Source Water Protection Plan for Clarence Cannon Wholesale Water Commission

October 2015

Contents

Approval of Source Water Protection Plan

Long Range Planning Committee
Source Water Protection Committee

REPRESENTING	NAME	SIGNATURE
HUNTSVILLE, CITY OF	E. ALLEN KOHLER	_____
MACON COUNTY PWSD #1	DAVID G. WALLER	_____
MONROE COUNTY PWSD #2	NANCY RIECHMANN	_____
PARIS, CITY OF	PHILLIP SHATZER	_____
SHELBY COUNTY PWSD #1	TONY STIEFEL	_____

PRIMARY CONTACT FOR PLANNING

STAFF	NAME	SIGNATURE
CCWWC GENERAL MANAGER 573-672-3221 ccwwc.h20@gmail.com	MARK MCNALLY	_____

Background

The Clarence Cannon Wholesale Water Commission (CCWWC) is a Joint Municipal Utility Commission organized under Sections 393.700 to 393.770 of the Revised Statues of the State of Missouri. It is a political subdivision of the State of Missouri. The CCWWC was officially established on October 3, 1983. There are currently twenty-three cities and rural water districts that are members of the CCWWC.

The first phase of the CCWWC system was constructed in 1991-92 and was financed with revenue bonds in the amount of $21.8 million and state and federal grant funds in the amount of $2.840 million. There were thirteen member systems at that time. The production and sale of water to members began on June 16, 1992.

The production and distribution facilities include a 10 million gallons per day (MGD) surface water treatment plant located on Mark Twain Lake near Florida, Missouri, 325.2 miles of transmission mains, 4 booster pumping stations, and 3.75 million gallons of system storage. Current sales average approximately four MGD.

Since the original construction phase, the CCWWC has had four transmission system expansion projects. A Board of Directors governs the CCWWC. Each contracting municipality or public water supply district appoints a director to sit on the board. The board has the responsibility for the management, administration and regulation of the business affairs of the CCWWC and to adopt rates for the sale of wholesale water to contracting parties.

The operation and maintenance of the water treatment plant is contracted to United Water Services, Inc. of Harrington Park, New Jersey.

The watershed of the North Fork Salt River of the Mark Twain Lake is the source of supply for the CCWWC, which supplies potable water to 24 rural water districts and communities in northeast Missouri serving 45,000 residents. The watershed covers 626 square miles or 400,640 acres. Mark Twain Lake has been on the 303(d) list for Missouri due to elevated atrazine levels. Other water-quality problems include high total organic carbons, high turbidity spikes, and sedimentation in the lake.

Most of the drinking water supplies in Northeast Missouri are derived from surface runoff, so NPS pollution is a primary factor in watershed education, management, and stewardship. For many communities and counties, this has been a new concept since it transcends property lines, city and county limits, government jurisdictions, and most boundaries—or horizons—of traditional experience, interest and/or knowledge.

In rural Missouri, most watershed management has focused on agriculture. Although these efforts have been effective, much of the impact was not translated to other sectors. As a major water-quality stakeholder, CCWWC sought funding in 1999 through an EPA 319 grant to provide a structure for community networking and education in the target watershed and the CCWWC membership communities and counties. Target audiences include decision makers in this drinking water community including: landowners/agricultural producers, city and county officials, community leaders, power suppliers, economic developers, planners, organizations with water-quality/environmental programs of work, water-treatment professionals, and related agencies.

A major product was the development of a Watershed Restoration Action Strategy (WRAS) to serve as an inventory of on-going efforts and to provide a blueprint for management decisions to guard the future health of the North Fork watershed. The steering committee and technical panel for the project developed the WRAS. Three issue areas emerged as important focus areas for efforts in the watershed: agriculture and natural resource management, communities and watersheds, and water and wastewater issues.

