03
00779305	4	25	50	3	75	168.0	218.0	0.001	0	149.0	25.00	50.0	0.0E+00	10.31	3.00	**2.0E-02**	**1.7E+03**	**11.5**	25.00	0.00%	pass	1.3E-03	2.3E-03	9.1E-03
00784102	8	34	250	3	400	168.0	250.0	0.001	0	149.0	216.00	82.0	0.0E+00	3.69	1.85	**7.1E-03**	**6.1E+02**	**4.1**	216.00	0.00%	pass	7.9E-04	8.3E-04	3.2E-03
																Max	**4.8E+04**	**3.2E+02**						
																Min	**9.5E+01**	**6.4E-01**						
																Geomean	**1.3E+03**	**8.9E+00**						

References:

Bradbury, K.B., and E.R. Rothschild, 1985. A computerized technique for estimating the hydraulic conductivity of aquifer from specific capacity data: Ground Water vol. 23, No. 2, pp. 240-246.

ASTM International, 2004. Standard Test Method for Determining Specific Capacity and Estimating Transmissivity at the Control Well, Standard D 5472-93, in Annual Book of ASTM Standards, Vol. 04.08 pp. 1279-1282.

Wonewoc

Worksheet for Estimating Transmissivity and Hydraulic Conductivity from Specific Capacity Test Data

Explanation and notes attached.

Maximum iterations	100
Error tolerance (as drawdown)	0.001 feet

	Field Data							*Estimated Parameters*			*Calculated Results*								*Diagnostics*					
		Depth to Water				Screened Interval													*Solution Integrity*			*Sensitivity of T:*		
Location	Well Diam.	Initial	Final	Test Duration	Mean Pumping Rate	Depth to Top	Depth to Bottom	Storage Coeff. (S)	Well loss Coeff. (C)	Aquifer Thickness (b)	Measured Drawdown (s_m)	Saturated Screen Length (L)	Well loss (s_w)	Partial Penetration Parameter (s_p)	Specific Capacity	**Transmissivity (T)**	**T (ft^2/day)**	**Conductivity (K)**	Calculated Drawdown	Error as Drawdown	Well Bore Storage Test	to S at ± 1 factor of 10	to s_w at 10% of s_m	to b at ± 25%
	inches	feet	feet	hours	gpm	feet	feet	-	sec^2/ft^5	feet	feet	feet	feet	-	gpm/ft	**sq ft/sec**		**ft/day**	feet			sq ft/sec	sq ft/sec	sq ft/sec
00104703	3	24	40	4	25	216.0	229.0	0.001	0	57.0	16.00	13.0	0.0E+00	14.60	1.56	**1.3E-02**	**1.1E+03**	**19.4**	16.00	0.00%	pass	6.5E-04	1.5E-03	5.7E-03
00122194	4	15	35	3	30	220.0	260.0	0.001	0	57.0	20.00	40.0	0.0E+00	1.71	1.50	**5.0E-03**	**4.3E+02**	**7.5**	20.00	0.00%	pass	6.5E-04	5.9E-04	1.8E-03
00140176	4	20	35	4	60	245.0	288.0	0.001	0	57.0	15.00	43.0	0.0E+00	1.28	4.00	**1.4E-02**	**1.2E+03**	**20.6**	15.00	0.00%	pass	1.7E-03	1.6E-03	4.4E-03
00145432	4	13	30	5	25	172.0	214.0	0.001	0	57.0	17.00	42.0	0.0E+00	1.42	1.47	**4.9E-03**	**4.2E+02**	**7.4**	17.00	0.00%	pass	6.3E-04	5.7E-04	1.7E-03
00147153	4	21	25	3	60	202.0	231.0	0.001	0	57.0	4.00	29.0	0.0E+00	4.14	15.00	**7.0E-02**	**6.0E+03**	**105.6**	4.00	0.00%	pass	6.4E-03	8.1E-03	2.7E-02
00154527	4	40	55	4	35	181.0	186.0	0.001	0	57.0	15.00	5.0	0.0E+00	35.86	2.33	**3.7E-02**	**3.2E+03**	**56.0**	15.00	0.00%	pass	9.6E-04	4.2E-03	1.9E-02
00155262	4	20	30	3	25	207.0	213.0	0.001	0	57.0	10.00	6.0	0.0E+00	30.09	2.50	**3.4E-02**	**3.0E+03**	**52.0**	10.00	0.00%	pass	1.0E-03	3.9E-03	1.7E-02
00169693	4	10	30	2	30	275.0	311.0	0.001	0	57.0	20.00	36.0	0.0E+00	2.42	1.50	**5.3E-03**	**4.5E+02**	**8.0**	20.00	0.00%	pass	6.5E-04	6.2E-04	2.1E-03
00178923	4	25	60	3	30	223.0	275.0	0.001	0	57.0	35.00	52.0	0.0E+00	0.35	0.86	**2.3E-03**	**2.0E+02**	**3.5**	35.00	0.00%	pass	3.7E-04	2.8E-04	6.9E-04
00179376	4	15	35	3	55	278.0	306.0	0.001	0	57.0	20.00	28.0	0.0E+00	4.45	2.75	**1.2E-02**	**1.1E+03**	**18.5**	20.00	0.00%	pass	1.2E-03	1.4E-03	5.1E-03
00190419	4	20	40	3	20	202.0	243.0	0.001	0	57.0	20.00	41.0	0.0E+00	1.56	1.00	**3.2E-03**	**2.8E+02**	**4.8**	20.00	0.00%	pass	4.3E-04	3.8E-04	1.2E-03
00197581	4	7	28	3	60	212.0	270.0	0.001	0	57.0	21.00	58.0	0.0E+00	-0.06	2.86	**7.9E-03**	**6.8E+02**	**12.0**	21.00	0.00%	pass	1.2E-03	9.4E-04	1.9E-03
00199906	4	26	50	2	30	201.0	220.0	0.001	0	57.0	24.00	19.0	0.0E+00	8.48	1.25	**7.1E-03**	**6.2E+02**	**10.8**	24.00	0.00%	pass	5.3E-04	8.2E-04	3.2E-03
00406314	4	10	100	1	50	210.0	280.0	0.001	0	57.0	90.00	70.0	0.0E+00	-0.62	0.56	**1.1E-03**	**9.8E+01**	**1.7**	90.00	0.00%	pass	2.5E-04	1.4E-04	4.1E-04
00406320	4	20	100	2	60	273.0	340.0	0.001	0	57.0	80.00	67.0	0.0E+00	-0.50	0.75	**1.7E-03**	**1.5E+02**	**2.6**	80.00	0.00%	pass	3.3E-04	2.1E-04	5.0E-04
00408981	4	15	45	2	35	195.0	231.0	0.001	0	57.0	30.00	36.0	0.0E+00	2.42	1.17	**4.0E-03**	**3.5E+02**	**6.1**	30.00	0.00%	pass	5.0E-04	4.7E-04	1.7E-03
00408981	4	15	45	3	35	195.0	231.0	0.001	0	57.0	30.00	36.0	0.0E+00	2.42	1.17	**4.1E-03**	**3.6E+02**	**6.3**	30.00	0.00%	pass	5.0E-04	4.8E-04	1.7E-03
00409516	4	15	245	3	12	217.0	245.0	0.001	0	57.0	230.00	28.0	0.0E+00	4.45	0.05	**1.9E-04**	**1.7E+01**	**0.3**	230.00	0.00%	pass	2.2E-05	2.3E-05	9.7E-05
00411507	4	20	40	3	30	256.0	335.0	0.001	0	57.0	20.00	79.0	0.0E+00	-0.99	1.50	**3.4E-03**	**3.0E+02**	**5.2**	20.00	0.00%	pass	6.6E-04	4.2E-04	1.6E-03
00429151	4	8	18	3	25	220.0	225.0	0.001	0	57.0	10.00	5.0	0.0E+00	35.86	2.50	**3.9E-02**	**3.4E+03**	**59.8**	10.00	0.00%	pass	1.0E-03	4.4E-03	2.0E-02
00435830	4	7	15	4	30	213.0	255.0	0.001	0	57.0	8.00	42.0	0.0E+00	1.42	3.75	**1.3E-02**	**1.1E+03**	**19.5**	8.00	0.00%	pass	1.6E-03	1.5E-03	4.3E-03
00435832	4	10	20	4	30	168.0	216.0	0.001	0	57.0	10.00	48.0	0.0E+00	0.71	3.00	**9.4E-03**	**8.1E+02**	**14.2**	10.00	0.00%	pass	1.3E-03	1.1E-03	2.8E-03
00437222	4	12	75	1	100	195.0	236.0	0.001	0	57.0	63.00	41.0	0.0E+00	1.56	1.59	**4.9E-03**	**4.2E+02**	**7.4**	63.00	0.00%	pass	6.9E-04	5.8E-04	1.9E-03
00437222	4	12	30	1	25	195.0	236.0	0.001	0	57.0	18.00	41.0	0.0E+00	1.56	1.39	**4.2E-03**	**3.6E+02**	**6.4**	18.00	0.00%	pass	6.0E-04	5.0E-04	1.7E-03
00437700	4	13	30	3	25	205.0	240.0	0.001	0	57.0	17.00	35.0	0.0E+00	2.62	1.47	**5.4E-03**	**4.6E+02**	**8.1**	17.00	0.00%	pass	6.3E-04	6.3E-04	2.2E-03
00450304	4	16	40	5	30	232.0	286.0	0.001	0	57.0	24.00	54.0	0.0E+00	0.20	1.25	**3.5E-03**	**3.0E+02**	**5.3**	24.00	0.00%	pass	5.5E-04	4.2E-04	9.4E-04
00450309	4	15	30	4	35	232.0	286.0	0.001	0	57.0	15.00	54.0	0.0E+00	0.20	2.33	**6.7E-03**	**5.8E+02**	**10.2**	15.00	0.00%	pass	1.0E-03	8.0E-04	1.7E-03
00450310	4	19	45	4	25	238.0	298.0	0.001	0	57.0	26.00	60.0	0.0E+00	-0.17	0.96	**2.5E-03**	**2.1E+02**	**3.8**	26.00	0.00%	pass	4.2E-04	3.0E-04	6.3E-04
00450325	4	25	45	5	30	232.0	291.0	0.001	0	57.0	20.00	59.0	0.0E+00	-0.12	1.50	**4.1E-03**	**3.5E+02**	**6.2**	20.00	0.00%	pass	6.6E-04	4.9E-04	1.0E-03
00477365	4	36	70	2	35	306.0	350.0	0.001	0	57.0	34.00	44.0	0.0E+00	1.15	1.03	**3.0E-03**	**2.6E+02**	**4.6**	34.00	0.00%	pass	4.5E-04	3.6E-04	1.1E-03
00494285	4	15	25	3	30	162.0	167.0	0.001	0	57.0	10.00	5.0	0.0E+00	35.86	3.00	**4.7E-02**	**4.1E+03**	**72.0**	10.00	0.01%	pass	1.2E-03	5.3E-03	2.4E-02
00506378	4	25	40	3	40	228.0	258.0	0.001	0	57.0	15.00	30.0	0.0E+00	3.85	2.67	**1.1E-02**	**9.7E+02**	**17.1**	15.00	0.00%	pass	1.1E-03	1.3E-03	4.6E-03
00509243	4	10	160	1	70	163.0	174.0	0.001	0	57.0	150.00	11.0	0.0E+00	16.37	0.47	**3.9E-03**	**3.3E+02**	**5.9**	150.00	0.00%	pass	1.9E-04	4.4E-04	1.8E-03
00509243	4	10	100	2	50	163.0	174.0	0.001	0	57.0	90.00	11.0	0.0E+00	16.37	0.56	**4.7E-03**	**4.0E+02**	**7.1**	90.00	0.00%	pass	2.3E-04	5.3E-04	2.2E-03
00510535	4	20	45	2	40	203.0	245.0	0.001	0	57.0	25.00	42.0	0.0E+00	1.42	1.60	**5.0E-03**	**4.3E+02**	**7.6**	25.00	0.00%	pass	6.9E-04	5.9E-04	1.8E-03
00510535	4	20	45	3	40	203.0	245.0	0.001	0	57.0	25.00	42.0	0.0E+00	1.42	1.60	**5.2E-03**	**4.4E+02**	**7.8**	25.00	0.00%	pass	6.9E-04	6.1E-04	1.8E-03
00511955	4	18	30	3.5	50	212.0	261.0	0.001	0	57.0	12.00	49.0	0.0E+00	0.61	4.17	**1.3E-02**	**1.1E+03**	**19.7**	12.00	0.00%	pass	1.8E-03	1.5E-03	3.7E-03
00562952	4	20	200	3	25	227.0	238.0	0.001	0	57.0	180.00	11.0	0.0E+00	16.37	0.14	**1.1E-03**	**9.9E+01**	**1.7**	180.00	0.00%	pass	5.8E-05	1.3E-04	5.5E-04
00587137	4	25	65	2	75	220.0	245.0	0.001	0	57.0	40.00	25.0	0.0E+00	5.52	1.88	**8.8E-03**	**7.6E+02**	**13.3**	40.00	0.00%	pass	8.0E-04	1.0E-03	3.8E-03
00599191	4	30	50	3	40	224.0	240.0	0.001	0	57.0	20.00	16.0	0.0E+00	10.65	2.00	**1.3E-02**	**1.2E+03**	**20.2**	20.00	0.00%	pass	8.4E-04	1.5E-03	5.8E-03
00624533	4	20	50	6	70	300.0	320.0	0.001	0	57.0	30.00	20.0	0.0E+00	7.89	2.33	**1.4E-02**	**1.2E+03**	**20.5**	30.00	0.00%	pass	9.8E-04	1.6E-03	5.7E-03
00705752	4	18	100	2	55	200.0	240.0	0.001	0	57.0	82.00	40.0	0.0E+00	1.71	0.67	**2.1E-03**	**1.8E+02**	**3.1**	82.00	0.00%	pass	2.9E-04	2.5E-04	8.3E-04

Max	**6.0E+03**	**1.1E+02**
Min	**1.7E+01**	**2.9E-01**
Geomean	**5.3E+02**	**9.3E+00**

References:

Bradbury, K.B., and E.R. Rothschild, 1985. A computerized technique for estimating the hydraulic conductivity of aquifer from specific capacity data: Ground Water vol. 23, No. 2, pp. 240-246.

ASTM International, 2004. Standard Test Method for Determining Specific Capacity and Estimating Transmissivity at the Control Well, Standard D 5472-93, in Annual Book of ASTM Standards, Vol. 04.08 pp. 1279-1282.

MINNESOTA MDH DEPARTMENT OF HEALTH
Environmental Health Division
Drinking Water Protection Section
Source Water Protection Unit
P.O. Box 64975
St. Paul, Minnesota 55164-0975

Determination of Aquifer Properties and Aquifer Test Plan (DAP-ATP) Form

Public Water Supply ID:	1020017	PWS Name:	Coon Rapids

Contact Information for Person Completing this Form

Name:	John Greer
Address:	Barr Engineering Company
	4700 West 77th Street, Suite 200
City, State, Zip:	Edina, MN 55435
Phone, Fax, e-mail:	(952) 832-2691

Aquifer Properties Determination Methods

☐ 1) An existing pumping test that meets the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on a well connected to the public water supply system.

☐ 2) An existing pumping test that meets the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on another well in a hydrogeologic setting determined by the department to be equivalent.

☐ 3) A proposed new test to be conducted on a new or existing well connected to the public water supply system and that meets the requirements for larger-sized water systems (wellhead protection rule part 4720.5520). A test plan must be approved before conducting the test.

☐ 4) A proposed new test to be conducted on a new or existing public well connected to the public water supply system and that meets the requirements for smaller-sized water systems (wellhead protection rule part 4720.5530). A test plan must be approved before conducting the test.

☐ 5) An existing pumping test that does not meet the requirements of wellhead protection rule part 4720.5520 and that was previously conducted on: 1) a public water supply well or 2) another well in a hydrogeologic setting determined by the department to be equivalent.

☑ 6) Existing specific capacity test(s) conducted on the public water supply well(s) or specific capacity tests conducted on other wells in a hydrogeologic setting determined by the department to be equivalent.

☐ 7) An existing published transmissivity value.

- Include all test data and analysis documentation with the estimated transmissivity, ft^2/day, when the aquifer properties determination method is; 1, 2, 5, 6, or 7, listed above.
- ▪ Attach detailed aquifer test plan for methods 3 or 4.

Submitted by: John Greer	Prof. License: 30347	Date: 7/31/2015

To request this document in another format, please call our Section Receptionist (651/201-4700) or Division TTY (651/201-5797).

Rationale for: 1) Aquifer Properties Determination or 2) Proposed New Test

Briefly describe the rationale for: 1) selected method to determine aquifer properties from existing data, **or** 2) a new aquifer test to be conducted on the pumped well referenced below. Include unique well numbers of all wells that were (or will be) monitored during data collection. How does the existing or proposed test deviate from the ideal. (e.g. rate, duration, no. of obwells, interfering wells, etc.) Attach documentation as necessary.

Aquifer Name:	Mt. Simon Sandstone	✓ Confined	☐ Unconfined	☐ Fractured Rock

Specific capacity data on the CWI log for Coon Rapids Well 18 (Unique Number 110469) was analyzed using the TGuess Method (Bradbury and Rothschild, 1985) to obtain a transmissivity of 4,700 ft**2/day (see attached).

Four production tests were conducted on Andover Well 3 (Unique Number 431683) in 1987. See the attached plots (provided by MDH) for test data and analysis. Below is a summary of the results from the four tests:

Date	Flow Rate (gpm)	T(ft**2/day)
10/12/1987	600	1,880
10/13/1987	600	1,600
10/14/1987	800	2,200
10/16/1987	1000	2,130

The geometric mean transmissivity of all five tests is 2,310 ft**2/day, which will be used in the base case model. The max and min of the four tests, 1,600 ft**2/day and 4,700 ft**2/day, respectively, will be used as the sensitivity analysis ranges.

Proposed New Test Information Summary

Pumped Well Name (Unique Number):	110469, 431683	**Test Duration (Hours):**	varies
Location: X, Y (meters) UTM-Z15N or Lat-Lon (decimal degrees) datum: NAD83	476962, 5004924 (110469) 476994, 5007465 (431683)	**Pump Type:**	unknown
		Discharge Rate:	600, 800, 1000, 1400 gpm
Number of Observation Wells:	0	**Flow Rate Measuring Device Type:**	unknown

- A map showing the location of the pumping well and observation well(s) must be included.

List the unique number of each public water supply well to which this DAP-ATP Form applies

202929	202965	110469			
202972	168721				
202951	161413				
202943	110460				
202932	110461				
202930	168720				

Reviewed by: Amal Djerrari	**Approved:** ● Yes ○ No	**Approval Date:** 8/3/2015

Mt. Simon

Worksheet for Estimating Transmissivity and Hydraulic Conductivity from Specific Capacity Test Data

Explanation and notes attached.

Maximum iterations	100
Error tolerance (as drawdown)	0.001 feet

Field Data								*Estimated Parameters*			*Calculated Results*								*Diagnostics*					
		Depth to Water				Screened Interval													*Solution Integrity*			*Sensitivity of T:*		
Location	Well Diam.	Initial	Final	Test Duration	Mean Pumping Rate	Depth to Top	Depth to Bottom	Storage Coeff. (S)	Well loss Coeff. (C)	Aquifer Thickness (b)	Measured Drawdown (s_m)	Saturated Screen Length (L)	Well loss (s_w)	Partial Penetration Parameter (s_p)	Specific Capacity	**Transmissivity (T)**	**T (ft^2/day)**	**Conductivity (K)**	Calculated Drawdown	Error as Drawdown	Well Bore Storage Test	to S at ± 1 factor of 10	to s_w at 10% of s_m	to b at ± 25%
	inches	feet	feet	hours	gpm	feet	feet	-	sec^2/ft^5	feet	feet	feet	feet	-	gpm/ft	**sq ft/sec**		**ft/day**	feet			sq ft/sec	sq ft/sec	sq ft/sec
00110469 (Coon Rapids 18)	24	140	248	36	1400	575.0	637.0	0.001	0	128.0	108.00	62.0	0.0E+00	3.53	12.96	**5.4E-02**	**4.7E+03**	**36.7**	108.00	0.00%	pass	5.5E-03	6.3E-03	1.9E-02

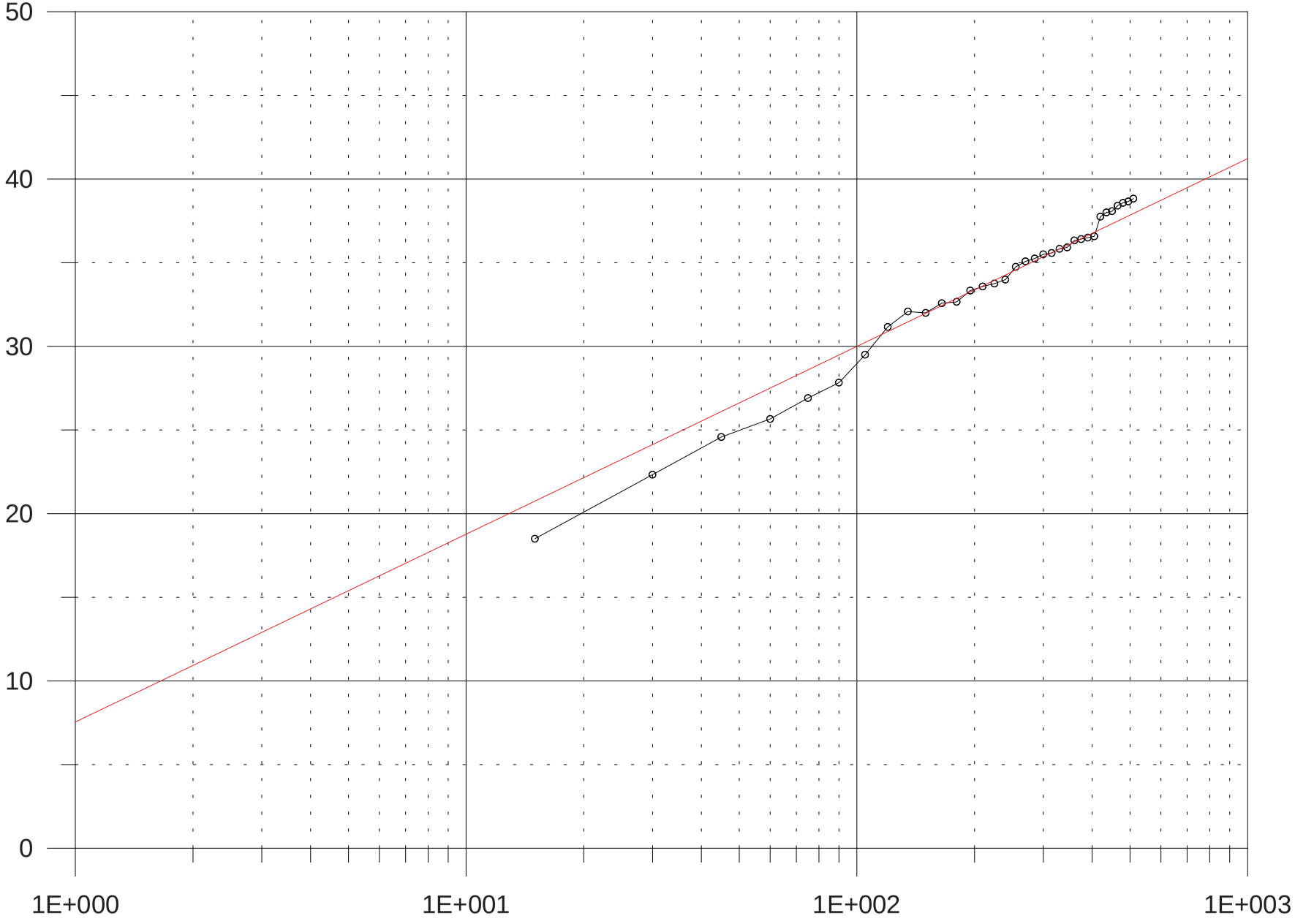
References:

Bradbury, K.B., and E.R. Rothschild, 1985. A computerized technique for estimating the hydraulic conductivity of aquifer from specific capacity data: Ground Water vol. 23, No. 2, pp. 240-246.

ASTM International, 2004. Standard Test Method for Determining Specific Capacity and Estimating Transmissivity at the Control Well, Standard D 5472-93, in Annual Book of ASTM Standards, Vol. 04.08 pp. 1279-1282.

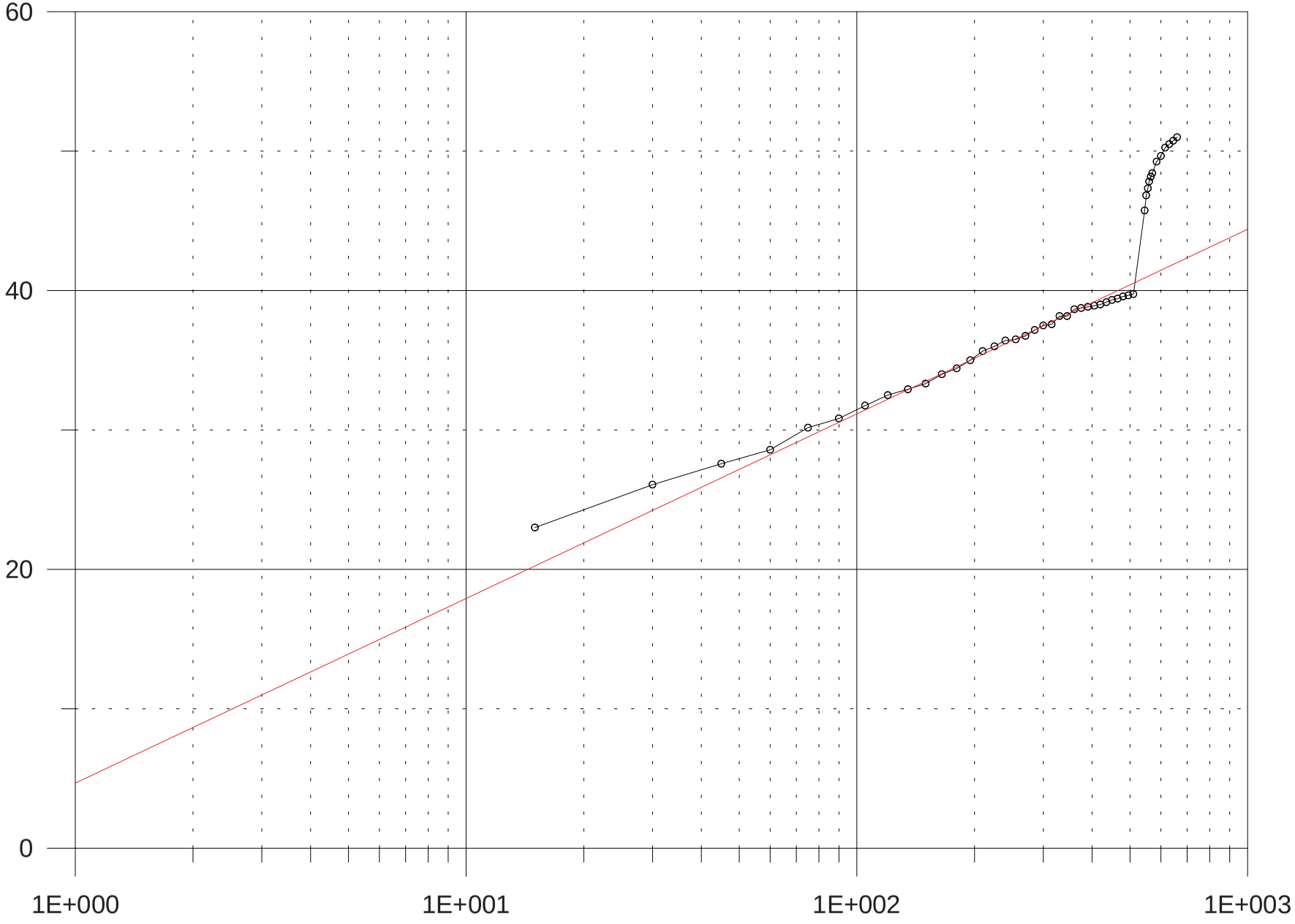
Test of Andover Well #3 (431683)
10/12/1987
Production Test

T = 35.3 600 / 11.24 = 1880 ft2/day



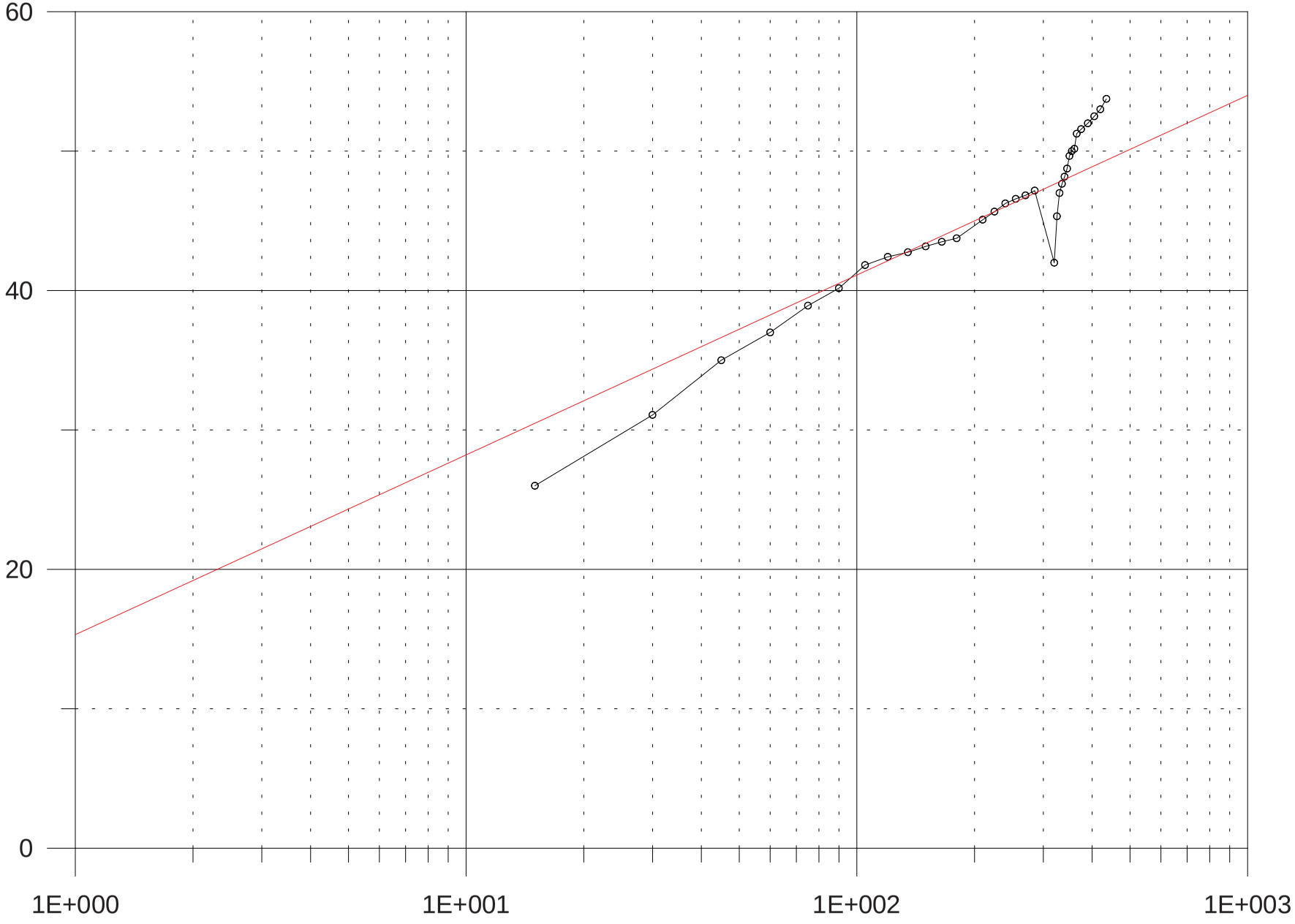
Test of Andover Well #3 (431683)
10/13/1987
Production Test

T = 35.3 600 / 13.24 = 1600 ft2/day



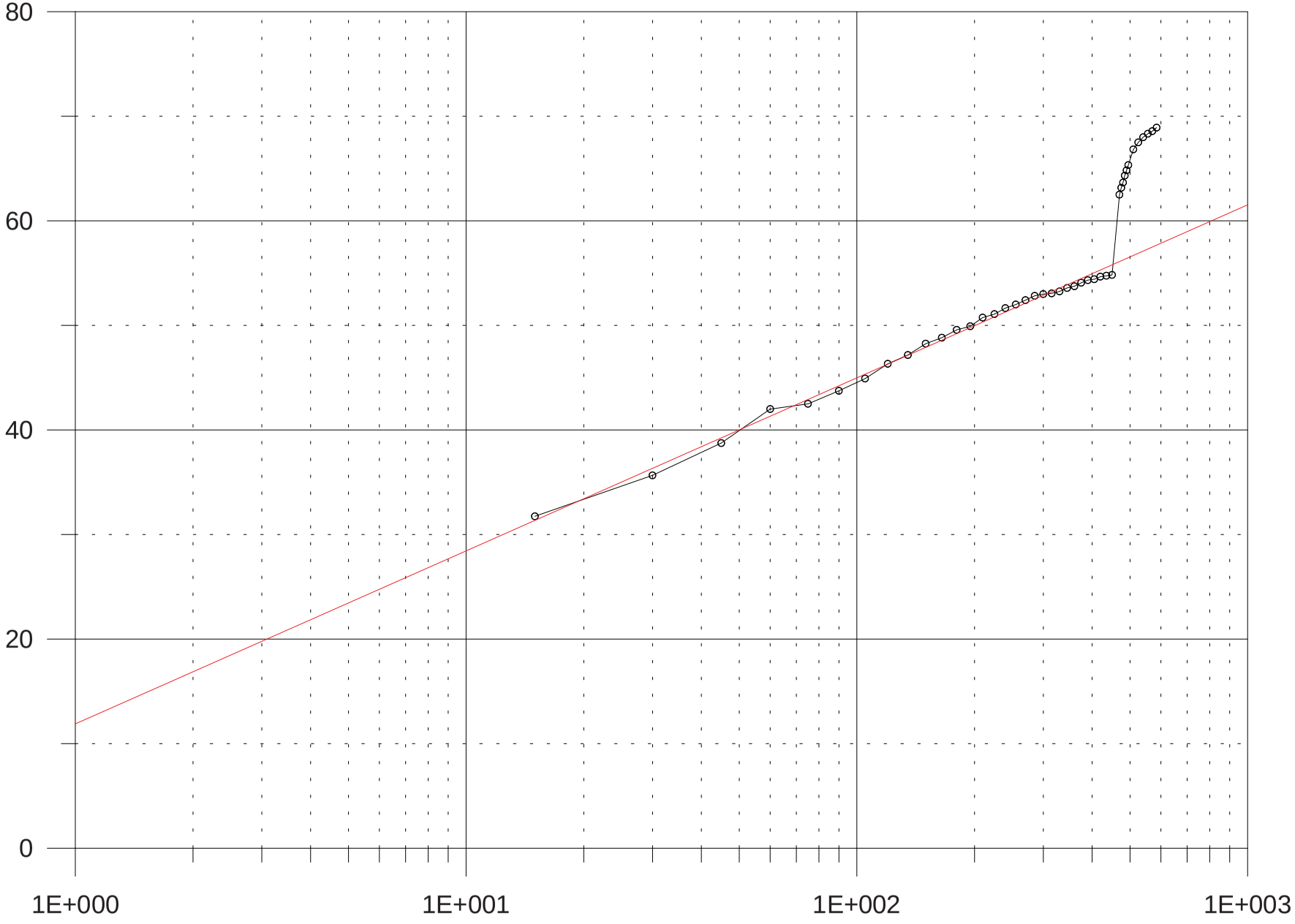
Test of Andover Well #3 (431683)
10/14/1987
Production Test

T = 35.3 800/ 12.89 = 2200ft2/day



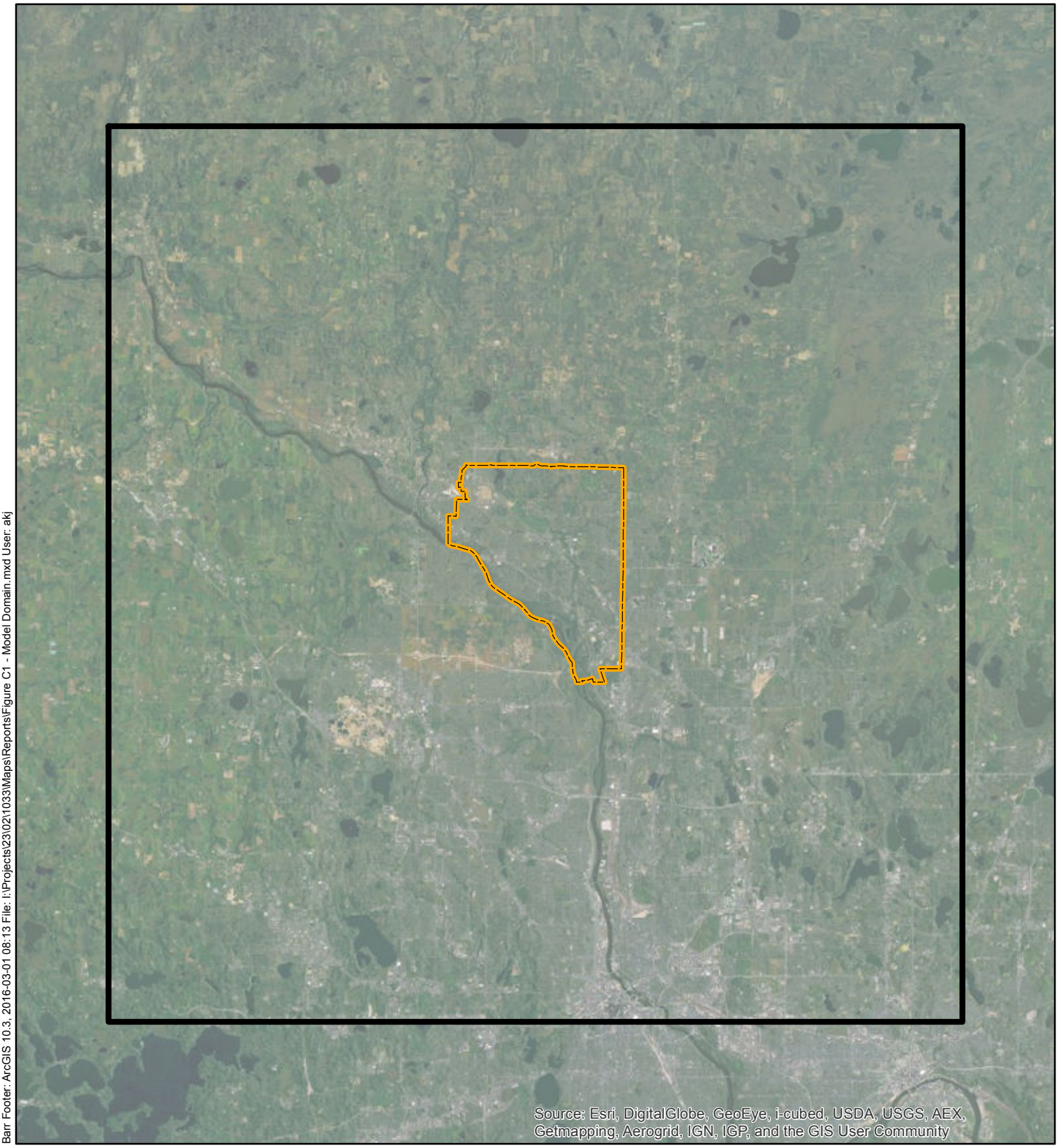
Test of Andover Well #3 (431683)
10/16/1987
Production Test

T = 35.3 1000/ 15.56 = 2130 ft2/day



Appendix C

Groundwater Model Details



Barr Footer: ArcGIS 10.3, 2016-03-01 08:13 File: I:\Projects\23\02\1033\Maps\Reports\Figure C1 - Model Domain.mxd User: akj

Model Boundary

Coon Rapids City Limits

N

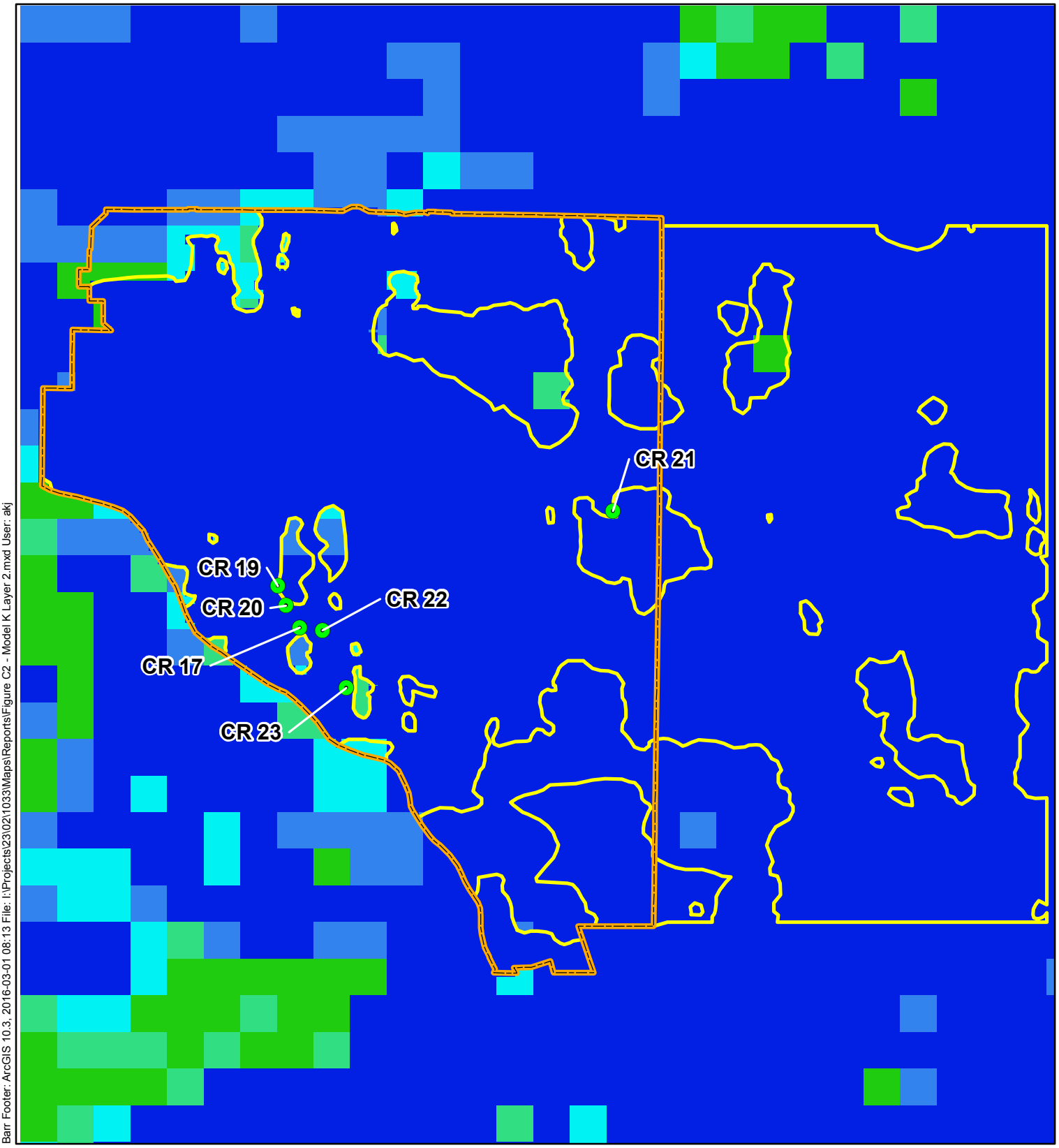
Miles

4 0 4

BARR

Figure C1

MODEL DOMAIN
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



Barr Footer: ArcGIS 10.3, 2016-03-01 08:13 File: I:\Projects\23\02\1033\Maps\Reports\Figure C2 - Model K Layer 2.mxd User: akj

Coon Rapids Municipal Well open to Quaternary

Coon Rapids City Limits

Till Unit Ce Extent in K Modification Area

Layer 2 Kz (m/day)

- 0.0001 - 0.0549
- 0.0550 - 0.2536
- 0.2537 - 1.0045
- 1.0046 - 3.3159
- 3.3160 - 7.6300

N

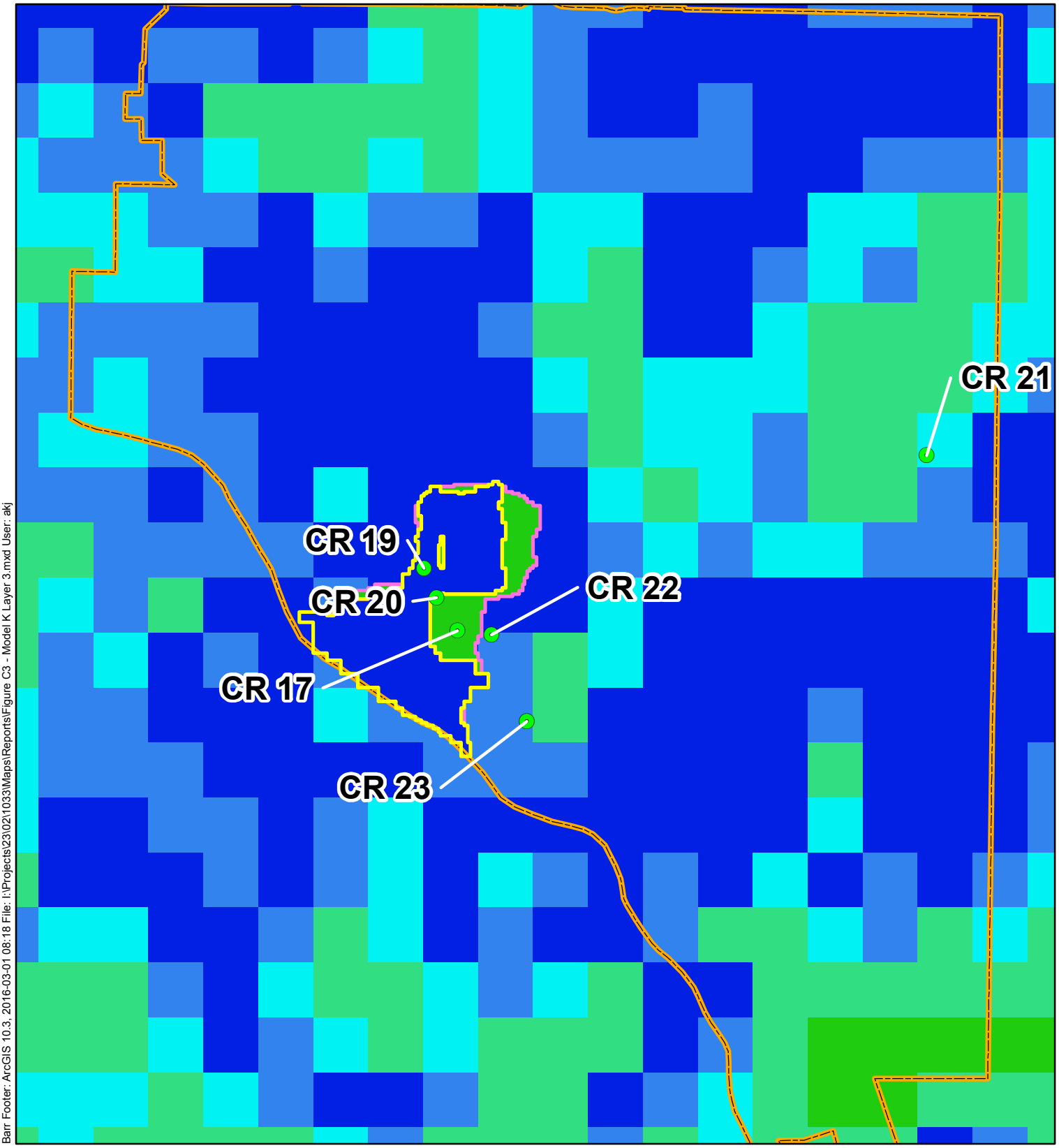
Feet

6,000 0 6,000

BARR

Figure C2

HYDRAULIC CONDUCTIVITY
LAYER 2
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



Barr Footer: ArcGIS 10.3, 2016-03-01 08:18 File: I:\Projects\23\02\1033\Maps\Reports\Figure C3 - Model K Layer 3.mxd User: akj

Coon Rapids Municipal Well open to Quaternary

Coon Rapids City Limits

Layer 3 Kx (m/day)

- 0.62 - 3.91
- 3.92 - 9.03
- 9.04 - 16.54
- 16.55 - 39.67
- 39.68 - 71.05

Till Unit Xt Extent

Sand Unit Sr Extent

N

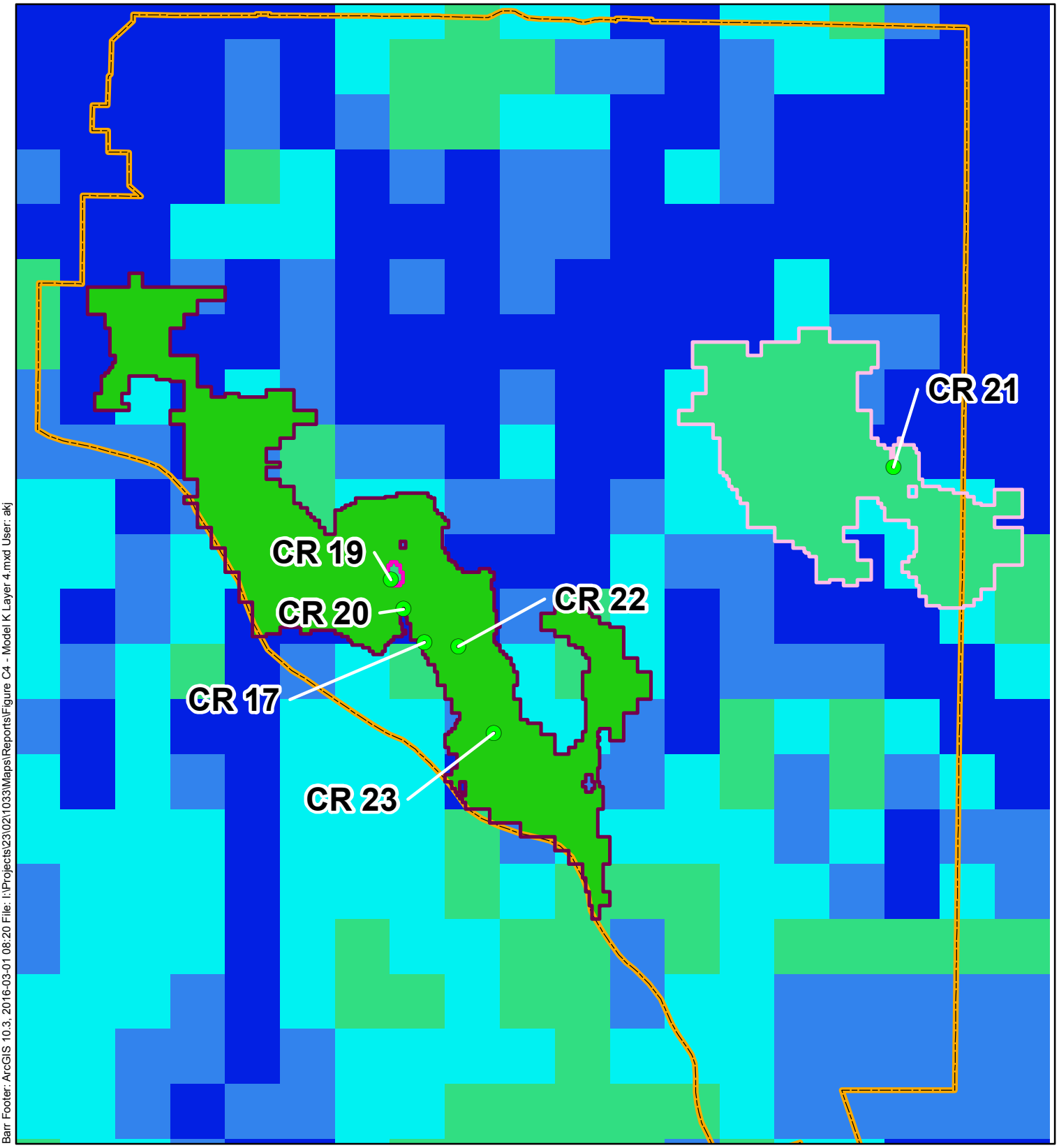
Feet

4,000 0 4,000

BARR

Figure C3

HYDRAULIC CONDUCTIVITY
LAYER 3
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



Barr Footer: ArcGIS 10.3, 2016-03-01 08:20 File: I:\Projects\23\02\1033\Maps\Reports\Figure C4 - Model K Layer 4.mxd User: akj

Coon Rapids Municipal Well open to Quaternary

Coon Rapids City Limits

Layer 4 Kx (m/day)

- 0.57 - 8.63
- 8.64 - 18.38
- 18.39 - 32.30
- 32.31 - 104.43
- 104.44 - 314.42

Sand Units Sp/Sx Extent (Wells 17, 20, 22, 23)

Sand Units Sx/Sr Extent (Well 21)

Sand Unit Sr Extent (Well 19)

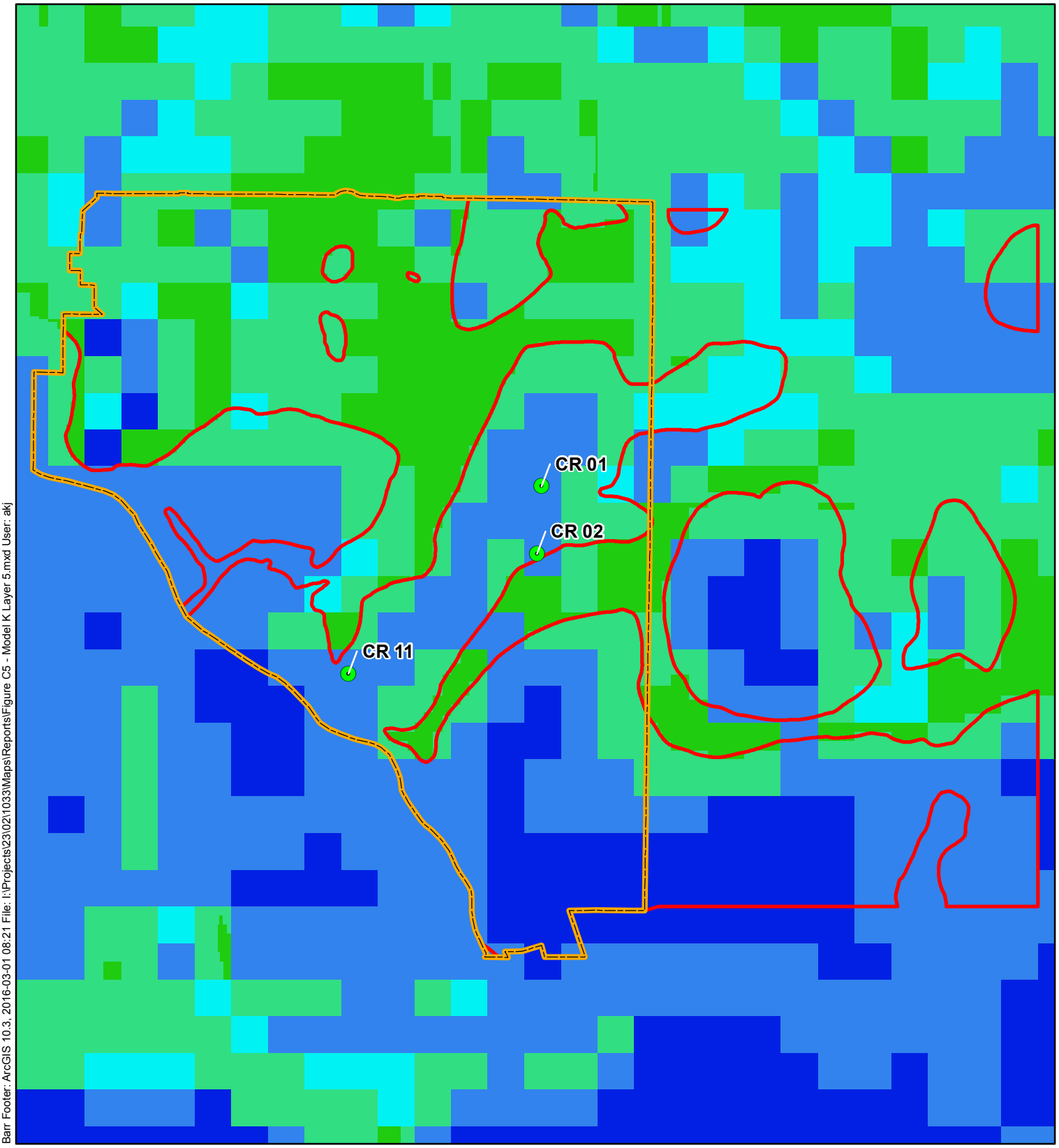
Feet

4,000 0 4,000

BARR

Figure C4

HYDRAULIC CONDUCTIVITY
LAYER 4
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



Barr Footer: ArcGIS 10.3, 2016-03-01 08:21 File: I:\Projects\23\02\1033\Maps\Reports\Figure C5 - Model K Layer 5.mxd User: akj

Coon Rapids Municipal Well Open to St. Lawrence Formation

Coon Rapids City Limits

St. Lawrence K Modification Area

Layer 5 Kx (m/day)

- 0.26 - 1.00
- 1.01 - 4.01
- 4.02 - 11.58
- 11.59 - 28.98
- 28.99 - 50.00

N

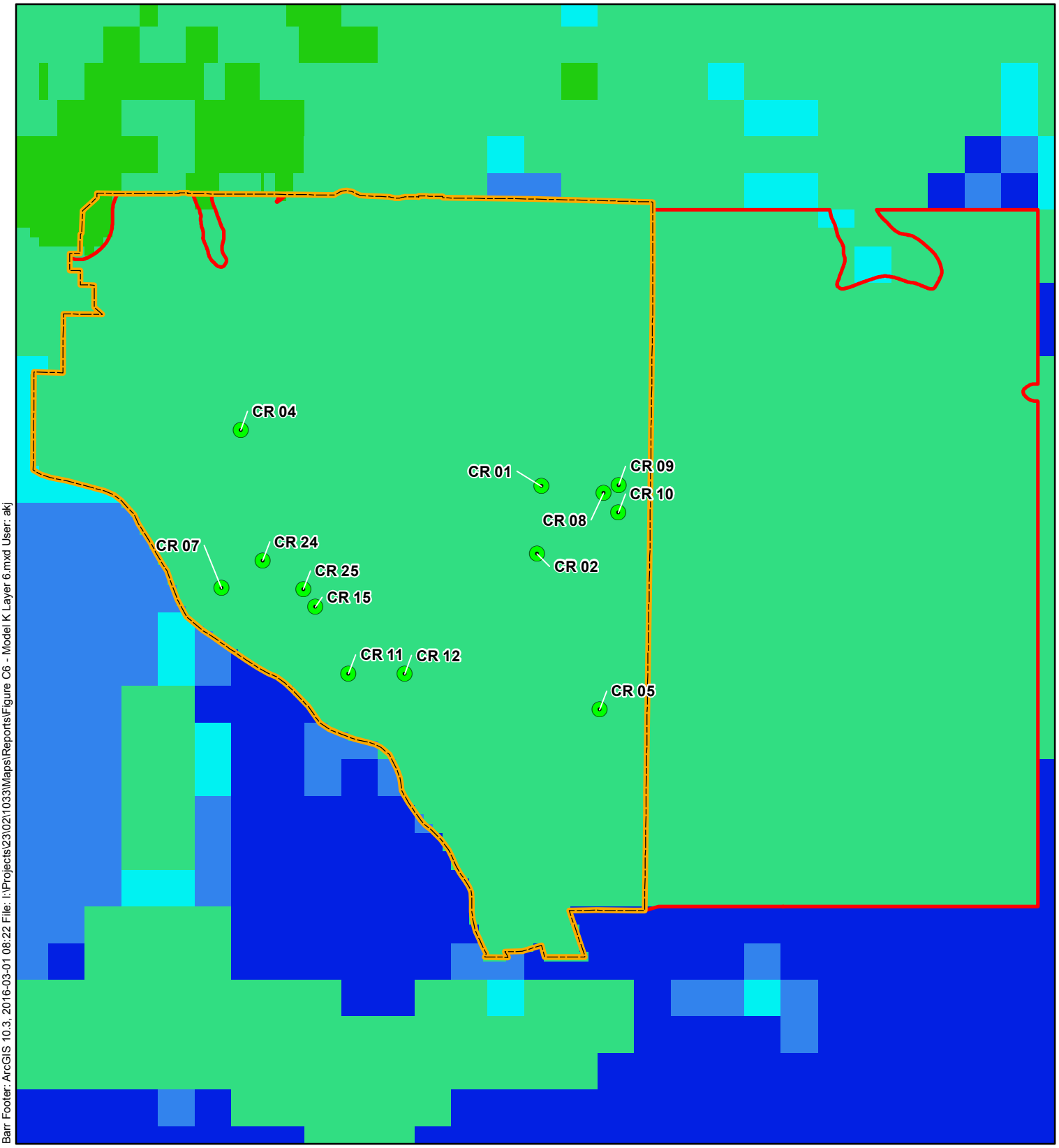
Feet

6,000 0 6,000

BARR

Figure C5

HYDRAULIC CONDUCTIVITY
LAYER 5
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



Barr Footer: ArcGIS 10.3, 2016-03-01 08:22 File: I:\Projects\23\02\1033\Maps\Reports\Figure C6 - Model K Layer 6.mxd User: akj

Coon Rapids Municipal Well Open to Tunnel City Group

Coon Rapids City Limits

Tunnel City K Modification Area

Layer 6 Kx (m/day)

- 0.33 - 0.41
- 0.42 - 0.48
- 0.49 - 1.32
- 1.33 - 15.00
- 15.01 - 50.00

N

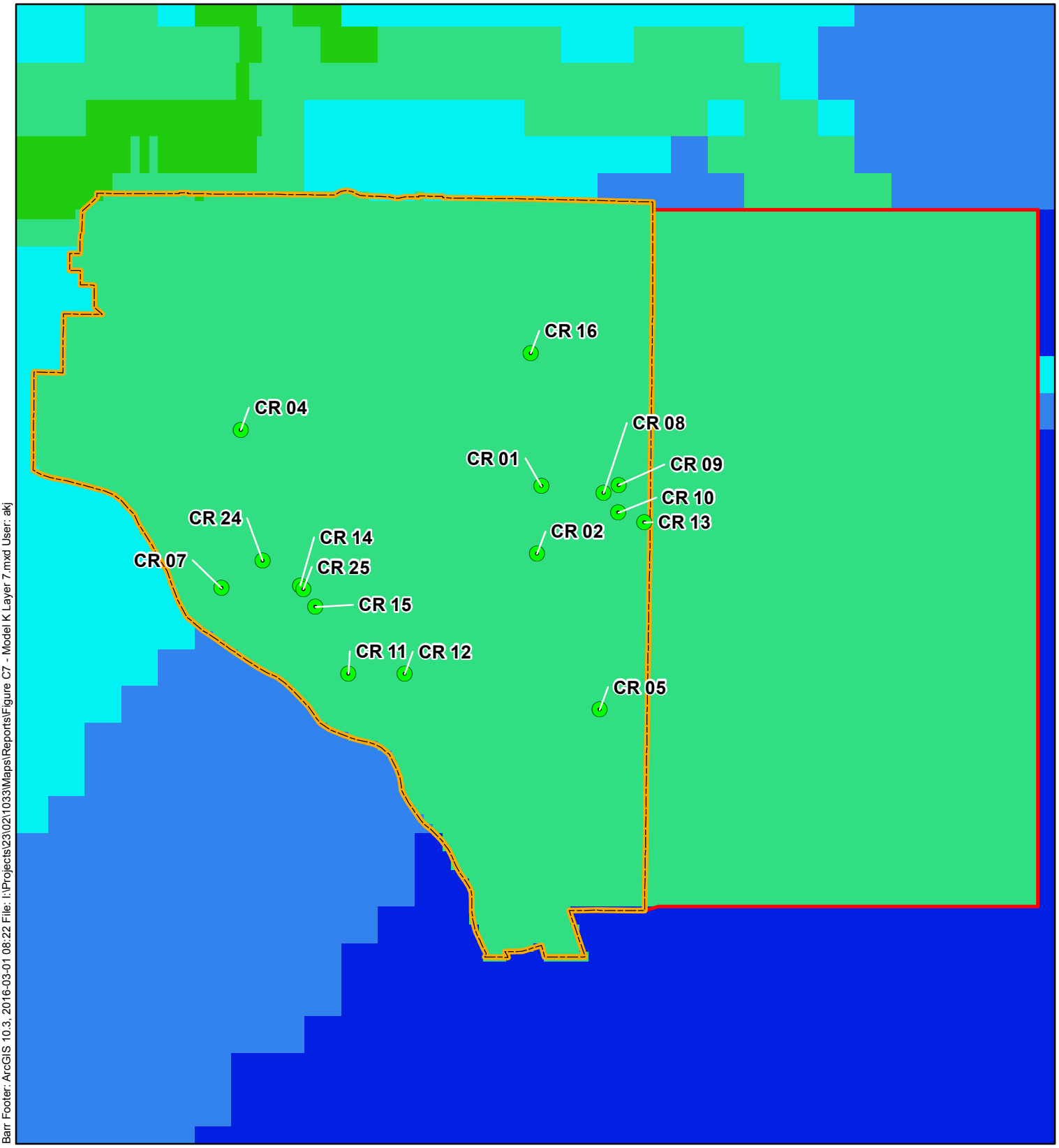
Feet

6,000 0 6,000

BARR

Figure C6

HYDRAULIC CONDUCTIVITY
LAYER 6
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



Barr Footer: ArcGIS 10.3, 2016-03-01 08:22 File: I:\Projects\23\02\1033\Maps\Reports\Figure C7 - Model K Layer 7.mxd User: akj

Coon Rapids Municipal Well Open to Wonewoc Sandstone

Coon Rapids City Limits

K Modification Area

Layer 7 Kx (m/day)

- 0.36 - 0.57
- 0.58 - 0.69
- 0.70 - 1.17
- 1.18 - 12.00
- 12.01 - 50.00

N

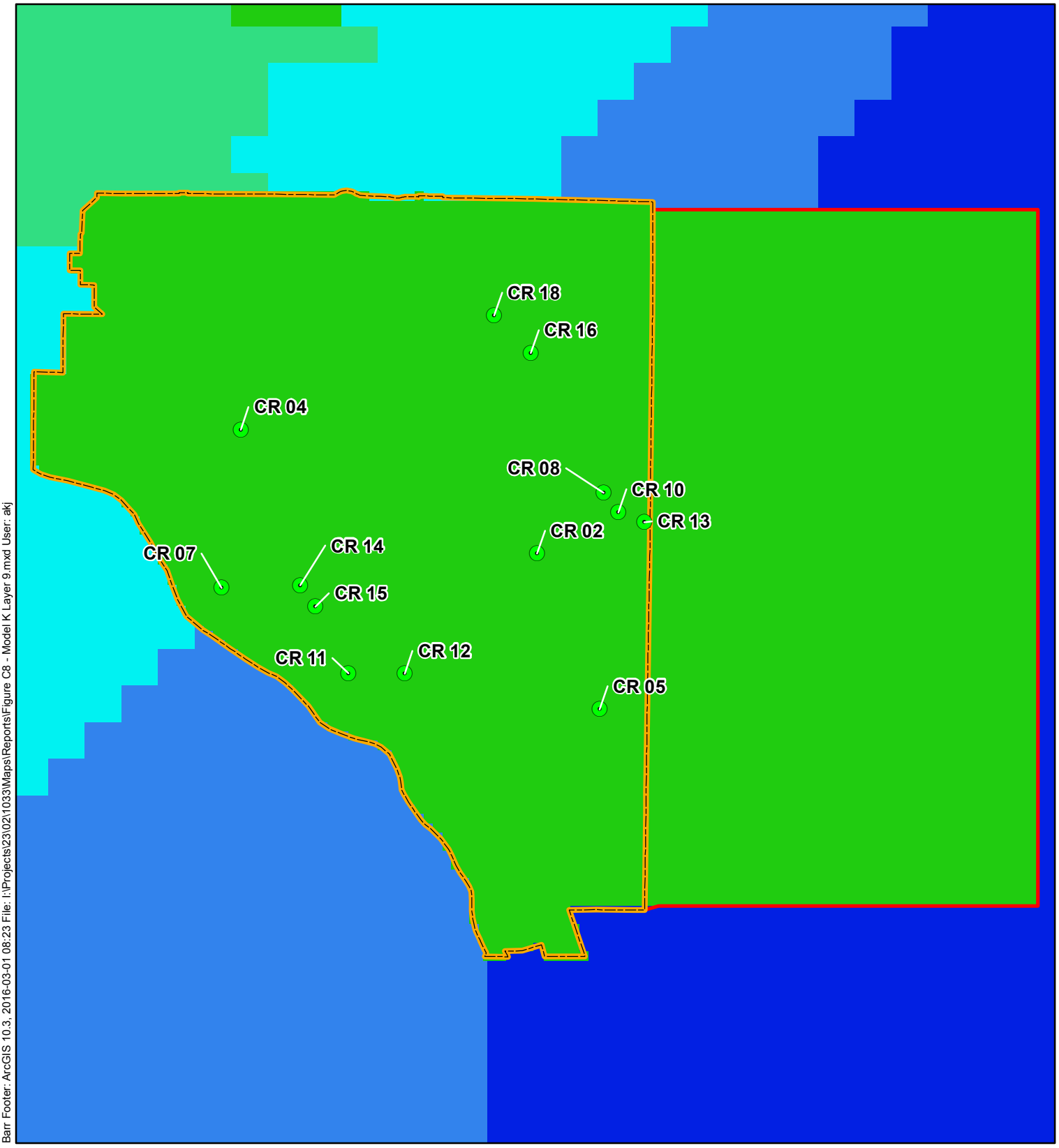
Feet

6,000 0 6,000

BARR

Figure C7

HYDRAULIC CONDUCTIVITY
LAYER 7
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



Barr Footer: ArcGIS 10.3, 2016-03-01 08:23 File: I:\Projects\23\02\1033\Maps\Reports\Figure C8 - Model K Layer 9.mxd User: akj

Coon Rapids Municipal Well Open to Mt. Simon

Coon Rapids City Limits

K Modification Area

Layer 9 Kx (m/day)

- 0.87 - 1.05
- 1.06 - 1.17
- 1.18 - 1.33
- 1.34 - 2.42
- 2.43 - 8.20

N

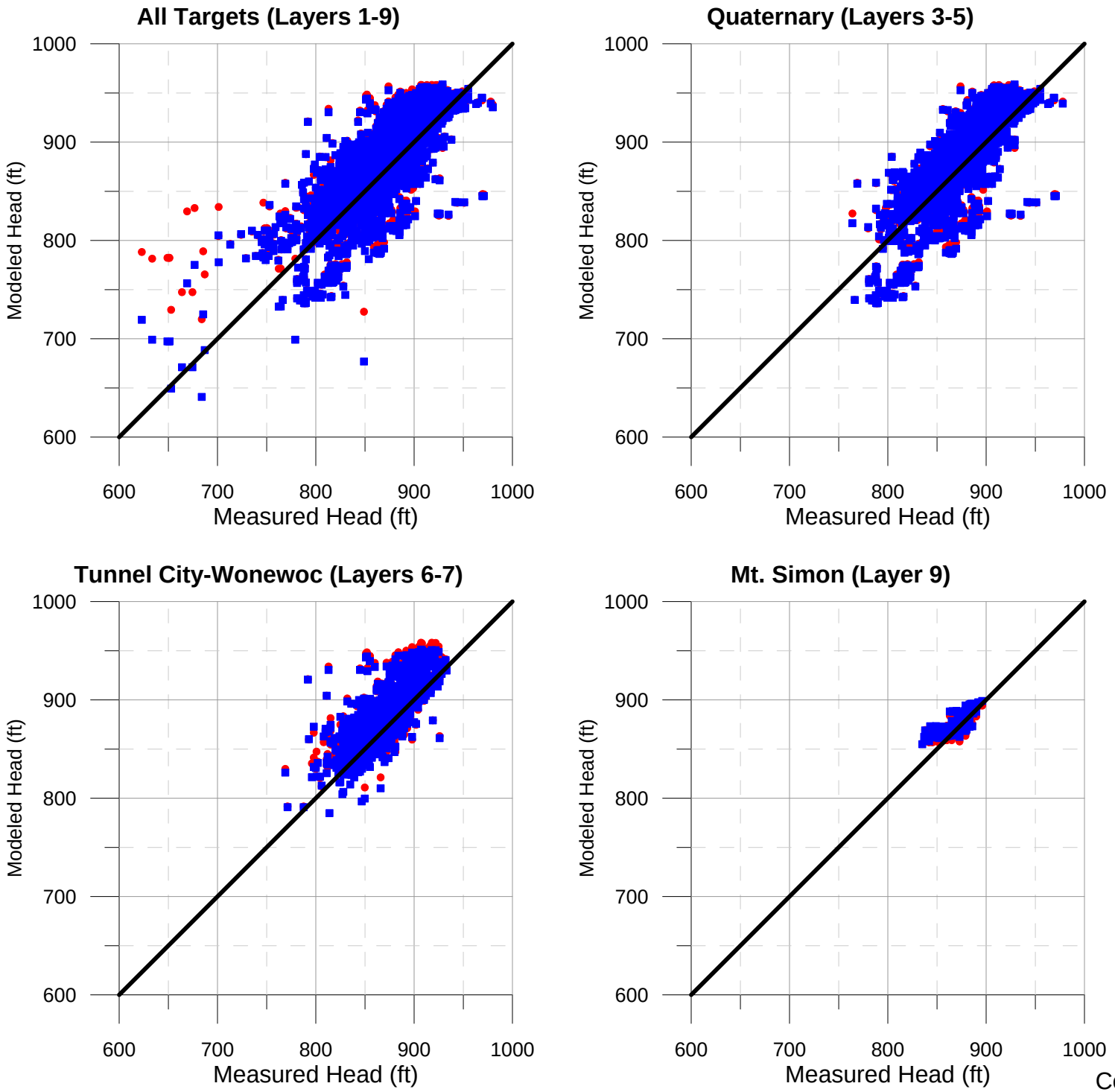
Feet

6,000 0 6,000

BARR

Figure C8

HYDRAULIC CONDUCTIVITY
LAYER 9
Coon Rapids WHPP Amendment
City of Coon Rapids, MN



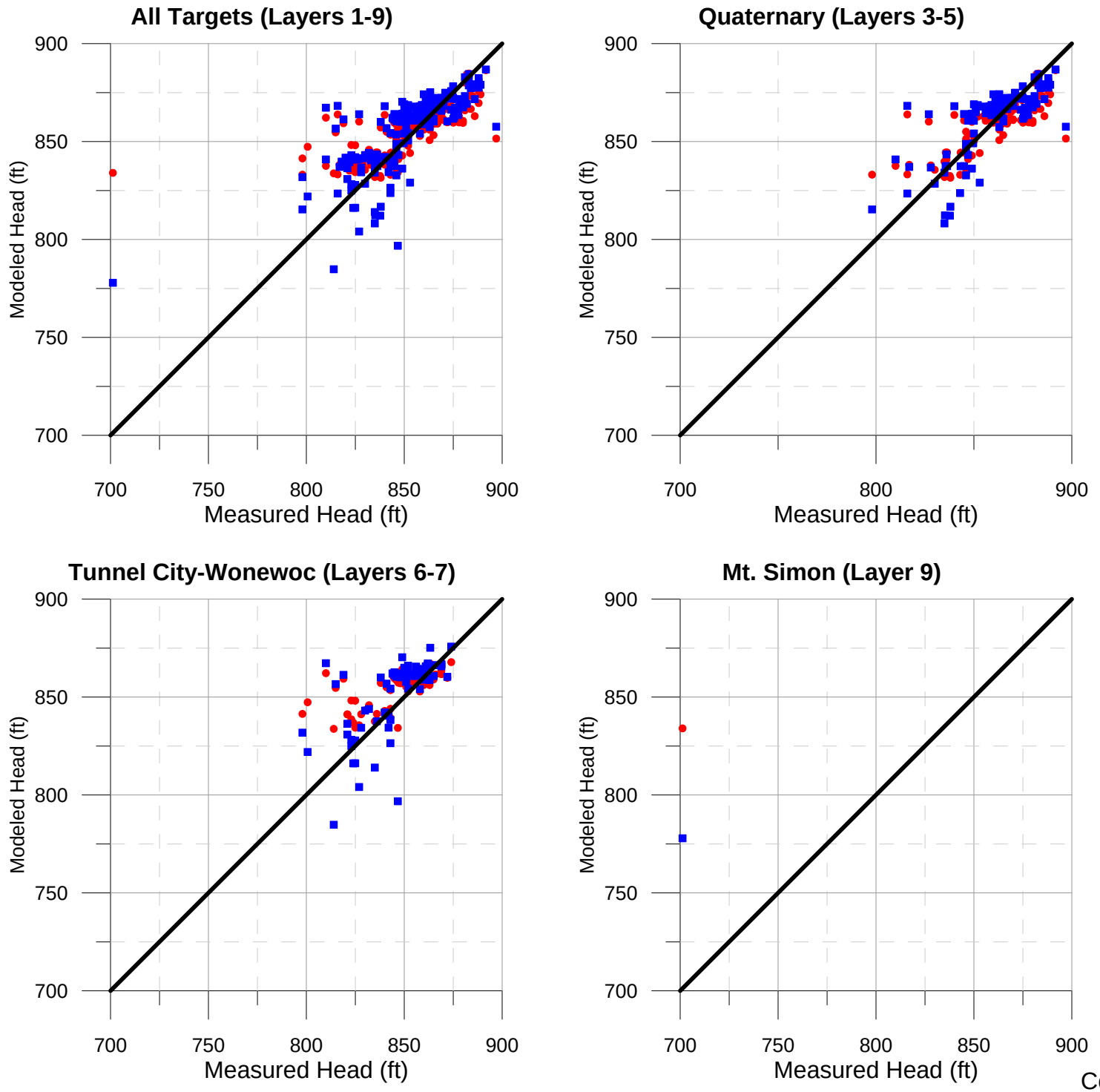
Only Metro Model 3 targets within the TMR model boundary shown.

WHPP model has updated K field but uses identical pumping rates to the base Metro Model 3.

Figure C9

MODEL CALIBRATION
ALL MODEL TARGETS
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

V:\23\02\1033\MM3\TMR\Calibration\Calibration_Comparison.grf



WHPP Model
Base MM3
1:1

Only Metro Model 3 targets within Coon Rapids city limits shown.

WHPP model has updated K field but uses identical pumping rates to the base Metro Model 3.

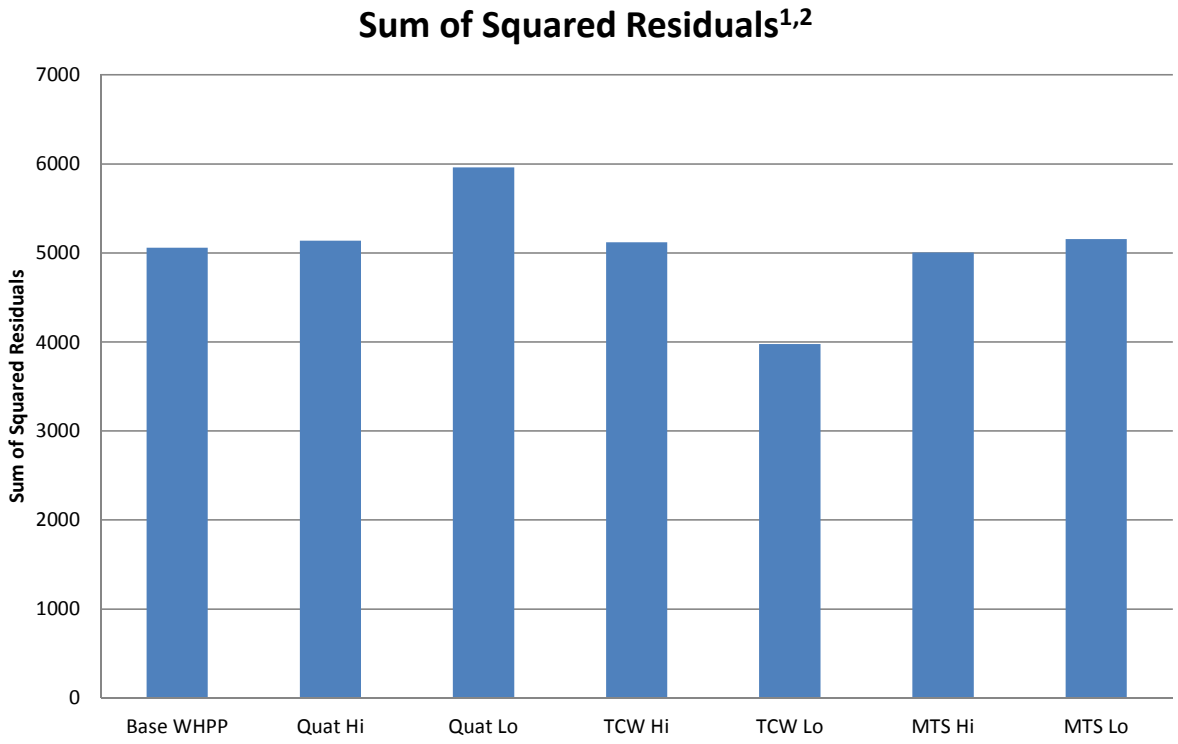
BARR

Figure C10

MODEL CALIBRATION
COON RAPIDS ONLY
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

V:\23\02\1033\MM3\TMR\Calibration\Calibration_Comparison_CRonly.grf

Figure C11
Sensitivity Analysis Results
Coon Rapids WHPP Amendment



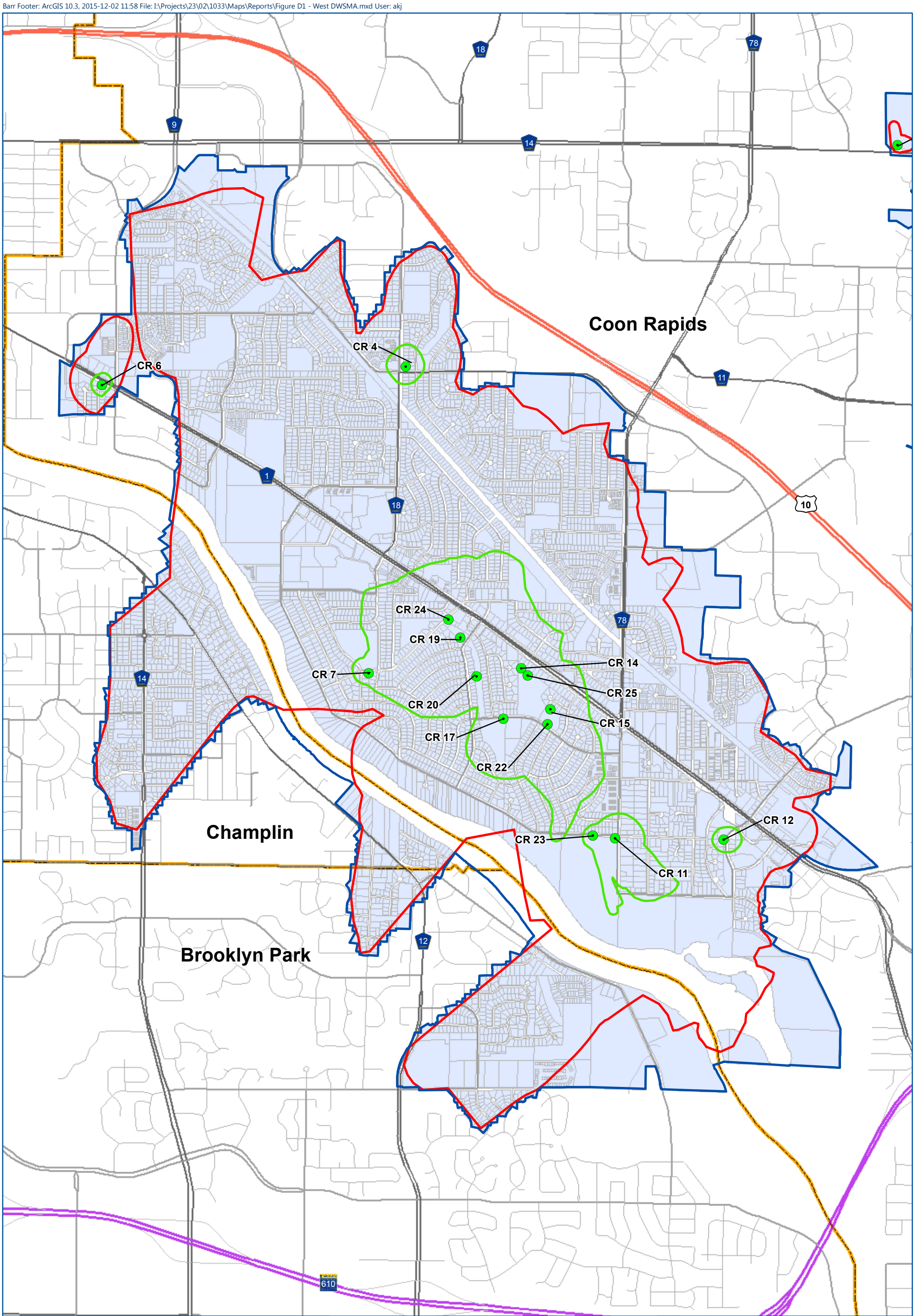
[1] Residuals calculated for the 220 Metro Model 3 calibration targets within Coon Rapids city limits only

[2] Residual = measured head - modeled head

Appendix D

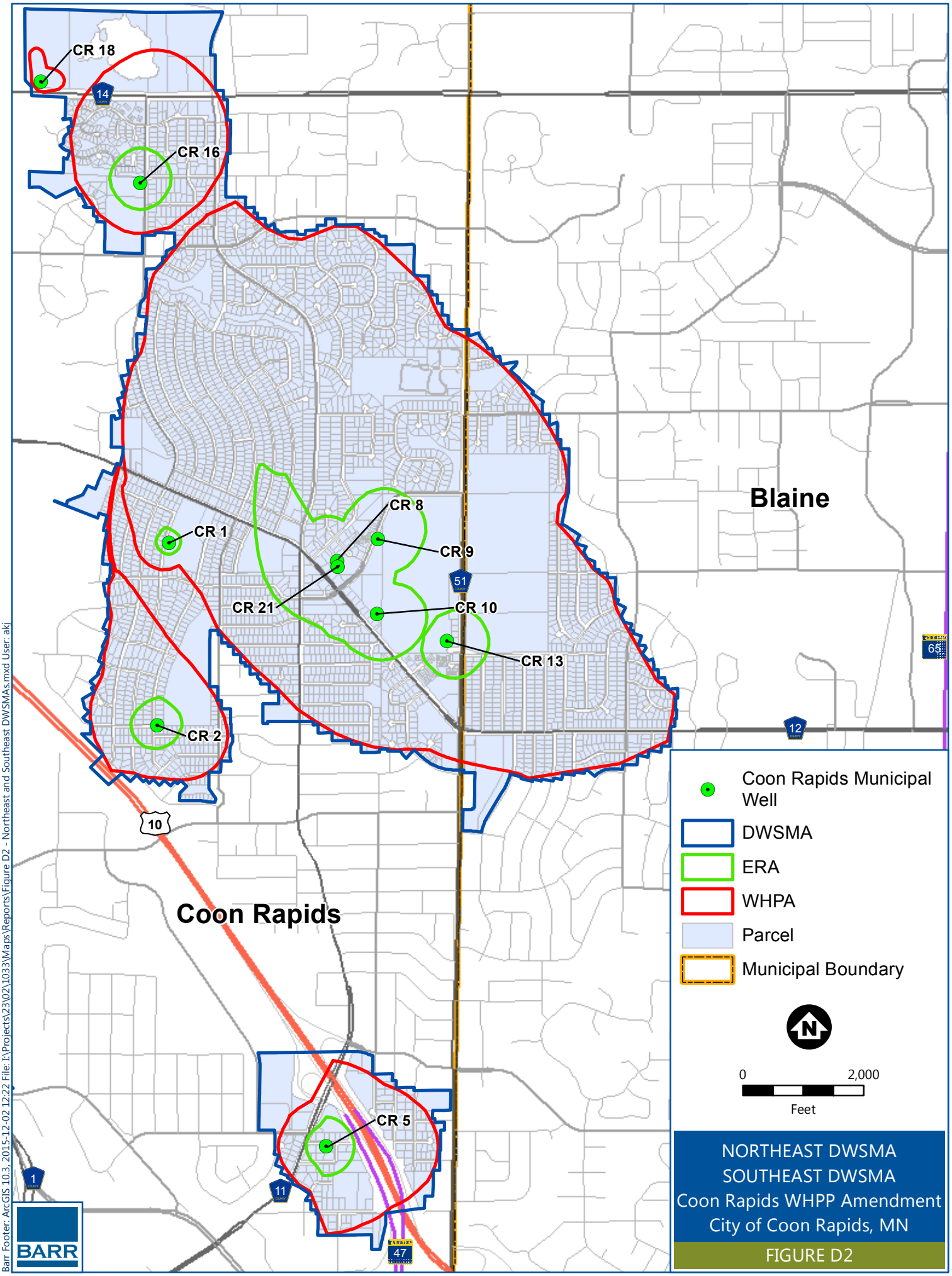
1:24,000 DWSMA Maps

Barr Footer: ArcGIS 10.3, 2015-12-02 11:58 File: I:\Projects\23\02\1033\Maps\Reports\Figure D1 - West DWSMA.mxd User: akj



WEST DWSMA
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE D1


CR 18
CR 16
CR 8
CR 9
CR 1
CR 21
CR 10
CR 13
CR 2
CR 5
Blaine
Coon Rapids
14
51
65
12
10
1
11
47
Coon Rapids Municipal Well
DWSMA
ERA
WHPA
Parcel
Municipal Boundary
N
0
2,000
Feet
NORTHEAST DWSMA
SOUTHEAST DWSMA
Coon Rapids WHPP Amendment
City of Coon Rapids, MN
FIGURE D2
BARR
Barr Footer: ArcGIS 10.3, 2015-12-02 12:22 File: I:\Projects\23\02\1033\Maps\Reports\Figure D2 - Northeast and Southeast DWSMAs.mxd User: akj

Appendix E

MDH Well Vulnerability Assessments

Adam K. Janzen

From: Djerrari, Amal (MDH) <amal.djerrari@state.mn.us>
Sent: Friday, October 23, 2015 15:18
To: Adam K. Janzen
Cc: John Greer; Djerrari, Amal (MDH)
Subject: RE: Coon Rapids Tritium

Hi Adam
I just received the tritium results for Coon Rapids
Amal

Well Id	Collection Date	Analyte	Result	PWS Id
202931	7/9/2015	TRITIUM	2.902362371	1020017
110460	7/9/2015	TRITIUM	1.763706017	1020017
474384	7/9/2015	TRITIUM	8.563001794	1020017
202929	7/9/2015	TRITIUM	2.581490857	1020017
202951	7/9/2015	TRITIUM	<.8	1020017
202937	7/9/2015	TRITIUM	6.833970803	1020017
110469	7/9/2015	TRITIUM	<.8	1020017

Amal M. Djerrari, Ph.D., P.E
Hydrologist

Minnesota Department of Health
Source Water Protection Unit
625 Robert Street North
St. Paul, MN 55164

ph: (651) 201-4577
Cell: (651) 245-1918
Fax: (651) 201-4701
e-mail: amal.djerrari@state.mn.us

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #1

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202926

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 13 | QUARTERS: BCCA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Multiple Aquifer	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	3	
Geologic Data From	:	Well Record	
Year Constructed	:	1957	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	220	5
Well Depth	:	462	
Casing grouted into borehole?		Unknown	0
Cement grout between casings?		Not applicable	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	600	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.05 12/16/1997	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		35
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS

ST. LAWRENCE - EAU CLAIRE

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #2

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202929

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 13 | QUARTERS: CCCC

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Multiple Aquifer	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	1	
Geologic Data From	:	Well Record	
Year Constructed	:	1957	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	226	5
Well Depth	:	685	
Casing grouted into borehole?		Unknown	0
Cement grout between casings?		Not applicable	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	600	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	.18 07/13/2004	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		35
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS
ST. LAWRENCE - SOLOR CHURCH

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

PWSID: 1020017 | TIER: 2
SYSTEM NAME: Coon Rapids | WHP RANK:
WELL NAME: Well #4 | UNIQUE WELL #: 00202972

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 9 | QUARTERS: DCCC

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	1	
Geologic Data From	:	Well Record	
Year Constructed	:	1960	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	233	5
Well Depth	:	605	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	600	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	.46 07/08/2013	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		35
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE
Vulnerability Overridden	:		

COMMENTS

NITRATE DATA FROM PWSD 1989, 8/75 SAMPLE Low rating is based on the thickness of the St. Lawrence that is grouted off. Log was not descriptive enough to assess the glacial deposits.