The WRAS has also been the foundation for other projects including the following:

- Knox and Shelby Soil and Water Conservation Districts (SWCDs) received SALT grants developed to help meet the objectives spelled out in the WRAS
- Eight unsewered communities in Macon and Shelby Counties have united to form a non-profit corporation; supporting partners include both County Commissions, the Macon REC, MODOT and traditional resource agencies such as USDA-RD and the Mark Twain Regional Council of Governments.
- Development of water festivals and a teacher's workshop targeting Missouri Assessment Program (MAP skills) and community service; these efforts have been fostered by the Mark Twain Lake Corps of Engineers, Kirksville Public Schools, Truman State University and a multi-agency panel of teachers/presenters.

In September of 2015 DNR approved a grant for source water protection in our watershed. The overall goal of this project is to promote source water awareness and implementation of agricultural best management practices in the North Fork Salt River watershed. Objectives in this project include:

1. Encouraging the use of cover crops as a practice to reduce soil erosion, nutrient, and pesticide runoff from the watershed,
2. Increase awareness of citizens in the North Fork Salt River watershed about the source of their drinking water and that the North Fork Salt River watershed provides a raw water supply for drinking water to over 70,000 people in northeast Missouri, and
3. Have a better understanding of atrazine use in the watershed.

Specific tasks of the project include:

1. Providing payment of invoices for cover crop seed (up to $1,000 per landowner) to at least 30 landowners within the North Fork Salt River watershed and following up with participating producers with a survey to guide future cover crop outreach/programs in the watershed,
2. Printing and distribution of two fliers (one for source water awareness and one for encouraging agriculture best management practices in the watershed to community groups,
3. Presentations to community groups,
4. Working with local youth groups on water quality related projects,
5. Organization of at least four farmer field days,
6. Designing and distributing a soil health t-shirt,
7. Design and development of a mobile source water educational display, and
8. Researching atrazine use, sources, and distributors in the watershed.

CCWW's role:
Provide funding for the Educator's salary (including both hourly rate and FICA benefits) from funding received by the CCWWC through the SWP Grant. This amount will be paid in a lump sum at the start of the project from the CCWWC to the University and is to be used solely for paying the salary and associated benefits of the Educator. The Source Water Educator position may be terminated by the CCWWC at any

time upon request of the CCWWC and any unused funds for the position's salary will be returned from the University to the CCWWC. Unless otherwise terminated, the Educator position will terminate when the grant funds for the position have been depleted.

Provide $100/month during the term of the Educator's position to the University for office supplies and administrative costs. This amount will be paid in a lump sum at the start of the project for the expected term of the agreement. The funding for this cost will be from the SWP Grant received by the CCWWC. If the agreement is terminated prior to the end of the agreement period, this amount will be returned to the CCWWC at a pro-rated daily amount for the remainder of the initial agreement period.

CCWWC shall reimburse University for mileage put on vehicle.

The Commission will pay for invoices for cover crop seed and maintain a system to check that account balance and provide approval (provide an approval i.d. number verbally over the phone) to seed dealers to allow them to invoice CCWWC for seed funded under this grant.

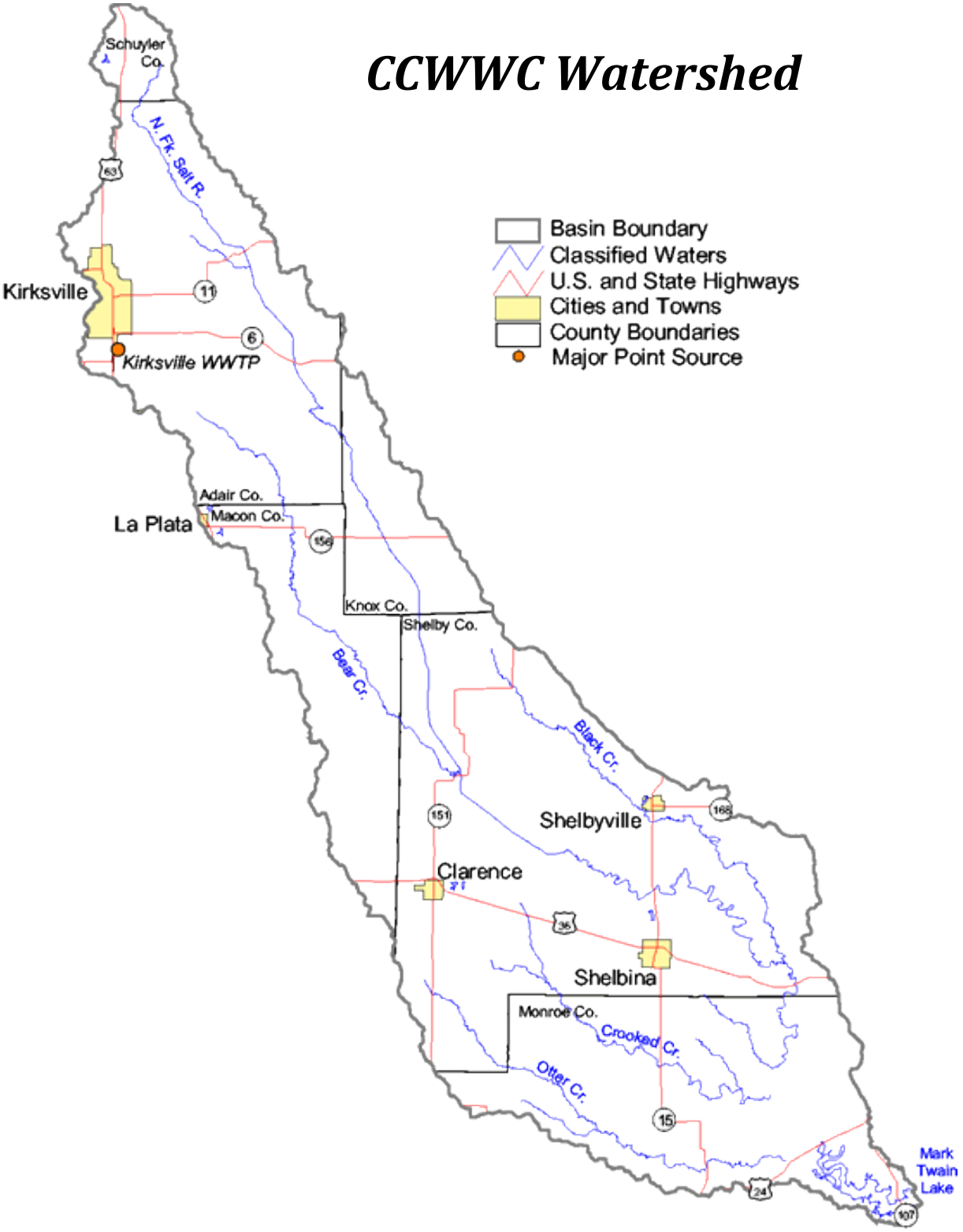
Identify a printing company to print the two fliers and pay the invoice for printing the fliers.

Provide postage for a follow up survey for farmers that participate in the seed program. DNR will draft the survey.

Provide oversight/pay invoices for development of a mobile display. The Source Water Educator, the DNR representative the Commission will provide ideas on the display. The FFA and others contacted by outreach will be given the opportunity for input.

Mission Statement

The Clarence Cannon Wholesale Water Commission (CCWWC) is a wholesale supplier of high quality potable water to the region through its member communities and public water supply districts. The CCWWC will produce and distribute drinking water to its members that meets or exceeds state and federal water quality standards. This service will be provided at a reasonable cost consistent with sound business practices to maximize efficiency and productivity. The CCWWC is a leader in the development of regional water systems and will support the growth of such systems as a means of solving water supply problems. The CCWWC is committed to providing training, service and support to its members and employees. Preservation and wise use of natural resources, particularly water resources, and public awareness of the issues facing the water profession are major concerns of the CCWWC that shall be cultivated as we pursue our mission.