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #5

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202951

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 25 | QUARTERS: ACBB

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Low	15
L Score	:	4	
Geologic Data From	:	Well Record	
Year Constructed	:	1961	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	242	5
Well Depth	:	695	
Casing grouted into borehole?		Unknown	0
Cement grout between casings?		Unknown	5
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	900	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.4	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		35
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE
Vulnerability Overridden	:		

COMMENTS
Low score is based on the thickness of the St. Lawrence that is sealed off.

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

PWSID: 1020017 | TIER: 2
SYSTEM NAME: Coon Rapids | WHP RANK:
WELL NAME: Well #6 | UNIQUE WELL #: 00202937

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 17 | QUARTERS: BBAA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Tunnel City Group	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	2	
Geologic Data From	:	Well Record	
Year Constructed	:	1960	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	118	10
Well Depth	:	158	
Casing grouted into borehole?		Unknown	0
Cement grout between casings?		Not applicable	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1050	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<1	0
Maximum tritium detected	:	14.9 11/08/1999	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		50
Wellhead Protection Vulnerability Rating	:		VULNERABLE

Vulnerability Overridden :

COMMENTS
NITRATE DATA FROM PWSD 1989, 8/75 SAMPLE

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #7

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202943

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 21 | QUARTERS: BDAC

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	3	
Geologic Data From	:	Well Record	
Year Constructed	:	1964	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	189	10
Well Depth	:	632	
Casing grouted into borehole?		Unknown	0
Cement grout between casings?		Unknown	5
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1050	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.4	0
Maximum tritium detected	:	1.1 11/08/1999	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		55
Wellhead Protection Vulnerability Rating	:		VULNERABLE

Vulnerability Overridden :

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #8

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202932

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 13 | QUARTERS: ACCD

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	1	
Geologic Data From	:	Data Inferred From Nearby Wells	
Year Constructed	:	1965	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	283	5
Well Depth	:	700	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1000	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<1	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		35
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS
NITRATE DATA FFROM PWSD 1989, 8/75 SAMPLE. Low rating is taken from the log of well #2 (202929).

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #9

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202931

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 13 | QUARTERS: ACCD

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Eau Claire	
DNR Geologic Sensitivity Rating	:	Very low	10
L Score	:	10	
Geologic Data From	:	Data Inferred From Nearby Wells	
Year Constructed	:	1969	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	294	5
Well Depth	:	500	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1000	10
Pathogen Detected?			NOT VULNERABLE
Surface Water Characteristics?			NOT VULNERABLE
Maximum nitrate detected	:	<.4	NOT VULNERABLE
Maximum tritium detected	:	<.8 04/21/1997	NOT VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		25
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE
Vulnerability Overridden	:		

COMMENTS
Very low rating is based on the log for well #2 (202931).

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #10

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202930

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 13 | QUARTERS: DABC

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Very low	10
L Score	:	10	
Geologic Data From	:	Data Inferred From Nearby Wells	
Year Constructed	:	1970	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	272	5
Well Depth	:	684	
Casing grouted into borehole?		Unknown	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1000	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<1	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		25
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS

NITRATE DATA FROM PWSD 1989, 8/75 SAMPLE NITRATE DATA FROM PWSD 1989, 7/80 SAMPLE NITRATE DATA FROM PWSD 1989, 6/84 SAMPLE NITRATE DATA FROM PWWSD 1989, 7/79 SAMPLE Very low rating is based on well #13 and the presence of the St. Lawrence confining layer.

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #11

TIER: 2
WHP RANK:
UNIQUE WELL #: 00202965

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 27 | QUARTERS: BAAA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Tunnel City-Wonewoc	
DNR Geologic Sensitivity Rating	:	Very low	0
L Score	:	4	
Geologic Data From	:	Well Record	
Year Constructed	:	1972	
Construction Method	:	Rotary/Drilled	0
Casing Depth	:	189	10
Well Depth	:	421	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Not applicable	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1100	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.4	0
Maximum tritium detected	:	2.7 06/08/2010	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		30
Wellhead Protection Vulnerability Rating	:		VULNERABLE
Vulnerability Overridden	:		

COMMENTS
NITRATE DATA FROEM PWSD 1989, 10/85 SAMPLE. Previous tritium result 7.2 on 11/08/1999.

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #12

TIER: 2
WHP RANK:
UNIQUE WELL #: 00168721

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 27 | QUARTERS: AAAA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Very low	10
L Score	:	9	
Geologic Data From	:	Well Record	
Year Constructed	:	1975	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	208	5
Well Depth	:	604	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	850	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.4	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		25
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #13

TIER: 2
WHP RANK:
UNIQUE WELL #: 00168720

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 13 | QUARTERS: DADD

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Very low	10
L Score	:	10	
Geologic Data From	:	Well Record	
Year Constructed	:	1977	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	395	5
Well Depth	:	693	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1000	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.4	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		25
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #14

TIER: 2
WHP RANK:
UNIQUE WELL #: 00110460

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 22 | QUARTERS: BCBB

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Medium	25
L Score	:	0	
Geologic Data From	:	Well Record	
Year Constructed	:	1977	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	328	5
Well Depth	:	613	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1000	10
Pathogen Detected?			NOT VULNERABLE
Surface Water Characteristics?			NOT VULNERABLE
Maximum nitrate detected	:	<.4	NOT VULNERABLE
Maximum tritium detected	:	<.8 11/08/1999	NOT VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		40
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #15

TIER: 2
WHP RANK:
UNIQUE WELL #: 00110461

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 22 | QUARTERS: BCDD

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Franconia-Mt. Simon	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	1	
Geologic Data From	:	Well Record	
Year Constructed	:	1976	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	225	5
Well Depth	:	615	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1300	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.4	0
Maximum tritium detected	:	1 11/08/1999	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		45
Wellhead Protection Vulnerability Rating	:		VULNERABLE

Vulnerability Overridden :

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #16

TIER: 2
WHP RANK:
UNIQUE WELL #: 00161413

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 11 | QUARTERS: ADAA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Wonewoc-Mt.Simon	
DNR Geologic Sensitivity Rating	:	Very low	15
L Score	:	5	
Geologic Data From	:	Well Record	
Year Constructed	:	1981	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	395	5
Well Depth	:	653	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1050	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.05 08/02/1994	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		40
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE

Vulnerability Overridden :

COMMENTS
L=5 Based on 58 feet of St. Lawrence Formation

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #17

TIER: 2
WHP RANK:
UNIQUE WELL #: 00150357

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 21 | QUARTERS: DAAA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Quaternary Buried Artesian	
DNR Geologic Sensitivity Rating	:	Medium	25
L Score	:	0	
Geologic Data From	:	Well Record	
Year Constructed	:	1981	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	81	10
Well Depth	:	121	
Casing grouted into borehole?		No	0
Cement grout between casings?		Not applicable	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1000	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.4	0
Maximum tritium detected	:	2 06/08/2010	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		45
Wellhead Protection Vulnerability Rating	:		VULNERABLE
Vulnerability Overridden	:		

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #18

TIER: 2
WHP RANK:
UNIQUE WELL #: 00110469

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 2 | QUARTERS: DCDC

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Mt. Simon	
DNR Geologic Sensitivity Rating	:	Very low	0
L Score	:	18	
Geologic Data From	:	Well Record	
Year Constructed	:	1986	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	575	0
Well Depth	:	637	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Unknown	5
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1000	10
Pathogen Detected?			NOT VULNERABLE
Surface Water Characteristics?			NOT VULNERABLE
Maximum nitrate detected	:	<.4	NOT VULNERABLE
Maximum tritium detected	:	<.8 04/21/1997	NOT VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	A	-20
Wellhead Protection Score	:		-5
Wellhead Protection Vulnerability Rating	:		NOT VULNERABLE
Vulnerability Overridden	:		

COMMENTS

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

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PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #19

TIER: 2
WHP RANK:
UNIQUE WELL #: 00110475

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 16 | QUARTERS:

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Quaternary Buried Artesian	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	3	
Geologic Data From	:	Well Record	
Year Constructed	:	1987	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	115	10
Well Depth	:	135	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Unknown	5
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1150	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	.53 07/08/2014	0
Maximum tritium detected	:	36.7 07/16/1991	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	M	0
Wellhead Protection Score	:		55
Wellhead Protection Vulnerability Rating	:		VULNERABLE

Vulnerability Overridden :

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #20

TIER: 2
WHP RANK:
UNIQUE WELL #: 00420956

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 21 | QUARTERS: ADBD

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Quaternary Buried Artesian	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	1	
Geologic Data From	:	Well Record	
Year Constructed	:	1988	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	95	10
Well Depth	:	135	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1100	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	.35 07/08/2014	0
Maximum tritium detected	:	6.9 06/08/2010	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		50
Wellhead Protection Vulnerability Rating	:		VULNERABLE
Vulnerability Overridden	:		Jim Walsh

COMMENTS

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MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #21

TIER: 2
WHP RANK:
UNIQUE WELL #: 00474384

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 13 | QUARTERS: ACCD

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Quaternary Buried Artesian	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	1	
Geologic Data From	:	Well Record	
Year Constructed	:	1990	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	170	10
Well Depth	:	203	
Casing grouted into borehole?		Unknown	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	900	10
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.05 07/07/2014	0
Maximum tritium detected	:	11.5 04/21/1997	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		40
Wellhead Protection Vulnerability Rating	:		VULNERABLE

Vulnerability Overridden :

COMMENTS

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

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PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #22

TIER: 2
WHP RANK:
UNIQUE WELL #: 00474385

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 22 | QUARTERS: CBAA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Quaternary Buried Artesian	
DNR Geologic Sensitivity Rating	:	Medium	25
L Score	:	0	
Geologic Data From	:	Well Record	
Year Constructed	:	1990	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	80	10
Well Depth	:	105	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Not applicable	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	250	5
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	.07 09/23/2014	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		40
Wellhead Protection Vulnerability Rating	:		VULNERABLE
Vulnerability Overridden	:		Jim Walsh

COMMENTS
Vulnerable because of tritium in Well 20.

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #23

TIER: 2
WHP RANK:
UNIQUE WELL #: 00463020

COUNTY: Anoka | TOWNSHIP NUMBER: 31 | RANGE: 24 W | SECTION: 27 | QUARTERS: BAA

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Quaternary Buried Artesian	
DNR Geologic Sensitivity Rating	:	Medium	25
L Score	:	0	
Geologic Data From	:	Well Record	
Year Constructed	:	1991	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	93	10
Well Depth	:	128	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Unknown	5
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	250	5
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.05 09/23/2014	0
Maximum tritium detected	:	7.7 06/08/2010	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		45
Wellhead Protection Vulnerability Rating	:		VULNERABLE
Vulnerability Overridden	:		

COMMENTS
Previous tritium result 21.6 TU on 04/21/1997.

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #24

TIER: 2
WHP RANK:
UNIQUE WELL #: 00674478

COUNTY: Anoka | TOWNSHIP NUMBER: | RANGE: | SECTION: | QUARTERS:

CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Tunnel City-Wonewoc	
DNR Geologic Sensitivity Rating	:	Medium	25
L Score	:	0	
Geologic Data From	:	Well Record	
Year Constructed	:	2003	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	241	5
Well Depth	:	388	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1150	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.05 07/08/2014	0
Maximum tritium detected	:	7.7 07/15/2010	VULNERABLE
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		50
Wellhead Protection Vulnerability Rating	:		VULNERABLE

Vulnerability Overridden :

COMMENTS

MINNESOTA DEPARTMENT OF HEALTH
SECTION OF DRINKING WATER PROTECTION
SWP Vulnerability Rating

625 Robert St. N. St. Paul MN 55155
P.O. Box 64975 St. Paul MN 55164 - 0975

PWSID: 1020017
SYSTEM NAME: Coon Rapids
WELL NAME: Well #25

TIER: 2
WHP RANK:
UNIQUE WELL #: 00674479

COUNTY: Anoka | TOWNSHIP NUMBER: | RANGE: | SECTION: | QUARTERS:

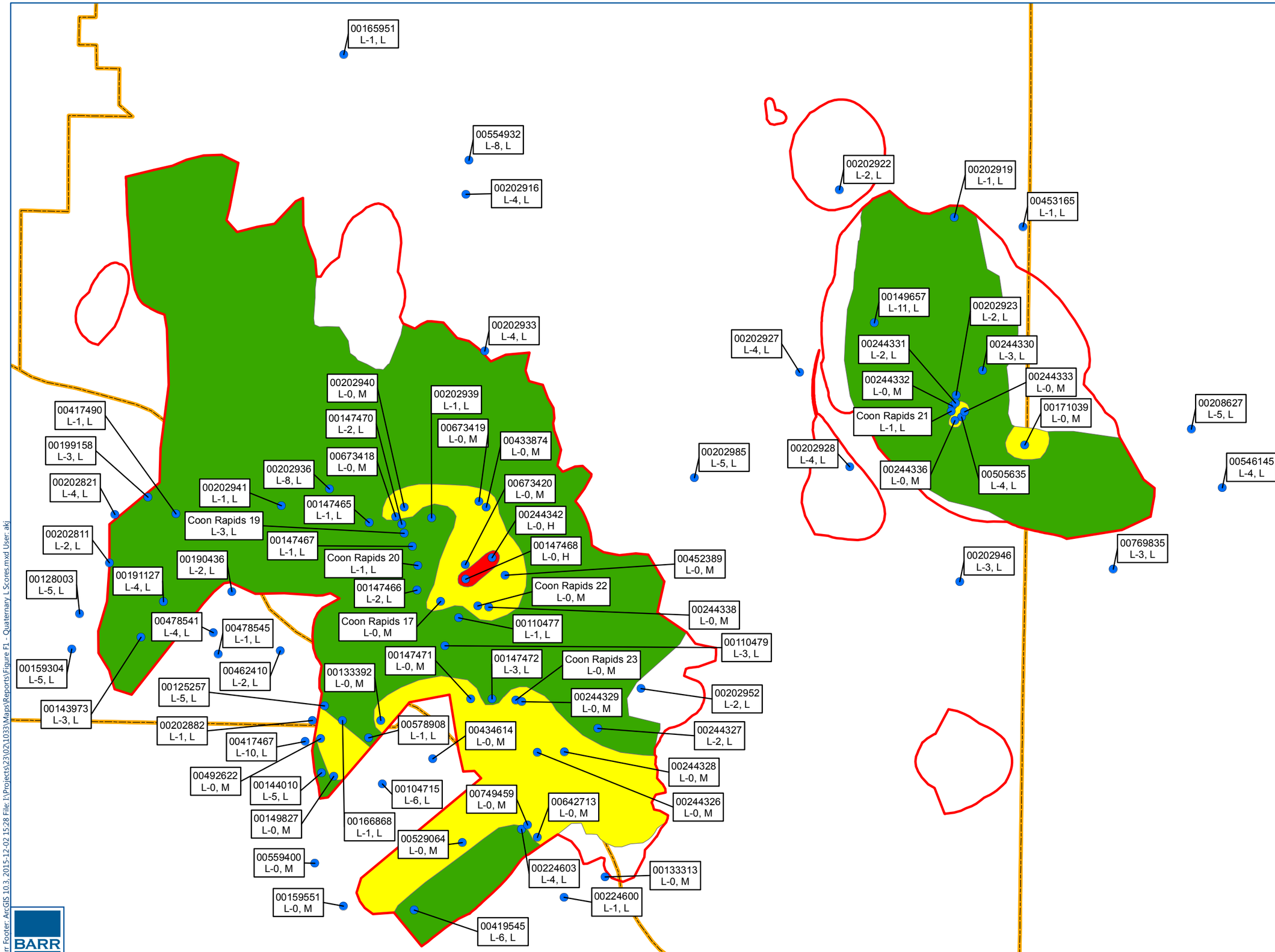
CRITERIA		DESCRIPTION	POINTS
Aquifer Name(s)	:	Tunnel City-Wonewoc	
DNR Geologic Sensitivity Rating	:	Low	20
L Score	:	3	
Geologic Data From	:	Well Record	
Year Constructed	:	2003	
Construction Method	:	Cable Tool/Bored	0
Casing Depth	:	229	5
Well Depth	:	388	
Casing grouted into borehole?		Yes	0
Cement grout between casings?		Yes	0
All casings extend to land surface?		Yes	0
Gravel - packed casings?		No	0
Wood or masonry casing?		No	0
Holes or cracks in casing?		Unknown	0
Isolation distance violations?			0
Pumping Rate	:	1125	20
Pathogen Detected?			0
Surface Water Characteristics?			0
Maximum nitrate detected	:	<.05 07/08/2014	0
Maximum tritium detected	:	Unknown	0
Non-THMS VOCs detected?			0
Pesticides detected?			0
Carbon 14 age	:	Unknown	0
Wellhead Protection Score	:		45
Wellhead Protection Vulnerability Rating	:		VULNERABLE

Vulnerability Overridden :

COMMENTS
L=3 Based on 30 feet of St. Lawrence Formation

Appendix F

L-Score and Vulnerability Maps



Quaternary L Score Well

WHPA

Municipal Boundary

Geologic Sensitivity

Very High

High

Moderate

Low

Unique Number/Well Name
L score, Geol. Sens.

Geologic sensitivity shown only for areas where the capture zone from the Quaternary aquifer is the uppermost capture zone in the WHPA.

Note: Only Quaternary wells deeper than 80' used in the L score calculations. The shallowest Coon Rapids Well (20) is screened from 80-105' below ground surface.

N

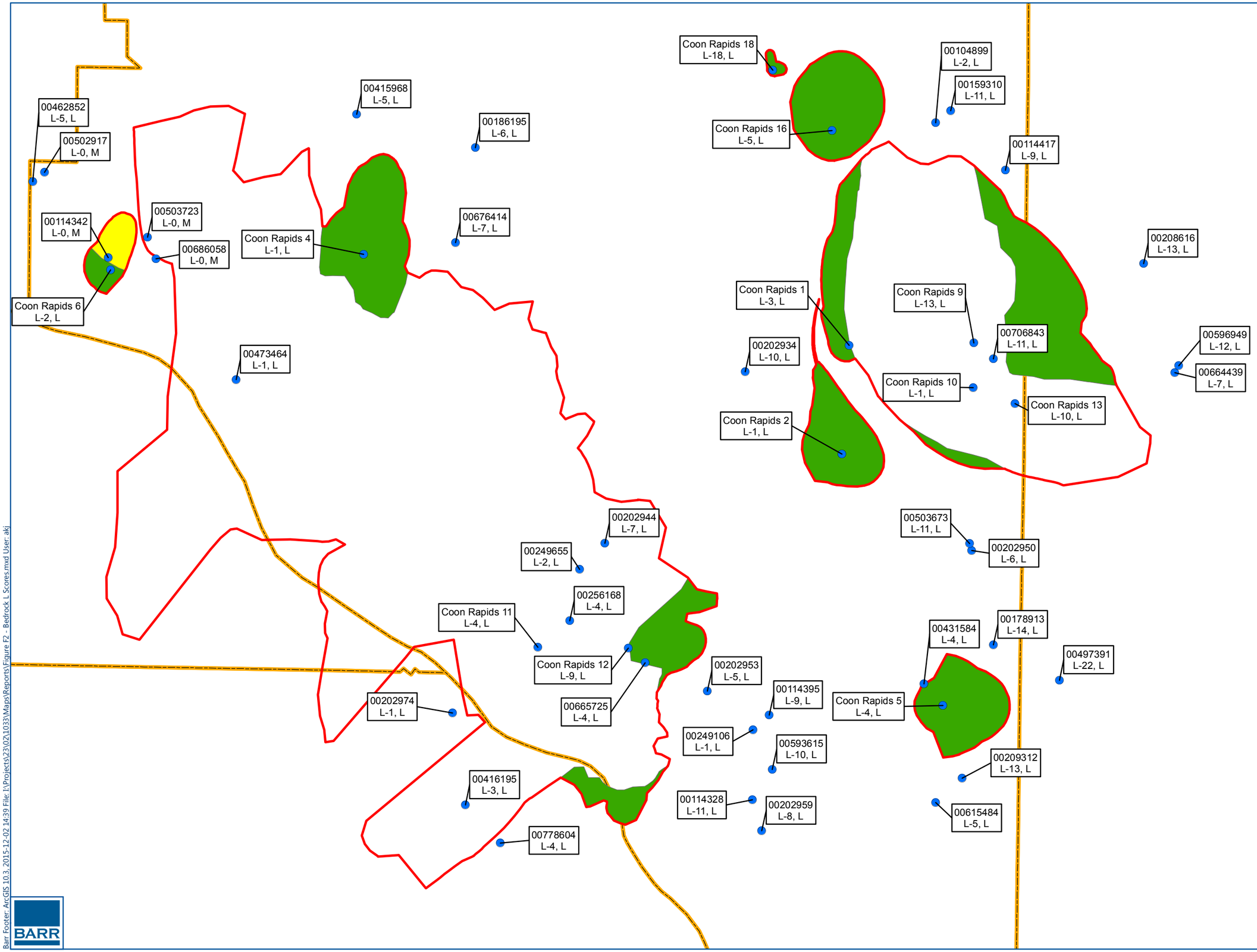
0 2,500
Feet

QUATERNARY L SCORES
AND GEOLOGIC SENSITIVITY
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE F1

BARR

Barr Footer: ArcGIS 10.3, 2015-12-02 15:28 File: I:\Projects\23\02\1033\Maps\Reports\Figure F1 - Quaternary L Scores.mxd User: akj



Bedrock L Score Well

WHPA

Municipal Boundary

Geologic Sensitivity

Very High

High

Moderate

Low

Unique Number/Well Name
L score, Geol. Sens.

Geologic sensitivity shown only for areas where the capture zone from a bedrock aquifer is the uppermost capture zone in the WHPA.

All L scores computed using only strata above the Tunnel City Group-Wonewoc Sandstone aquifer except at Coon Rapids 18, where all strata above the Mt. Simon aquifer were used.

0 2,500
Feet

BEDROCK L SCORES
AND GEOLOGIC SENSITIVITY
Coon Rapids WHPP Amendment
City of Coon Rapids, MN

FIGURE F2

BARR

Barr Footer: ArcGIS 10.3, 2015-12-02 14:39 File: I:\Projects\23\02\1033\Maps\Reports\Figure F2 - Bedrock L Scores.mxd User: akj

Appendix G

Groundwater Model Files and GIS Shapefiles

Appendix C

Data Elements Assessment

Appendix C

Data Elements Assessment

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C1.0 Data Elements Assessment

The data elements and their assessments required to be included in the Wellhead and Source Water Protection Plan amendment (WHPP) for the City of Coon Rapids (Public Water Supply 1020017) are discussed in this appendix. Data elements related to the physical environment, land use, water quantity, and water quality required for this WHPP for the City of Coon Rapids were specified in the October 14, 2016 Scoping 2 Decision Notice from the Minnesota Department of Health (MDH, 2016).

Three Drinking Water Supply Management Areas (DWSMAs) have been delineated for Coon Rapids that encompass the Wellhead Protection Areas (WHPAs) for the Coon Rapids water supply wells (Barr, 2016). The West DWSMA encompasses the WHPAs for Wells 4, 6, 7, 11, 12, 14, 15, 17, 19, 20, 22, 23, 24, and 15; the Northeast DWSMA encompasses the WHPAs for Wells 1, 2, 8, 9, 10, 13, 16, 18, and 21; and the Southeast DWSMA encompasses the Well 5 WHPA. The Southeast DWSMA is contained entirely within the Coon Rapids city limits while the Northeast DWSMA extends east into Blaine and the West DWSMA extends southwest into Champlin and Brooklyn Park in Hennepin County. Locations of the Coon Rapids DWSMAs are shown on Figure C-1.

C1.1 Physical Data Elements

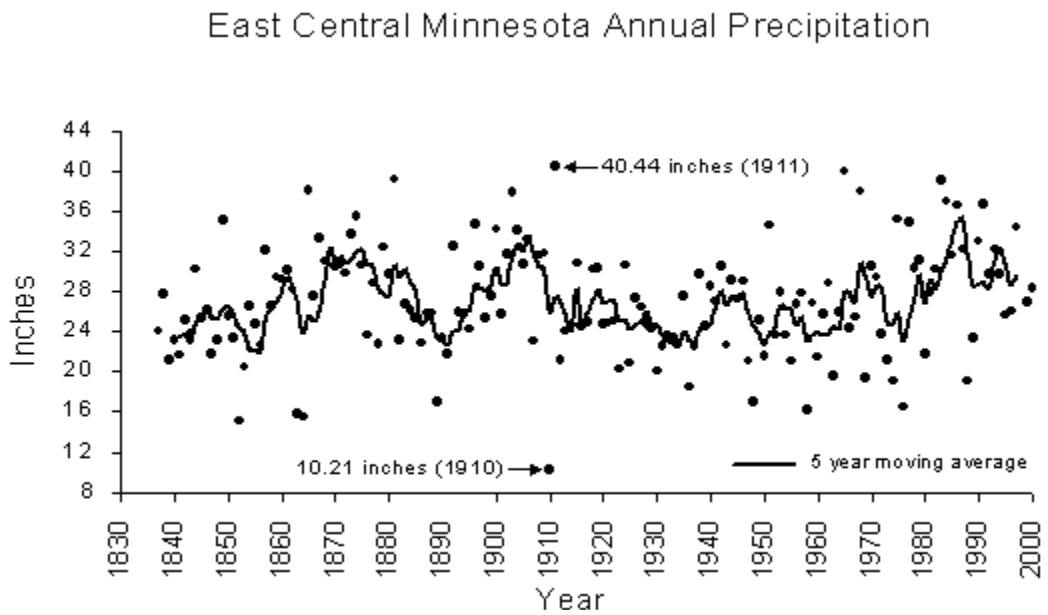
Physical data elements required to be considered for this Plan amendment are identified in the Scoping 2 Decision Notice (MDH, 2016). Per the Scoping 2 Decision Notice, precipitation, geology and hydrogeology, soils, and water resources data elements were required to be considered during development of the Plan.

C1.1.1 Precipitation

Management of the Coon Rapids DWSMAs must consider and reflect available precipitation information.

As shown in Attachment C-1, there were/are a number of precipitation gaging stations in Anoka County that reported measurements to the State Climatology Office during the period 2012-2016. In addition, there were/are a number of precipitation gaging stations in Hennepin County that reported measurements to the State Climatology Office during the period 2012-2016. Locations of these precipitation gaging stations are identified by township, range, and section in the Minnesota Climatology Working Group tables in Attachment C-1. These tables also show the monthly and annual precipitation measured at these stations in Anoka and Hennepin Counties for the period 2012 through 2016.

Annual precipitation in east-central Minnesota from the late 1830s to 2000 is shown in the following graph:



Source: Minnesota Dept. of Natural Resources website

The amount of precipitation affects recharge to the groundwater system and the potential for contaminant loading to the groundwater system. This is particularly important in areas of high aquifer vulnerability where the aquifer is not protected from infiltration of precipitation by significant confining units between the ground surface and the top of the source water aquifer. Recharge to the groundwater system affects the size of the WHPA. Recharge was included in the groundwater flow model used to identify the porous media flow portion of the WHPAs (e.g., Barr, 2016; Metropolitan Council, 2012 and 2014). In addition, the amount of precipitation also affects the amount of surface runoff. As noted in Barr (2016), the one of the Coon Rapids DWSMAs includes an area where aquifer vulnerability is classified as High but it was determined that it was not necessary to include surface water contribution areas in the delineations. (Surface water contribution areas are areas of higher topography from which surface runoff drains onto areas within the WHPA where aquifer vulnerability is classified as High.)

C1.1.2 Geology and Hydrogeology

Existing information on the geology and hydrogeology in the vicinity of Coon Rapids was used to define the extent of the source water aquifers used by the City, delineate the WHPAs, and to assess the vulnerability of the public water supply wells and the aquifers in the DWSMAs.

The regional conceptual hydrogeologic model is described in detail by Metropolitan Council (2009; 2014) and hydrogeologic conditions in the vicinity of Coon Rapids are discussed by Barr (2016). Information pertinent to the Coon Rapids area is summarized below.

The Quaternary-aged unconsolidated sediments that overlie the bedrock in Coon Rapids were deposited by multiple glacial advances during the Pleistocene Epoch (Meyer et al., 2013) and vary in thickness from approximately 90 to nearly 300 feet. The upper 30-50 feet of the Quaternary sediments are typically comprised of sand and gravel. The deeper sediments are comprised of discontinuous sequences of fine-grained sediments (i.e., clays and silts) interbedded with sands and gravels.

As shown on Figure C-2, the Coon Rapids DWSMAs are underlain by a complex buried bedrock valley network. The uppermost bedrock unit beneath the DWSMAs varies by location and ranges from the Jordan Sandstone to the Tunnel City Group. The reader is referred to Mossler (2012) for additional information on the details of the bedrock in the Coon Rapids area.

The regional groundwater flow system in the vicinity of Coon Rapids includes the following aquifers: Quaternary glacial drift deposits, Tunnel City Group and Wonewoc Sandstone (considered a single aquifer known as the Tunnel City-Wonewoc aquifer), and Mt. Simon Sandstone. The St. Lawrence Formation, which overlies the Tunnel City Group, is considered to be a regional aquitard but it can support domestic wells. The Eau Claire Formation aquitard hydraulically separates the Wonewoc Sandstone from the Mt. Simon Sandstone.

As shown in Table C-1, the Coon Rapids municipal water supply wells are completed in various aquifers including Quaternary sand and gravel, the Tunnel City-Wonewoc aquifer, and the Mt. Simon aquifer. These aquifers are also referred to in this Plan amendment as the source water aquifers.

The important bedrock hydrostratigraphic units relative to the Coon Rapids DWSMAs are described in more detail by Barr (2016).

Information regarding the geology and hydrogeology of the area was used to assess the vulnerability to contamination of the source water aquifers within the DWSMAs. The information is consistent with the classification of the susceptibility to contamination of the source water aquifers within the DWSMAs varying from Low to High depending upon location.

C1.1.3 Soils

Management of the Coon Rapids DWSMAs must consider and reflect available soil information.

Review of available information from the U.S. Department of Agriculture – Natural Resources Conservation Service SSURGO database (USDA-NRCS, 2012) indicates that there are a variety of surficial soil types within the DWSMAs and that these soils have a range of infiltration characteristics. Surficial soil types within the DWSMAs are shown on Figure C-3 and surficial soil permeability is shown on Figure C-4. While available data from the Minnesota Board of Water and Soil Resources (BWSR) indicates there are small areas of high soil erosion risk within the West and Northeast DWSMAs, the City is not aware of any eroding lands causing sedimentation problems within the DWSMAs.

Based on the aquifer vulnerability assessment results, issues related to surficial soil characteristics or the surficial soil types may potentially have an effect on the management strategies developed for the DWSMAs. Surficial geologic materials in the City of Coon Rapids include clay, silt, sand, gravel, and porous soils. As indicated on Figure C-4, most of the surficial soils in the DWSMAs have a high or moderate infiltration rate. The City is well aware that land development and land use activity may have an impact on the source water aquifers, particularly in areas of high aquifer vulnerability within the DWSMAs, due to infiltration through the permeable soil types.

C1.1.4 Water Resources

Management of the Coon Rapids DWSMAs must consider and reflect available water resources information.

Surface water resources must be evaluated to determine if they could potentially apply to this Plan.

The Mississippi River watershed is the only major watershed that overlaps the Coon Rapids DWSMAs. The City of Coon Rapids lies within the boundaries of the area administered by the Coon Creek Watershed District (CCWD). The West DWSMA extends into the area administered by the West Mississippi Watershed Management Organization (WMWMO). Flow directions in and boundaries of the watersheds in the area do not indicate any reasons for concern.

Surface water bodies within or that cross the DWSMAs include lakes, ponds, river/streams, stormwater basins, and wetlands. There are water bodies in the DWSMAs that meet the definition of public waters in Minnesota Statutes Section 103G.005, subdivision 15. In addition, there are water bodies in the DWSMAs that have shoreland classifications pursuant to Minnesota Statutes Sections 103F.201 to 103F.221 and consistent with Minnesota Rules part 6120.3300. Title 11 of the Coon Rapids City Code regulates land development, including in environmentally sensitive areas. No streams cross the portion of the West DWSMA in which the source water aquifer vulnerability has been classified as High. A small portion of the Northeast DWSMA near McKay Creek Lake is in FEMA-designated Flood Zone A. There are areas in the West and Northeast DWSMAs that are in FEMA-designated Flood Zone AE. Floodplains in Coon Rapids are addressed in Title 11, Chapter 11-1100 of the Coon Rapids City Code. Coon Rapids does not currently have an appropriation permit to withdraw water from any surface water feature within the DWSMAs. Water quality management for the surface water bodies in Coon Rapids is addressed in the City's Storm Water Pollution Prevention Plan.

There are wetlands within the DWSMAs. Approximately one-half of these wetlands within the DWSMAs are small in size (i.e., <1 acre) and are not definable by the Minnesota Statute for Public Waters Wetlands (i.e., Section 103G.221 to 103G.2373). Locations of wetlands in Coon Rapids are identified in the City's Wetland Management Plan (WSB, 2004).

Per the October 14, 2016 Scoping 2 Decision Notice from the MDH, submission of data elements related to water resources are not required for this WHPP amendment.

Geologic conditions in and around the City's DWSMAs result in the aquifer vulnerability being classified as High in approximately 0.4% of the area within the West DWSMA. No areas in which aquifer vulnerability is classified as High are present in the Northeast DWSMA or Southeast DWSMA. Based on the aquifer vulnerability assessment results, it considered to be possible that issues related to surface water resources could have some effect on the water quality in the source water aquifers and should be considered in the development of the management strategies for the DWSMAs, particularly in areas where aquifer vulnerability is classified as High. The quality of the source water is dependent on the quality of its recharge. Recharge sources/mechanisms are noted above. Existing surface water management programs in the DWSMAs address water quality and, therefore, reduce the potential negative effects that surface

infiltrating waters may have on the source water aquifer. The City believes that existing surface water management programs are adequate to address surface water quality in the DWSMAs and to ensure that aquifer recharge and water availability do not become an issue for the City.

C1.2 Land Use Data Elements

The Scoping 2 Decision Notice required land use data elements to be considered during development of this Plan amendment. Land use and public utility services are within the DWSMAs are discussed in this section. In Part 1 of this Plan amendment, property parcel boundaries were used in the delineation of the DWSMAs (Barr, 2016).

C1.2.1 Current Land Use

Figure C-5 shows the current (year 2010, with minor modifications based on newer information) land use map within the DWSMAs. Numerous land uses are found within the DWSMAs. Land uses in the DWSMAs that cover 1% or more of the area in the DWSMAs include residential of various types, park/recreational/preserve, open water, institutional, retail and other commercial, undeveloped land, and major highways. As shown on Figure C-5, residential land use, which includes Single Family (detached and attached), Multifamily, and Manufactured Housing Parks, is the most common land use occupying approximately 61% of the area in the DWSMAs. Figure C-6 shows the current Coon Rapids zoning within the DWSMAs. Zoning maps for Blaine, Brooklyn Park, and Champlin are presented in Attachment C-4.

C.1.2.1.1 Potential Contaminant Source Inventory

A potential contaminant source inventory (PCSI) was conducted within the DWSMAs. As shown on Figure C-1, the aquifer vulnerability in the DWSMAs includes the following classifications: Low, Moderate, and High. In the West DWSMA, approximately 94.5% of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 5% of the West DWSMA and High in approximately 0.5% of the West DWSMA. In the Northeast DWSMA, approximately 99% of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 1% of the Northeast DWSMA. The aquifer vulnerability within the entire Southeast DWSMA around Coon Rapids Well 5 is classified as Low.

Per the October 14, 2016 Scoping 2 Decision Notice and MDH policy, in the areas where aquifer vulnerability is classified as High the types of potential contaminant point sources inventoried include chemical storage sites, potential Class V well locations (per the U.S. EPA, Class V wells include cesspools, large-scale septic systems serving more than 20 people, or potential automotive maintenance waste disposal wells/pits), hazardous waste generators, individual sewage treatment systems (ISTS; a.k.a., septic systems), storage tank sites (registered storage tanks and leaking underground storage tank sites), pipeline facilities, and wells. In areas where the aquifer vulnerability is classified as Moderate the types of potential contaminant point sources inventoried include above-ground and underground storage tanks, leaking underground storage tank (LUST) locations, potential Class V well locations, pipeline facilities, chemical storage locations, spills/potential contamination sites, and wells. In areas where the aquifer vulnerability is classified as Low the types of potential contaminant point sources inventoried include potential Class V well locations and wells.

Information on potential contaminant source locations was obtained from the following sources: Anoka County, Minnesota Department of Agriculture (MDA), Minnesota Department of Health (MDH), Minnesota Department of Natural Resources (MDNR), Minnesota Department of Public Safety (MnDPS), Minnesota Geological Survey (MGS), Minnesota Office of Pipeline Safety (MnOPS), Minnesota Pollution Control Agency (MPCA), Metropolitan Council, Minnesota Geospatial Information Office (MGIO), National Pipeline Mapping System, and U.S. Environmental Protection Agency (USEPA) databases. These data sources are summarized in Table C-2. Information from the various sources was compared to identify overlaps/duplications. In keeping with the Wellhead Protection Rules and MDH policy, all identified potential contaminant source locations within the old Coon Rapids DWSMA limits have been verified. Furthermore, all potential contaminant source locations identified in the areas between the boundaries of the old and new Coon Rapids DWSMAs were verified during preparation of this Plan amendment. As part of location verification locations identified during the PCSI that mapped incorrectly were corrected to the extent possible based on available data. For future updates of this Plan, the City will access available data sources and maintain as accurate and up to date a potential contaminant source database as possible in its wellhead protection file.

A potential contaminant source inventory for in the Inner Wellhead Management Zone (IWMZ) around each of the municipal supply wells was completed in June, 2016. Copies of the IWMZ inventory reports are presented in Attachment C-2.

Properties identified as potential sources of contamination during the PCSI include properties with wells, potential Class V well locations, storage tanks, LUST sites, and chemical storage. Information on these properties is presented in Tables C-3 through C-6 as follows:

- Wells – Table C-3
- Potential Class V wells – Table C-4
- Storage tanks and LUST sites – Table C-5
- Chemical Storage Sites – Table C-6

The potential contaminant source properties identified during the inventory include various commercial, institutional, government, and storage tank sites as well as residences. All of the LUST sites identified within the DWSMAs have been closed by the MPCA. Locations of potential contaminant sources are shown on Figures C-7 through C-10 as follows:

- Well locations – Figure C-7
- Potential Class V well locations – Figure C-8
- Storage tank and LUST site locations – Figure C-9
- Chemical storage site locations – Figure C-10

These potential contaminant sources have been considered in the development of the management strategies for the DWSMAs.

Potential contaminant source locations were verified, to the extent possible, during preparation of this Plan amendment (Tables C-3 through C-6). Verification procedures used included matching mapped locations with addresses on MDH Well Records or State/County-issued permits or in County/State/Federal databases, published business addresses, property parcel addresses, local knowledge of City staff, or information from City files (note that not all verification procedures were used for each type of potential

contaminant source). The data tables indicate the status of verification for each potential contaminant source location. New information developed on contaminant sources in the future will be verified as they are discovered as part of the WHPP implementation.

C.1.2.1.1.1 Wells

Wells located within the DWSMAs, in particular wells completed in or below the source water aquifers from which the City's wells pump have the potential for being a pathway via which contamination could more rapidly reach a source water aquifer and the Coon Rapids municipal wells; especially if the wells were not properly installed or have not been adequately maintained. Data obtained from the Minnesota County Well Index (CWI) and the MDNR Permit and Reporting System (MPARS) during the PCSI indicate that there are 207 wells (this number includes 193 active wells, two inactive wells, and 12 wells whose status is unknown) within the Coon Rapids DWSMAs (Figure C-7). Twenty-five of the wells are the Coon Rapids municipal water supply wells. Table C-3 lists the wells that were identified in the DWSMAs and indicates the aquifer in which each well is completed (if known), the date the well was completed (if known), and the status of the well (if known).

During the search for wells in the DWSMAs, 921 sealed wells were identified. Per direction from the MDH, the sealed well locations are not included in the PCSI. However, since an improperly sealed well could act as a pathway for contaminants to migrate from the surface into the groundwater system the City believes it is important to maintain a record of sealed well locations. Therefore, sealed well locations in the DWSMAs are shown in Attachment C-3.

As indicated in Table C-3, uses for the 193 known active wells in the DWSMAs include domestic (109), non-Coon Rapids public water supply (7), irrigation (11), and commercial (5) along with other uses. Twenty-eight of the active wells in the DWSMAs (not counting the Coon Rapids municipal supply wells) extend into or through the Tunnel City-Wonewoc aquifer (18 of Coon Rapids' wells pump from this aquifer). In addition, 58 active non-City wells are open to unconsolidated sand and gravel above the bedrock. As indicated in Table C-3, seven Coon Rapids wells pump from an unconsolidated, confined sand and gravel aquifer above the bedrock. Wells located within the DWSMAs, particularly those wells completed in or below the source water aquifers, have the potential to provide a pathway for contamination to reach the source water aquifer(s) and the Coon Rapids municipal water supply wells.

Available information from the MPARS database indicates that there are 37 high capacity wells within a zone that includes the Coon Rapids DWSMAs and extends one mile beyond the DWSMA boundaries (this number does not include the 24 Coon Rapids municipal supply wells). High capacity wells are defined as wells that pump more than 1,000,000 gallons per year or more than 10,000 gallons per day. Owners of these wells are required to obtain a groundwater appropriation permit from the MDNR. High capacity wells outside of the DWSMAs were identified because changes in operation of these wells could, potentially, affect the DWSMA boundaries. Of these 37 non-Coon Rapids wells, nine are used for municipal water supply, 19 are used for some type of irrigation, six are used for industrial processing, two are used for water level maintenance, and one is identified as a construction dewatering well (Table C-7). As shown in Table C-7, 28 of the non-Coon Rapids high capacity wells extend into or through the Tunnel City Group.

C.1.2.1.1.2 Potential Class V Well Locations

An inventory of locations where Class V wells may be present, or may have been present, within the DWSMAs was done as part of the PCSI. A typical land use associated with the presence of Class V wells is automobile service stations and repair shops. As defined by the U.S. Environmental Protection Agency, cesspools and large-scale septic systems that serve more than 20 people also are included in the Class V well classification. During the PCSI, it was determined that there are 23 separate property parcels where Class V wells may be present, or may have been present, based on the type of business that is or had operated there or the use of the property (see Table C-4 and Figure C-8). Twenty of these properties are in the West DWSMA and the other three are in the Northeast DWSMA (Figure C-8). For all 23 properties, the assessment of potential for presence of a Class V well is due to the properties' association with automobile repair. MDH did not require that the City determine if Class V wells are actually present on any of these properties. Results of the location verification are summarized in Table C-4.

C.1.2.1.1.3 Storage Tanks

The PCSI identified 54 properties within the portions of the DWSMAs in which aquifer vulnerability is classified as Moderate on which storage tanks are or have been located (see Table C-5 and Figure C-9). These properties include a total of 186 current or former storage tanks. Ninety-eight of the tanks have been removed (Table C-5). Products stored in the remaining storage tanks vary from site to site and include various fuels, oils, hydraulic fluid, and unspecified substances. As indicated in Table C-5, releases from the tanks were reported at 33 of the properties. Available information indicates that the MPCA has closed all of the sites for which releases were reported.

C.1.2.1.1.4 Chemical Storage Sites

The PCSI identified 23 properties within the portions of the DWSMAs where aquifer vulnerability is classified as Moderate on which chemical storage occurs (Table C-6 and Figure C-10). Five of these properties are City wells (Wells 6, 7, 12, 16, and 18) and two of the properties are the City's water treatment plants. Water treatment chemicals are stored at the properties.

C1.2.2 Historical Land Use

The area around Coon Rapids was organized as Anoka Township in 1857. Initially, the Township included Coon Creek (what is now the City of Coon Rapids) as well as what is now the City of Anoka. Agriculture was the main economic activity in the area at the time. The first railway service to Coon Creek began in 1863 (Gilund, 1985). Brick manufacturing began in Coon Creek around 1880. The Village of Coon Rapids was incorporated in 1952. The Village of Coon Rapids became the City of Coon Rapids in 1959.

In 1960 the population of Coon Rapids was 14,931. By 1980 the population of Coon Rapids had grown to 35,826 and to 52,978 by 1990. Population growth in Coon Rapids slowed after 1990. The 2010 census counted 61,476 people in Coon Rapids. The Metropolitan Council estimated the 2015 population of Coon Rapids to be 62,527. Additional information on the history of Coon Rapids can be found on the City's webpage http://www.ci.coon-rapids.mn.us/415/City-History and the Anoka County Historical Society webpage https://anokacountyhistory.org/history-of-anoka-county/history-of-coon-rapids/ .

Historical land use shown on Figure C-11 is based on pre-1984 land use data from the Metropolitan Council. As indicated on Figure C-11, the vast majority of the pre-1984 land use in the areas that fall within the limits of the DWSMAs was residential. Metadata associated with ArcView shapefiles of pre-1984 land use maps available from the Metropolitan Council indicate that the maps are not considered reliable for determining land use of individual properties. Based on available information, historical land uses that might significantly affect the management strategies for the DWSMAs that are not currently present within the DWSMAs were not identified.

While it is possible that buried features such as wells that were not properly sealed or unused underground storage tanks not listed in any available database could be present within the DWSMAs, available information does not suggest the presence of such features. Thus, there is no basis for a concerted search for such buried features within the DWSMAs. If any such, currently unknown, features are to be located in the future it would most likely occur only if they are encountered during development or redevelopment of a property.

C1.3 Public Utilities

Management of the DWSMAs in the City of Coon Rapids must consider and reflect available public utility services information.

Coon Rapids Wells 1 through 16, 24, and 25 have open-borehole completions. The bedrock aquifers in which these wells are open are shown in Table C-1. Coon Rapids Well 17 and Wells 19 through 23 are screened in the unconsolidated, confined Quaternary sand and gravel that overlies the bedrock. Well construction information for the Coon Rapids municipal wells is summarized in Table C-1. Copies of the MDH Well Records for these wells are presented in Appendix A.

C1.3.1 Pipelines

As shown on Figure C-12, natural gas pipelines cross the northwestern portion of the Northeast DWSMA. One natural gas pipelines is adjacent to the southern boundary of the Southeast DWSMA. There are no petroleum pipelines that cross the Coon Rapids DWSMAs. The City will rely on State/Federal oversight and the management programs of the pipeline owners for proper operation and maintenance of the pipelines and response to releases from the pipelines. The City will inform the pipeline owners of the proximity of their pipelines to the City's DWSMAs. To the extent possible, the City will support any response activities by these other entities in the event of a release from any of the pipelines within or near the DWSMAs.

C.1.3.2 Sewers

C.1.3.2.1 Sanitary Sewers

The trunk sanitary sewer system in Coon Rapids is shown on Figure C-13.

An improperly designed or maintained sanitary sewer system may increase the chance for the release of untreated sewage into environmentally sensitive areas such as protected wetlands, lakes, or rivers or allow infiltration of contaminants that could potentially reach the uppermost source water aquifer. The City of

Coon Rapids has an ongoing maintenance program to insure the integrity and proper operation of their sanitary sewer system. Additional measures in this Plan to address the sanitary sewer system is considered to be unnecessary.

C.1.3.2.2 Storm Sewers

Storm water management in Coon Rapids is described in the City's Comprehensive Storm Water Management Plan and Storm Water Pollution Prevention Plan. The City's storm sewer system is shown on Figure C-14. Title 13of the City Code addresses stormwater management in Coon Rapids.

In addition to the City's storm water management system, portions of the Anoka County ditch system cross the West and Northeast DWSMAs. A map showing the County ditch system is presented in Attachment C-4.

A municipal storm sewer and surface water drainage system plays a significant role in the management of storm water and can be an important part of management strategies developed for a wellhead protection plan. An improperly designed or maintained storm sewer and surface water drainage system may increase the chance for the spread of a contaminant into environmentally sensitive areas such as protected wetlands, lakes, or rivers or allow infiltration of contaminants that could potentially reach the uppermost source water aquifer. A surface water management program is in place in Coon Rapids. The City will rely on their existing surface water management program to address issues related to surface water. Therefore additional measures to address surface water in this Plan are considered to be unnecessary.

C1.4 Water Quantity Data Elements

Groundwater and surface water quantity are discussed in this section as required by the October 14, 2016 Scoping 2 Decision Notice from the MDH.

C1.4.1 Surface Water Quantity

As discussed above, surface water features within the DWSMAs include lakes, ponds, storm water basins, and wetlands. Surface water management is discussed in the City's Storm Water Pollution Prevention Plan. There are no active appropriations permits to withdraw water directly from any surface water feature within the DWSMAs. In addition, the City is not aware of any current water-use conflicts that impact surface water quantity in the vicinity of the DWSMAs. Therefore, measures in this Plan to address surface water quantity issues are considered to be unnecessary.

C1.4.2 Groundwater Quantity

The Coon Rapids municipal water supply system currently includes 24 wells. As shown in Table C-1, Wells 1 through 7, 12, 16, 18, 22 and 23 are used only seasonally. Under MDNR Appropriation Permit No. 1980-6139, the City of Coon Rapids currently has a permitted annual groundwater appropriation of 3.2 billion gallons per year (BGY). The permitted instantaneous total pumping rate for the Coon Rapids system is 26,575 gallons per minute (gpm) or approximately 38.3 million gallons per day (MGD).

The projected water use (i.e., pumpage) used to delineate the Coon Rapids WHPAs and DWSMAs was 3,758,131,000 gallons per year (Barr, 2016).

The City of Coon Rapids was incorporated in 1959. In 1960 the population of Coon Rapids was 14,931. By 1980 the population of Coon Rapids had grown to 35,826 and to 52,978 by 1990. Population growth in Coon Rapids slowed after 1990. The 2010 census counted 61,476 people in Coon Rapids. The Metropolitan Council estimated the 2015 population of Coon Rapids to be 62,527. The Metropolitan Council projects Coon Rapids' population to reach 64,800 in 2020 and 68,400 in 2030 (Metropolitan Council, 2015).

Water demand for the period 2004 through 2013 is presented in the City's Comprehensive Water System Plan (Bolton & Menk, 2014). Total annual volume pumped by the Coon Rapids municipal wells during the period 2010 through 2014 is presented in Part 1 of this Plan amendment (Barr, 2016). Between 2005 and 2015 Coon Rapids's water demand varied from year to year. During this period the population served increased by only 0.5%. The total annual water demand in 2015 was approximately 18% lower than the total demand in 2005. During the period 2005 through 2015, the total per capita/day water demand met by the City's water supply system ranged from approximately 104 gallons per capita/day (gpc/d) to approximately 144 gpc/d.

The City's Comprehensive Water System Plan (Bolton & Menk, 2014) projects the daily average water demand in 2029 using two different methodologies. The 2029 average day demand projections range from approximately 8.3 MGD to 9.05 MGD (approximately 5,800 gpm to 6,300 gpm). The Water System Plan also projects the 2029 maximum day water demand using the two methodologies. The 2029 maximum day demand projections range from approximately 23.75 MGD to 25.80 MGD (approximately 16,500 gpm to 17,900 gpm). Current daily water demand (based on the period 2010-2015) averages approximately 7.3 MGD. Maximum day demand (the largest daily water use in a given year) ranged from 14.0 MGD to 20.8 MGD in the period 2010-2015.

As discussed above, in addition to the City of Coon Rapids municipal wells the PCSI identified 37 high capacity water wells within one mile of the DWSMAs that are listed in the MDNR's MPARS database as having annual appropriations of more than 1 million gallons. Information on these wells is presented in Table C-7. The City is currently unaware of any adverse groundwater conflicts or interferences related to the existing Coon Rapids municipal wells.

Construction of other high capacity wells in or near the DWSMAs may influence groundwater flow in the source water aquifers and the groundwater quantity available to the municipal system. Such wells could potentially affect the boundaries of the DWSMAs, which would require the City to update the Wellhead Protection Plan. In addition, such wells could potentially reduce the static levels in the source water aquifers. Issues regarding changes in appropriations resulting from additions or deletions to the current list of water appropriations in or near the DWSMAs will be addressed in the management portion of this Plan.

Persistent drought conditions may also prove to be a threat to the quantity of groundwater available to the municipal system. The City's water conservation program includes a tiered water rate structure and odd-even day sprinkling restrictions. The sprinkling restrictions are in place for the period June 1 through August 31. Under Title 13 Section 13-219 of the City Code the Emergency Board (which consists of the Mayor, City Manager, and Director of Public Services) can declare a Water Emergency and put in place measures over and above the City's odd-even day sprinkling restrictions to curtail water usage during periods of critical shortages. Allowable restrictions on water use during a Water Emergency are specified in Title 13 Section 13-220 of the City Code.

Coon Rapids' current water supply meets the demand of its consumers. The City is confident that the municipal water supply system will continue to have the capability of meeting future demand.

C1.5 Water Quality Data Elements

Surface water and groundwater quality are discussed in this section as required by the October 14, 2016 Scoping 2 Decision Notice from the MDH, submission of data related to water quality in this WHPP amendment is not required.

C1.5. Surface Water Quality

The Mississippi River and Coon Creek cross the West DWSMA and Sand Creek crosses the Northeast DWSMA. The MPCA has identified these streams as impaired waters. Surface water management is addressed in the City's Storm Water Pollution Prevention Plan.

C1.5.2 Groundwater Quality

The MDH has an ongoing program to monitor the quality of municipal water supplies. City of Coon Rapids municipal wells are sampled annually for selected metals, other inorganic compounds, organic compounds (including perfluorochemicals), and bacteria as part of this program. To date, reported concentrations of all monitoring parameters meet the regulatory levels specified by the U.S. EPA as part of the Safe Drinking Water Act or by the State of Minnesota. These results are presented in the City's annual Consumer Confidence Report. The City does not routinely collect samples from their water supplies wells beyond the annual sampling by the MDH. A copy of the City's 2016 Consumer Confidence Report is presented in Appendix D. The 2016 Consumer Confidence Report, along with reports from previous years, can also be found on the City's website at http://www.ci.coon-rapids.mn.us/Archive.aspx?AMID=40.

The City treats water pumped from its primary water supply wells in two water treatment plants to remove iron and manganese from the water before it is put in to the distribution system. In addition to iron and manganese removal, water from the treatment plants is chlorinated and fluoridated before being put into the distribution system. Water from the seasonal wells is chlorinated and fluoridated at the wellheads before it enters the distribution system. Two of the seasonal wells (Wells 16 and 18) are subject to annual withdrawal limits due to an agreement with the MDH to address radium concentrations in the water pumped from these wells.

The MDH has prepared a study for Anoka County which evaluates the relative susceptibility of the water table aquifer to contamination from nitrate (MDH, 2012). There are a few small areas of high susceptibility identified by the MDH within the Coon Rapids DWSMAs. The uppermost source water aquifer within the Coon Rapids DWSMAs is generally separated from the water table aquifer by hydrogeologic confining units. The vulnerability classification of the uppermost source water aquifer within the Coon Rapids DWSMAs ranges from Low to Moderate, except for a small area near Wells 15 and 25 in which the vulnerability is High. Very low concentrations of nitrate (i.e., <1 mg/L) have been reported in samples from five of the Coon Rapids water supply wells (Barr, 2016). Typically, the most significant source of nitrate in groundwater is agricultural practices. As shown on Figure C-05, agricultural land use is not present in the Coon Rapids DWSMAs. Thus, it is unlikely that any significant concentrations of nitrate will be introduced into the water table aquifer in the DWSMAs in the future and nitrate likely will not adversely impact the uppermost source water aquifer in the DWSMAs.

It's important to consider groundwater quality when determining management strategies for the land uses within the DWSMAs. Since the City currently enjoys good water quality, the City has developed management strategies in this WHPP amendment aimed at maintaining the groundwater quality in the source water aquifers.

C1.6 Assessment of Data Elements

C1.6.1 Use of the Municipal Wells

Coon Rapids currently has 24 municipal water supply wells in the municipal water supply and distribution system for Public Water Supply 1020017. Locations of the wells are shown on Figure C-1 and construction details for the Coon Rapids municipal wells are summarized in Table C-1. Copies of the MDH well records for these wells are presented in Appendix A.

In the 2010 census Coon Rapids had a population of 61,476. The Metropolitan Council projects Coon Rapids' population to reach 64,800 in 2020 and 68,400 in 2030 (Metropolitan Council, 2015).

As discussed above, the City's projected daily average water demand in 2029 ranges from approximately 8.3 MGD to 9.05 MGD (approximately 5,800 gpm to 6,300 gpm) while the projected 2029 maximum day water demand ranges from approximately 23.75 MGD to 25.80 MGD (approximately 16,500 gpm to 17,900 gpm). Current daily water demand (based on the period 2010-2015) averages approximately 7.3 MGD. Coon Rapids' permitted annual appropriation volume is 3.2 BGY. The permitted instantaneous total pumping rate for the Coon Rapids system is 26,575 gpm.

Coon Rapids currently has five water storage facilities consisting of three elevated towers and two ground reservoirs. These facilities have a combined storage capacity of 14.5 million gallons. The Comprehensive Water System Plan (Bolton & Menk, 2014) recommends a new 1.5 million gallon elevated tower be constructed.

The City's Comprehensive Water System Plan (Bolton & Menk, 2014) does not indicate that any additional water supply wells will be needed to provide for projected future water demand.

C1.6.2 Wellhead Protection Area Criteria

Delineation of the WHPAs for the Coon Rapids wells involved the evaluation of porous-media flow. Information/criteria used to perform the groundwater flow modeling for the Coon Rapids WHPA/DWSMA delineations are discussed in the WHPA delineation report (Amendment to Part 1 of this WHPP prepared by Barr, 2016) and summarized below.

C1.6.2.1 Time of Travel

A 10-year groundwater time of travel was used for the WHPA delineation for each of the Coon Rapids municipal wells. A map in the Part 1 amendment report shows the 10-year groundwater time of travel WHPAs for the Coon Rapids wells.

C1.6.2.2 Aquifer Transmissivity

A combination of pumping tests conducted at Coon Rapids Wells 19 and 20 (Quaternary), specific capacity data at Well 21 (Quaternary), specific capacity data at Coon Rapids Wells 24 and 25 (Tunnel City and Wonewoc), specific capacity data at Coon Rapids Well 18 (Mt. Simon), and pumping tests at Andover Well 3 (Mt. Simon) were used to estimate the transmissivities of the source water aquifers. A summary of the test results is included in Appendix B of the Part 1 WHPP Amendment report. Results from the tests were incorporated into the groundwater flow model as discussed in the WHPP Part 1 Amendment report (Barr, 2016).

C1.6.2.3 Daily Volume of Water Pumped

Daily volume of water pumped from each of Coon Rapids' municipal wells used in the groundwater flow model was determined by using the highest recorded or projected pumping annual volume for each well. Determination of the daily volume of water pumped for each well used in the groundwater flow models is discussed in detail in Barr (2016).

C1.6.2.4 Flow Boundaries

The Mississippi River, along the southwest boundary of Coon Rapids, is a groundwater flow boundary, though not necessarily for all of the aquifers in the area. Additional details on the groundwater flow boundaries used for groundwater flow modeling are presented in Metropolitan Council (2009; 2014). Major rivers and lakes within the model domain are simulated using the MODFLOW River Package.

C1.6.2.5 Groundwater Flow Field

The groundwater flow field used for delineation of the WHPAs was determined by the groundwater flow model. The groundwater flow direction in the confined Quaternary and Tunnel City-Wonewoc aquifers is generally westerly to southerly in the vicinity of Coon Rapids. No published groundwater contours are known for these aquifers in Anoka County, but the modeled contours appear to be reasonable since they indicate groundwater flow towards the Mississippi River.

As expected due to the presence of the Eau Claire Formation aquitard, flow in the Mt. Simon Sandstone aquifer is less influenced by the rivers and more dependent on high capacity pumping. As a result, flow in the Mt. Simon in the vicinity of Coon Rapids is primarily directed towards the south and southwest. This is

consistent with the large cone of depression centered on southeastern Hennepin County shown on the Mt. Simon groundwater contour map included in the Hennepin County Geologic Atlas (Kanivetsky, 1989).

C1.6.3 Quantity and Quality of Water Supplying the Public Water Supply Wells

As discussed above, the Coon Rapids municipal wells are open to three different aquifers. Construction details for the Coon Rapids municipal wells are summarized in Table C-1.

Based on the available information, there are no known groundwater quantity issues that will have any significant impact on the management of the DWSMAs associated with the Coon Rapids wells. While it is possible that high capacity wells completed in the source water aquifers in the vicinity of Coon Rapids or within the DWSMAs could affect the quantity of groundwater available, there are currently no known significant conflicts or interferences related to the municipal wells in the DWSMAs.

The City currently is not planning to install any additional water supply wells to meet future demand. New high capacity wells constructed by others in the vicinity of the DWSMAs within the 10-year life time of this Plan could, potentially, affect the DWSMA boundaries. If directed to do so by the MDH, the City will incorporate such new wells into the groundwater model and assess if projected pumping from the new wells would affect the boundaries of the DWSMAs. Any required Plan amendments would be prepared with the help of the Wellhead Protection Consultant.

C1.6.4 Land and Groundwater Uses in the DWSMAs

Aquifer vulnerability within the DWSMAs ranges from Low to High. In the West DWSMA, approximately 94.5% of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 5% of the West DWSMA and High in approximately 0.5% of the West DWSMA. In the Northeast DWSMA, approximately 99% of the area has an aquifer vulnerability classification of Moderate. The aquifer vulnerability is classified as Low in approximately 1% of the Northeast DWSMA. The aquifer vulnerability within the entire Southeast DWSMA around Coon Rapids Well 5 is classified as Low.

Land uses within the DWSMAs could affect source water protection efforts or the management of the DWSMAs. In particular, unmaintained, damaged, poorly-constructed, unused, or incorrectly abandoned wells could provide a direct route for contaminants to enter one or more of the source water aquifers.

As discussed by Barr (2016), the DWSMAs were delineated to encompass the zones in which groundwater travel time to the Coon Rapids municipal wells is ten years or less. The DWSMAs encompass the WHPAs and are defined by geographically identifiable features. The Southeast DWSMA is contained entirely within the Coon Rapids city limits, while the Northeast DWSMA extends east into Blaine and the West DWSMA extends southwest into Champlin and Brooklyn Park.

Potential contaminant sources within the DWSMAs identified through the PCSI include wells, properties where Class V wells potentially may be, or may have been, located, storage tank sites, and chemical storage locations. These potential contaminant sources will be considered when developing the management strategies for the Coon Rapids DWSMAs.

C2.0 References

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Tables

Table C-1

Coon Rapids Municipal Well Construction Summary
Coon Rapids WHPP Amendment

Local Well ID	Unique Number	Use/ Status[1]	Casing Diameter (in.)	Casing Depth (ft.)	Well Depth (ft.)	Year Constructed	Aquifer	Well Vulnerability
1	202926	S	12	220	462	1957	CTCW	Not Vulnerable
2	202929	S	12	226	788	1957	CTCG-CMTS	Not Vulnerable
4	202972	S	20 x 16	233	605	1960	CTCG-CMTS	Not Vulnerable
5	202951	S	24 x 16	242	695	1961	CTCG-CMTS	Not Vulnerable
6	202937	S	20	118	158	1960	CTCG	Vulnerable
7	202943	S	24 x 16	189	632	1964	CTCG-CMTS	Vulnerable
8	202932	P	24 x 16	283	700	1965	CTCG-CMTS	Not Vulnerable
9	202931	P	24 x 16	294	500	1969	CTCW	Not Vulnerable
10	202930	P	30 x 24 x 16	272	684	1970	CTCG-CMTS	Not Vulnerable
11	202965	P	24	157	627	1972	CTCG-CMTS	Vulnerable
12	168721	S	24 x 16	208	604	1975	CTCG-CMTS	Not Vulnerable
13	168720	P	24 x 16	395	693	1977	CTCG-CMTS	Not Vulnerable
14	110460	P	30 x 20	328	613	1977	CTCG-CMTS	Not Vulnerable
15	110461	P	30 x 20	225	615	1976	CTCG-CMTS	Vulnerable
16	161413	S	30 x 24 x 18	395	653	1981	CWON-CMTS	Not Vulnerable
17	150357	P	30	81	121	1981	QBAA	Vulnerable
18	110469	S	36 x 30 x 24	575	637	1986	CMTS	Not Vulnerable
19	110475	P	30 x 20	115	135	1987	QBAA	Vulnerable
20	420956	P	30 x 20	95	135	1988	QBAA	Vulnerable
21	474384	P	24 x 18	170	203	1990	QBAA	Vulnerable
22	474385	S	24	80	105	1990	QBAA	Vulnerable
23	463020	S	30 x 24	93	128	1991	QBAA	Vulnerable
24	674478	P	36 x 30 x 24	241	388	2003	CTCW	Vulnerable
25	674479	P	36 x 24	229	388	2003	CTCW	Vulnerable

[1] P = Primary; S = Seasonal
CMTS = Mt. Simon Sandstone
CTCG = Tunnel City Groupl
CTCW = Tunnel City Group and Wonewoc Sandstone
CWON = Wonewoc Sandstone
QBAA = Quaternary Buried Artesian Aquifer

Table C-2

Potential Contaminant Source Inventory Data Sources
Coon Rapids WHPP Amendment

Potential Contaminant Source Type	Data Source(s)
Chemical Storage Sites	MnDPS, MDA
Hazardous Waste Generator Locations	MPCA WIMN & Agency Interests databases; Anoka County
LUST Site Locations	MPCA WIMN & Agency Interests databases
Potential Class V Well Locations	MPCA WIMN database; USEPA
Storage Tanks	MPCA WIMN & Agency Interests databases
Wells	MN CWI database; MDNR MPARS database; MDH Sealed Wells database
Other Data Type	**Data Source(s)**
Current Land Use	Met Council 2010 Generalized Land Use
Historical Land Use	Met Council pre-1984 Land Use
Planned Land Use	Met Council 2030 Generalized Interpreted Land Use
Bedrock Geology	MGS 2013 Bedrock Geology of the Twin Cities Ten-County Metropolitan Area
Flood Zones	FEMA Digital Flood Insurance Rate Map Database (2015 – Effective)
Pipelines	MGIO & MnOPS 1996, USDOT NPMS public map view
Soil Cover	U.S. Dept. of Agriculture, Natural Resources Conservation Service SSURGO Soils Database
Soil Permeability	U.S. Dept. of Agriculture, Natural Resources Conservation Service SSURGO Soils Database
Zoning	City of Coon Rapids Zoning Map

Acronyms

CWI – County Well Index
FEMA – Federal Emergency Management Administration
MnDPS – Minnesota Department of Public Safety
Met Council – Metropolitan Council
MDA – Minnesota Department of Agriculture
MDH – Minnesota Department of Health
MDNR – Minnesota Department of Natural Resources
MPARS – Minnesota Permitting and Reporting System
MGIO – Minnesota Geospatial Information Office
MGS – Minnesota Geological Survey
MnOPS – Minnesota Office of Pipeline Safety
MPCA – Minnesota Pollution Control Agency
NPMS – National Pipeline Mapping System
WIMN – What's In My Neighborhood
USDOT – United States Department of Transportation
USEPA – United States Environmental Protection Agency

Table C-3

PCSI Results - Well Locations in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Depth (Feet)	Date Completed	Aquifer	PCS Code	Location Verified
1	003-133124230045	202926	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 1	11349 Norway St Nw	Coon Rapids	462	09/00/1957	MTPL	WEL	Yes
2	003-133124330022	202929	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 2	10911 Magnolia St	Coon Rapids	788	06/00/1957	MTPL	WEL	Yes
4	003-093124430001	202972	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 4	2731 Northdale Bl	Coon Rapids	605	08/19/1960	CTCM	WEL	Yes
5	003-253124130041	202951	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 5	99th La Nw	Coon Rapids	695	09/00/1961	CTCM	WEL	Yes
6	003-173124220016	202937	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 6	11611 Yucca St Nw	Coon Rapids	158	11/00/1960	CTCG	WEL	Yes
7	003-263124220041	202943	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 7	10617 Direct River Dr	Coon Rapids	632	04/00/1964	CTCM	WEL	Yes
8	003-133124130109	202932	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 8	269 Northdale Bl	Coon Rapids	700	05/07/1965	CTCM	WEL	Yes
9	003-133124130108	202931	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 9	11399 Dogwood St Nw	Coon Rapids	500	04/07/1969	CTCE	WEL	Yes
10	003-133124420001	202930	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 10	203 Northdale Bl	Coon Rapids	684	05/05/1970	CTCM	WEL	Yes
11	003-273124210001	202965	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 11	Not Available	Coon Rapids	627	05/11/1972	CTCW	WEL	Yes
12	003-273124110043	168721	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 12	Not Available	Coon Rapids	604	05/14/1975	CTCM	WEL	Yes
13	003-133124140007	168720	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 13	11100 University Av	Coon Rapids	693	03/25/1977	CTCM	WEL	Yes
14	003-223124230002	110460	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 14	2344 Coon Rapids Bl	Coon Rapids	613	03/22/1977	CTCM	WEL	Yes
15	003-223124230001	110461	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 15	2231 105th Av	Coon Rapids	615	09/13/1976	CTCM	WEL	Yes
16	003-113124140001	161413	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 16	12280 Olive St	Coon Rapids	653	04/10/1981	CWMS	WEL	Yes
17	003-213124410046	150357	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 17	2400 105th Av Nw	Coon Rapids	121	12/18/1981	QBAA	WEL	Yes
18	003-023124430001	110469	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 18	Not Available	Coon Rapids	637	05/00/1986	CMTS	WEL	Yes
19	003-213124110036	110475	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 19	Not Available	Coon Rapids	143	10/14/1987	QBAA	WEL	Yes
20	003-213124140086	420956	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 20	Xavis St Nw	Coon Rapids	135	04/26/1988	QBAA	WEL	Yes
21	003-133124130109	474384	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 21	269 Northdale Bl	Coon Rapids	207	01/26/1990	QBAA	WEL	Yes
22	003-223124230001	474385	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 22	2220 105th Av Nw	Coon Rapids	108	03/15/1990	QBAA	WEL	Yes
23	003-273124210001	463020	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 23	2100 Coon Rapids Bl Nw	Coon Rapids	151	12/16/1991	QBAA	WEL	Yes
24	003-213124110023	674478	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 24	10845 Direct River Dr	Coon Rapids	388	12/19/2003	CTCW	WEL	Yes
25	003-223124230002	674479	Active	Community Supply (municipal - Coon Rapids)	Coon Rapids 25	2324 Coon Rapids Bl Nw	Coon Rapids	388	12/19/2003	CTCW	WEL	Yes
26	053-3412021340014	133395	Active	Domestic	Dooley, Ed	10925 Mississippi St	Champlin	124	06/21/1977	CJDN	WEL	Yes
27	003-233124330036	202952	Active	Domestic	Shephard, Paul	1520 Coon Rapids Bl Nw	Coon Rapids	126	09/23/1970	QBAA	WEL	Approximate
28	003-223124420064	202945	Active	Commercial	North Central Gas	Not Available	Coon Rapids	258	01/11/1961	CTCG	WEL	Uncertain
29	053-2812021330028	417490	Active	Domestic	Not Available	11701 Adair Av	Champlin	110	09/06/1985	CJDN	WEL	Yes
30	003-253124110046	1000000006	Unknown	Not Available	Not Available	Not Available	Coon Rapids	0	Not Available	Not Available	WEL	Uncertain
31	053-3212021140123	404218	Active	Domestic	Karst	11327 Douglas Dr	Champlin	185	02/16/1985	CJSL	WEL	Yes
32	053-2912021440009	202818	Active	Domestic	Not Available	11709 Edgewood Av Ne	Champlin	102	12/03/1973	QBAA	WEL	Yes
33	053-2812021330041	143530	Active	Domestic	Halm, Jerry	11801 Porter Dr	Champlin	98	04/20/1977	CJDN	WEL	Approximate
34	053-3312021440014	202889	Active	Domestic	Sjolander, Fred	11020 West River Rd	Champlin	174	10/08/1971	CJTC	WEL	Yes
35	053-3312021230088	191144	Active	Domestic	Not Available	11333 Colorado Av	Champlin	122	10/21/1982	CJDN	WEL	Yes
36	053-3312021320070	202858	Active	Domestic	Not Available	6009 113th Av	Champlin	66	09/04/1973	QBAA	WEL	Yes
37	053-0311921130041	197589	Active	Domestic	Joyce, Irene	3609 Sunset Rd	Brooklyn Park	152	08/21/1984	CJSL	WEL	Yes
38	003-263124220004	665725	Active	Heat Pump	Drake Apartments	10011 Egret Bl	Coon Rapids	230	10/30/2001	CTCG	WEL	Yes
39	053-3212021110042	202886	Active	Domestic	Bouley, Eugene	11641 Douglas Dr	Champlin	101	10/24/1967	CJDN	WEL	Yes
40	053-0411921140001	122263	Active	Domestic	Darmer, Larry	10637 Noble Av N	Brooklyn Park	143	08/10/1983	CJSL	WEL	Approximate
41	053-0311921130034	165650	Active	Domestic	Aun, John	3616 Sunset Rd	Brooklyn Park	131	06/11/1980	CJDN	WEL	Yes
42	053-2812021340032	228438	Active	Community Supply (municipal)	Champlin 2	Not Available	Champlin	620	04/15/1974	CTCM	WEL	Uncertain
43	003-213124230005	202942	Active	Domestic	Lumley, Howard	10630 Mississippi Bl	Coon Rapids	245	03/23/1965	CSLT	WEL	Yes
44	053-3312021230043	197329	Active	Domestic	Not Available	5917 114th La	Champlin	112	06/24/1983	CJDN	WEL	Yes
45	003-133124410008	171039	Active	Domestic	Dahler, William	11140 University Av Ne	Coon Rapids	98	07/30/1980	QBAA	WEL	Yes
46	053-3312021320063	202859	Active	Domestic	Not Available	6016 113th Av	Champlin	67	11/01/1973	QBAA	WEL	Yes
47	003-173124220083	202938	Active	Public Supply/non-community	Summerhill School	3856 Coon Rapids Bl	Coon Rapids	284	00/00/1970	CTCG	WEL	Yes
48	003-153124430016	248460	Active	Public Supply/non-comm.-non-transient	Church Of The Epiphany A	Not Available	Coon Rapids	0	Not Available	Not Available	WEL	Uncertain
49	053-3412021330052	111253	Active	Commercial	Armstrong, Ralph	4608 109th Av N	Champlin	190	01/20/1977	CSLT	WEL	Approximate
50	053-3412021340008	154163	Active	Domestic	Carlson, D.H.	10952 Mississippi Dr	Champlin	139	09/18/1978	CJSL	WEL	Yes
51	053-0311921340008	431406	Active	Domestic	Not Available	10325 France Av N	Brooklyn Park	110	02/04/1987	CJDN	WEL	Approximate
52	053-0311921220058	452565	Active	Domestic	Nerison, Dennis	10700 Noble Av	Brooklyn Park	95	11/23/1988	CJDN	WEL	Yes
53	053-3312021230065	191128	Active	Domestic	Not Available	6200 114th Av N	Champlin	111	10/21/1982	CJDN	WEL	Yes
54	053-3212021110064	155085	Active	Domestic	Not Available	6304 115.5th Av N	Champlin	176	06/26/1978	CJSL	WEL	Yes
55	053-3312021440063	125257	Active	Domestic	Adams, Paul	10909 Noble Av Nw	Champlin	102	08/18/1976	QBAA	WEL	Yes
56	003-133124210031	202924	Active	Domestic	Not Available	11630 Larch St Nw	Coon Rapids	78	06/10/1958	QBAA	WEL	Yes
58	053-3412021340005	433824	Active	Domestic	Asplund, David	10932 Mississippi Dr N	Champlin	119	10/11/1987	CJSL	WEL	Yes
59	053-0211921330001	420970	Active	Community Supply (municipal)	Brooklyn Park 15	Not Available	Brooklyn Park	622	05/08/1989	CMSH	WEL	Uncertain
60	053-0211921330001	224603	Active	Test Well	Brooklyn Park Tw-5	Not Available	Brooklyn Park	120	05/30/1973	Not Available	WEL	Uncertain
61	003-153124430016	545373	Active	Irrigation Well	Epiphany Church	11001 Hanson Bl	Coon Rapids	273	04/13/1994	CTCG	WEL	Yes
62	003-133124420086	144024	Active	Irrigation Well	Foley Dental Office	11237 Foley Bl Nw	Coon Rapids	40	09/23/1976	QWTA	WEL	Yes
63	053-3412021330016	166854	Active	Domestic	Toskas, Dennis	10965 Mississippi Dr	Champlin	75	09/27/1979	CJDN	WEL	Yes
64	053-3312021440052	166868	Active	Domestic	Wallin, John	11005 West River Rd	Champlin	103	10/25/1979	CJDN	WEL	Yes
65	003-163124340062	202936	Active	Domestic	Szyplinsti	10930 Crooked Lake Bl Nw	Coon Rapids	155	09/17/1960	CJDN	WEL	Approximate
66	053-0311921340006	511954	Active	Public Supply/non-comm.-transient	Pine Grove Bible Church	4000 101St Av	Brooklyn Park	135	11/09/1989	CJSL	WEL	Yes
67	003-253124110004	169013	Active	Domestic	Lundberg, Bruce	9975 Butternut St Nw	Coon Rapids	120	12/19/1979	QBAA	WEL	Approximate
68	003-153124230092	486000	Active	Other	Mccalib, Mark	11343 Verdin St Nw	Coon Rapids	25	06/14/1992	QWTA	WEL	Yes
69	053-2812021330014	174863	Active	Domestic	Not Available	11823 Porter Dr	Champlin	118	04/15/1980	CJDN	WEL	Yes
70	053-0311921220038	202888	Active	Commercial	Skelly Oil	River Rd W	Champlin	268	04/28/1966	CTCG	WEL	Uncertain