CCWWC Watershed
Basin Boundary
Classified Waters
U.S. and State Highways
Cities and Towns
County Boundaries
Major Point Source
Schuyler Co.
N. Fk. Salt R.
Kirksville
Kirksville WWTP
Adair Co.
Macon Co.
La Plata
Knox Co.
Shelby Co.
Bear Cr.
Black Cr.
Shelbyville
Clarence
Shelbina
Monroe Co.
Crooked Cr.
Otter Cr.
Mark Twain Lake

Requirements for a Source Water Protection Plan

The requirements of a Source Water Protection Program are listed below:

1) Form a planning team or steering committee
2) Delineate the area around your water source that you intend to manage and protect (SWA)
3) Perform a survey for potential or existing contaminants within the delineated protection zone (SWA)
4) Perform a susceptibility determination of the source to those potential or existing contaminants (SWA)
5) Develop a planning/management strategy to extend protection (initiated with assembling the SWA)
6) Have a back-up plan for providing water in the event of a service disruption

CCWWC
Source Water Protection Program

Form a planning team or steering committee

There exists a steering committee that meets on a regular basis. The Long Range Planning Committee, a standing committee of the Commission, provides the oversight to the General Manager in source water protection efforts. See the signature sheet of the members of the standing committee on the approval page.

Delineate the area around your water source that you intend to manage and protect (SWA)

The watershed described earlier in this document is the Commission's area of concern. Outreach by media by public affairs releases targets the outlying area, providing continuing education for watershed protection. In the immediate area of the intake, two buoys mark an exclusion area where no boats are allowed.

Perform a survey for potential or existing contaminants within the delineated protection zone (SWA)
Perform a susceptibility determination of the source to those potential or existing contaminants (SWA)
Develop a planning/management strategy to extend protection (initiated with assembling the SWA)

Refer to the following maps and survey information on the following pages.

We strive to utilize all available local resources to educate the public and provide publicity for the effort. Cannon Dam project planners initially predicted that Mark Twain Lake would receive 115,000 acre feet of sediment over 100 years. A sediment survey in 2000 indicated that the lake was receiving less sediment than predicted. Continued watershed protection efforts reflect the State of Missouri's investment of $22.7 million in soil erosion control measures in the Mark Twain Lake watershed from 1986 to 2006.

Agriculture/Natural Resource Management – We are concerned about erosion and sedimentation, nutrient and pesticide runoff, livestock nutrient runoff, loss of forest, fish and wildlife resources, and maintenance of water quality for recreational use.

Communities/Watersheds – There is a lack of watershed awareness by landowners. Public affairs outreach increases watershed awareness and stresses ownership by all who influence the watershed.

Water/Wastewater – Pollutants cause public health issues from wastewater disposal, effluent from non-sewered communities, improper disposal of solid and hazardous waste, and stormwater runoff. There is a need for increasing the knowledge base for water and wastewater treatment professionals.

The CCWWC has an accredited water laboratory and routinely evaluates the water treatment plant influent to evaluate the water quality. We report impacts to our watershed to the Missouri Department of Natural Resources when appropriate to identify and correct the source in the watershed. The appropriate, water quality science is used to evaluate and implement new treatments and procedures.

Source Water Assessment Report Overview

The following report is generated by the Missouri Department of Natural Resources and is intended to assist communities in Missouri with the development and implementation of source water protection planning and management. The Source Water Protection Program, administered by the Public Drinking Water Branch of the department's Water Protection Program, is a voluntary, non-regulatory program designed to promote source water protection awareness and to facilitate local planning efforts. In response to the 1996 amendments to the federal Safe Drinking Water Act, the department was required to generate preliminary assessment reports for every public water source (such as a groundwater well or surface water intake) in Missouri and to provide this information to the general public.

All information contained within these reports is housed within a Geographic Information System (GIS) designed specifically for this program. Water system facility information is updated quarterly; however, the stock contaminant inventory data (for the statewide coverage used in this product) was compiled in 2003 and is not regularly updated. Revisions to the stock state-provided contaminant data are under development. Planning teams should utilize the stock contaminant inventory data as a starting point for producing a more accurate local potential contaminant inventory.

Understanding Your Source Water Assessment Report

The assessment reports produced by the department include several key components that provide a framework upon which a community or public water system can better manage potential threats to their raw water source. Each assessment report includes five key elements.

1. Delineation Maps
2. Source (well or intake) Data Sheets
3. Contaminant Data Sheet
4. Contaminant Summary Sheet
5. Susceptibility Determination Sheet

1. Delineation Maps

Standardized protection areas are delineated on aerial photograph-based or topographic quadrangle-based maps for groundwater and surface water systems of Missouri. The area of protection for a groundwater well should ideally approximate the actual zone of recharge for the well – this is generally the area that should be deemed most sensitive to additional contamination. The ideal protection area for surface water sources is the watershed drainage basin that feeds the reservoir or stream.

Approximating the zone of recharge for a water well can be problematic and difficult to ascertain without detailed hydrologic modeling. Thorough modeling can be resource intensive and typically requires research and onsite investigation – for this reason the department utilizes two simplified methods to approximate the recharge area for public water wells in Missouri. The first and most simplistic method is to establish an area of protection based on an arbitrary distance from the well – a one-half mile radius around each well is projected on each map for each well. The second method is a simplified hydrologic model that estimates the velocity of aquifer flow and recharge of the well. The department-provided assessments use a twenty-year time-of-travel radius around each wellhead as an additional approximation of well recharge. Generally, the time-of-travel radius is an estimate of the speed with which aquifer flow will recharge a well – a faster flow will be represented by a relatively large time-of-travel radius (typical

for alluvial and unconsolidated aquifer formations or karst areas) and a slower flow is indicated by a relatively small time-of-travel radius (typical of deep wells drilled into solid consolidated bedrock). Wells with large time-of-travel radii are more vulnerable to contamination from areas that are distant from the wellhead than a well with a smaller radius. Source water protection coordinators and planning teams are encouraged to constrain the most accurate zone of recharge for their wells possible; however, using the preliminary delineations provided in these reports is a reasonable starting point for management planning.

Recharge areas for surface water sources are generally easier to identify than for groundwater sources. Potential contaminants within the drainage basin that feeds the reservoir or stream can be carried by runoff directly into the receiving stream or reservoir used as a raw water source – for this reason it is logical to consider the entire watershed as the protection area. Standardized surface water source protection areas are delineated on these maps by outlining the smallest drainage basin or sub-watershed that feeds the source stream or reservoir. An important consideration for source water protection planners is to focus on areas that are feasible to protect – establishing effective protection for an entire watershed can be beyond the financial or technical ability of many public water systems in Missouri. As such, it is appropriate to establish an area that can reasonably be protected - these assessment reports, in addition to projecting the delineation of the watershed, also include an inset area that includes a five-mile up-watershed buffer from the intake (indicating the areas of the drainage basin that occur within five miles of the intake itself).

2. Contaminant Data Sheet

The Contaminant Data Sheet lists potential contaminant sites that occur within the delineated protection areas and serves as the potential contaminant inventory for the public water system. Each site is labeled with a potential contaminant number (C#) which can be cross-referenced to the delineation maps. Additional information such as site name or owner is also listed on this sheet (where available), as well as the original source database from which the data is obtained.

The sites depicted in this report were obtained from over thirty state, federal, and other databases or identified during the Source Water Inventory Project (SWIP) field survey, which was performed by staff of the Center for Applied Research and Environmental Systems (CARES) prior to 2003. Three icons are used to denote the nature of the potential contaminant site – magenta and yellow dots depict sites that were obtained from pre-existing data and denote whether the site was confirmed or unconfirmed (respectively) at the time the statewide potential contaminant inventory was compiled. Green triangles are used to depict sites that were identified through field observation by CARES staff during initial development of the assessment reports. Many of the parent databases that were utilized for this assessment were not originally available in GIS format and some location information for listed sites has been found to be errant – protection planning teams should take this into consideration while implementing their protection programs and attempt to verify unconfirmed locations or inaccurate data to further refine relevant potential contaminant inventories for local planning purposes.