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City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Depth (Feet)	Date Completed	Aquifer	PCS Code	Location Verified
71	053-3412021340015	430260	Active	Domestic	Elson, Richard	10935 Mississippi Dr	Champlin	80	04/21/1987	CJDN	WEL	Yes
72	003-223124230001	244339	Active	Observation Well	Coon Rapids Obth-25	Not Available	Coon Rapids	103	03/23/1989	Not Available	WEL	Uncertain
73	003-223124140010	202944	Active	Domestic	Broms Investment Co.	10527 Ibis St Nw	Coon Rapids	255	03/15/1972	CTCG	WEL	Yes
74	053-0311921210028	122784	Active	Domestic	Anderson, Ray	10930 West River Rd	Champlin	52	10/20/1976	QBAA	WEL	Approximate
75	003-223124230002	147468	Active	Observation Well	Coon Rapids Obth-7	Not Available	Coon Rapids	127	08/21/1988	QBAA	WEL	Uncertain
76	053-3312021240077	171026	Active	Domestic	Cody, Ron	11454 Welcome La N	Champlin	191	05/16/1981	CJTC	WEL	Yes
77	053-2812021330002	202883	Active	Commercial	Not Available	11843 West River Rd	Champlin	260	06/13/1972	CSLT	WEL	Yes
78	003-123124230117	202922	Active	Domestic	Boden, Richard	12221 Olive St Nw	Coon Rapids	122	05/08/1970	QBAA	WEL	Yes
79	003-153124220001	202933	Active	Public Supply/non-community	Coon Rapids Jr. High Sch	Not Available	Coon Rapids	158	11/05/1957	QBAA	WEL	Uncertain
80	053-0311921420007	409424	Active	Domestic	Robertson, Chuck	10510 France Av N	Brooklyn Park	65	06/05/1985	QBAA	WEL	Yes
81	053-0311921130033	421111	Active	Domestic	Frentress, Edna	3608 Sunset Rd	Brooklyn Park	55	06/05/1986	QBAA	WEL	Yes
82	053-3412021340007	149773	Active	Domestic	Houle, Roberta	10944 Mississippi Dr	Champlin	81	12/16/1977	QBAA	WEL	Yes
83	003-153124240032	604124	Active	Domestic	Ocel, Robert J.	11401 Partridge St Nw	Coon Rapids	21	10/27/1997	QWTA	WEL	Yes
84	003-083124330080	165952	Active	Domestic	Not Available	3835 Coon Rapids Bl Nw	Coon Rapids	111	07/17/1979	QBAA	WEL	Approximate
85	003-133124130108	505635	Unknown	Test Well	City Of Coon Rapids Tw	11400 Dogwood St Nw	Coon Rapids	210	06/20/1989	Not Available	WEL	Approximate
86	003-223124230002	244325	Active	Observation Well	Coon Rapids Obth-11	Not Available	Coon Rapids	195	Not Available	Not Available	WEL	Uncertain
87	053-3312021230013	159338	Active	Domestic	Thompsen, Gary	5924 114th Av N	Champlin	132	06/08/1979	CJDN	WEL	Yes
88	053-3312021320002	143973	Active	Domestic	Christiansen, Marvin	11216 Douglas Dr	Champlin	93	10/15/1977	QBAA	WEL	Yes
89	003-213124140025	147466	Active	Observation Well	Coon Rapids Obth-9	Not Available	Coon Rapids	131	08/25/1987	QBAA	WEL	Uncertain
90	053-3312021320067	202860	Active	Domestic	Not Available	6109 113th Av	Champlin	66	09/20/1970	QBAA	WEL	Yes
91	053-3212021110043	160034	Active	Domestic	Collison, Larry	11631 Douglas Dr N	Champlin	200	04/27/1979	CJSL	WEL	Yes
92	053-3212021110061	202814	Active	Domestic	Rivera, Grorge	6305 116th Av	Champlin	90	10/10/1972	CJDN	WEL	Yes
93	003-213124110049	147470	Active	Observation Well	Coon Rapids Obth-5	Not Available	Coon Rapids	140	08/15/1987	MTPL	WEL	Uncertain
94	053-0411921140001	171086	Active	Domestic	Koehn, Daryl	10645 Noble Av N	Brooklyn Park	167	08/05/1981	CJSL	WEL	Approximate
95	003-133124130109	244332	Active	Observation Well	Coon Rapids Obth-18A	Not Available	Coon Rapids	200	03/01/1989	QBAA	WEL	Uncertain
96	053-0311921130019	186154	Active	Domestic	Skooglund, Paul	3707 Sunset Rd	Brooklyn Park	165	08/12/1982	CJTC	WEL	Yes
97	053-2812021330031	114308	Active	Domestic	Popp, Gerald	11830 West River Rd	Champlin	255	04/02/1975	CSLT	WEL	Yes
98	053-2812021330006	114346	Active	Domestic	O'Konek, Arthur	11820 Douglas Rd	Champlin	214	07/01/1976	CSTL	WEL	Yes
99	053-3212021110069	202811	Active	Domestic	Sybrandt, H.	6500 115.5th St	Champlin	95	07/05/1971	QBAA	WEL	Yes
100	053-0311921430028	416195	Active	Domestic	Strand, Randall & Charlotte	10301 Abbott Av N	Brooklyn Park	200	12/16/1986	CSLT	WEL	Approximate
101	003-123124220093	143434	Active	Domestic	Not Available	688 Main St	Coon Rapids	156	07/12/1977	QBAA	WEL	Yes
102	053-0311921220005	556919	Active	Domestic	Everson, Gehart	10840 Noble Av N	Brooklyn Park	62	12/21/1994	QBUA	WEL	Yes
103	053-0211921320004	749459	Active	Domestic	Kroenig, Paul	10433 River Rd W	Brooklyn Park	104	05/03/2007	QBAA	WEL	Yes
104	053-0311921220059	202979	Active	Domestic	Not Available	10800 Kyle Av	Brooklyn Park	86	01/24/1968	CJDN	WEL	Yes
105	053-2912021440008	202820	Active	Domestic	Not Available	11717 Edgewood Av	Champlin	102	12/04/1973	QBAA	WEL	Yes
106	003-173124220079	114342	Active	Domestic	Geroux, Lee	3849 Coon Rapids Bl Nw	Coon Rapids	175	12/15/1975	CTCG	WEL	Approximate
107	003-273124110060	202963	Active	Domestic	Flynn, Tom	9933 Ibis St Nw	Coon Rapids	143	07/21/1971	CJDN	WEL	Yes
108	053-0311921230011	111265	Active	Domestic	Bernard, William	10650 Noble Av N	Brooklyn Park	197	06/13/1977	CSLT	WEL	Yes
109	003-273124110063	202964	Active	Domestic	Weaver, Darrel	1669 99th Av Nw	Coon Rapids	165	04/06/1972	CJSL	WEL	Approximate
110	053-3312021210079	156206	Active	Domestic	Ray, Roger	11601 River Rd W	Champlin	108	02/06/1979	CJDN	WEL	Yes
111	053-3312021230085	173122	Active	Domestic	Not Available	6217 Thousand Pines Entre	Champlin	108	10/31/1980	CJDN	WEL	Yes
112	053-2912021440112	255976	Inactive	Domestic	Not Available	11703 Douglas Dr	Champlin	172	Not Available	CSTL	WEL	Approximate
113	053-0311921130038	133205	Active	Domestic	Renstrum, Don Sr.	3701 Sunset Rd	Brooklyn Park	134	06/06/1977	CJSL	WEL	Yes
114	003-213124110039	147467	Active	Observation Well	Coon Rapids Obth-8	Not Available	Coon Rapids	140	08/24/1988	QBAA	WEL	Uncertain
115	053-3412021340013	133392	Active	Domestic	Dooley, Ed	10901 Indiana Av N	Champlin	87	03/14/1977	QBAA	WEL	Yes
116	053-0311921230011	149827	Active	Domestic	Bernard, William	10650 Noble Av N	Brooklyn Park	105	07/07/1978	QBAA	WEL	Yes
117	053-3412021330023	149850	Active	Domestic	Leef, Steven	10974 West River Rd	Champlin	140	08/10/1978	CJSL	WEL	Yes
118	053-3312021320043	202863	Active	Domestic	Not Available	6217 111.5th Av N	Champlin	61	07/10/1973	QBAA	WEL	Yes
119	053-3312021230062	191127	Active	Domestic	Not Available	6100 114th Av Ne	Champlin	107	10/18/1982	QBAA	WEL	Yes
120	053-0311921220018	179045	Active	Domestic	Aurzado, Lamonte	10809 Kyle N	Brooklyn Park	94	06/11/1981	CJDN	WEL	Yes
121	003-083124340224	686058	Active	Irrigation Well	Pheasant Ridge Thownhome	11701 Tulip St Nw	Coon Rapids	166	09/18/2002	CTCG	WEL	Yes
122	053-0311921420096	183897	Active	Domestic	Sagerstrom, Ray	10401 France Av N	Brooklyn Park	99	07/01/1982	CJDN	WEL	Approximate
123	003-083124340075	497511	Active	Irrigation Well	Burkholder, Dayton	3790 117th La	Coon Rapids	28	08/24/1991	QWTA	WEL	Yes
124	053-0211921340005	133313	Active	Domestic	Coon Rapids Dam	103rd	Brooklyn Park	113	09/22/1977	QBAA	WEL	Uncertain
125	003-213124220031	202941	Active	Domestic	Jacobsen, Roger	10916 Flora St Nw	Coon Rapids	100	05/07/1973	QBAA	WEL	Yes
126	053-2912021440013	191135	Active	Domestic	Hanson, Dale R.	11716 Edgewood Av N	Champlin	166	11/17/1982	QBAA	WEL	Yes
127	053-3312021320057	202861	Active	Domestic	Not Available	6216 113th Av	Champlin	95	12/04/1973	CJDN	WEL	Yes
128	003-133124130004	202923	Active	Domestic	Schultz, Charles	11401 Flintwood St Nw	Coon Rapids	90	05/18/1966	QBAA	WEL	Yes
129	053-2912021440007	202821	Active	Domestic	Not Available	11725 Edgewood Av	Champlin	101	01/30/1974	QBAA	WEL	Yes
130	003-213124110049	147469	Active	Observation Well	Coon Rapids Obth-6	Not Available	Coon Rapids	150	08/20/1987	QBAA	WEL	Uncertain
131	053-0311921220018	578908	Active	Domestic	City Of Brooklyn Park	10832 Kyle Av N	Brooklyn Park	83	08/13/1997	QBAA	WEL	Approximate
132	053-0311921130020	506508	Active	Domestic	Walters, Larry	3713 Sunset Rd	Brooklyn Park	162	07/17/1989	CJTC	WEL	Yes
133	003-083124340156	503723	Active	Irrigation Well	Reisling Park North Iii	3729 118th La Nw	Coon Rapids	177	08/03/1989	CTCG	WEL	Yes
134	053-3312021230051	191153	Active	Domestic	Henneman, Chuck	6008 114th Av N	Champlin	107	12/22/1982	CJDN	WEL	Yes
135	053-0311921230011	144010	Active	Domestic	Resech, Dave	10655 Noble Av N	Brooklyn Park	102	06/30/1976	QBAA	WEL	Yes
136	053-3412021340008	439820	Active	Domestic	Sherer, Douglas	10952 Mississippi Dr	Champlin	78	01/15/1988	QBAA	WEL	Yes
137	053-3312021320044	202862	Active	Domestic	Not Available	6209 111.5th Av	Champlin	58	06/12/1973	QBAA	WEL	Yes

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PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Depth (Feet)	Date Completed	Aquifer	PCS Code	Location Verified
138	053-0311921140010	449190	Active	Domestic	Edwards, Greg Sr.	10501 West River Rd	Brooklyn Park	138	12/14/1988	CJSL	WEL	Yes
139	053-3212021110031	202817	Active	Domestic	Not Available	11631 Edgewood Av	Champlin	102	03/20/1972	QBAA	WEL	Yes
140	053-0311921220028	471027	Active	Domestic	Goldsmith, Sue	10724 Noble Av N	Brooklyn Park	65	11/16/1990	QBAA	WEL	Yes
141	053-0311921220004	417485	Active	Domestic	Sullivan	10856 Noble Av N	Brooklyn Park	203	08/26/1985	CTCG	WEL	Yes
142	053-3312021220095	149755	Active	Domestic	Van Dalen, N.H.	6106 117th Av N	Champlin	174	03/30/1978	CJSL	WEL	Approximate
143	053-2812021330005	124994	Active	Domestic	Stone, William	11810 Douglas Dr	Champlin	230	05/25/1977	CSLT	WEL	Yes
144	003-223124430055	256168	Active	Domestic	Ms. Elva	10203 Linnet St Nw	Coon Rapids	254	Not Available	CTCG	WEL	Yes
145	053-3212021110066	202810	Active	Domestic	Not Available	6400 115.5th Av	Champlin	105	02/22/1972	QBAA	WEL	Yes
146	003-163124320008	202935	Active	Irrigation Well	Elisff, Ben	3114 Coon Rapids Bl Nw	Coon Rapids	65	05/03/1964	QWTA	WEL	Approximate
147	003-213124110002	202939	Active	Domestic	Leverenz, Tom	2437 Coon Rapids Bl	Coon Rapids	81	07/06/1972	QBAA	WEL	Yes
148	053-0311921130040	190433	Active	Domestic	Johnson, Raymond	3689 Sunset Rd	Brooklyn Park	140	11/16/1982	CJSL	WEL	Yes
149	053-0411921110008	492622	Active	Domestic	Richardson, Julie	10845 Noble Av N	Brooklyn Park	127	06/27/1991	QBAA	WEL	Yes
150	053-2912021440028	183865	Active	Domestic	Michels, Doug	11819 Douglas Dr	Champlin	76	04/13/1982	QBAA	WEL	Yes
151	003-123124430027	462360	Active	Irrigation Well	Hildre, G.W.	308 118th Av Nw	Coon Rapids	16	05/01/1990	QWTA	WEL	Yes
152	003-223124240055	452389	Active	Irrigation Well	Haven'S Sporting Goods	2141 Coon Rapids Bl Nw	Coon Rapids	96	03/28/1989	QBAA	WEL	Yes
153	053-0211921320002	642713	Active	Domestic	Elsness, Mike	10417 West River Rd	Brooklyn Park	100	05/24/2000	QBAA	WEL	Yes
154	053-0311921220002	466007	Active	Domestic	Follis, Gail	4513 109th Av N	Brooklyn Park	103	05/21/1990	CJDN	WEL	Yes
155	053-2812021330003	199158	Active	Domestic	Sheforgen, Rick	11839 West River Road	Champlin	110	07/27/1983	CJDN	WEL	Yes
156	053-3412021330019	124130	Active	Domestic	Not Available	10972 Mississippi Dr	Champlin	106	10/29/1975	CJDN	WEL	Yes
157	053-3312021220033	159308	Active	Domestic	Thomsen, Gary	11500 Zane Ci N	Champlin	132	06/08/1979	CJDN	WEL	Yes
158	053-0411921110009	184765	Active	Domestic	Anderson, John	10833 Noble Av N	Brooklyn Park	141	05/10/1982	CJSL	WEL	Yes
159	053-3212021110065	149426	Active	Domestic	Not Available	6308 115.5th Av	Champlin	186	11/28/1977	CJSL	WEL	Yes
160	003-133124330042	202928	Active	Domestic	Not Available	11141 Magnolia St Nw	Coon Rapids	155	01/02/1957	QBAA	WEL	Approximate
161	053-3312021440001	452608	Active	Unknown	City Of Champlin	10980 West River Rd	Champlin	59	01/24/1989	QBAA	WEL	Yes
162	053-0311921340007	419545	Active	Commercial	Kirkpatrick	3900 101St Av	Brooklyn Park	100	08/19/1986	QBAA	WEL	Yes
163	053-3412021340010	434641	Active	Domestic	Not Available	10951 Mississippi Dr	Champlin	80	07/27/1987	CJDN	WEL	Yes
164	003-173124440042	655594	Active	Elevator	Tsm Develpoment	11030 Mississippi Bl	Coon Rapids	35	12/13/2000	Not Available	WEL	Yes
165	003-133124420001	706843	Active	Irrigation Well	Northdale Middle School	11301 Dogwood St Nw	Coon Rapids	470	05/18/2005	CTCW	WEL	Yes
166	003-173124120001	676524	Active	Elevator	U Haul	3401 Coon Rapids Bl Nw	Coon Rapids	19	07/01/2002	Not Available	WEL	Approximate
167	053-0311921440016	778604	Active	Irrigation Well	Nature View Vista Twin Homes	10130 Chestnut Ci N	Brooklyn Park	240	07/08/2010	CSLT	WEL	Yes
168	003-263124210029	433874	Active	Observation Well	City Of Coon Rapids	1313 Coonrapids Bl Nw	Coon Rapids	120	02/17/1988	QBAA	WEL	Yes
169	003-253124210051	598987	Active	Elevator	Kerasotes Theatres	10051 Woodcrest Dr	Coon Rapids	10	07/11/1997	Not Available	WEL	Yes
170	053-3312021230057	173140	Active	Domestic	Not Available	11432 Colorado Av N	Champlin	108	01/16/1981	CJDN	WEL	Yes
171	053-3212021110063	155084	Active	Domestic	Not Available	6300 115.5th Av N	Champlin	176	06/23/1978	CJSL	WEL	Yes
172	003-153124430016	265911	Active	Public Supply/non-comm.-non-transient	Church Of The Epiphany A	Not Available	Coon Rapids	0	Not Available	Not Available	WEL	Uncertain
173	003-173124410001	473464	Active	Irrigation Well	Anoka Ramsey Comm Col.	11200 Mississippi Bl	Coon Rapids	350	11/20/1990	CTCW	WEL	Yes
174	053-0311921220029	114390	Active	Domestic	Getchel, Leila	10712 Noble Av N	Brooklyn Park	203	07/23/1976	CSLT	WEL	Yes
175	003-023124440001	224355	Active	Domestic	Coon Rapids Golf	Not Available	Coon Rapids	259	06/30/1970	Not Available	WEL	Uncertain
176	053-0311921440061	403260	Unknown	Other	Not Available	Not Available	Brooklyn Park	41	06/04/1984	Not Available	WEL	Uncertain
177	053-3412021330008	472712	Unknown	Domestic	Daigle, Gary	Box 25	Champlin	186	12/13/1990	Not Available	WEL	Uncertain
178	003-193123220076	501672	Active	Monitoring Well	Mobile Station Mw-3	Not Available	Blaine	30	02/28/1989	Not Available	WEL	Uncertain
179	003-173124140001	492443	Active	Monitoring Well	Wcco Radio/Midwest	3237 Coon Rapids Mw-3 Bl	Coon Rapids	40	08/14/1991	Not Available	WEL	Yes
180	003-163124330018	504605	Active	Monitoring Well	Amoco Oil Co. Mw-4	2998 111th Av Nw	Coon Rapids	30	03/20/1989	Not Available	WEL	Approximate
181	003-163124330018	504604	Active	Monitoring Well	Amoco Oil Co. Mw-3	2998 111th Av Nw	Coon Rapids	30	03/20/1987	Not Available	WEL	Approximate
182	003-163124330018	504603	Active	Monitoring Well	Amoco Oil Co. Mw-2	2998 111th Av Nw	Coon Rapids	30	03/20/1987	Not Available	WEL	Approximate
183	003-163124330018	504602	Active	Monitoring Well	Amoco Oil Co. Mw-1	2998 111th Av Nw	Coon Rapids	35	03/20/1987	Not Available	WEL	Approximate
184	003-153124440006	532728	Active	Elevator	Epiphany Sr. Housing Cor	1800 111 Av Nw	Coon Rapids	33	11/11/1993	Not Available	WEL	Yes
185	003-153124430017	643070	Active	Elevator	Epiphany Assisted Living	10955 Hanson Bl	Coon Rapids	24	02/15/2000	Not Available	WEL	Yes
186	003-153124430017	643069	Active	Elevator	Epiphany Assisted Living	10955 Hanson Bl	Coon Rapids	24	02/11/2000	Not Available	WEL	Yes
187	003-263124220010	707737	Active	Monitoring Well	Mw-2	1440 Coon Rapids Bl	Coon Rapids	20	04/28/2004	Not Available	WEL	Yes
188	003-263124220010	707736	Active	Monitoring Well	Mw-1	1440 Coon Rapids Bl	Coon Rapids	24	04/28/2004	Not Available	WEL	Yes
189	003-153124440006	532729	Active	Elevator	Epiphany Sr. Housing Cor	1800 111 Av Nw	Coon Rapids	32	11/12/1993	Not Available	WEL	Yes
190	003-153124430016	685845	Active	Monitoring Well	Church Of The Epiphany	1900 111th St	Coon Rapids	12.5	06/08/2006	Not Available	WEL	Yes
191	003-153124430016	560400	Unknown	Monitoring Well	Not Available	1900 111th St	Coon Rapids	24	05/15/1996	Not Available	WEL	Yes
192	003-263124210029	560401	Unknown	Monitoring Well	Not Available	1313 Nw Coon Rapids Bl	Coon Rapids	14	05/17/1996	Not Available	WEL	Yes
193	003-173124140001	530318	Unknown	Monitoring Well	Not Available	3237 Coon Rapids Bl	Coon Rapids	40.5	06/24/1993	Not Available	WEL	Yes
194	003-173124140001	524623	Unknown	Monitoring Well	Wcco Am Radio	3237 Coon Rapids Bl	Coon Rapids	38	02/25/1993	Not Available	WEL	Yes
195	003-173124140001	524622	Unknown	Monitoring Well	Not Available	3237 Coon Rapids Bl	Coon Rapids	57	02/24/1993	Not Available	WEL	Yes
196	003-163124320004	539581	Unknown	Monitoring Well	Not Available	3155 Nw Coon Rapids Bl	Coon Rapids	38	04/10/1994	Not Available	WEL	Yes
197	003-163124320004	539580	Unknown	Monitoring Well	Not Available	3155 Nw Coon Rapids Bl	Coon Rapids	37	04/07/1994	Not Available	WEL	Yes
198	003-153124430016	531333	Unknown	Monitoring Well	Not Available	1900 111th Av Nw	Coon Rapids	19	09/28/1993	Not Available	WEL	Yes
199	003-193123220076	519996	Active	Remedial	Ogren, John K.	10873 University Av Ne	Blaine	46	01/21/1993	Not Available	WEL	Approximate
200	003-173124410001	592986	Active	Elevator	Anoka Ramsey Comm. Coll.	11200 Mississippi Bl Nw	Coon Rapids	14	05/12/1997	Not Available	WEL	Yes
201	053-3412021330026	770995	Active	Domestic	Parent, Brent	10984 Mississippi Dr N	Champlin	97	06/03/2011	Not Available	WEL	Yes
202	053-3412021330008	479024	Active	Monitoring Well	Mw-1	10915 River Pk W	Champlin	29	01/28/1992	Not Available	WEL	Approximate
203	053-3412021330008	479025	Active	Monitoring Well	Mw-2	10915 River Pk W	Champlin	28	01/22/1992	Not Available	WEL	Approximate
204	053-3412021330008	479026	Active	Monitoring Well	Mw-3	10915 River Pk W	Champlin	29	01/21/1992	Not Available	WEL	Approximate

Table C-3

PCSI Results - Well Locations in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Depth (Feet)	Date Completed	Aquifer	PCS Code	Location Verified
205	003-263124210029	505218	Active	Test Well	City Of Coon Rapids	1313 Coon Rapids Bl	Coon Rapids	47	06/23/1989	Not Available	WEL	Yes
206	053-3412021330015	503201	Active	Domestic	Menderson, John	10900 West River Rd	Champlin	125	09/12/1989	Not Available	WEL	Approximate
207	003-263124210029	505217	Active	Test Well	City Of Coon Rapids	1313 Coon Rapids Bl	Coon Rapids	25.5	06/23/1989	Not Available	WEL	Yes

Approximate - Parcel not found but location is approximately where that address would exist
Uncertain - Not enough address information to verify location

Table C-4

PCSI Results - Potential Class V Well Locations in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Status	Location Name	Street Address	City or Twp	Generator Size	PCS Code	Location Verified
208	003-163124430009	Active	Aaron Auto Service Inc	2626 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
209	003-223124240007	Active	Altra Muffler & Brake	2061 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
210	003-223124240003	Active	Auto Zone #3078	2151 Coon Rapids Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
211	003-163124310019	Active	Coon Rapids Goodyear	11190 Crooked Lake Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
212	003-173124120001	Active	Coon Rapids Rers	3401 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
213	003-213124120013	Active	Coon Rapids Service, Inc.	2600 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
214	003-163124430011	Active	Dbt Auto Repair Llc	2620 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
215	003-153124420008	Active	Dist 11 Vehicle Service Bldg	11299 Hanson Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
216	003-233124330012	Active	Don's Small Engine Svc., Inc	1449 Coon Rapids Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
217	003-223124130115	Active	Hi-Ten Service Center	1937 Coon Rapids Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
218	003-163124340003	Active	Itrust Transmission & Auto Service	2810 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
219	003-163124430010	Active	Mckay Collision	2660 Coon Rapids Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
220	003-223124240006	Active	Midwest Transmission Service	2051 Coon Rapids Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
221	003-163124430021	Active	Mike's Tire One	2721 Coon Rapids Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
222	003-223124240004	Active	Neil's Collision Center	2121 Coon Rapids Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
223	003-133124130053	Active	Northdale Automotive	11401 Foley Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
224	003-133124240065	Active	O'Reilly Auto Parts - 3241	441 Northdale Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
225	003-163124340002	Active	Precision Tune Auto Care	2831 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Yes
226	003-163124430058	Active	Sandy's Auto Service	2690 Coon Rapids Blvd NW	Coon Rapids	Class 1 Used Oil	CVMVW	Approximate
227	003-163124120001	Active	Ultratech Automotive, Inc	11527 Crooked Lake Blvd NW	Coon Rapids	Very Small Quantity Generator	CVMVW	Yes
228	003-183123430117	Active	Rick Austin's Muffler Shops, Inc.	611 109Th Ave NW	Blaine	Class 1 Used Oil	CVMVW	Yes
229	003-163124310014	Inactive	Firestone Coon Rapids	2920 Coon Rapids Blvd NW	Coon Rapids	Small to Minimal Quantity Generator	CVMVW	Approximate
230	053-2812021330004	Active	Kallstrom Automotive Services	11835 River Rd W	Champlin	Small to Minimal Quantity Generator	CVMVW	Yes

Approximate - Parcel not found but location is approximately where that address would exist

Potential Contaminant Source (PCS) Codes:
CVMVW - Motor Vehicle Waste Disposal Well (potential Class V)

Table C-5

PCSI Results - Storage Tank Locations in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PCS Code-Material Code	PID Number	MPCA Agency Interests ID	Site	Site Address	City	Tank Number	Install Date	Registration Date	Tank Capacity	Tank Status	Tank Product/Product Released	Above or Under Ground	Release Discovered Date	Release Report Date	Complete Site Closure Date	Location Verified
231	UST - C000	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	004	2/1/1968	5/30/1986	560	Removed	Transmission Fluid	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
232	UST - F000	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	001	2/1/1968	5/30/1986	1000	Removed	Motor Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
232	UST - F000	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	002	2/1/1968	5/30/1986	1000	Removed	Motor Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
232	UST - F000	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	005	11/1/1989	10/18/1995	550	Removed	Motor Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
232	UST - F000	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	006	11/1/1989	10/18/1995	1000	Removed	Motor Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
233	UST - W000	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	003	2/1/1968	5/30/1986	1000	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
233	UST - W000	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	007	11/1/1989	10/18/1995	1000	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
234	UST - F000	003-193123220002	26518	SuperAmerica 4445	10865 University Ave NE	Blaine	001	7/26/1990	11/26/1990	12000	Active	E-10 - 10% ethanol & 90% gas	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
234	UST - F000	003-193123220002	26518	SuperAmerica 4445	10865 University Ave NE	Blaine	002	7/26/1990	11/26/1990	10000	Active	E-85 - 85% ethanol & 15% gas	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
234	UST - F000	003-193123220002	26518	SuperAmerica 4445	10865 University Ave NE	Blaine	003	7/26/1990	11/26/1990	10000	Active	E-10 - 10% ethanol & 90% gas	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
234	UST - F000	003-193123220002	26518	SuperAmerica 4445	10865 University Ave NE	Blaine	004	7/26/1990	11/26/1990	10000	Active	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
235	UST - C000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	006	10/22/1990	6/20/1991	12000	Removed	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
235	UST - C000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	007	10/22/1990	6/20/1991	12000	Removed	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
235	UST - C000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	008	10/22/1990	6/20/1991	12000	Removed	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
236	UST - F000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	002	1/1/1971	5/28/1986	6000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
236	UST - F000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	003	1/1/1961	5/28/1986	8000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
236	UST - F000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	004	1/1/1961	5/28/1986	8000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
236	UST - F000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	005	1/1/1978	5/28/1986	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
237	UST - W000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	001	1/1/1961	5/28/1986	550	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
237	UST - W000	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	009	10/22/1990	6/20/1991	550	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
238	UST - W000	003-223124130023	30452	O'Reilly Auto Parts - 1052	1925 Coon Rapids Blvd NW	Coon Rapids	001	7/16/1993	5/25/1994	600	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
239	UST - F000	003-163124340002	32351	RKH Services Inc dba Auto Max	2841 Coon Rapids Blvd	Coon Rapids	001	12/1/1962	7/2/1987	3000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
239	UST - F000	003-163124340002	32351	RKH Services Inc dba Auto Max	2841 Coon Rapids Blvd	Coon Rapids	002	12/1/1962	7/2/1987	5000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
239	UST - F000	003-163124340002	32351	RKH Services Inc dba Auto Max	2841 Coon Rapids Blvd	Coon Rapids	003	12/1/1962	7/2/1987	6000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
239	UST - F000	003-163124340002	32351	RKH Services Inc dba Auto Max	2841 Coon Rapids Blvd	Coon Rapids	004	9/1/1974	7/2/1987	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
240	UST - W000	003-163124340002	32351	RKH Services Inc dba Auto Max	2841 Coon Rapids Blvd	Coon Rapids	641	5/8/1987	7/2/1987	560	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
241	Not Available	003-163124430011	30526	DBT Auto Repair LLC	2620 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Applicable	Not Applicable	Not Applicable	Yes
242	UST - F000	003-153124220001	30530	Coon Rapids Jr High	11600 Raven St NW	Coon Rapids	001	1/1/1968	3/14/1986	17000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
242	UST - F000	003-153124220001	30530	Coon Rapids Jr High	11600 Raven St NW	Coon Rapids	002	7/22/1996	8/29/1996	10000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
243	AST - W000	003-213124120013	30532	Coon Rapids Service Inc	2600 Coon Rapids Blvd NW	Coon Rapids	1001	3/1/1998	4/15/2003	260	Active	Used Or Waste Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
244	UST - F000	003-213124120013	30532	Coon Rapids Service Inc	2600 Coon Rapids Blvd NW	Coon Rapids	001	1/1/1962	4/6/1986	6000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
244	UST - F000	003-213124120013	30532	Coon Rapids Service Inc	2600 Coon Rapids Blvd NW	Coon Rapids	002	1/1/1962	4/6/1986	6000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
244	UST - F000	003-213124120013	30532	Coon Rapids Service Inc	2600 Coon Rapids Blvd NW	Coon Rapids	003	1/1/1962	4/6/1986	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
245	UST - W000	003-213124120013	30532	Coon Rapids Service Inc	2600 Coon Rapids Blvd NW	Coon Rapids	004	1/1/1962	4/6/1986	500	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
245	UST - W000	003-213124120013	30532	Coon Rapids Service Inc	2600 Coon Rapids Blvd NW	Coon Rapids	005	1/1/1962	4/6/1986	500	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
246	UST - F000	003-153124420008	39985	ISD 11 Vehicle Service Bldg	11299 Hanson Blvd NW	Coon Rapids	001	1/1/1978	3/14/1986	10000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
247	UST - F000	003-213124210001	58994	ISD 11 - Mississippi Elementary School	10620 Direct River Dr	Coon Rapids	001	1/1/1978	3/14/1986	10000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
248	AST	003-173124410001	94145	Anoka Ramsey Community College	11200 Mississippi Blvd NW	Coon Rapids	1002	12/9/1998	12/18/1998	500	Active	Other Substance	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
249	UST - F000	003-173124410001	94145	Anoka Ramsey Community College	11200 Mississippi Blvd NW	Coon Rapids	001	1/1/1968	12/16/1985	10000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
249	UST - F000	003-173124410001	94145	Anoka Ramsey Community College	11200 Mississippi Blvd NW	Coon Rapids	002	1/1/1968	12/16/1985	10000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
249	UST - F000	003-173124410001	94145	Anoka Ramsey Community College	11200 Mississippi Blvd NW	Coon Rapids	003	1/1/1974	12/16/1985	15000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
249	UST - F000	003-173124410001	94145	Anoka Ramsey Community College	11200 Mississippi Blvd NW	Coon Rapids	1	11/1/1997	2/27/2008	20000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
250	UST - F000	003-183123430117	103268	Austins Muffler	611 109th Ave	Blaine	004	1/1/1960	7/24/1996	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
250	UST - F000	003-183123430117	103268	Austins Muffler	611 109th Ave	Blaine	005	1/1/1960	7/24/1996	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
251	UST - W000	003-183123430117	103268	Austins Muffler	611 109th Ave	Blaine	001	1/1/1960	2/19/1993	1000	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
251	UST - W000	003-183123430117	103268	Austins Muffler	611 109th Ave	Blaine	002	1/1/1960	2/19/1993	1000	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
251	UST - W000	003-183123430117	103268	Austins Muffler	611 109th Ave	Blaine	003	1/1/1960	2/19/1993	1000	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
252	UST - F000	003-193123220062	103284	Stonegate Apartments	10850 6th St NE	Blaine	001	9/17/2004	10/28/2004	1000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
252	UST - F000	003-193123220062	103284	Stonegate Apartments	10850 6th St NE	Blaine	142	9/1/1968	5/7/1986	1500	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
253	UST - C000	003-163124340007	103125	Coon Rapids BP	2825 Coon Rapids Blvd	Coon Rapids	001	9/1/1985	5/27/1986	10000	Temporarily Closed	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
253	UST - C000	003-163124340007	103125	Coon Rapids BP	2825 Coon Rapids Blvd	Coon Rapids	002	9/1/1985	5/27/1986	10000	Temporarily Closed	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
253	UST - C000	003-163124340007	103125	Coon Rapids BP	2825 Coon Rapids Blvd	Coon Rapids	003	9/1/1985	5/27/1986	10000	Temporarily Closed	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
254	UST - F000	003-173124220061	104044	Mercy Health Care Center	3960 Coon Rapids Blvd	Coon Rapids	001	5/23/1974	10/26/1994	12000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
254	UST - F000	003-173124220061	104044	Mercy Health Care Center	3960 Coon Rapids Blvd	Coon Rapids	002	1/1/1964	7/21/1998	15000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
254	UST - F000	003-173124220061	104044	Mercy Health Care Center	3960 Coon Rapids Blvd	Coon Rapids	003	1/1/1972	7/2/1998	15000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
255	UST - F000	003-163124330018	105699	Amoco Ss #7511	2998 111th Ave NW	Coon Rapids	001	1/1/1900	5/27/1986	12000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
255	UST - F000	003-163124330018	105699	Amoco Ss #7511	2998 111th Ave NW	Coon Rapids	002	1/1/1900	5/27/1986	12000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
256	AST - W000	003-163124430021	105587	Coon Rapids Amoco Certicare Center	2721 Coon Rapid Blvd	Coon Rapids	1001	12/1/1997	1/27/1999	780	Active	Used Or Waste Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
257	UST - W000	003-163124430021	105587	Coon Rapids Amoco Certicare Center	2721 Coon Rapid Blvd	Coon Rapids	001	10/15/1985	2/18/1986	500	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
258	UST - F000	003-153124430016	105572	Epiphany Church	1900 111th Ave	Coon Rapids	001	1/1/1969	7/28/1986	10000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
258	UST - F000	003-153124430016	105572	Epiphany Church	1900 111th Ave	Coon Rapids	002	1/1/1976	7/28/1986	550	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
258	UST - F000	003-153124430016	105572	Epiphany Church	1900 111th Ave	Coon Rapids	003	1/10/1992	1/10/1992	4000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
259	UST - F000	003-083124330021	105690	Around The Block	11872 Round Lake Blvd NW	Coon Rapids	001	9/20/1985	4/30/1986	12000	Active	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
259	UST - F000	003-083124330021	105690	Around The Block	11872 Round Lake Blvd NW	Coon Rapids	002	9/20/1985	4/30/1986	12000	Active	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
259	UST - F000	003-083124330021	105690	Around The Block	11872 Round Lake Blvd NW	Coon Rapids	003	9/20/1985	4/30/1986	10000	Active	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
260	UST - F000	003-173124140001	105694	WCCO Transmitter	3227 Coon Rapids Blvd NW	Coon Rapids	001	1/1/1935	5/16/1986	1500	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
260	UST - F000	003-173124140001	105694	WCCO Transmitter	3227 Coon Rapids Blvd NW	Coon Rapids	002	1/1/1963	5/16/1986	4000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
260	UST - F000	003-173124140001	105694	WCCO Transmitter	3227 Coon Rapids Blvd NW	Coon Rapids	003	4/26/1991	4/26/1991	10000	Removed	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
260	UST - F000	003-173124140001	105694	WCCO Transmitter	3227 Coon Rapids Blvd NW	Coon Rapids	1	8/7/2009	5/6/2010	12000	Active	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
261	AST - W000	003-163124310019	106918	Goodyear Tire Center #5763	11190 Crooked Lake Blvd	Coon Rapids	1001	1/1/1900	2/11/1998	185	Active	Used Or Waste Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
262	UST - F000	003-163124310019	106918	Goodyear Tire Center #5763	11190 Crooked Lake Blvd	Coon Rapids	001	1/1/1986	4/18/1986	550	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
263	UST - F000	003-133124140007	106678	Eisenhower Elementary School	151 Northdale Blvd	Coon Rapids	001	1/1/1971	3/14/1986	20000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
263	UST - F000	003-133124140007	106678	Eisenhower Elementary School	151 Northdale Blvd	Coon Rapids	001	6/22/2004	3/14/1986	20000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
263	UST - F000	003-133124140007	106678	Eisenhower Elementary School	151 Northdale Blvd	Coon Rapids	002	6/22/2004	9/21/2004	10000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
264	UST - F000	003-153124330002	106680	Hoover Elementary School	2369 109th Ave NW	Coon Rapids	001	1/1/1966	3/14/1986	8000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
264	UST - F000	003-153124330002	106680	Hoover Elementary School	2369 109th Ave NW	Coon Rapids	002	7/5/2000	9/29/2003	10000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
265	UST - F000	003-133124130006	106529	Coon Rapids Marathon	380 Northdale Blvd	Coon Rapids	001	1/1/1977	4/4/1986	8000	Active	E-10 - 10% ethanol & 90% gas	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
265	UST - F000	003-133124130006	106529	Coon Rapids Marathon	380 Northdale Blvd	Coon Rapids	002	1/1/1980	4/4/1986	10000	Active	E-10 - 10% ethanol & 90% gas	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
265	UST - F000	003-133124130006	106529	Coon Rapids Marathon	380 Northdale Blvd	Coon Rapids	003	1/1/1980	4/4/1986	10000	Active	E-10 - 10% ethanol & 90% gas	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
265	UST - F000	003-133124130006	106529	Coon Rapids Marathon	380 Northdale Blvd	Coon Rapids	005	1/1/1900	4/4/1986	1000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
266	UST - W000	003-133124130006	106529	Coon Rapids Marathon	380 Northdale Blvd	Coon Rapids	004	1/1/1900	4/4/1986	560	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
267	UST - F000	003-223124440005	106681	L O Jacob Elementary School	1700 Coon Rapids Blvd	Coon Rapids	001	1/1/1941	3/14/1986	5000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
267	UST - F000	003-223124440005	106681	L O Jacob Elementary School	1700 Coon Rapids Blvd	Coon Rapids	002	6/13/1993	7/12/1993	10000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
268	UST - F000	003-223124420064	106532	North Central Public Service Co	1930 Coon Rapids Blvd	Coon Rapids	001	6/10/1961	4/14/1986	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
268	UST - F000	003-223124420064	106532	North Central Public Service Co	1930 Coon Rapids Blvd	Coon Rapids	002	7/7/1974	4/14/1986	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
269	UST - F000	003-113124140002	106684	Sand Creek Elementary School	12156 Olive St NW	Coon Rapids	001	1/1/1965	3/14/1986	8000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
269	UST - F000	003-113124140002	106684	Sand Creek Elementary School	12156 Olive St NW	Coon Rapids	018	6/17/1996	6/24/1996	10000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
270	UST - F000	003-133124230074	106685	Sorteberg Elementary School	11400 Magnolia St NW	Coon Rapids	001	1/1/1960	3/14/1986	8000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
270	UST - F000	003-133124230074	106685	Sorteberg Elementary School	11400 Magnolia St NW	Coon Rapids	002	6/25/1994	7/8/1994	10000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
271	UST - F000	003-133124420001	106538	Northdale Junior High School	11301 Dogwood St	Coon Rapids	001	1/1/1977	3/18/1986	25000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
271	UST - F000	003-133124420001	106538	Northdale Junior High School	11301 Dogwood St	Coon Rapids	002	6/18/2002	10/17/2002	10000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
272	UST - F000	003-133124130053	107245	Northdale Automotive Inc	11401 Foley Blvd NW	Coon Rapids	002	6/1/1984	5/5/1986	10000	Temporarily Closed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
272	UST - F000	003-133124130053	107245	Northdale Automotive Inc	11401 Foley Blvd NW	Coon Rapids	003	6/1/1984	5/5/1986	10000	Temporarily Closed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
273	UST - W000	003-133124130053	107245	Northdale Automotive Inc	11401 Foley Blvd NW	Coon Rapids	001	7/1/1978	5/5/1986	550	Active	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
274	UST - F000	003-273124140001	107174	Coon Rapids Dam	9750 Egret Blvd	Coon Rapids	181	1/1/1978	4/26/1986	1000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
274	UST - F000	003-273124140001	107174	Coon Rapids Dam	9750 Egret Blvd	Coon Rapids	182	1/1/1978	4/26/1986	1000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
275	UST - F000	003-223124130115	107250	Hi Ten Service	1937 Coon Rapids Blvd	Coon Rapids	001	9/1/1954	5/6/1986	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
275	UST - F000	003-223124130115	107250	Hi Ten Service	1937 Coon Rapids Blvd	Coon Rapids	002	9/1/1954	5/6/1986	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
275	UST - F000	003-223124130115	107250	Hi Ten Service	1937 Coon Rapids Blvd	Coon Rapids	003	9/1/1954	5/6/1986	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
275	UST - F000	003-223124130115	107250	Hi Ten Service	1937 Coon Rapids Blvd	Coon Rapids	004	7/20/1989	7/25/1990	8000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
275	UST - F000	003-223124130115	107250	Hi Ten Service	1937 Coon Rapids Blvd	Coon Rapids	005	7/20/1989	7/25/1990	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes

Table C-5

PCSI Results - Storage Tank Locations in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PCS Code-Material Code	PID Number	MPCA Agency Interests ID	Site	Site Address	City	Tank Number	Install Date	Registration Date	Tank Capacity	Tank Status	Tank Product/Product Released	Above or Under Ground	Release Discovered Date	Release Report Date	Complete Site Closure Date	Location Verified
276	UST - F000	003-173124220015	107237	Carlson Automotive Llc/ Carlson Toyota	3815 Coon Rapids Blvd NW	Coon Rapids	001	1/1/1980	6/9/1994	560	Removed	Motor Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
276	UST - F000	003-173124220015	107237	Carlson Automotive Llc/ Carlson Toyota	3815 Coon Rapids Blvd NW	Coon Rapids	100	11/1/1979	4/25/1986	500	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
277	UST - W000	003-173124220015	107237	Carlson Automotive Llc/ Carlson Toyota	3815 Coon Rapids Blvd NW	Coon Rapids	002	1/1/1980	6/9/1994	560	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
278	UST - F000	003-233124330038	107243	SuperAmerica	1531 Coon Rapids Blvd	Coon Rapids	001	11/17/1965	2/24/1986	8000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
278	UST - F000	003-233124330038	107243	SuperAmerica	1531 Coon Rapids Blvd	Coon Rapids	002	11/17/1965	2/24/1986	8000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
278	UST - F000	003-233124330038	107243	SuperAmerica	1531 Coon Rapids Blvd	Coon Rapids	003	11/17/1965	2/24/1986	8000	Removed	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
279	UST - W000	003-233124330038	107243	SuperAmerica	1531 Coon Rapids Blvd	Coon Rapids	004	11/17/1965	2/24/1986	560	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
280	AST - F000	003-163124340002	107825	Precision Tune	2831 Coon Rapids Blvd NW	Coon Rapids	1002	4/1/1987	12/15/1992	800	Active	Motor Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
280	AST - F000	003-163124340002	107825	Precision Tune	2831 Coon Rapids Blvd NW	Coon Rapids	1003	4/1/1987	12/15/1992	1000	Active	Motor Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
281	AST - W000	003-163124340002	107825	Precision Tune	2831 Coon Rapids Blvd NW	Coon Rapids	1001	4/1/1987	12/15/1992	200	Active	Used Or Waste Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
282	UST - F000	003-223124240005	109529	Crown EZ Stop	2111 Coon Rapids Blvd NW	Coon Rapids	001	1/1/1978	2/14/1986	12000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
282	UST - F000	003-223124240005	109529	Crown EZ Stop	2111 Coon Rapids Blvd NW	Coon Rapids	002	1/1/1979	2/14/1986	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
282	UST - F000	003-223124240005	109529	Crown EZ Stop	2111 Coon Rapids Blvd NW	Coon Rapids	003	1/1/1984	2/14/1986	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
282	UST - F000	003-223124240005	109529	Crown EZ Stop	2111 Coon Rapids Blvd NW	Coon Rapids	004	1/1/1982	2/14/1986	6000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
282	UST - F000	003-223124240005	109529	Crown EZ Stop	2111 Coon Rapids Blvd NW	Coon Rapids	005	1/1/1982	2/14/1986	2000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
282	UST - F000	003-223124240005	109529	Crown EZ Stop	2111 Coon Rapids Blvd NW	Coon Rapids	006	1/1/1984	2/14/1986	2000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
283	UST - C000	003-123124220108	109747	Holiday Stationstore #309	12480 Foley Blvd NW	Coon Rapids	001	5/28/1996	6/10/1996	8000	Active	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
283	UST - C000	003-123124220108	109747	Holiday Stationstore #309	12480 Foley Blvd NW	Coon Rapids	002	5/28/1996	6/10/1996	8000	Active	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
283	UST - C000	003-123124220108	109747	Holiday Stationstore #309	12480 Foley Blvd NW	Coon Rapids	003	5/28/1996	6/10/1996	8000	Active	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
283	UST - C000	003-123124220108	109747	Holiday Stationstore #309	12480 Foley Blvd NW	Coon Rapids	004	5/28/1996	6/10/1996	8000	Active	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
284	UST - F000	003-123124220108	109747	Holiday Stationstore #309	12480 Foley Blvd NW	Coon Rapids	`1	5/28/1996	6/10/1996	8000	Active	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
285	AST - F000	053-0311921430092	110470	Ken Kiffmeyer Res/const Co	3608 101st Ave N	Brooklyn Park	1001	Not Available	6/4/2001	800	Active	Gasoline	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
285	AST - F000	053-0311921430092	110470	Ken Kiffmeyer Res/const Co	3608 101st Ave N	Brooklyn Park	1002	Not Available	6/4/2001	800	Active	Diesel	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
285	UST - F000	053-0311921430092	110470	Ken Kiffmeyer Res/const Co	3608 101st Ave N	Brooklyn Park	001	1/1/1988	4/21/1994	500	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
286	AST - F000	003-163124430009	112086	Sparks Cumputerize Car Care	2650 Coon Rapids Blvd NW	Coon Rapids	1001	10/1/1989	6/5/1990	275	Active	Motor Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
286	AST - F000	003-163124430009	112086	Sparks Cumputerize Car Care	2650 Coon Rapids Blvd NW	Coon Rapids	1002	10/1/1989	6/5/1990	275	Active	Motor Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
287	AST - W000	003-163124430009	112086	Sparks Cumputerize Car Care	2650 Coon Rapids Blvd NW	Coon Rapids	1003	10/1/1989	6/5/1990	275	Active	Used Or Waste Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
288	AST - F000	053-0211921340005	112306	Coon Rapids Dam Regional Park	10360 W River Rd	Brooklyn Park	1001	4/1/1994	5/25/1994	500	Active	Gasoline	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
289	UST - C000	053-3212021410059	112058	Amys Mini Mart	11151 Douglas Dr	Champlin	002	12/10/1986	3/24/1987	10000	Active	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
290	UST - F000	053-3212021410059	112058	Amys Mini Mart	11151 Douglas Dr	Champlin	001	12/10/1986	3/24/1987	10000	Active	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
291	UST - F000	003-153124420005	112467	Faith Lutheran Church	11115 Hanson Blvd	Coon Rapids	001	1/1/1900	12/27/1995	560	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
292	UST - F000	003-163124330001	114260	Joseph Cook Memorial Arena	11091 NW Mississippi Blvd	Coon Rapids	001	1/1/1970	4/10/1998	2000	Active	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
293	UST - F000	003-173124440003	116499	Mississippi View Apartments	11010-11020 Mississippi Blvd	Coon Rapids	`1	Not Available	Not Available	3000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
293	UST - F000	003-173124440003	116499	Mississippi View Apartments	11010-11020 Mississippi Blvd	Coon Rapids	`2	Not Available	11/28/2006	3000	Removed	Fuel Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
294	AST - F000	003-223124420065	117171	Centerpoint Energy- Service Center	10511 Hanson Blvd; 1930 Coon Rapids Blvd	Coon Rapids	1002	3/1/1999	2/25/1999	260	Active	Motor Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
295	AST - W000	003-223124420065	117171	Centerpoint Energy- Service Center	10511 Hanson Blvd; 1930 Coon Rapids Blvd	Coon Rapids	1001	4/4/1995	4/24/1995	300	Active	Used Or Waste Oil	Aboveground	Not Applicable	Not Applicable	Not Applicable	Yes
296	UST - F000	003-223124420065	117171	Centerpoint Energy- Service Center	10511 Hanson Blvd; 1930 Coon Rapids Blvd	Coon Rapids	001	1/1/1961	10/8/1992	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
296	UST - F000	003-223124420065	117171	Centerpoint Energy- Service Center	10511 Hanson Blvd; 1930 Coon Rapids Blvd	Coon Rapids	002	1/1/1974	10/8/1992	4000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
296	UST - F000	003-223124420065	117171	Centerpoint Energy- Service Center	10511 Hanson Blvd; 1930 Coon Rapids Blvd	Coon Rapids	003	1/1/1980	10/8/1992	1000	Removed	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
297	UST - W000	003-223124420065	117171	Centerpoint Energy- Service Center	10511 Hanson Blvd; 1930 Coon Rapids Blvd	Coon Rapids	004	12/12/1992	1/19/1993	560	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	001	10/1/1988	3/26/1990	12000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	002	10/1/1988	3/26/1990	12000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	003	10/1/1988	3/26/1990	8000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	004	10/1/1988	3/26/1990	8000	Removed	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	005	11/12/2004	1/11/2005	15000	Active	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	006	11/12/2004	1/11/2005	20000	Active	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	007	11/11/2004	1/11/2005	6000	Active	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
298	UST - F000	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	008	11/12/2004	1/11/2005	6000	Active	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
299	UST - C000	003-173124140002	131208	Rally Gas	3397 Coon Rapids Blvd	Coon Rapids	002	1/10/1986	1/11/1988	10000	Removed	Alcohol Blend	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
300	UST - F000	003-173124140002	131208	Rally Gas	3397 Coon Rapids Blvd	Coon Rapids	001	1/10/1988	1/11/1988	10000	Removed	Gasoline	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
300	UST - F000	003-173124140002	131208	Rally Gas	3397 Coon Rapids Blvd	Coon Rapids	003	1/10/1988	1/11/1988	6000	Removed	Diesel	Underground	Not Applicable	Not Applicable	Not Applicable	Approximate
301	UST - W000	003-153124210025	138171	Former Kmart #7467	2100 Northdale Blvd NW	Coon Rapids	001	11/9/1980	4/28/1986	1000	Removed	Used Or Waste Oil	Underground	Not Applicable	Not Applicable	Not Applicable	Yes
302	LUST	003-173124120001	942	U-Haul - Coon Rapids RERS	3401 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Used Oil	Not Available	09/04/2001	09/04/2001	08/29/2002	Yes
303	LUST	003-193123220002	26518	SuperAmerica 4445	10865 University Ave NE	Blaine	Not Available	Not Available	Not Available	Not Available	Not Available	Unknown	Not Available	08/21/1998	08/21/1998	11/15/1999	Yes
304	LUST	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Unleaded; Used Oil	Not Available	8/30/2005	8/31/2005	8/22/2006	Approximate
304	LUST	003-133124440006	28660	Oak Park Amoco	10938 University Ave NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Type Unknown	Not Available	Not Available	10/17/1990	01/28/1994	Approximate
305	LUST	003-163124340003	29681	Jule Automotive Inc	2810 Coon Rapids Blvd	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Hydraulic Fluid	Not Available	12/30/2011	12/30/2011	05/15/2012	Yes
306	LUST	003-153124220001	30530	Coon Rapids Jr High	11600 Raven St NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	09/09/1996	09/09/1996	10/08/1997	Yes
307	LUST	003-213124120013	30532	Coon Rapids Service Inc	2600 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2; Gasoline, Unleaded; Waste Oil	Not Available	06/18/1990	06/18/1990	01/10/1991	Yes
308	LUST	003-153124420008	39985	ISD 11 Vehicle Service Bldg	11299 Hanson Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	07/09/1990	04/12/1991	10/21/1991	Yes
309	LUST	003-163124340061	42286	Target Stores T42	11000 Crooked Lake Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	06/06/2000	06/08/2000	02/12/2001	Yes
310	LUST	003-213124210001	58994	ISD 11 - Mississippi Elementary School	10620 Direct River Dr	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	06/15/1994	06/15/1994	12/22/1994	Yes
311	LUST	003-173124410001	94145	Anoka Ramsey Community College	11200 Mississippi Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	11/18/1997	11/19/1997	03/14/2001	Yes
312	LUST	053-3412021330015	100637	Finassieve #604-7505-609	10915 W River Rd	Champlin	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline Leaded; Gasoline, Unleaded	Not Available	10/17/1990	03/22/1991	05/24/1993	Approximate
313	LUST	003-163124430096	105698	Coon Rapids Chrysler Plymouth	2710 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Hydraulic Fluid	Not Available	03/04/2004	03/04/2004	01/21/2005	Approximate
314	LUST	003-163124330018	105699	Amoco Ss #7511	2998 111th Ave NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Type Unknown	Not Available	11/26/1986	12/24/1986	10/13/1992	Approximate
315	LUST	003-173124140001	105694	WCCO Transmitter	3227 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	06/04/1991	08/07/1991	10/22/1993	Yes
316	LUST	003-153124330002	106680	Hoover Elementary School	2369 109th Ave NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 3	Not Available	07/05/2000	07/06/2000	01/18/2007	Yes
317	LUST	003-133124130006	106529	Coon Rapids Marathon	380 Northdale Blvd	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Unleaded	Not Available	11/10/1995	11/10/1995	11/04/1999	Yes
318	LUST	003-223124440005	106681	L O Jacob Elementary School	1700 Coon Rapids Blvd	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	06/22/1993	06/22/1993	01/05/1994	Yes
319	LUST	003-113124140002	106684	Sand Creek Elementary School	12156 Olive St NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	06/27/1996	06/27/1996	07/31/1996	Yes
320	LUST	003-133124230074	106685	Sorteberg Elementary School	11400 Magnolia St NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	06/23/1994	06/23/1994	03/02/1998	Yes
321	LUST	003-223124130115	107250	Hi Ten Service	1937 Coon Rapids Blvd	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Unleaded	Not Available	11/22/2006	11/22/2006	12/20/2007	Yes
322	LUST	003-173124220015	107237	Carlson Automotive Llc/ Carlson Toyota	3815 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Motor Oil	Not Available	06/09/1997	06/10/1997	09/03/1997	Approximate
323	LUST	003-233124330038	107243	SuperAmerica	1531 Coon Rapids Blvd	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Waste Oil	Not Available	07/05/1992	04/07/1997	06/06/1997	Yes
324	LUST	003-223124240005	109529	Crown EZ Stop	2111 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Unleaded	Not Available	06/26/2012	06/26/2012	02/28/2013	Yes
324	LUST	003-223124240005	109529	Ostlunds Phillips 66	2111 Coon Rapids Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Type Unknown	Not Available	09/08/1988	09/09/1988	06/20/1989	Yes
325	LUST	053-3212021410059	112058	Amys Mini Mart	11151 Douglas Dr	Champlin	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Unleaded	Not Available	10/23/2010	10/23/2010	10/30/2015	Yes
326	LUST	053-3412021330022	118349	Bills Superette Inc #5	10917 W River Rd	Champlin	Not Available	Not Available	Not Available	Not Available	Not Available	Diesel; Gasoline, Unleaded	Not Available	05/03/2005	05/03/2005	08/16/2005	Yes
327	LUST	003-173124140002	131208	Rally Gas	3397 Coon Rapids Blvd	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Unleaded	Not Available	01/12/2012	01/12/2012	10/28/2014	Approximate
328	LUST	003-153124430016	188455	Church Of The Epiphany	1900 111th Ave NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Gasoline, Unleaded	Not Available	09/24/1990	09/24/1990	06/15/1994	Yes
329	LUST	003-193123210002	190015	Former Gas Station	384 109th Ave	Blaine	Not Available	Not Available	Not Available	Not Available	Not Available	Unknown	Not Available	10/02/1996	10/03/1996	11/05/1996	Yes
330	LUST	003-153124210025	190928	Village 10 Shopping Center	2100 Northdale Blvd NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	04/25/1996	04/25/1996	11/22/1996	Yes
331	LUST	003-133124420058	191601	Former Service Building	Foley Blvd & 111th Ln NW	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Unknown	Not Available	12/23/1999	12/28/1999	09/29/2003	Approximate
332	LUST	003-223124210065	206929	Gorham Builders C/o Remax	10732 Hanson Blvd	Coon Rapids	Not Available	Not Available	Not Available	Not Available	Not Available	Fuel Oil 1 & 2	Not Available	04/19/2001	04/19/2001	05/16/2001	Yes

LUST - Leaking Underground Storage Tank
Approximate - Parcel not found but location is approximately where that address would exist.

Table C-6

PCSI Results - Chemical Storage Sites in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

Non-Agricultural Chemicals							
PCSI ID	**PID Number**	**CAS Number**	**Facility Name**	**Site Address**	**Chemicals**	**PCS Code - Material Code**	**Location Verified**
333	053-0311921410062	270150052	Brooklyn Park Public Utilities Well #15	10441 W River Rd	Chlorine; Hydrofluorosilicic Acid (25% Or Less)	STOR - C000	Approximate
334	003-193123220062	20200049	681 Properties Dba Stonegate	10640 - 10850 6th St Ne	Fuel Oil #2	STOR - F000	Yes
335	003-133124140007	20500041	Eisenhower Elementary School - Isd #11	151 Northdale Blvd	Fuel Oil	STOR - F000	Yes
336	003-153124330002	20500043	Hoover Elementary School - Isd #11	2369 109Th Ave Nw	Fuel Oil	STOR - F000	Yes
337	003-223124440005	20500044	Rivertrail Learning Center At L.O. Jacob - Isd #11	1700 Coon Rapids Blvd	Fuel Oil	STOR - F000	Yes
338	003-213124210001	20500045	Mississippi Elementary School - Isd #11	10620 Direct River Drive	Fuel Oil	STOR - F000	Yes
339	003-113124140002	20500047	Sand Creek Elementary School - Isd #11	12156 Olive St Nw	Fuel Oil	STOR - F000	Yes
340	003-133124230074	20500048	Sorteberg Early Childhood Center - Isd #11	11400 Magnolia St Nw	Fuel Oil	STOR - F000	Yes
341	003-153124220001	20500050	Coon Rapids Middle School - Isd #11	11600 Raven St Nw	Fuel Oil	STOR - F000	Yes
342	003-133124420001	20500051	Northdale Middle School - Isd #11	11301 Dogwood St Nw	Chlorine; Fuel Oil	STOR - C000	Yes
343	003-133124130109	20500054	Coon Rapids East Water Treatment Plant	11300 Dogwood St	Chlorine; Hydrofluorosilicic Acid; Sodium Hydroxide; Sulfur Dioxide	STOR - C000	Yes
344	003-223124230002	20500055	Coon Rapids West Water Treatment Plant	2241 105Th Ave Nw	Chlorine; Hydrofluorosilicic Acid; Sodium Hydroxide; Sulfur Dioxide	STOR - C000	Yes
345	003-213124240044	20500058	Coon Rapids Well #7		Chlorine; Hydrofluorosilicic Acid	STOR - C000	Yes
346	003-273124110043	20500059	Coon Rapids Well #12	10080 Egret Blvd	Chlorine; Hydrofluorosilicic Acid	STOR - C000	Yes
347	003-113124140001	20500061	Coon Rapids Well #16	12280 Olive St	Chlorine; Hydrofluorosilicic Acid	STOR - C000	Yes
348	003-173124410001	20500065	Anoka-Ramsey Community College	11200 Mississippi Blvd	Fuel Oil #2	STOR - F000	Yes
349	003-173124220016	20500071	City Of Coon Rapids Well #6	11611 Yucca St	Chlorine; Hydrofluorosilicic Acid	STOR - C000	Yes
350	003-173124140001	20500074	Wcco Radio Transmitter	3237 Coon Rapids Blvd Nw	Diesel Fuel	STOR - F000	Yes
351	003-083124120015	20500086	The Home Depot Store #2803	3550 124Th Avenue, Nw	Lead; Sulfuric Acid	STOR - C000	Yes
352	003-153124430016	20500092	Epiphany Church	1900 111Th Ave Nw	Fuel Oil	STOR - F000	Yes
353	003-163124340061	20500093	Coon Rapids Ice Center	11000 Crooked Lake Blvd	Ammonia (Anhydrous)	STOR - C000	Yes

Agricultural Chemicals							
PCSI ID	**PID Number**	**Program ID**	**Facility Name**	**Site Address**	**License Type**	**PCS Code - Material Code**	**Location Verified**
354	003-133124220058	20148822	Quality Care Lawn Service	11531 Norway St NW	Fertilizer License	STOR - A050	Yes

Approximate - Parcel not found but location is approximately where that address would exist.

Table C-7

High Capacity Wells within One Mile of the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

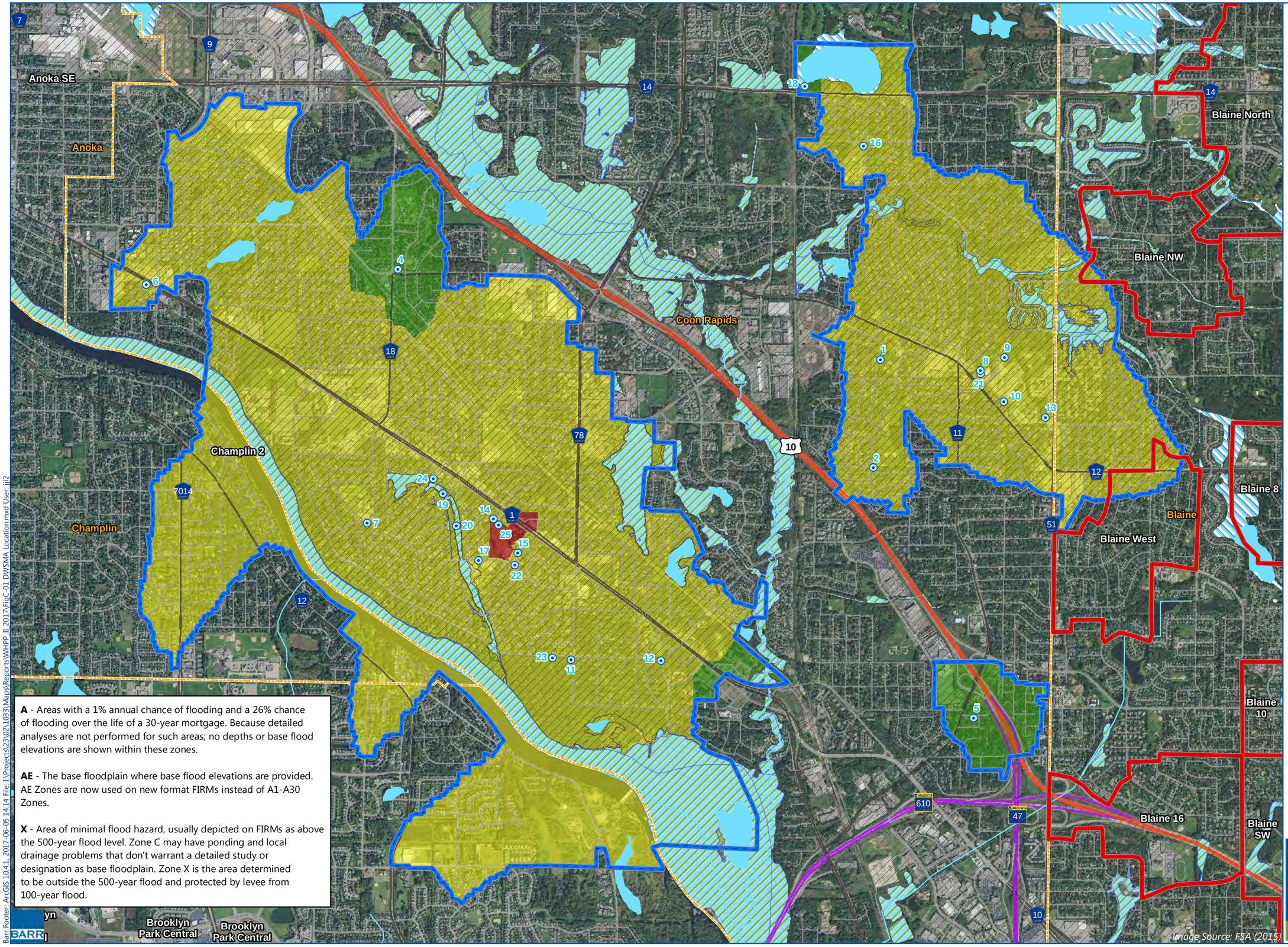
PCSI ID	Unique ID	Status	Permittee	Use	Aquifer	Permitted Volume MGY
1	202926	Active	Coon Rapids, City Of	Municipal/Public Water Supply	St. Lawrence-Eau Claire	3200
2	202929	Active	Coon Rapids, City Of	Municipal/Public Water Supply	St. Lawrence-Mt. Simon	3200
3	202940	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Quaternary Buried Artesian	3200
4	202972	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
5	202951	Active	Coon Rapids, City Of	Municipal/Public Water Supply	St. Lawrence-Mt. Simon	3200
6	202937	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City	3200
7	202943	Active	Coon Rapids, City Of	Municipal/Public Water Supply	St. Lawrence-Mt. Simon	3200
8	202932	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
9	202931	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Eau Claire	3200
10	202930	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
11	202965	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
12	168721	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
13	168720	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
14	110460	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
15	110461	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3200
16	161413	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Wonewoc-Eau Claire-Mt. Simon	3200
17	150357	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Quaternary Buried Artesian	3200
18	110469	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Mt. Simon	3200
19	110475	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Quaternary Buried Artesian	3200
20	420956	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Quaternary Buried Artesian	3200
21	474384	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Quaternary Buried Artesian	3200
22	474385	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Quaternary Buried Artesian	3200
23	463020	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Water Table	3200
24	674478	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Wonewoc	3200
25	674479	Active	Coon Rapids, City Of	Municipal/Public Water Supply	Tunnel City-Wonewoc	3200
42	228438	Active	Champlin, City of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	1131
59	420970	Active	Brooklyn Park, City of - Public Works Dept	Municipal/Public Water Supply	Mt. Simon-Hinckley	3560
121	686058	Active	Pheasant Ridge Townhomes Association	Landscaping/Athletic Field Irrigation	Tunnel City	1.4
133	503723	Active	Reisling Park North Iii	Landscaping/Athletic Field Irrigation	St. Lawrence-Tunnel City	4.1
165	706843	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	Tunnel City-Wonewoc	9.2
167	778604	Active	Natureview Vista Association	Landscaping/Athletic Field Irrigation	St. Lawrence-Tunnel City	5
173	473464	Active	Mnscu Anoka-Ramsey Community College	Landscaping/Athletic Field Irrigation	Quaternary Buried Artesian	15
151587	151587	Active	Blaine, City of	Municipal/Public Water Supply	Tunnel City-Eau Claire	3337
191909	191909	Active	Brooklyn Park, City of - Public Works Dept	Landscaping/Athletic Field Irrigation	St. Lawrence-Wonewoc	15
202971	202971	Active	Anoka, City Of	Municipal/Public Water Supply	St. Lawrence-Mt. Simon	1200
208611	208611	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	Tunnel City-Eau Claire	16
208615	208615	Active	Blaine, City of	Municipal/Public Water Supply	St. Lawrence-Mt. Simon	3337

Table C-7

High Capacity Wells within One Mile of the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	Unique ID	Status	Permittee	Use	Aquifer	Permitted Volume MGY
208616	208616	Active	Blaine, City of	Municipal/Public Water Supply	Tunnel City-Eau Claire	3337
208628	208628	Active	Blaine, City of	Municipal/Public Water Supply	St. Lawrence-Mt. Simon	3337
208629	208629	Active	Blaine, City of	Municipal/Public Water Supply	Tunnel City-Mt. Simon	3337
208630	208630	Active	Blaine, City of	Municipal/Public Water Supply	Tunnel City-Eau Claire	3337
209305	209305	Active	Federal Cartridge Co	Non-metallic Processing (rubber, plastic, glass, concrete)	Tunnel City-Wonewoc	158.5
209305	209305	Active	Federal Cartridge Co	Other Industrial Processing	Tunnel City-Wonewoc	158.5
209306	209306	Active	Federal Cartridge Co	Non-metallic Processing (rubber, plastic, glass, concrete)	Tunnel City-Wonewoc	158.5
209306	209306	Active	Federal Cartridge Co	Other Industrial Processing	Tunnel City-Wonewoc	158.5
209308	209308	Active	Federal Cartridge Co	Non-metallic Processing (rubber, plastic, glass, concrete)	Tunnel City-Wonewoc	159
209308	209308	Active	Federal Cartridge Co	Other Industrial Processing	Tunnel City-Wonewoc	159
231864	231864	Active	Bunker Hills Golf Club	Golf Course Irrigation	Quaternary Buried Artesian	195
231866	231866	Active	Bunker Hills Golf Club	Golf Course Irrigation	Quaternary Buried Artesian	195
431681	431681	Active	Anoka County Parks And Recreation	Basin (Lake) Level Maintenance	Tunnel City-Wonewoc	7
431681	431681	Active	Anoka County Parks And Recreation	Other Water Level Maintenance	Tunnel City-Wonewoc	7
462964	462964	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	Water Table	6
462967	462967	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	Quaternary Buried Unconfined	20
482893	482893	Active	Champlin, City of	Landscaping/Athletic Field Irrigation	Tunnel City-Wonewoc	24
500696	500696	Active	Bunker Hills Golf Club	Golf Course Irrigation	Quaternary Buried Artesian	195
503670	503670	Active	Pheasant Ridge Townhomes Association	Landscaping/Athletic Field Irrigation	Tunnel City	1.4
674482	674482	Active	Brooklyn Park, City of - Public Works Dept	Landscaping/Athletic Field Irrigation	Tunnel City-Wonewoc	22.8
676414	676414	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	Tunnel City-Wonewoc	23
676448	676448	Active	Anoka-Hennepin ISD 11	Landscaping/Athletic Field Irrigation	Tunnel City-Wonewoc	9
711531	711531	Active	Realife Cooperative of Coon Rapids	Landscaping/Athletic Field Irrigation	Quaternary Buried Artesian	3
768685	768685	Active	Saint Therese At Oxbow Lake Inc	Landscaping/Athletic Field Irrigation	Quaternary Buried Artesian	5
NA1	Not Available	Active	Centerpoint Energy	Construction Dewatering	Not Available	13

Figures



A - Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.

AE - The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.

X - Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.

Municipal Well

Municipal Boundary

Coon Rapids DWSMA

FEMA Flood Zone

A

AE

X

DWSMA Vulnerability

High

Moderate

Low

Nearby DWSMAs

Anoka

Blaine

Brooklyn Park Central

Champlin

2 - Municipal Well Location PCSI ID (PCSI ID refers to Table C-3)

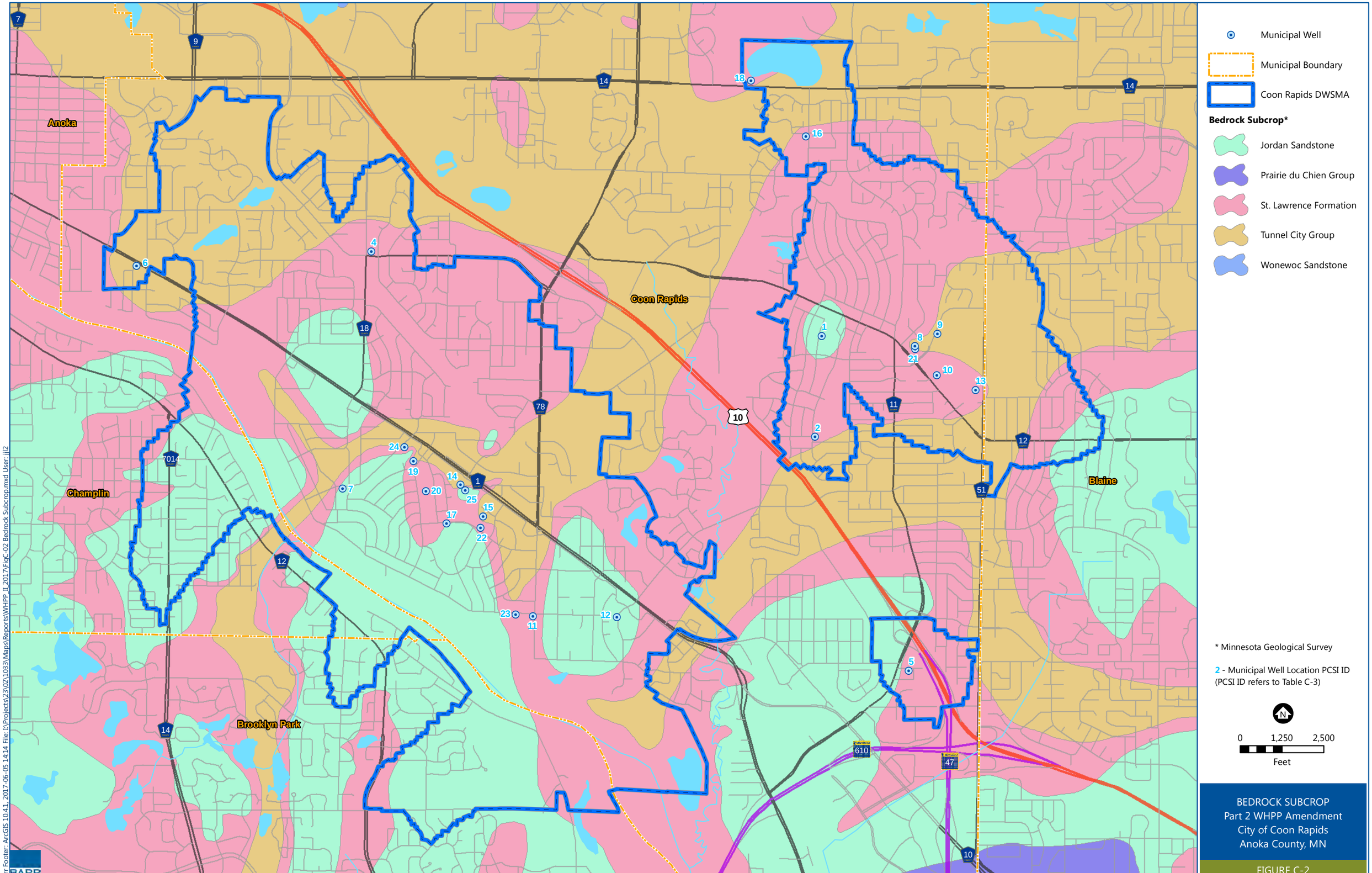
0 1,250 2,500

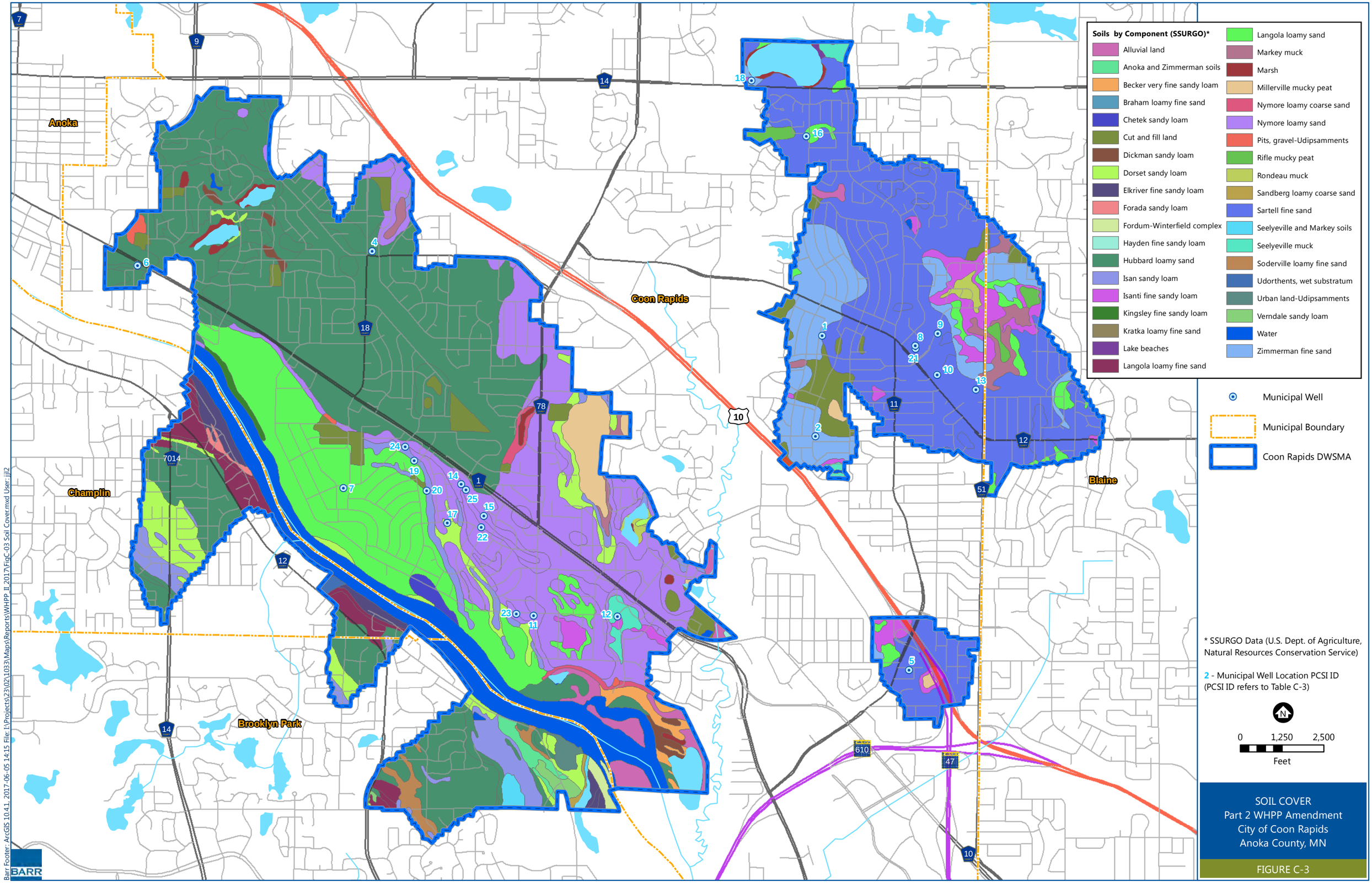
Feet

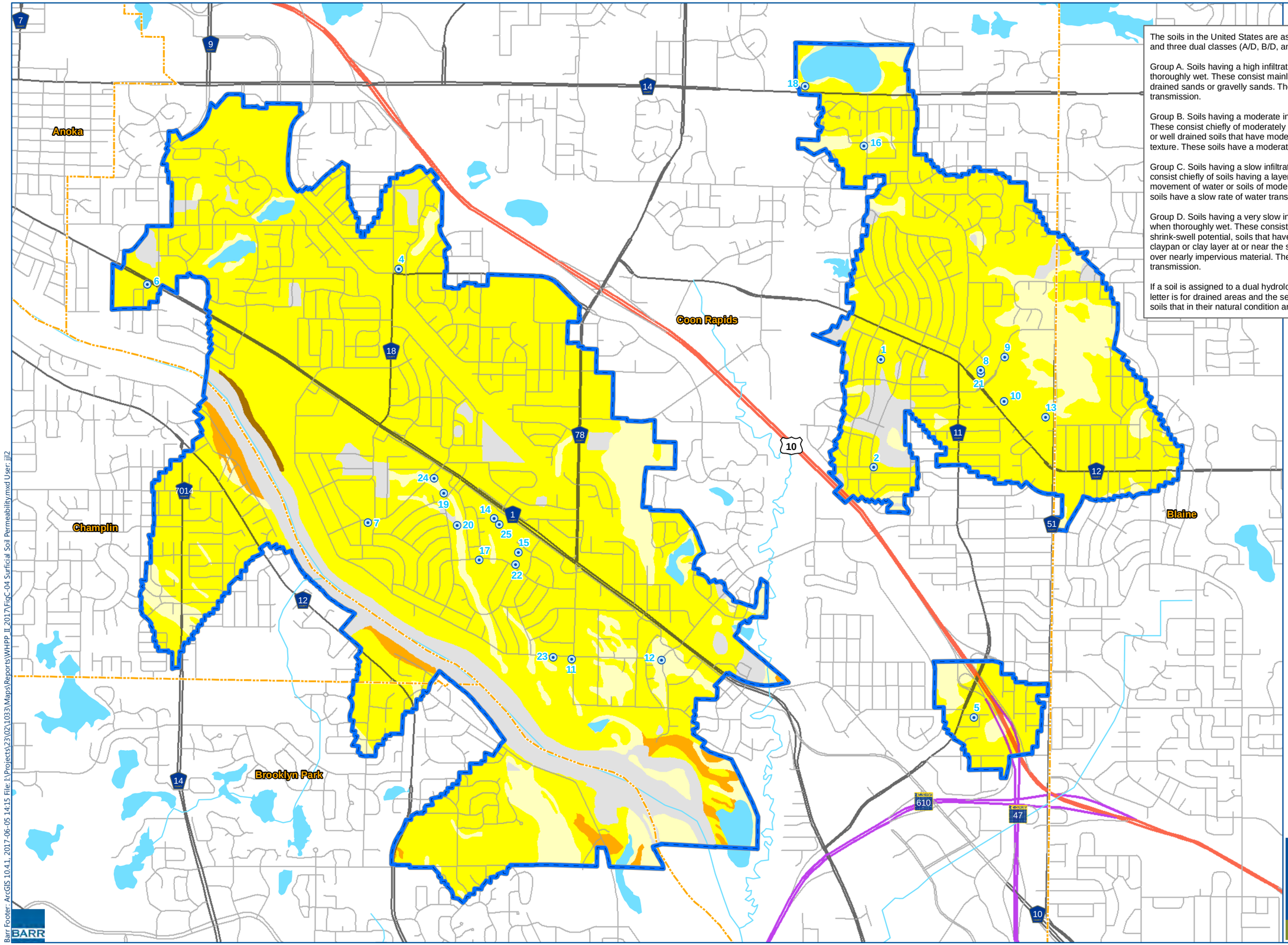
MUNICIPAL WELLS, DWSMAs, AND AQUIFER VULNERABILITY
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-1

Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:14 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-01 DWSMA Location.mxd User: jil2


Municipal Well
Municipal Boundary
Coon Rapids DWSMA
Bedrock Subcrop*
Jordan Sandstone
Prairie du Chien Group
St. Lawrence Formation
Tunnel City Group
Wonewoc Sandstone
Anoka
Coon Rapids
Champlin
Brooklyn Park
Blaine
* Minnesota Geological Survey
2 - Municipal Well Location PCSI ID
(PCSI ID refers to Table C-3)
0
1,250
2,500
Feet
BEDROCK SUBCROP
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN
FIGURE C-2
BARR
Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:14 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-02 Bedrock Subcrop.mxd User: jjl2


Soils by Component (SSURGO)*
Alluvial land
Anoka and Zimmerman soils
Becker very fine sandy loam
Braham loamy fine sand
Chetek sandy loam
Cut and fill land
Dickman sandy loam
Dorset sandy loam
Elkriver fine sandy loam
Forada sandy loam
Fordum-Winterfield complex
Hayden fine sandy loam
Hubbard loamy sand
Isan sandy loam
Isanti fine sandy loam
Kingsley fine sandy loam
Kratka loamy fine sand
Lake beaches
Langola loamy fine sand
Langola loamy sand
Markey muck
Marsh
Millerville mucky peat
Nymore loamy coarse sand
Nymore loamy sand
Pits, gravel-Udipsamments
Rifle mucky peat
Rondeau muck
Sandberg loamy coarse sand
Sartell fine sand
Seelyeville and Markey soils
Seelyeville muck
Soderville loamy fine sand
Udorthents, wet substratum
Urban land-Udipsamments
Verndale sandy loam
Water
Zimmerman fine sand
Municipal Well
Municipal Boundary
Coon Rapids DWSMA
Anoka
Coon Rapids
Champlin
Brooklyn Park
Blaine
* SSURGO Data (U.S. Dept. of Agriculture, Natural Resources Conservation Service)
2 - Municipal Well Location PCSI ID (PCSI ID refers to Table C-3)
N
0 1,250 2,500
Feet
SOIL COVER
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN
FIGURE C-3
BARR
Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:15 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-03 Soil Cover.mxd User: jil2



The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Municipal Well

Municipal Boundary

Coon Rapids DWSMA

Soil Permeability Classification*

Not rated or not available

A

A/D

B

B/D

C

C/D

* SSURGO Data (U.S. Dept. of Agriculture, Natural Resources Conservation Service)

2 - Municipal Well Location PCSI ID (PCSI ID refers to Table C-3)

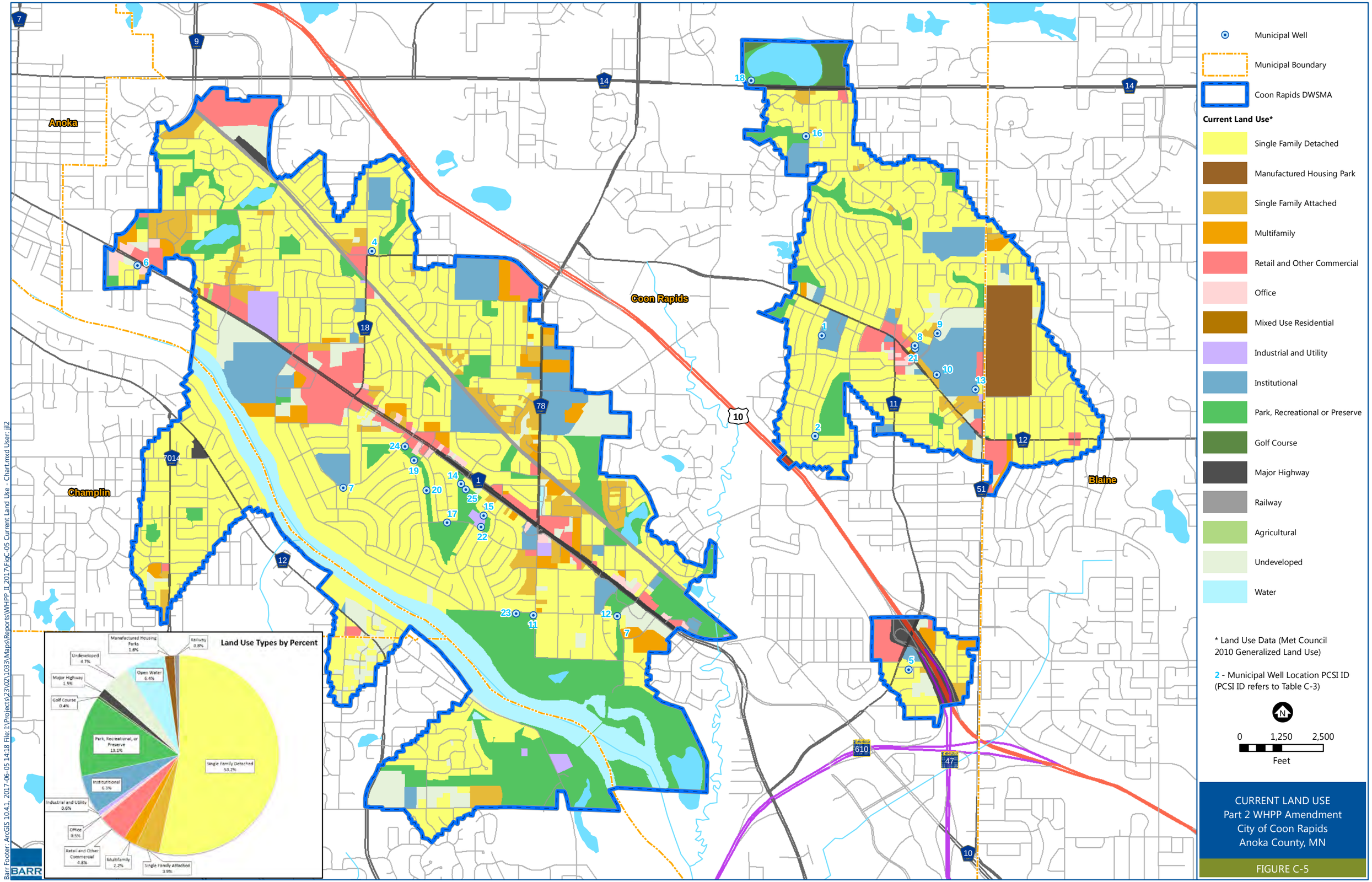
0 1,250 2,500
Feet

SURFICIAL SOIL PERMEABILITY
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-4