3. Contaminant Summary Sheet

The Contaminant Summary Sheet is a companion to the inventory data sheet and represents a quick reference for the original sources of the data (if obtained from an existing database) or the type of facility that was identified through field survey. The most common types of facilities that were targeted for inclusion within the statewide inventory are also listed.

4. Susceptibility Determination Sheet

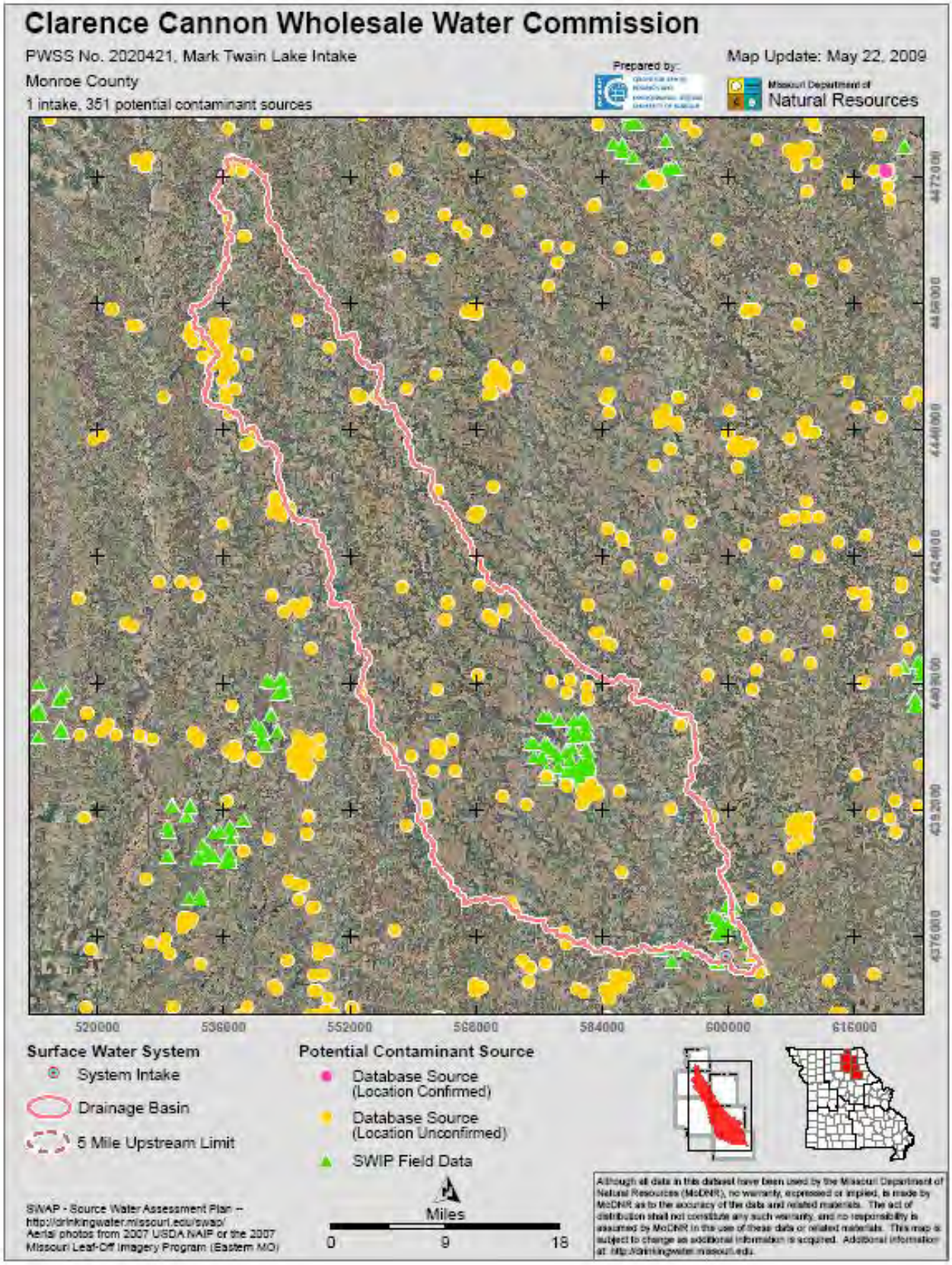
The Susceptibility Determination Sheet represents a preliminary analysis of a given water system's vulnerability to source water contamination. The analysis is defined by the various criteria that are assessed and the availability of information. Monitoring records, well/intake construction quality and other physical characteristics are considered, including the presence of sites listed within the contaminant inventory. Based on the best available information, each criterion is rated as either "Not Susceptible," "Moderately Susceptible," or "Highly Susceptible." For criteria that cannot be assessed due to insufficient information, a designation of "Incomplete Data" is marked on the susceptibility determination sheet. It is important to understand that the provided susceptibility determination is not a score card – it is merely a tool intended to assist with prioritization of protection strategies. It is common for local planning team members, water system staff in particular, to recognize inaccurate or incomplete data used to produce the state-provided analysis – this is due, in part, to the nature of the GIS database utilized to produce the assessments. The GIS database used in this assessment is independent of the official database maintained by the department (Safe Drinking Water Information System; SDWIS) for regulatory purposes. Source water protection planners are encouraged to contact the Public Drinking Water Branch regarding inaccurate information.