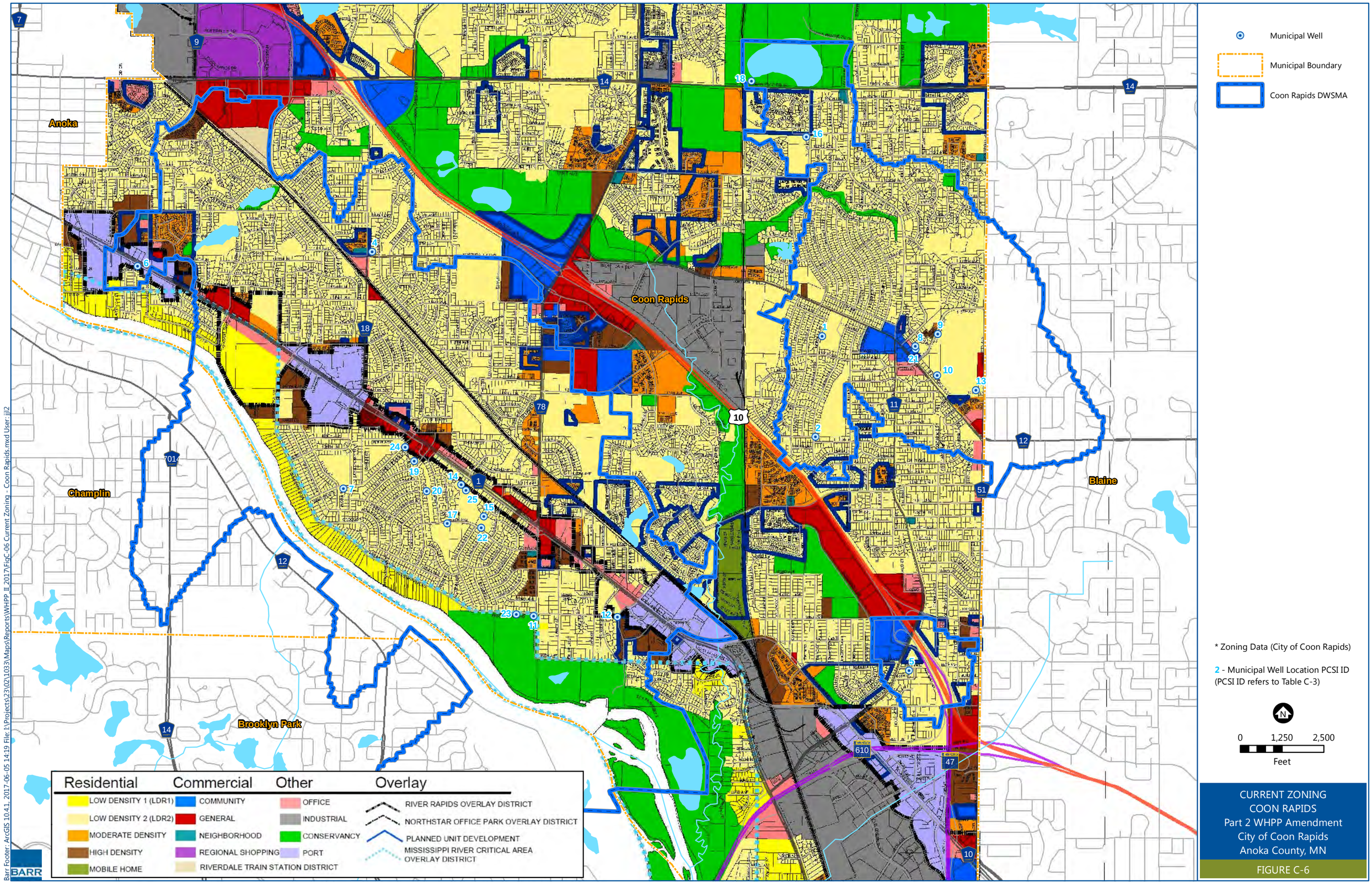
BARR

Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:15 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-04 Surficial Soil Permeability.mxd User: jjl2



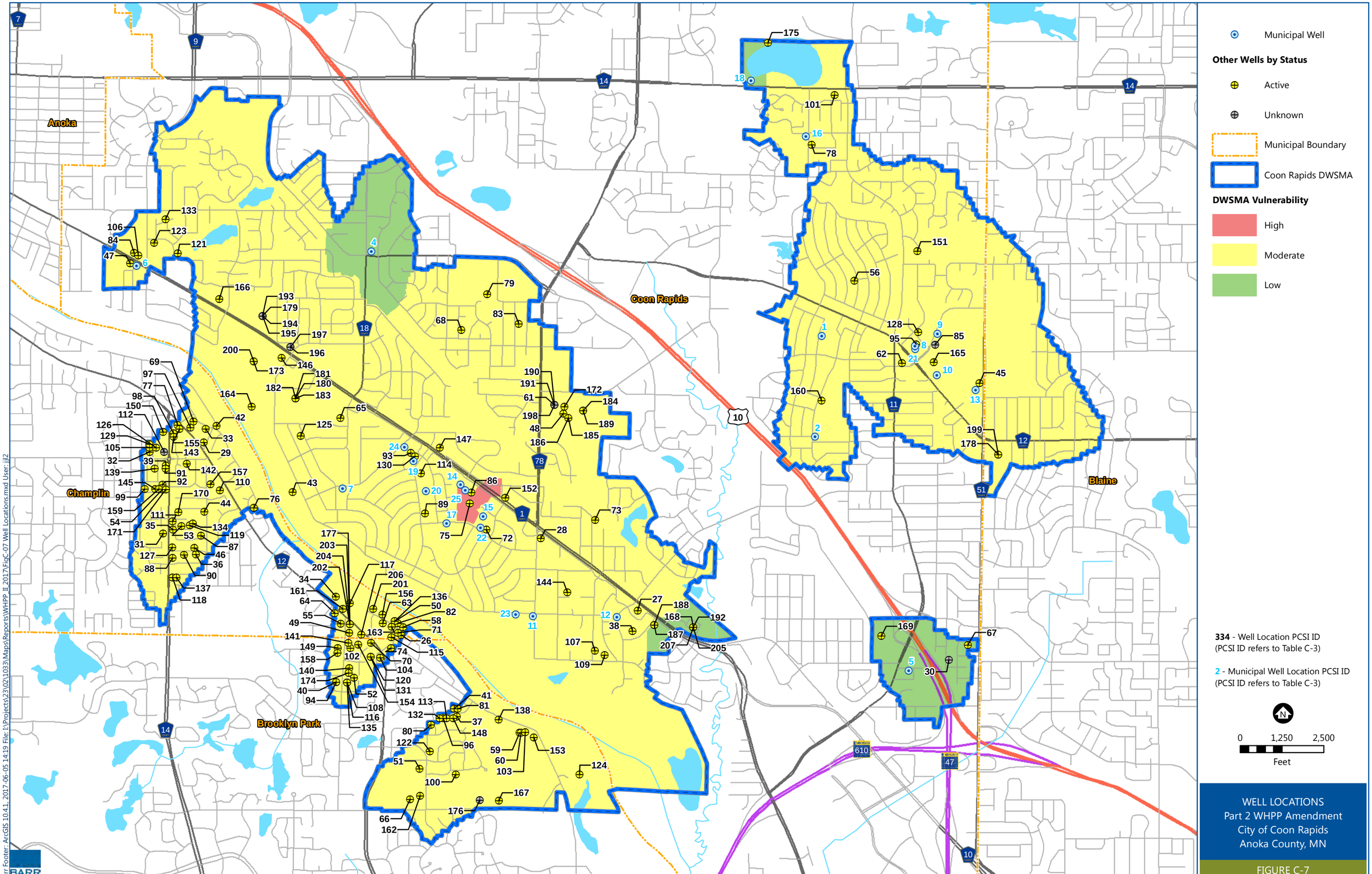
CURRENT LAND USE
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-5



CURRENT ZONING
COON RAPIDS
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-6

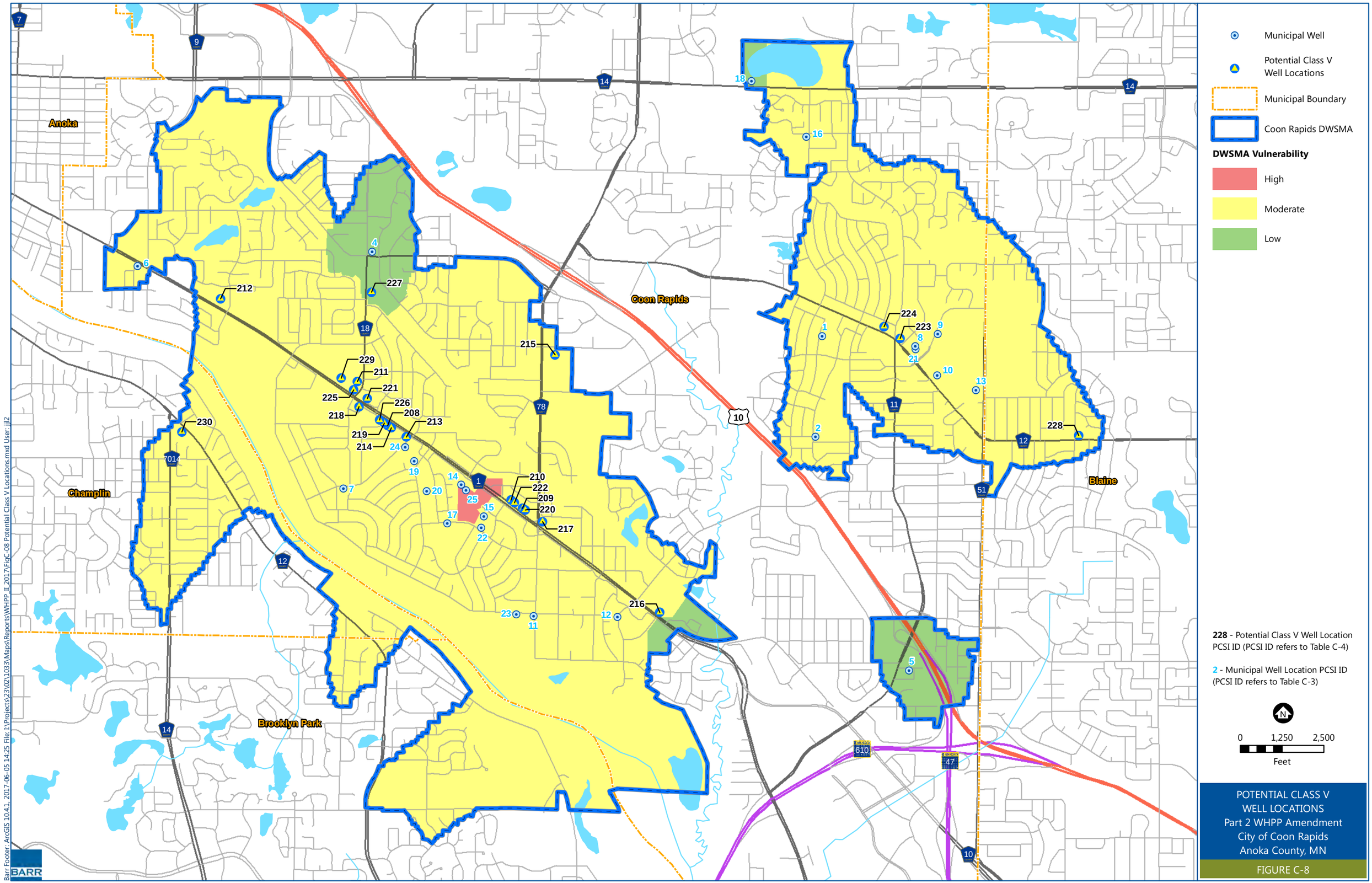


WELL LOCATIONS
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-7

Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:19 File: I:\Projects\23\02\103\Maps\Reports\WHPP_II_2017\FigC-07 Well Locations.mxd User: jjl2

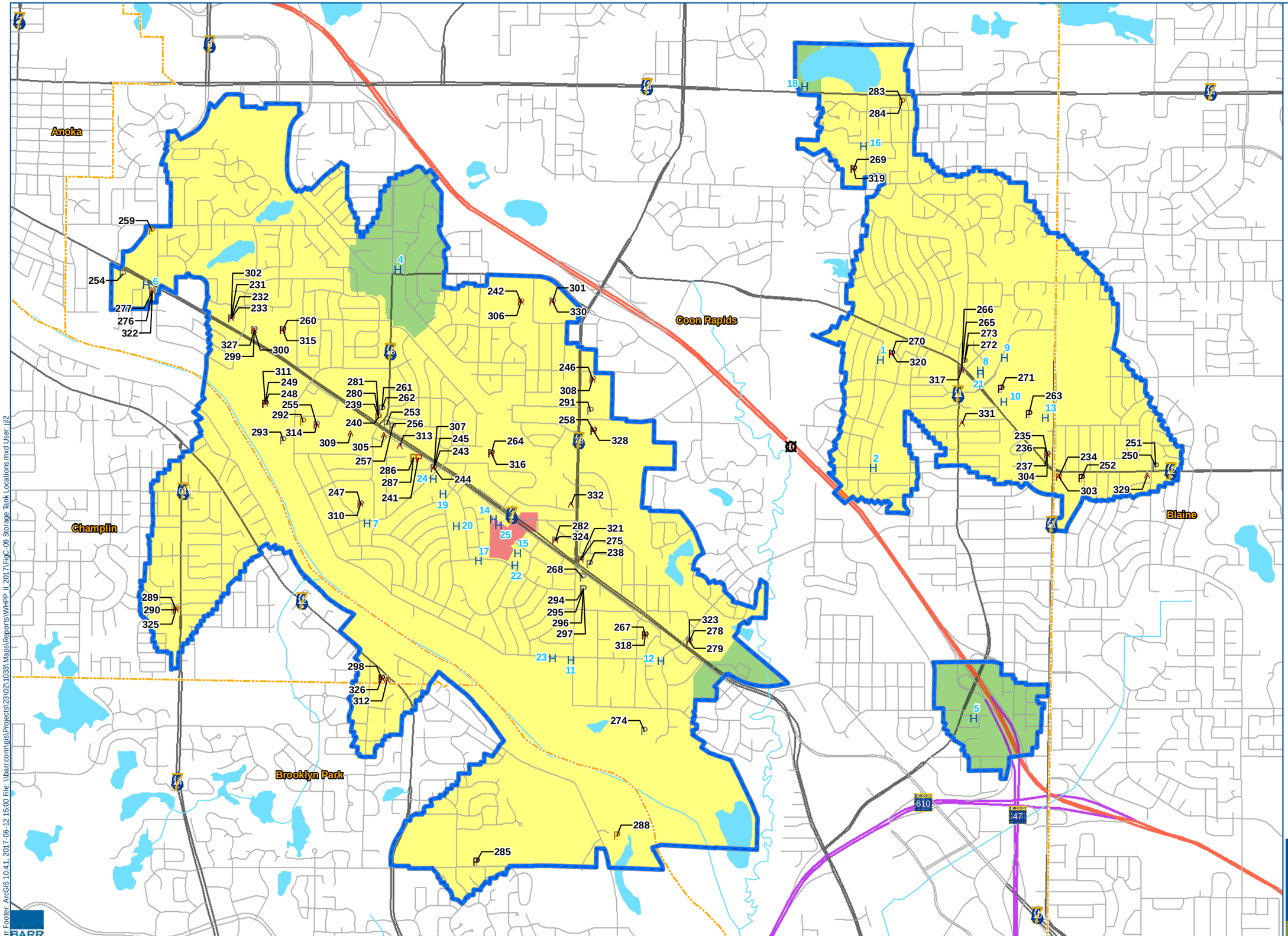
BARR



POTENTIAL CLASS V WELL LOCATIONS
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-8

Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:25 File: I:\Projects\23\02\103\Maps\Reports\WHPP_II_2017\FigC-08 Potential Class V Locations.mxd User: jjl2



H Municipal Well

^ MPCA LUST Site

Tank Location

Active

Active/Inactive*

Inactive

Unknown

Municipal Boundary

Coon Rapids DWSMA

DWSMA Vulnerability

High

Moderate

Low

* Location includes both active and removed tanks

263 - Tank Location PCSI ID (PCSI ID refers to Table C-5)

2 - Municipal Well Location PCSI ID (PCSI ID refers to Table C-3)

N

0 1,250 2,500

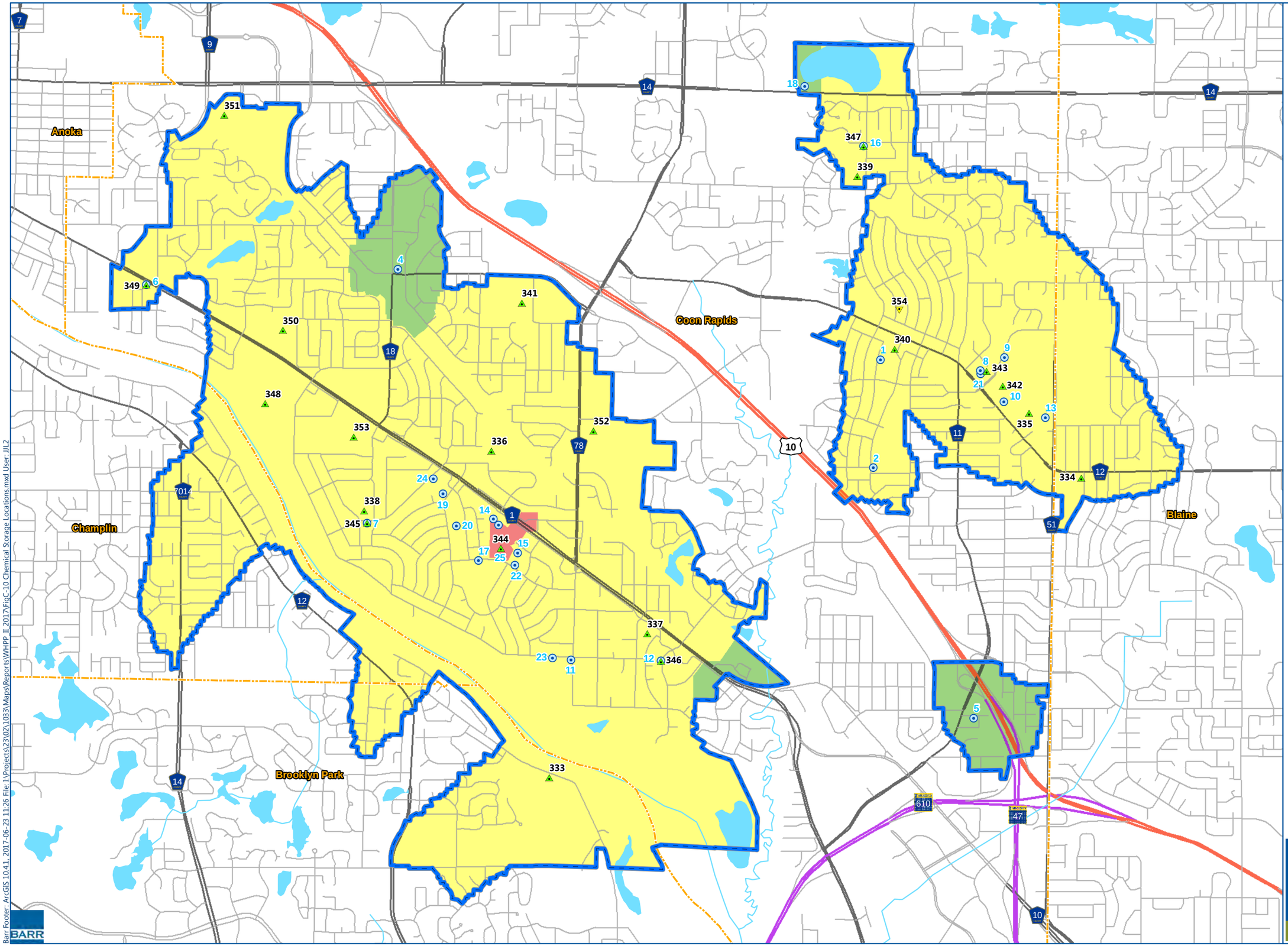
Feet

STORAGE TANK LOCATIONS
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-9

BARR

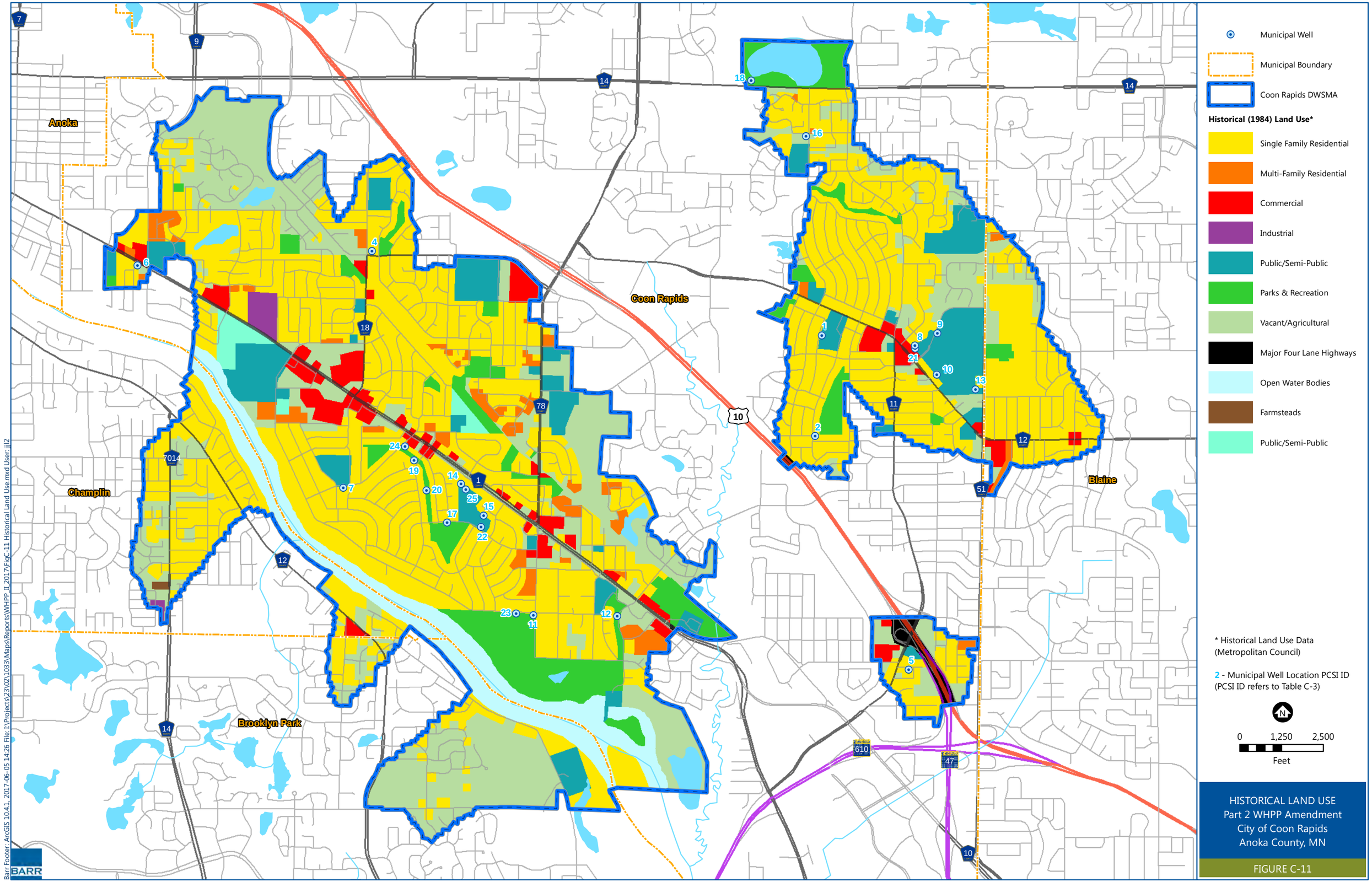
Barr Footer: ArcGIS 10.4.1, 2017-06-12 15:00 File: \\barr.com\gis\Projects\23\02\10331\Maps\Reports\WHPP II 2017\FigC-09 Storage Tank Locations.mxd User: jjl2

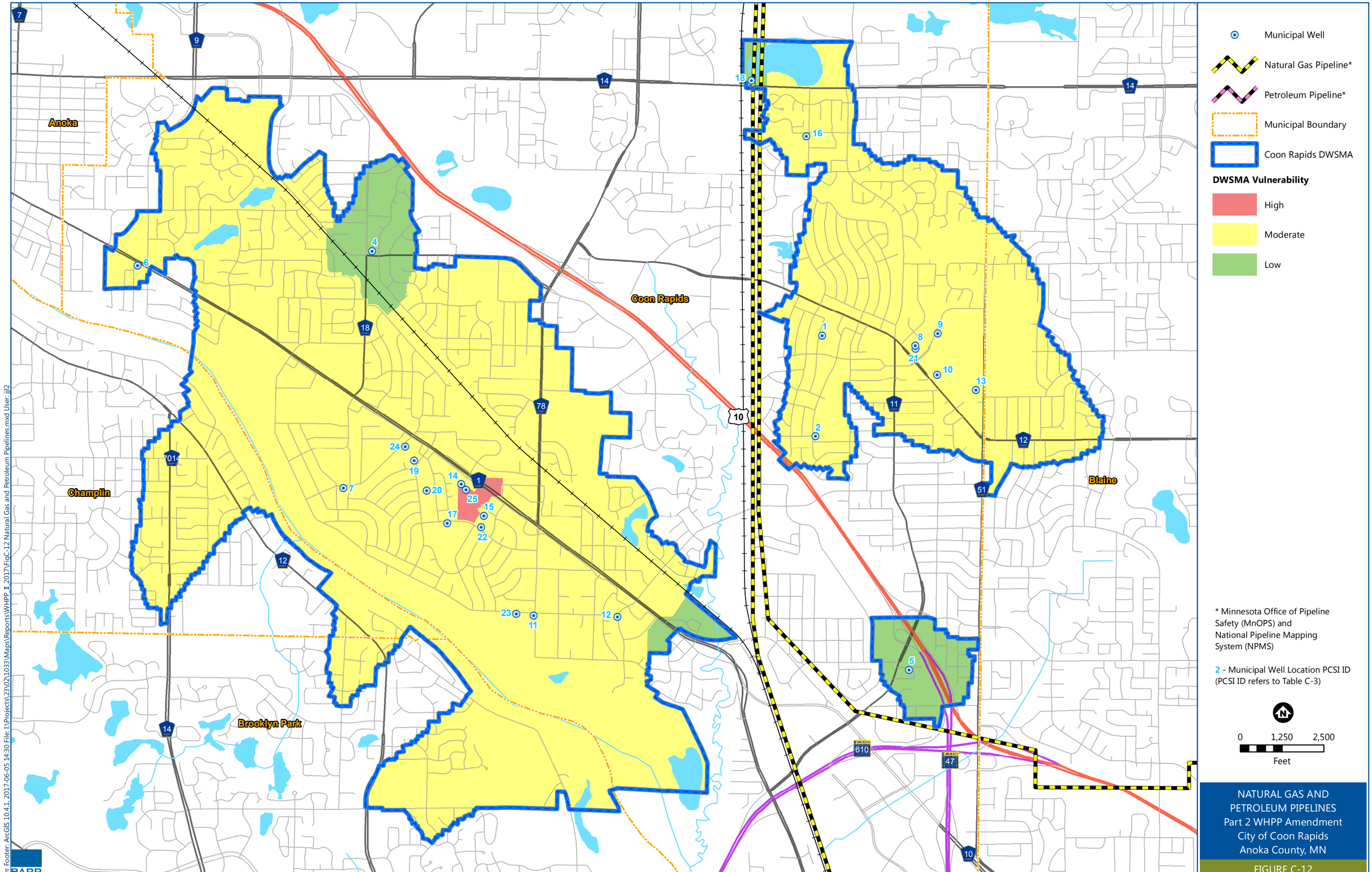


CHEMICAL STORAGE LOCATIONS
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-10

Barr Footer: ArcGIS 10.4.1, 2017-06-23 11:26 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-10 Chemical Storage Locations.mxd User: JJL2

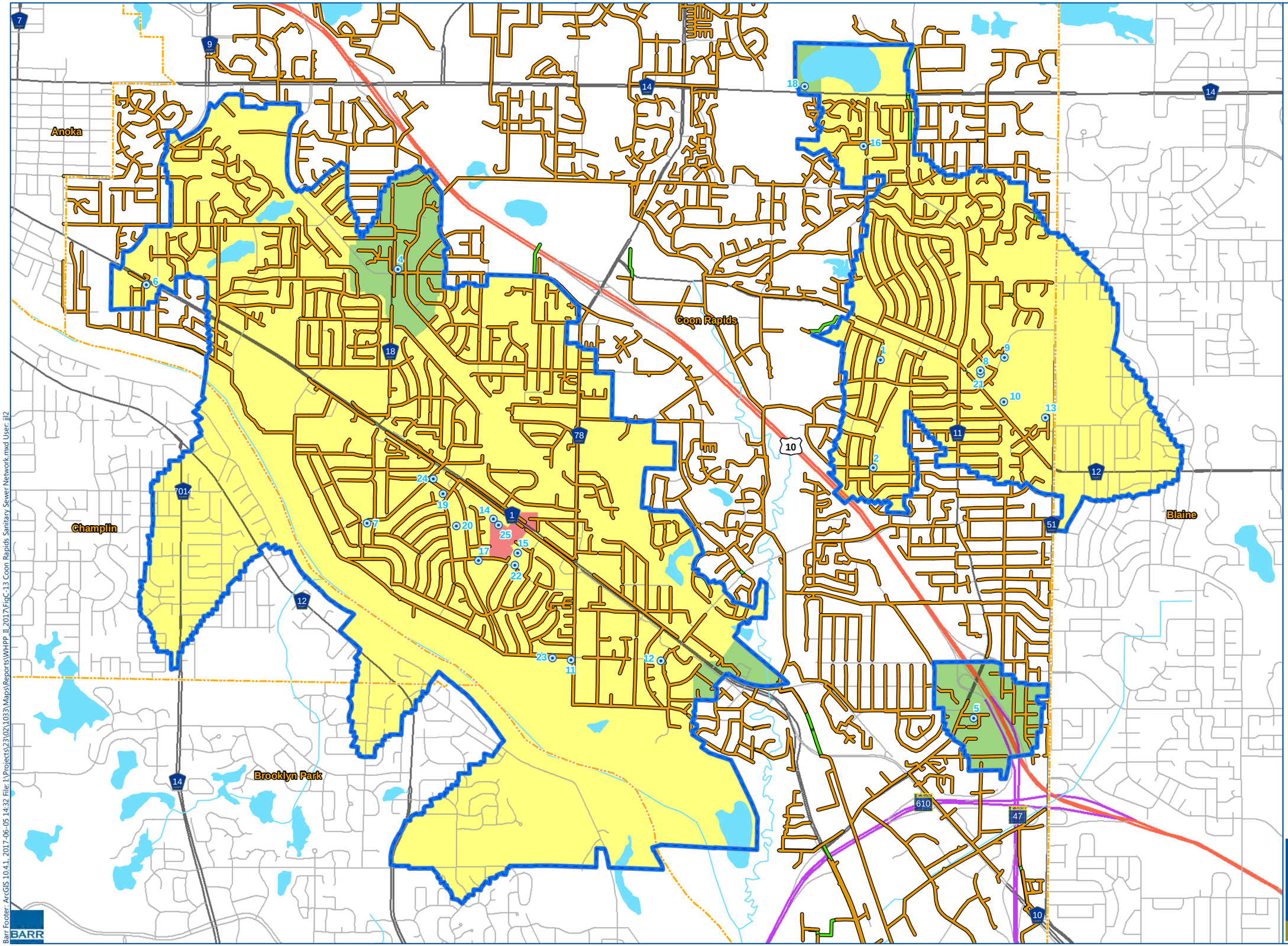

Municipal Well
Municipal Boundary
Coon Rapids DWSMA
Historical (1984) Land Use*
Single Family Residential
Multi-Family Residential
Commercial
Industrial
Public/Semi-Public
Parks & Recreation
Vacant/Agricultural
Major Four Lane Highways
Open Water Bodies
Farmsteads
Public/Semi-Public
* Historical Land Use Data (Metropolitan Council)
2 - Municipal Well Location PCSI ID (PCSI ID refers to Table C-3)
N
0
1,250
2,500
Feet
Anoka
Coon Rapids
Champlin
Brooklyn Park
Blaine
HISTORICAL LAND USE
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN
FIGURE C-11
BARR
Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:26 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-11 Historical Land Use.mxd User: jjl2



NATURAL GAS AND PETROLEUM PIPELINES
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-12

Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:30 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-12 Natural Gas and Petroleum Pipelines.mxd User: jjl2



Municipal Well

Municipal Boundary

Coon Rapids DWSMA

Sanitary Sewer Pipes*

Gravity Main

Pressurized Main

DWSMA Vulnerability

High

Moderate

Low

* Sewer Data (City of Coon Rapids)

2 - Municipal Well Location PCSI ID (PCSI ID refers to Table C-3)

0 1,250 2,500

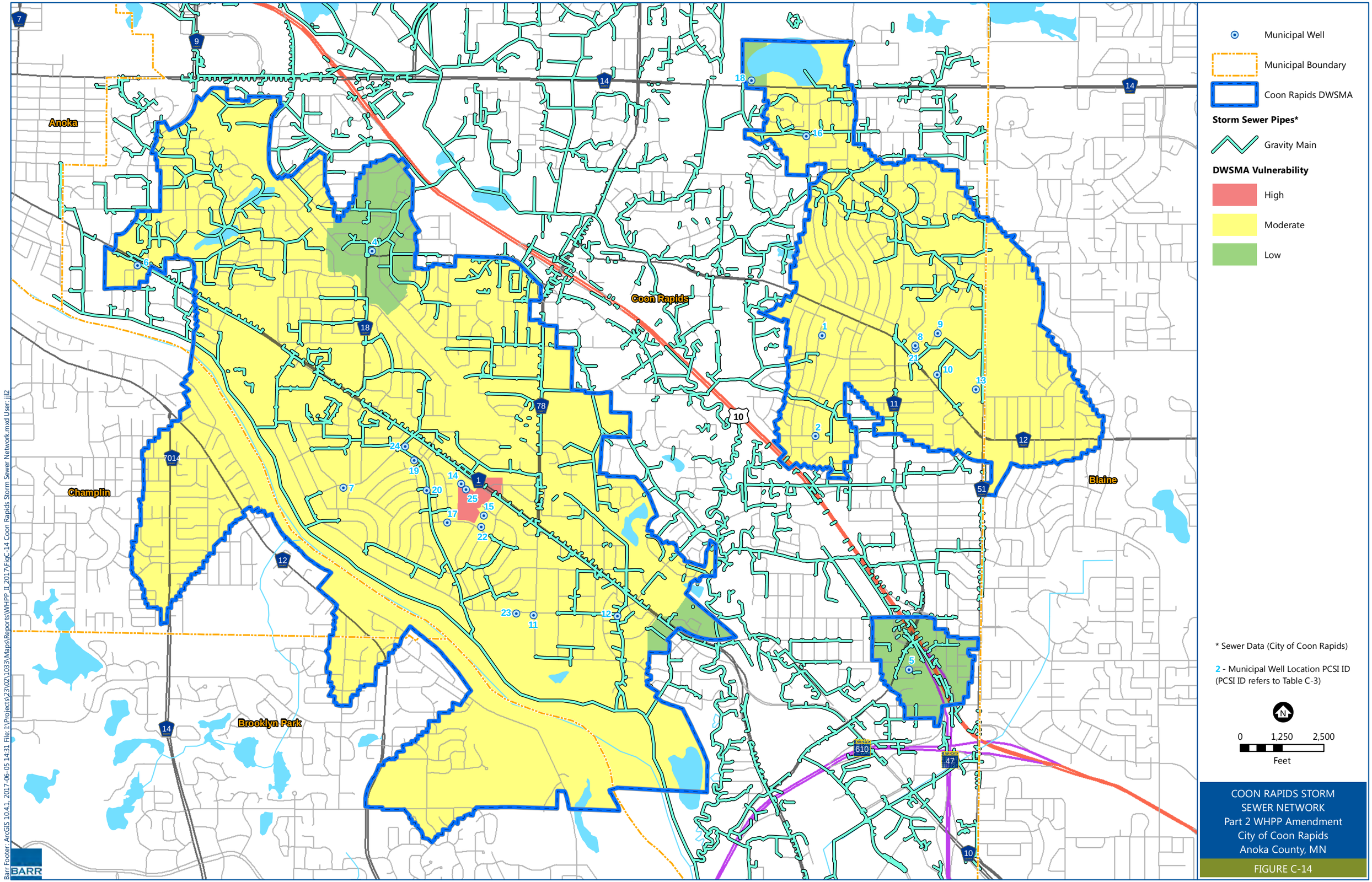
Feet

COON RAPIDS SANITARY SEWER NETWORK
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-13

Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:32 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-13 Coon Rapids Sanitary Sewer Network.mxd User: jjl2

BARR



COON RAPIDS STORM SEWER NETWORK
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN

FIGURE C-14

Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:31 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\FigC-14 Coon Rapids Storm Sewer Network.mxd User: jjl2

Attachment C-1

Precipitation Data

Minnesota Climatology Working Group

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

Annual Reports of Monthly Precipitation Totals

This application creates annual summaries of precipitation data gathered by volunteer-based observation networks throughout Minnesota. The data presented are monthly totals and the data are grouped by county. Observer locations are described using township, range, and section numbers.

Choose a county and year, then click on **"Annual report"**.

ANOKA 2012 Annual report

2012 ANOKA Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
2	30N	24W	3	RUSCHY D	DNR	.51	1.68	1.31	2.50	9.64	4.20	5.70	1.12	.51	1.45	1.09	1.34	29.07	28.70	31.05	21.17
2	30N	24W	14		SWCD	.35	2.08	1.55	2.89	10.52	4.38	5.45	1.02	.53	1.81	1.03	1.69	30.40	30.57	33.30	21.90
2	30N	24W	14		BYRG			1.53	2.87	10.90	4.59	5.86	1.21	.62	1.74	.95	1.76				23.18
2	30N	24W	25	RANTA SC	MOSQ				3.05	10.18	4.01	5.03	.95		1.07						
2	31N	22W	29	LINO LAK	MOSQ				2.06	10.43	3.27	4.48	.77	.59	1.42						19.54
2	31N	23W	21	BLAINE	MOSQ				2.37	10.05	3.59	5.20	1.11	.58	1.52						20.53
2	31N	23W	22		BYRG			1.45	2.41	10.20				.50	1.58	1.41	2.51				
2	31N	24W	7	LUBERDA	MOSQ				2.93	10.46	3.68	5.15	1.06	.54	2.89						20.89
2	31N	24W	12		SWCD				2.78	10.43											
2	31N	24W	24	MADETZKE	MOSQ						2.62	4.07	1.02	.55	1.33						
2	32N	22W	14		BYRG	.64	1.08	1.81	2.75	10.28	3.28	5.55	1.29	.58	1.74	.62	1.39	29.37	29.23	31.01	20.98
2	32N	23W	16	JOHNSONB	MOSQ				2.53	9.96	2.88	5.38	.92	.74	1.76						19.88
2	32N	23W	18		SWCD				2.60	10.24	2.54	5.63	3.75	.58	1.44	.90					22.74
2	32N	23W	20		SWCD			1.16	2.37	11.35	2.99	6.95	1.11	.68	1.73	*					23.08
2	32N	23W	21	KIRKMANM	MOSQ				2.56	10.45	2.51	5.78	.83	.62	1.53						20.19
2	32N	24W	4	SPEISER	MOSQ				2.02	12.53	3.12	5.75	.77	.53	.62						22.70
2	32N	24W	23	ANDOVER	NWS	.45	1.61	1.42	2.56	11.03	1.94	4.85	.88	.63	2.70		1.82				19.33
2	32N	24W	26		SWCD	.64	1.57	1.52	2.34	10.68	3.26	5.57	.77	.53	2.41	.89	1.57	28.57	28.41	31.75	20.81
2	32N	24W	35	ANOKA	MOSQ				2.40	9.08	2.88	4.12	.86	.55	1.59						17.49
2	32N	25W	6		SWCD				2.00	11.57	4.38	5.42	1.08	.94	1.03	.88					23.39
2	32N	25W	21	SHEFVELA	MOSQ				2.31	9.91	4.06	4.80	.20								
2	33N	22W	7		SWCD			*	2.13	9.46	2.73	4.04	1.10	.28	1.55						17.61
2	33N	23W	4	EAST BET	MOSQ				2.25	12.46	4.16	6.42	1.05	.40	2.61						24.49
2	33N	23W	18		SWCD			1.44	2.43	12.92	3.21	6.44	1.18	.49	2.39						24.24
2	33N	23W	25		SWCD	.38	1.80	1.29	2.49	10.86	2.84	4.54	1.58	.40	1.85	.91	1.76	27.93	27.66	30.70	20.22
2	33N	23W	35		SWCD				2.50	10.83											
2	33N	24W	16		SWCD				2.04	12.33	3.39	4.68	1.10	.38	.89						21.88
2	33N	24W	32		SWCD	.39	1.74	1.04	2.39	12.45	2.80	5.27	1.02	.37	2.46	.95	1.48	29.24	29.12	32.36	21.91
2	33N	24W	32		SWCD	.14		.93	1.93	9.95	4.03	5.55	1.07	.57							21.17
2	33N	25W	36		SWCD	.60			1.97	12.97	3.03	4.66	.33	.46							21.45
2	33N	25W	36		SWCD				2.41	12.31	2.90	2.99	.93	.51	1.31						19.64
2	34N	22W	27		SWCD			1.32	2.48	11.59	3.10	5.09	1.23	.49	2.11						21.50
2	34N	23W	36		BYRG	.92	1.44	1.44	2.11	13.22	2.47	7.15	1.05	.37	2.12	.85	1.69	31.68	31.52	34.83	24.26

2	34N 24W 32	ST FRANC NWS	.62	1.71	1.15	2.36	15.79	3.65	8.34	1.01	.26	1.48	.65	2.00			39.02	29.05
2	34N 24W 32	STFRANHS MOSQ				2.12	12.98	3.80	5.66	1.18	.36	1.08						23.98
county averages			.51	1.63	1.36	2.41	11.18	3.32	5.36	1.08	.52	1.71	.93	1.73	29.47	29.32	33.00	21.70
# of obs			11	9	15	34	34	32	32	32	31	30	12	11	7	7	8	29

- Data as received and digitized on or before 5/18/2017. **All values are in inches**.
- 'cc ttt rr ss' is county-township-range-section number, 'ooooooo' is community name (where applicable), 'nnnn' is network type.
- 'AGR', 'HYD', and 'ANN' are 12 month precipitation totals starting in Sep 2011, Oct 2011, and Jan 2012, respectively. 'GRO' is growing season (May 2012 thru Sep 2012) precipitation total.
- '*' denotes a partial monthly record, 'e' denotes that value is wholly or partially estimated.
- Prepared by: State Climatology Office - DNR Waters, phone: 651-296-4214, web: http://climate.umn.edu

For some purposes, **daily** precipitation data are required. The precipitation data archive allows a user to interactively retrieve daily precipitation data from the site nearest to a target.

Obtaining Data for Legal Purposes

Last modified: April 10, 2008

Minnesota Climatology Working Group

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

Annual Reports of Monthly Precipitation Totals

This application creates annual summaries of precipitation data gathered by volunteer-based observation networks throughout Minnesota. The data presented are monthly totals and the data are grouped by county. Observer locations are described using township, range, and section numbers.

Choose a county and year, then click on **"Annual report"**.

ANOKA 2013 Annual report

2013 ANOKA Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
2	30N	24W	3	RUSCHY D	DNR	.66	1.05	2.18	4.28	4.31	7.66	3.68	.80	1.34	4.41	.75	1.41	29.01	29.84	32.53	17.79
2	30N	24W	14		SWCD	.69	1.20	2.03	4.40	4.67	7.46	3.55	1.00	1.20	3.91	.53	1.63	30.06	30.73	32.27	17.88
2	30N	24W	14		BYRG	.69	1.12	2.03	3.78	5.00	7.43	3.61	1.05	1.33	4.06	.44	1.60	29.78	30.49	32.14	18.42
2	30N	24W	25	RANTA SC	MOSQ				2.44	5.85	7.50	2.83	1.05	1.34	4.05						18.57
2	31N	22W	29	LINO LAK	MOSQ				1.65	4.60	6.46	2.47	.62	1.63	4.42						15.78
2	31N	23W	21	BLAINE	MOSQ				3.54	5.08	4.90	3.24	.98	1.46	4.35						15.66
2	31N	23W	22		BYRG	1.18	1.50	2.30	4.13	4.70	5.30										
2	31N	24W	7	LUBERDA	MOSQ				2.94	4.00	5.65	4.12	.77	1.70	4.24						16.24
2	31N	24W	24	MADETZKE	MOSQ				3.11	4.41	5.97	3.49	.91	1.45	4.77						16.23
2	32N	22W	14		BYRG	.51	1.16	2.11	4.37	3.36	5.87	3.86	.51	1.39	3.57	.59	1.63	26.08	26.89	28.93	14.99
2	32N	23W	16	JOHNSONB	MOSQ				3.16	4.95	5.51	3.27	.67	1.66	3.62						16.06
2	32N	23W	18		SWCD			1.11	3.04	4.92	4.98	2.89	1.03	1.48	4.40						15.30
2	32N	23W	20		SWCD				5.70	4.95	5.06	3.63	1.16	1.94	4.41	.63					16.74
2	32N	23W	21	KIRKMANM	MOSQ					4.51	5.46	3.15	1.02	1.59	3.45						15.73
2	32N	24W	4	SPEISER	MOSQ				1.60	4.18	3.75	3.11	.37	2.04	4.70						13.45
2	32N	24W	23	ANDOVER	NWS	.93	1.28	1.75	3.20	3.54	4.27	2.29	.55	2.75	1.96	.38	1.96			24.86	13.40
2	32N	24W	26		SWCD	.70	1.14	2.17	3.16	4.29	5.11	2.77	1.04	1.53	3.82	.66	1.77	25.78	26.78	28.16	14.74
2	32N	24W	35	ANOKA	MOSQ				2.94	4.62	2.99	2.72	.72	1.54	3.63						12.59
2	32N	25W	6		SWCD				2.58	4.30	5.95	4.89	.65	2.62	4.25	.94					18.41
2	33N	22W	7		SWCD				2.46	4.93	4.66	1.96	.97	1.79	2.51						14.31
2	33N	23W	4	EAST BET	MOSQ				3.42	4.05	5.24	3.48	.51	2.52	3.52						15.80
2	33N	23W	18		SWCD				3.31	4.51	5.11	2.92	1.00	2.43	3.79						15.97
2	33N	23W	25		SWCD	.69	.72	1.93	2.39	4.10	4.57	3.50	.57	1.74	3.12	.70	1.31	23.39	24.73	25.34	14.48
2	33N	23W	35		SWCD				3.01	4.02	4.47	2.94	.89	1.64	3.40						13.96
2	33N	24W	16		SWCD				1.90	4.69	5.35	3.77	.56	2.35	3.43						16.72
2	33N	24W	32		SWCD	.62	1.29	2.55	4.32	3.40	6.18	3.65	.61	1.65	3.48	.75	2.40	27.88	29.16	30.90	15.49
2	33N	24W	32		SWCD		1.37	3.50	2.24	3.13	6.12	2.31	.35	1.12	1.70	.61	2.06				13.03
2	33N	25W	36		SWCD				2.71	4.59	5.42	4.19	1.06	1.86	3.73	.92					17.12
2	34N	23W	36		BYRG	.29	1.25	2.56	4.28	4.60	4.87	3.73	.54	2.78	3.59	1.06	2.17	27.15	29.56	31.72	16.52
2	34N	24W	32	ST FRANC	NWS	.79	1.38	3.09	4.19		7.71			2.80	4.54						
2	34N	24W	32	STFRANHS	MOSQ				2.80	5.42	5.44	3.31	.53	1.99	4.01						16.69
county averages						.70	1.21	2.25	3.24	4.46	5.56	3.29	.78	1.82	3.76	.69	1.79	27.39	28.52	29.65	15.80

# of obs	11	12	13	30	30	31	29	29	30	30	13	10	8	8	9	29

- Data as received and digitized on or before 5/18/2017. **All values are in inches**.
- 'cc ttt rr ss' is county-township-range-section number, 'ooooooo' is community name (where applicable), 'nnnn' is network type.
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- Prepared by: State Climatology Office - DNR Waters, phone: 651-296-4214, web: http://climate.umn.edu

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Obtaining Data for Legal Purposes

Last modified: April 10, 2008

Minnesota Climatology Working Group

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

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ANOKA 2014 Annual report

2014 ANOKA Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
2	30N	24W	3	RUSCHY D	DNR	1.19	1.26	.91	7.82	3.78	9.57	3.17	4.12	2.36	1.08	1.33	.98	39.73	40.75	37.57	23.00
2	30N	24W	14		SWCD	1.37	1.51	.79	7.43	5.08	8.16	2.52	4.23	1.55	1.16	1.15	1.11	38.36	38.71	36.06	21.54
2	30N	24W	14		BYRG					5.02	8.02	2.76	4.39	1.60	*		.95				21.79
2	30N	24W	25	RANTA SC	MOSQ				5.27	4.52	9.50										
2	31N	22W	29	LINO LAK	MOSQ				5.32	3.84	11.39										
2	31N	23W	21	BLAINE	MOSQ				6.48	5.01	9.57										
2	31N	23W	22		BYRG					6.22	8.39		6.73	1.93	.97	1.43	1.13				
2	31N	24W	7	LUBERDA	MOSQ				6.55	4.80	9.91										
2	31N	24W	24	MADETZKE	MOSQ				6.42	5.01	11.29										
2	32N	22W	14		BYRG	1.08	1.62	.88	5.93	4.38	10.80	2.32	5.79	2.85	1.14	1.51	1.01	39.98	41.44	39.31	26.14
2	32N	23W	16	JOHNSONB	MOSQ				5.69	4.11	12.16										
2	32N	23W	18		SWCD			.46	8.70	8.22	8.26	1.98	5.23	1.78	1.21						25.47
2	32N	23W	20		SWCD				6.30	4.54	14.31	2.25	3.68	4.63	1.43						29.41
2	32N	23W	21	KIRKMANM	MOSQ				7.90	4.69	11.45										
2	32N	24W	4	SPEISER	MOSQ				4.83	4.17	10.47										
2	32N	24W	23	ANDOVER	NWS	.55	.92	.75	7.48	3.73	9.16	1.33	3.66	1.74	.59	1.65	.84	34.63	33.62	32.40	19.62
2	32N	24W	26		SWCD	1.23	1.13	.92	6.96	4.48	11.69	1.72	5.45	1.86	.95	1.58	1.03	41.36	41.69	39.00	25.20
2	32N	24W	35	ANOKA	MOSQ				6.70	4.75	14.56										
2	32N	25W	6		SWCD				6.29	7.29	8.39	1.63	4.35	1.03	.79						22.69
2	33N	22W	7		SWCD				5.50	3.47	9.10	1.02	4.99	1.15	1.01						19.73
2	33N	23W	4	EAST BET	MOSQ				5.64	3.89	10.34										
2	33N	23W	18		SWCD				6.12	4.90	11.32	2.20	4.70	1.44	1.02						24.56
2	33N	23W	25		SWCD	1.14	1.28	.69	4.78	6.91	5.82	1.59	7.20	1.25	1.15	.95	1.09	36.28	35.79	33.85	22.77
2	33N	23W	35		SWCD				7.42	5.06	9.13	1.75									
2	33N	24W	16		SWCD					3.94	10.24	2.15	5.52	2.97							24.82
2	33N	24W	32		SWCD	1.45	1.91	.53	7.70	7.81	10.70	1.95	6.36	1.15	.61			46.69	46.19		27.97
2	33N	25W	36		SWCD				7.11	4.62	9.40	1.58	5.40	1.71	.94						22.71
2	34N	23W	36		BYRG	1.23	1.29	.75	8.38	5.18	9.51	1.28	4.85	2.42	.94	2.15	1.24	42.07	41.71	39.22	23.24
2	34N	24W	32	STFRANHS	MOSQ				4.89	4.15	9.99										
county averages						1.16	1.37	.74	6.52	4.95	10.09	1.95	5.10	1.97	1.00	1.47	1.04	39.89	39.99	36.77	23.79
# of obs						8	8	9	26	29	29	17	17	17	15	8	9	8	8	7	16

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Minnesota Climatology Working Group

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ANOKA 2015 Annual report

2015 ANOKA Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
2	30N	24W	3	RUSCHY D	DNR	.25	.27	.58	1.68	5.59	4.08	7.40	3.84	4.43	2.77	3.76	1.91	29.44	31.51	36.56	25.34
2	30N	24W	14		SWCD	.30	.36	.73	1.88	5.23	3.99	7.13	3.97	4.79	2.75	3.98	1.97	28.56	31.80	37.08	25.11
2	30N	24W	14		BYRG	.23	.32	.72	1.90	5.49	3.82	7.14	4.20	4.56	2.32	3.95	1.55			36.20	25.21
2	31N	23W	22		BYRG	.32	.38	.52	2.10	6.24	4.35	6.35	3.96	3.64	3.46	3.99	1.47	29.68	31.39	36.78	24.54
2	32N	22W	14		BYRG	.24	.23	.59	2.16	5.69	4.40	7.62	5.26	3.43	3.12	3.72	1.56	32.70	33.28	38.02	26.40
2	32N	23W	18		SWCD			.78	2.17	5.88	3.71	7.11	4.34	3.05	3.29	3.87					24.09
2	32N	23W	20		SWCD				1.93	5.27	3.86	6.10	5.00	3.23	3.50	4.60					23.46
2	32N	24W	23	ANDOVER	NWS	.13	.30	.51	1.34	4.14	2.80	7.49	4.49	1.61	3.25	3.52	1.16	26.02	25.89	30.74	20.53
2	32N	24W	26		SWCD	.31	.30	.64	1.96	4.59	3.30	6.94	4.14	2.39	3.25	4.23	1.82	27.60	28.13	33.87	21.36
2	32N	25W	6		SWCD				1.91	5.44	*	6.64	3.61	3.82	4.15	3.74					
2	33N	22W	7		SWCD				1.79	4.77	3.07	6.02	4.04	2.91	2.75						20.81
2	33N	23W	18		SWCD				2.85	5.12	3.94	6.48	3.65	3.14	3.52						22.33
2	33N	23W	25		SWCD	.24	.31	.50	1.96	5.03	3.07	5.96	2.81	2.45	3.58	3.62	1.02	24.32	25.52	30.55	19.32
2	33N	24W	16		SWCD					3.90	3.10	5.48	2.12	3.68							18.28
2	33N	24W	32		SWCD				.52	5.01											
2	33N	25W	36		SWCD				2.72	4.90	4.12	6.39	3.69	3.26	3.70	3.15					22.36
2	34N	23W	36		BYRG	.20	.41	.79	3.04	5.07	4.38	5.36	4.55	3.30	3.71	3.11	1.89	30.55	31.43	35.81	22.66
2	34N	24W	32	ST FRANC	NWS							*									
county averages						.25	.32	.64	1.99	5.14	3.73	6.60	3.98	3.36	3.27	3.79	1.59	28.61	29.87	35.07	22.79
# of obs						9	9	10	16	17	15	16	16	16	15	13	9	8	8	9	15

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Last modified: April 10, 2008

Minnesota Climatology Working Group

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ANOKA 2016 Annual report

2016 ANOKA Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
2	30N	24W	3	RUSCHY D	DNR	.29	.58	1.62	3.26	3.00	3.71	4.42	7.77	10.73	3.23	3.08	2.28	37.52	43.82	43.97	29.63
2	30N	24W	14		SWCD	.31	.92	1.96	3.73	2.69	2.84	5.02	9.75	8.45	3.08	3.50	1.98	40.71	44.37	44.23	28.75
2	30N	24W	14		BYRG	.28	.50	1.54	4.28	3.14	3.29	4.88	9.66	9.58	3.28	3.39	1.88	39.95	44.97	45.70	30.55
2	30N	24W	15	BENNEK D	MOSQ			3.32		4.74			7.79	7.67							
2	31N	23W	22		BYRG	.41	1.17					4.68	6.81	6.34	2.89	2.83	2.32				
2	32N	22W	14		BYRG	.31	.91	2.11	2.43	2.42	3.50	4.60	7.89	5.01	2.69	2.32	1.43	36.00	37.58	35.62	23.42
2	32N	23W	18		SWCD			2.18	3.11	3.02	4.53	5.39	7.71	5.80	3.37	*					26.45
2	32N	23W	20		SWCD				2.96	3.53	4.73	7.13	8.85	5.75	3.66	2.94					29.99
2	32N	24W	23	ANDOVER	NWS	.20	1.00	1.54	2.29	3.39	3.88	6.59	5.13	3.48	2.26	3.40	1.73	33.56	35.43	34.89	22.47
2	32N	24W	26		SWCD	.29	.68	1.89	2.70	3.87	3.78	6.63	5.97	4.74	3.75	3.24	1.77	37.50	39.85	39.31	24.99
2	32N	25W	6		SWCD				2.85	5.56	2.76	6.77	6.23	4.88	2.87	*					26.20
2	33N	22W	7		SWCD				1.41	3.74	3.29	4.67	5.34	5.15	2.92						22.19
2	33N	23W	18		SWCD				2.21	2.57	3.74	6.05	5.53	6.08	3.77						23.97
2	33N	23W	25		SWCD	.40	.89	1.87	2.07	3.21	4.02	5.57	5.61	5.21	3.50	3.04	1.54	34.31	37.07	36.93	23.62
2	33N	24W	16		SWCD						2.79										
2	33N	24W	16		SWCD					8.05		5.05	2.41	5.50	3.15						
2	33N	24W	32		SWCD				3.89												
2	33N	25W	14		SWCD									6.54	2.89						
2	33N	25W	36		SWCD				3.05	3.81	2.75	*	6.25	5.56	2.55	1.05					
2	34N	23W	36		BYRG	.56		2.97	2.10	2.95	3.79	5.20	5.16	5.15	3.74	3.80	1.84				22.25
county averages						.34	.83	2.10	2.82	3.73	3.56	5.51	6.70	6.20	3.15	2.96	1.86	37.08	40.44	40.09	25.73
# of obs						9	8	10	15	16	15	15	17	18	17	11	9	7	7	7	13

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HENNEPIN 2012 Annual report

2012 HENNEPIN Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
27	27N	24W	15		BYRG				2.95	9.97	5.07	3.43	2.35	.57	1.38						21.39
27	27N	24W	20		BYRG				2.91	10.08	4.59	3.12	2.23	.61							20.63
27	28N	24W	12		WSD	.37	1.61	1.50	3.58	9.15	3.44	3.04	1.09	.14	1.12	.71	1.56			27.31	16.86
27	28N	24W	25	MPLS NWS	NWS	.36	1.72	1.40	3.04	9.34	3.59	4.90	1.38	.30	1.30	.63	1.64	27.99	27.93	29.60	19.51
27	29N	23W	30		BYRG	.67	1.58	1.39	2.67	8.65	2.76	4.41	1.17	.37	1.53	.86	1.40	25.85	25.72	27.46	17.36
27	29N	23W	33	METROMOS	MOSQ				3.29	9.44	3.52	5.21	1.00	.42	1.40						19.59
27	29N	24W	1		SWCD	.33	.76	1.54	3.23	9.15	4.19	5.10	1.82	.40	1.16	.69	1.90	28.26	28.31	30.27	20.66
27	29N	24W	11		SWCD				3.09	10.19	3.81	4.78	1.65	.49	1.57	*					20.92
27	29N	24W	23	LSAF	NWS	.67	1.62	1.82	3.44	9.04	3.48	6.24	1.86	.32	1.35	1.02	1.55	31.15	30.58	32.41	20.94
27	116N	22W	7		SWCD			1.16	3.41	10.25	5.30	3.81	2.75	.44	1.29						22.55
27	117N	21W	7		BYRG	.37	2.13	1.50	2.97	8.73	4.23	3.92	1.60	.46	1.20	.89	1.60	28.18	28.30	29.60	18.94
27	117N	21W	8	MURCH TI	MOSQ				3.05	9.31	4.10										
27	117N	22W	15		SWCD				3.01	9.11	4.34	3.26	1.71	.46	1.26						18.88
27	117N	22W	17		BYRG			.98	3.24	9.62	4.65	3.12	2.39	.54							20.32
27	117N	22W	21	MINNETON	MOSQ				3.07	9.41	4.68	3.26	1.57	.48	1.23						19.40
27	117N	22W	29		BYRG				2.87	10.05	4.60	2.72	2.05	.40							19.82
27	117N	23W	19	SPRNG PK	NWS	.49	1.73	1.70	2.96	9.55		4.75	1.50	.30	1.35	.85	1.20				
27	117N	23W	24	DEEPHAVE	MOSQ				2.79	10.57	4.53	2.67	1.77	.42	1.60						19.96
27	117N	23W	26		WSD	.40	1.29	1.57	3.04	8.60	5.39	2.77	1.69	.34	1.32	.81	1.73			28.95	18.79
27	117N	23W	31		BYRG				2.79	10.99	4.82	2.42	1.88	.51	1.55	*					20.62
27	117N	23W	34		BYRG			*	1.74	9.30	5.40			.50							
27	117N	24W	21	MINNETRI	MOSQ				2.40	10.95	4.12	2.76	2.83	.51	.95						21.17
27	117N	24W	27		BYRG	.47	1.56	1.16	1.99	10.19	4.03	2.28	2.83	.45	.93	.59	.93	26.12	26.28	27.41	19.78
27	118N	21W	6		BYRG				2.82	10.20	4.62	4.04	1.13	.60	1.52	.88					20.59
27	118N	21W	17		SWCD				1.44												
27	118N	21W	20	NEW HOPE	NWS	.32	2.21	1.26	2.72	9.17	3.62	4.53	1.64	.50	1.52	.93	1.79	27.70	27.89	30.21	19.46
27	118N	21W	30		SWCD				2.80	8.57	3.69	4.42	1.43	.53	1.32						18.64
27	118N	22W	5	XIONG JA	MOSQ						4.10	3.69	1.35	.53	2.07						
27	118N	22W	13	HANSMANN	MOSQ				2.44	9.74	4.70	4.33	1.15	.39	1.30						20.31
27	118N	22W	17		SWCD				2.98	10.55	5.29	5.76	.96	.58	2.24						23.14
27	118N	22W	18		SWCD				2.77	10.07	5.84	5.10	.92	.54	2.60						22.47
27	118N	22W	22	PLYMOUTH	MOSQ				2.83	9.05	3.90	4.87	1.45	.48	1.67						19.75
27	118N	22W	24	GREEN R	MOSQ				2.42	8.12	3.26	3.71	1.76	.35	1.10						17.20

27	118N	22W	25		BYRG	.72	2.54	1.29	2.76	9.72	3.91	4.81	1.87	.63	1.47	1.09	1.83	29.82	29.96	32.64	20.94
27	118N	22W	31		SWCD				2.71	9.79	4.06	5.27	1.21	.52	1.09						20.85
27	118N	23W	2		WSD	.30	1.55	.81	2.12			4.30	1.08	.64	2.08	.68	1.14				
27	118N	23W	22		SWCD			*	2.08	8.66	3.96										
27	119N	21W	25		BYRG				2.47	9.55	2.95	4.75	.80	.55	1.12						18.60
27	119N	21W	31		BYRG						*										
27	119N	21W	33		BYRG			.95	2.69	9.33	3.89	4.05	1.33	.59	1.71						19.19
27	119N	21W	33		BYRG				2.70	9.00	3.60	4.25	1.05	.35	1.50						18.25
27	119N	21W	34		BYRG			*	2.97	10.56	4.05	4.45	1.43	.82	1.73						21.31
27	119N	22W	1		SWCD			.85	2.89	9.50	4.02	5.32	.99	.98	2.20	.68	1.39				20.81
27	119N	22W	9		SWCD				2.18	10.14	3.13										
27	119N	22W	13	N HENN D	MOSQ						3.52	4.30	.91	.46	1.46						
27	119N	22W	33		BYRG			.88	2.79	10.55	4.36	4.21	.99	.48	1.88	.62					20.59
27	119N	22W	33		SWCD	.39	2.13	1.21	2.70	9.92	4.69	3.92	.83	.43	1.77	.71	1.56	28.53	27.86	30.26	19.79
27	119N	22W	33		BYRG			.81	3.01	11.11	4.53	3.90	.97	.45	1.90	.66					20.96
27	119N	23W	25	CORCORAN	MOSQ						4.27	5.67	.91	.58	2.94						
27	119N	24W	33	ROCKFORD	MOSQ				2.20	13.14	3.53	4.31	1.84	.37	.89						23.19
27	119N	24W	34		SWCD				2.54	11.78	5.04	4.69	1.76	.57	1.53						23.84
27	120N	21W	32	CHAMPLIN	MOSQ				2.63	10.31	3.92	5.05	1.05	.55	1.58						20.88
27	120N	21W	33	CHAMPLIN	MOSQ						3.95	4.88	.94	.53	1.50						
27	120N	22W	16	DAYTON	MOSQ						4.01	4.37	.94	.35							
county averages						.45	1.73	1.25	2.75	9.79	4.18	4.19	1.50	.49	1.53	.78	1.52	28.18	28.09	29.65	20.22
# of obs						13	13	19	48	46	50	48	48	49	44	17	14	9	9	11	41

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- '*' denotes a partial monthly record, 'e' denotes that value is wholly or partially estimated.
- Prepared by: State Climatology Office - DNR Waters, phone: 651-296-4214, web: http://climate.umn.edu

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Last modified: April 10, 2008

Minnesota Climatology Working Group

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

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Choose a county and year, then click on **"Annual report"**.

HENNEPIN 2013 Annual report

2013 HENNEPIN Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
27	27N	24W	15		BYRG				5.22	7.64	5.40	5.56	2.13	1.63	2.98						22.36
27	27N	24W	20		BYRG						6.88										
27	28N	24W	12		BYRG								*	1.28	3.73	.54	1.42				
27	28N	24W	25	MPLS NWS	NWS	.86	1.33	2.04	5.22	6.24	5.17	3.51	2.07	1.35	3.00	.52	1.46	30.31	31.36	32.77	18.34
27	29N	23W	30		BYRG	.89	1.41	1.90	5.31	5.70	6.24	2.59	2.31	1.07	3.63	.52	1.52	30.51	31.21	33.09	17.91
27	29N	23W	33	METROMOS	MOSQ				4.24	5.88	5.88	3.45	2.13	1.36	3.66						18.70
27	29N	24W	1		SWCD	.71	1.32	2.32	4.90	6.43	5.35	5.81	1.89	1.68	3.53	.50	1.41	32.88	34.16	35.85	21.16
27	29N	24W	23	LSAF	NWS	.96	1.09	1.89	4.03	5.71	7.25	3.74	2.38	1.27	4.32	.73	1.32	31.29	32.24	34.69	20.35
27	116N	22W	7		SWCD					6.00	6.74	6.11	1.81	1.69	4.28						22.35
27	116N	22W	28	FLYING C	NWS				3.69	5.84	5.90	6.10	1.60	1.51	3.34	*					20.95
27	117N	21W	7		BYRG	.68	1.10	2.06	4.13	5.05	7.16	5.11	1.79	1.22	4.19	.56	1.60	31.23	31.99	34.65	20.33
27	117N	22W	17		BYRG					3.17	6.86	6.05	2.20	1.61	*						19.89
27	117N	22W	21	MINNETON	MOSQ				3.80	5.88	5.53	5.59	2.09	1.30	4.07						20.39
27	117N	22W	29		BYRG				5.37	5.90	5.19	5.52	1.43	1.53							19.57
27	117N	23W	19	SPRNG PK	NWS	.65	.85	1.21	*												
27	117N	23W	24	DEEPHAVE	MOSQ				5.09	6.06	7.02	6.72	1.58								
27	117N	23W	31		BYRG				4.54	5.47	6.05	5.10	1.11	1.25	3.89	*					18.98
27	117N	24W	27		BYRG	.38	.91	1.34	4.15	4.78	6.22	4.44	.78	1.29	2.57	.43	1.41	25.90	26.74	28.70	17.51
27	118N	21W	4	CRYSTAL	NWS				2.95	3.25	7.21	3.11	.93	1.07	3.76						15.57
27	118N	21W	6		BYRG				4.99	5.07	8.33	3.48	1.08	1.32	4.83	.63					19.28
27	118N	21W	20	NEW HOPE	NWS	.70	1.29	2.24	5.46	4.27	8.77	5.83	1.65	1.27	4.48	.59	1.77	34.95	35.72	38.32	21.79
27	118N	22W	13	HANSMANN	MOSQ				2.39	3.80	4.36	2.77	1.58	1.10	3.71						13.61
27	118N	22W	17		SWCD				2.75	6.87	8.07	5.00	1.67	1.46	4.69						23.07
27	118N	22W	18		SWCD					6.65	7.82	4.19	1.34	1.50	3.98						21.50
27	118N	22W	22	PLYMOUTH	MOSQ				3.95	5.44	7.53	4.26	1.51		3.77						
27	118N	22W	24	GREEN R	MOSQ				4.01	4.43	7.98	4.57	1.34	1.04	3.84						19.36
27	118N	22W	25		BYRG	.75	1.39	1.90	5.33	4.97	8.09	4.65	1.21	1.42	4.60	.58	1.97	33.31	34.10	36.86	20.34
27	119N	21W	25		BYRG				3.85	3.50	6.05	3.40	.90	1.20	3.90						15.05
27	119N	21W	31		BYRG					*	7.51	4.86	*	*	*						
27	119N	21W	33		BYRG				4.57	3.34	7.74	3.37	.95	1.39	4.35						16.79
27	119N	21W	33		BYRG				4.05	4.50	6.55	2.95	.70	1.40	4.10						16.10
27	119N	21W	34		BYRG				5.09	4.00	7.88	3.39	1.00	1.65	4.70						17.92
27	119N	22W	1		SWCD	.54	1.02	2.27	4.99	4.40	6.03	3.14	1.41	1.43	4.98	.59	1.56	29.05	29.50	32.36	16.41

27	119N	22W	13	N HENN D	MOSQ				3.30	4.05	6.75								
27	119N	22W	19	MAPLEGRO	MOSQ								1.27	1.35					
27	119N	22W	33		BYRG				3.70	5.27	7.54	3.17	1.19	1.58	4.81	.62			18.75
27	119N	22W	33		SWCD	.58	1.26	2.01	4.06	5.61	7.26	3.36	1.05	1.42	4.51	.48	1.48	29.66 30.65 33.08	18.70
27	119N	22W	33		BYRG				3.13	5.86	8.45	3.63	1.06	1.53	4.81	.61			20.53
27	119N	24W	33	ROCKFORD	MOSQ				2.31	4.84	8.01	3.67	1.17		4.66				
27	119N	24W	34		SWCD				3.63	4.61	7.77	3.10	1.40						
27	120N	21W	32	CHAMPLIN	MOSQ				3.74	4.47	5.86	3.99	.88	1.56	4.73				16.76
27	120N	21W	33	CHAMPLIN	MOSQ								.87						
27	120N	22W	16	DAYTON	MOSQ								.64						
county averages						.70	1.18	1.93	4.18	5.14	6.85	4.31	1.42	1.39	4.08	.56	1.54	30.91 31.77 34.04	19.04
# of obs						11	11	11	33	36	38	36	38	33	32	14	11	10 10 10	31

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Obtaining Data for Legal Purposes

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Minnesota Climatology Working Group

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Annual Reports of Monthly Precipitation Totals

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HENNEPIN 2014 Annual report

2014 HENNEPIN Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
27	27N	24W	15		BYRG				6.87	2.24	12.88	2.86	2.25	1.43	2.20						21.66
27	28N	24W	12		BYRG	1.25	1.42	.79	6.67	3.96	11.41	2.85	2.81	2.27	1.49	.92	.81	38.13	39.12	36.65	23.30
27	28N	24W	12		WSD				6.94	4.23	10.64	2.21	3.06	1.57	1.71	.93	.85				21.71
27	28N	24W	25	MPLS NWS	NWS	1.42	1.41	.82	6.27	4.55	11.36	2.27	2.90	.92	1.75	.88	.86	37.33	36.90	35.41	22.00
27	29N	23W	30		BYRG	1.33	1.59	.79	5.84	3.29	8.02	2.97	2.62	1.51	1.40	1.08	1.02	33.19	33.63	31.46	18.41
27	29N	23W	33	METROMOS	MOSQ				6.42	3.54	10.21										
27	29N	24W	1		SWCD	2.21	1.29	.50	5.46												
27	29N	24W	23	LSAF	NWS	1.08	1.27	.69	6.37	3.70	10.15	3.10	2.21	2.86	1.27	1.29	1.03	36.21	37.80	35.02	22.02
27	116N	22W	7		SWCD					5.03	14.08	4.11	3.06	1.78							28.06
27	116N	22W	28	FLYING C	NWS				5.37	4.48	12.41	3.61	4.45	1.16	1.16		*				26.11
27	117N	21W	7		BYRG	1.30	1.24	.65	6.78	4.46	10.33	2.46	3.98	1.49	1.14	.84	.97	38.77	39.04	35.64	22.72
27	117N	22W	15		SWCD					4.49	10.52	2.65	2.91	1.85	1.14						22.42
27	117N	22W	21	MINNETON	MOSQ				6.63	3.98	11.23										
27	117N	22W	29		BYRG				7.47	4.45	10.49	3.26	3.20	.97							22.37
27	117N	23W	24	DEEPHAVE	MOSQ				7.81	4.24	10.52										
27	117N	23W	26		WSD			.51	6.11	4.22	11.33	2.89	2.80	2.03	.75	.94	.82				23.27
27	117N	23W	31		BYRG				6.21	8.33	8.80	2.98	4.12	1.88	1.72	*					26.11
27	117N	24W	27		BYRG	1.00	1.40	.66	5.41	3.73	10.65	2.94	3.07	2.32	.85	.83	.95	34.56	35.59	33.81	22.71
27	118N	21W	4	CRYSTAL	NWS			.52	5.48	4.72	7.12	3.07	3.33	1.13	.95		*				19.37
27	118N	21W	6		BYRG				7.87	4.08	10.71	3.86	2.95	1.23	1.35						22.83
27	118N	21W	20	NEW HOPE	NWS	1.47	1.45	.89	7.79	4.79	10.88	4.07	2.31	1.89	1.08	1.30	1.14	41.76	42.38	39.06	23.94
27	118N	22W	13	HANSMANN	MOSQ				5.35	3.53	9.28										
27	118N	22W	17		SWCD				*	4.95	11.80	3.77	2.90	2.02	*						25.44
27	118N	22W	22	PLYMOUTH	MOSQ				7.58	4.44	10.78										
27	118N	22W	24	GREEN R	MOSQ				6.90	3.51	10.46										
27	118N	22W	25		BYRG	1.80	1.71	.80	8.24	3.76	10.18	3.95	2.76	1.91	1.15	1.34	1.33	41.77	42.26	38.93	22.56
27	118N	23W	2		WSD	.99	.96	.74	6.37	8.13	6.90										
27	118N	23W	20	MEDINA	MOSQ						11.50	4.10	2.70	3.30	.60	.20					
27	119N	21W	25		BYRG				6.76	3.90	9.15	2.70	3.10	1.55	.80						20.40
27	119N	21W	31		BYRG							3.80	2.42	1.57	.87						
27	119N	21W	33		BYRG				6.96	3.93	9.64	3.26	3.41	2.05	1.11						22.29
27	119N	21W	33		BYRG				6.05	4.10	8.90	3.60	2.90	1.85	1.10						21.35
27	119N	21W	34		BYRG				6.40	4.21	9.10	3.44	3.40	2.22	1.22						22.37

27	119N	22W	1		SWCD	1.39	1.40	.90	7.38	8.67	7.15	2.85	3.78	1.96	.96	1.18	.98	42.08	42.61	38.60	24.41
27	119N	22W	9		SWCD					7.04	6.53	3.39	3.46	1.45	.97						21.87
27	119N	22W	33		BYRG				7.10	4.59	11.58										
27	119N	22W	33		SWCD	1.22	.72	.80	7.64	4.53	10.55	3.80	3.45	1.69	.78	1.33	.91	40.60	40.87	37.42	24.02
27	119N	22W	33		BYRG				6.19	8.20	7.96	4.19	2.62	2.70	.93						25.67
27	119N	24W	33	ROCKFORD	MOSQ				7.61	4.83	11.57										
27	120N	21W	32	CHAMPLIN	MOSQ				6.64	4.26	9.15										
county averages						1.37	1.32	.72	6.67	4.68	10.16	3.28	3.07	1.81	1.17	1.00	.97	38.44	39.02	36.20	22.94
# of obs						12	12	14	34	37	38	29	29	29	26	13	12	10	10	10	27

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HENNEPIN 2015 Annual report

2015 HENNEPIN Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
27	27N	24W	15		BYRG				2.71	4.28	4.33	7.71	5.45	4.17	2.83						25.94
27	28N	24W	12		BYRG	.43	.28	.74	2.29	4.42	4.99	7.18	2.92	3.54	2.77	4.60	2.40	28.74	30.01	36.56	23.05
27	28N	24W	12		WSD	.34	.29	.81	2.35	4.67	4.95	7.26	3.27	3.14	2.45	4.34	2.49	29.00	30.57	36.36	23.29
27	28N	24W	25	MPLS NWS	NWS	.34	.35	.67	2.42	3.55	4.40	6.87	2.99	4.65	2.61	4.52	1.86	26.00	29.73	35.23	22.46
27	29N	23W	30		BYRG	.30	.27	.67	2.13	4.51	3.99	6.47	1.86	2.82	2.35	4.47	2.21	25.21	26.52	32.05	19.65
27	29N	23W	33	METROMOS	MOSQ				2.19	4.74	4.57	5.95	2.73								
27	29N	24W	23	LSAF	NWS	.33	.32	.72	2.48	5.14	4.14	7.13	2.85	3.75	2.97	4.20	2.51	29.56	30.45	36.54	23.01
27	116N	22W	7		SWCD				2.49	4.75	4.83	8.61	1.53	2.51	2.72						22.23
27	116N	22W	28	FLYING C	NWS	*	*	.62	2.27	3.45	4.38	7.32	4.00	3.08	2.50	3.86	1.28				22.23
27	117N	21W	7		BYRG	*	.32	.58	2.03	3.39	3.54	6.64	3.23	2.82	2.39	4.53	1.54				19.62
27	117N	22W	21	MINNETON	MOSQ				2.02	4.43	5.04	7.83	3.11								
27	117N	22W	29		BYRG				2.12	4.34	5.05	8.06	3.42	3.80	2.72						24.67
27	117N	23W	26		WSD	.42	.36			4.22	4.75	7.31	3.27	4.21	2.64		1.02				23.76
27	117N	23W	31		BYRG				1.70	4.51	3.82	7.94	2.82	3.28	2.81	4.71					22.37
27	117N	24W	27		BYRG	.30	.34	.79	1.28	5.33	3.82	8.81	1.90	4.15	2.90	2.72	1.66	27.52	29.35	34.00	24.01
27	118N	21W	4	CRYSTAL	NWS	*	*	.55	1.72	4.24	3.11	6.20	2.84	4.03	2.70	3.76	1.34				20.42
27	118N	21W	6		BYRG				2.12	4.80	3.30	6.70	3.94		2.86	4.18					
27	118N	21W	20	NEW HOPE	NWS	.34	.38	.80	1.78	4.46	3.37	8.30	2.98	3.79	2.93	4.56	1.86	27.82	29.72	35.55	22.90
27	118N	22W	13	HANSMANN	MOSQ				1.18	3.79	3.43	6.73	2.96								
27	118N	22W	24	GREEN R	MOSQ				1.39	3.92	2.75	5.92	2.52								
27	118N	22W	25		BYRG	.52	.43	.73	1.63	4.92	3.73	8.62	3.09	4.12	3.29	5.07	1.98	29.40	31.61	38.13	24.48
27	118N	23W	2		WSD	.36	.38	.80	1.60		2.38	6.34	3.62	3.24	2.82		1.75				
27	119N	21W	25		BYRG				1.77	4.70	3.60	6.60	3.45	4.75	2.85						23.10
27	119N	21W	31		BYRG				*	4.74	2.95	6.41	3.65	4.09	3.14	*					21.84
27	119N	21W	33		BYRG				2.21	5.08	3.27	7.14	3.31	4.24	3.06						23.04
27	119N	21W	33		BYRG				1.90	4.00	3.55	6.80	3.10	4.05	2.90						21.50
27	119N	21W	34		BYRG				2.24	5.20	3.57	7.16	3.58	4.49	3.69						24.00
27	119N	22W	1		SWCD	.18	.33	.71	1.99	4.45	3.67	6.91	3.85	3.80	3.49	3.99	1.26	27.17	29.01	34.63	22.68
27	119N	22W	33		SWCD	.37	.30	.53	1.43	4.35	3.69	6.17	4.77	3.81	3.10	3.72	1.86	26.32	28.44	34.10	22.79
27	119N	22W	33		BYRG				1.84	4.83	3.53	6.57	4.87	3.62	3.28	4.22					23.42
27	120N	21W	32	CHAMPLIN	MOSQ				1.66	4.45	3.24	6.14	3.48								
county averages						.35	.33	.69	1.96	4.46	3.86	7.09	3.27	3.76	2.88	4.22	1.80	27.67	29.54	35.32	22.77

# of obs	12	13	14	29	30	31	31	31	25	26	16	15	10	10	10	24

- Data as received and digitized on or before 5/18/2017. **All values are in inches**.
- 'cc ttt rr ss' is county-township-range-section number, 'ooooooo' is community name (where applicable), 'nnnn' is network type.
- 'AGR', 'HYD', and 'ANN' are 12 month precipitation totals starting in Sep 2014, Oct 2014, and Jan 2015, respectively. 'GRO' is growing season (May 2015 thru Sep 2015) precipitation total.
- '*' denotes a partial monthly record, 'e' denotes that value is wholly or partially estimated.
- Prepared by: State Climatology Office - DNR Waters, phone: 651-296-4214, web: http://climate.umn.edu

For some purposes, **daily** precipitation data are required. The precipitation data archive allows a user to interactively retrieve daily precipitation data from the site nearest to a target.

Obtaining Data for Legal Purposes

Last modified: April 10, 2008

Minnesota Climatology Working Group

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

Annual Reports of Monthly Precipitation Totals

This application creates annual summaries of precipitation data gathered by volunteer-based observation networks throughout Minnesota. The data presented are monthly totals and the data are grouped by county. Observer locations are described using township, range, and section numbers.

Choose a county and year, then click on **"Annual report"**.

HENNEPIN 2016 Annual report

2016 HENNEPIN Monthly Precipitation, Totals

cc	ttt	rr	ss	oooooooo	nnnn	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGR	HYD	ANN	GRO
27	27N	24W	15		BYRG				3.07	2.22	5.19	5.54	8.37	7.00	4.20						28.32
27	28N	24W	12		BYRG	.31	.68	2.32	3.33	2.08	4.55	4.42	8.19	5.67	3.59	2.78	2.27	39.19	41.32	40.19	24.91
27	28N	24W	12		WSD	.26	1.49	2.87		2.61	4.00	4.86	8.62	5.71	3.55	2.91	1.97				25.80
27	28N	24W	25	MPLS NWS	NWS	.31	1.09	2.26	2.84	2.42	4.49	5.09	7.82	5.47	3.41	2.98	2.14	39.96	40.78	40.32	25.29
27	29N	23W	30		BYRG	.35		2.08	3.15	1.84	4.78	3.82	9.35	4.62	3.16	2.76	2.04				24.41
27	29N	24W	23	LSAF	NWS	.34	.79	1.94	4.33	1.59	4.50	4.89	10.60	5.28	2.95	2.67	2.68	42.41	43.94	42.56	26.86
27	116N	21W	18	DUERRE D	NWS							2.80	4.82	5.12	3.70	1.31					
27	116N	22W	7		SWCD					2.23	4.07	6.88	11.03	6.15	3.72						30.36
27	116N	22W	28	FLYING C	NWS			1.59	2.64	2.13	4.32	4.84	9.42	5.60	*	.27	1.48				26.31
27	117N	21W	7		BYRG	.26	.73	1.37	3.83	1.87	2.60	4.38	10.36	5.51	3.23	2.54	2.09	36.68	39.37	38.77	24.72
27	117N	22W	21	MINNETON	MOSQ										3.28						
27	117N	22W	29		BYRG				3.55	2.22	2.31	5.09	10.37	5.11	3.27						25.10
27	117N	23W	26		WSD	.34		1.09	3.44	1.83	4.01	5.33	10.03	5.60	2.97	1.20	1.12				26.80
27	117N	23W	31		BYRG				2.92	1.77	4.05	6.49	10.60	4.45	3.14	*					27.36
27	117N	24W	27		BYRG	.25	.90	1.18	2.95	2.15	4.06	5.94	8.21	4.72	2.42	1.42	1.66	37.07	37.64	35.86	25.08
27	118N	21W	4	CRYSTAL	NWS			1.57	3.12	2.13	2.20	6.73	6.95	6.45	2.95	.75	1.21				24.46
27	118N	21W	6		BYRG				3.43	2.70	2.24	8.14	8.75								
27	118N	21W	20	NEW HOPE	NWS	.31	1.02	1.92	3.73	2.13	3.47	5.74	9.15	7.08	3.25	2.92	2.13	40.61	43.90	42.85	27.57
27	118N	22W	13	HANSMANN	MOSQ				2.60	1.80		6.25	6.77	4.52							
27	118N	22W	24	GREEN R	MOSQ			3.51				5.26	7.37	5.31							
27	118N	22W	25		BYRG	.35	.89	1.67	3.86	2.53	3.39	6.19	10.98	6.99				44.32	47.19		30.08
27	118N	23W	2		WSD	.38	.80	.94	3.11	2.03	2.37	5.93	8.47	8.43	3.00		1.40				27.23
27	119N	21W	25		BYRG				3.63	2.30	2.44	5.65	7.85	9.45	3.00						27.69
27	119N	21W	31		BYRG				*	2.70	2.66	6.93	8.42	8.88	3.15	2.21	1.47				29.59
27	119N	21W	33		BYRG				4.47	2.51	2.72	6.19	8.47	9.43	3.52						29.32
27	119N	21W	33		BYRG				4.10	2.15	2.80	6.95	8.75	6.75	3.62						27.40
27	119N	21W	34		BYRG				4.51	2.70	2.64	7.28	8.15	9.74	3.62	*					30.51
27	119N	22W	1		SWCD	.27	.76	1.54	3.40	3.03	4.21	4.16	8.63	8.24	3.42	2.33	1.77	38.54	42.98	41.76	28.27
27	119N	22W	9		SWCD					2.31	2.64	5.70	6.85	11.10	2.79						28.60
27	119N	22W	33		SWCD	.26	.72	1.28	3.07	2.20	2.95	5.50	7.26	9.45	3.00	1.16	2.15	35.73	41.37	39.00	27.36
27	119N	22W	33		BYRG				3.18	2.13	2.71	6.27	8.95	11.12	3.52	2.31					31.18
27	120N	21W	32	CHAMPLIN	MOSQ					2.80											

county averages	.31	.90	1.82	3.43	2.25	3.42	5.64	8.65	6.86	3.29	2.03	1.84	39.39	42.05	40.16	27.33
# of obs	13	11	16	24	29	27	30	30	29	26	16	15	9	9	8	26

- Data as received and digitized on or before 5/18/2017. **All values are in inches**.
- 'cc ttt rr ss' is county-township-range-section number, 'ooooooo' is community name (where applicable), 'nnnn' is network type.
- 'AGR', 'HYD', and 'ANN' are 12 month precipitation totals starting in Sep 2015, Oct 2015, and Jan 2016, respectively. 'GRO' is growing season (May 2016 thru Sep 2016) precipitation total.
- '*' denotes a partial monthly record, 'e' denotes that value is wholly or partially estimated.
- Prepared by: State Climatology Office - DNR Waters, phone: 651-296-4214, web: http://climate.umn.edu

For some purposes, **daily** precipitation data are required. The precipitation data archive allows a user to interactively retrieve daily precipitation data from the site nearest to a target.

Obtaining Data for Legal Purposes

Last modified: April 10, 2008

Attachment C-2

IWMZ Inventories

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #1	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S25	☐ **YES** (Please attach a copy)
UNIQUE WELL NO.	202926	☐ **NO** ☐ **UNDETERMINED**
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S25	**UNIQUE WELL NO.**	202926

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

PWS ID / FACILITY ID	1020017 S25	UNIQUE WELL NO.	202926

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	85	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S25	UNIQUE WELL NO.	202926

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

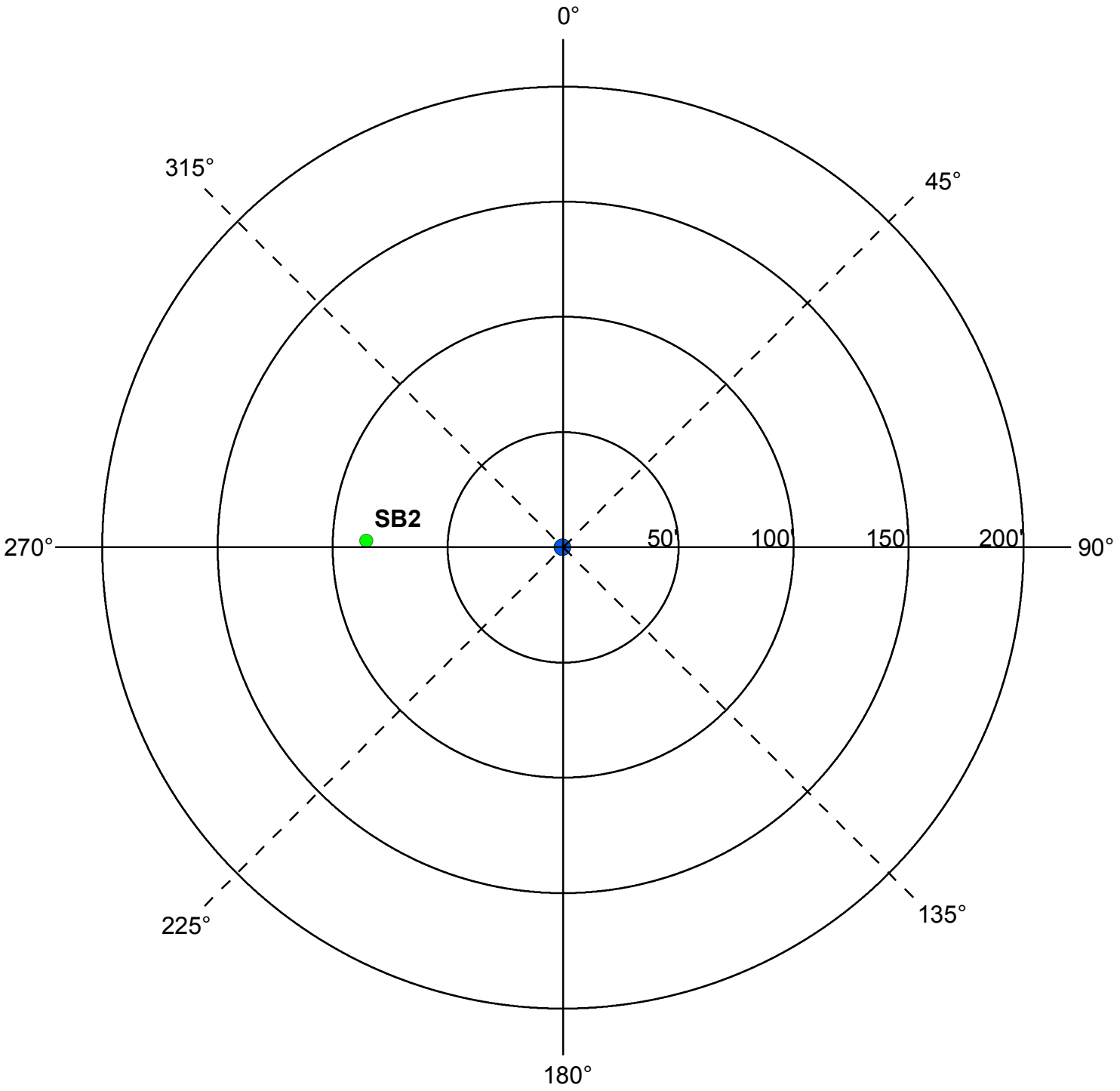
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S25	UNIQUE WELL NO.	202926

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S25	UNIQUE WELL NO.	202926

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #2	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S26	☐ YES (Please attach a copy)
UNIQUE WELL NO.	202929	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S26	**UNIQUE WELL NO.**	202929

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

PWS ID / FACILITY ID	1020017 S26	UNIQUE WELL NO.	202929

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	75	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	155	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		

PWS ID / FACILITY ID	1020017 S26	UNIQUE WELL NO.	202929

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

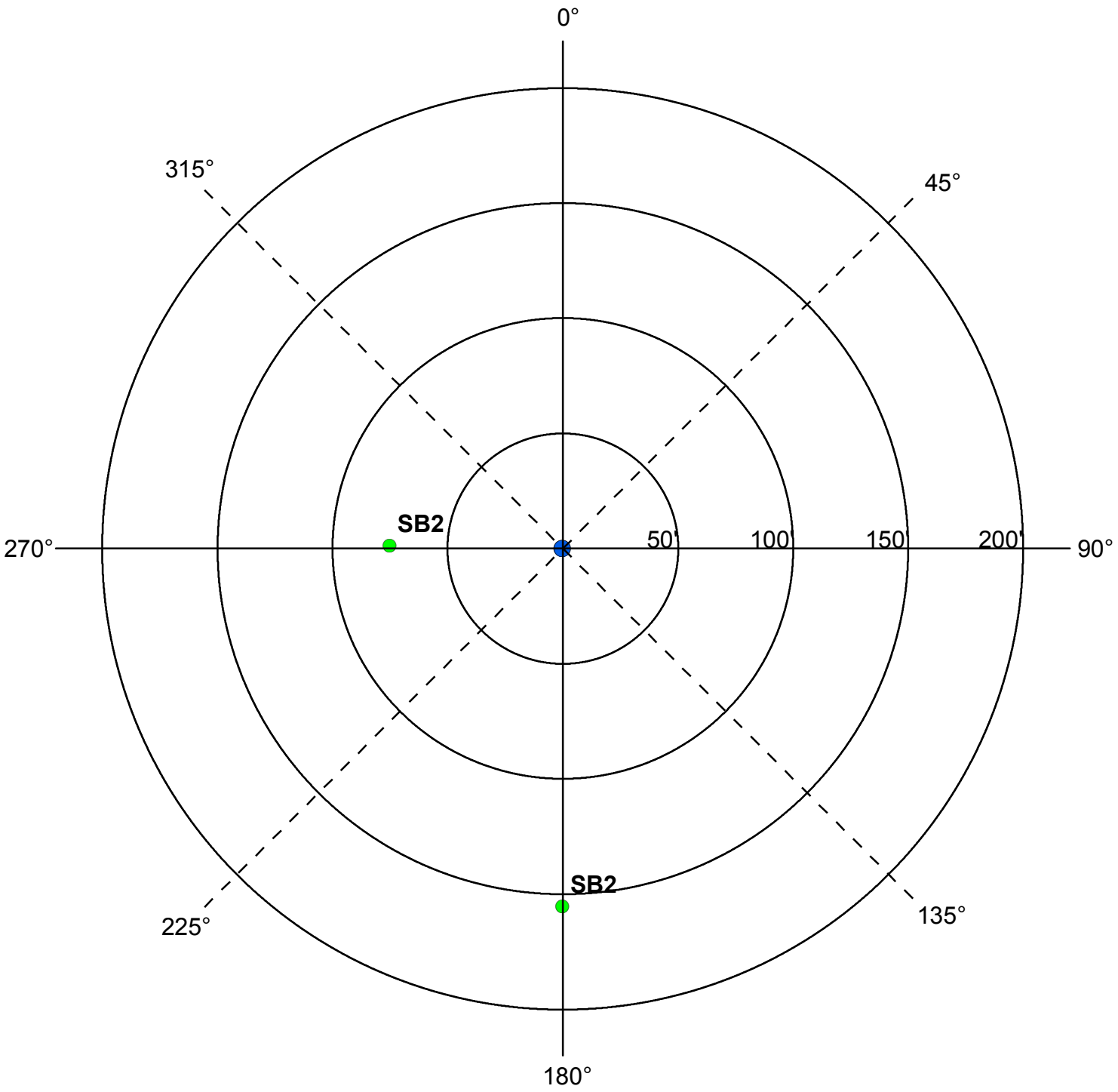
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S26	UNIQUE WELL NO.	202929

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S26	UNIQUE WELL NO.	202929

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #4
FACILITY ID S04
UNIQUE WELL NO. 202972
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S04	UNIQUE WELL NO.	202972

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

PWS ID / FACILITY ID	1020017 S04	UNIQUE WELL NO.	202972

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	190	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	100	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	125	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		Y	150	N
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		Y	195	N
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		

PWS ID / FACILITY ID	1020017 S04	UNIQUE WELL NO.	202972

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

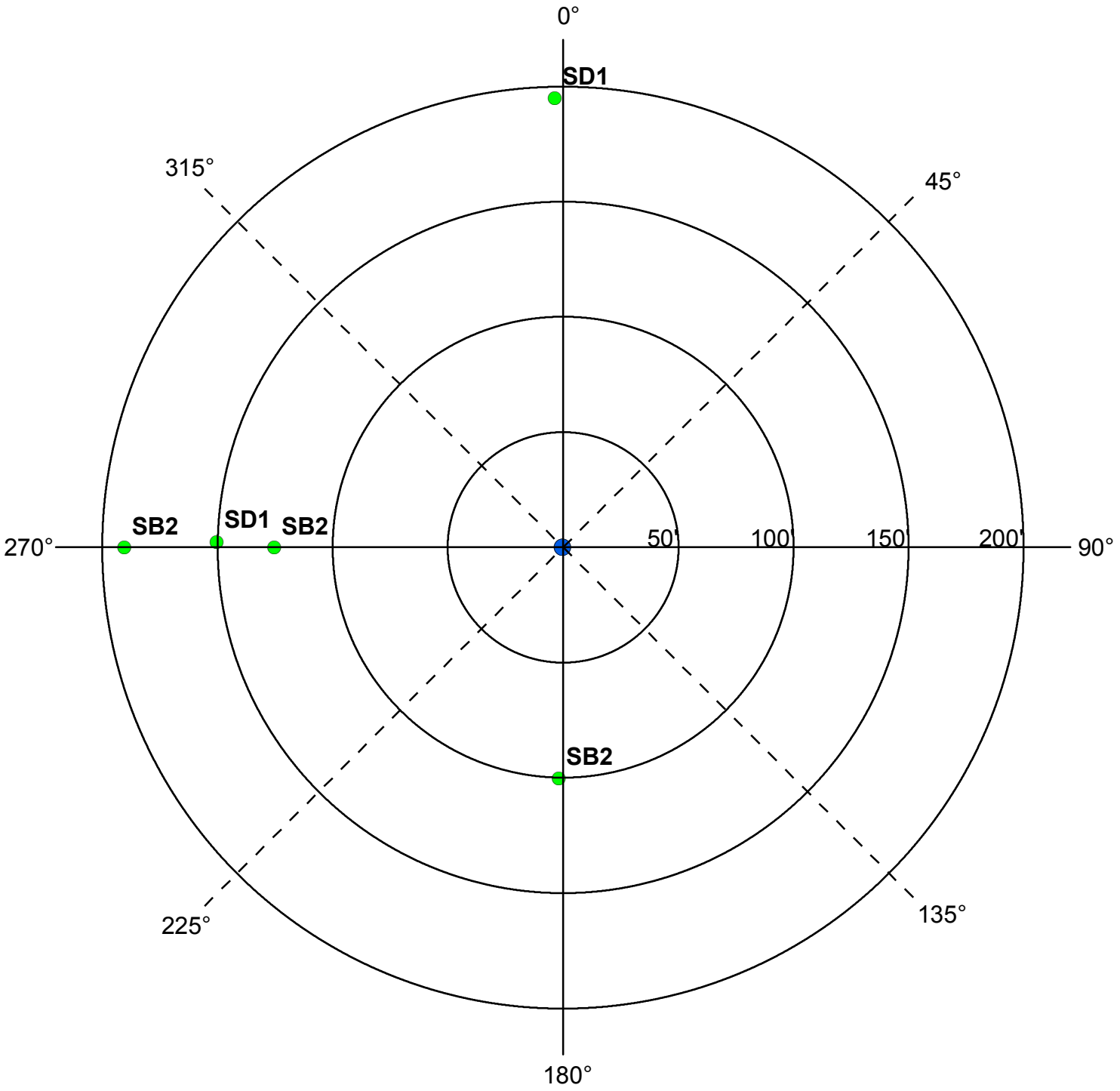
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S04	UNIQUE WELL NO.	202972

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S04	UNIQUE WELL NO.	202972

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #5
FACILITY ID S05
UNIQUE WELL NO. 202951
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S05	UNIQUE WELL NO.	202951

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

PWS ID / FACILITY ID	1020017 S05	UNIQUE WELL NO.	202951

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	153	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	80	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		Y	155	N
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		

PWS ID / FACILITY ID	1020017 S05	UNIQUE WELL NO.	202951

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

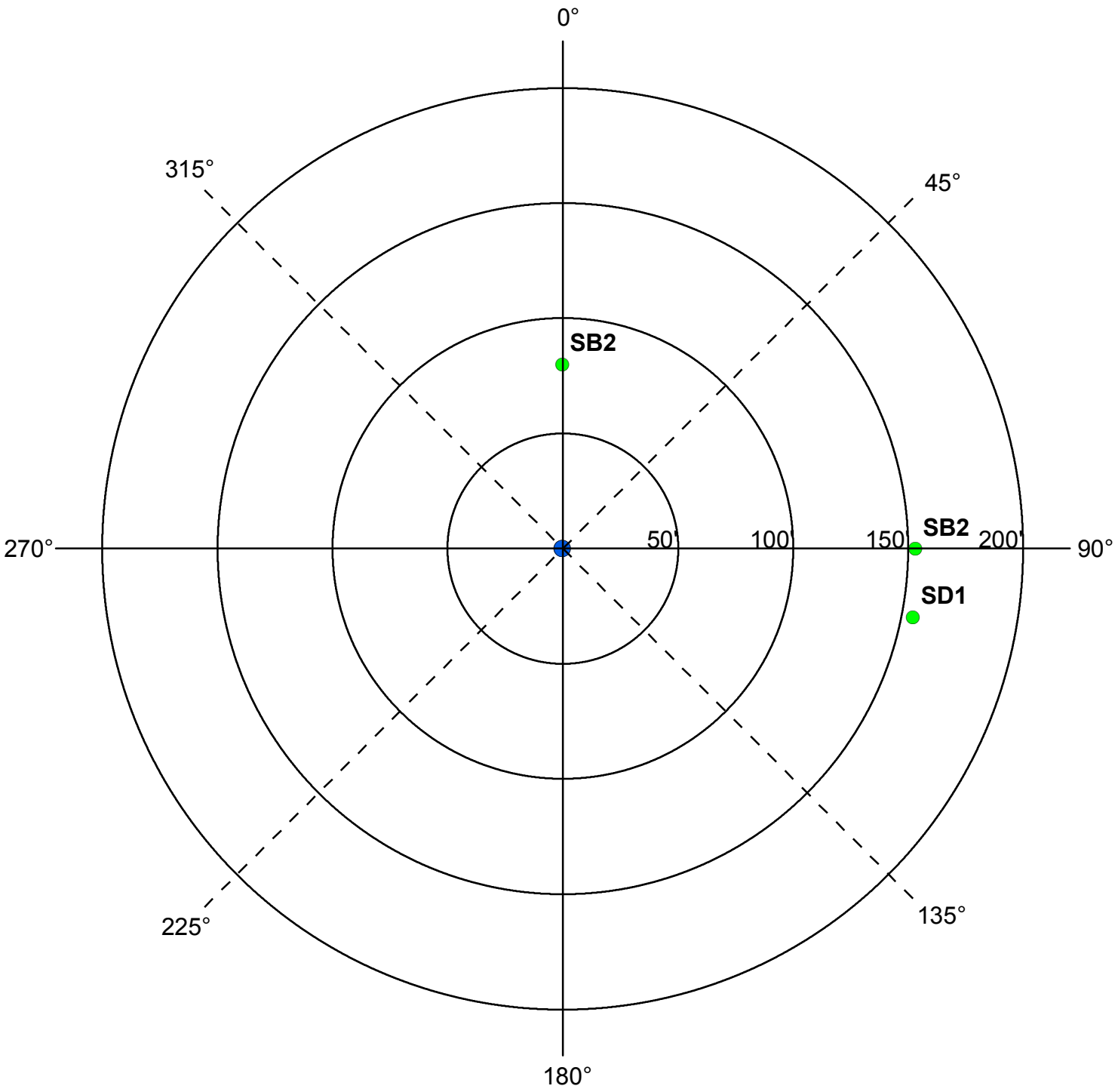
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S05	UNIQUE WELL NO.	202951

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S05	UNIQUE WELL NO.	202951

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #6	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S06	☐ YES (Please attach a copy)
UNIQUE WELL NO.	202937	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S06	**UNIQUE WELL NO.**	202937

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

PWS ID / FACILITY ID	1020017 S06	UNIQUE WELL NO.	202937

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	90	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		Y	105	N
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S06	UNIQUE WELL NO.	202937

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

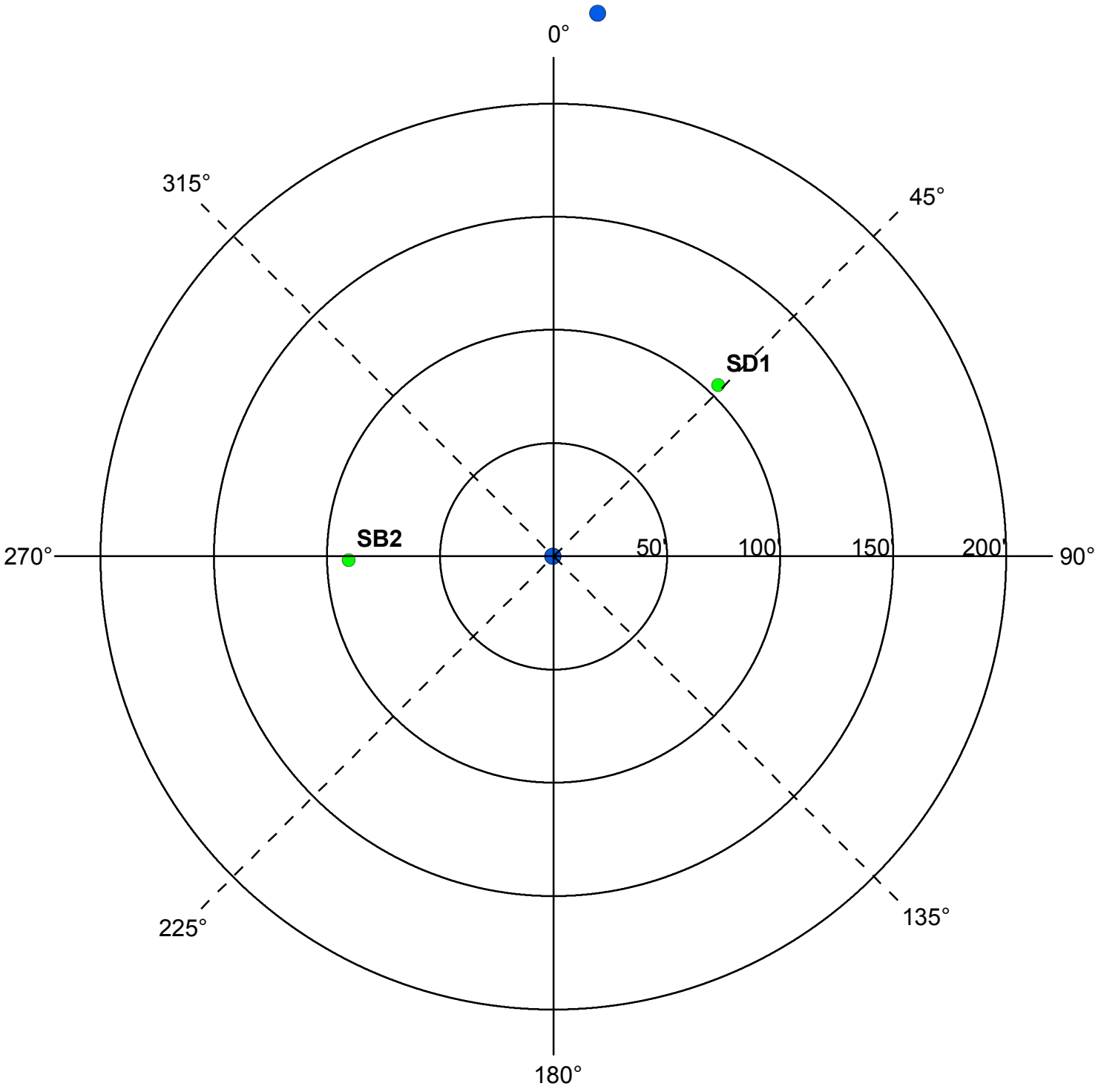
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S06	UNIQUE WELL NO.	202937

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S06	UNIQUE WELL NO.	202937

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #7	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S07	☐ YES (Please attach a copy)
UNIQUE WELL NO.	202943	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S07	**UNIQUE WELL NO.**	202943

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

PWS ID / FACILITY ID	1020017 S07	UNIQUE WELL NO.	202943

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	185	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	100	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		

PWS ID / FACILITY ID	1020017 S07	UNIQUE WELL NO.	202943

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

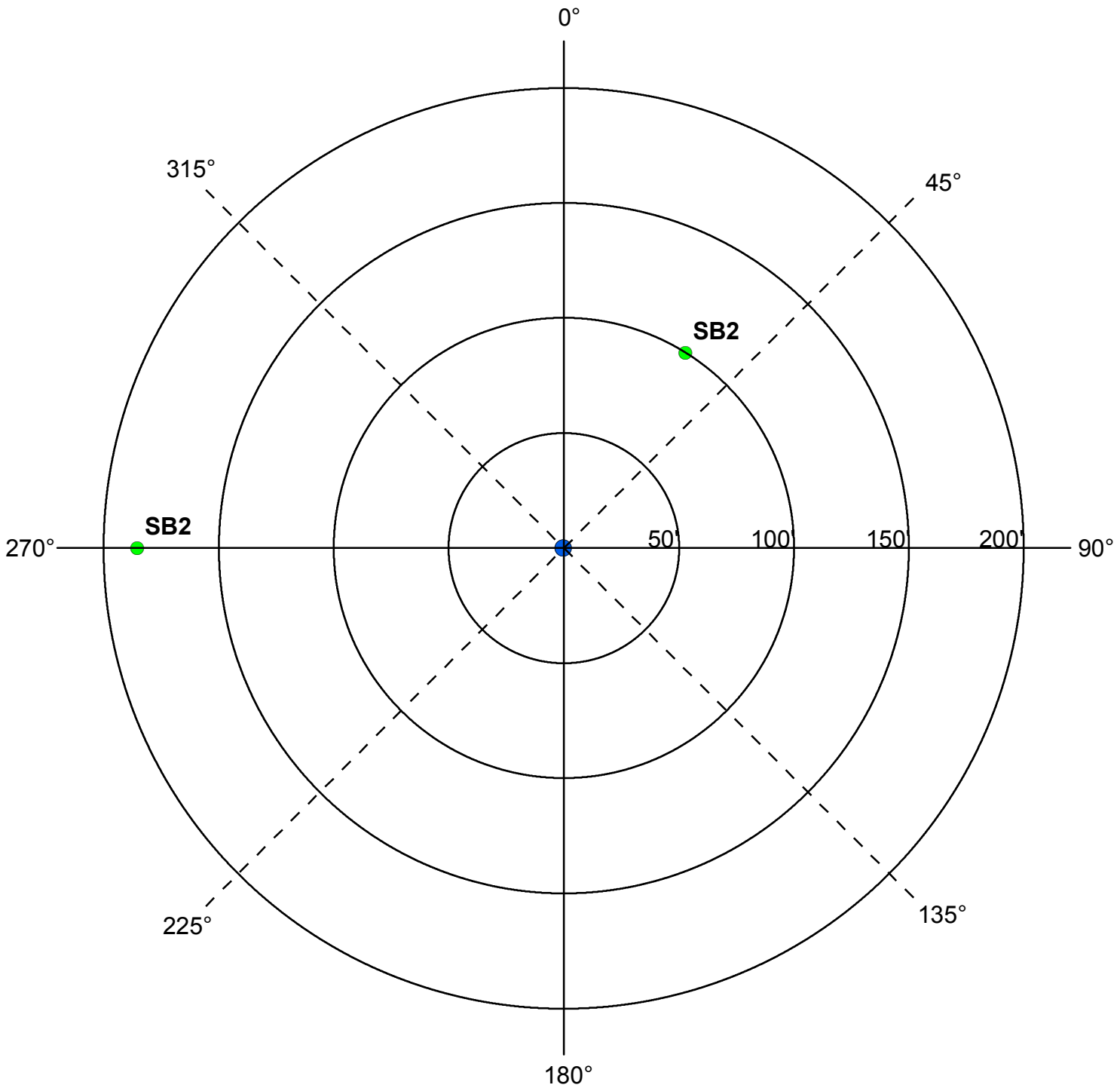
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S07	UNIQUE WELL NO.	202943

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S07	UNIQUE WELL NO.	202943

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

COMMENTS

For further information, please contact:

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

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

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

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #8	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S08	☐ YES (Please attach a copy)
UNIQUE WELL NO.	202932	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S08	**UNIQUE WELL NO.**	202932

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

PWS ID / FACILITY ID	1020017 S08	UNIQUE WELL NO.	202932

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		Y	66	
WEL	Operating well	record dist.	record dist.		Y	86	
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		Y	175	N
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		

PWS ID / FACILITY ID	1020017 S08	UNIQUE WELL NO.	202932

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

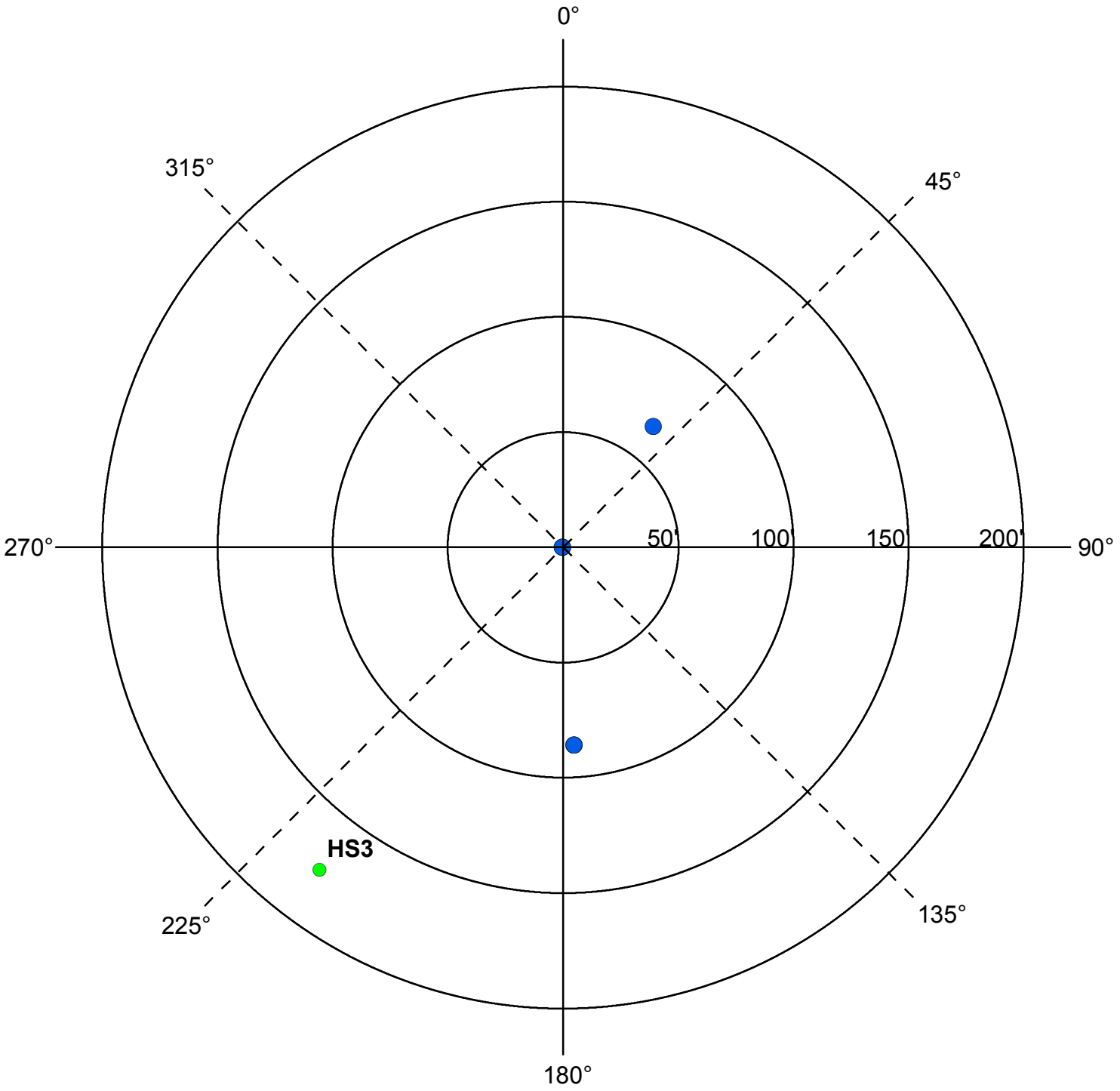
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S08	UNIQUE WELL NO.	202932

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S08	UNIQUE WELL NO.	202932

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #9
FACILITY ID S09
UNIQUE WELL NO. 202931
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S09	UNIQUE WELL NO.	202931

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

PWS ID / FACILITY ID	1020017 S09	UNIQUE WELL NO.	202931

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	140	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S09	UNIQUE WELL NO.	202931

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

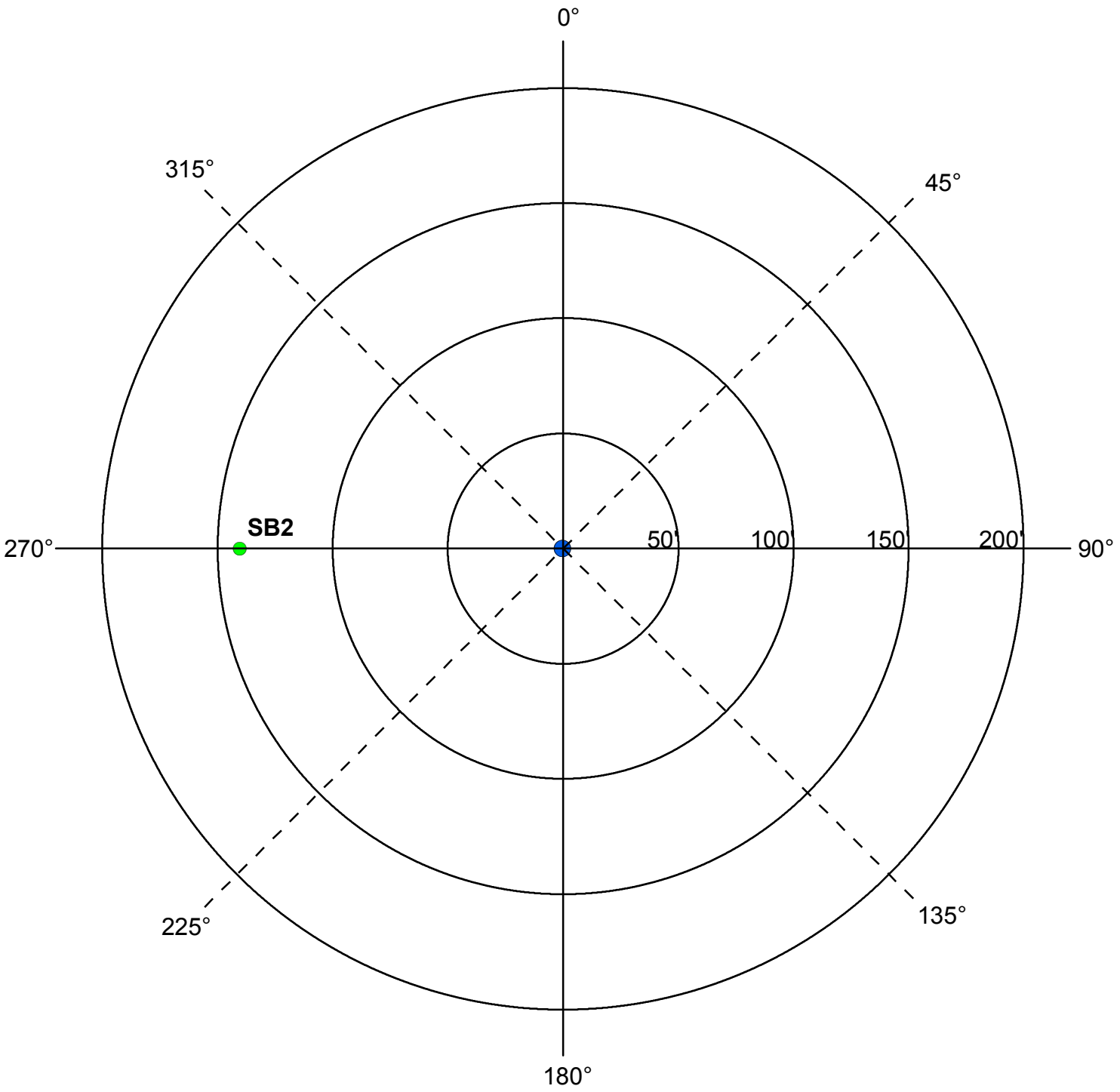
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S09	UNIQUE WELL NO.	202931

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S09	UNIQUE WELL NO.	202931

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #10	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S10	☐ **YES** (Please attach a copy)
UNIQUE WELL NO.	202930	☐ **NO** ☐ **UNDETERMINED**
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S10	**UNIQUE WELL NO.**	202930

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

PWS ID / FACILITY ID	1020017 S10	UNIQUE WELL NO.	202930

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S10	UNIQUE WELL NO.	202930

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

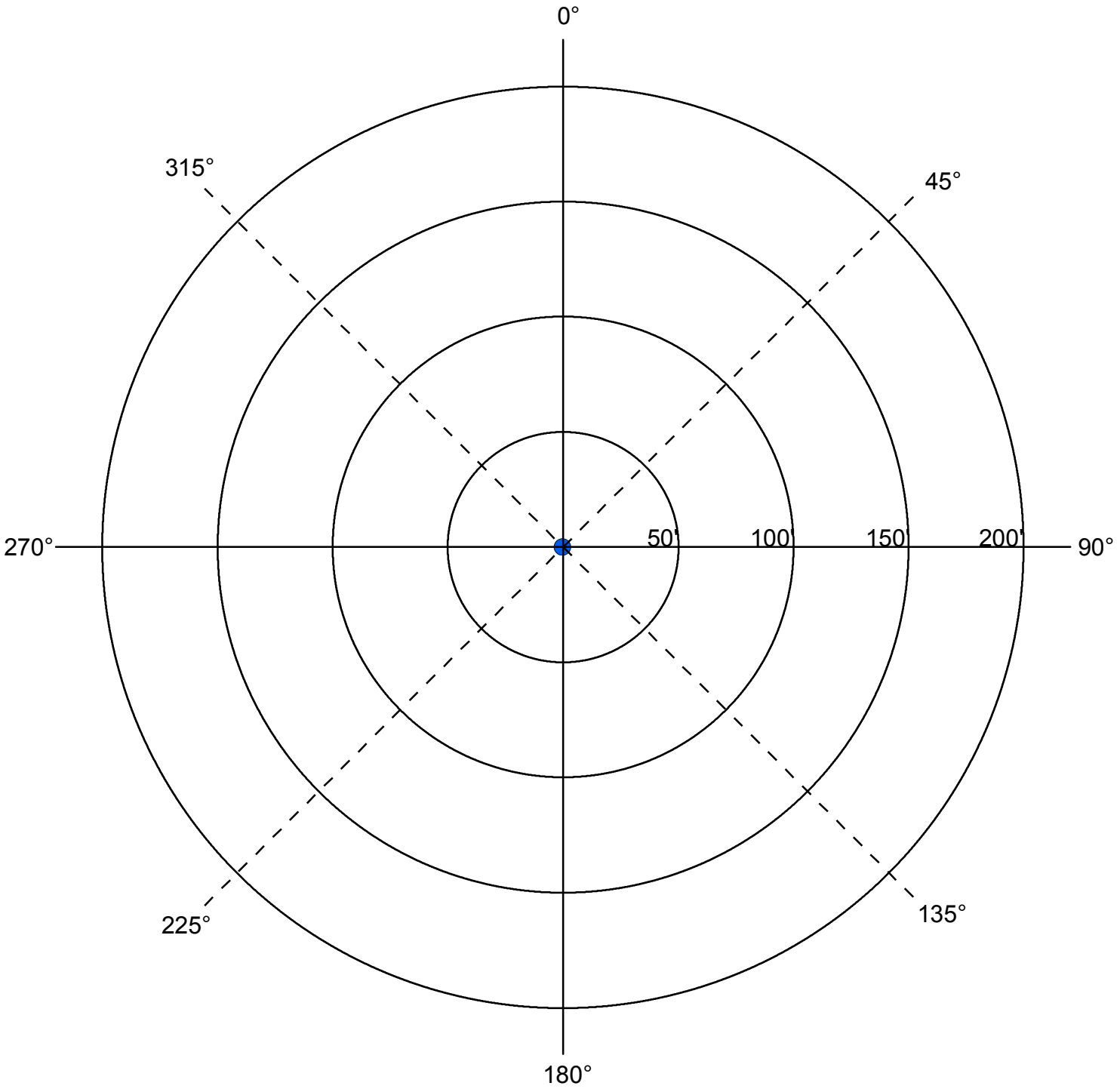
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S10	UNIQUE WELL NO.	202930

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S10	UNIQUE WELL NO.	202930

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #11
FACILITY ID S11
UNIQUE WELL NO. 202965
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S11	UNIQUE WELL NO.	202965

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

PWS ID / FACILITY ID	1020017 S11	UNIQUE WELL NO.	202965

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	80	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	100	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	75	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		

PWS ID / FACILITY ID	1020017 S11	UNIQUE WELL NO.	202965

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

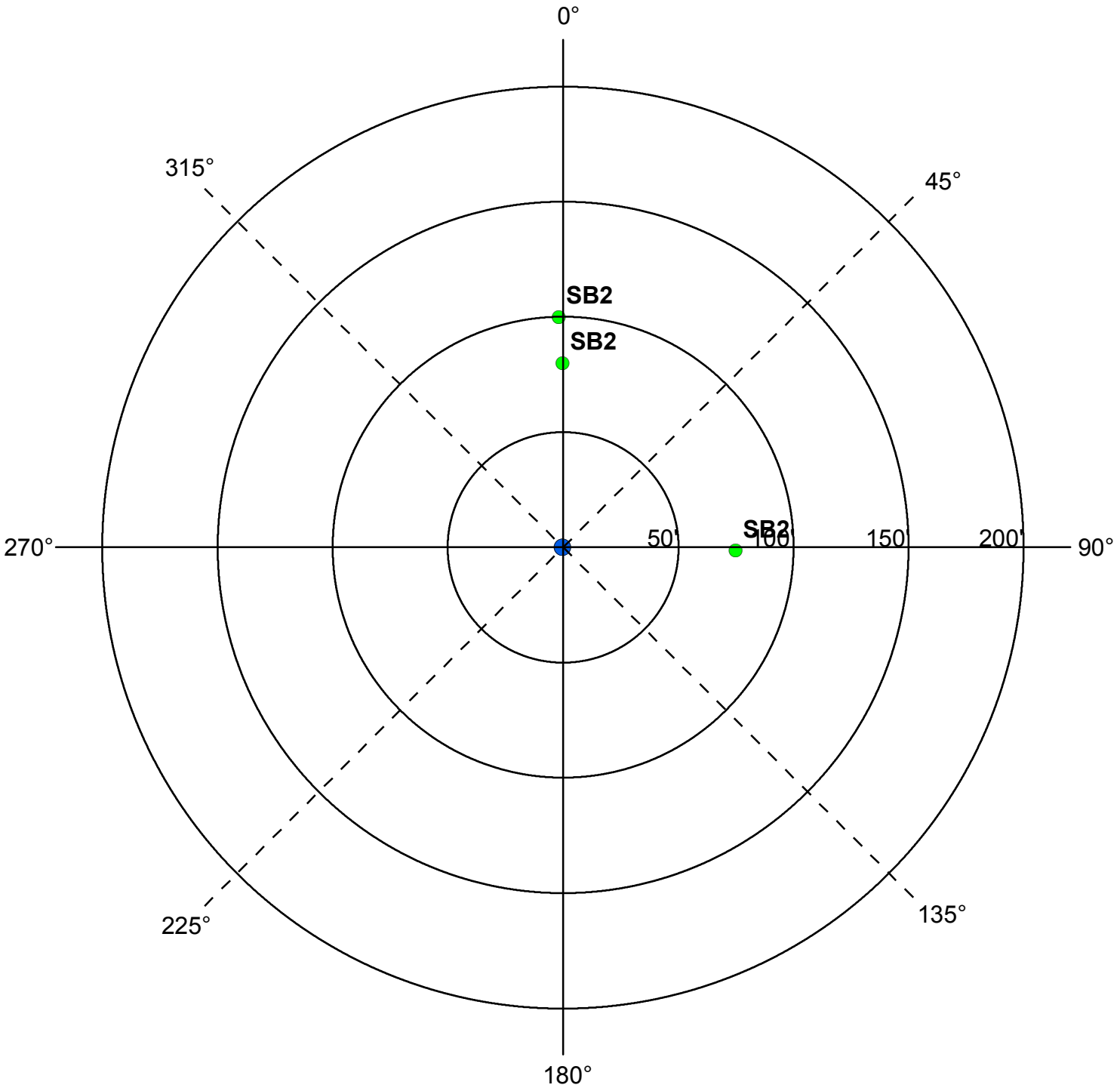
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S11	UNIQUE WELL NO.	202965

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S11	UNIQUE WELL NO.	202965

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

COMMENTS

For further information, please contact:

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

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

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

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #12	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S12	☐ YES (Please attach a copy)
UNIQUE WELL NO.	168721	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S12	**UNIQUE WELL NO.**	168721

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

PWS ID / FACILITY ID	1020017 S12	UNIQUE WELL NO.	168721

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	75	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		Y	85	N
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		Y	50	N
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S12	UNIQUE WELL NO.	168721

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

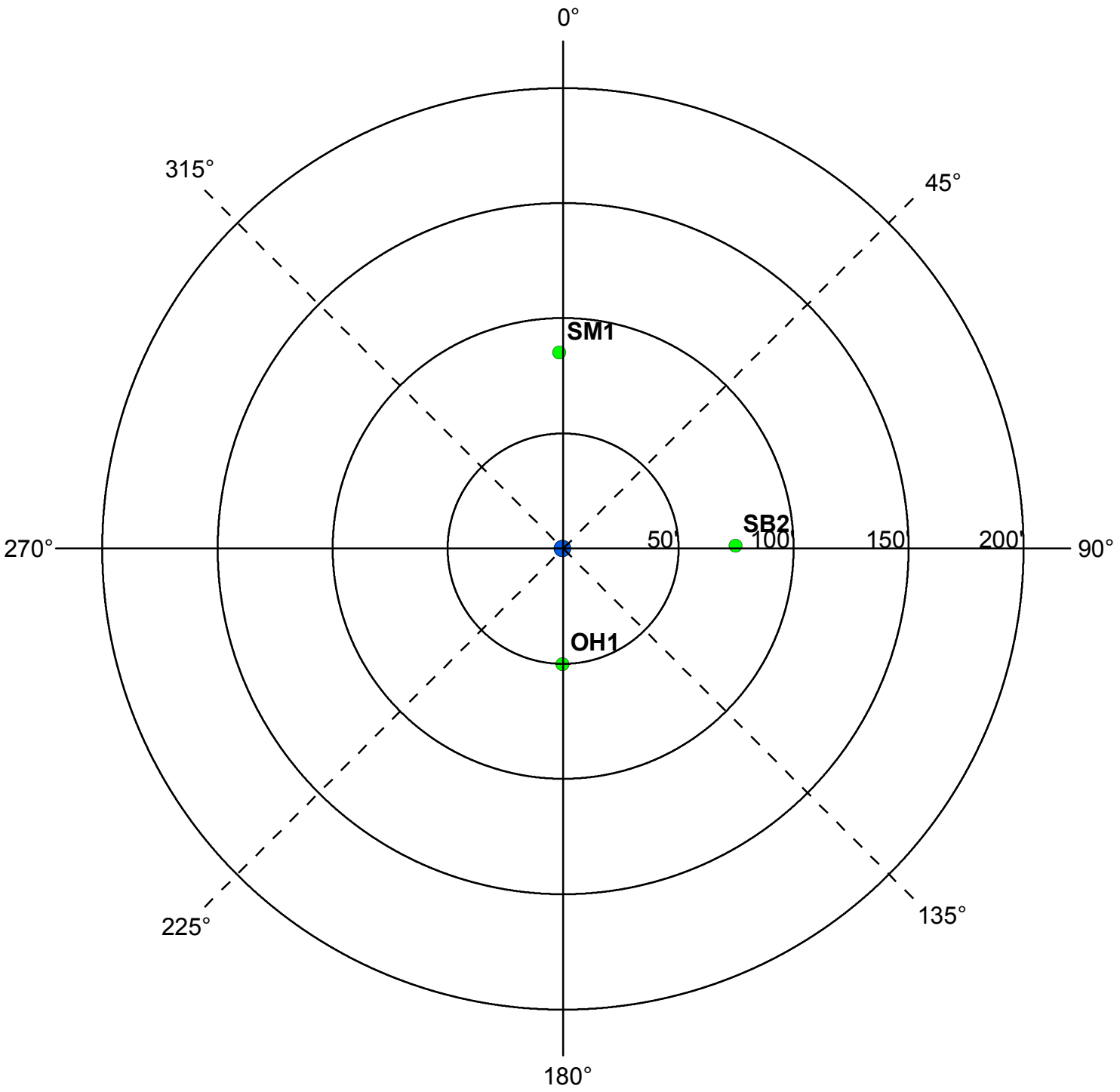
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S12	UNIQUE WELL NO.	168721

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S12	UNIQUE WELL NO.	168721

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #13	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S13	☐ **YES** (Please attach a copy)
UNIQUE WELL NO.	168720	☐ **NO** ☐ **UNDETERMINED**
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S13	**UNIQUE WELL NO.**	168720

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

PWS ID / FACILITY ID	1020017 S13	UNIQUE WELL NO.	168720

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	90	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S13	UNIQUE WELL NO.	168720

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

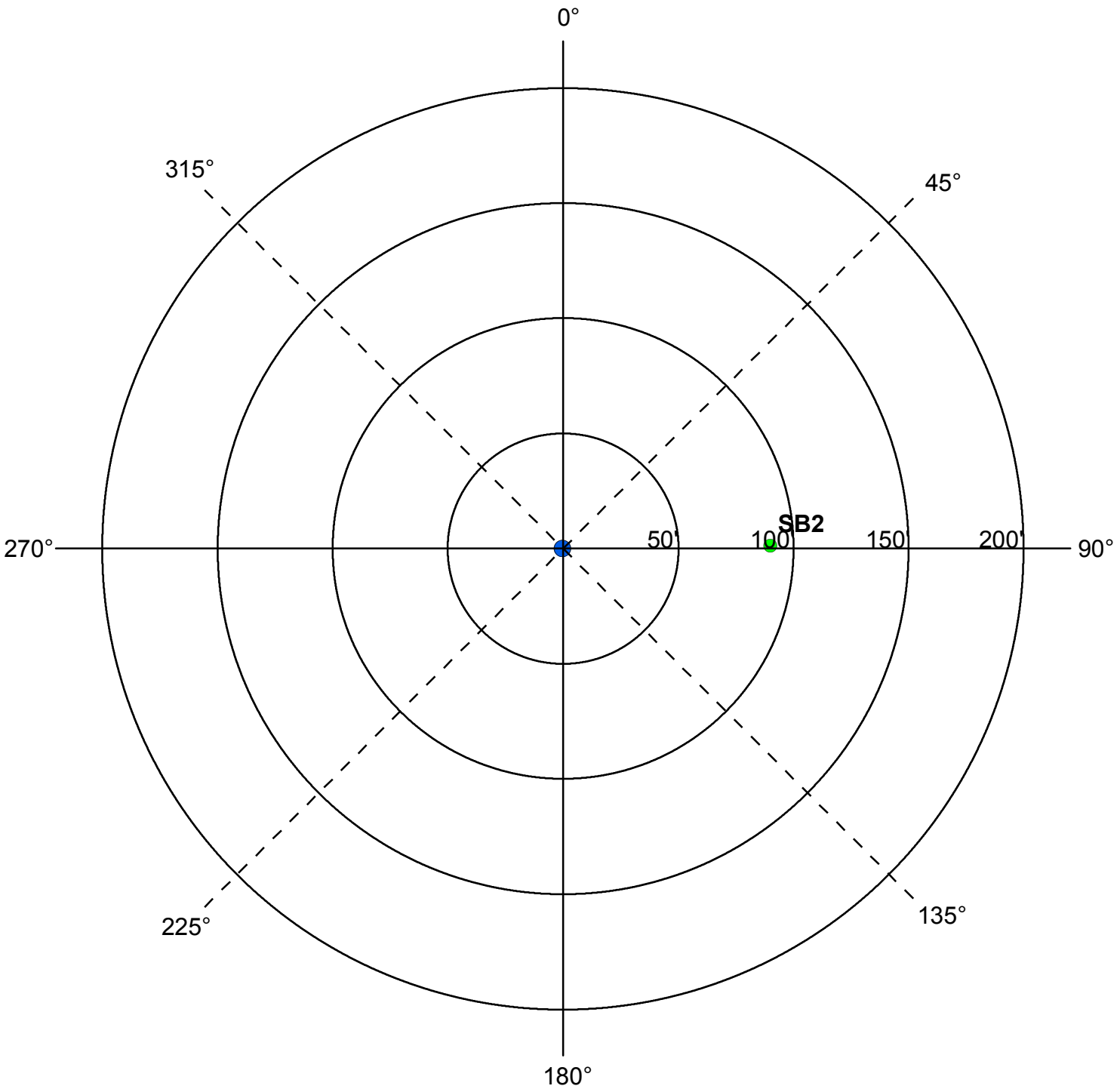
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S13	UNIQUE WELL NO.	168720

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S13	UNIQUE WELL NO.	168720

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #14	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S14	☐ **YES** (Please attach a copy)
UNIQUE WELL NO.	110460	☐ **NO** ☐ **UNDETERMINED**
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S14	**UNIQUE WELL NO.**	110460

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

PWS ID / FACILITY ID	1020017 S14	UNIQUE WELL NO.	110460

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S14	UNIQUE WELL NO.	110460

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

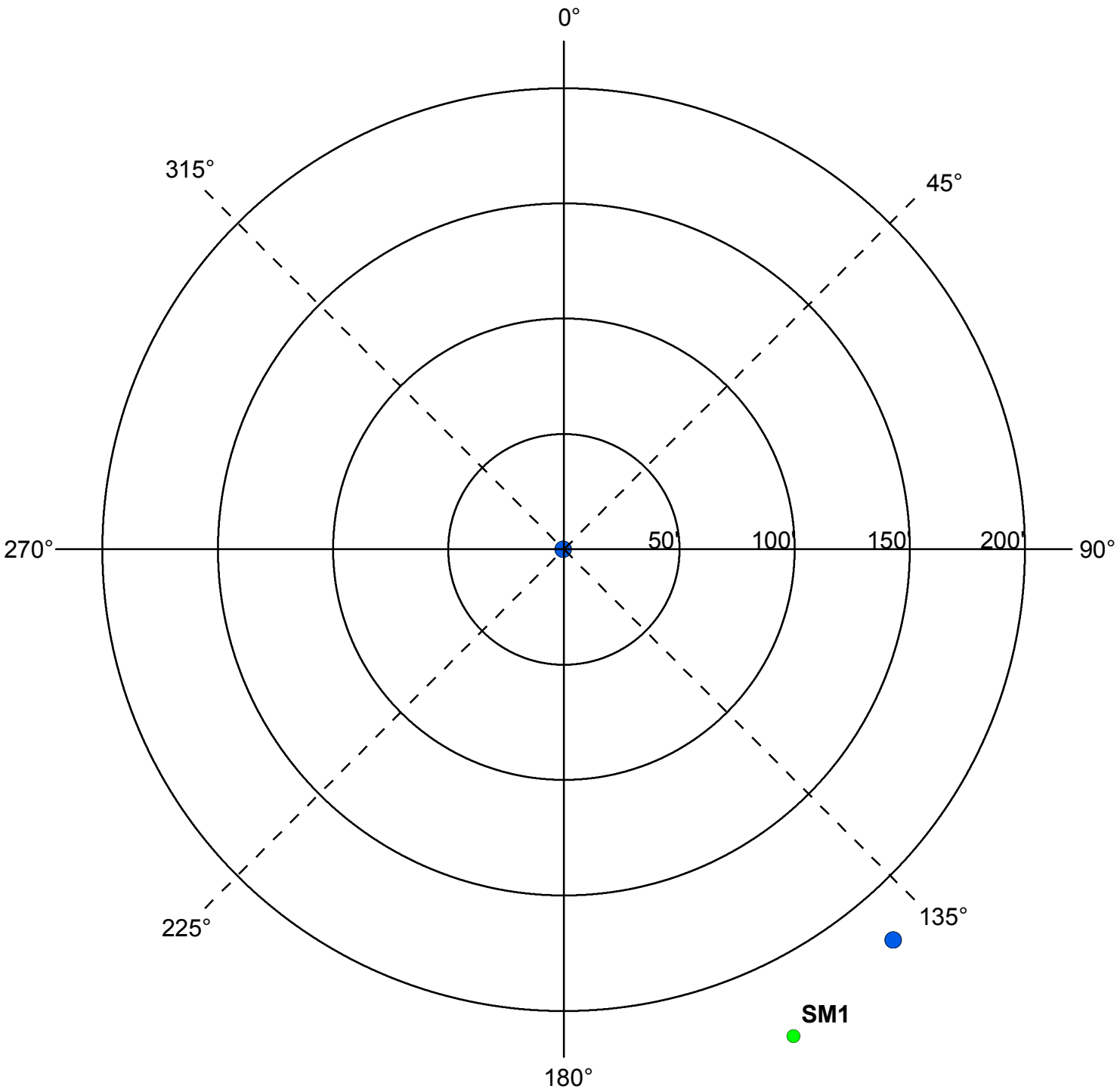
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S14	UNIQUE WELL NO.	110460

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S14	UNIQUE WELL NO.	110460

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #15	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S21	☐ YES (Please attach a copy)
UNIQUE WELL NO.	110461	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S21	**UNIQUE WELL NO.**	110461

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

PWS ID / FACILITY ID	1020017 S21	UNIQUE WELL NO.	110461

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S21	UNIQUE WELL NO.	110461

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

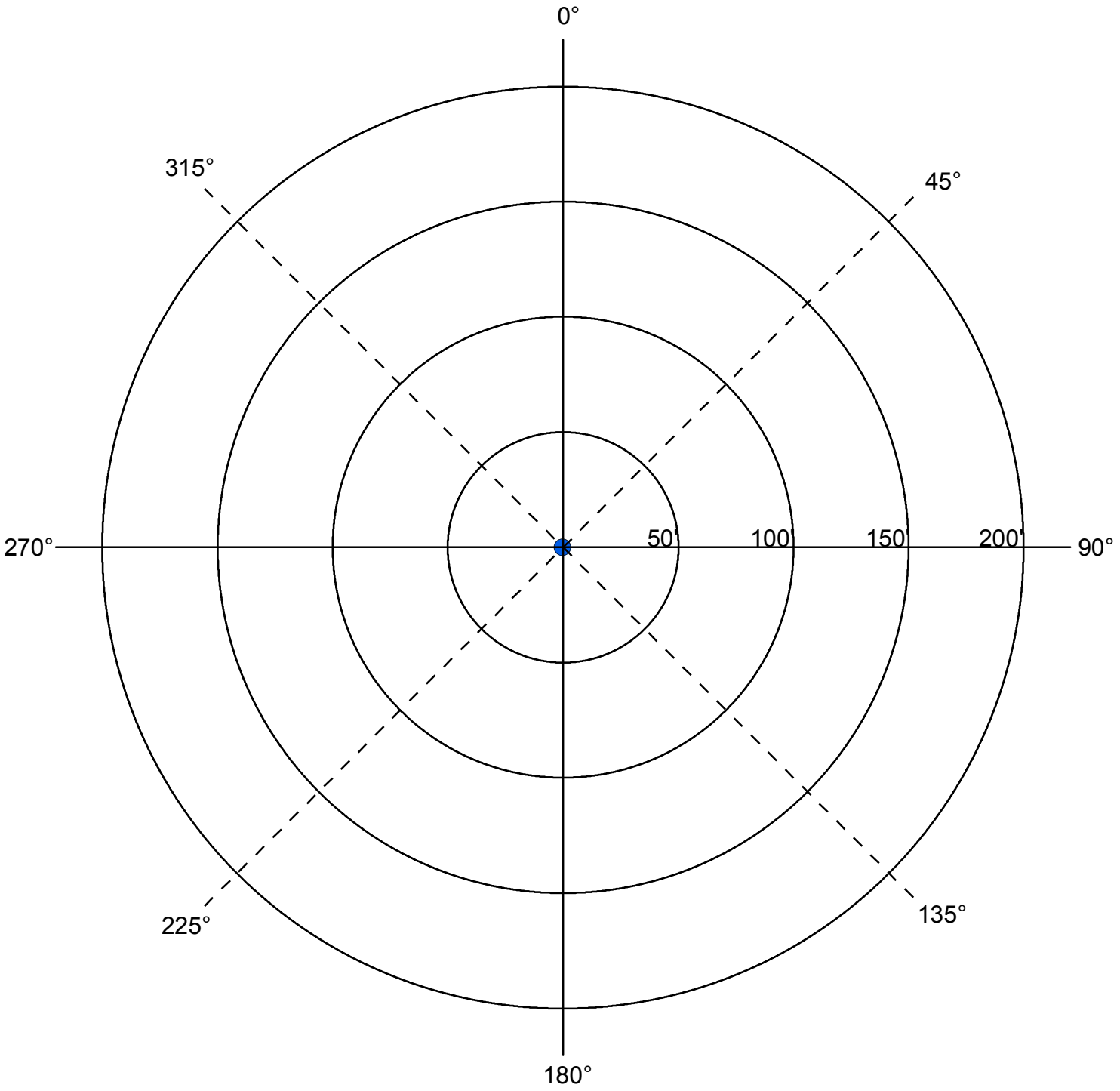
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S21	UNIQUE WELL NO.	110461

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 2 - 2016

PWS ID / FACILITY ID	1020017 S21	UNIQUE WELL NO.	110461

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #16	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S15	☐ YES (Please attach a copy)
UNIQUE WELL NO.	161413	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S15	**UNIQUE WELL NO.**	161413

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

PWS ID / FACILITY ID	1020017 S15	UNIQUE WELL NO.	161413

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	120	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	90	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	110	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		Y	75	N
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		Y	130	N
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		

PWS ID / FACILITY ID	1020017 S15	UNIQUE WELL NO.	161413

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

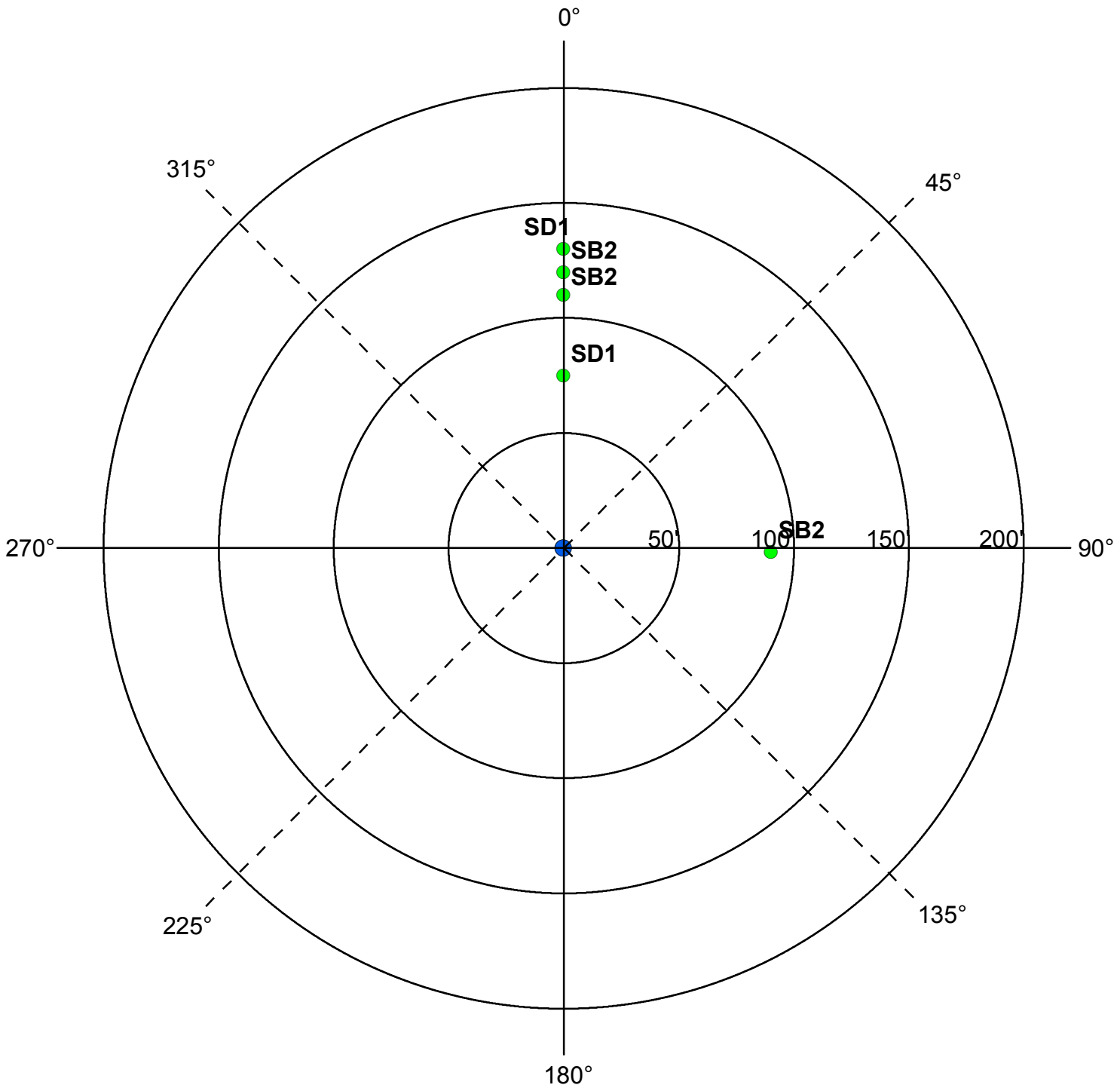
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S15	UNIQUE WELL NO.	161413

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 2 - 2016

PWS ID / FACILITY ID	1020017 S15	UNIQUE WELL NO.	161413

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

COMMENTS

For further information, please contact:

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

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

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

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #17	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S16	☐ YES (Please attach a copy)
UNIQUE WELL NO.	150357	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S16	**UNIQUE WELL NO.**	150357

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

PWS ID / FACILITY ID	1020017 S16	UNIQUE WELL NO.	150357

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	80	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	70	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		

PWS ID / FACILITY ID	1020017 S16	UNIQUE WELL NO.	150357

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

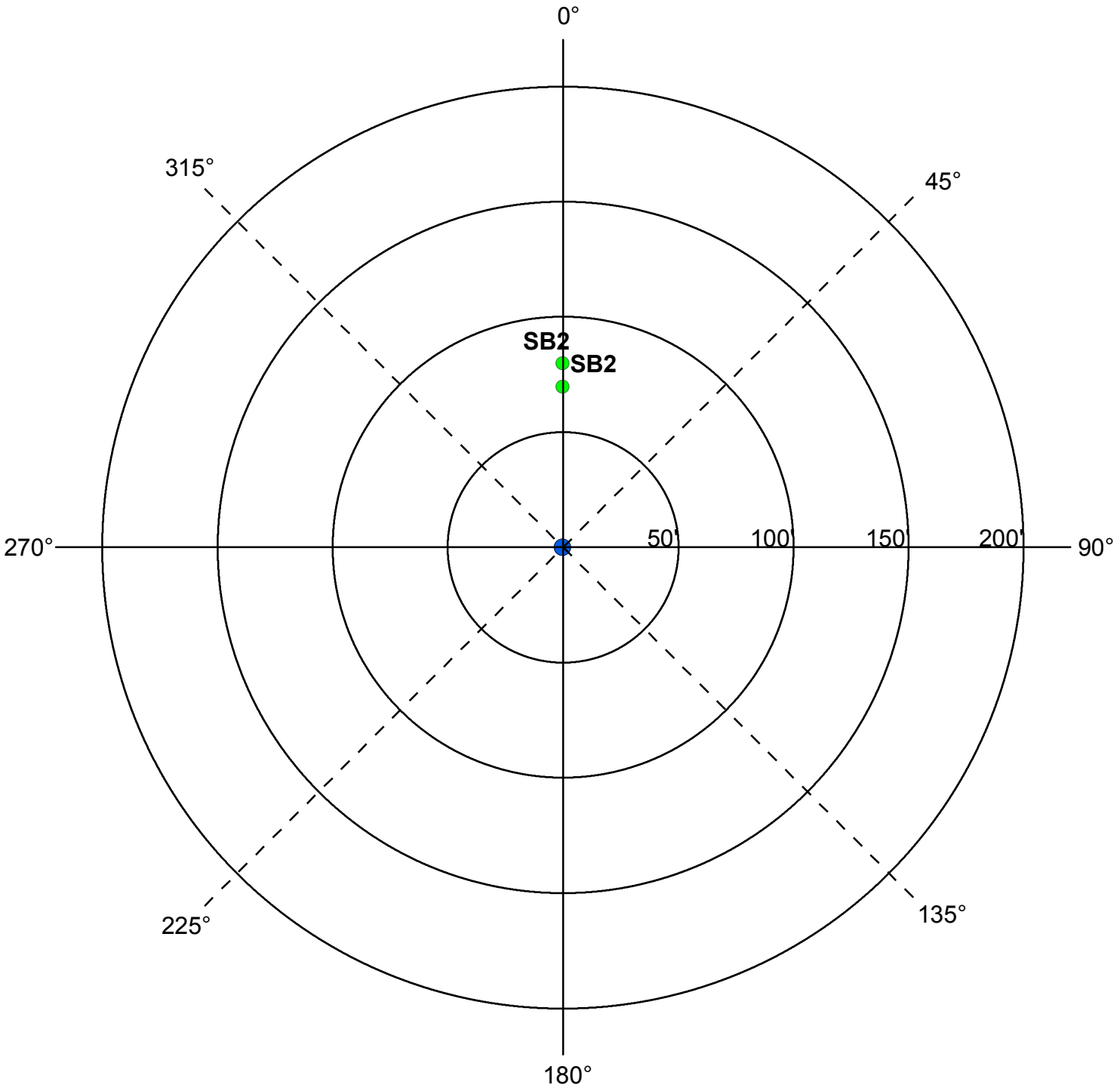
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S16	UNIQUE WELL NO.	150357

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S16	UNIQUE WELL NO.	150357

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #18	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S17	☐ **YES** (Please attach a copy)
UNIQUE WELL NO.	110469	☐ **NO** ☐ **UNDETERMINED**
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S17	**UNIQUE WELL NO.**	110469

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

PWS ID / FACILITY ID	1020017 S17	UNIQUE WELL NO.	110469

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		Y	150	N
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S17	UNIQUE WELL NO.	110469

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

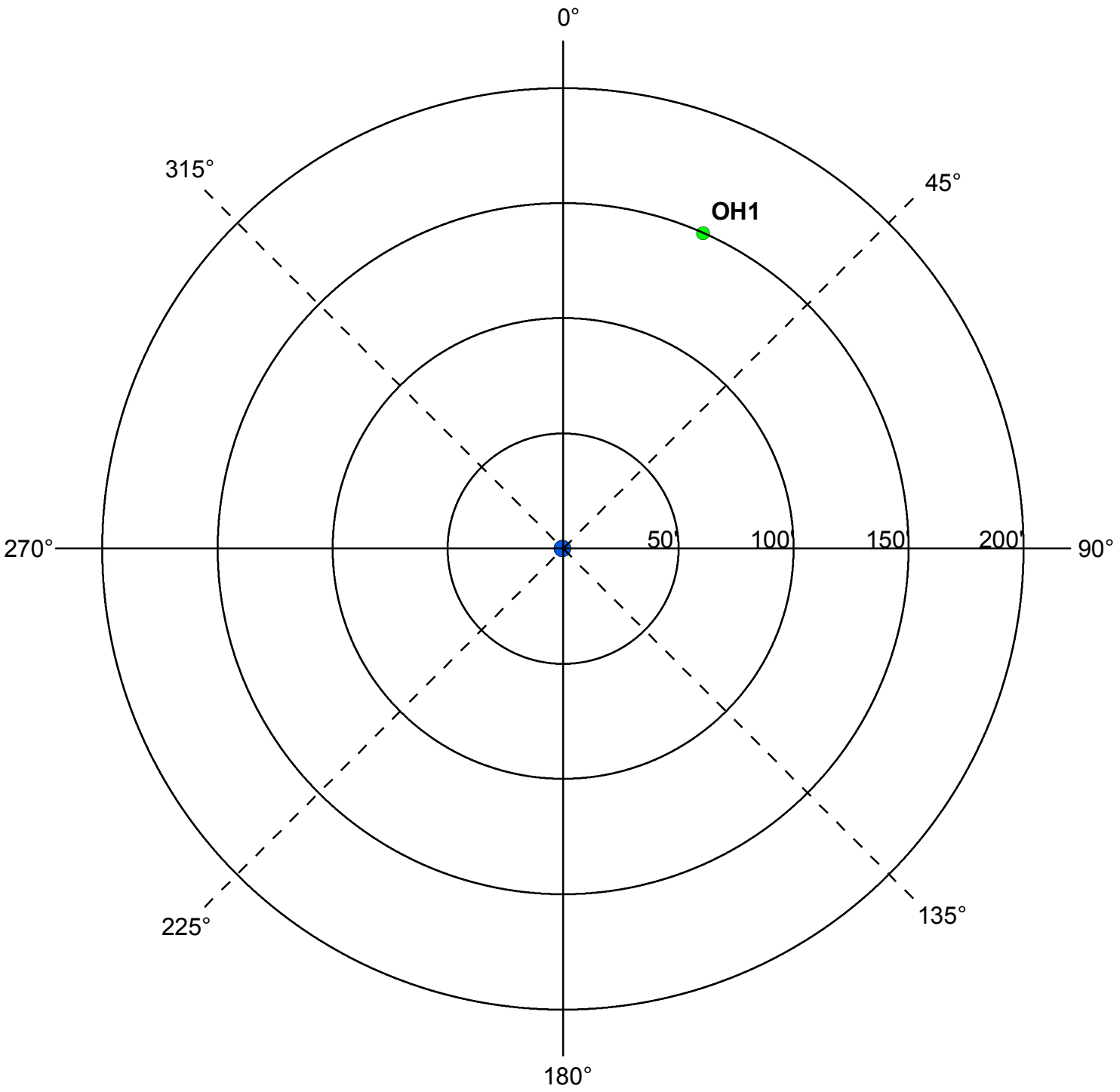
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S17	UNIQUE WELL NO.	110469

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S17	UNIQUE WELL NO.	110469

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #19	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S18	☐ **YES** (Please attach a copy)
UNIQUE WELL NO.	110475	☐ **NO** ☐ **UNDETERMINED**
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S18	**UNIQUE WELL NO.**	110475

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

PWS ID / FACILITY ID	1020017 S18	UNIQUE WELL NO.	110475

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	125	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	140	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		Y	160	
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		Y	150	N

PWS ID / FACILITY ID	1020017 S18	UNIQUE WELL NO.	110475

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

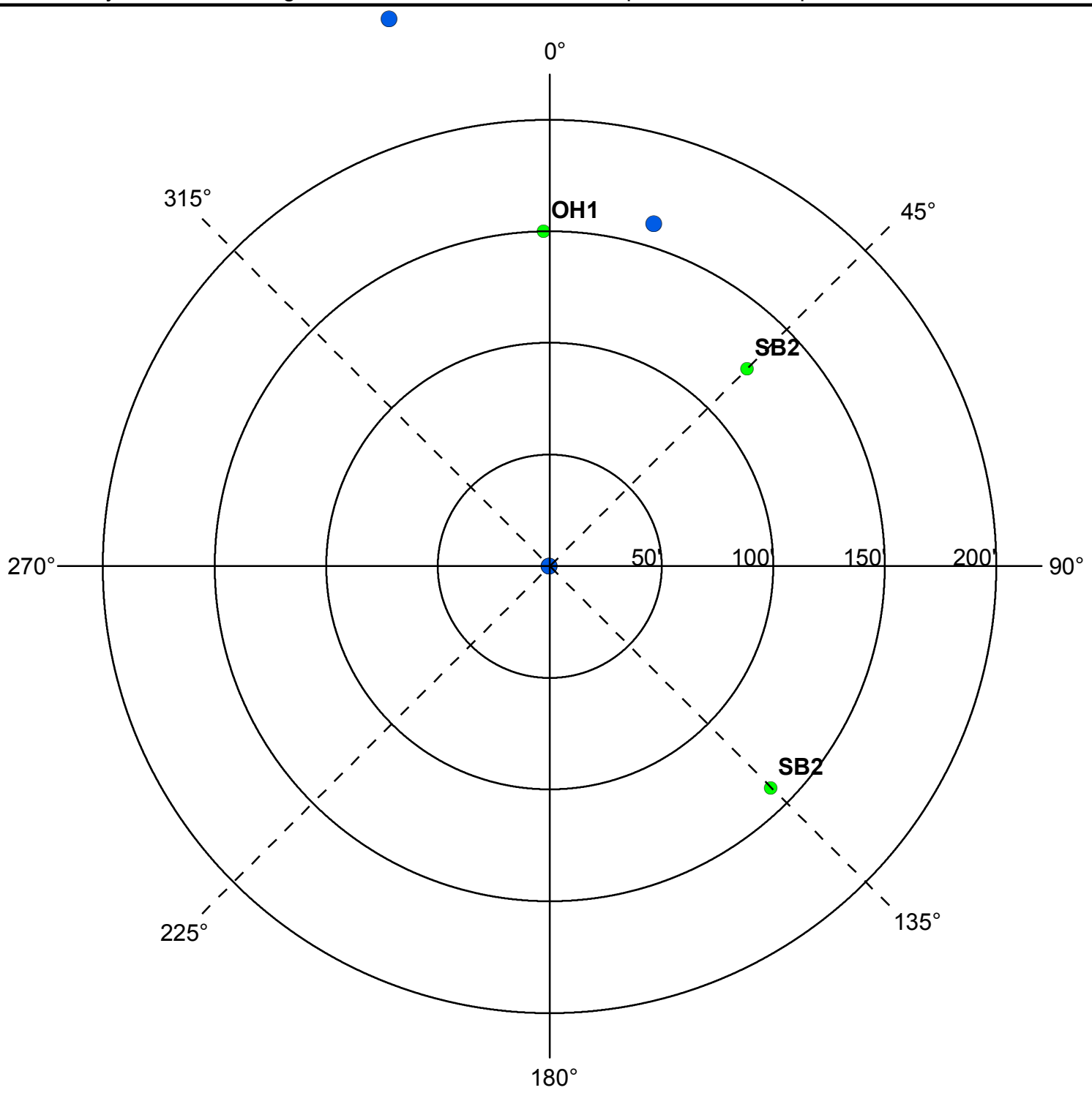
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S18	UNIQUE WELL NO.	110475

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S18	UNIQUE WELL NO.	110475

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #20
FACILITY ID S19
UNIQUE WELL NO. 420956
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S19	UNIQUE WELL NO.	420956

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

PWS ID / FACILITY ID	1020017 S19	UNIQUE WELL NO.	420956

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		Y	50	N
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S19	UNIQUE WELL NO.	420956

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

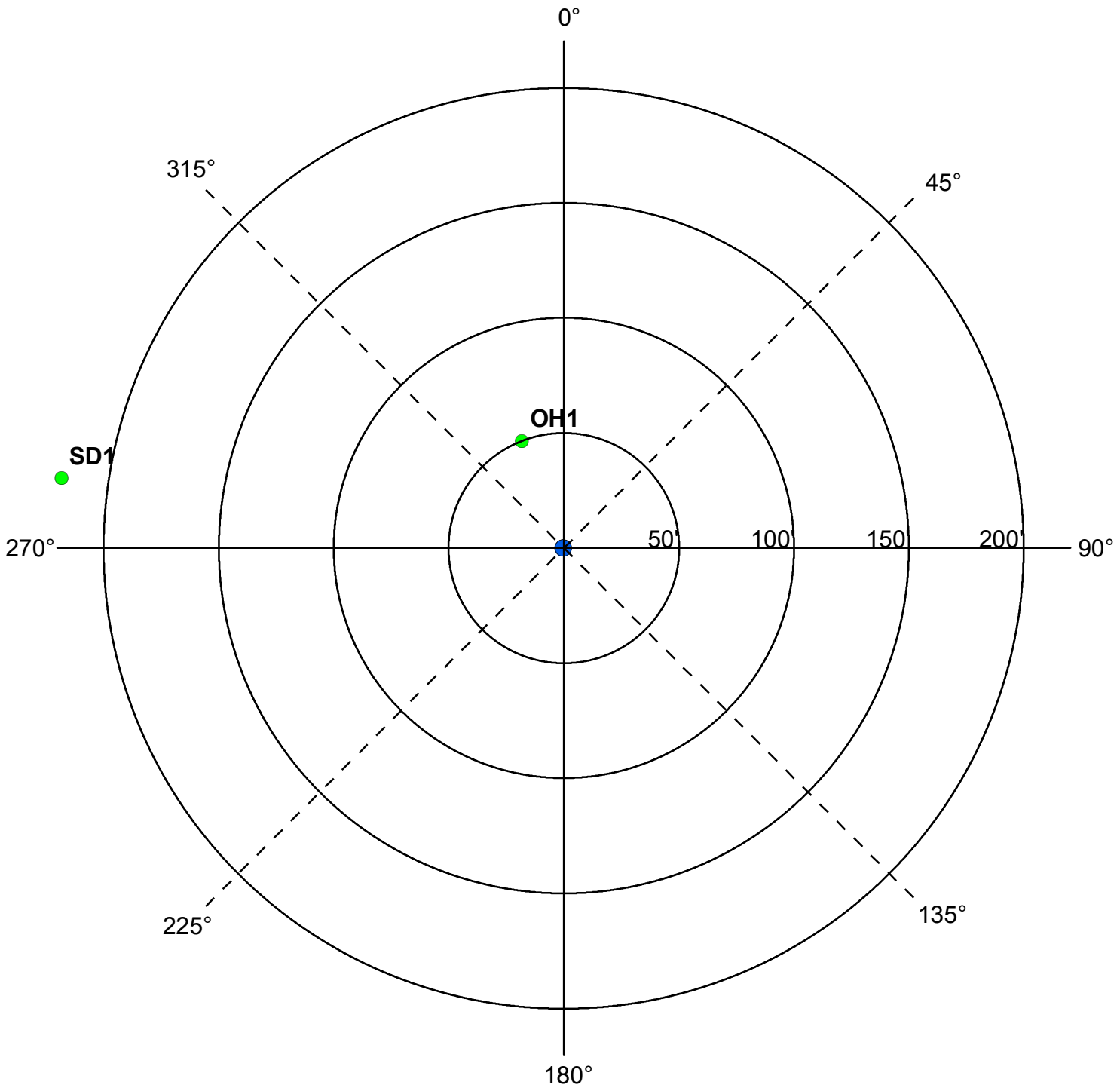
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S19	UNIQUE WELL NO.	420956

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S19	UNIQUE WELL NO.	420956

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #21
FACILITY ID S22
UNIQUE WELL NO. 474384
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S22	UNIQUE WELL NO.	474384

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

PWS ID / FACILITY ID	1020017 S22	UNIQUE WELL NO.	474384

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		Y	143	
WEL	Operating well	record dist.	record dist.		Y	86	
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		Y	123	N**
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		

PWS ID / FACILITY ID	1020017 S22	UNIQUE WELL NO.	474384

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

** This number is the estimated distance that this potential source is from this well even though it was identified during an inventory for an adjacent well.

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

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

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

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

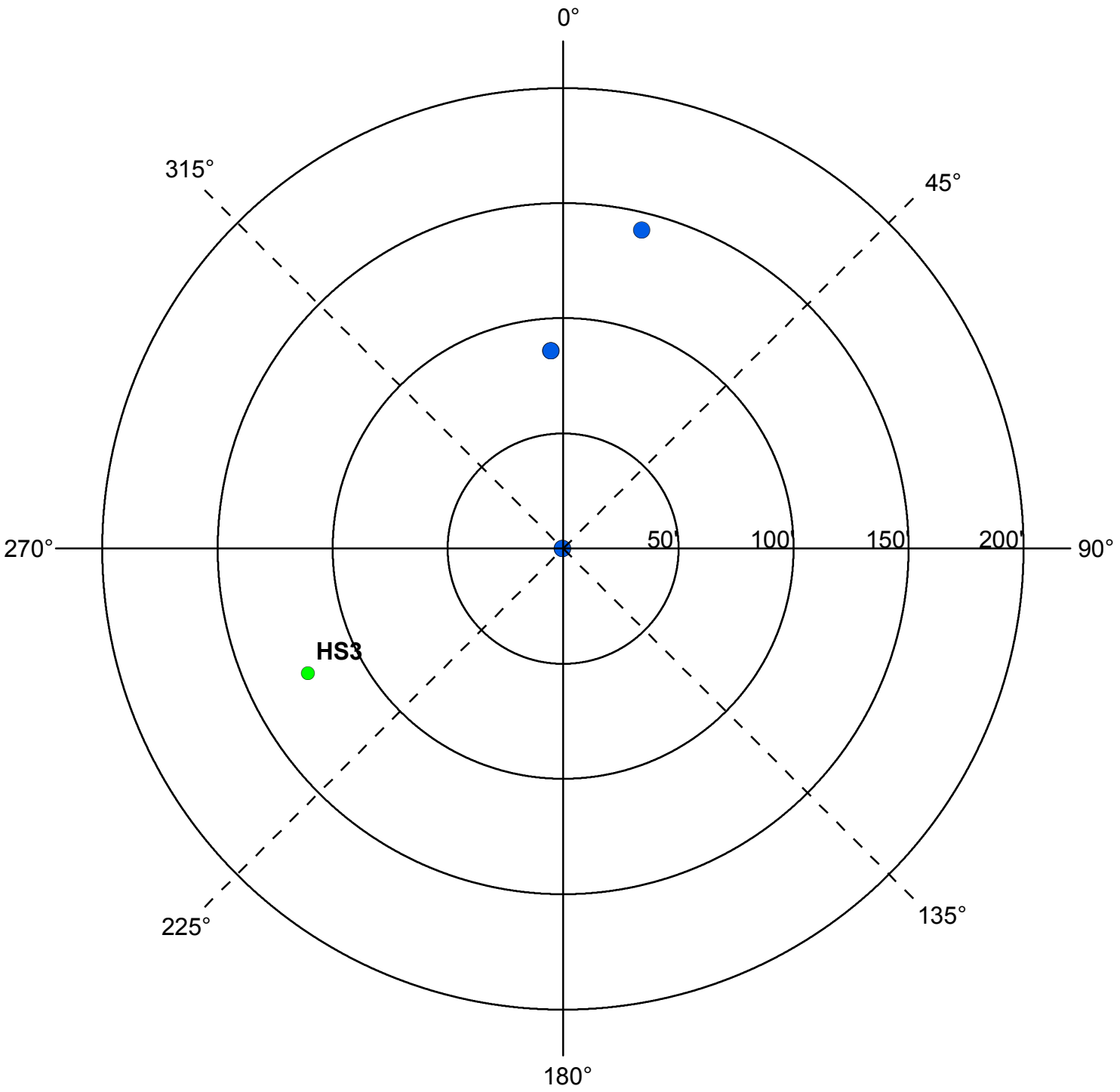
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S22	UNIQUE WELL NO.	474384

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S22	UNIQUE WELL NO.	474384

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #22	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S23	☐ YES (Please attach a copy)
UNIQUE WELL NO.	474385	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S23	**UNIQUE WELL NO.**	474385

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

PWS ID / FACILITY ID	1020017 S23	UNIQUE WELL NO.	474385

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	170	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		Y	182	
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S23	UNIQUE WELL NO.	474385

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

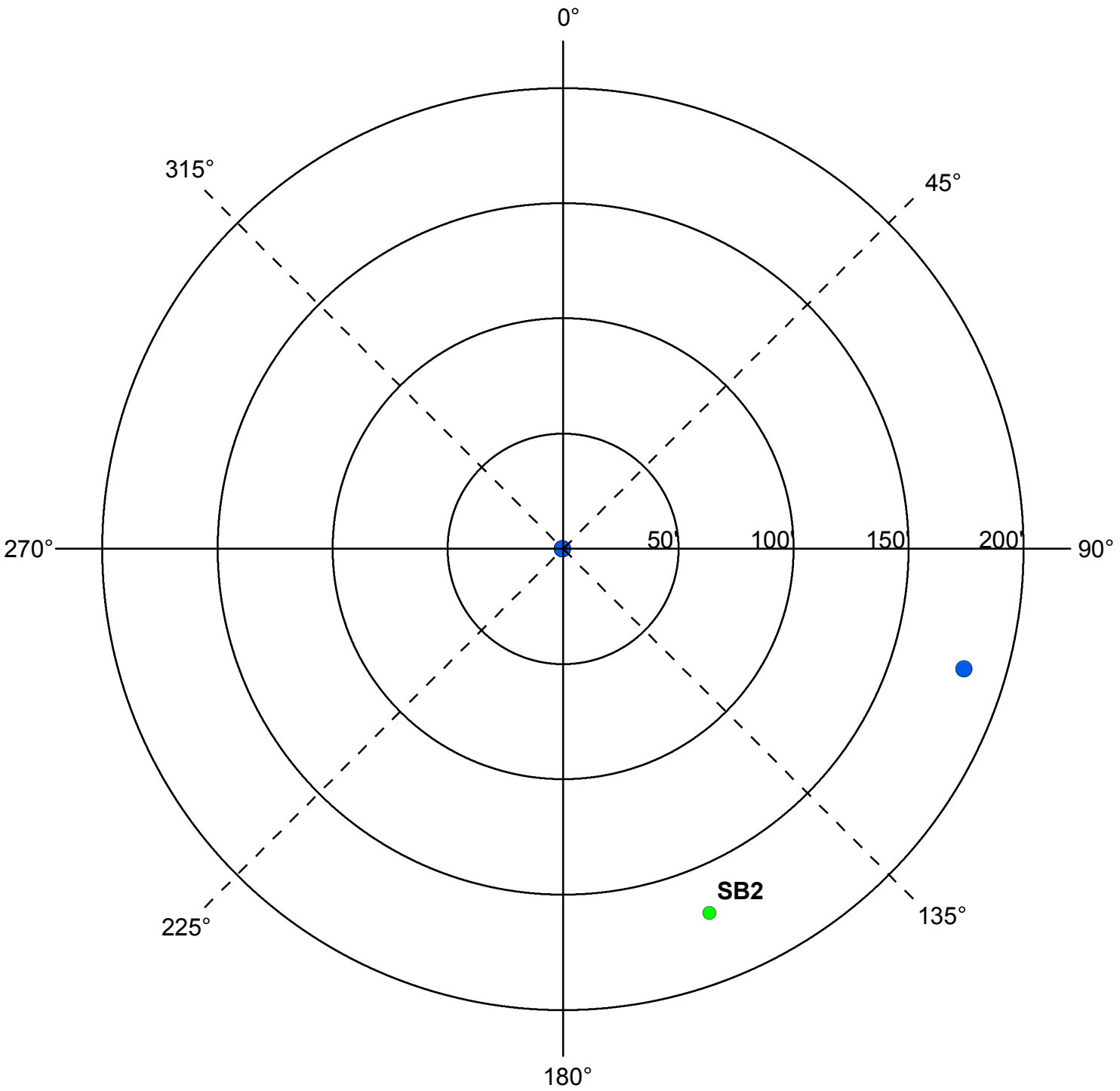
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S23	UNIQUE WELL NO.	474385

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S23	UNIQUE WELL NO.	474385

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #23
FACILITY ID S24
UNIQUE WELL NO. 463020
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S24	UNIQUE WELL NO.	463020

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

PWS ID / FACILITY ID	1020017 S24	UNIQUE WELL NO.	463020

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	75	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	50	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		

PWS ID / FACILITY ID	1020017 S24	UNIQUE WELL NO.	463020

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

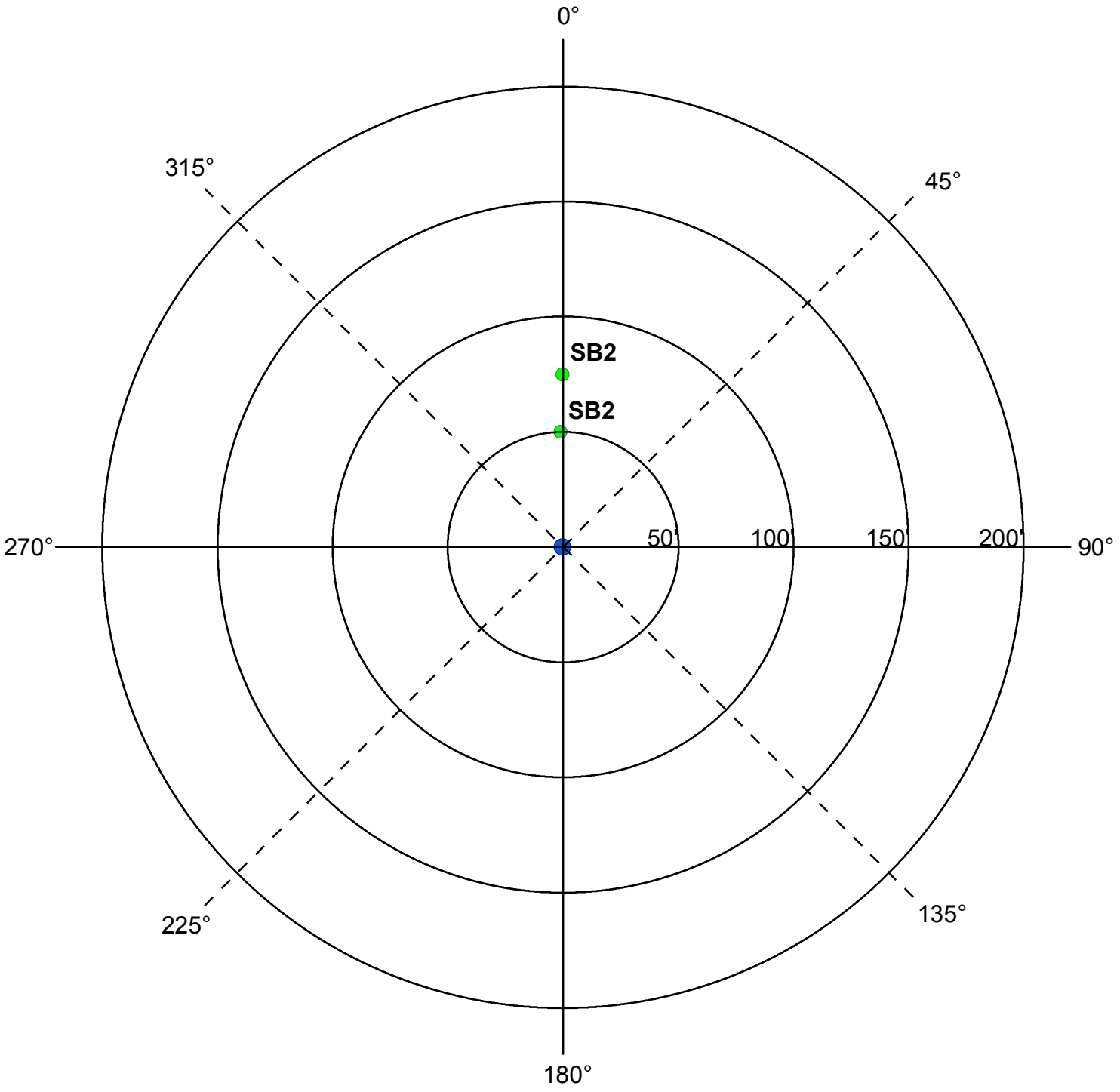
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S24	UNIQUE WELL NO.	463020

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S24	UNIQUE WELL NO.	463020

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID	1020017	**COMMUNITY**
NAME	Coon Rapids	
ADDRESS	Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761	

FACILITY (WELL) INFORMATION

NAME	Well #24	**IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?**
FACILITY ID	S27	☐ YES (Please attach a copy)
UNIQUE WELL NO.	674478	☐ NO ☐ UNDETERMINED
COUNTY	Anoka	

PWS ID / FACILITY ID	1020017 S27	**UNIQUE WELL NO.**	674478

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

PWS ID / FACILITY ID	1020017 S27	UNIQUE WELL NO.	674478

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	85	N
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		Y	90	N
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		Y	70	N
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		N		
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		N		
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		Y	155	N

PWS ID / FACILITY ID	1020017 S27	UNIQUE WELL NO.	674478

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

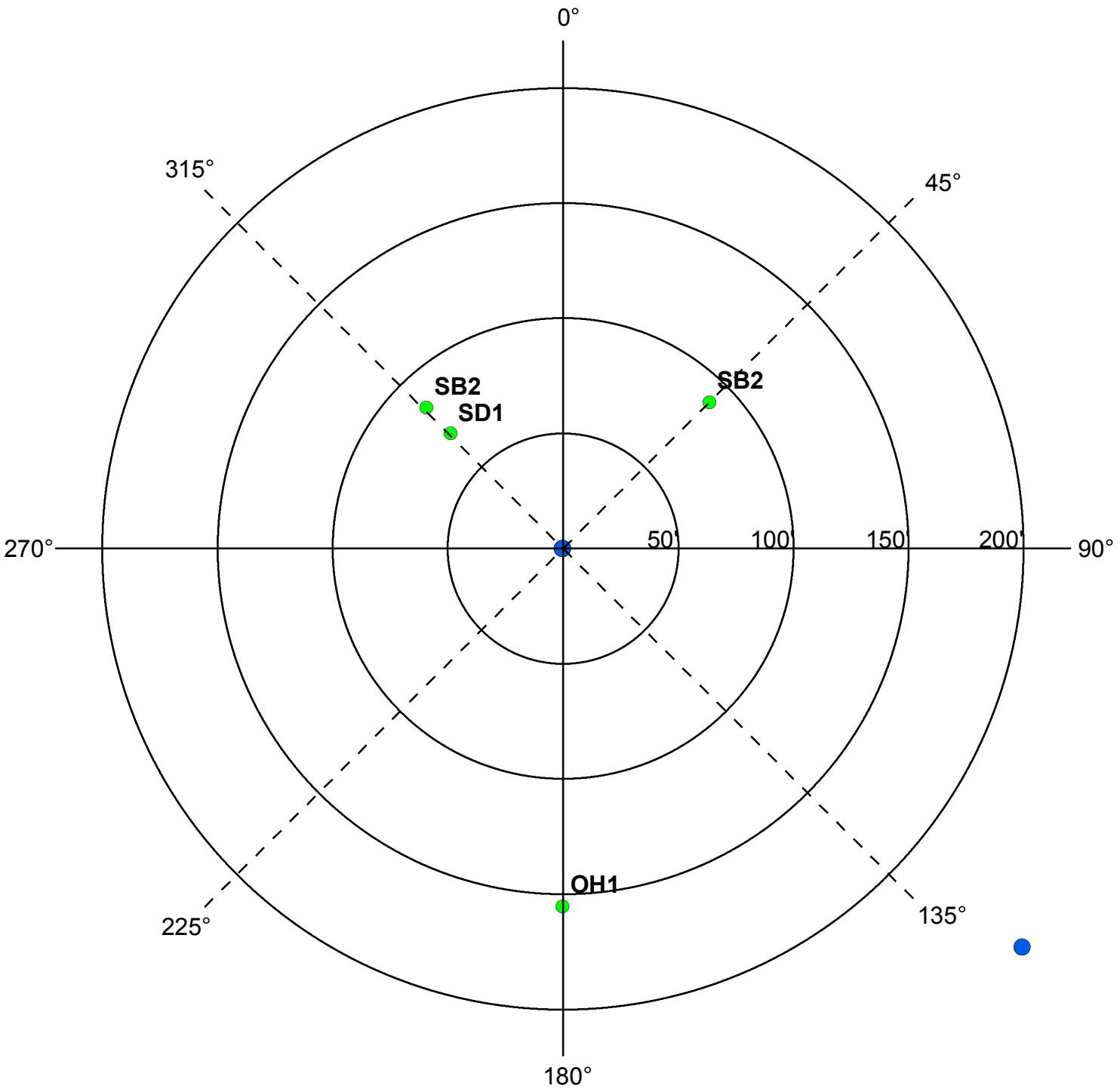
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S27	UNIQUE WELL NO.	674478

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S27	UNIQUE WELL NO.	674478

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

COMMENTS

For further information, please contact:

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

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

MINNESOTA MDH DEPARTMENT of HEALTH
Environmental Health Division
Drinking Water Protection Section
P.O. Box 64975
St. Paul, Minnesota 55164-0975

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

PUBLIC WATER SYSTEM INFORMATION

PWS ID 1020017 **COMMUNITY**
NAME Coon Rapids
ADDRESS Kory Jorgensen Utilities Supervisor, Public Works Garage, 1831 111th Avenue, Coon Rapids, MN 554333761

FACILITY (WELL) INFORMATION

NAME Well #25
FACILITY ID S28
UNIQUE WELL NO. 674479
COUNTY Anoka

IS THERE A WELL LOG OR ADDITIONAL CONSTRUCTION INFORMATION AVAILABLE?
☐ YES (Please attach a copy)
☐ NO ☐ UNDETERMINED

PWS ID / FACILITY ID	1020017 S28	UNIQUE WELL NO.	674479

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

PWS ID / FACILITY ID	1020017 S28	UNIQUE WELL NO.	674479

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PR1	Privy, nonportable	50	50	100	N		
PR2	Portable (privy) or toilet	50	20		N		
*SF1	Watertight sand filter; peat filter; or constructed wetland	50	50		N		
SET	Septic tank	50	50		N		
HTK	Sewage holding tank, watertight	50	50		N		
SS1	Sewage sump capacity 100 gal. or more	50	50		N		
SS2	Sewage sump capacity less than 100 gal., tested, conforming to rule	50	20		N		
*ST1	Sewage treatment device, watertight	50	50		N		
SB1	Sewer, buried, approved materials, tested, serving one building, or two or less single-family residences	50	20		N		
SB2	Sewer, buried, collector, municipal, serving a facility handling infectious or pathological wastes, open-jointed or unapproved materials	50	50		N		
*WB1	Water treatment backwash holding basin, reclaim basin, or surge tank with a direct sewer connection	50	50		N		
*WB2	Water treatment backwash holding basin, reclaim basin, or surge tank with a backflow protected sewer connection	20	20		N		
Land Application							
SPT	Land spreading area for sewage, septage, or sludge	50	50	100	N		
Solid Waste Related							
COS	Commercial compost site	50	50		N		
CD1	Construction or demolition debris disposal area	50	50	100	N		
*HW1	Household solid waste disposal area, single residence	50	50	100	N		
LF1	Landfill, permitted demolition debris, dump, or mixed municipal solid waste from multiple persons	300	300	600	N		
SVY	Scrap yard	50	50		N		
SWT	Solid waste transfer station	50	50		N		
Storm Water Related							
SD1	Storm water drain pipe, 8 inches or greater in diameter	50	20		N		
SWI	Storm water drainage well[2] (Class V well - illegal[3])	50	50		N		
SM1	Storm water pond greater than 5000 gal.	50	35		Y	60	N
Wells and Borings							
*EB1	Elevator boring, not conforming to rule	50	50		N		
*EB2	Elevator boring, conforming to rule	20	20		N		
MON	Monitoring well	record dist.	record dist.		Y	190	
WEL	Operating well	record dist.	record dist.		N		
UUW	Unused, unsealed well or boring	50	50		N		
General							
*CR1	Cistern or reservoir, buried, nonpressurized water supply	20	20		N		
PLM	Contaminant plume	50	50		N		
*CW1	Cooling water pond, industrial	50	50	100	N		
DC1	Deicing chemicals, bulk road	50	50	100	N		
*ET1	Electrical transformer storage area, oil-filled	50	50		N		
GRV	Grave or mausoleum	50	50		N		
GP1	Gravel pocket or French drain for clear water drainage only	20	20		N		
*HS1	Hazardous substance buried piping	50	50		N		
HS2	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight, without safeguards	150	150		N		
HS3	Hazardous substance tank or container, above ground or underground, 56 gal. or more, or 100 lbs. or more dry weight with safeguards	100	100		N		
HS4	Hazardous substance multiple storage tanks or containers for residential retail sale or use, no single tank or container exceeding 56 gal. or 100 lbs., but aggregate volume exceeding	50	50		N		
HWF	Highest water or flood level	50	N/A		N		
*HG1	Horizontal ground source closed loop heat exchanger buried piping	50	50		N		
*HG2	Horizontal ground source closed loop heat exchanger buried piping and horizontal piping, approved materials and heat transfer fluid	50	10		N		
IWD	Industrial waste disposal well (Class V well)[2]	illegal[3]	illegal[3]		N		
IWS	Interceptor, including a flammable waste or sediment	50	50		N		
OH1	Ordinary high water level of a stream, river, pond, lake, reservoir, or drainage ditch (holds water six months or more)	50	35		N		
*PP1	Petroleum buried piping	50	50		N		
*PP2	Petroleum or crude oil pipeline to a refinery or distribution center	100	100		N		

PWS ID / FACILITY ID	1020017 S28	UNIQUE WELL NO.	674479

PCSI CODE	ACTUAL OR POTENTIAL CONTAMINATION SOURCE	ISOLATION DISTANCES (FEET)				LOCATION	
		Minimum Distances		Sensitive Well[1]	Within 200 Ft. Y / N / U	Dist. from Well	Est. (?)
		Community	Non-community				
PT1	Petroleum tank or container, 1100 gal. or more, without safeguards	150	150		N		
PT2	Petroleum tank or container, 1100 gal. or more, with safeguards	100	100		N		
PT3	Petroleum tank or container, buried, between 56 and 1100 gal.	50	50		N		
PT4	Petroleum tank or container, not buried, between 56 and 1100 gal.	50[5]	20		N		
PU1	Pit or unfilled space more than four feet in depth	20	20		N		
PC1	Pollutant or contaminant that may drain into the soil	50	50	100	N		
SP1	Swimming pool, in-ground	20	20		N		
*VH1	Vertical heat exchanger, horizontal piping conforming to rule	50	10		N		
*VH2	Vertical heat exchanger (vertical) piping, conforming to rule	50	35		N		
*WR1	Wastewater rapid infiltration basin, municipal or industrial	300	300	600	N		
*WA1	Wastewater spray irrigation area, municipal or industrial	150	150	300	N		
*WS1	Wastewater stabilization pond, industrial	150	150	300	N		
*WS2	Wastewater stabilization pond, municipal, 500 or more gal./acre/day of leakage	300	300	600	N		
*WS3	Wastewater stabilization pond, municipal, less than 500 gal./acre/day of leakage	150	150	300	N		
*WT1	Wastewater treatment unit tanks, vessels and components (Package plant)	100	100		N		
*WT2	Water treatment backwash disposal area	50	50	100	N		
Additional Sources (If there is more than one source listed above, please indicate here).							
Potential Contamination Sources and Codes Based on Previous Versions of this Form							
	none found within 200' of this well.						

* New potential contaminant source.

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

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

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

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

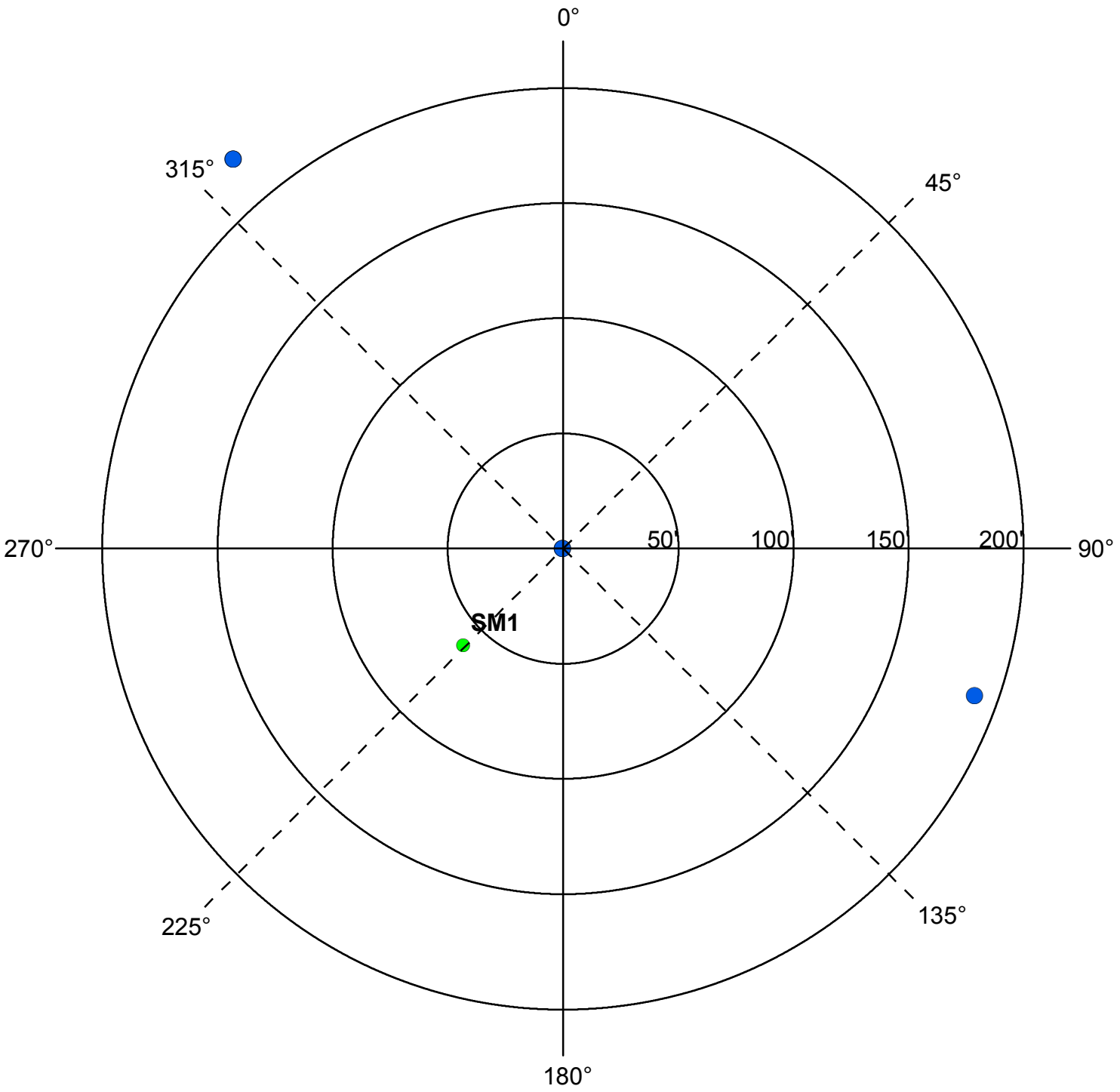
[5] A community public water-supply well must be a minimum of 50 feet from a petroleum tank or container, unless the tank or container is used for emergency pumping and is located in a room or building separate from the community well; and is of double-wall construction with leak detection between walls;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

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

PWS ID / FACILITY ID	1020017 S28	UNIQUE WELL NO.	674479

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

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



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

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

INSPECTOR	Neiman, Dave	DATE	6 - 3 - 2016

PWS ID / FACILITY ID	1020017 S28	UNIQUE WELL NO.	674479

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

COMMENTS

For further information, please contact:

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

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

Attachment C-3

Sealed Wells

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
1	003-163124340061	442466	Sealed	Abandoned	Target Rw-1	11000 Crooked Lake Bl Nw	Coon Rapids	44	07/19/1988	QWTA	WEL	Yes
2	003-223124320049	110477	Sealed	Test Well	Coon Rapids Th-2	Not Available	Coon Rapids	110	08/12/1987	Not Available	WEL	Uncertain
3	003-133124130006	596258	Sealed	Abandoned	Mw	380 Northdale Bl	Coon Rapids	25	07/08/1997	QWTA	WEL	Yes
4	003-273124210001	244329	Sealed	Test Well	Coon Rapids Obth-16	Not Available	Coon Rapids	160	Not Available	Not Available	WEL	Uncertain
5	003-163124340061	194890	Sealed	Abandoned	Target Mw-6	11000 Crooked Lake Bl Nw	Coon Rapids	36	09/03/1987	QWTA	WEL	Yes
6	003-223124320065	244338	Sealed	Test Well	Coon Rapids Th-24	Not Available	Coon Rapids	163	03/21/1989	Not Available	WEL	Uncertain
7	003-223124320058	110479	Sealed	Test Well	Coon Rapids Th-1	Not Available	Coon Rapids	110	08/11/1987	Not Available	WEL	Uncertain
8	053-3312021410007	202887	Sealed	Abandoned	Hayden, L.	11116 West River Rd	Champlin	82	02/26/1970	CJDN	WEL	Yes
9	003-273124220001	147471	Sealed	Test Well	Coon Rapids Th-4	Not Available	Coon Rapids	100	08/13/1987	Not Available	WEL	Uncertain
10	003-163124340061	442467	Sealed	Abandoned	Target Stores Rw-2	11000 Crooked Lake Bl Nw	Coon Rapids	44	07/21/1988	QWTA	WEL	Yes
11	003-133124130006	623952	Sealed	Abandoned	Anoka County Library	380 Northdale Bl	Coon Rapids	25	10/28/1998	QWTA	WEL	Yes
12	003-153124330001	673419	Sealed	Abandoned	Coon Rapids Tw-2	109th Av Nw	Coon Rapids	156	06/17/2002	QBAA	WEL	Uncertain
13	003-223124230002	673420	Sealed	Abandoned	Coon Rapids Tw-3	2241 105th Av	Coon Rapids	120	06/17/2002	QBAA	WEL	Yes
14	003-263124210008	629336	Sealed	Abandoned	Coon Rapids Mw-101	1350 Coon Rapids Bl Nw	Coon Rapids	18	08/16/1999	QWTA	WEL	Yes
15	003-163124340061	194891	Sealed	Abandoned	Target Mw-7	11000 Crooked Lake Bl Nw	Coon Rapids	31	09/04/1987	QWTA	WEL	Yes
16	003-273124110053	244327	Sealed	Test Well	Coon Rapids Th-14	Not Available	Coon Rapids	170	Not Available	Not Available	WEL	Uncertain
17	003-213124110022	673418	Sealed	Abandoned	Coon Rapids Tw-1	Direct River Dr	Coon Rapids	152	07/17/2002	QBAA	WEL	Uncertain
18	003-133124130006	586854	Sealed	Abandoned	Pmw-1	380 Northdale Bl	Coon Rapids	25	07/31/1996	Not Available	WEL	Yes
19	003-133124130109	244331	Sealed	Test Well	Coon Rapids Th-18	Not Available	Coon Rapids	250	Not Available	Not Available	WEL	Uncertain
20	Not Available	244342	Sealed	Test Well	Coon Rapids Th-29	Not Available	Coon Rapids	139	02/19/1990	Not Available	WEL	Uncertain
21	003-273124210001	474383	Sealed	Abandoned	Coon Rapids Th27-A	10110 Mississippi Bl	Coon Rapids	161	02/18/1991	Not Available	WEL	Approximate
22	003-223124420017	249655	Sealed	Commercial	Not Available	1827 Coon Rapids Bl Nw	Coon Rapids	244	00/00/1967	CTCG	WEL	Yes
23	003-223124230001	244340	Sealed	Test Well	Coon Rapids Th-26	Not Available	Coon Rapids	148	03/29/1989	Not Available	WEL	Uncertain
24	053-3312021220095	149762	Sealed	Abandoned	Van Dalen, N.H.	6106 117th Av N	Champlin	174	03/31/1978	CJSL	WEL	Approximate
25	003-273124210001	147472	Sealed	Test Well	Coon Rapids Th-3	Not Available	Coon Rapids	125	08/13/1987	Not Available	WEL	Uncertain
26	003-213124120041	147465	Sealed	Test Well	Coon Rapids Th-10	Not Available	Coon Rapids	137	08/26/1987	Not Available	WEL	Uncertain
27	Not Available	244333	Sealed	Test Well	Coon Rapids Th-19	Not Available	Coon Rapids	247	Not Available	Not Available	WEL	Uncertain
28	003-133124210046	202925	Sealed	Domestic	Not Available	11550 Kumquat St Nw	Coon Rapids	78	06/05/1958	QBAA	WEL	Yes
29	Not Available	244336	Sealed	Test Well	Coon Rapids Th-22	Not Available	Coon Rapids	235	02/21/1989	Not Available	WEL	Uncertain
30	003-133124130006	586856	Sealed	Abandoned	Pmw-3	380 Northdale Bl	Coon Rapids	25	07/31/1996	Not Available	WEL	Yes
31	053-0311921220058	430317	Sealed	Abandoned	Virgillo	10701 Noble Av N	Brooklyn Park	114	08/18/1987	CJDN	WEL	Approximate
32	003-263124220041	202962	Sealed	Community Supply (municipal - Coon Rapids)	Coon Rapids 7.5	Not Available	Coon Rapids	175	10/28/1963	CJSL	WEL	Uncertain
33	003-273124130001	244328	Sealed	Test Well	Coon Rapids Th-15	Not Available	Coon Rapids	120	Not Available	Not Available	WEL	Uncertain
34	003-133124140006	244330	Sealed	Test Well	Coon Rapids Th-17	Not Available	Coon Rapids	238	Not Available	Not Available	WEL	Uncertain
35	003-273124210001	244341	Sealed	Test Well	Coon Rapids Th-27A	10110 Mississippi Bl	Coon Rapids	161	00/00/1991	Not Available	WEL	Approximate
36	003-133124130006	586855	Sealed	Abandoned	Pmw-2	380 Northdale Bl	Coon Rapids	25	07/31/1996	QWTA	WEL	Yes
37	003-273124130001	244326	Sealed	Test Well	Coon Rapids Obth-13	Not Available	Coon Rapids	140	Not Available	Not Available	WEL	Uncertain
38	003-163124340061	194892	Sealed	Abandoned	Target Mw-8	11000 Crooked Lake Bl Nw	Coon Rapids	31	09/04/1987	QWTA	WEL	Yes
39	053-2912021440014	202819	Sealed	Abandoned	Not Available	11708 Edgewood Av	Champlin	101	Not Available	QBAA	WEL	Yes
40	003-273124140001	271980	Sealed	Abandoned	Coon Rapids Dam Regional Park	Not Available	Coon Rapids	390	00/00/1914	MTPL	WEL	Uncertain
41	003-163124340061	194889	Sealed	Abandoned	Target Mw-5	11000 Crooked Lake Bl Nw	Coon Rapids	32	09/02/1987	QWTA	WEL	Yes
42	003-263124210008	629344	Sealed	Abandoned	Coon Rapids Mw-109	1350 Coon Rapids Bl Nw	Coon Rapids	18	08/16/1999	QWTA	WEL	Yes
43	003-163124340061	329638	Sealed	Abandoned	St2	11000 Crooked Lake Bl	Coon Rapids	61	08/11/2009	Not Available	WEL	Yes
44	003-193123220076	461097	Sealed	Abandoned	Super America Mw-10	10873 University Av	Blaine	30	07/30/1991	Not Available	WEL	Approximate
45	003-193123220076	461096	Sealed	Abandoned	Super America Mw-9	10873 University Av	Blaine	32	07/30/1991	Not Available	WEL	Approximate
46	003-193123220076	461095	Sealed	Abandoned	Super America Mw-8	10873 University Av	Blaine	30	07/29/1991	Not Available	WEL	Approximate
47	003-193123220076	461094	Sealed	Abandoned	Super America Mw-11	10873 University Av	Blaine	30	08/01/1991	Not Available	WEL	Approximate
48	003-163124320005	461738	Sealed	Abandoned	Super America	3075 Coonrapids Bl	Coon Rapids	38	01/07/1991	Not Available	WEL	Yes
49	003-193123220076	459183	Sealed	Abandoned	Ogren, John K.	10873 University Av Ne	Blaine	43	04/20/1990	Not Available	WEL	Approximate
50	003-223124240005	452900	Sealed	Abandoned	Crown Ceco Inc Mw-3	2111 Nw Coon Rapids Bl	Coon Rapids	32	01/12/1989	Not Available	WEL	Approximate
51	003-223124240005	452899	Sealed	Abandoned	Crown Ceco Inc Mw-2	2111 Nw Coon Rapids Bl	Coon Rapids	38	01/09/1989	Not Available	WEL	Approximate
52	003-223124240005	452898	Sealed	Abandoned	Crown Ceco Inc Mw-1	2111 Nw Coon Rapids Bl	Coon Rapids	41	01/11/1989	Not Available	WEL	Approximate
53	003-273124210001	474382	Sealed	Abandoned	Coon Rapids Tw 23	10110 Mississippi Bl	Coon Rapids	136	01/22/1991	Not Available	WEL	Approximate
54	003-263124220010	677417	Sealed	Abandoned	Not Available	1440 Coon Rapids Bl	Coon Rapids	18	03/10/2003	Not Available	WEL	Yes
55	003-263124220007	677415	Sealed	Abandoned	Not Available	1406 Coon Rapids Bl	Coon Rapids	18	03/06/2003	Not Available	WEL	Approximate
56	003-263124220007	677420	Sealed	Abandoned	Not Available	1430 100th Av Nw	Coon Rapids	18	03/07/2003	Not Available	WEL	Approximate
57	003-263124220010	677418	Sealed	Abandoned	Not Available	1440 Coon Rapids Bl	Coon Rapids	40	03/10/2003	Not Available	WEL	Yes
58	003-163124320005	496468	Sealed	Abandoned	Cheep Skate Mw-16	3075 Coonrapids Bl	Coon Rapids	38	10/10/1991	Not Available	WEL	Yes
59	003-163124320005	496467	Sealed	Abandoned	Super America Corp Mw-15	3075 Coonrapids Bl	Coon Rapids	34	09/18/1991	Not Available	WEL	Yes
60	003-163124320005	496466	Sealed	Abandoned	Super America Corp Mw-14	3075 Coonrapids Bl	Coon Rapids	34	09/17/1991	Not Available	WEL	Yes
61	003-193123220076	501671	Sealed	Abandoned	Mobile Station Mw-2	Not Available	Blaine	30	02/27/1989	Not Available	WEL	Uncertain
62	003-193123220076	501670	Sealed	Abandoned	Mobile Station Mw-1	Not Available	Blaine	30	02/27/1989	Not Available	WEL	Uncertain
63	003-153124430016	470167	Sealed	Abandoned	Epiphany Ca. Church Mw-3	11001 Hanson Bl	Coon Rapids	15	11/26/1990	Not Available	WEL	Yes
64	003-153124430016	470166	Sealed	Abandoned	Epiphany Ca. Church Mw-2	11001 Hanson Bl	Coon Rapids	15	11/26/1990	Not Available	WEL	Yes
65	003-153124430016	470165	Sealed	Abandoned	Epiphany Ca. Church Mw-1	11001 Hanson Bl	Coon Rapids	15	11/26/1990	Not Available	WEL	Yes
66	003-193123220076	478351	Sealed	Abandoned	Ogren, John K. Mw-7	10873 University Av Ne	Blaine	30	02/27/1991	Not Available	WEL	Approximate
67	003-173124140001	492442	Sealed	Abandoned	Wcco Radio/Tv Mw-2	3237 Coonrapids Bl	Coon Rapids	40	08/14/1991	Not Available	WEL	Yes
68	003-163124320005	477860	Sealed	Abandoned	Super America Mw-10	3075 Coonrapids Bl	Coon Rapids	38	01/09/1991	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
69	003-163124320005	477859	Sealed	Abandoned	Super America Mw-13	3075 Coonrapids Bl	Coon Rapids	37	01/18/1991	Not Available	WEL	Yes
70	003-193123220076	501673	Sealed	Abandoned	Mobile Station Mw-4	Not Available	Blaine	30	03/01/1989	Not Available	WEL	Uncertain
71	003-163124320005	468792	Sealed	Abandoned	Super America Mw-11	3075 Coonrapids Bl	Coon Rapids	39	01/14/1991	Not Available	WEL	Yes
72	003-163124320005	468791	Sealed	Abandoned	Super America Mw-12	3075 Coonrapids Bl	Coon Rapids	37	01/17/1991	Not Available	WEL	Yes
73	003-193123220076	501717	Sealed	Abandoned	Mobil Oil Mw-5	Not Available	Blaine	27	00/00/1989	Not Available	WEL	Uncertain
74	003-133124440006	511298	Sealed	Abandoned	Amoco Oil Company Mw-1	10938 University Av Nw	Coon Rapids	25	02/07/1991	Not Available	WEL	Yes
75	003-163124120002	678241	Sealed	Abandoned	Morevalu Marathon	11517 Crooked Lake Bl	Coon Rapids	34	07/15/2002	Not Available	WEL	Yes
76	003-163124120002	678240	Sealed	Abandoned	Morevalu Marathon	11517 Crooked Lake Bl	Coon Rapids	34	07/15/2002	Not Available	WEL	Yes
77	003-163124120002	678239	Sealed	Abandoned	Morevalu Marathon	11517 Crooked Lake Bl	Coon Rapids	34	07/15/2002	Not Available	WEL	Yes
78	003-163124120002	678238	Sealed	Abandoned	Morevalu Marathon	11517 Crooked Lake Bl	Coon Rapids	34	07/15/2002	Not Available	WEL	Yes
79	003-263124220007	677416	Sealed	Abandoned	Not Available	1406 Coon Rapids Bl	Coon Rapids	18	03/07/2003	Not Available	WEL	Approximate
80	003-263124220003	677421	Sealed	Abandoned	Duben Park	10020 Drake St	Coon Rapids	18	03/07/2003	Not Available	WEL	Yes
81	003-263124220007	677419	Sealed	Abandoned	Parkview Estates	1430 100th Av Nw	Coon Rapids	18	03/07/2003	Not Available	WEL	Approximate
82	003-213124110014	328589	Sealed	Abandoned	City Of Coon Rapids	Not Available	Coon Rapids	152	06/13/2002	Not Available	WEL	Uncertain
83	003-193123220076	501718	Sealed	Abandoned	Mw-6 Mobil Oil	See Remarks	Blaine	27	00/00/1989	Not Available	WEL	Uncertain
84	003-173124140001	492441	Sealed	Abandoned	Wcco Radio/Tv Inc. Mw-1	3237 Coonrapids Bl	Coon Rapids	42	08/13/1991	Not Available	WEL	Yes
85	003-193123220002	461093	Sealed	Not Available	Mobil Oil	109th (& University) Av	Blaine	29	3/24/1995	Not Available	WEL	Uncertain
86	053-2812021330013	H000001847	Sealed	Not Available	Dahl, James	11817 Porter Dr	Champlin	33	6/15/1990	Not Available	WEL	Yes
87	053-0411921110049	H000001789	Sealed	Not Available	Beck, Ronnie	10741 Noble Av N	Brooklyn Park	55	2/13/1990	Not Available	WEL	Yes
88	003-163124420090	H000003196	Sealed	Not Available	Bailey, Ralph	11146 Arrowhead St Nw	Coon Rapids	27	7/28/1990	Not Available	WEL	Yes
89	003-123124340014	H000003197	Sealed	Not Available	Bilborough, Charles	11860 Ilex St Nw	Coon Rapids	30	9/24/1990	Not Available	WEL	Yes
90	003-153124240020	H000003199	Sealed	Not Available	Falck, Dean	11332 Hanson Bl	Coon Rapids	105	9/18/1990	Not Available	WEL	Yes
91	003-273124120014	H000003201	Sealed	Not Available	Thomas, Doug	9949 Hanson Bl	Coon Rapids	63	4/11/1990	Not Available	WEL	Yes
92	003-123124320060	H000003206	Sealed	Not Available	Swenson, Mark	11941 Norway St	Coon Rapids	48	8/22/1990	Not Available	WEL	Yes
93	003-123124230084	H000003207	Sealed	Not Available	Ldk Bldg	646 123rd Av	Coon Rapids	110	8/14/1990	Not Available	WEL	Yes
94	003-153124240057	H000003208	Sealed	Not Available	Windsperger, Rose	11317 Quinn St Nw	Coon Rapids	131	9/20/1990	Not Available	WEL	Yes
95	003-213124110069	H000003209	Sealed	Not Available	Morrell, Jeff	2448 Coon Rapids Bl	Coon Rapids	60	10/17/1990	Not Available	WEL	Yes
96	003-133124220071	H000003211	Sealed	Not Available	Arnold, Thomas	11511 Magnolia St Nw	Coon Rapids	49	7/17/1990	Not Available	WEL	Yes
97	003-163124340019	H000003212	Sealed	Not Available	Jennings, Charles	10901 Crooked Lake Bl	Coon Rapids	68	9/28/1990	Not Available	WEL	Yes
98	003-163124110025	H000003213	Sealed	Not Available	Hoelter, Arlene	11609 Wren St Nw	Coon Rapids	25	9/21/1990	Not Available	WEL	Yes
99	003-153124240045	H000003214	Sealed	Not Available	Hanson, Carl	11416 Partridge St Nw	Coon Rapids	45	9/21/1990	Not Available	WEL	Yes
100	003-223124220063	H000003215	Sealed	Not Available	Brodeen, Randy	2340 108th Av Nw	Coon Rapids	100	10/11/1990	Not Available	WEL	Yes
101	003-163124340018	H000003216	Sealed	Not Available	Peterson, Florence	10911 Crooked Lake Bl	Coon Rapids	68	5/2/1990	Not Available	WEL	Yes
102	003-263124220007	629337	Sealed	Not Available	Coon Rapids, City Of	Coon Rapids (1350-1440) Bl	Coon Rapids	17	4/6/2007	Not Available	WEL	Uncertain
103	003-123124330021	H000010587	Sealed	Not Available	Wilson, Wallace	11741 Larch St	Coon Rapids	28	5/16/1991	Not Available	WEL	Yes
104	003-083124310027	H000010805	Sealed	Not Available	Brask, Randy	11900 Vintage St Nw	Coon Rapids	20	4/16/1991	Not Available	WEL	Yes
105	003-153124240059	H000014355	Sealed	Not Available	Larson, Timothy J	11333 Quinn St Nw	Coon Rapids	116	10/16/1991	Not Available	WEL	Yes
106	003-253124140027	H000014356	Sealed	Not Available	Service West Contracting	9912 Cottonwood St	Coon Rapids	30	9/26/1991	Not Available	WEL	Yes
107	003-253124140027	H000014357	Sealed	Not Available	Service West Contracting	9912 Cottonwood St	Coon Rapids	26	9/26/1991	Not Available	WEL	Yes
108	003-093124340025	H000014358	Sealed	Not Available	Hannu, Rodney	2820 118th La Nw	Coon Rapids	25	9/23/1991	Not Available	WEL	Yes
109	003-133124210072	H000014359	Sealed	Not Available	Cline, Karen	11600 Ilex St Nw	Coon Rapids	33	9/16/1991	Not Available	WEL	Yes
110	003-123124340021	H000008635	Sealed	Not Available	Keith, Don	11801 Juniper St Nw	Coon Rapids	27	1/29/1991	Not Available	WEL	Yes
111	003-133124240030	H000008636	Sealed	Not Available	National Mortgage	541 Northdale Bl	Coon Rapids	40	1/11/1991	Not Available	WEL	Yes
112	003-133124220069	H000016325	Sealed	Not Available	Knudson, Valerie	11716 Larch St	Coon Rapids	32	11/19/1991	Not Available	WEL	Yes
113	003-183123330046	H000017399	Sealed	Not Available	Nelson, Elizabeth	10920 Sixth St Ne	Blaine	23	1/21/1992	Not Available	WEL	Yes
114	003-223124240040	H000012365	Sealed	Not Available	Preimesberger, Gay	2050 107th Av Nw	Coon Rapids	75	8/5/1991	Not Available	WEL	Yes
115	003-183123330039	H000011479	Sealed	Not Available	Tarnowski, Helen	11014 Sixth St Ne	Blaine	34	6/18/1991	Not Available	WEL	Yes
116	003-133124240026	H000011482	Sealed	Not Available	Rodger, Paul	570 115th Av Nw	Coon Rapids	63	6/7/1991	Not Available	WEL	Yes
117	003-133124240037	H000011483	Sealed	Not Available	Breske, Dan	571 114th Av Nw	Coon Rapids	66	5/21/1991	Not Available	WEL	Yes
118	003-123124330016	H000011725	Sealed	Not Available	Oliver, Ron	11840 Kumquat St	Coon Rapids	43	5/30/1991	Not Available	WEL	Yes
119	003-133124320043	H000011726	Sealed	Not Available	Geis, Mary	11267 Olive St Nw	Coon Rapids	19	6/18/1991	Not Available	WEL	Yes
120	053-3312021240057	H000016721	Sealed	Not Available	Mcconnell, Larry	11401 Xenia Av	Champlin	105	10/31/1991	Not Available	WEL	Yes
121	003-153124240083	H000013434	Sealed	Not Available	Aldrich, Robert	11308 Quinn St	Coon Rapids	88	8/28/1991	Not Available	WEL	Yes
122	003-133124240012	H000013435	Sealed	Not Available	Olson,	600 115th Av Nw	Coon Rapids	70	8/28/1991	Not Available	WEL	Yes
123	003-253124130065	H000015125	Sealed	Not Available	Mann, Delores	231 97th Av Nw	Coon Rapids	28	7/31/1991	Not Available	WEL	Yes
124	003-123124320062	H000012940	Sealed	Not Available	Brownings, Kimberly	11956 Norway St Nw	Coon Rapids	28	8/1/1991	Not Available	WEL	Yes
125	003-133124220044	H000012941	Sealed	Not Available	Kelly, John	11630 Magnolia St Nw	Coon Rapids	33	7/24/1991	Not Available	WEL	Yes
126	003-123124330083	H000012942	Sealed	Not Available	Demeules, Bob	11755 Norway St Nw	Coon Rapids	53	7/2/1991	Not Available	WEL	Yes
127	003-213124110014	H000014162	Sealed	Not Available	Coon Rapids, City Of	Coon Rapids Bl	Coon Rapids	145	10/19/1988	Not Available	WEL	Uncertain
128	003-213124110014	H000014163	Sealed	Not Available	Coon Rapids, City Of	Coon Rapids Bl	Coon Rapids	145	10/19/1988	Not Available	WEL	Uncertain
129	003-233124330020	H000010776	Sealed	Not Available	Kurschinski, Mike	1470 Egret Bl Nw	Coon Rapids	108	4/23/1991	Not Available	WEL	Yes
130	053-3212021110035	H000011025	Sealed	Not Available	Gammins, Mike	11600 Florida Av	Champlin	87	6/6/1991	Not Available	WEL	Yes
131	003-133124240011	H000016214	Sealed	Not Available	Johnson, Mathew	11501 Kumquat St	Coon Rapids	44	11/18/1991	Not Available	WEL	Yes
132	003-133124240034	H000016216	Sealed	Not Available	Hertz, Tony	501 Northdale Bl	Coon Rapids	36	11/27/1991	Not Available	WEL	Yes
133	003-093124340009	H000007664	Sealed	Not Available	Lord, Don	2901 118th La	Coon Rapids	25	1/4/1991	Not Available	WEL	Yes
134	053-3312021220095	H000008642	Sealed	Not Available	Vandalen, Nicolas	6101 117th Av N	Champlin	40	2/1/1991	Not Available	WEL	Yes
135	003-183123330125	H000009568	Sealed	Not Available	Leslie, Irene	11043 University Av Ne	Blaine	43	3/26/1991	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
136	003-133124220041	H000009647	Sealed	Not Available	Lord,	11700 Magnolia	Coon Rapids	68	3/13/1991	Not Available	WEL	Yes
137	003-123124330139	H000009367	Sealed	Not Available	Neuman, Loretta	11724 Larch St Nw	Coon Rapids	89	9/17/1990	Not Available	WEL	Yes
138	003-093124340028	H000009368	Sealed	Not Available	Blondine, Spilane	2800 119th Av Nw	Coon Rapids	70	11/20/1990	Not Available	WEL	Yes
139	003-123124340004	H000009725	Sealed	Not Available	Modaff, John	11731 Kumquat St Nw	Coon Rapids	23	3/29/1991	Not Available	WEL	Yes
140	003-123124340048	H000009867	Sealed	Not Available	Janssen, Rick	11680 Ilex St Nw	Coon Rapids	18	3/18/1991	Not Available	WEL	Yes
141	053-3312021240044	H000009217	Sealed	Not Available	Haider, Gary	11432 Yates Av N	Champlin	148	2/2/1991	Not Available	WEL	Yes
142	003-133124220090	H000009246	Sealed	Not Available	Dock, Dennis	740 115th Av Nw	Coon Rapids	32	3/8/1991	Not Available	WEL	Yes
143	003-123124340048	H000009868	Sealed	Not Available	Janssen, Rick	11680 Ilex St Nw	Coon Rapids	25	3/18/1991	Not Available	WEL	Yes
144	003-153124240038	H000009869	Sealed	Not Available	Byland, Steve	11449 Partridge St	Coon Rapids	115	4/10/1991	Not Available	WEL	Yes
145	053-3212021110009	H000008135	Sealed	Not Available	Porter, Connie	6317 115.5th Av N	Champlin	90	10/23/1990	Not Available	WEL	Yes
146	003-273124120052	H000021123	Sealed	Not Available	Miller, Suzette	9949 Linnet St	Coon Rapids	40	6/16/1992	Not Available	WEL	Yes
147	003-133124210082	H000019604	Sealed	Not Available	Lafleur, Richard	11541 Juniper St Nw	Coon Rapids	37	4/13/1992	Not Available	WEL	Yes
148	003-183123330043	H000021230	Sealed	Not Available	Geary, Judy	10938 Sixth St Ne	Blaine	23	5/26/1992	Not Available	WEL	Yes
149	003-223124310064	H000023599	Sealed	Not Available	Anderson, Cary	10470 Osage St Nw	Coon Rapids	28	6/18/1992	Not Available	WEL	Yes
150	003-133124210068	H000023986	Sealed	Not Available	Kelm, Harold/Nancy	11632 Ilex St Nw	Coon Rapids	30	6/18/1992	Not Available	WEL	Yes
151	003-133124210004	H000025853	Sealed	Not Available	Graham, Irene	11671 Kumquat St Nw	Coon Rapids	30	9/15/1992	Not Available	WEL	Yes
152	003-163124230008	H000025112	Sealed	Not Available	Jasper, Richard	11470 Kerry St	Coon Rapids	58	8/26/1992	Not Available	WEL	Yes
153	003-123124330058	H000023223	Sealed	Not Available	Gulbranson, Terry	11817 Magnolia St Nw	Coon Rapids	35	8/12/1992	Not Available	WEL	Yes
154	003-223124440011	H000026671	Sealed	Not Available	Rademacher, Wanda	10244 Ibis St Nw	Coon Rapids	72	4/13/1993	Not Available	WEL	Yes
155	003-223124440011	H000026673	Sealed	Not Available	Rademachor, Wanda	10244 Ibis St Nw	Coon Rapids	26	4/13/1993	Not Available	WEL	Yes
156	003-133124210092	H000026700	Sealed	Not Available	Moberg, Linda	11641 Juniper St Nw	Coon Rapids	35	5/27/1993	Not Available	WEL	Yes
157	003-163124430012	H000024434	Sealed	Not Available	Hayford, Bob	2610 Coon Rapids Bl	Coon Rapids	146	9/9/1992	Not Available	WEL	Yes
158	003-223124230011	H000024907	Sealed	Not Available	Cracauer, Steve	2310 Coon Rapids Bl	Coon Rapids	95	8/21/1992	Not Available	WEL	Yes
159	003-123124320036	H000026793	Sealed	Not Available	Hardy, Adam	11909 Larch St Nw	Coon Rapids	32	10/8/1993	Not Available	WEL	Yes
160	003-133124210075	H000026818	Sealed	Not Available	Zoeller, Robert	11572 Ilex	Coon Rapids	20	4/9/1993	Not Available	WEL	Yes
161	003-223124230011	H000025445	Sealed	Not Available	Cracauer, Steve	2310 Coon Rapids Bl	Coon Rapids	24	8/21/1992	Not Available	WEL	Yes
162	003-133124210007	H000028439	Sealed	Not Available	Yankovich, Nick	11641 Kumquat St Nw	Coon Rapids	37	6/24/1993	Not Available	WEL	Yes
163	003-153124340004	H000028620	Sealed	Not Available	Baum, Dave	11064 Hanson Bl	Coon Rapids	185	6/29/1993	Not Available	WEL	Yes
164	003-123124330033	H000023982	Sealed	Not Available	Moriarty, Jim	11840 Larch St Nw	Coon Rapids	38	6/23/1992	Not Available	WEL	Yes
165	003-163124110118	H000012121	Sealed	Not Available	Poepke, Peter	11512 Yukon St Nw	Coon Rapids	26	6/27/1991	Not Available	WEL	Yes
166	003-123124340055	H000023354	Sealed	Not Available	Hanson, Ronald	11720 Juniper St W	Coon Rapids	42	8/6/1992	Not Available	WEL	Yes
167	003-253124130065	H000015660	Sealed	Not Available	Mann, Delores	231 97th Av Nw	Coon Rapids	30	7/31/1991	Not Available	WEL	Yes
168	003-133124220060	H000025330	Sealed	Not Available	Swensen, Beverly	11551 Norway St Nw	Coon Rapids	53	9/3/1992	Not Available	WEL	Yes
169	003-233124110018	H000018195	Sealed	Not Available	Gehrig, Dalayne	10856 Olive St Nw	Coon Rapids	15	3/9/1992	Not Available	WEL	Yes
170	003-163124220094	H000018196	Sealed	Not Available	Anderson, Norman J.	11567 Jonquil St Nw	Coon Rapids	63	3/5/1992	Not Available	WEL	Yes
171	003-093124340029	H000017818	Sealed	Not Available	Yost, Gary	2810 119th Av	Coon Rapids	28	2/18/1992	Not Available	WEL	Yes
172	003-213124220048	H000018639	Sealed	Not Available	Koss, Susan	10833 Flora St Nw	Coon Rapids	25	12/24/1991	Not Available	WEL	Yes
173	003-123124330018	H000018302	Sealed	Not Available	Klosterboer, Kenneth	11824 Kumquat St	Coon Rapids	43	4/8/1992	Not Available	WEL	Yes
174	003-133124220092	H000019836	Sealed	Not Available	Olson, Neil/Cheri	760 115th Av	Coon Rapids	21	4/21/1992	Not Available	WEL	Yes
175	003-123124330137	H000022845	Sealed	Not Available	Pohl, Dave	11740 Larch St Nw	Coon Rapids	58	7/28/1992	Not Available	WEL	Yes
176	003-223124210028	H000019389	Sealed	Not Available	Metz, Duane	10833 Thrush St Nw	Coon Rapids	42	4/3/1992	Not Available	WEL	Yes
177	003-123124340035	H000019393	Sealed	Not Available	Wallin, Evonne	11730 Ilex St	Coon Rapids	25	4/2/1992	Not Available	WEL	Yes
178	003-113124440020	H000020901	Sealed	Not Available	Baumtrog, Dave	11800 Olive St	Coon Rapids	28	5/5/1992	Not Available	WEL	Yes
179	003-183123330091	H000015546	Sealed	Not Available	Oswald, Douglas D	11007 Fourth St Ne	Blaine	42	9/23/1991	Not Available	WEL	Yes
180	003-223124430030	H000015551	Sealed	Not Available	Bolker, William	10230 Linnet	Coon Rapids	100	10/8/1991	Not Available	WEL	Yes
181	003-153124240080	H000017950	Sealed	Not Available	Winnie Y. Chan, Estate Of	11332 Quinn St Nw	Coon Rapids	129	2/24/1992	Not Available	WEL	Yes
182	003-133124220076	H000017125	Sealed	Not Available	Odle,	11561 Magnolia St Nw	Coon Rapids	36	9/26/1991	Not Available	WEL	Yes
183	003-223124210025	H000017126	Sealed	Not Available	Fryhling, C	10845 Thrush St	Coon Rapids	66	11/11/1991	Not Available	WEL	Yes
184	003-223124140009	H000018952	Sealed	Not Available	Julson, Stan	10505 Ibis St Nw	Coon Rapids	16	4/27/1992	Not Available	WEL	Yes
185	003-223124140009	H000018953	Sealed	Not Available	Julson, Stan/Paula	10505 Ibis St Nw	Coon Rapids	16	4/27/1992	Not Available	WEL	Yes
186	003-123124320049	H000018226	Sealed	Not Available	Johnson, John	11940 Magnolia St	Coon Rapids	32	3/16/1992	Not Available	WEL	Yes
187	003-163124140045	H000020556	Sealed	Not Available	Suthers, Steven K.	11402 Wren St Nw	Coon Rapids	35	4/27/1992	Not Available	WEL	Yes
188	003-123124330121	H000019774	Sealed	Not Available	Hite, John	11781 Olive St Nw	Coon Rapids	40	4/14/1992	Not Available	WEL	Yes
189	003-223124210025	H000018633	Sealed	Not Available	Fryhling, C	10845 Thrush St	Coon Rapids	21	11/11/1991	Not Available	WEL	Yes
190	003-163124220002	H000020583	Sealed	Not Available	Meisinger, Ed	3139 115th Av Nw	Coon Rapids	44	4/30/1992	Not Available	WEL	Yes
191	003-123124330048	H000013279	Sealed	Not Available	Snider, David	11788 Larch St Nw	Coon Rapids	46	9/5/1991	Not Available	WEL	Yes
192	053-3212021140017	H000021362	Sealed	Not Available	Norton	11358 Edgewood Av	Champlin	28	6/3/1992	Not Available	WEL	Yes
193	003-223124220015	H000022240	Sealed	Not Available	Fraki, James	2231 108th Av Nw	Coon Rapids	25	7/15/1992	Not Available	WEL	Yes
194	003-223124220015	H000022241	Sealed	Not Available	Fraki, James	2231 108th Av Nw	Coon Rapids	95	7/15/1992	Not Available	WEL	Yes
195	003-123124340047	H000022243	Sealed	Not Available	Arnold, Griffith	11688 Ilex St Nw	Coon Rapids	25	7/20/1992	Not Available	WEL	Yes
196	003-123124220092	H000030132	Sealed	Not Available	Jordan, Ray	608 Main St	Coon Rapids	30	7/2/1993	Not Available	WEL	Yes
197	003-273124120031	H000041303	Sealed	Not Available	Herber, Kevin	1914 Mississippi Bl Nw	Coon Rapids	120	9/1/1993	Not Available	WEL	Yes
198	003-223124430044	H000041315	Sealed	Not Available	Chesler, David	10115 Hanson Bl	Coon Rapids	95	3/31/1994	Not Available	WEL	Yes
199	003-133124220045	H000041106	Sealed	Not Available	Kruse, Mike	11620 Magnolia St	Coon Rapids	32	9/11/1993	Not Available	WEL	Yes
200	003-163124140096	H000042845	Sealed	Not Available	Kulbeik, Lynn	11402 Heights Dr N	Coon Rapids	25	11/17/1993	Not Available	WEL	Yes
201	053-3312021320012	H000042759	Sealed	Not Available	O'Reilly, Kevin/Chris	6117 112th Av N	Champlin	66	9/27/1993	Not Available	WEL	Yes
202	053-2812021330020	H000042840	Sealed	Not Available	Bouma, Lynn	11812 Porter Dr	Champlin	97	11/11/1993	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
203	053-3212021410002	H000036631	Sealed	Not Available	Nsp Easement	Not Available	Champlin	46	5/25/1993	Not Available	WEL	Uncertain
204	003-133124210055	H000038365	Sealed	Not Available	Denhartod, Craig	11531 Larch St	Coon Rapids	50	11/2/1993	Not Available	WEL	Yes
205	003-083124310030	H000038700	Sealed	Not Available	Vincent, Katie	11919 Woodbine St Nw	Coon Rapids	29	8/10/1993	Not Available	WEL	Yes
206	003-133124220096	H000032149	Sealed	Not Available	Auren, Laurie	751 Northdale Bl	Coon Rapids	40	4/19/1993	Not Available	WEL	Yes
207	003-273124120049	H000020280	Sealed	Not Available	Simon, Steve	1821 99th Av Nw	Coon Rapids	142	6/9/1992	Not Available	WEL	Yes
208	003-133124210070	H000032234	Sealed	Not Available	Hocks, Blanche	11616 Ilex St	Coon Rapids	36	6/6/1993	Not Available	WEL	Yes
209	003-163124120005	H000032316	Sealed	Not Available	Carlson, Kenneth/Lois	2612 Northdale Bl N	Coon Rapids	25	5/26/1993	Not Available	WEL	Yes
210	003-183123330053	H000032341	Sealed	Not Available	Denzer, Lance/Suzann	10915 Fifth St	Blaine	36	7/21/1993	Not Available	WEL	Yes
211	003-183123330053	H000032342	Sealed	Not Available	Denzer, Lance/Suzann	10915 Fifth St	Blaine	27	7/21/1993	Not Available	WEL	Yes
212	003-123124320053	H000024608	Sealed	Not Available	Moe, Richard	11908 Magnolia St	Coon Rapids	30	6/24/1992	Not Available	WEL	Yes
213	003-133124240021	H000024758	Sealed	Not Available	Lintlop, David	520 115th Av Nw	Coon Rapids	35	9/9/1992	Not Available	WEL	Yes
214	003-163124120005	H000032315	Sealed	Not Available	Carlson, Kenneth/Lois	2612 Northdale Bl N	Coon Rapids	66	5/26/1993	Not Available	WEL	Yes
215	003-183123330029	H000034181	Sealed	Not Available	Grose, Dan	11019 Sixth St Ne	Blaine	42	9/13/1993	Not Available	WEL	Yes
216	053-3312021320026	H000029638	Sealed	Not Available	Hanson, Ronald J.	6017 112th Av N	Champlin	53	3/24/1993	Not Available	WEL	Yes
217	053-0311921430024	H000036634	Sealed	Not Available	Nsp Easement	Not Available	Brooklyn Park	31	5/24/1993	Not Available	WEL	Uncertain
218	053-0311921440002	H000036635	Sealed	Not Available	Nsp Easement	Not Available	Brooklyn Park	31	6/4/1993	Not Available	WEL	Uncertain
219	053-0211921330001	H000036636	Sealed	Not Available	Nsp Easement	Not Available	Brooklyn Park	31	5/21/1993	Not Available	WEL	Uncertain
220	003-223124230002	H000034384	Sealed	Not Available	Coon Rapids, City Of	2301 105th Av Nw	Coon Rapids	130	5/21/1993	Not Available	WEL	Approximate
221	003-133124210015	H000035774	Sealed	Not Available	Hagen, Jim	11551 Kumquat St	Coon Rapids	45	4/23/1993	Not Available	WEL	Yes
222	003-133124210047	H000035775	Sealed	Not Available	Frishmon, Timm	11540 Kumquat St	Coon Rapids	35	4/23/1993	Not Available	WEL	Yes
223	003-223124220012	H000034647	Sealed	Not Available	Nemchik, Jim	10758 Thrush St	Coon Rapids	90	4/30/1994	Not Available	WEL	Yes
224	003-253124130002	H000026655	Sealed	Not Available	Stone, Maureen	221 97th Av Nw	Coon Rapids	25	3/12/1993	Not Available	WEL	Yes
225	003-223124210031	H000026666	Sealed	Not Available	Sauer, Greg	10821 Thrush St Nw	Coon Rapids	88	3/31/1993	Not Available	WEL	Yes
226	003-223124320083	H000028603	Sealed	Not Available	Godfrey, Rob/Sandy	10373 Quinn St Nw	Coon Rapids	24	3/19/1993	Not Available	WEL	Yes
227	003-093124310021	H000026584	Sealed	Not Available	Eliason, Arlo	3001 119th Av	Coon Rapids	58	4/2/1993	Not Available	WEL	Yes
228	003-133124430104	H000026639	Sealed	Not Available	Freeman, Richard	330 109th La Nw	Coon Rapids	25	10/6/1997	Not Available	WEL	Yes
229	003-133124210012	H000026651	Sealed	Not Available	Kaiser, Rick	11581 Kumquat St	Coon Rapids	34	3/2/1993	Not Available	WEL	Yes
230	003-163124230022	H000032101	Sealed	Not Available	Dahl, Kathleen	3029 113th Av Nw	Coon Rapids	55	3/23/1993	Not Available	WEL	Yes
231	003-223124420064	H000032135	Sealed	Not Available	Midwest Gas	1930 Coon Rapids Bl Nw	Coon Rapids	215	4/16/1993	Not Available	WEL	Yes
232	003-223124430037	H000048263	Sealed	Not Available	Metcalf, Mitch	10233 Hanson Bl	Coon Rapids	15	6/13/1994	Not Available	WEL	Yes
233	003-273124120016	H000048274	Sealed	Not Available	Garves, Rob	9927 Hanson Bl Nw	Coon Rapids	92	7/18/1994	Not Available	WEL	Yes
234	003-223124220059	H000047923	Sealed	Not Available	Bane, Mike	2380 108th Av Nw	Andover	85	3/25/1994	Not Available	WEL	Yes
235	003-263124230004	H000052020	Sealed	Not Available	Hopper, Keith	1560 97th La	Coon Rapids	128	5/14/1994	Not Available	WEL	Yes
236	003-133124420077	H000052027	Sealed	Not Available	Kapala-Glodek Funeral Service	242 Northdale Bl	Coon Rapids	22	5/28/1994	Not Available	WEL	Yes
237	003-133124420077	H000052032	Sealed	Not Available	Kapala-Glodek Funeral Service	242 Northdale Bl	Coon Rapids	107	5/28/1994	Not Available	WEL	Yes
238	003-123124340025	H000055184	Sealed	Not Available	Ruud, Charles	11841 Juniper S	Coon Rapids	25	7/28/1994	Not Available	WEL	Yes
239	003-183123330022	H000052991	Sealed	Not Available	Hansen, Jean	10925 Sixth St Ne	Blaine	18	9/7/1994	Not Available	WEL	Yes
240	003-193123210049	H000051095	Sealed	Not Available	Blake, Jeff	301 108th Av	Blaine	21	5/10/1994	Not Available	WEL	Yes
241	003-133124240022	H000047693	Sealed	Not Available	Bridges, Connie/Dean	530 115th Av Nw	Coon Rapids	30	4/14/1997	Not Available	WEL	Yes
242	003-113124440014	H000048276	Sealed	Not Available	Fahey, Don	11848 Olive St	Coon Rapids	26	8/5/1994	Not Available	WEL	Yes
243	003-093124310079	H000048281	Sealed	Not Available	Thompson, Mildred	12010 Crooked Lake Bl	Coon Rapids	72	9/19/1994	Not Available	WEL	Yes
244	003-223124220024	H000048283	Sealed	Not Available	Javener, Les	10879 Thrush St	Coon Rapids	120	9/24/1994	Not Available	WEL	Yes
245	003-153124230005	H000051116	Sealed	Not Available	Burnevik, Hazel	11447 Swallow St Nw	Coon Rapids	23	4/19/1994	Not Available	WEL	Yes
246	003-223124220064	H000048290	Sealed	Not Available	Morris, Terry/Donna	2330 108th Av Nw	Coon Rapids	31	12/9/1994	Not Available	WEL	Yes
247	003-133124240028	H000051282	Sealed	Not Available	Buttueiler, Rita	561 Northdale Bl	Coon Rapids	46	9/13/1994	Not Available	WEL	Yes
248	003-093124310011	H000038902	Sealed	Not Available	Christiansen, Donald	11943 Eidelweiss Nw	Coon Rapids	30	9/24/1993	Not Available	WEL	Yes
249	003-123124330074	H000050407	Sealed	Not Available	Va	11808 Magnolia	Coon Rapids	48	3/22/1994	Not Available	WEL	Yes
250	003-163124110071	H000041780	Sealed	Not Available	Foster, William	11562 Xavis St Nw	Coon Rapids	27	4/21/1994	Not Available	WEL	Yes
251	003-133124210103	H000051214	Sealed	Not Available	Mccloud, Lester	11650 Juniper St Nw	Coon Rapids	27	4/21/1994	Not Available	WEL	Yes
252	003-153124240047	H000048256	Sealed	Not Available	Quasbort, Sandy	11400 Partridge	Coon Rapids	21	5/26/1994	Not Available	WEL	Yes
253	003-153124240047	H000048257	Sealed	Not Available	Quasbort, Sandy	11400 Partridge	Coon Rapids	220	5/26/1994	Not Available	WEL	Yes
254	003-153124230076	H000045128	Sealed	Not Available	Niznik, Michael	2318 115th Av Nw	Coon Rapids	22	12/23/1993	Not Available	WEL	Yes
255	003-083124310019	H000045887	Sealed	Not Available	Surma, Jim/Carol	11927 Vintage St Nw	Coon Rapids	30	1/12/1994	Not Available	WEL	Yes
256	003-133124240027	H000045564	Sealed	Not Available	Stanek, Tom	571 Northdale Bl	Coon Rapids	40	1/11/1994	Not Available	WEL	Yes
257	003-133124220043	H000038912	Sealed	Not Available	Norberg, Jeff/Kathy	11640 Magnolia St	Coon Rapids	42	10/25/1993	Not Available	WEL	Yes
258	003-223124320080	H000038920	Sealed	Not Available	Miller, Gilman	10427 Quinn	Coon Rapids	20	11/15/1993	Not Available	WEL	Yes
259	003-123124340009	H000038935	Sealed	Not Available	Lahoud, Arlene	11740 Kumquat	Coon Rapids	52	2/21/1994	Not Available	WEL	Yes
260	003-223124420018	H000044085	Sealed	Not Available	Seman Mortuary	1833 Coon Rapids Bl	Coon Rapids	166	4/19/1994	Not Available	WEL	Approximate
261	003-123124330120	H000039004	Sealed	Not Available	Linde, Mayme E.	11771 Olive Nw	Coon Rapids	37	9/16/1993	Not Available	WEL	Yes
262	003-123124320044	H000038683	Sealed	Not Available	Steinert, George/Lynn	11925 Magnolia St Nw	Coon Rapids	28	7/29/1993	Not Available	WEL	Yes
263	003-253124120004	H000038698	Sealed	Not Available	Cartwright, Evelyn	9905 Foley Bl Nw	Coon Rapids	15	8/2/1993	Not Available	WEL	Approximate
264	003-123124330069	H000039234	Sealed	Not Available	Moon, Leroy	11848 Magnolia St N	Coon Rapids	34	12/28/1993	Not Available	WEL	Yes
265	003-123124330097	H000059272	Sealed	Not Available	Niemczyski, Paul/Mary	11881 Norway St Nw	Coon Rapids	18	6/6/1995	Not Available	WEL	Yes
266	003-123124340013	H000072217	Sealed	Not Available	Norton, Todd/Melanie	11717 Larch St	Coon Rapids	28	8/19/1995	Not Available	WEL	Yes
267	003-133124240055	H000072220	Sealed	Not Available	Anderson, Dan	11521 Juniper St	Coon Rapids	35	8/24/1995	Not Available	WEL	Yes
268	003-133124210091	H000072226	Sealed	Not Available	Sharpe, Roger	11631 Juniper St Nw	Coon Rapids	29	8/30/1995	Not Available	WEL	Yes
269	003-213124220040	H000072453	Sealed	Not Available	Lindbloom, Robert M.	10756 Flora St	Coon Rapids	33	10/11/1995	Not Available	WEL	Yes

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PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
270	003-223124430059	H000066430	Sealed	Not Available	Nbl Financial Corporation	10143 Linnet St Nw	Coon Rapids	125	9/16/2003	Not Available	WEL	Approximate
271	003-183123330018	H000066434	Sealed	Not Available	Rasmussen, Ray	10901 Sixth St	Blaine	30	9/27/2003	Not Available	WEL	Yes
272	003-153124240017	H000066458	Sealed	Not Available	Sommerfeld, Ari/Martha	11356 Osage St Nw	Coon Rapids	120	7/27/1995	Not Available	WEL	Yes
273	003-123124330122	H000066471	Sealed	Not Available	Wrzos, Raymond	11791 Olive St	Coon Rapids	25	7/26/1995	Not Available	WEL	Yes
274	003-083124310018	H000066472	Sealed	Not Available	Berg, Joe	11919 Vintage St	Coon Rapids	130	7/28/1995	Not Available	WEL	Yes
275	053-3312021320034	H000072457	Sealed	Not Available	Kunde, Michael/Debr	6216 111TH Av N	Champlin	57	10/12/1995	Not Available	WEL	Yes
276	003-133124220013	H000066510	Sealed	Not Available	Dahlin, Dennis	11560 Olive St Nw	Coon Rapids	23	9/6/1995	Not Available	WEL	Yes
277	003-223124230025	H000059105	Sealed	Not Available	Nigon, Dave/Carol	10663 Verdin St Nw	Coon Rapids	15	11/7/1994	Not Available	WEL	Yes
278	003-223124220039	H000059315	Sealed	Not Available	Lindstrom, Morris/Joyce	10870 Thrush St	Coon Rapids	120	6/22/1995	Not Available	WEL	Yes
279	003-083124310017	H000059318	Sealed	Not Available	Vanoss, Jill	11911 Vintage St Nw	Coon Rapids	28	6/22/1995	Not Available	WEL	Yes
280	003-133124210043	H000054445	Sealed	Not Available	Va	11580 Kumquat Av	Coon Rapids	31	9/27/1994	Not Available	WEL	Yes
281	003-123124220006	H000059767	Sealed	Not Available	Mueller, Bud/Joanne	731 123rd Av Nw	Coon Rapids	29	11/14/1994	Not Available	WEL	Yes
282	003-083124310014	H000056899	Sealed	Not Available	Hoffer, Kelly	11910 Undercliff St Nw	Coon Rapids	137	9/30/1994	Not Available	WEL	Yes
283	003-133124420070	H000063463	Sealed	Not Available	Nelson, Martha	200 111th La	Coon Rapids	31	5/18/1995	Not Available	WEL	Yes
284	003-223124430036	H000066520	Sealed	Not Available	Gohman, Keith	10243 Hanson Bl	Coon Rapids	70	9/14/1995	Not Available	WEL	Yes
285	003-223124240045	H000063381	Sealed	Not Available	Bailey, Lisa	2030 106th Av Nw	Coon Rapids	105	3/22/1995	Not Available	WEL	Yes
286	003-133124210109	H000064230	Sealed	Not Available	Tucker, Richard	11590 Juniper St Nw	Coon Rapids	37	5/22/1995	Not Available	WEL	Yes
287	053-3312021230091	H000064271	Sealed	Not Available	Schreiber, Rose M.	11306 Douglas Dr N	Champlin	23	6/29/1995	Not Available	WEL	Yes
288	003-133124220029	H000064966	Sealed	Not Available	Reinfeld, Ray	11521 Olive St Nw	Coon Rapids	60	3/23/1995	Not Available	WEL	Yes
289	003-123124330024	H000059235	Sealed	Not Available	Hein, Mike/Melissa	11765 Larch St	Coon Rapids	28	5/3/1995	Not Available	WEL	Yes
290	003-133124130001	H000052719	Sealed	Not Available	Camp, Bill	339 Northdale Bl	Coon Rapids	25	7/25/1994	Not Available	WEL	Yes
291	003-223124240022	H000052744	Sealed	Not Available	Sjolander, Fred	2031 107th Av Nw	Coon Rapids	96	1/31/1995	Not Available	WEL	Yes
292	003-133124240035	H000052747	Sealed	Not Available	Hartfiel, Ben	560 Northdale Bl	Coon Rapids	40	2/17/1995	Not Available	WEL	Yes
293	003-133124220095	H000059343	Sealed	Not Available	Jirsa, Geneale	761 Northdale Bl	Coon Rapids	30	6/20/1995	Not Available	WEL	Yes
294	003-123124330046	H000063470	Sealed	Not Available	Joyce, Kelly	11808 Larch St	Coon Rapids	45	5/30/1995	Not Available	WEL	Yes
295	003-163124230006	H000063484	Sealed	Not Available	Lonkey, Dick	11447 Lily St Nw	Coon Rapids	51		Not Available	WEL	Yes
296	003-113124110125	H000063487	Sealed	Not Available	Lilliencrantz, Don	12426 Redwood St Nw	Coon Rapids	20	8/2/1995	Not Available	WEL	Yes
297	003-133124110002	H000045149	Sealed	Not Available	Miller, James	11626 University Av Nw	Coon Rapids	26	3/17/1994	Not Available	WEL	Yes
298	003-133124230074	H000049022	Sealed	Not Available	Sorteberg School	11400 Magnolia St Nw	Coon Rapids	31	9/2/1994	Not Available	WEL	Yes
299	003-223124230003	H000056847	Sealed	Not Available	Hausmann, William	2241 Coon Rapids Bl	Coon Rapids	50	8/30/1994	Not Available	WEL	Yes
300	003-073123330064	H000054881	Sealed	Not Available	Dropps, Edwin A	15 117th Av Ne	Blaine	27	10/4/1994	Not Available	WEL	Approximate
301	003-223124310003	H000069713	Sealed	Not Available	Coon Rapids United Methodist Church	10506 Hanson Bl Nw	Coon Rapids	184	5/25/1995	Not Available	WEL	Yes
302	003-123124320061	H000081459	Sealed	Not Available	Bliss, Scott	11951 Norway St Nw	Coon Rapids	30	10/23/1992	Not Available	WEL	Yes
303	003-223124220053	H000091730	Sealed	Not Available	Sorenson, Kathy	2351 108th Av Nw	Coon Rapids	32	12/10/1987	Not Available	WEL	Yes
304	003-223124220033	H000091736	Sealed	Not Available	Chandler, Vern	10898 Thrush	Coon Rapids	88	4/25/1988	Not Available	WEL	Yes
305	003-163124220105	H000091740	Sealed	Not Available	Furlong, Bruce	11542 Jonquil St	Coon Rapids	0	5/27/1987	Not Available	WEL	Yes
306	003-253124130018	H000091743	Sealed	Not Available	Jaworski, Mary	305 97th Av Nw	Coon Rapids	34	10/28/1988	Not Available	WEL	Yes
307	003-163124320007	H000091758	Sealed	Not Available	White Castle	3000 Coon Rapids Bl	Coon Rapids	36	10/3/1985	Not Available	WEL	Approximate
308	003-133124220030	H000080639	Sealed	Not Available	Remund, Marie	11541 Olive St	Coon Rapids	39	12/8/1992	Not Available	WEL	Yes
309	003-183123330055	H000091673	Sealed	Not Available	Century 21	10931 Fifth St	Blaine	20	9/28/1988	Not Available	WEL	Yes
310	003-183123330132	H000091697	Sealed	Not Available	Accap Construction	10913 University Av N	Blaine	23	10/24/1986	Not Available	WEL	Yes
311	003-183123330130	H000091713	Sealed	Not Available	Accap Construction	10907 University Av	Blaine	23	10/24/1986	Not Available	WEL	Yes
312	003-183123330134	H000091714	Sealed	Not Available	Accap Construction	10925 University Av	Blaine	15	10/24/1986	Not Available	WEL	Yes
313	003-183123330130	H000091715	Sealed	Not Available	Accap Construction	10917 University Av	Blaine	22	10/24/1986	Not Available	WEL	Approximate
314	003-223124240030	H000091719	Sealed	Not Available	Jewell, Rollie	10640 Hanson Bl	Coon Rapids	102	6/29/1988	Not Available	WEL	Yes
315	003-223124220008	H000091721	Sealed	Not Available	Caouette, Tina	2216 108th Av Nw	Coon Rapids	85	7/20/1988	Not Available	WEL	Yes
316	003-223124210008	H000091722	Sealed	Not Available	Joyce, Dan	10761 Key Ci	Coon Rapids	98	7/21/1988	Not Available	WEL	Yes
317	003-123124330037	H000091724	Sealed	Not Available	Johannsen, Dennis	11873 Larch St Nw	Coon Rapids	45	11/18/1988	Not Available	WEL	Yes
318	003-163124430057	H000091725	Sealed	Not Available	Midwest Auto Mall	2704 Coon Rapids Bl	Coon Rapids	70	9/15/1987	Not Available	WEL	Approximate
319	003-123124340022	H000091769	Sealed	Not Available	Biegler, Brad	11811 Juniper St	Coon Rapids	17	9/22/1987	Not Available	WEL	Yes
320	003-133124210058	H000091770	Sealed	Not Available	Jensen, Roger	11561 Larch Av	Coon Rapids	21	8/31/1987	Not Available	WEL	Yes
321	003-123124340036	H000091771	Sealed	Not Available	Varvelle, Jeffrey	11719 Ilex St Nw	Coon Rapids	50	8/26/1987	Not Available	WEL	Approximate
322	003-133124220084	H000091772	Sealed	Not Available	Delaney, Lyle	11709 Magnolia St	Coon Rapids	21	3/11/1988	Not Available	WEL	Yes
323	003-133124120004	H000091774	Sealed	Not Available	Pennala, Roslyn	11555 Flintwood St	Coon Rapids	25	2/26/1988	Not Available	WEL	Yes
324	003-163124430050	H000091726	Sealed	Not Available	Midwest Auto Mall	2664 Coon Rapids Bl	Coon Rapids	17	9/15/1987	Not Available	WEL	Yes
325	003-123124340022	H000091727	Sealed	Not Available	Biegler, Brad	11811 Juniper St	Coon Rapids	19	9/17/1987	Not Available	WEL	Yes
326	003-123124330029	H000078845	Sealed	Not Available	Handle, Paul	11809 Larch St	Coon Rapids	35	3/15/1993	Not Available	WEL	Yes
327	053-3312021240035	H000080296	Sealed	Not Available	Va	11317 Yates Av N	Champlin	120	12/14/1992	Not Available	WEL	Yes
328	003-123124220108	H000079491	Sealed	Not Available	Amoco Oil Company	Hwy 242 (& Foley Bl)	Coon Rapids	23	2/11/1993	Not Available	WEL	Uncertain
329	003-123124220108	H000079492	Sealed	Not Available	Amoco Oil Company	Hwy 242 (& Foley Bl)	Coon Rapids	22	2/11/1993	Not Available	WEL	Uncertain
330	003-123124220108	H000079496	Sealed	Not Available	Amoco Oil Company	Hwy 242 (& Foley Bl)	Coon Rapids	18	2/11/1993	Not Available	WEL	Uncertain
331	003-123124220108	H000079497	Sealed	Not Available	Amoco Oil Company	Hwy 242 (& Foley Bl)	Coon Rapids	24	2/11/1993	Not Available	WEL	Uncertain
332	003-123124220108	H000079498	Sealed	Not Available	Amoco Oil Company	Hwy 242 (& Foley Bl)	Coon Rapids	21	2/11/1993	Not Available	WEL	Uncertain
333	003-133124240029	H000080306	Sealed	Not Available	Utecht, Jill	551 Northdale Bl	Coon Rapids	32	12/15/1992	Not Available	WEL	Yes
334	053-3312021440071	H000080024	Sealed	Not Available	Kittleson, Gary	11021 River Rd W	Champlin	25	1/5/1993	Not Available	WEL	Yes
335	003-133124210036	H000077362	Sealed	Not Available	Shenkee, Steve	11550 Larch St	Coon Rapids	25	10/31/1989	Not Available	WEL	Yes
336	003-123124320034	H000077364	Sealed	Not Available	Simonson, Betty	11900 Kumquat St	Coon Rapids	30	7/11/1989	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
337	003-133124210116	H000079919	Sealed	Not Available	Paite, Jerry/Janet	11520 Juniper St Nw	Coon Rapids	27	1/19/1993	Not Available	WEL	Yes
338	003-213124210013	H000077485	Sealed	Not Available	Dillenburg, Michael	10900 Dahlia St Nw	Coon Rapids	30	12/31/1988	Not Available	WEL	Yes
339	003-123124340015	H000079375	Sealed	Not Available	Northwestern College	11850 Ilex St Nw	Coon Rapids	55	2/4/1993	Not Available	WEL	Yes
340	003-273124120044	H000078960	Sealed	Not Available	Hanson, Orville K.	1855 99th Av Nw	Coon Rapids	50	2/26/1993	Not Available	WEL	Yes
341	003-123124330027	H000060052	Sealed	Not Available	Corey, Charles	11789 Larch	Coon Rapids	34	11/23/1994	Not Available	WEL	Yes
342	003-123124220072	H000073735	Sealed	Not Available	Hood, Frank S.	744 Main St Nw	Coon Rapids	65	5/23/1996	Not Available	WEL	Yes
343	003-123124220072	H000073736	Sealed	Not Available	Hook, Frank S.	744 Main St Nw	Coon Rapids	68	5/23/1996	Not Available	WEL	Yes
344	003-213124110010	H000080857	Sealed	Not Available	Estenson, Bruce	2405 Coon Rapids Bl	Coon Rapids	63	11/19/1992	Not Available	WEL	Approximate
345	003-123124340069	H000074804	Sealed	Not Available	Hanson, Dennis	11809 Kumquat St	Coon Rapids	24	10/5/1995	Not Available	WEL	Yes
346	003-133124220097	H000074807	Sealed	Not Available	Moen, Tim	741 Northdale Bl	Coon Rapids	31	10/18/1995	Not Available	WEL	Yes
347	003-123124340075	H000074808	Sealed	Not Available	Dunham, Brian	11733 Larch St	Coon Rapids	0	11/24/1995	Not Available	WEL	Yes
348	003-223124240033	H000074810	Sealed	Not Available	Curtis, Jeane	10616 Hanson Bl	Coon Rapids	96	12/15/1995	Not Available	WEL	Yes
349	003-133124220031	H000074811	Sealed	Not Available	Mahr, Sue	11561 Olive St	Coon Rapids	46	12/15/1995	Not Available	WEL	Yes
350	003-223124220030	H000074812	Sealed	Not Available	Meld, Dianne	10809 Thrush St	Coon Rapids	92	1/18/1996	Not Available	WEL	Yes
351	003-123124330073	H000074816	Sealed	Not Available	Larkin, Terry	11816 Magnolia	Coon Rapids	38	4/12/1996	Not Available	WEL	Yes
352	003-133124120002	H000074817	Sealed	Not Available	Cronin, Tom	11613 Flintwood	Coon Rapids	76	4/25/1996	Not Available	WEL	Yes
353	003-213124240013	H000075522	Sealed	Not Available	Porter, Robin	10465 Crocus St	Coon Rapids	117	2/13/1996	Not Available	WEL	Yes
354	003-153124240054	H000078071	Sealed	Not Available	Schultz, Lori	11300 Partridge St	Coon Rapids	131	12/10/1991	Not Available	WEL	Yes
355	003-123124330023	H000078072	Sealed	Not Available	Swanson, Bob	11757 Larch St Nw	Coon Rapids	29	10/23/1991	Not Available	WEL	Yes
356	003-123124330119	H000078073	Sealed	Not Available	Meyer, Steven	11761 Olive St	Coon Rapids	26	10/21/1991	Not Available	WEL	Yes
357	003-133124210114	H000075619	Sealed	Not Available	Bond, Gwen	11540 Juniper	Coon Rapids	40	8/13/1996	Not Available	WEL	Yes
358	003-233124320007	H000077011	Sealed	Not Available	Wingade, Keith R.	1615 Coon Rapids Bl	Coon Rapids	56	8/9/1991	Not Available	WEL	Approximate
359	053-3212021410021	H000073471	Sealed	Not Available	Wawrzyniak, James \	11242 Georgia Av	Champlin	15	10/10/1995	Not Available	WEL	Yes
360	003-233124330015	H000077422	Sealed	Not Available	Peck, Terry	1495 Egret Bl	Coon Rapids	95	8/30/1989	Not Available	WEL	Yes
361	053-3312021320024	H000075482	Sealed	Not Available	Savage, Joe/Darla	5917 113th Av	Champlin	76	11/2/1995	Not Available	WEL	Yes
362	003-163124410030	H000075491	Sealed	Not Available	Classen, Bill	11260 Zion St Nw	Coon Rapids	26	11/6/1995	Not Available	WEL	Yes
363	003-123124330054	H000075911	Sealed	Not Available	Mancl, John	11773 Magnolia St Nw	Coon Rapids	26	10/4/1995	Not Available	WEL	Yes
364	053-3312021330086	H000077239	Sealed	Not Available	Men Rio Construction Co., Inc.	11041 Douglas Dr	Champlin	28	6/6/1990	Not Available	WEL	Approximate
365	003-123124340070	H000077452	Sealed	Not Available	Meyers, Steven	11817 Kumquat St	Coon Rapids	35	3/15/1990	Not Available	WEL	Yes
366	003-213124430002	H000077453	Sealed	Not Available	Moorhouse, Larry	10259 Mississippi Bl Nw	Coon Rapids	39	6/22/1990	Not Available	WEL	Yes
367	003-123124230102	H000067963	Sealed	Not Available	Faulkner, Virgil	702 123rd Av Nw	Coon Rapids	30	4/13/1995	Not Available	WEL	Approximate
368	003-183123330063	H000094825	Sealed	Not Available	No Property Owner On Record	11031 Fifth St	Blaine	21	4/7/1988	Not Available	WEL	Yes
369	003-133124210049	H000094834	Sealed	Not Available	Munbleau, Gloria	11520 Kumquat St Nw	Coon Rapids	28	4/17/1989	Not Available	WEL	Yes
370	003-233124330028	H000102265	Sealed	Not Available	Enmark, John	1578 103rd Av Nw	Coon Rapids	80	5/23/1996	Not Available	WEL	Yes
371	003-223124240075	H000102519	Sealed	Not Available	Lewis, Ralph	2080 Coon Rapids Bl	Coon Rapids	291	5/29/1996	Not Available	WEL	Approximate
372	003-133124240050	H000108556	Sealed	Not Available	Steele, Gladys	11516 Ilex St Nw	Coon Rapids	34	9/10/1996	Not Available	WEL	Yes
373	003-133124120063	H000102733	Sealed	Not Available	Nielsen, Chris/Kumiko	11679 Evergreen St	Coon Rapids	24	4/29/1996	Not Available	WEL	Yes
374	003-123124340018	H000102746	Sealed	Not Available	Brown, Christy	11820 Ilex St Nw	Coon Rapids	38	6/11/1996	Not Available	WEL	Yes
375	003-083124310005	H000107545	Sealed	Not Available	Miskowiec, Steve	11951 Undercliff St Nw	Coon Rapids	85	7/26/1996	Not Available	WEL	Yes
376	003-213124440045	H000102081	Sealed	Not Available	Cech, Rita	10222 Mississippi Bl Nw	Coon Rapids	75	5/21/1996	Not Available	WEL	Yes
377	003-133124240044	H000107524	Sealed	Not Available	Skog, John	11361 Kumquat St	Coon Rapids	40	7/16/1996	Not Available	WEL	Yes
378	003-163124220099	H000102703	Sealed	Not Available	Rainwater, Ben/Cheryl	11525 Jonquil St	Coon Rapids	42	2/28/1996	Not Available	WEL	Yes
379	003-133124210083	H000102704	Sealed	Not Available	Utter, Tom	11551 Juniper St Nw	Coon Rapids	35	3/5/1996	Not Available	WEL	Yes
380	003-133124240043	H000102026	Sealed	Not Available	Klasons, John	11371 Kumquat St Nw	Coon Rapids	30	4/19/1996	Not Available	WEL	Yes
381	003-223124220011	H000079081	Sealed	Not Available	Getting, Jim	10798 Thrush	Coon Rapids	44	9/15/1992	Not Available	WEL	Yes
382	003-093124340012	H000079083	Sealed	Not Available	Larson, Chris	2931 118th La Nw	Coon Rapids	0		Not Available	WEL	Yes
383	003-233124320006	H000094836	Sealed	Not Available	Peifer, John	10321 Flamingo St Nw	Coon Rapids	10	4/5/1989	Not Available	WEL	Yes
384	003-213124110030	H000094840	Sealed	Not Available	Coon Rapids, City Of	10800 Xavis	Coon Rapids	145	10/24/1988	Not Available	WEL	Yes
385	003-223124220038	H000094842	Sealed	Not Available	Eastman, Robert	10874 Thrush St Nw	Coon Rapids	94	12/15/1988	Not Available	WEL	Yes
386	003-133124210088	H000094844	Sealed	Not Available	Lahner, Steve	11601 Juniper	Coon Rapids	29	4/7/1989	Not Available	WEL	Yes
387	003-253124140027	H000101723	Sealed	Not Available	Forest Lake Contracting	181 99th Av	Coon Rapids	25	5/2/1996	Not Available	WEL	Approximate
388	003-123124320057	H000080495	Sealed	Not Available	Madson, Gayle	11917 Norway St Nw	Coon Rapids	25	11/25/1992	Not Available	WEL	Yes
389	053-3212021110050	H000114473	Sealed	Not Available	Jenniges, Myron	11630 Edgewood Av N	Champlin	88	4/15/1997	Not Available	WEL	Yes
390	003-123124340072	H000114591	Sealed	Not Available	Fashant, Betty	11833 Kumquat St	Coon Rapids	35	3/5/1997	Not Available	WEL	Yes
391	003-163124110050	H000114689	Sealed	Not Available	Martin, John	11567 Xavis St Nw	Coon Rapids	25	3/10/1997	Not Available	WEL	Yes
392	003-153124240050	H000114690	Sealed	Not Available	Smith, Doug/Ruth	11332 Partridge St Nw	Coon Rapids	130	3/10/1997	Not Available	WEL	Yes
393	003-163124230072	H000114691	Sealed	Not Available	Kari, Steve	11440 Heather St Nw	Coon Rapids	30	3/14/1997	Not Available	WEL	Yes
394	003-133124210019	H000114692	Sealed	Not Available	Holmquist, Brad	11511 Kumquat St Nw	Coon Rapids	45	3/19/1997	Not Available	WEL	Yes
395	003-083124330017	H000115108	Sealed	Not Available	Al Parent Construction, Inc.	3915 Coon Rapids Bl	Coon Rapids	48	4/18/1997	Not Available	WEL	Yes
396	003-133124230074	H000109557	Sealed	Not Available	Isd 11	11400 Magnolia St Nw	Coon Rapids	23	9/25/1996	Not Available	WEL	Yes
397	Not Available	H000118752	Sealed	Not Available	Not Available	Not Available		24	4/29/1997	Not Available	WEL	Uncertain
398	003-133124210053	H000118838	Sealed	Not Available	Nepstad, Gerhard	11511 Larch St Nw	Coon Rapids	30	6/17/1997	Not Available	WEL	Yes
399	003-123124320047	H000119067	Sealed	Not Available	Duffy, Raymond	11949 Magnolia St Nw	Coon Rapids	33	6/5/1997	Not Available	WEL	Yes
400	003-223124220004	H000115585	Sealed	Not Available	Lott, Bill	10709 Thrush St Nw	Coon Rapids	95	2/25/1998	Not Available	WEL	Yes
401	003-223124210007	H000115725	Sealed	Not Available	Nortorn, Wayne	10760 Key Ci Nw	Coon Rapids	55	4/16/1997	Not Available	WEL	Yes
402	003-183123330041	H000120529	Sealed	Not Available	Moran, Steve	11002 Sixth St Ne	Blaine	24	3/19/1996	Not Available	WEL	Yes
403	003-133124240025	H000112833	Sealed	Not Available	Jenkins, Bob	560 115th Av Nw	Coon Rapids	35	11/21/1996	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
404	003-183123330105	H000112894	Sealed	Not Available	Johnson, John P.	11002 Fourth St Ne	Blaine	25	12/11/1996	Not Available	WEL	Yes
405	003-183123330105	H000112895	Sealed	Not Available	Johnson, John P.	11002 Fourth St Ne	Blaine	20	12/11/1996	Not Available	WEL	Yes
406	003-133124130053	H000116033	Sealed	Not Available	Northdale 76	11404 Foley Bl	Coon Rapids	30	8/1/1997	Not Available	WEL	Yes
407	053-3312021240046	H000108993	Sealed	Not Available	Sawatsky, Alice	11416 Yates Av N	Champlin	94	12/2/1996	Not Available	WEL	Yes
408	053-3312021230017	H000113531	Sealed	Not Available	Va	5933 113TH Av N	Champlin	83	2/17/1997	Not Available	WEL	Yes
409	003-133124240045	H000114657	Sealed	Not Available	Rearson, Tim	11351 Kumquat St Nw	Coon Rapids	30	1/15/1997	Not Available	WEL	Yes
410	003-093124340030	H000107241	Sealed	Not Available	Grant, Steve	2820 119th Av Nw	Coon Rapids	29	8/13/1996	Not Available	WEL	Yes
411	003-123124340005	H000107242	Sealed	Not Available	Rivera, Angel	11721 Kumquat St Nw	Coon Rapids	32	8/13/1996	Not Available	WEL	Yes
412	003-153124240055	H000112845	Sealed	Not Available	Hanson, Larry	11301 Quinn St Nw	Coon Rapids	125	12/11/1996	Not Available	WEL	Yes
413	053-0311921130044	H000104724	Sealed	Not Available	Roach, Robert L.	3501 Sunset rd	Brooklyn Park	79	5/9/1996	Not Available	WEL	Yes
414	003-153124240018	H000106539	Sealed	Not Available	Shields, Kris	11348 Osage St	Coon Rapids	115	7/1/1996	Not Available	WEL	Yes
415	003-153124420005	H000106543	Sealed	Not Available	Faith Lutheran Church	11115 Hanson Bl	Coon Rapids	115	8/12/1996	Not Available	WEL	Yes
416	003-273124120024	H000104432	Sealed	Not Available	Borner, Pat	9960 Linnet St	Coon Rapids	110	8/23/1996	Not Available	WEL	Yes
417	003-093124340021	H000116479	Sealed	Not Available	Bahe, Conrad	2900 118th La Nw	Coon Rapids	80	7/22/1997	Not Available	WEL	Yes
418	003-133124220067	H000103505	Sealed	Not Available	Henthorn, Christine	11711 Norway St Nw	Coon Rapids	25	3/8/1996	Not Available	WEL	Yes
419	003-173124440001	H000109754	Sealed	Not Available	Mn Doa	Not Available	Coon Rapids	26	8/23/1996	Not Available	WEL	Uncertain
420	003-133124220042	H000109650	Sealed	Not Available	Lablanche, Barry	11650 Magnolia St	Coon Rapids	27	1/7/1997	Not Available	WEL	Yes
421	003-263124220007	H000115412	Sealed	Not Available	Coon Rapids, City Of	Coon Rapids (1350-1410) Bl	Coon Rapids	17	2/16/1998	Not Available	WEL	Uncertain
422	003-123124340043	H000111778	Sealed	Not Available	Anderson, Scott	11741 Juniper St	Coon Rapids	54	10/28/1996	Not Available	WEL	Yes
423	003-153124240051	H000108773	Sealed	Not Available	Olson, Marla	11324 Partridge St Nw	Coon Rapids	120	8/12/1996	Not Available	WEL	Yes
424	003-233124330029	H000112015	Sealed	Not Available	Fjerstad, Jerry	1570 103rd Av	Coon Rapids	100	5/6/1997	Not Available	WEL	Yes
425	003-133124210094	H000120247	Sealed	Not Available	Gibbs, Patrick	11661 Juniper St	Coon Rapids	40	2/27/1996	Not Available	WEL	Yes
426	053-3312021240023	H000113047	Sealed	Not Available	Giese, Ted/Kay	11449 Yates Av N	Champlin	110	12/2/1996	Not Available	WEL	Yes
427	003-223124240044	H000104405	Sealed	Not Available	Steinberg, Bill	10540 Hanson Bl	Coon Rapids	55	7/25/1996	Not Available	WEL	Yes
428	003-133124210005	H000104187	Sealed	Not Available	Corbin, Richard	11661 Kumquat St	Coon Rapids	36	5/22/1996	Not Available	WEL	Yes
429	053-2812021330032	H000104193	Sealed	Not Available	Schreiber, Jerry	11836 W River rd	Champlin	90	5/30/1996	Not Available	WEL	Yes
430	053-3212021110062	H000126949	Sealed	Not Available	Meyers, Richard W.	11581 Douglas Dr	Champlin	59	10/24/1997	Not Available	WEL	Yes
431	003-133124240014	H000126213	Sealed	Not Available	Kosloski, Randolph L.	620 115th Av Nw	Coon Rapids	48	8/6/1997	Not Available	WEL	Yes
432	003-133124220093	H000126227	Sealed	Not Available	Gonsales, Eugene	770 115th Av Nw	Coon Rapids	66	9/17/1997	Not Available	WEL	Yes
433	003-133124210112	H000130688	Sealed	Not Available	Wagner, Wayne	11560 Juniper St	Coon Rapids	28	12/3/1997	Not Available	WEL	Yes
434	003-223124220062	H000128240	Sealed	Not Available	Bloodgood, Dawn	2350 108th Av Nw	Coon Rapids	47	1/5/1999	Not Available	WEL	Yes
435	003-253124130072	H000128251	Sealed	Not Available	Mann, John	261 97th Av Nw	Coon Rapids	22	5/21/1993	Not Available	WEL	Yes
436	003-123124420002	H000128996	Sealed	Not Available	Gerads, Earl S.	Not Available	Coon Rapids	20	1/19/2006	Not Available	WEL	Uncertain
437	003-123124420002	H000128997	Sealed	Not Available	Gerads, Earl S.	Not Available	Coon Rapids	20	1/19/2006	Not Available	WEL	Uncertain
438	003-163124420027	H000135449	Sealed	Not Available	Reinhardt, Clarence	11253 Crooked Lake Bl Nw	Coon Rapids	0	6/9/1998	Not Available	WEL	Yes
439	003-223124240051	H000135450	Sealed	Not Available	Mathis, Marcella	2100 106th Av	Coon Rapids	88	6/9/1998	Not Available	WEL	Yes
440	003-183123340107	H000128291	Sealed	Not Available	Stieren, Ronald J.	10931 Washington St Ne	Blaine	20	5/10/1999	Not Available	WEL	Yes
441	003-133124230007	H000128332	Sealed	Not Available	Staffonson, Dale	727 114th Av Nw	Coon Rapids	31	9/29/1989	Not Available	WEL	Yes
442	003-223124420011	H000134933	Sealed	Not Available	Real Estate Masters	1911 103rd Av Nw	Coon Rapids	114	3/11/1998	Not Available	WEL	Yes
443	003-123124130056	H000130740	Sealed	Not Available	Miedtke, Scott	12077 Evergreen St	Coon Rapids	43	4/14/1998	Not Available	WEL	Yes
444	003-133124230008	H000126916	Sealed	Not Available	Hall, Curt	717 114th Av Nw	Coon Rapids	25	8/26/1997	Not Available	WEL	Yes
445	003-133124220007	H000135410	Sealed	Not Available	Mevissen, Tom	11710 Olive St Nw	Coon Rapids	31	4/8/1998	Not Available	WEL	Yes
446	003-233124330008	H000119623	Sealed	Not Available	Larson Mechanical	1509 Coon Rapids Bl	Coon Rapids	20	5/13/1997	Not Available	WEL	Yes
447	003-223124220046	H000126248	Sealed	Not Available	Bisek, Leona	10804 Thrush St	Coon Rapids	28	3/30/1998	Not Available	WEL	Yes
448	003-153124240042	H000123316	Sealed	Not Available	Kampa, Patty	11440 Partridge St	Coon Rapids	100	6/12/1997	Not Available	WEL	Yes
449	003-223124210005	H000125428	Sealed	Not Available	Martig, Marcy	10740 Key Ci Nw	Coon Rapids	102	8/12/1997	Not Available	WEL	Yes
450	003-223124230027	H000123871	Sealed	Not Available	Faulkner, Virgil	10659 Verdin St	Coon Rapids	18	6/24/1997	Not Available	WEL	Yes
451	003-133124210052	H000123882	Sealed	Not Available	Gliddon, Alfred	11501 Larch St	Coon Rapids	29	7/8/1997	Not Available	WEL	Yes
452	003-113124440003	H000117061	Sealed	Not Available	Styles, Tom	11857 Olive St Nw	Coon Rapids	0	9/11/1997	Not Available	WEL	Yes
453	003-233124330018	H000117062	Sealed	Not Available	Fischer, Kalynn	10221 Flamingo St Nw	Coon Rapids	80	9/4/1997	Not Available	WEL	Yes
454	003-223124240031	H000117090	Sealed	Not Available	Corcoran, Don/Teresa	10632 Hanson Bl	Coon Rapids	145	11/21/1997	Not Available	WEL	Yes
455	003-093124330004	H000123890	Sealed	Not Available	Pemble, Steve	3000 119th Av Nw	Coon Rapids	68	7/18/1997	Not Available	WEL	Yes
456	003-153124240058	H000123900	Sealed	Not Available	Olson, Coleen	11325 Quinn St Nw	Coon Rapids	126	7/30/1997	Not Available	WEL	Yes
457	003-133124210096	H000128714	Sealed	Not Available	Behlen, Mark	11681 Juniper St Nw	Coon Rapids	30	7/10/1989	Not Available	WEL	Yes
458	003-123124340017	H000128816	Sealed	Not Available	Willis, Susan	11830 Ilex St Nw	Coon Rapids	31	7/19/1990	Not Available	WEL	Yes
459	003-123124320064	H000128903	Sealed	Not Available	Ellison, M. D.	11940 Norway St Nw	Coon Rapids	23	7/25/1990	Not Available	WEL	Yes
460	003-233124330038	H000117970	Sealed	Not Available	Anoka County Rent All	1531 Coon Rapids Bl	Coon Rapids	26	4/24/1997	Not Available	WEL	Approximate
461	003-123124220023	H000127901	Sealed	Not Available	Hackworthy, Kim	12347 Olive St	Coon Rapids	19	8/27/1997	Not Available	WEL	Yes
462	003-213124430006	H000127908	Sealed	Not Available	Heikel, Gloria	10314 Mississippi Bl	Coon Rapids	85	9/11/1997	Not Available	WEL	Approximate
463	003-183123330079	H000117258	Sealed	Not Available	Thalhuber, John J	10914 Fifth St	Blaine	10	6/10/1997	Not Available	WEL	Yes
464	003-223124410182	H000131187	Sealed	Not Available	Hassan, Ann	10409 Jay St	Coon Rapids	100	12/10/1997	Not Available	WEL	Yes
465	003-223124410064	H000132909	Sealed	Not Available	Tovar, Roseann	10430 Hummingbird St Nw	Coon Rapids	95	1/23/1998	Not Available	WEL	Yes
466	003-223124130061	H000132920	Sealed	Not Available	Anoka County Highway Department	10563 Hanson Bl	Coon Rapids	20	2/6/1998	Not Available	WEL	Yes
467	003-223124130061	H000132923	Sealed	Not Available	Anoka County Highway Department	10563 Hanson Bl	Coon Rapids	85	2/6/1998	Not Available	WEL	Yes
468	053-0311921220006	H000132929	Sealed	Not Available	Stella, Michael/Shir	10832 Noble Av N	Brooklyn Park	80	2/17/1998	Not Available	WEL	Yes
469	003-163124410061	H000132942	Sealed	Not Available	Hammes, Bill	2409 Heights Dr S	Coon Rapids	35	3/6/1998	Not Available	WEL	Yes
470	003-133124210050	H000132947	Sealed	Not Available	Culley, Steve/Wendy	11510 Kumquat St Nw	Coon Rapids	30	3/11/1998	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
471	003-133124220059	H000142696	Sealed	Not Available	Peterson, David L	11541 Norway St	Coon Rapids	22	3/3/1999	Not Available	WEL	Yes
472	003-153124240077	H000142638	Sealed	Not Available	Kent, George	11400 Quinn St Nw	Coon Rapids	55	7/29/1998	Not Available	WEL	Yes
473	003-213124230009	H000142652	Sealed	Not Available	Eggert, Carol	10560 Mississippi Bl	Coon Rapids	80	8/20/1998	Not Available	WEL	Yes
474	003-273124120011	H000139216	Sealed	Not Available	Anderson, Dennis	10033 Hanson Bl	Coon Rapids	135	9/28/1998	Not Available	WEL	Yes
475	003-223124240026	H000137398	Sealed	Not Available	Chambers, Jack	2101 107th Av	Coon Rapids	87	8/3/1998	Not Available	WEL	Yes
476	003-153124240040	H000131204	Sealed	Not Available	Merhiy, Larry	11456 Partridge St Nw	Coon Rapids	116	1/12/1998	Not Available	WEL	Yes
477	003-223124430029	H000141758	Sealed	Not Available	Martin, William	10216 Linnet St Nw	Coon Rapids	99	4/15/1999	Not Available	WEL	Yes
478	003-223124220055	H000131184	Sealed	Not Available	Beaving, George	2420 108th Av Nw	Coon Rapids	88	11/28/1997	Not Available	WEL	Yes
479	003-123124330064	H000128344	Sealed	Not Available	Johnson, Dan/Janice	11865 Magnolia St	Coon Rapids	31	3/16/1990	Not Available	WEL	Yes
480	003-193123210016	H000133913	Sealed	Not Available	Branum, John	10819 President Dr	Blaine	18	3/25/1998	Not Available	WEL	Yes
481	003-163124140026	H000133917	Sealed	Not Available	Richardson, Harold	2510 115th Av	Coon Rapids	21	4/8/1998	Not Available	WEL	Yes
482	003-163124130025	H000135176	Sealed	Not Available	Halverson, John	11324 Bittersweet St Nw	Coon Rapids	35	4/14/1998	Not Available	WEL	Yes
483	003-163124220097	H000135414	Sealed	Not Available	Rebeck, Rita	11543 Jonquil St	Coon Rapids	42	4/16/1998	Not Available	WEL	Yes
484	003-133124220077	H000135415	Sealed	Not Available	Kempenich, Mike	11601 Magnolia St Nw	Coon Rapids	25	4/16/1998	Not Available	WEL	Yes
485	003-123124330056	H000125317	Sealed	Not Available	Zupon, David	11801 Magnolia St Nw	Coon Rapids	35	8/1/1997	Not Available	WEL	Yes
486	003-133124240038	H000133294	Sealed	Not Available	Adams, Greg	11421 Juniper St	Coon Rapids	38	7/22/1998	Not Available	WEL	Approximate
487	003-123124330028	H000134411	Sealed	Not Available	Hostetler, Judy	11801 Larch St	Coon Rapids	30	2/26/1998	Not Available	WEL	Yes
488	003-213124240001	H000134414	Sealed	Not Available	Hartstrom, Larry	10554 Direct River Dr	Coon Rapids	61	3/9/1998	Not Available	WEL	Yes
489	003-183123330037	H000135738	Sealed	Not Available	Bloomgren, Diane	11026 Sixth St Ne	Blaine	20	6/2/1998	Not Available	WEL	Yes
490	003-133124210104	H000134445	Sealed	Not Available	Wiemers, Sandy	11640 Juniper St Nw	Coon Rapids	32	6/5/1998	Not Available	WEL	Yes
491	003-133124210034	H000125326	Sealed	Not Available	Mueller, Elroy A.	11600 Larch St Nw	Coon Rapids	25	8/8/1997	Not Available	WEL	Yes
492	053-3312021240030	H000132318	Sealed	Not Available	Frismanis, Herman	11409 Yates Av	Champlin	60	4/15/1998	Not Available	WEL	Yes
493	003-123124340011	H000129727	Sealed	Not Available	Thompson, Marvel	11720 Kumquat St Nw	Coon Rapids	35	9/29/1997	Not Available	WEL	Yes
494	003-153124240064	H000129755	Sealed	Not Available	Gunter, Sue	11417 Quinn St Nw	Coon Rapids	110	11/11/1997	Not Available	WEL	Yes
495	003-223124240074	H000134910	Sealed	Not Available	Turner, Darrell/Gayl	2110 Coon Rapids Bl	Coon Rapids	92	2/19/1998	Not Available	WEL	Yes
496	053-3312021320015	H000151578	Sealed	Not Available	Neprude, Leigh	6008 113th Av N	Champlin	59	8/19/1999	Not Available	WEL	Yes
497	003-223124120070	H000148449	Sealed	Not Available	Manfred Hage, Estate Of	1925 108th La Ne	Coon Rapids	175	12/29/1998	Not Available	WEL	Yes
498	003-213124110064	H000143731	Sealed	Not Available	Boerger, Paul	10687 Verdin St Nw	Coon Rapids	15	9/28/1998	Not Available	WEL	Yes
499	003-093124430010	H000143746	Sealed	Not Available	Wodarski, Lisa	11835 Crocus St Nw	Coon Rapids	17	10/7/1998	Not Available	WEL	Yes
500	003-133124320028	H000143757	Sealed	Not Available	Henriksen, Marlys	11248 Norway St Nw	Coon Rapids	10	10/21/1998	Not Available	WEL	Yes
501	003-133124320028	H000143759	Sealed	Not Available	Henriksen, Marlys	11248 Norway St Nw	Coon Rapids	10	10/21/1998	Not Available	WEL	Yes
502	003-133124210097	H000148660	Sealed	Not Available	Koeneman, Dale	11691 Juniper St Nw	Coon Rapids	25	12/10/1998	Not Available	WEL	Yes
503	053-2812021330016	H000154962	Sealed	Not Available	Brodeen, Nancy	11842 W River rd	Champlin	107	6/25/1999	Not Available	WEL	Yes
504	003-223124220007	H000143775	Sealed	Not Available	Szaflarski, David	2224 108th Av Nw	Coon Rapids	85	12/2/1998	Not Available	WEL	Yes
505	053-3312021320019	H000161827	Sealed	Not Available	Titus, George	5900 113th Av N	Champlin	54	10/29/1999	Not Available	WEL	Yes
506	003-163124340014	H000155582	Sealed	Not Available	Anderson, Paul/Carolyn	10951 Crooked Lake Bl	Coon Rapids	44	8/26/1999	Not Available	WEL	Yes
507	003-223124230013	H000151035	Sealed	Not Available	Svare, Marcie	2260 Coon Rapids Bl	Coon Rapids	83	5/3/1999	Not Available	WEL	Yes
508	003-093124310008	H000151041	Sealed	Not Available	Vandenburgh, Marsha	2829 119th Av Nw	Coon Rapids	24	5/3/1999	Not Available	WEL	Yes
509	003-163124140097	H000151048	Sealed	Not Available	Olson, Garth	11364 N Heights Dr	Coon Rapids	30	5/20/1999	Not Available	WEL	Yes
510	003-093124310008	H000151049	Sealed	Not Available	Vandenburgh, Marsha	2829 119th Av	Coon Rapids	0	5/17/1999	Not Available	WEL	Yes
511	003-123124330129	H000151019	Sealed	Not Available	Mueller, Leroy	11770 Olive St	Coon Rapids	29	4/7/1999	Not Available	WEL	Yes
512	003-123124330128	H000149830	Sealed	Not Available	Dye, Lorraine	11841 Olive St	Coon Rapids	42	3/3/1999	Not Available	WEL	Yes
513	003-133124220035	H000151387	Sealed	Not Available	Engelking, Duane	11661 Olive St	Coon Rapids	28	6/22/1999	Not Available	WEL	Yes
514	003-223124130101	H000151389	Sealed	Not Available	Sauter & Sons	10625 Hanson Bl	Coon Rapids	113	6/23/1999	Not Available	WEL	Yes
515	003-133124210098	H000151007	Sealed	Not Available	Ramczyk, Henry	11698 Juniper St Nw	Coon Rapids	35	2/22/1999	Not Available	WEL	Yes
516	003-223124240060	H000151010	Sealed	Not Available	Kehn, Glenn	2151 107th Av	Coon Rapids	46	2/22/1999	Not Available	WEL	Yes
517	003-223124210034	H000147512	Sealed	Not Available	Dropps, Roy	10840 Thrush St	Coon Rapids	64	2/9/1999	Not Available	WEL	Yes
518	003-223124220029	H000137545	Sealed	Not Available	Strike, Ronald	10853 Thrush St Nw	Coon Rapids	66	6/19/1998	Not Available	WEL	Yes
519	003-153124240022	H000144853	Sealed	Not Available	Nash, Simone	11316 Osage Nw	Coon Rapids	60	9/11/1998	Not Available	WEL	Yes
520	003-223124220052	H000144857	Sealed	Not Available	Larson, Julie	2341 108th Av	Coon Rapids	66	9/16/1998	Not Available	WEL	Yes
521	003-223124220052	H000144858	Sealed	Not Available	Larson, Julie	2341 108th Av	Coon Rapids	80	9/16/1998	Not Available	WEL	Yes
522	003-153124240023	H000144885	Sealed	Not Available	Cusey, Rodney	11308 Osage St Nw	Coon Rapids	68	11/10/1998	Not Available	WEL	Yes
523	003-133124220049	H000144891	Sealed	Not Available	Rupar, Micah	11550 Magnolia St	Coon Rapids	27	11/12/1998	Not Available	WEL	Yes
524	003-183123220004	H000144897	Sealed	Not Available	Sutton, Dan	140 117th Av Ne	Blaine	28	12/14/1998	Not Available	WEL	Yes
525	053-2912021440002	H000155528	Sealed	Not Available	Coughlan, Colleen	11715 Douglas Dr	Champlin	65	7/7/1999	Not Available	WEL	Yes
526	003-183123330117	H000146763	Sealed	Not Available	Zacharias, Shelly	10943 University Av	Blaine	24	1/14/1999	Not Available	WEL	Yes
527	053-3212021410059	H000140429	Sealed	Not Available	Food & Fuel	11151 Douglas Dr	Champlin	0	7/15/1998	Not Available	WEL	Yes
528	053-3212021110059	H000138988	Sealed	Not Available	Aarhus, Arthur	6401 116th Av N	Champlin	50	8/21/1998	Not Available	WEL	Yes
529	053-3212021110034	H000138989	Sealed	Not Available	Anderson, Tim	11601 Edgewood Av N	Champlin	54	8/21/1998	Not Available	WEL	Yes
530	003-093124340005	H000167155	Sealed	Not Available	Pribyl, Richard	2821 118th La Nw	Coon Rapids	25	4/25/2000	Not Available	WEL	Yes
531	003-133124240020	H000161968	Sealed	Not Available	Dittberner, Melvin	510 115th Av Nw	Coon Rapids	30	11/11/1999	Not Available	WEL	Yes
532	003-163124140015	H000161977	Sealed	Not Available	Foote, Grovner W.	2529 115th Av Nw	Coon Rapids	25	12/1/1999	Not Available	WEL	Yes
533	003-153124240006	H000165620	Sealed	Not Available	Mattson, Erik	11324 Hanson Bl	Coon Rapids	102	4/5/2000	Not Available	WEL	Yes
534	003-213124420001	H000163716	Sealed	Not Available	Camble, Mary	10344 Mississippi Bl	Coon Rapids	75	12/30/1999	Not Available	WEL	Yes
535	003-123124340066	H000156392	Sealed	Not Available	Groth, Colleen	11810 Juniper St Nw	Coon Rapids	34	7/14/1999	Not Available	WEL	Yes
536	003-253124130052	H000163956	Sealed	Not Available	Sime, Gerry	322 98th La	Coon Rapids	62	4/21/2000	Not Available	WEL	Yes
537	003-123124320078	H000163957	Sealed	Not Available	Hilger, Clarence	649 Sand Creek Dr	Coon Rapids	35	4/21/2000	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
538	003-123124330063	H000163975	Sealed	Not Available	Klein, Donna	11857 Magnolia St	Coon Rapids	43	6/21/2000	Not Available	WEL	Yes
539	003-123124330106	H000164658	Sealed	Not Available	Vannurden, Alice	11824 Norway St Nw	Coon Rapids	40	4/18/2000	Not Available	WEL	Yes
540	003-133124130084	H000164661	Sealed	Not Available	Schultz, Ed	11421 Flintwood St Nw	Coon Rapids	150	4/25/2000	Not Available	WEL	Yes
541	003-223124240071	H000164662	Sealed	Not Available	Nelson, Nona	2130 Coon Rapids Bl	Coon Rapids	151	4/26/2000	Not Available	WEL	Yes
542	003-133124210071	H000164663	Sealed	Not Available	Dyrdahl, Linda	11608 Ilex St	Coon Rapids	32	4/27/2000	Not Available	WEL	Yes
543	003-083124310015	H000164664	Sealed	Not Available	Walter Danz, Estate Of	11900 Undercliff St Nw	Coon Rapids	94	4/26/2000	Not Available	WEL	Yes
544	003-093124340032	H000164668	Sealed	Not Available	Russell L. Ridge, Estate Of	2840 119th Av Nw	Coon Rapids	60	5/4/2000	Not Available	WEL	Yes
545	003-133124220037	H000164669	Sealed	Not Available	Jobes, Arlyn	11711 Olive St Nw	Coon Rapids	35	5/9/2000	Not Available	WEL	Yes
546	003-253124240016	H000164670	Sealed	Not Available	Hulstrand, Bert	9822 Foley Bl	Coon Rapids	41	5/11/2000	Not Available	WEL	Yes
547	003-123124320045	H000164674	Sealed	Not Available	Fjerstad, Richard	11933 Magnolia St	Coon Rapids	31	5/17/2000	Not Available	WEL	Yes
548	Not Available	H000164677	Sealed	Not Available	Anoka County Highway Department	Not Available	Coon Rapids	54	5/26/2000	Not Available	WEL	Uncertain
549	003-133124240048	H000164678	Sealed	Not Available	Demars, Mildred R.	11321 Kumquat St	Coon Rapids	35	5/26/2000	Not Available	WEL	Yes
550	003-133124210038	H000163086	Sealed	Not Available	Welshons, Viola	11530 Larch St Nw	Coon Rapids	28	6/14/2000	Not Available	WEL	Yes
551	003-133124220048	H000163087	Sealed	Not Available	Wikstrom, Charles	11560 Magnolia St Nw	Coon Rapids	25	6/16/2000	Not Available	WEL	Yes
552	003-273124120029	H000166263	Sealed	Not Available	Ammann, Jeff	10050 Linnet St Nw	Coon Rapids	115	4/25/2000	Not Available	WEL	Yes
553	003-223124220034	H000164856	Sealed	Not Available	Curtis, Louis	10890 Thrush St Nw	Coon Rapids	105	3/9/2000	Not Available	WEL	Yes
554	003-223124220010	H000164867	Sealed	Not Available	Lehn, Joseph/Dalor	2261 Coon Rapids Bl	Coon Rapids	85	3/16/2000	Not Available	WEL	Yes
555	003-133124210076	H000171719	Sealed	Not Available	Koppy, Evelyn	11564 Ilex St Nw	Coon Rapids	36	10/3/2000	Not Available	WEL	Yes
556	003-123124330091	H000171720	Sealed	Not Available	Pk Properties	11833 Norway St	Coon Rapids	26	10/3/2000	Not Available	WEL	Yes
557	003-213124440056	H000173101	Sealed	Not Available	Epping, Norb W.	10170 Mississippi Bl	Coon Rapids	110	9/12/2000	Not Available	WEL	Yes
558	003-223124240032	H000173105	Sealed	Not Available	Haugen, Roger	10624 Hanson Bl	Coon Rapids	110	9/13/2000	Not Available	WEL	Yes
559	053-3312021320010	H000173117	Sealed	Not Available	Shuma, Ken	6209 112th Av	Champlin	55	9/20/2000	Not Available	WEL	Yes
560	003-203124110003	H000164689	Sealed	Not Available	Paulson, Sheri	10860 Mississippi Bl	Coon Rapids	77	7/11/2000	Not Available	WEL	Yes
561	003-183123330045	H000173148	Sealed	Not Available	Hoel, Nancy	10926 Sixth St	Blaine	36	9/26/2000	Not Available	WEL	Yes
562	053-3312021320061	H000158025	Sealed	Not Available	Olson, Larry	6100 113th Av	Champlin	61	9/9/1999	Not Available	WEL	Yes
563	003-163124440024	H000157753	Sealed	Not Available	Goodshaud, Dick	11050 Wren St	Coon Rapids	15	7/30/1999	Not Available	WEL	Yes
564	003-163124440024	H000157754	Sealed	Not Available	Goodshaud, Dick	11050 Wren St	Coon Rapids	10	7/30/1999	Not Available	WEL	Yes
565	003-093124310074	H000157756	Sealed	Not Available	Francisco, Wendy	11953 Eidelweiss St	Coon Rapids	155	8/12/1999	Not Available	WEL	Yes
566	003-223124330014	H000150237	Sealed	Not Available	Waller, Al	10314 Thrush St Nw	Coon Rapids	30	10/22/1999	Not Available	WEL	Yes
567	003-223124440005	H000158801	Sealed	Not Available	Isd 11	1700 Coon Rapids Bl	Coon Rapids	410	8/23/1999	Not Available	WEL	Yes
568	003-153124240028	H000160019	Sealed	Not Available	Sanborn, Leann	11325 Partridge St Nw	Coon Rapids	121	10/26/1999	Not Available	WEL	Yes
569	003-123124330140	H000160023	Sealed	Not Available	Norman, Betty Jo	11717 Magnolia St Nw	Coon Rapids	0	11/9/1999	Not Available	WEL	Yes
570	003-133124240019	H000160357	Sealed	Not Available	Petro, Kim/Mike	500 115th Av Nw	Coon Rapids	31	9/16/1999	Not Available	WEL	Yes
571	003-203124110004	H000159999	Sealed	Not Available	Brom, Mary	10850 Mississippi Bl	Coon Rapids	130	10/22/1999	Not Available	WEL	Yes
572	003-123124340061	H000155533	Sealed	Not Available	Danelson, Cecil	11860 Juniper St Nw	Coon Rapids	25	7/22/1999	Not Available	WEL	Yes
573	003-123124330113	H000155538	Sealed	Not Available	Besonen, Carl	11754 Norway St	Coon Rapids	40	7/15/1999	Not Available	WEL	Yes
574	003-133124240024	H000155549	Sealed	Not Available	Field, Bernice	550 115th Av Nw	Coon Rapids	30	7/26/1999	Not Available	WEL	Yes
575	003-123124340012	H000155555	Sealed	Not Available	Betty Henifin, Estate Of	11710 Kumquat St Nw	Coon Rapids	35	8/4/1999	Not Available	WEL	Yes
576	053-3312021230008	H000153386	Sealed	Not Available	Maus, Pat	11316 Zane Av N	Champlin	125	6/11/1999	Not Available	WEL	Yes
577	003-223124230024	H000152211	Sealed	Not Available	Bona, Sue	10665 Verdin St	Coon Rapids	25	6/5/1999	Not Available	WEL	Yes
578	003-133124210123	H000165418	Sealed	Not Available	Kruger, Justin	11500 Larch St	Coon Rapids	24	5/6/2000	Not Available	WEL	Yes
579	003-213124230008	H000150168	Sealed	Not Available	Scott, Ronnie L.	10600 Mississippi Bl Nw	Coon Rapids	103	4/10/1999	Not Available	WEL	Yes
580	003-133124220051	H000150178	Sealed	Not Available	Zayonckows, Joseph J.	11530 Magnolia St Nw	Coon Rapids	54	5/14/1999	Not Available	WEL	Yes
581	003-183123330054	H000150182	Sealed	Not Available	Miller, Ronald	10925 Fifth St Ne	Blaine	40	5/19/1999	Not Available	WEL	Yes
582	003-213124110020	H000150196	Sealed	Not Available	Riley, Ron	2422 Coon Rapids Bl	Coon Rapids	21	6/30/1999	Not Available	WEL	Yes
583	003-213124110020	H000150197	Sealed	Not Available	Riley, Ron	2422 Coon Rapids Bl	Coon Rapids	90	6/30/1999	Not Available	WEL	Yes
584	003-133124340064	H000158738	Sealed	Not Available	Sauter & Sons	11118 Foley Bl	Coon Rapids	15	7/8/1999	Not Available	WEL	Approximate
585	003-223124310003	H000159993	Sealed	Not Available	Coon Rapids Methodist Church	10506 Hanson Bl	Coon Rapids	31	10/18/1999	Not Available	WEL	Yes
586	003-223124130101	H000173668	Sealed	Not Available	Sauter & Sons, Inc.	10625 Hanson Bl	Coon Rapids	21	9/7/2000	Not Available	WEL	Yes
587	003-133124210117	H000179350	Sealed	Not Available	Johnson, Keith	11708 Larch St Nw	Coon Rapids	34	7/31/2001	Not Available	WEL	Yes
588	003-133124210107	H000182468	Sealed	Not Available	Bopp, Darrell	11610 Juniper St Nw	Coon Rapids	33	4/16/2002	Not Available	WEL	Yes
589	003-133124210102	H000170789	Sealed	Not Available	Vandenburg, Guy	11660 Juniper St Nw	Coon Rapids	26	1/19/2001	Not Available	WEL	Yes
590	003-133124210027	H000170790	Sealed	Not Available	Ascheman, Lisa	11671 Larch St Nw	Coon Rapids	31	1/19/2001	Not Available	WEL	Yes
591	003-153124130073	H000179301	Sealed	Not Available	Johnson, Lyle	11331 Hanson Bl	Coon Rapids	14	3/21/2001	Not Available	WEL	Approximate
592	003-123124330038	H000176471	Sealed	Not Available	Ringweiski, Kipp	11872 Larch St Nw	Coon Rapids	33	7/23/2001	Not Available	WEL	Yes
593	003-163124220106	H000179308	Sealed	Not Available	Broderick, Kristi	11534 Jonquil St Nw	Coon Rapids	45	4/19/2001	Not Available	WEL	Yes
594	003-223124410033	H000167475	Sealed	Not Available	Salvation Army	10326 Ibis Av	Coon Rapids	111	8/16/2000	Not Available	WEL	Uncertain
595	003-163124140011	H000169473	Sealed	Not Available	Barnett, Dave	2451 115th Av	Coon Rapids	20	7/31/2000	Not Available	WEL	Yes
596	003-183123330006	H000167393	Sealed	Not Available	Johnson, Darrin	11020 Seventh St Ne	Blaine	22	10/2/2000	Not Available	WEL	Yes
597	053-3312021230062	H000170155	Sealed	Not Available	Realty House	11318 Douglas Dr	Champlin	25	9/26/2000	Not Available	WEL	Yes
598	003-133124210025	H000171727	Sealed	Not Available	Nordquist, John	11651 Larch St Nw	Coon Rapids	31	11/28/2000	Not Available	WEL	Yes
599	053-3212021110076	H000184033	Sealed	Not Available	Patton, Dick	11621 Florida Av N	Champlin	48	10/11/2001	Not Available	WEL	Yes
600	003-123124330008	H000164277	Sealed	Not Available	Kammerer, Tom	11897 Kumquat	Coon Rapids	40	5/15/2001	Not Available	WEL	Yes
601	003-163124210050	H000164291	Sealed	Not Available	Mallam, Brett	2850 116th Av Nw	Coon Rapids	35	5/5/2001	Not Available	WEL	Yes
602	003-183123330078	H000164297	Sealed	Not Available	Bisson, Roger	10920 Fifth St Ne	Blaine	35	5/21/2001	Not Available	WEL	Yes
603	003-223124140152	H000170763	Sealed	Not Available	Black, Dave	10531 Jay St Nw	Coon Rapids	86	8/30/2000	Not Available	WEL	Yes
604	003-253124110066	H000170764	Sealed	Not Available	Hatch, Linda	9938 Cottonwood St Nw	Coon Rapids	24	9/12/2000	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
605	003-123124320048	H000180671	Sealed	Not Available	Watson, Bert	11948 Magnolia St Nw	Coon Rapids	78	5/9/2001	Not Available	WEL	Yes
606	053-3212021110010	H000167370	Sealed	Not Available	Richard, Mark	11509 Douglas Dr	Champlin	114	6/29/2000	Not Available	WEL	Yes
607	053-3212021110010	H000167371	Sealed	Not Available	Richards, Mark	11509 Douglas Dr	Champlin	25	6/29/2000	Not Available	WEL	Yes
608	003-123124340010	H000169453	Sealed	Not Available	Miller, Andrew	11730 Kumquat St Nw	Coon Rapids	25	7/12/2000	Not Available	WEL	Yes
609	003-123124330076	H000162513	Sealed	Not Available	Mimback, Dennis	11780 Magnolia St	Coon Rapids	24	12/8/1999	Not Available	WEL	Yes
610	003-173124140003	H000189381	Sealed	Not Available	Marathon Oil	11489 Round Lake Bl	Coon Rapids	35	3/29/2002	Not Available	WEL	Approximate
611	003-093124340244	H000189382	Sealed	Not Available	Oasis Market	11706 Crooked Lake Bl	Coon Rapids	27	3/29/2002	Not Available	WEL	Approximate
612	003-123124320054	H000183622	Sealed	Not Available	Gangelhoff, Karen	11900 Magnolia	Coon Rapids	25	7/31/2001	Not Available	WEL	Yes
613	003-133124220073	H000200614	Sealed	Not Available	Peter, Ray	11531 Magnolia St	Coon Rapids	26	10/18/2002	Not Available	WEL	Yes
614	053-0311921220018	H000190957	Sealed	Not Available	Brooklyn Park, City Of	10841 Kyle Av N	Brooklyn Park	128	11/16/2001	Not Available	WEL	Approximate
615	003-133124220068	H000185077	Sealed	Not Available	Belisle, Dale	11721 Norway St	Coon Rapids	26	9/11/2001	Not Available	WEL	Yes
616	053-2812021340034	H000185082	Sealed	Not Available	Vry, Don	11848 Mississippi Dr	Champlin	67	9/28/2001	Not Available	WEL	Yes
617	003-133124210093	H000192389	Sealed	Not Available	Hjertstedt, Marcy	11651 Juniper St Nw	Coon Rapids	31	10/16/2002	Not Available	WEL	Yes
618	003-213124420007	H000185184	Sealed	Not Available	Collier, Robert	10401 Zion St	Coon Rapids	40	10/29/2001	Not Available	WEL	Yes
619	003-223124240020	H000183792	Sealed	Not Available	Mohs, Dave	10662 Hanson Bl	Coon Rapids	90	9/18/2001	Not Available	WEL	Yes
620	003-233124320010	H000186104	Sealed	Not Available	Stromgren, Wade	1549 103rd Av Nw	Coon Rapids	0	8/24/2001	Not Available	WEL	Yes
621	003-133124120056	H000175507	Sealed	Not Available	Person, Richard	11681 Flintwood St	Coon Rapids	20	11/9/2000	Not Available	WEL	Yes
622	053-2812021320027	H000185985	Sealed	Not Available	Stevens, Fred	11830 Porter Dr	Champlin	55	8/30/2005	Not Available	WEL	Yes
623	003-123124330117	H000181058	Sealed	Not Available	Pauly, Jim	11741 Olive St	Coon Rapids	22	6/14/2001	Not Available	WEL	Yes
624	003-253124130074	H000176977	Sealed	Not Available	Lauria, Mark/Amy	312 98th La	Coon Rapids	48	3/27/2001	Not Available	WEL	Yes
625	003-133124410009	H000177392	Sealed	Not Available	Fairbanks Capital Corporation	11150 University Av Nw	Coon Rapids	75	5/1/2001	Not Available	WEL	Yes
626	003-213124440001	H000182449	Sealed	Not Available	Law, David	10153 Mississippi Bl	Coon Rapids	118	10/29/2001	Not Available	WEL	Yes
627	003-253124130022	H000192361	Sealed	Not Available	Johnson, Vera	321 97th La Nw	Coon Rapids	18	7/16/2002	Not Available	WEL	Yes
628	003-253124130022	H000192363	Sealed	Not Available	Johnson, Vera	321 97th La Nw	Coon Rapids	18	7/16/2002	Not Available	WEL	Yes
629	053-3312021320071	H000192397	Sealed	Not Available	Dhanan, Barakat	6217 112th Av	Champlin	47	10/22/2002	Not Available	WEL	Yes
630	003-123124330115	H000181460	Sealed	Not Available	Wagner, Derrick	11738 Norway St Nw	Coon Rapids	25	7/10/2001	Not Available	WEL	Yes
631	003-163124220001	H000181464	Sealed	Not Available	Huntington, Don	3139 116th La Nw	Coon Rapids	75	7/9/2001	Not Available	WEL	Yes
632	003-213124240003	H000192272	Sealed	Not Available	Church, David	10534 Hollywood Bl	Coon Rapids	92	7/18/2002	Not Available	WEL	Yes
633	003-223124220048	H000181499	Sealed	Not Available	Stromgren, Marvin	10800 Thrush St Nw	Coon Rapids	105	8/13/2001	Not Available	WEL	Yes
634	003-093124340023	H000185100	Sealed	Not Available	Ingeborg Hagen, Estate Of	2840 118th La Nw	Coon Rapids	27	10/18/2001	Not Available	WEL	Yes
635	003-163124110028	H000177334	Sealed	Not Available	Main, Ronald	11563 Wren St Nw	Coon Rapids	20	1/29/2001	Not Available	WEL	Yes
636	003-163124430096	H000200914	Sealed	Not Available	Coon Rapids Chrysler Plymouth	2710 Coon Rapids Bl Nw	Coon Rapids	46	12/12/2002	Not Available	WEL	Approximate
637	003-133124220016	H000198059	Sealed	Not Available	Berglund, Chris	11700 Norway St Nw	Coon Rapids	25	9/11/2002	Not Available	WEL	Yes
638	003-183123330016	H000198072	Sealed	Not Available	Morton, Wayne	10908 Seventh St	Blaine	25	10/28/2002	Not Available	WEL	Yes
639	053-3312021240055	H000211153	Sealed	Not Available	Curtis, Rolff/Mary	11417 Xenia Av N	Champlin	138	6/24/2003	Not Available	WEL	Yes
640	003-153124320026	H000212629	Sealed	Not Available	Ivor Mitchell Estate	11255 Verdin Ci	Coon Rapids	12	9/2/2003	Not Available	WEL	Yes
641	003-143124110014	H000201169	Sealed	Not Available	Anderson, Jim	806 Northdale Bl Nw	Coon Rapids	31	1/23/2003	Not Available	WEL	Yes
642	003-143124110014	H000201173	Sealed	Not Available	Anderson, Jim	806 Northdale Bl Nw	Coon Rapids	30	1/23/2003	Not Available	WEL	Yes
643	003-133124430003	H000212799	Sealed	Not Available	Bauers, John/Susan	353 111th Av Nw	Coon Rapids	22	7/21/2004	Not Available	WEL	Yes
644	003-163124220107	H000200829	Sealed	Not Available	Hedrick, Roger	11524 Jonquil St	Coon Rapids	43	10/29/2002	Not Available	WEL	Yes
645	003-233124320002	H000200399	Sealed	Not Available	Neinstadt, Dan	10341 Flamingo St Nw	Coon Rapids	100	4/15/2003	Not Available	WEL	Yes
646	003-223124220023	H000193678	Sealed	Not Available	Wolford, John	10883 Thrush St Nw	Coon Rapids	134	3/19/2002	Not Available	WEL	Yes
647	003-213124110067	H000193681	Sealed	Not Available	Kaslow, Jerry	10688 Verdin St Nw	Coon Rapids	22	4/10/2002	Not Available	WEL	Yes
648	003-123124340059	H000193685	Sealed	Not Available	Kroll, Ken	11880 Juniper St	Coon Rapids	29	4/17/2002	Not Available	WEL	Yes
649	003-163124230114	H000193693	Sealed	Not Available	Larson, Gerals	11347 Lily St	Coon Rapids	72	5/10/2002	Not Available	WEL	Yes
650	003-133124220098	H000193703	Sealed	Not Available	Ganser, Marty	731 Northdale Bl	Coon Rapids	32	5/23/2002	Not Available	WEL	Yes
651	003-133124240056	H000193723	Sealed	Not Available	Mary Patrick, Estate Of	11510 Juniper St Nw	Coon Rapids	29	7/24/2002	Not Available	WEL	Yes
652	003-093124340033	H000193731	Sealed	Not Available	Bray, Mae	2850 119th Av	Coon Rapids	26	8/12/2002	Not Available	WEL	Yes
653	003-093124340033	H000193732	Sealed	Not Available	Bray, Mae	2850 119th Av	Coon Rapids	62	8/12/2002	Not Available	WEL	Yes
654	003-153124320005	H000193737	Sealed	Not Available	Pierce, Ken	2210 111th La Nw	Coon Rapids	122	8/30/2002	Not Available	WEL	Yes
655	003-223124430002	H000193785	Sealed	Not Available	Krekelberg, Audrey	1801 Mississippi Bl	Coon Rapids	127	6/30/2003	Not Available	WEL	Yes
656	003-273124120033	H000188775	Sealed	Not Available	Soltis, Joey	1850 Mississippi Bl	Coon Rapids	102	12/17/2001	Not Available	WEL	Yes
657	003-153124240031	H000188783	Sealed	Not Available	Lawrence, Michael	11349 Partridge St Nw	Coon Rapids	115	1/16/2002	Not Available	WEL	Yes
658	003-133124240047	H000188754	Sealed	Not Available	Ervin Prickett, Estate Of	11331 Kumquat St Nw	Coon Rapids	27	10/23/2001	Not Available	WEL	Yes
659	003-223124240055	H000198702	Sealed	Not Available	S/L National Corporatioin	2131 Coon Rapids Bl Nw	Coon Rapids	85	4/6/2002	Not Available	WEL	Approximate
660	003-183123330087	H000198703	Sealed	Not Available	Abrahamson, James	10931 Fourth St Ne	Blaine	15	8/2/2002	Not Available	WEL	Yes
661	003-093124310067	H000198723	Sealed	Not Available	Kohl, Allan	12020 Crooked Lake Bl	Coon Rapids	65	9/4/2002	Not Available	WEL	Yes
662	003-263124210008	H000199827	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids (1350-1440) Bl	Coon Rapids	40	3/24/2003	Not Available	WEL	Yes
663	003-273124120027	H000204459	Sealed	Not Available	Loxtercamp, Chad	10026 Linnet St Nw	Coon Rapids	72	2/5/2003	Not Available	WEL	Approximate
664	003-163124230055	H000204473	Sealed	Not Available	Snippen, Bob	11425 Jonquil St Nw	Coon Rapids	98	4/8/2003	Not Available	WEL	Yes
665	003-253124130023	H000199239	Sealed	Not Available	Armstrong, Oliver	329 97th La Nw	Coon Rapids	34	10/3/2002	Not Available	WEL	Yes
666	003-123124320042	H000199240	Sealed	Not Available	Thum, John	11909 Magnolia Av	Coon Rapids	27	10/3/2002	Not Available	WEL	Yes
667	003-183123330106	H000196822	Sealed	Not Available	Carlson, Gary/Rita	10944 Fourth St Ne	Blaine	22	1/22/2003	Not Available	WEL	Yes
668	053-0311921430008	H000196751	Sealed	Not Available	Action Construction	10225 Abbott Av N	Brooklyn Park	61	7/11/2002	Not Available	WEL	Uncertain
669	003-223124240034	H000215894	Sealed	Not Available	Rasmusson, Ann	10608 Hanson Bl	Coon Rapids	90	11/3/2003	Not Available	WEL	Yes
670	003-143124110005	H000213489	Sealed	Not Available	Stoesz, Alice	841 Northdale Bl	Coon Rapids	169	12/9/2003	Not Available	WEL	Yes
671	053-2812021310002	H000208355	Sealed	Not Available	Schneider, Wayne	11900 Mississippi Dr	Champlin	59	4/22/2003	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
672	003-123124330035	H000208599	Sealed	Not Available	Smits, Bill	11857 Larch St Nw	Coon Rapids	25	7/14/2004	Not Available	WEL	Yes
673	003-223124430057	H000222285	Sealed	Not Available	Howe, Leroy	10256 Linnet	Coon Rapids	72	5/26/2004	Not Available	WEL	Yes
674	003-163124230004	H000218087	Sealed	Not Available	Spanjers, Richard	3141 113th Av	Coon Rapids	60	3/10/2005	Not Available	WEL	Yes
675	003-253124130021	H000222547	Sealed	Not Available	Jechorek, Mike	315 97th La Nw	Coon Rapids	25	6/11/2004	Not Available	WEL	Yes
676	003-223124240097	H000218430	Sealed	Not Available	Omega Constrction Company	2017 Coon Rapids Bl Nw	Coon Rapids	90	3/25/2004	Not Available	WEL	Yes
677	003-133124210079	H000218433	Sealed	Not Available	Rudolph, Ruth	11540 Ilex St Nw	Coon Rapids	40	4/2/2004	Not Available	WEL	Yes
678	003-223124410031	H000213472	Sealed	Not Available	Pk Investment Properties	1715 Coon Rapids Bl	Coon Rapids	107	10/27/2003	Not Available	WEL	Yes
679	003-223124410031	H000213473	Sealed	Not Available	Pk Investment Properties	1715 Coon Rapids Bl	Coon Rapids	16	10/27/2003	Not Available	WEL	Yes
680	003-223124210030	H000213114	Sealed	Not Available	Medelberg, Kathryn	10825 Thrush St Nw	Coon Rapids	40	8/8/2003	Not Available	WEL	Yes
681	003-223124220025	H000213115	Sealed	Not Available	Buelow, Dewaine	10875 Thrush St Nw	Coon Rapids	120	8/8/2003	Not Available	WEL	Yes
682	003-163124220091	H000213118	Sealed	Not Available	Hasselius, Robert	3123 116th Av Nw	Coon Rapids	70	8/14/2003	Not Available	WEL	Yes
683	053-3312021240041	H000203905	Sealed	Not Available	Martin, Nick	11456 Yates Av N	Champlin	147	12/4/2002	Not Available	WEL	Yes
684	003-153124240033	H000208060	Sealed	Not Available	Humphrey, Jack	11409 Partridge St	Coon Rapids	123	5/13/2003	Not Available	WEL	Yes
685	003-163124230060	H000208088	Sealed	Not Available	Schmidt, Dell	11436 Ivywood St	Coon Rapids	21	7/16/2003	Not Available	WEL	Yes
686	053-2812021320043	H000207990	Sealed	Not Available	Hopping, John	11908 Colorado Av N	Champlin	97	5/12/2003	Not Available	WEL	Yes
687	053-2812021320036	H000207991	Sealed	Not Available	Hysjulien, Milt	11836 Porter Dr	Champlin	55	5/16/2003	Not Available	WEL	Yes
688	003-133124210003	H000207996	Sealed	Not Available	Fossum, Deloris	11681 Kumquat St Nw	Coon Rapids	35	5/21/2003	Not Available	WEL	Yes
689	053-3312021320021	H000205236	Sealed	Not Available	Benson, Mark	6008 112th Av N	Champlin	55	4/1/2003	Not Available	WEL	Yes
690	053-0311921420096	H000208506	Sealed	Not Available	Donnayu, Paul	10349 France Av N	Brooklyn Park	105	5/28/2003	Not Available	WEL	Approximate
691	003-123124340030	H000208513	Sealed	Not Available	Rihde, Larry	11780 Ilex Av N	Coon Rapids	36	5/6/2003	Not Available	WEL	Yes
692	053-3212021110025	H000213764	Sealed	Not Available	Vanhorrick, Bill	11641 Florida Av N	Champlin	110	8/20/2003	Not Available	WEL	Yes
693	003-213124230011	H000210198	Sealed	Not Available	Belain Excavating	10540 Mississippi Bl	Coon Rapids	55	12/12/2003	Not Available	WEL	Yes
694	003-133124210035	H000211008	Sealed	Not Available	Johnson, Marjorie	11560 Larch St	Coon Rapids	36	6/13/2003	Not Available	WEL	Yes
695	003-183123330017	H000211025	Sealed	Not Available	Engren, Donald	10902 Seventh St Ne	Blaine	21	7/15/2003	Not Available	WEL	Yes
696	003-123124230104	H000201261	Sealed	Not Available	Brackin, Ronald G.	728 123rd Av Nw	Coon Rapids	46	10/23/2002	Not Available	WEL	Yes
697	003-163124130011	H000201266	Sealed	Not Available	Johnson, Richard	2653 S Heights Dr	Coon Rapids	25	11/11/2002	Not Available	WEL	Yes
698	053-3312021240026	H000220537	Sealed	Not Available	Nesser, Mike	11429 Yates Ci N	Champlin	57	4/12/2004	Not Available	WEL	Yes
699	003-253124130031	H000203373	Sealed	Not Available	Cain, Carol	9769 Foley Bl	Coon Rapids	40	12/5/2002	Not Available	WEL	Yes
700	003-223124210019	H000207966	Sealed	Not Available	Ezanov, Jeff	2130 108th Av Nw	Coon Rapids	24	4/12/2003	Not Available	WEL	Yes
701	003-223124210019	H000207969	Sealed	Not Available	Ezanov, Jeff	2130 108th Av Nw	Coon Rapids	94	4/12/2003	Not Available	WEL	Yes
702	003-133124210121	H000205582	Sealed	Not Available	Rosencrantz, Gerald	11520 Larch St Nw	Coon Rapids	25	2/27/2003	Not Available	WEL	Yes
703	003-133124210057	H000203578	Sealed	Not Available	Guy, Shawn	11551 Larch St	Coon Rapids	23	4/14/2003	Not Available	WEL	Yes
704	003-223124440012	H000203584	Sealed	Not Available	Kerssen, Mary	1744 103rd Av	Coon Rapids	75	5/5/2003	Not Available	WEL	Yes
705	003-133124210122	H000203565	Sealed	Not Available	Eisenberg, Ken	11510 Larch St Nw	Coon Rapids	109	3/14/2003	Not Available	WEL	Yes
706	053-3212021140060	H000200375	Sealed	Not Available	Braun, Sandy	11416 Florida Av	Champlin	16	2/5/2003	Not Available	WEL	Yes
707	003-133124430080	H000200383	Sealed	Not Available	Buerkley, Mary	230 110th Av	Coon Rapids	29	3/17/2003	Not Available	WEL	Yes
708	003-163124220100	H000200384	Sealed	Not Available	Collaci, Maria	11519 Jonquil St	Coon Rapids	43	3/17/2003	Not Available	WEL	Yes
709	053-3312021320007	H000231416	Sealed	Not Available	Christoferson, Cliff	6108 112th Av N	Champlin	52	3/9/2005	Not Available	WEL	Yes
710	053-3412021330004	H000233410	Sealed	Not Available	Bills Superette	10967 River rd	Champlin	30	5/25/2005	Not Available	WEL	Approximate
711	003-153124240062	H000223103	Sealed	Not Available	Winterhall, Sherman	11401 Quinn St	Coon Rapids	69	6/13/2005	Not Available	WEL	Yes
712	003-183123330048	H000223104	Sealed	Not Available	Hugh, Beverly	10908 Sixth St Ne	Blaine	24	6/22/2005	Not Available	WEL	Yes
713	003-183123430070	H000223118	Sealed	Not Available	Kroone, Gloria	624 109th Av Ne	Blaine	24	7/29/2005	Not Available	WEL	Yes
714	003-183123330092	H000223132	Sealed	Not Available	Kirkbride, Sonja	11013 Fourth St Ne	Blaine	26	8/8/2005	Not Available	WEL	Yes
715	053-2812021330032	H000234573	Sealed	Not Available	Schreiber, Arleen	11836 W River rd	Champlin	45	6/2/2005	Not Available	WEL	Yes
716	003-133124230052	H000233150	Sealed	Not Available	Counselor Realty	11334 Kumquat St Nw	Coon Rapids	22	7/6/2005	Not Available	WEL	Yes
717	003-183123330020	H000230498	Sealed	Not Available	Redden, Robert	10913 Sixth St Ne	Blaine	23	5/13/2005	Not Available	WEL	Yes
718	053-3412021330020	H000228770	Sealed	Not Available	Omega Development	10964 Mississippi Dr	Champlin	47	12/6/2004	Not Available	WEL	Yes
719	053-3312021440004	H000242253	Sealed	Not Available	Tri Star Homes	4700 109th Av	Champlin	54	11/16/2005	Not Available	WEL	Yes
720	053-3312021440004	H000242254	Sealed	Not Available	Tri Star Homes	4700 109th Av	Champlin	50	4/26/2006	Not Available	WEL	Yes
721	003-183123330013	H000230973	Sealed	Not Available	Lamecker, Doug	10926 Seventh St Ne	Blaine	22	3/25/2005	Not Available	WEL	Yes
722	003-123124330136	H000227837	Sealed	Not Available	Barthl, Les	11748 Larch St Nw	Coon Rapids	30	10/19/2004	Not Available	WEL	Yes
723	003-123124340115	H000233136	Sealed	Not Available	Moore, Robert	408 117th Av Nw	Coon Rapids	25	5/9/2005	Not Available	WEL	Yes
724	003-123124320035	H000231266	Sealed	Not Available	Hermann, Judy	11901 Larch St Nw	Coon Rapids	35	7/21/2005	Not Available	WEL	Yes
725	053-0311921220029	H000210828	Sealed	Not Available	S.R. Weidema, Inc.	10717 Noble Av N	Brooklyn Park	140	7/18/2003	Not Available	WEL	Approximate
726	053-0311921220029	H000210829	Sealed	Not Available	S.R. Weidema, Inc.	Not Available	Brooklyn Park	35	7/18/2003	Not Available	WEL	Uncertain
727	053-2812021320044	H000225679	Sealed	Not Available	Tappe, Jodi	11906 Colorado Av	Champlin	86	4/20/2005	Not Available	WEL	Yes
728	053-0311921140005	H000225690	Sealed	Not Available	Blume, Amy	10541 W River rd	Brooklyn Park	78	5/16/2005	Not Available	WEL	Yes
729	003-123124330040	H000225613	Sealed	Not Available	Layne, Melisa	11856 Larch St	Coon Rapids	44	8/4/2004	Not Available	WEL	Yes
730	053-3212021110057	H000226030	Sealed	Not Available	Huemann, Adry/Linda	6409 116th Av N	Champlin	91	10/5/2004	Not Available	WEL	Yes
731	003-223124230006	H000226038	Sealed	Not Available	Henrikson, Barry P.	2231 Coon Rapids Bl	Coon Rapids	88	10/25/2004	Not Available	WEL	Yes
732	003-133124210026	H000217029	Sealed	Not Available	Price, Kathy	11661 Larch St	Coon Rapids	21	6/2/2004	Not Available	WEL	Yes
733	003-223124310038	H000217064	Sealed	Not Available	Richardson, Doug	10521 Partridge Ci	Coon Rapids	28	8/8/2004	Not Available	WEL	Yes
734	003-153124340198	H000217112	Sealed	Not Available	Larson, Phylis	10986 Hanson Bl Nw	Coon Rapids	84	12/3/2004	Not Available	WEL	Approximate
735	003-253124110070	H000217113	Sealed	Not Available	Anderson, Dale	10012 Cottonwood St Nw	Coon Rapids	17	12/8/2004	Not Available	WEL	Yes
736	053-3312021240027	H000217119	Sealed	Not Available	Ertl, Sue	11425 Yates Ci N	Champlin	69	12/21/2004	Not Available	WEL	Yes
737	053-3312021240025	H000217135	Sealed	Not Available	Morle, James	11433 Yates Ci N	Champlin	102	3/7/2005	Not Available	WEL	Yes
738	053-3412021330022	H000221260	Sealed	Not Available	Washburn, John L.	10920 W River rd	Champlin	120	6/30/2004	Not Available	WEL	Approximate

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
739	003-123124340039	H000221074	Sealed	Not Available	Novak, Eugene/June	11701 Juniper St Nw	Coon Rapids	33	7/7/2004	Not Available	WEL	Yes
740	003-213124140072	H000216983	Sealed	Not Available	Allen, Sue	10672 Wren St Nw	Coon Rapids	14	3/17/2004	Not Available	WEL	Yes
741	003-153124230090	H000216819	Sealed	Not Available	Frantz, Darla	2321 113th Av Nw	Coon Rapids	18	6/2/2004	Not Available	WEL	Yes
742	003-133124120077	H000216820	Sealed	Not Available	Edina Realty	244 116th Av Nw	Coon Rapids	16	6/3/2004	Not Available	WEL	Yes
743	003-123124340042	H000216823	Sealed	Not Available	Larrabee, Mickey/Dave	11731 Juniper St	Coon Rapids	32	7/1/2004	Not Available	WEL	Yes
744	003-173124220036	H000225072	Sealed	Not Available	Ruzynski, Mike	11556 Zea St	Coon Rapids	114	6/29/2004	Not Available	WEL	Yes
745	003-223124310016	H000226119	Sealed	Not Available	M, Curtis	2137 105th La Nw	Coon Rapids	24	9/1/2004	Not Available	WEL	Yes
746	003-253124120015	H000221282	Sealed	Not Available	Cross Of Christ Church	9931 Foley Bl Nw	Coon Rapids	25	4/13/2005	Not Available	WEL	Yes
747	003-183123330012	H000221285	Sealed	Not Available	Koester, Robert	10932 Seventh St	Blaine	23	6/22/2005	Not Available	WEL	Yes
748	003-093124340031	H000210856	Sealed	Not Available	Kaldahl, Larry	2830 119th Av	Coon Rapids	23	7/7/2003	Not Available	WEL	Yes
749	003-153124240046	H000216647	Sealed	Not Available	Weyscheid, Eldon	11408 Partridge St Nw	Coon Rapids	132	4/3/2006	Not Available	WEL	Yes
750	053-2912021440011	H000224517	Sealed	Not Available	Foster, Mark	11732 Edgewood Av N	Champlin	112	7/28/2004	Not Available	WEL	Yes
751	003-223124440014	H000134223	Sealed	Not Available	Estate Of Marguerite Port	10228 Ibis St Nw	Coon Rapids	17	8/15/2006	Not Available	WEL	Yes
752	003-213124230029	H000238623	Sealed	Not Available	Gordon, Tom	10555 Mississippi Bl Nw	Coon Rapids	96	8/15/2005	Not Available	WEL	Yes
753	003-133124240025	H000241143	Sealed	Not Available	Seddon, Timothy/Ange	560 115th Av Nw	Coon Rapids	39	12/6/2005	Not Available	WEL	Yes
754	003-153124310018	H000245093	Sealed	Not Available	Foley, Jerry	2160 111th La Nw	Coon Rapids	85	5/9/2006	Not Available	WEL	Yes
755	003-133124240038	H000242289	Sealed	Not Available	Provast, Jan	561 114th Av	Coon Rapids	30	4/24/2006	Not Available	WEL	Yes
756	053-2812021320013	H000235606	Sealed	Not Available	Parent Custom Homes	11920 Mississippi Dr	Champlin	85	4/28/2005	Not Available	WEL	Yes
757	053-3312021240028	H000243716	Sealed	Not Available	Girgis, Laila	11421 Yates Ci	Champlin	90	2/27/2006	Not Available	WEL	Yes
758	003-223124220036	H000245505	Sealed	Not Available	Miller, Tim	10882 Thrush St Nw	Coon Rapids	58	2/10/2006	Not Available	WEL	Yes
759	003-123124330014	H000235918	Sealed	Not Available	Fredricks, Ron	11856 Kumquat St Nw	Coon Rapids	38	5/25/2005	Not Available	WEL	Yes
760	053-3212021110029	H000250171	Sealed	Not Available	Hagberg, Paul	6401 117th Av N	Champlin	85	9/5/2006	Not Available	WEL	Yes
761	003-223124410213	H000232075	Sealed	Not Available	Salvation Army	10347 Ibis St Nw	Coon Rapids	120	1/4/2005	Not Available	WEL	Yes
762	053-3412021330022	H000234412	Sealed	Not Available	Zahl Petroleum, Contractor	10917 W River rd	Champlin	58	4/29/2005	Not Available	WEL	Yes
763	003-123124330099	H000234419	Sealed	Not Available	Homolka, Dennis	11880 Norway St	Coon Rapids	30	5/9/2005	Not Available	WEL	Yes
764	003-133124210077	H000234430	Sealed	Not Available	Carter, Joan	11556 Ilex St Nw	Coon Rapids	36	5/26/2005	Not Available	WEL	Yes
765	003-223124240044	H000236659	Sealed	Not Available	Campbell, Anthony	10550 Hanson Bl Nw	Coon Rapids	100	6/23/2005	Not Available	WEL	Approximate
766	003-123124330068	H000236664	Sealed	Not Available	Zigan, James	11856 Magnolia St Nw	Coon Rapids	30	6/27/2005	Not Available	WEL	Yes
767	003-273124120042	H000236665	Sealed	Not Available	Reefer, Jack	9919 Linnet St Nw	Coon Rapids	95	7/1/2005	Not Available	WEL	Yes
768	003-123124220092	H000231799	Sealed	Not Available	Slavin, Jeff/Beverly	608 Main St Nw	Coon Rapids	34	4/22/2005	Not Available	WEL	Yes
769	003-123124220092	H000231800	Sealed	Not Available	Slavin, Jeff/Beverly	608 Main St Nw	Coon Rapids	25	4/22/2005	Not Available	WEL	Yes
770	003-123124340024	H000237135	Sealed	Not Available	Herman Capital	11831 Juniper St Ne	Coon Rapids	38	6/20/2005	Not Available	WEL	Yes
771	003-133124220066	H000238035	Sealed	Not Available	Krueger, Lori	11701 Norway St Nw	Coon Rapids	45	10/4/2005	Not Available	WEL	Yes
772	053-0411921110049	H000230478	Sealed	Not Available	Gonyea Homes	10756 Noble Av N	Brooklyn Park	24	4/4/2005	Not Available	WEL	Approximate
773	053-0411921110049	H000230479	Sealed	Not Available	Gonyea Homes	10756 Noble Av N	Brooklyn Park	38	4/14/2005	Not Available	WEL	Approximate
774	003-223124220054	H000230482	Sealed	Not Available	Dahlman, Harold	2361 108th Av	Coon Rapids	40	4/18/2005	Not Available	WEL	Yes
775	003-223124210033	H000230483	Sealed	Not Available	Ruhl, Franklin	10848 Thrush St	Coon Rapids	22	4/17/2005	Not Available	WEL	Yes
776	003-223124210026	H000230484	Sealed	Not Available	Kroll, Lillian	10841 Thrush St	Coon Rapids	21	4/17/2005	Not Available	WEL	Yes
777	053-3312021240024	H000230571	Sealed	Not Available	Westerveit, Tom	11441 Yates Av N	Champlin	98	11/11/2004	Not Available	WEL	Yes
778	053-2812021320006	H000239497	Sealed	Not Available	Gerber, Larry	12012 Mississippi Dr	Champlin	56	9/14/2005	Not Available	WEL	Yes
779	003-123124330033	H000259639	Sealed	Not Available	Hanken, Tanya	11841 Larch St	Coon Rapids	38	9/10/2007	Not Available	WEL	Yes
780	003-123124330002	H000248594	Sealed	Not Available	Tom Hilden Construction	11849 Kumquat St	Coon Rapids	32	1/24/2007	Not Available	WEL	Yes
781	003-153124320050	H000253252	Sealed	Not Available	Smith, Dan	11221 Swallow St Nw	Coon Rapids	26	11/2/2006	Not Available	WEL	Yes
782	003-183123330006	H000237017	Sealed	Not Available	Novis, Jaime	11020 Seventh St Ne	Blaine	13	9/27/2007	Not Available	WEL	Yes
783	Not Available	H000252915	Sealed	Not Available	Ward, Mary	Not Available	Coon Rapids	180	3/20/2007	Not Available	WEL	Uncertain
784	003-223124220032	H000254907	Sealed	Not Available	Hefty, Tom	10801 Thrush St	Coon Rapids	102	11/6/2006	Not Available	WEL	Yes
785	003-133124220021	H000265307	Sealed	Not Available	Olson, Anita	11600 Norway St Nw	Coon Rapids	30	9/24/2007	Not Available	WEL	Yes
786	003-133124210064	H000253254	Sealed	Not Available	Barsness, Mark	11664 Ilex St Nw	Coon Rapids	38	11/21/2006	Not Available	WEL	Yes
787	003-133124210069	H000245947	Sealed	Not Available	Vincent, Nicole	11624 Ilex St Nw	Coon Rapids	25	1/12/2007	Not Available	WEL	Yes
788	003-253124120012	056563	Sealed	Not Available	Mn Dot	Not Available	Coon Rapids	51	9/12/1995	Not Available	WEL	Uncertain
789	003-133124440088	H000245579	Sealed	Not Available	Peace Lutheran Church	20 Northdale Bl	Coon Rapids	110	8/2/2006	Not Available	WEL	Yes
790	003-133124320023	H000246729	Sealed	Not Available	Paul, Carol	748 112th Av Nw	Coon Rapids	14	6/19/2006	Not Available	WEL	Yes
791	003-263124210008	629339	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids Bl	Coon Rapids	17	4/6/2007	Not Available	WEL	Yes
792	003-263124210008	629340	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids Bl	Coon Rapids	17	4/6/2007	Not Available	WEL	Yes
793	003-263124210008	629341	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids Bl	Coon Rapids	17	4/6/2007	Not Available	WEL	Yes
794	003-263124210008	629342	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids Bl	Coon Rapids	16	4/6/2007	Not Available	WEL	Yes
795	003-263124210008	635407	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids Bl	Coon Rapids	17	4/6/2007	Not Available	WEL	Yes
796	003-263124210008	629343	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids Bl	Coon Rapids	18	4/6/2007	Not Available	WEL	Yes
797	003-123124320066	H000253271	Sealed	Not Available	Pavlenko, Dan	11924 Norway St	Coon Rapids	30	4/5/2007	Not Available	WEL	Yes
798	Not Available	056564	Sealed	Not Available	Mn Dot	Not Available	Coon Rapids	51	9/13/1995	Not Available	WEL	Uncertain
799	Not Available	056565	Sealed	Not Available	Mn Dot	Not Available	Coon Rapids	51	9/14/1995	Not Available	WEL	Uncertain
800	003-223124210024	H000245593	Sealed	Not Available	Weber, Lenard	10849 Thrush St Nw	Coon Rapids	47	9/6/2006	Not Available	WEL	Yes
801	003-223124240063	H000247525	Sealed	Not Available	Sheldon, Gwen	2181 107th Av Nw	Coon Rapids	89	5/24/2006	Not Available	WEL	Yes
802	003-123124330108	H000245573	Sealed	Not Available	Oconner, Shawn	11808 Norway St	Coon Rapids	42	7/18/2006	Not Available	WEL	Yes
803	003-173124220041	H000245564	Sealed	Not Available	Ryman, Tim	3849 116th Av	Coon Rapids	120	6/22/2006	Not Available	WEL	Yes
804	003-163124130010	H000247117	Sealed	Not Available	Borden, Jim	2661 S Heights Dr	Coon Rapids	25	7/19/2006	Not Available	WEL	Yes
805	003-173124220079	H000256122	Sealed	Not Available	Lloyds Construction	3815 Coon Rapids Bl	Coon Rapids	101	3/7/2007	Not Available	WEL	Approximate

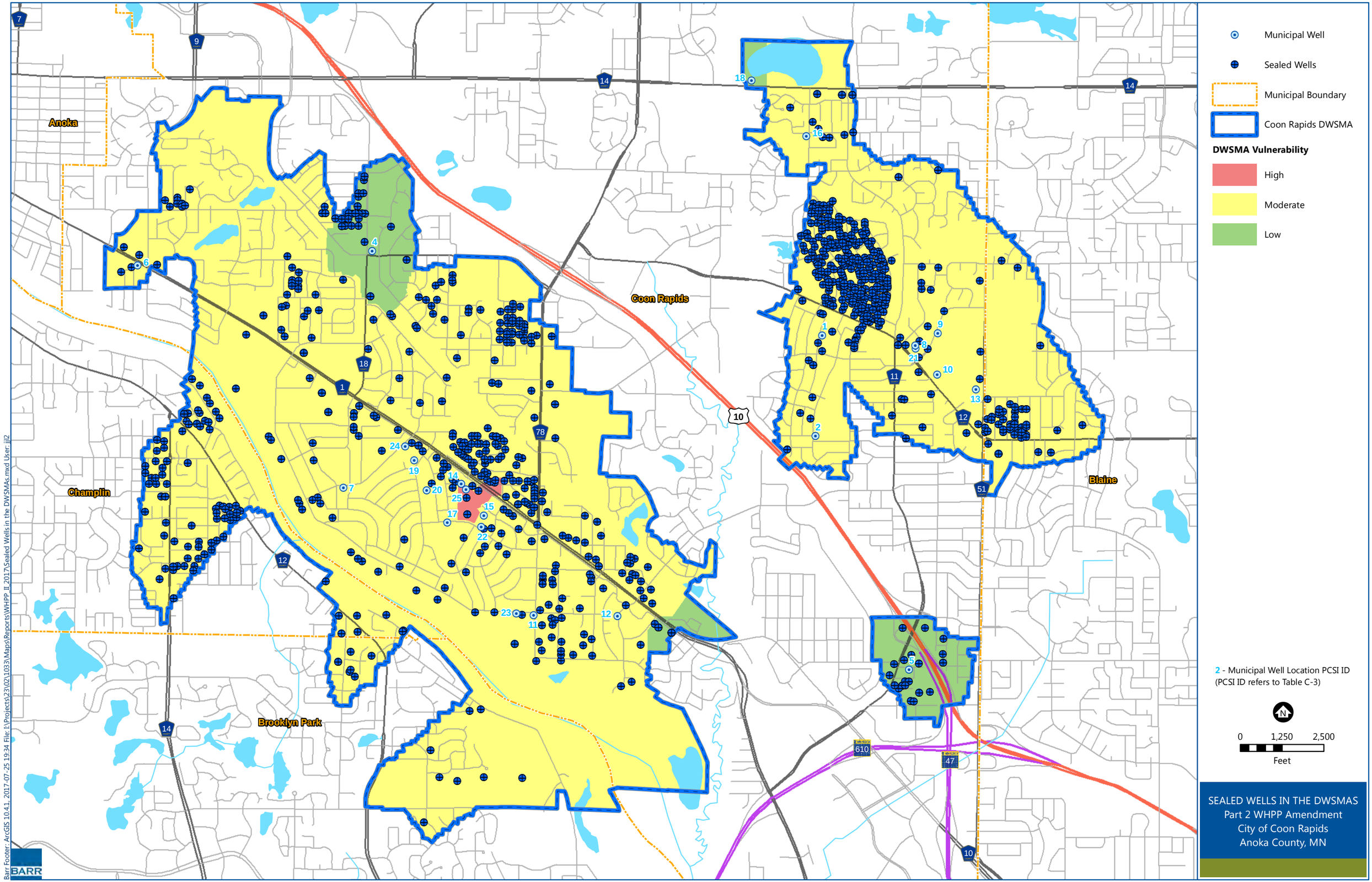
PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
806	003-133124210008	H000245696	Sealed	Not Available	Ramundt, Craig	11631 Kumquat St Nw	Coon Rapids	31	1/16/2007	Not Available	WEL	Yes
807	053-3312021240021	H000265333	Sealed	Not Available	Rekstad, Dennis	11457 Yates Av N	Champlin	108	10/8/2007	Not Available	WEL	Yes
808	003-223124240046	H000248873	Sealed	Not Available	Preuss, Dave	2040 106th Av Nw	Coon Rapids	102	11/7/2007	Not Available	WEL	Yes
809	003-133124230003	H000257796	Sealed	Not Available	Roberts, Jon	671 Northdale Bl	Coon Rapids	29	1/15/2008	Not Available	WEL	Yes
810	003-133124210061	H000266238	Sealed	Not Available	Geidl, Sandra	11621 Larch St Nw	Coon Rapids	28	1/3/2008	Not Available	WEL	Yes
811	053-2812021330019	H000248883	Sealed	Not Available	Oleary, Ryan	11806 Porter Dr N	Champlin	55	3/11/2008	Not Available	WEL	Yes
812	053-2812021320004	H000265706	Sealed	Not Available	Plewacki, Gale	12036 Mississippi Dr	Champlin	44	10/9/2007	Not Available	WEL	Yes
813	053-2812021330004	H000266469	Sealed	Not Available	Kallstrom, Joe	11835 W River rd	Champlin	64	12/27/2007	Not Available	WEL	Yes
814	003-123124330031	H000266823	Sealed	Not Available	Alben, Brian	11825 Larch St Nw	Coon Rapids	38	11/12/2007	Not Available	WEL	Yes
815	053-2812021330013	H000263267	Sealed	Not Available	Dahl, Jim	11817 Porter Dr	Champlin	97	4/22/2008	Not Available	WEL	Yes
816	003-273124110051	H000263558	Sealed	Not Available	Gay, Kimberly	10010 Ibis St	Coon Rapids	50	8/14/2007	Not Available	WEL	Yes
817	003-223124240047	H000255398	Sealed	Not Available	Folk, Larry	2050 106th Av Nw	Coon Rapids	96	5/16/2007	Not Available	WEL	Yes
818	003-133124220085	H000253668	Sealed	Not Available	Spires, Bonnie	670 115th Av Nw	Coon Rapids	25	4/16/2008	Not Available	WEL	Yes
819	003-123124330032	H000262069	Sealed	Not Available	Krieger, Alan	11833 Larch St Nw	Coon Rapids	22	7/24/2007	Not Available	WEL	Yes
820	003-123124330141	H000259619	Sealed	Not Available	Anderson, Judy	11725 Magnolia St Nw	Coon Rapids	41	7/12/2007	Not Available	WEL	Yes
821	003-263124210008	629338	Sealed	Not Available	Coon Rapids, City Of	1350 Coon Rapids Bl	Coon Rapids	17	4/6/2007	Not Available	WEL	Yes
822	003-223124240028	H000237010	Sealed	Not Available	Wincek, Don	2121 107th Av Nw	Coon Rapids	95	7/11/2007	Not Available	WEL	Yes
823	003-173124220079	H000258784	Sealed	Not Available	Kami, Inc.	3815 Coon Rapids Bl Nw	Coon Rapids	24	5/24/2007	Not Available	WEL	Approximate
824	003-123124320050	H000263580	Sealed	Not Available	Johnson, Dorothy	11932 Magnolia St	Coon Rapids	32	9/7/2007	Not Available	WEL	Yes
825	053-2812021330012	H000263268	Sealed	Not Available	Wheeler, Everett	11815 Porter Dr	Champlin	92	4/22/2008	Not Available	WEL	Yes
826	003-153124240010	H000266247	Sealed	Not Available	Coon Rapids, City Of	11301 Osage St	Coon Rapids	110	2/14/2008	Not Available	WEL	Yes
827	003-093124310074	H000255607	Sealed	Not Available	Lilke, John	11953 Eidelweiss St Nw	Coon Rapids	123	5/12/2007	Not Available	WEL	Yes
828	053-2812021330042	H000264266	Sealed	Not Available	Strunge, Jerome	11715 Adair Av N	Champlin	78	8/27/2007	Not Available	WEL	Yes
829	003-123124340045	H000259602	Sealed	Not Available	Sack, Steven	11761 Juniper St Nw	Coon Rapids	37	6/6/2007	Not Available	WEL	Yes
830	003-123124340045	H000259601	Sealed	Not Available	Sack, Steven	11761 Juniper St Nw	Coon Rapids	13	6/6/2007	Not Available	WEL	Yes
831	003-123124330116	H000258974	Sealed	Not Available	Barbara Williams Estate	11731 Olive St	Coon Rapids	30	6/27/2007	Not Available	WEL	Yes
832	003-123124340038	H000272443	Sealed	Not Available	Leblanc, Melanie	11700 Ilex St Nw	Coon Rapids	52	8/20/2008	Not Available	WEL	Yes
833	003-153124240046	H000275776	Sealed	Not Available	Wholesale Home Improvements	11408 Partridge St Nw	Coon Rapids	132	5/22/2009	Not Available	WEL	Yes
834	053-3312021240051	H000279202	Sealed	Not Available	Whaley, Doug L.	11301 Yates Av N	Champlin	56	4/29/2009	Not Available	WEL	Approximate
835	003-133124220009	H000250987	Sealed	Not Available	Knight, Jean	11670 Olive St	Coon Rapids	56	6/6/2009	Not Available	WEL	Yes
836	003-123124340046	H000262096	Sealed	Not Available	Kraft, Steve	11771 Juniper St	Coon Rapids	31	6/10/2008	Not Available	WEL	Yes
837	053-3212021110048	H000259743	Sealed	Not Available	Ziegler, Nancy	11610 Edgewood Av	Champlin	69	3/24/2009	Not Available	WEL	Yes
838	003-123124340006	H000274826	Sealed	Not Available	Reimer, Cheri	11711 Kumquat St	Coon Rapids	30	7/28/2009	Not Available	WEL	Yes
839	003-273124110054	H000278223	Sealed	Not Available	Nierengarten, David	9940 Ibis St Nw	Coon Rapids	91	7/2/2009	Not Available	WEL	Yes
840	003-133124240013	H000268789	Sealed	Not Available	Bautch, Josh	610 115th Av	Coon Rapids	20	7/8/2008	Not Available	WEL	Yes
841	003-133124230072	H000274393	Sealed	Not Available	Dennis, Steve	719 113th Av Nw	Coon Rapids	22	9/23/2008	Not Available	WEL	Yes
842	003-213124310017	H000263282	Sealed	Not Available	Nist, F. Marcine	10346 Mississippi Bl	Coon Rapids	48	7/16/2008	Not Available	WEL	Yes
843	003-133124240016	H000237037	Sealed	Not Available	Weispfenning, Rich	621 Northdale Bl Nw	Coon Rapids	31	8/27/2008	Not Available	WEL	Yes
844	003-133124220033	H000271701	Sealed	Not Available	Ebert, Ewald	11621 Olive St Nw	Coon Rapids	38	6/17/2008	Not Available	WEL	Yes
845	003-153124230100	H000097662	Sealed	Not Available	Schultz, David	2315 114th La Nw	Coon Rapids	21	9/15/1989	Not Available	WEL	Yes
846	003-253124130035	H000128235	Sealed	Not Available	Smith, Harold W.	231 99th Av Nw	Coon Rapids	20	12/23/1992	Not Available	WEL	Approximate
847	Not Available	H000277043	Sealed	Not Available	Central Bank	Not Available	Not Available	50	7/7/2010	Not Available	WEL	Uncertain
848	003-223124130106	H000292479	Sealed	Not Available	Moore, Janet	1941 105th La Nw	Coon Rapids	155	1/4/2011	Not Available	WEL	Yes
849	003-163124440062	H000269577	Sealed	Not Available	Hartfiel, Mark	11040 Yukon St Nw	Coon Rapids	22	5/14/2010	Not Available	WEL	Yes
850	003-153124240073	H000293540	Sealed	Not Available	Amborn, Cheryl	11432 Quinn St Nw	Coon Rapids	85	3/4/2011	Not Available	WEL	Yes
851	003-093124310075	H000290233	Sealed	Not Available	Elliott, Kathy	11952 Crooked Lake Bl	Coon Rapids	68	3/24/2011	Not Available	WEL	Yes
852	053-3312021240042	H000288981	Sealed	Not Available	Nelson, Tim	11448 Yates Av N	Champlin	135	7/23/2010	Not Available	WEL	Yes
853	053-3312021320039	H000289699	Sealed	Not Available	Schnitzler, Brad	6016 111TH Av N	Champlin	55	4/21/2011	Not Available	WEL	Yes
854	Not Available	H000289760	Sealed	Not Available	Coon Rapids, City Of	Not Available	Not Available	85	10/21/2010	Not Available	WEL	Uncertain
855	003-133124220061	H000286244	Sealed	Not Available	Schwantz, Rob	11601 Norway St	Coon Rapids	30	3/18/2011	Not Available	WEL	Yes
856	003-133124210051	H000290237	Sealed	Not Available	Wandzel, Nancy	11500 Kumquat St Nw	Coon Rapids	39	4/8/2011	Not Available	WEL	Yes
857	003-113124440018	H000289757	Sealed	Not Available	Kapler, Ken	11816 Olive St	Coon Rapids	26	11/29/2010	Not Available	WEL	Yes
858	003-233124330032	H000278264	Sealed	Not Available	Kinseth, Judy	1520 103rd Av Nw	Coon Rapids	102	10/22/2009	Not Available	WEL	Yes
859	003-133124220054	H000278276	Sealed	Not Available	Jost, Evelyn	11500 Magnolia St Nw	Coon Rapids	27	12/8/2009	Not Available	WEL	Yes
860	003-223124220056	H000274834	Sealed	Not Available	Faroane, Dale	2410 108th Av Nw	Coon Rapids	123	10/23/2009	Not Available	WEL	Yes
861	003-213124220005	H000275657	Sealed	Not Available	Marilyn Carnell Trust	10760 Mississippi Bl Nw	Coon Rapids	88	6/11/2009	Not Available	WEL	Yes
862	003-223124220041	H000278274	Sealed	Not Available	Lubbers, Brian	10860 Thrush St	Coon Rapids	115	11/16/2009	Not Available	WEL	Yes
863	003-223124440036	H000280908	Sealed	Not Available	Rapid Properties, Llc	1620 103rd Av Nw	Coon Rapids	115	11/16/2009	Not Available	WEL	Yes
864	003-123124330085	H000284454	Sealed	Not Available	Cerny, Elaine	11771 Norway St Nw	Coon Rapids	40	10/7/2009	Not Available	WEL	Yes
865	053-1011921210017	H000269567	Sealed	Not Available	Brooklyn Park, City Of	10047 Fall Gold Parkway	Brooklyn Park	18	8/18/2009	Not Available	WEL	Yes
866	053-2912021440004	H000278129	Sealed	Not Available	Purlieus Properties, Inc.	11707 Douglas Dr N	Champlin	45	9/1/2009	Not Available	WEL	Yes
867	003-123124330025	H000280815	Sealed	Not Available	Michaelson, Keith	11773 Larch St	Coon Rapids	28	9/4/2009	Not Available	WEL	Yes
868	003-123124320059	H000297865	Sealed	Not Available	Johnson, Kurtis	11933 Norway St Nw	Coon Rapids	25	1/17/2012	Not Available	WEL	Yes
869	003-123124330143	H000294550	Sealed	Not Available	Montgomery, Anna	11741 Magnolia St	Coon Rapids	145	12/6/2011	Not Available	WEL	Yes
870	003-133124330009	H000300484	Sealed	Not Available	Watje, Wendy	11004 Magnolia St	Coon Rapids	20	11/23/2011	Not Available	WEL	Yes
871	003-223124420015	H000301056	Sealed	Not Available	Scheunemann, Roger	1911 Coon Rapids Bl	Coon Rapids	140	11/30/2011	Not Available	WEL	Yes
872	003-253124130005	H000297860	Sealed	Not Available	Le, Hu	9858 Foley Bl Nw	Coon Rapids	40	12/28/2011	Not Available	WEL	Yes

PCSI Results - Sealed Wells in the DWSMAs
City of Coon Rapids Part 2 WHPP Amendment

PCSI ID	PID No.	Unique No.	Status	Use	Well Owner	Well Location	City	Total Sealed Depth (Feet)	Date Completed/Sealed	Aquifer	PCS Code	Location Verified
873	003-223124310057	H000301054	Sealed	Not Available	Deutsche Bank National Trust Co.	10465 Partridge St Nw	Coon Rapids	21	11/19/2011	Not Available	WEL	Yes
874	003-163124330044	H000303034	Sealed	Not Available	Coon Rapids, City Of	2996 111th Av Nw	Coon Rapids	40	3/28/2012	Not Available	WEL	Approximate
875	003-163124330044	H000303033	Sealed	Not Available	Coon Rapids, City Of	2966 111th Av Nw	Coon Rapids	40	3/28/2012	Not Available	WEL	Approximate
876	003-173124210045	H000303032	Sealed	Not Available	Coon Rapids, City Of	3789 Coon Rapids Bl	Coon Rapids	24	3/27/2012	Not Available	WEL	Approximate
877	003-183123330044	H000097595	Sealed	Not Available	Lamb, Daniel	10932 Sixth St Ne	Blaine	18	5/11/1990	Not Available	WEL	Yes
878	003-133124210085	H000292486	Sealed	Not Available	Bornes, Dean	11571 Juniper St	Coon Rapids	48	3/30/2011	Not Available	WEL	Yes
879	Not Available	H000289994	Sealed	Not Available	Us Bank Na Nd	Not Available	Not Available	21	10/26/2010	Not Available	WEL	Uncertain
880	Not Available	H000291359	Sealed	Not Available	Humbert, Ronald	Not Available	Not Available	159	9/27/2010	Not Available	WEL	Uncertain
881	Not Available	H000291358	Sealed	Not Available	Johnson, Robert	Not Available	Not Available	89	10/10/2010	Not Available	WEL	Uncertain
882	003-183123330071	H000097593	Sealed	Not Available	Moorhouse, Larry	11014 Fifth St Ne	Blaine	20	5/22/1990	Not Available	WEL	Yes
883	003-183123330074	H000097594	Sealed	Not Available	Hud	10944 Fifth St Ne	Blaine	20	5/22/1990	Not Available	WEL	Yes
884	003-093124340010	H000097635	Sealed	Not Available	Morehouse, James	2911 118th La	Coon Rapids	27	7/20/1990	Not Available	WEL	Yes
885	003-223124430038	H000097636	Sealed	Not Available	Youakim, Maurice	10227 Hanson Bl	Coon Rapids	65	7/19/1990	Not Available	WEL	Yes
886	003-223124430038	H000097637	Sealed	Not Available	Youakim, Maurice	10227 Hanson Bl	Coon Rapids	30	7/19/1990	Not Available	WEL	Yes
887	003-133124220047	H000097640	Sealed	Not Available	Kocur, Bill	11600 Magnolia St Nw	Coon Rapids	30	7/30/1990	Not Available	WEL	Yes
888	Not Available	H000279393	Sealed	Not Available	Midgely, Orville	Not Available	Not Available	87	10/22/2010	Not Available	WEL	Uncertain
889	003-223124220065	H000286227	Sealed	Not Available	Galebach, Troy	2320 108th Av	Coon Rapids	106	9/21/2010	Not Available	WEL	Yes
890	003-133124240053	H000097643	Sealed	Not Available	Friton, David	11501 Juniper St Nw	Coon Rapids	55	5/16/1990	Not Available	WEL	Yes
891	003-223124230002	H000097645	Sealed	Not Available	Coon Rapids, City Of	2301 105th Av Nw	Coon Rapids	25	5/11/1990	Not Available	WEL	Approximate
892	003-163124220016	H000097648	Sealed	Not Available	Century 21 Realty	3011 115th Av	Coon Rapids	25	4/27/1990	Not Available	WEL	Yes
893	003-093124340020	H000097653	Sealed	Not Available	Anderson, Kevin D.	2910 118th La	Coon Rapids	23	2/4/1990	Not Available	WEL	Yes
894	003-153124240012	H000097654	Sealed	Not Available	Peterson, Carl	11333 Partridge St	Coon Rapids	136	2/16/1990	Not Available	WEL	Yes
895	003-133124220032	H000289769	Sealed	Not Available	Storkan, Doug	11601 Olive St	Coon Rapids	15	11/29/2010	Not Available	WEL	Yes
896	003-143124440015	H000292491	Sealed	Not Available	Henseth, Debbie	11022 Norway St	Coon Rapids	22	4/23/2011	Not Available	WEL	Yes
897	053-3212021110041	H000290442	Sealed	Not Available	Hennepin County	11651 Douglas Dr	Champlin	89	9/21/2010	Not Available	WEL	Yes
898	053-3212021140126	H000290440	Sealed	Not Available	Hennepin County	11311 Douglas Dr	Champlin	24	9/21/2010	Not Available	WEL	Yes
899	003-133124430004	H000286313	Sealed	Not Available	Murry, Tom	343 111th Av	Coon Rapids	23	5/10/2010	Not Available	WEL	Yes
900	003-223124430025	H000277044	Sealed	Not Available	Central Bank	Not Available	Not Available	90	7/7/2010	Not Available	WEL	Uncertain
901	003-163124340015	H000294501	Sealed	Not Available	Songstad, Vern	10941 Crooked Lake Bl	Coon Rapids	47	6/28/2011	Not Available	WEL	Yes
902	003-183123240075	H000306882	Sealed	Not Available	Durkot, Alan	11311 Seventh St	Blaine	33	9/7/2012	Not Available	WEL	Yes
903	003-163124140071	H000301250	Sealed	Not Available	Petersdorph Co.	11414 Xavis St	Coon Rapids	24	8/16/2012	Not Available	WEL	Yes
904	003-093124340040	H000306275	Sealed	Not Available	Schirmers, Bruce	2960 119th La Nw	Coon Rapids	74	9/20/2012	Not Available	WEL	Yes
905	003-153124240067	H000305492	Sealed	Not Available	Schmidt, Ruth E.	11441 Quinn St Nw	Coon Rapids	107	7/23/2012	Not Available	WEL	Yes
906	003-163124330044	H000292422	Sealed	Not Available	Coon Rapids, City Of	2980 Coon Rapids Bl	Coon Rapids	35	7/8/2011	Not Available	WEL	Approximate
907	003-163124330044	H000292421	Sealed	Not Available	Coon Rapids, City Of	3026 111th Av Nw	Coon Rapids	35	7/8/2011	Not Available	WEL	Approximate
908	003-163124330044	H000292423	Sealed	Not Available	Coon Rapids, City Of	2900 Coon Rapids Bl	Coon Rapids	35	7/8/2011	Not Available	WEL	Approximate
909	003-163124340003	H000301188	Sealed	Not Available	Peoples Bank Of Commerce	2810 Coon Rapids Bl	Coon Rapids	37	12/21/2011	Not Available	WEL	Yes
910	003-213124310015	H000300315	Sealed	Not Available	Walsh, Paul	10360 Mississippi Bl	Coon Rapids	131	12/28/2011	Not Available	WEL	Yes
911	003-223124220061	H000298941	Sealed	Not Available	Hanson, Marlene	2360 108th Av Nw	Coon Rapids	88	3/20/2012	Not Available	WEL	Yes
912	003-163124340003	H000270822	Sealed	Not Available	Nova Consulting Group	2810 Coon Rapids Bl	Coon Rapids	39	2/10/2012	Not Available	WEL	Yes
913	003-133124210022	H000299726	Sealed	Not Available	Wolf, Alvin	11670 Kumquat St Nw	Coon Rapids	31	9/27/2011	Not Available	WEL	Yes
914	003-093124340008	H000299740	Sealed	Not Available	Jadwin, Sandra K.	2851 118th La Nw	Coon Rapids	30	10/26/2011	Not Available	WEL	Yes
915	003-223124240023	H000294210	Sealed	Not Available	Easthouse, Larry	2041 107th Av	Coon Rapids	92	10/13/2011	Not Available	WEL	Yes
916	003-163124110027	H000297130	Sealed	Not Available	Getchell, Randy	11571 Wren St Nw	Coon Rapids	23	5/23/2012	Not Available	WEL	Yes
917	003-133124210013	H000299068	Sealed	Not Available	Youngman, Leona	11571 Kumquat St	Coon Rapids	70	10/5/2011	Not Available	WEL	Yes
918	003-133124210039	H000305484	Sealed	Not Available	Maurstad, Matt	11630 Kumquat St Nw	Coon Rapids	32	7/2/2012	Not Available	WEL	Yes
919	003-183123330093	H000306284	Sealed	Not Available	Jacquemart, Anita	11019 Fourth St Ne	Blaine	20	11/5/2012	Not Available	WEL	Yes
920	003-133124210023	H000307330	Sealed	Not Available	Ulferts, Gary	11660 Kumquat St	Coon Rapids	28	10/30/2012	Not Available	WEL	Yes
921	053-2812021320011	H000304506	Sealed	Not Available	Orr, Richard	11936 Mississippi Dr	Champlin	36	8/8/2012	Not Available	WEL	Yes
922	003-133124410018	224657	Sealed	Abandoned	Coon Rapids T.W.13	Not Available	Coon Rapids	680	00/00/1975	Not Available	WEL	Uncertain
923	Not Available	202940	Sealed	Community Supply (municipal - Coon Rapids)	Coon Rapids 3	Not Available	Coon Rapids	145	Not Available	QBAA	WEL	Uncertain
924	003-223124440002	H000350171	Sealed	Not Available	City of Coon Rapids	1520 Coon Rapids Blvd	Coon Rapids	70	7/6/2017	Not Available	WEL	Yes

Approximate - Parcel not found but location is approximately where that address would exist
Uncertain - Not enough address information to verify location

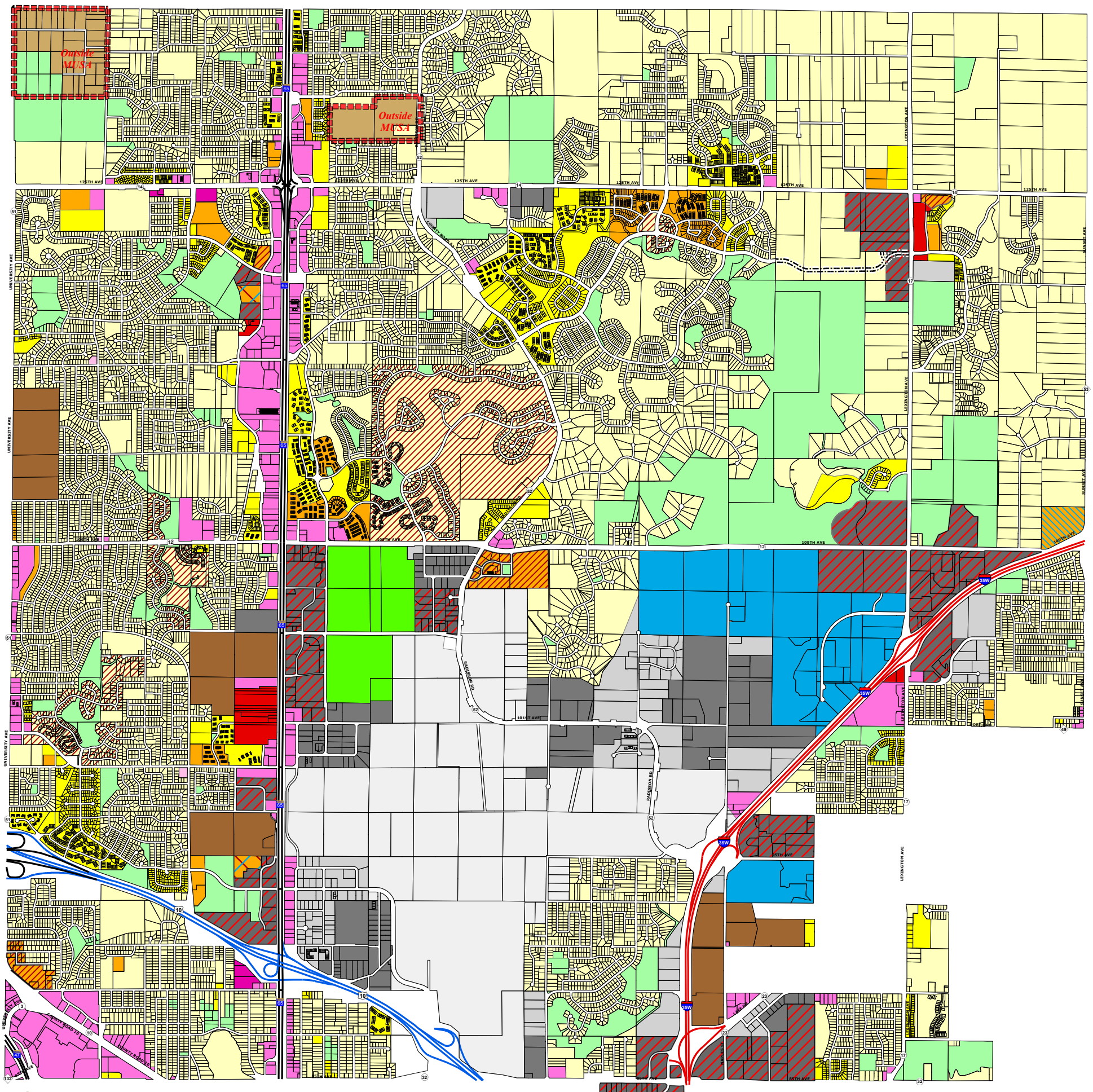

Municipal Well
Sealed Wells
Municipal Boundary
Coon Rapids DWSMA
DWSMA Vulnerability
High
Moderate
Low
2 - Municipal Well Location PCSI ID
(PCSI ID refers to Table C-3)
0
1,250
2,500
Feet
SEALED WELLS IN THE DWSMAS
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN
Anoka
Champlin
Brooklyn Park
Coon Rapids
Blaine
BARR
Barr Footer: ArcGIS 10.4.1, 2017-07-25 19:34 File: I:\Projects\23\02\1033\Maps\Reports\WHPP_II_2017\Sealed Wells in the DWSMAs.mxd User: jjl2

Attachment C-4

Maps for other Jurisdictions

Comprehensive Land Use Plan

City of Blaine, MN



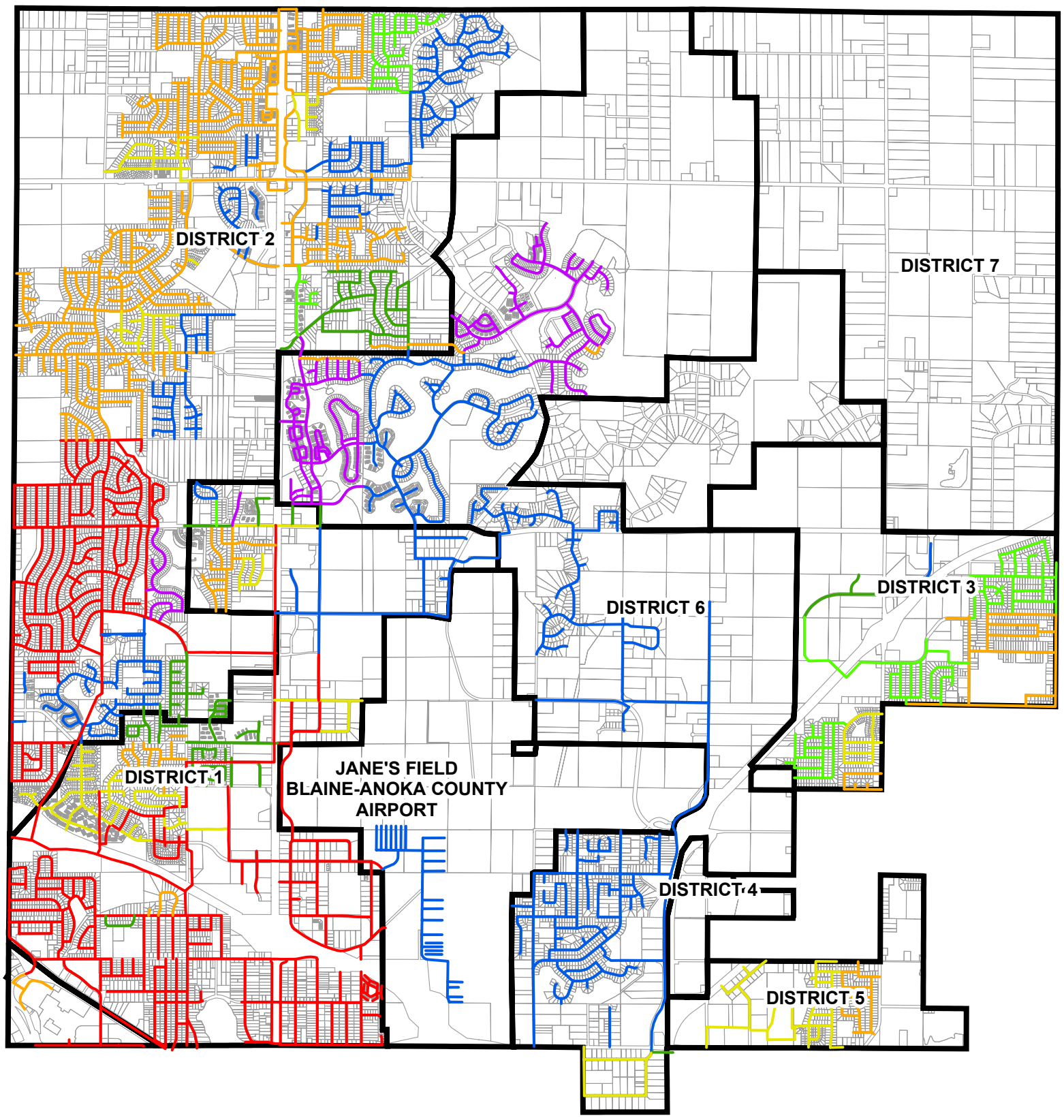
Disclaimer: This document has been compiled using information gathered from various governmental offices and other sources and is to be used for reference purposes only. Every effort has been made to make sure the completeness and accuracy on this document. The City of Blaine does not represent that the data can be used for exact measurement of distance or direction or precision in the depiction of geographic features. If errors or discrepancies are found, please contact (763) 717-2639.

This map is in draft form and should not be looked upon as a legal document.
Map Created By City of Blaine GIS
Data provided by City of Blaine Planning Department
Map Date: November 2016

Legend

- Interstate Highway
- US Highway
- State Highway
- LDR - Low Density Residential
- L-MDR - Low/Medium Density Res.
- MDR - Medium Density Residential
- MDR/PC
- HDR - High Density Residential
- HDR/PC
- HDR/PI
- HDR/PI/PC
- MHR - Mobile Home Residential
- LI - Light Industrial
- HI - Heavy Industrial
- PI - Planned Industrial
- NC - Neighborhood Commercial
- CC - Community Commercial
- PC - Planned Commercial
- PI/PC - Planned Ind./Comm.
- O - Office
- R - Rural Residential
- P/OS - Park / Open Space
- RR - Regional Recreation
- AP - Airport

Planning\Projects\Land Use Map Small.mxd



LEGEND

PARCELS

SANITARY SEWER DISTRICTS

YEAR BUILT

- 1965 to 1969
- 1970 to 1979
- 1980 to 1984
- 1985 to 1989
- 1990 to 1994
- 1995 to 1999
- 2000 to 2004

This map shows preliminary data of the year built on the City if Blaine sanitary sewer system. Dates and locations have not been checked against as-built drawings.

Map Document: (X:\AE\Blain\040200\GIS\Fig_2_PipeAge_SanitarySewer_Blaine_11x17.mxd)
8/17/2005 -- 11:27:21 AM

0 2,000 4,000 8,000 Feet

SEH

3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110
PHONE: (651) 490-2000
FAX: (651) 490-2150
WATTS: 800-325-2055
www.sehinc.com

FILE NO.
ABLAIN0402.00

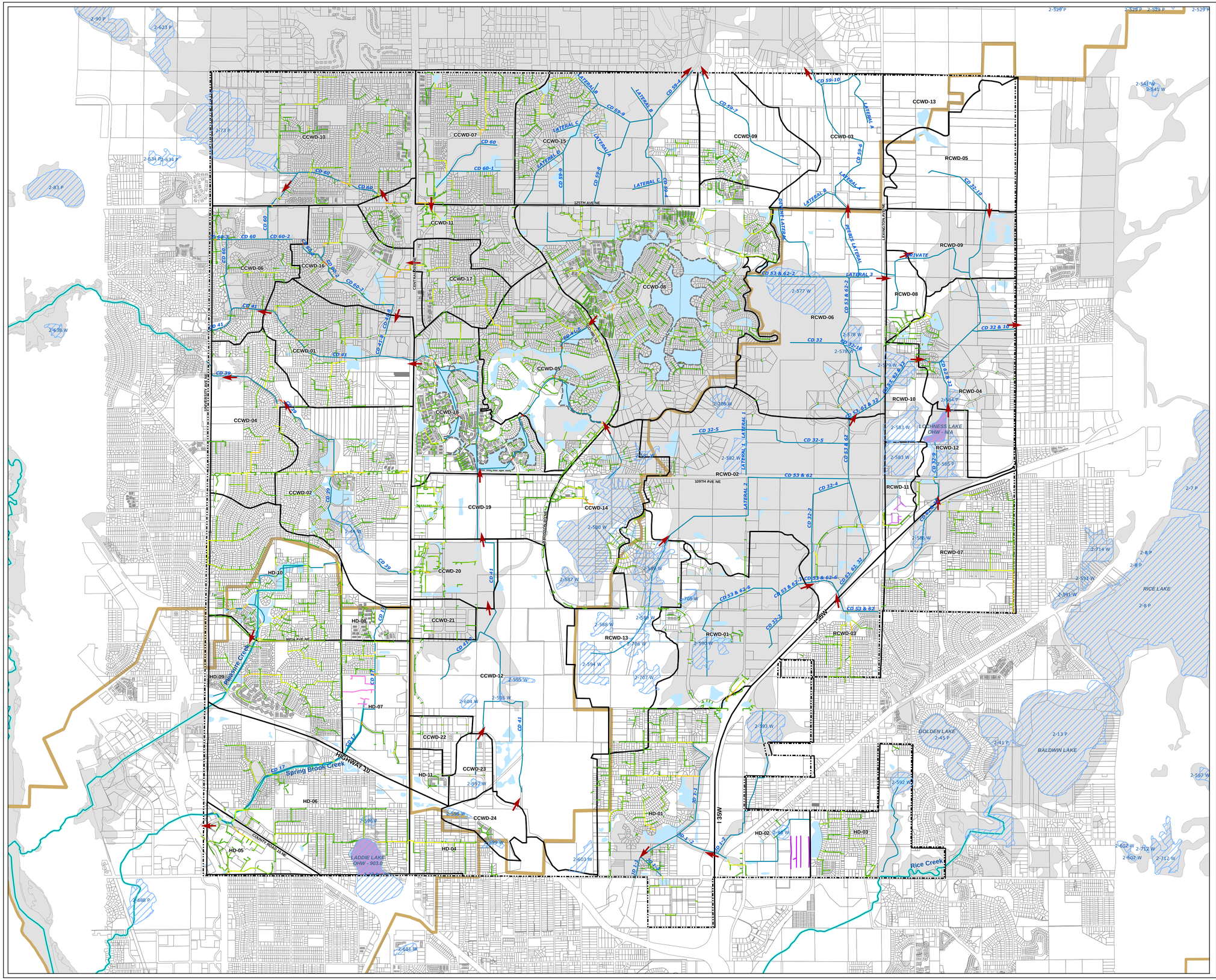
March 1, 2005

CITY OF BLAINE
SANITARY SEWER SYSTEM
ESTIMATED CONSTRUCTION DATES

Figure
2

Existing Storm Sewer Map

Storm Water Management Plan
City of Blaine, Minnesota
Map 1



Storm Pipes
- <= 12"
- 15"
- 18"
- 20"
- 21"
- 22"
- 24"
- 27"
- 28"
- 29"
- 30"
- 31"
- 33"
- 36"
- 40"
- 42"
- 43"
- 44"
- 45"
- 48"
- 54"
- 58"
- 60"
- 62"
- 65"
- 72"
- 78"
- 88"
- 114"
- 120"
- CFT
- PRV
- SPB

- Ponds
- PWI
- Public Water
- Ditches
- Impaired Waters
- Flow Arrows
- Man-Made Basins
- FEMA
- Drainage Area Boundary
- WMO
- City Boundary

N

1,800 0 1,800 Feet

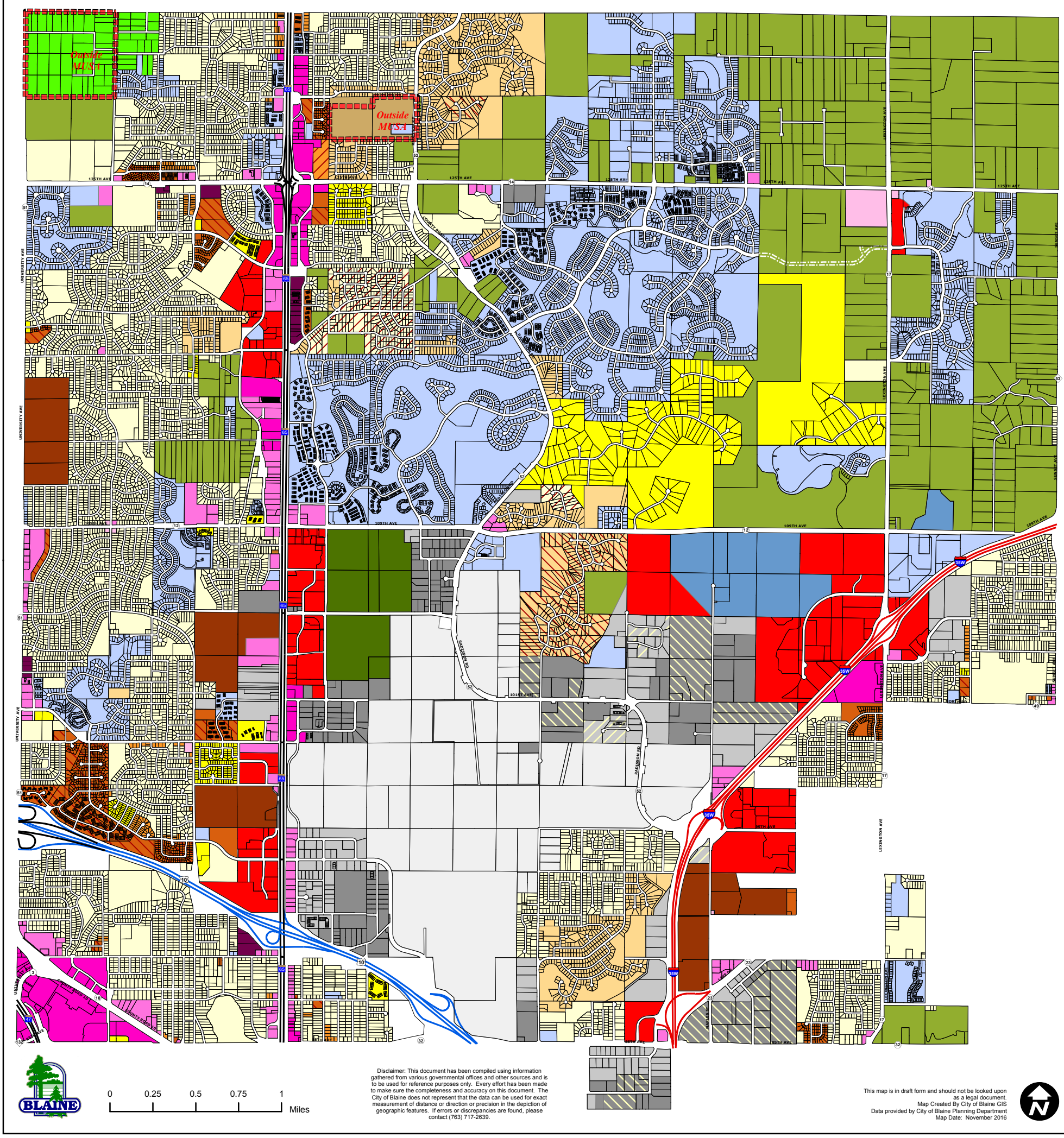
October 2008

Bonestroo

I:/654/65407002/GIS/Projects/Map1_storn sewer.mxd

Zoning Map

City of Blaine, MN



Legend

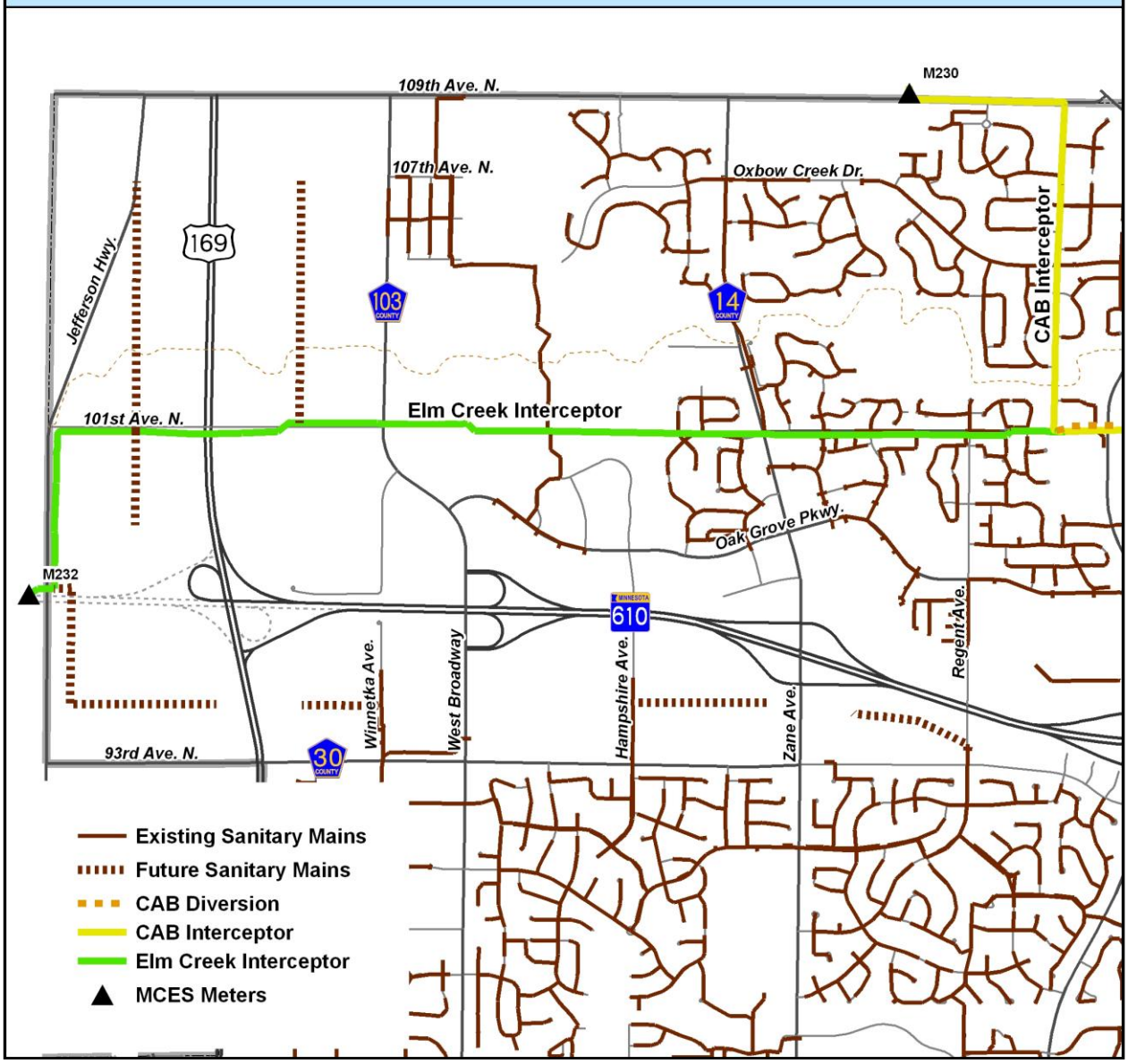
- Interstate Highway
- US Highway
- State Highway
- B-1 - Neighborhood Business
- B-2 - Community Commercial
- B-3 - Regional Commercial
- B-4 - Office Research Park
- DF - Development Flex
- Airport
- I-1 - Light Industrial
- I-1A - Light Industrial
- I-2 - Heavy Industrial
- I-2A - Heavy Industrial
- PBD - Planned Business District
- POD - Planned Office District
- R-1 - Single Family
- R-1A - Single Family
- R-1AA - Single Family
- R-1B - Single Family
- R-2 - Two Family
- R-3A - Low Density Multi-Family
- R-3B - Medium Density Multi-Family
- R-3C - High Density Multi-Family
- R-4 - Mobile Homes
- RE - Residential Estate
- RF - Residential Flex
- RR - Regional Recreation
- AG - Agriculture
- FR - Farm Residence

Planning\Projects\Zoning Map Small.mxd

- The City of Maple Grove serves two religious buildings in the northwest part of Brooklyn Park.

Figure 6.4.2B: Planned Sanitary Sewer

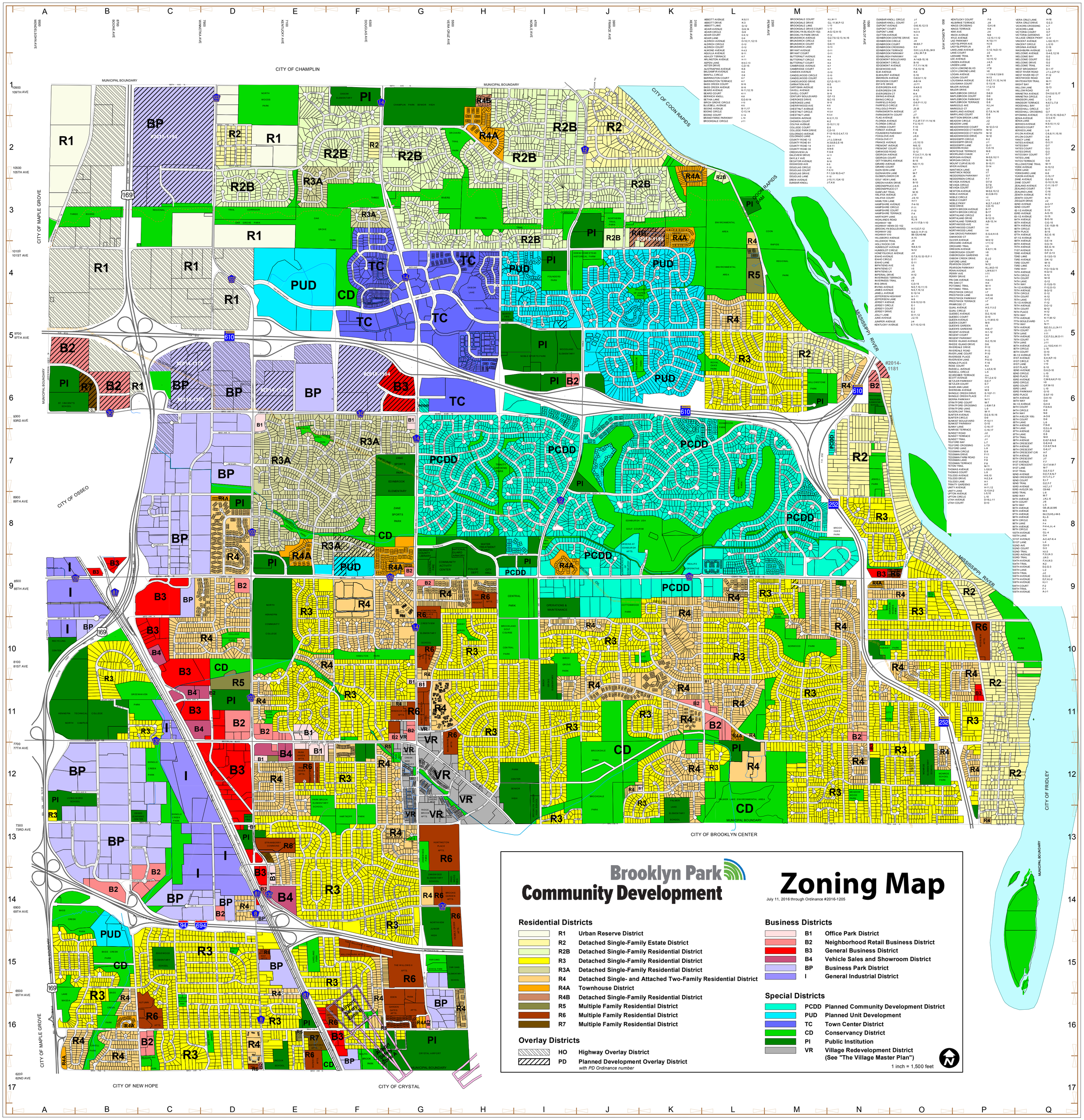
February 2008



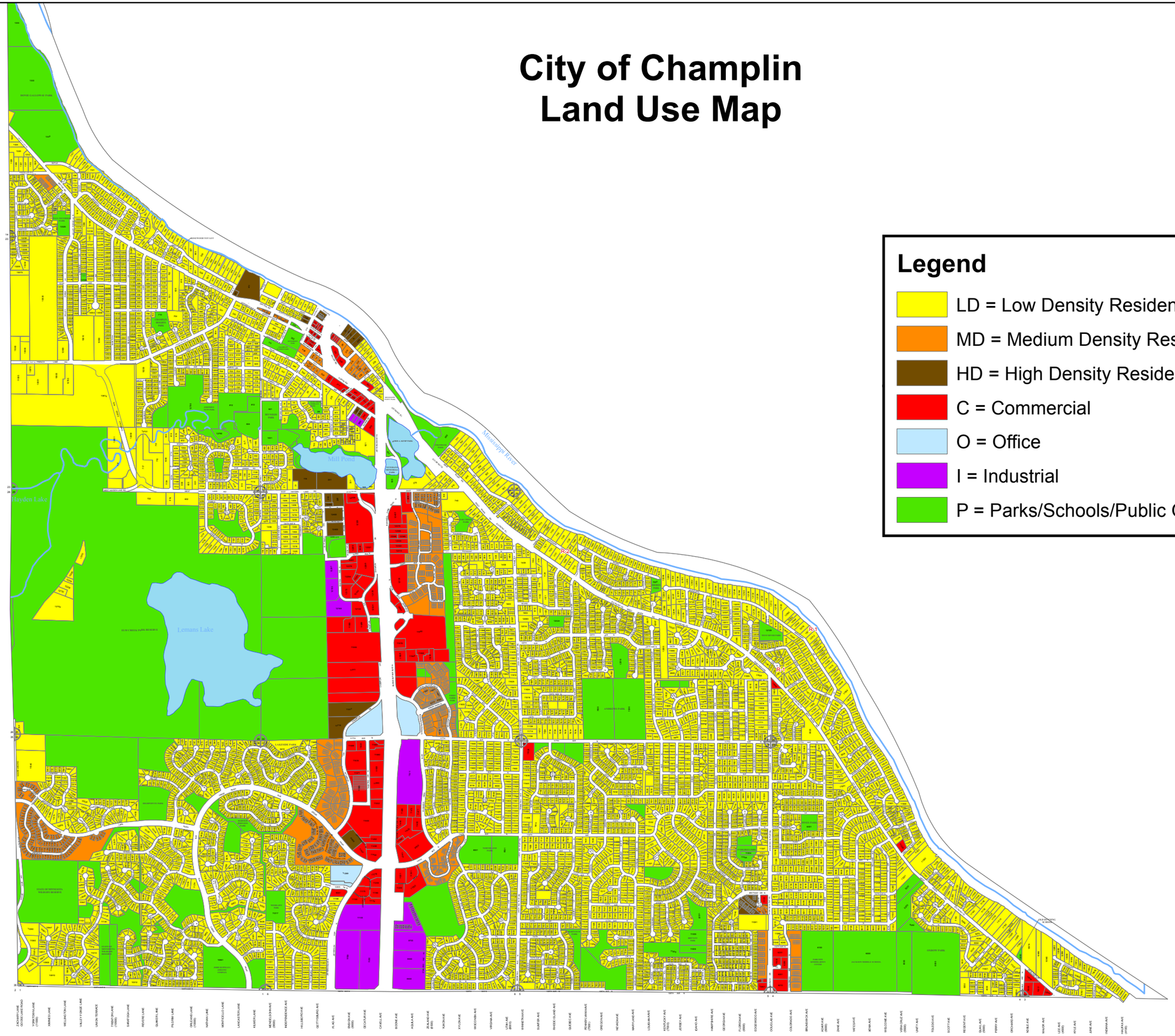
Maintenance

The City of Brooklyn Park Operations and Maintenance Department is responsible for all maintenance activities associated with the City's sanitary sewer system. There are no major outstanding maintenance issues with the sanitary sewer system at this time. Preventive maintenance is conducted by the department on a regular basis, including:

- Replacement of clay pipe house services within the right of way during street reconstruction projects
- Rehabilitation and replacement of clay pipe mains


Brooklyn Park
Community Development
Zoning Map
July 11, 2016 through Ordinance #2016-1205
Residential Districts
R1 Urban Reserve District
R2 Detached Single-Family Estate District
R2B Detached Single-Family Residential District
R3 Detached Single-Family Residential District
R3A Detached Single-Family Residential District
R4 Detached Single- and Attached Two-Family Residential District
R4A Townhouse District
R4B Detached Single-Family Residential District
R5 Multiple Family Residential District
R6 Multiple Family Residential District
R7 Multiple Family Residential District
Overlay Districts
HO Highway Overlay District
PD Planned Development Overlay District
with PD Ordinance number
Business Districts
B1 Office Park District
B2 Neighborhood Retail Business District
B3 General Business District
B4 Vehicle Sales and Showroom District
BP Business Park District
I General Industrial District
Special Districts
PCDD Planned Community Development District
PUD Planned Unit Development
TC Town Center District
CD Conservancy District
PI Public Institution
VR Village Redevelopment District
(See "The Village Master Plan")
1 inch = 1,500 feet
CITY OF CHAMPLIN
CITY OF COON RAPIDS
CITY OF OSSEO
CITY OF MAPLE GROVE
CITY OF BROOKLYN CENTER
CITY OF FRIDLEY
CITY OF NEW HOPE
CITY OF CRYSTAL
MUNICIPAL BOUNDARY
MISSISSIPPI RIVER
#2014-1181
#2015-194
#2016-1195

City of Champlin
Land Use Map



N
W E
S

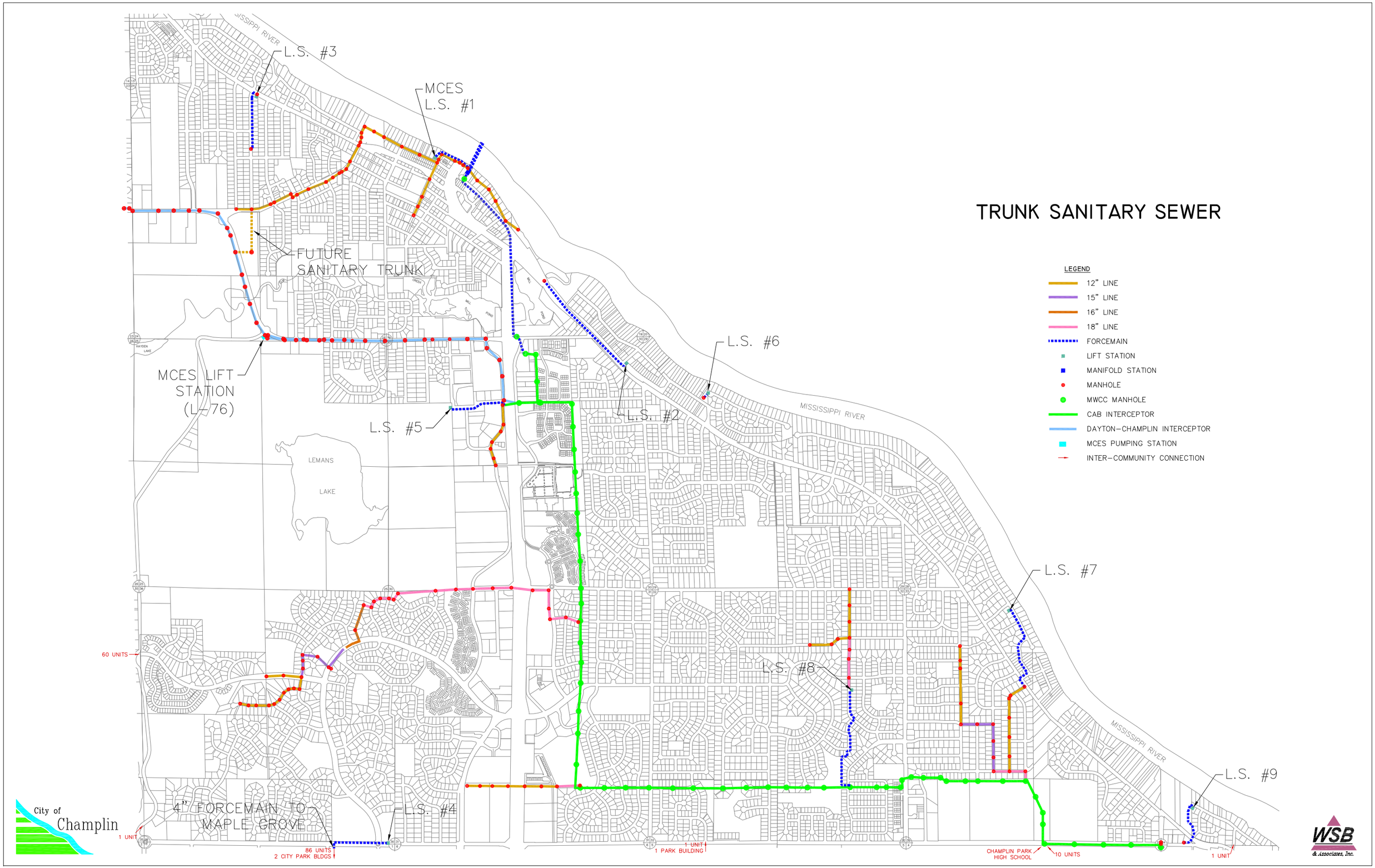
0 2,000 Feet

Legend

- LD = Low Density Residential - This Land Use
- MD = Medium Density Residential
- HD = High Density Residential
- C = Commercial
- O = Office
- I = Industrial
- P = Parks/Schools/Public Open Space

* Created by City of Champlin GIS
September 2011

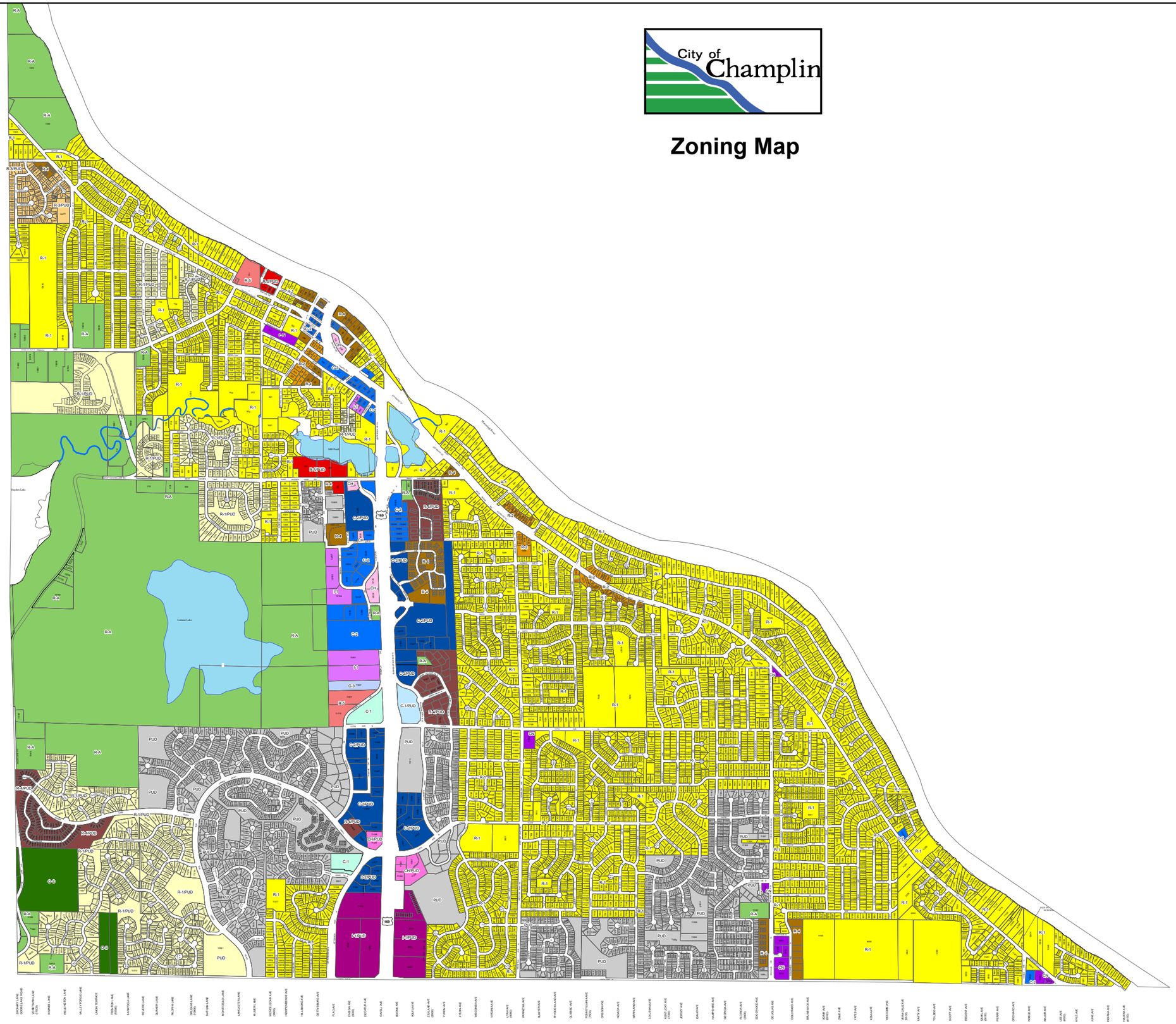
TRUNK SANITARY SEWER



K:\01684-32\Cad\Plan\Champlin Sanitary Map.dwg, 12/1/2008 3:34:19 PM

City of Champlin

Zoning Map

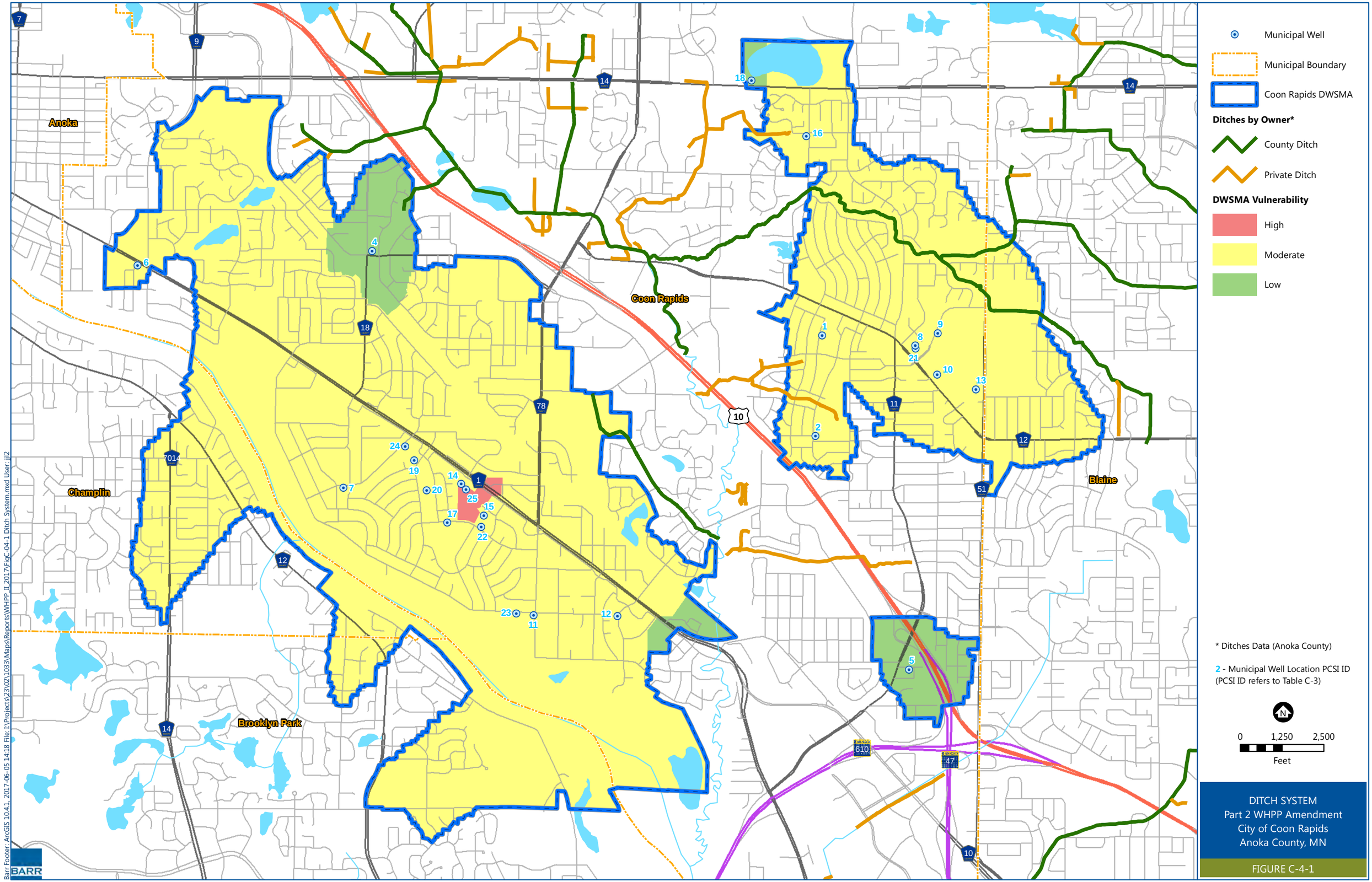


N

0 750 1,500 3,000 Feet

Legend

- C-1 Commercial Office
- C-1/PUD
- C-2 Commercial General Business
- C-2/PUD
- C-3 Commercial Mini-Storage
- CH Commercial Highway
- CH/PUD
- CN Commercial Neighborhood
- I-1 Industrial
- I-1/PUD
- O-S Open Space
- PARK
- PUD Planned Unit Development
- R-1 Single Family Residential
- R-1/PUD
- R-2 Two-Family Residential
- R-3/PUD
- R-4 Medium Density Residential
- R-4/PUD
- R-5 High Density Residential
- R-5/PUD
- R-A Residential Agricultural


Municipal Well
Municipal Boundary
Coon Rapids DWSMA
Ditches by Owner*
County Ditch
Private Ditch
DWSMA Vulnerability
High
Moderate
Low
Anoka
Coon Rapids
Champlin
Brooklyn Park
Blaine
* Ditches Data (Anoka County)
2 - Municipal Well Location PCSI ID
(PCSI ID refers to Table C-3)
0
1,250
2,500
Feet
DITCH SYSTEM
Part 2 WHPP Amendment
City of Coon Rapids
Anoka County, MN
FIGURE C-4-1
BARR
Barr Footer: ArcGIS 10.4.1, 2017-06-05 14:18 File: I:\Projects\23\02\103\Maps\Reports\WHPP_II_2017\FigC-04-1 Ditch System.mxd User: jjl2

Appendix D

Water Quality Information

PWSID: 1020017

City of Coon Rapids
2016 Drinking Water Report

The City of Coon Rapids is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2016. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

Source of Water

The City of Coon Rapids provides drinking water to its residents from a groundwater source: 24 wells ranging from 105 to 700 feet deep, that draw water from the Multiple, Tunnel City-Mt.Simon, Tunnel City-Wonewoc, Wonewoc-Mt.Simon, Quaternary Buried Artesian, Mt. Simon, Tunnel City Group, and Tunnel City-Eau Claire aquifers.

The Minnesota Department of Health has made a determination as to how vulnerable our systems' source(s) of water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 (and press 5) during normal business hours. Also, you can view it on line at www.health.state.mn.us/divs/eh/water/swp/swa.

Call 763-767-6576 if you have questions about the City of Coon Rapids drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

Results of Monitoring

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2016. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

Key to abbreviations:
MCLG—Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL—Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MRDL—Maximum Residual Disinfectant Level.

MRDLG—Maximum Residual Disinfectant Level Goal.

AL—Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.

90th Percentile Level—This is the value obtained after disregarding 10 percent of the samples taken that had the

highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.) Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

pCi/l—PicoCuries per liter (a measure of radioactivity).

ppm—Parts per million, which can also be expressed as milligrams per liter (mg/l).

ppb—Parts per billion, which can also be expressed as micrograms per liter (μg/l).

nd—No Detection.

N/A—Not Applicable (does not apply).

Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant
			Range (2016)	Average /Result*	
Alpha Emitters (pCi/l)	0	15.4	nd-16	15♦	Erosion of natural deposits.
Arsenic (ppb)	0	10	N/A	5.25	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium (ppm) (08/10/2015)	2	2	N/A	.05	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Combined Radium (pCi/l)	0	5.4	nd-7.8	7.7♦	Erosion of natural deposits.
Di(2-Ethylhexyl) Adipate (ppb)	400	400	nd-45	22.5	Discharge from chemical factories.
Fluoride (ppm)	4	4	.52-.68	.72	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Haloacetic Acids (HAA5) (ppb)	0	60	nd-30.5	22.73	By-product of drinking water disinfection.
Nitrate (as Nitrogen) (ppm)	10.4	10.4	nd-.07	.07	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
TTHM (Total trihalomethanes) (ppb)	0	80	13.1-53.5	45.35	By-product of drinking water disinfection.

*This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

PWSID: 1020017

♦Our system has taken the initiative to limit the amount of water being pumped from the source(s) with higher levels of Alpha Emitters and Combined Radium. We have a compliance agreement with the MDH to ensure drinking water consumed by residents contain levels less than the MCL(s) on an annual basis.

Contaminant (units)	MRDLG	MRDL	****	*****	Typical Source of Contaminant
Chlorine (ppm)	4	4	.4-.6	.61	Water additive used to control microbes.

****Highest and Lowest Monthly Average.
*****Highest Quarterly Average.

Contaminant (units)	MCLG	AL	90% Level	# sites over AL	Typical Source of Contaminant
Copper (ppm) (07/29/2014)	1.3	1.3	.78	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb) (07/29/2014)	0	15	1.8	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Coon Rapids is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Monitoring may have been done for additional contaminants that do not have MCLs established for them and are not required to be monitored under the Safe Drinking Water Act. Results may be available by calling 651-201-4700 or 1-800-818-9318 during normal business hours.

Compliance with National Primary Drinking Water Regulations

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban

stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U. S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

For Non-English Speaking Customers:

English:

This report contains very important information. Translate or ask someone who understands it.

Spanish:

Información importante. Si no la entiende, haga que alguien se la traduzca ahora.

Hmong:

Nov yog ntaub ntawv tseem ceeb. Yog koy tsi to taub, nrhiav neeg pab txhais rau koh kom sai sai.

Appendix E

Written Comments from Local Units of Government

Anoka County
Community Health and
Environmental Service Department
(BF Biernat)

Comments Regarding:

Coon Rapids Wellhead Protection Plan Part 2 (August 2017)

September 14, 2017
The Anoka County Community Health and Environmental Services Department offers the following comments regarding the Wellhead Protection Plan for the City of Coon Rapids, Part 2 (Dated August, 2017), hereinafter referred to as Plan. These comments will be forwarded to Mr. Tim Himmer, Public Works Director. Our review is offered to provide the City of Coon Rapids with additional (possibly alternative) planning views that may enhance their plan.

GENERAL COMMENTS

We commend Coon Rapids for a wellhead protection plan that leaves us with very little suggestions for improvement. The Plan has initiatives to include other public water suppliers and Anoka County into its goals to protect the source of the city's water and safety of its resident's drinking water. The Plan indicates the City's leadership role in protecting local water resources instead of simply preparing a plan that meets state rules. As a result, the Plan challenges us to determine how we can meet the City's expectations.

The Plan indicates that the Know The Flow (KTF) website is an Anoka County website (Anoka County's Know the Flow website). Anoka County originally launched a water webpage on its website (www.AnokaCounty.us/water). Feedback from communities and agencies in the county caused us to abandon the webpage and collaborate in the creation the multi-organization KTF website that is independent of Anoka County government. Development of the KTF website was financed by the city members of the Municipal Wellhead Protection Group. KTF is maintained on a contract server (not the county's server) and coordinated and maintained for the wellhead group and the Anoka County Water Task Force by Environmental Services.

We Recommend (#1): that references to the "Anoka County's Know the Flow website be modified to indicate that Know the Flow is collaborative water website.

SPECIFIC COMMENTS

Section 7.3.1 Potential Class V Well Properties

Page 25: *"Anoka County Environmental Services regulates hazardous and solid waste disposal. Many of the 23 properties may also be regulated by the County. The County does not permit disposal of hazardous waste through a Class V well. The City will work with Anoka County Environmental Services to inspect those properties that the County permits as hazardous waste generators."*

Anoka County Environmental Services is explicit that disposal of a hazardous waste at a licensed facility is prohibited and violates the license conditions.

We Recommend (#2): that the statement be modified to state that The County prohibits disposal of hazardous waste through a Class V well.

September 8, 2017

Tim Himmer, Wellhead Protection Manager
City of Coon Rapids
11155 Robinson Drive
Coon Rapids, MN 55433

RE: Coon Rapids Wellhead Protection Plan, Part 2
Metropolitan Council District 9
Referral File No. 21558-2

Dear Mr. Himmer:

Thank you for submitting Part 2 of the City of Coon Rapids wellhead protection plan (WHPP). Metropolitan Council (Council) staff review completed plans under the provisions of Minnesota Rules, Chapter 4720.

The Council evaluates wellhead protection plans in comparison with information reported in the Council's Master Water Supply Plan, including: population and water demand information, predicted issues associated with water supply development, and identified opportunities for inter-jurisdictional cooperation. This wellhead protection plan provides a good overview of the supply source and measures to protect it. Council staff offer the following comments to highlight how the plan could be made even stronger.

The City of Coon Rapids WHPP contains excellent information and demonstrates a significant understanding of WHP issues. The Council thanks the City for identifying the collaborative opportunity with DWSMA-overlapping communities in Chapters 6. The extension of the City's WHPP into the neighboring communities of Blaine, Brooklyn Park, and Champlin creates an opportunity for the sharing of ideas and resources for wellhead protection implementation. The Anoka County Wellhead Protection Group provides a forum for coordinated wellhead protection (WHP) with DWSMA-overlapping governmental units, to facilitate communication and drinking water protection planning activities. This group supports the goals outlined in Chapter 6, and could aid the wellhead protection manager in their efforts to identify problems, share information, and communicate source water protection activities.

The Council commends the City's addition of 'success criteria' to each WHP action presented in Chapter 7. This supports the City's plan implementation evaluation program and sets an example for other communities to follow when developing their WHP plans. The collected success criterion data and information could be used to strengthen the City's wellhead protection progress report. The City could consider working with the DNR Cooperative Groundwater Monitoring group to install monitoring equipment on wells that are only used for emergency supply, or any other wells that may be abandoned on public or county properties. Such an effort would support the City's monitoring, data collection, and water supply planning goals.

The integration of the WHPP with the City's planning process is a critical task in strengthening source water protection. There are a number of resources available to communities to aid in the wellhead and source water planning and protection effort. Some examples include:

- 2015 Coon Rapids Systems Statement
- 2015 Master Water Supply Plan
- Water Conservation Toolbox
- Stormwater Reuse Guide
- Metropolitan Council 2010 Report: Evaluation of Groundwater and Surface-Water Interaction: Guidance for Resource Assessment
- The Minnesota Technical Assistance Program
- Thrive MSP 2040 Regional Plan

Please let me know if you are interested in learning more about these tools or any other resources.

This letter completes the Council's review process. On behalf of the Council, I thank you for your efforts in preparing this plan. Please send us a copy of the finalized WHPP, if any revisions are made. Should any questions arise regarding the Council's review comments, please feel free to contact John Clark of the Council's Environmental Services Division at (651) 602-1452 or johnd.clark@metc.state.mn.us.

Sincerely,

Sam Paske

Sam Paske
Assistant General Manager, Environmental Quality Assurance

cc: Edward Reynoso, Metropolitan Council Member, District 9
Erik Wojchik, Metropolitan Council Sector Representative
John Freitag, Minnesota Department of Health

Appendix F

Wellhead Protection Program Evaluation Template

WHP PLAN AMENDMENT EVALUATION
What have you accomplished?

for

City of Coon Rapids
PWS ID #1020017
Date

Date of Initial Plan Approval:

Evaluation Completed By:

Copies Presented or Sent To:	
☐ Minnesota Department of Health Attn: Trudi Witkowski Environmental Health Division Source Water Protection Unit P.O. Box 64975 St. Paul, MN 55164-0975 Trudi.witkowski@state.mn.us	☐MDH or MRWA Planner ☐Wellhead Protection File ☐City Council/Governing Body

Note to staff: delete the italicized planner notes text after completing a draft of this document.

A. Implementation of Wellhead Protection Management Strategies.

(Note to planner: import the activity column from the Implementation Tracking Spreadsheet located here: O:\DwpSwp\Implementation Tracking\Action Items Database - Copy for Planners Use.xlsx First expand this table to have the exact number of rows needed, highlight appropriate rows in the table, and select overwrite cells from the pasting option.)

WHP Measure	Implemented? Y or N	Comments

B. Additional Financial Resources

(Note to planner: Include a summary of SWP Grants. Data located in the SWP Grants Database: O:\DWP\SWPGrantTracking\SWPGrant.accde

Have you taken advantage of local, state, or federal financial resources (such as Well Sealing Grants, SWP Grants, Clean Water Fund Grants or LCCMR funds) to help you implement your wellhead protection plan?

YES ☐ NO ☐

SWP Grants History:

C. Status of Inner Wellhead Management Zone Work (IWMZ Work)

Note to planner: Consult the status for each well in the PWS system at and copy here: http://mdh-app2/pwss_reports/DWIntro.aspx.

Date of the most recent IWMZ inventory for each well in the public water supply system:

Does the IWMZ need to be updated for the amendment? YES☐ NO☐

D. Sealing Old Municipal Wells

Note to planner: Check for updated old muni well reports and information on sealing at: http://mdh-app2/pwss_reports/UWPStatusIntro.aspx

Have you sealed any old municipal public water supply wells? YES ☐ NO ☐

Comments:

E. Water Quality Sampling and Data Collection

Have you or MDH sampled the quality of the groundwater in your DWSMA? YES ☐ NO ☐
Comments:

Have you collected additional data to improve the wellhead protection area delineation or assess vulnerability (e.g. tritium, isotopes, groundwater elevations)? YES☐ NO☐

Comments:

Have you implemented a monitoring plan for water quality developed in cooperation with MDH?
Note to planner: Check SWP Tracker to determine if a water quality monitoring plan was developed by MDH.
YES☐ NO☐

Comments:

F. Potential Contaminant Source Inventory (PCSI)

Have you maintained or updated your PCSI? YES ☐ NO ☐

Have you identified new PCS in your DWSMA and included them in your PCSI? ☐YES ☐NO

Comments:

G. Using SDWA Monitoring Data

Are there any changes in your SDWA compliance monitoring results? YES ☐ NO ☐

Comments:

Note to planners: SDWA monitoring results can be found in MNDWIS: Function/Results

H. Contingency Plan

Have you had to implement any part of your Contingency Plan? YES☐ NO☐

Comments:

Appendix G

Water Supply Contingency Plan

WATER SUPPLY CONTINGENCY PLAN
CITY OF COON RAPIDS

INDEX

A. PURPOSE

B. PUBLIC WATER SUPPLY CHARACTERISTICS

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3. Storage and Distribution
4. Maps and Plans

C. PRIORITY OF WATER USERS DURING WATER SUPPLY EMERGENCY

D. ALTERNATIVE WATER SUPPLY

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2. Bottled Water
3. System Interconnects
4. Other Alternative Water Resources

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F. EMERGENCY IDENTIFICATION PROCEDURES

G. NOTIFICATION PROCEDURES

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

G. MITIGATION AND CONSERVATION PLAN

1. Mitigation
2. Conservation

Annual Plan Review

Date Reviewed	*Reviewer*	*Comments*

Plan Distribution

Person	*Organization*	*Plan Location*

Prepared by: Tim Himmer, Public Works Director

Date Approved: _____

A. PURPOSE

The purpose of this Contingency Plan is to establish, provide and keep updated, certain emergency response procedures and information for the City of Coon Rapids, MN, which may become vital in the event of a partial or total loss of public water supply services as a result of natural disaster, chemical contamination, civil disorder or human-caused disruptions.

B. PUBLIC WATER SUPPLY CHARACTERISTICS

1. Current Supply Source

Table B-1

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection))	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Groundwater	Tunnel City Group	Well 1	1958	750	472	Active	No
		Well 6	1961	1250	158	Active	No
Groundwater	Wonewoc	Well 2	1959	575	685	Active	No
		Well 4	1960	1000	602	Active	No
		Well 5	1961	900	695	Active	No
		Well 7	1964	1600	632	Active	No
		Well 8	1965	1000	702	Active	No
		Well 9	1969	1000	500	Active	No
		Well 10	1971	1000	684	Active	No
		Well 11	1973	1200	627	Active	No
		Well 12	1975	850	604	Active	No
		Well 13	1977	850	693	Active	No
		Well 14	1977	1650	613	Active	No
		Well 15	1977	1400	615	Active	No
		Well 24	2003	1500	388	Active	No
Groundwater	Quaternary	Well 17	1981	1450	121	Active	No
		Well 19	1987	1100	135	Active	No
		Well 20	1988	1100	135	Active	No
		Well 21	1990	1200	203	Active	No
		Well 22	1990	500	105	Active	No
		Well 23	1992	500	123	Active	No
Groundwater	Wonewoc – Mt. Simon	Well 16	1981	1500	653	Emergency Only	No
Groundwater	Mt. Simon	Well 18	1986	1200	637	Emergency Only	No
*While individual wells do not have emergency power sources, an emergency generator at the West Water treatment plant provides back-up power for three of the high service pumps.							

2. Treatment

Table B-2

Treatment Site ID (Plant Name or Well ID)	Year Constructed	Treatment Capacity (MGD)	Treatment Method	Treatment Type	Annual Amount of Residuals (gal)	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
Well 1	1958	1.08	Chemical addition	chlorination, fluoridation,	n/a	n/a	n/a
Well 2	1959	0.83	Chemical addition	chlorination, fluoridation,	n/a	n/a	n/a
Well 4	1960	1.44	Chemical addition	chlorination, fluoridation,	n/a	n/a	n/a
Well 5	1961	1.30	Chemical addition	chlorination, fluoridation,	n/a	n/a	n/a
Well 6	1961	1.80	Chemical addition	chlorination, fluoridation,	n/a	n/a	n/a
Well 7	1964	2.30	Chemical addition	chlorination, fluoridation,	n/a	n/a	n/a
Well 12	1975	1.22	Chemical addition	chlorination, fluoridation,	n/a	n/a	n/a
East Treatment Plant	1991	7.2	Chemical addition, filtration, Fe/Mn removal	Oxidation, pressure filtration, chlorination, fluoridation, sulfur dioxide (for chlorine reduction)	9,985,146 *	Discharge into sanitary sewer	Yes
West Treatment Plant	1991	14.0	Chemical addition, filtration, Fe/Mn removal	Oxidation, pressure filtration, chlorination, fluoridation, sulfur dioxide (for chlorine reduction)	17,164,718*	Discharge into sanitary sewer	Yes
Total	n/a	31.2	n/a	n/a	27,149,864 *	n/a	n/a

3. Storage and Distribution

Table B-3

Structure Name	Type of Storage Structure	Year Constructed	Primary Material	Storage Capacity (Gallons)
East Water Tower	Elevated storage	1958	Steel	500,000
East Ground Storage Reservoir	Ground storage	1965	Steel	5,500,000
West Water Tower	Elevated storage	1960	Iron	1,000,000
West Ground Storage Reservoir	Ground storage	1975	Concrete	5,000,000
Hanson Blvd. Tower	Elevated Storage	2003	Steel	2,500,000
Total	n/a	n/a	n/a	14,500,000

4. Maps/Plans

Physical plans available at City Hall and Public Works facilities. Digital plans maintained by the City's GIS department and available remotely via City Works (asset management system).

C. PRIORITY OF WATER USERS DURING WATER SUPPLY EMERGENCY

Table C-1—Water Use Priority Grouping

Customer Category	Allocation Priority	Average Daily Demand (GPD)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	4,928,600	*
Institutional Commercial Industrial	2	1,182,400	*
Non-essential	3	2,957,000	2,957,000*
TOTAL	NA	9,068,000	2,957,000*

GPD – Gallons per Day; 2013-2015 Water Use Data; * Non-essential calculated as increased summer demand between all customer categories.

Triggers for implementing water supply reduction/allocation procedures:

Table C-2

Emergency Triggers	Short-term Actions	Long-term Actions
✓ Contamination ✓ Loss of production ✓ Infrastructure failure ✓ Executive order by Governor ☐ Other: _____	☐ Supply augmentation through ____ ✓ Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Water allocation through ____ ☐ Meet with large water users to discuss their contingency plan. ✓ Voluntary reduction measures, encouraged by public service announcements, i.e. bill stuffers, fliers, and notices in local newspaper	☐ Supply augmentation through ____ ✓ Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. ☐ Water allocation through_____ ✓ Meet with large water users to discuss their contingency plan.

D. ALTERNATIVE WATER SUPPLY OPTIONS

1. Surface water sources and treatment needs. NO
2. Bottled water supplies, delivery and distribution. YES
3. System interconnects with other water supplies. YES
4. New well. NO

5. Emergency or backup wells. YES – #s 1, 2, 4, 5, 6, 7, 12, 16, 18

6. Emergency treatment of water system. NO

7. Source Management (blending). YES – #s 16 & 18

10. Other. N/A

Table D-1

Interconnections with other water supply systems to supply water in an emergency

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
City of Andover	675 GPM 0.972 MGD	6-inch DIP	WATER CONNECTION
City of Blaine	1850 GPM 2.664 MGD	10-inch DIP	WATER CONNECTION

GPM – Gallons per minute MGD – million gallons per day

Table D-2

Utilizing surface water as an alternative source

Surface Water Source Name	Capacity (GPM)	Capacity (MGD)	Treatment Needs	Note Any Limitations On Use
n/a				

If not covered above, describe additional emergency measures for providing water (obtaining bottled water, or steps to obtain National Guard services, etc.)

System wells 1, 2, 4, 5, 7, and 12 are utilized during peak demands and can also serve emergency production needs. Wells No. 16 and 18 can also be used in emergency situations, but they are a last resort & must be blended due to high radium concentrations.

E. INVENTORY OF AVAILABLE EMERGENCY EQUIPMENT AND MATERIALS

Table E-1 contains a list of services, equipment and supplies that are available to the City (system) to respond to a disruption in the water system. It is believed that the items contained in Table E-1 would be adequate to respond to most (if not all) water system emergencies.

Table E-1

Technical/Contracted Services/Supplies	Name	Work Telephone	Alternate Telephone
MRWA Technical Services	MN Rural Water Association	800-367-6792	
Well Driller/Repair	E.H. Renner	763-427-6100	612-701-5922
Pump Repair	Quality Control Systems	952-758-9445	
	SLS Pumping:	763-434-6814	
	Dan's Sewer Service	763-434-6814	
	Schlomka Vac Service	651-437-7284	
Electrician	Rawlands Electric (Dwayne)	763-772-4224	
Plumber	Larsco, Inc (Jason or Eric)	763-421-3319	
Water/Sewer Installation, Backhoe, meter repair, valves, etc.	Valley Rich Co.	952-448-3002	612-839-8502
	Perkins Const.	612-363-6459	
Chemical Supplier	Hydro Con.	651-674-2757	
Lift Stations	Electric Pump	952-758-6600	
Meter Repair	Utilities Division	763-767-6462	
Generator	Interstate (contract)	952-854-5511	
Valves	Utilities Division	763-767-6462	
Pipe & Fittings	Utilities Division	763-767-6462	
Water Storage	Utilities Division	763-767-6462	
Laboratory/Engineering Firm	Instrumental Research	763-571-3698	
Engineering firm	Engineering Dept.	763-767-6479	

F. EMERGENCY IDENTIFICATION PROCEDURES

Table F-1 Procedural Operations

Incident	Responsible Party	Address	Telephone #(s)	System Affected	Response Procedure	Comments
Identify Disruption	Primary: Kory Jorgenson Alt: Tim Himmer	1831 111th Ave NW Coon Rapids MN 55433	763-767-6576 763-767-6494			
Notify Response Personnel (Coordinator)	Primary: Tim Himmer Alt: Kory Jorgenson	11155 Robinson Dr Coon Rapids MN 55433	763-767-6494 763-767-6576			
Identify Incident Direction and Control	Primary: Tim Himmer Alt: Kory Jorgenson	11155 Robinson Dr Coon Rapids MN 55433	763-767-6494 763-767-6576			
Identify Internal Communication	Primary: Tim Himmer Alt: Kory Jorgenson	11155 Robinson Dr Coon Rapids MN 55433	763-767-6494 763-767-6576			
Inform Public	Primary: Stephanie Ring Alt: Tim Himmer	11155 Robinson Dr Coon Rapids MN 55433	763-767-6582 763-767-6494			
Assess Incident on Continual Basis	Primary: Kory Jorgenson Alt: Michael Drake	1831 111th Ave NW Coon Rapids MN 55433	763-767-6576 763-286-0350			
Assess Contamination Disruption	Primary: Tim Himmer Alt: Kory Jorgenson	11155 Robinson Dr Coon Rapids MN 55433	763-767-6494 763-767-6576			
Assess Mechanical Disruption	Primary: Kory Jorgenson Alt: Tim Himmer	1831 111th Ave NW Coon Rapids MN 55433	763-767-6576 763-767-6494			
Provide Alternate Water Supply	Primary: Michael Drake Alt: Kory Jorgenson	2241 105th Ave Coon Rapids MN 55433	763-286-0350 763-767-6576			
Impose Water Use Restrictions	Primary: Tim Himmer Alt: Brad Wise	11155 Robinson Dr Coon Rapids MN 55433	763-767-6494 763-767-6401			

G. NOTIFICATION PROCEDURES

1. Agency Notification

Table G-1 contains the names and telephone numbers for contacts at various local and state agencies that may be notified in the event of an public water supply system emergency. Based on the nature of the emergency and the information available, various representatives from this listing will be selected by the response coordinator to be part of *the* ***emergency oversight committee*** which will then meet throughout the duration of the emergency to aid in decision-making and positive outcomes.

Table G-1. Agency Emergency Contact Listing

Emergency Response Team	Name	Work Telephone	Alternate Telephone
Emergency Response Lead	Tim Himmer	763-767-6494	763-226-5581
Alternate Emergency Response Lead	Kory Jorgensen	763-767-6576	612-286-0280
Water Operator	Michael Drake	763-755-7584	763-286-0350
Alternate Water Operator	Mike Stalboerger	763-755-7657	763-286-0797
Public Communications	Stephanie Ring	763-767-6487	©763-242-7653 Jon Urquhart: 763-767-6582

State and Local Emergency Response Contacts	Name	Work Telephone	Alternate Telephone
State Incident Duty Officer	Minnesota Duty Officer	800/422-0798 Out	651-649-5451 Metro
County Emergency Director	Terry Stoltzman	763-323-5761	
National Guard	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
Mayor/Board Chair	Jerry Koch	763-767-1811	
Fire Chief	John Piper	763-767-6478	
Police Chief	Brad Wise	763-767-6401	
Ambulance		911	
Hospital	Mercy	763-236-6000	
Doctor or Medical Facility	Mercy	763-236-6000	

State and Local Agencies	Name	Work Telephone	Alternate Telephone
MDH District Engineer	Isaac Bradlich	651-201-3971	
MDH	Drinking Water Protection	651-201-4700	
State Testing Laboratory	Minnesota Duty Officer	800/422-0798 Out	651-649-5451 Metro
MPCA	St. Paul Office	651-296-6300	800-657-3864
DNR Area Hydrologist	Kate Drewry	651-259-5753	
County Water Planner	Jamie Shurbon	763-434-2030	Bart Biernat: 763-422-6985

Utilities	Name	Work Telephone	Alternate Telephone
Anoka Electric Company	Xcel Energy: Jason Darrington	800-895-4999 © 612-616-6720	
Electric Company	Connexus Energy: Doug Cabak	763-323-2600	
Gas Company	Center Point Energy: Steve Guhanick	612-372-4664 612-321-5421	
	NRG Energy	612-349-6091	
Telephone Company	Comcast: Doug Zahn	651-755-2602	
	Century Link: Tom Burney Bill Byers	763-712-5006 © 612-250-4005	

	Zayo Group: Steven Senger	© 612-210-8036	
Gopher State One Call	GSOC	800-252-1166 or 811	651-454-0002
Highway Department	Anoka County Highway Dept	763-862-4200	

Mutual Aid Agreements	Name	Work Telephone	Alternate Telephone
Neighboring Water System/	City of Andover City of Blaine City of Spring Lake Park City of Anoka City of Brooklyn Park City of Fridley	763-767-5181 763-785-6165 763-784-6491 763-576-2925 763-569-3340 763-571-3450	763-792-7257
Emergency Water Connection	City of Andover City of Blaine	763-767-5181 763-785-6165	
Materials: Chemicals	Hawkins Chem.	612-331-9100	

Communications	Name	Work Telephone	Alternate Telephone
News Paper	Coon Rapids Herald	763-421-4444	
School Superintendent	David Law	763-506-1001	
Coon Rapids Television Network	Steve Ericson	763-767-6554	Fax: 763-767-6538

Critical Water Users	Name	Work Telephone	Alternate Telephone
Hospital	Mercy	763-236-6000	
Nursing Home	Camila Rose Care Center LLC	763-755-8400	
	Epiphany Assisted Living	763-755-0320	
	Park River Estates Care Center	763-757-2320	
	Homestead at Coon Rapids	763-754-2800	
	Mary T. Inc.	763-754-2505	
	Select Senior Living of Coon Rapids	763-767-1127	
	Margaret Place Senior Apartments	763-754-2505	
Public Shelter	City of Coon Rapids	763-951-7222	
	Bunker Hills Clubhouse	763-755-4141	
	Coon Rapids Ice Arena	763-951-7222	
Evac. Shelters	Faith Lutheran Church	763-755-3530	
	All Anoka-Hennepin school buildings in City		
	Epiphany	763-755-0320	

*After Hours on-call line (24 hr. util. contact) – phone 1: Dispatch; 2: 763-238-3158

2. Critical Response Personnel

Table G-2

Emergency Response Team	Name	Work Telephone	Alternate Telephone
Emergency Response Lead	Tim Himmer	763-767-6494	763-226-5581
Alternate Emergency Response Lead	Kory Jorgensen	763-767-6576	612-286-0280
Water Operator	Michael Drake	763-755-7584	763-286-0350
Alternate Water Operator	Mike Stalboerger	763-755-7657	763-286-0797
Public Communications	Stephanie Ring	763-767-6487	©763-242-7653 Jon Urquhart: 763-767-6582

3. Public Information Plan

A. Public relations center

Public Information Center Location during Emergency:
Coon Rapids City Hall

Times Available:
Business Hours (8 am – 4:30 pm) and As-Needed

B. Information checklist to be conveyed to the public and media

Name of water system:_____

Contaminant of concern and date:_____

Source of contamination:_____

Public health hazard:_____

Steps the public can take:_____

Steps the water system is taking:_____

Other information:_____

C. Media Contacts

Table G-3

Communications	Name	Work Telephone	Alternate Telephone
News Paper	Coon Rapids Herald	763-421-4444	
School Superintendent	David Law	763-506-1001	
Coon Rapids Television Network	Steve Ericson	763-767-6554	Fax: 763-767-6538

H. MITIGATION AND CONSERVATION PLAN

1. MITIGATION

a. Infrastructure maintenance/upgrades/maps: Street Reconstruction Program; Locates; CityWorks (asset management - as-builts, watermain break & condition data)

b. Regular inspection of tower, well, pump house: Daily

c. Staff emergency training: Annually

d. System security analysis: SCADA, daily review

e. Site new backup well: N/A

f. System valving to isolate problems: CityWorks and As-Builts

g. Sanitation procedures for construction/repairs: Contracted

2. CONSERVATION

a. Water Meters: Continuous Read, Leak Detection

b. Public Education: Newsletters, City Website (www.coonrapidsmn.gov)

c. Rate structure: Yes, Tiered

d. Other: Odd/Even sprinkling ban, Building Code (low-flow fixtures)