5. Source (Well/Intake) Data Sheet

The Source (Well/Intake) Data Sheet describes the physical and technical characteristics of the intake device used to draw raw water. Information regarding well or intake construction, drill depth, pump capacity, construction quality, and other technical specifications are included, as are detection histories for certain regulated contaminants. A substantial portion of the susceptibility determination analysis is based on the information contained on this data sheet – inaccurate or absent information will reduce the accuracy of the corresponding susceptibility determination and increase the potential for "data gaps" within the analysis, itself. Planning teams are encouraged to notify the Public Drinking Water Branch of any revisions or updates to this information for incorporation into the GIS that is used to generate the assessment reports and corresponding susceptibility determinations.

6. Using the Source Water Assessment Report

The provided Source Water Assessment Reports are designed to be utilized as a planning and educational tool to guide protection strategies. There is no requirement that a public water system or community use their state-provided assessment to guide their efforts; however, a frequently asked question by those that would like to implement a protection program is "Where do I start?" Depending on the size of the community and other factors, the concept can seem overwhelming. These assessment reports provide a wealth of background information that can be revised, distilled, corrected or expanded as appropriate given the unique conditions that exist for each unique water source and community. Source water protection planners are reminded, though, that analyses such as these are only as accurate and relevant as the information used in their production. In nearly all cases, local planners will have access to more current and accurate information within their own communities. All planning teams are encouraged to use their state-provided assessment to construct a more accurate locally-driven assessment report for use in their community's protection efforts.


Clarence Cannon Wholesale Water Commission
PWSS No. 2020421, Mark Twain Lake Intake
Monroe County
1 intake, 351 potential contaminant sources
Prepared by:
Map Update: May 22, 2009
Missouri Department of Natural Resources
520000
536000
552000
568000
584000
600000
616000
Surface Water System
System Intake
Drainage Basin
5 Mile Upstream Limit
Potential Contaminant Source
Database Source (Location Confirmed)
Database Source (Location Unconfirmed)
SWIP Field Data
Miles
0
9
18
SWAP - Source Water Assessment Plan -- http://drinkingwater.missouri.edu/swap/
Aerial photos from 2007 USDA NAIP or the 2007 Missouri Leaf-Off Imagery Program (Eastern MO)
Although all data in this dataset have been used by the Missouri Department of Natural Resources (MoDNR), no warranty, expressed or implied, is made by MoDNR as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by MoDNR in the use of these data or related materials. This map is subject to change as additional information is acquired. Additional information at: http://drinkingwater.missouri.edu.

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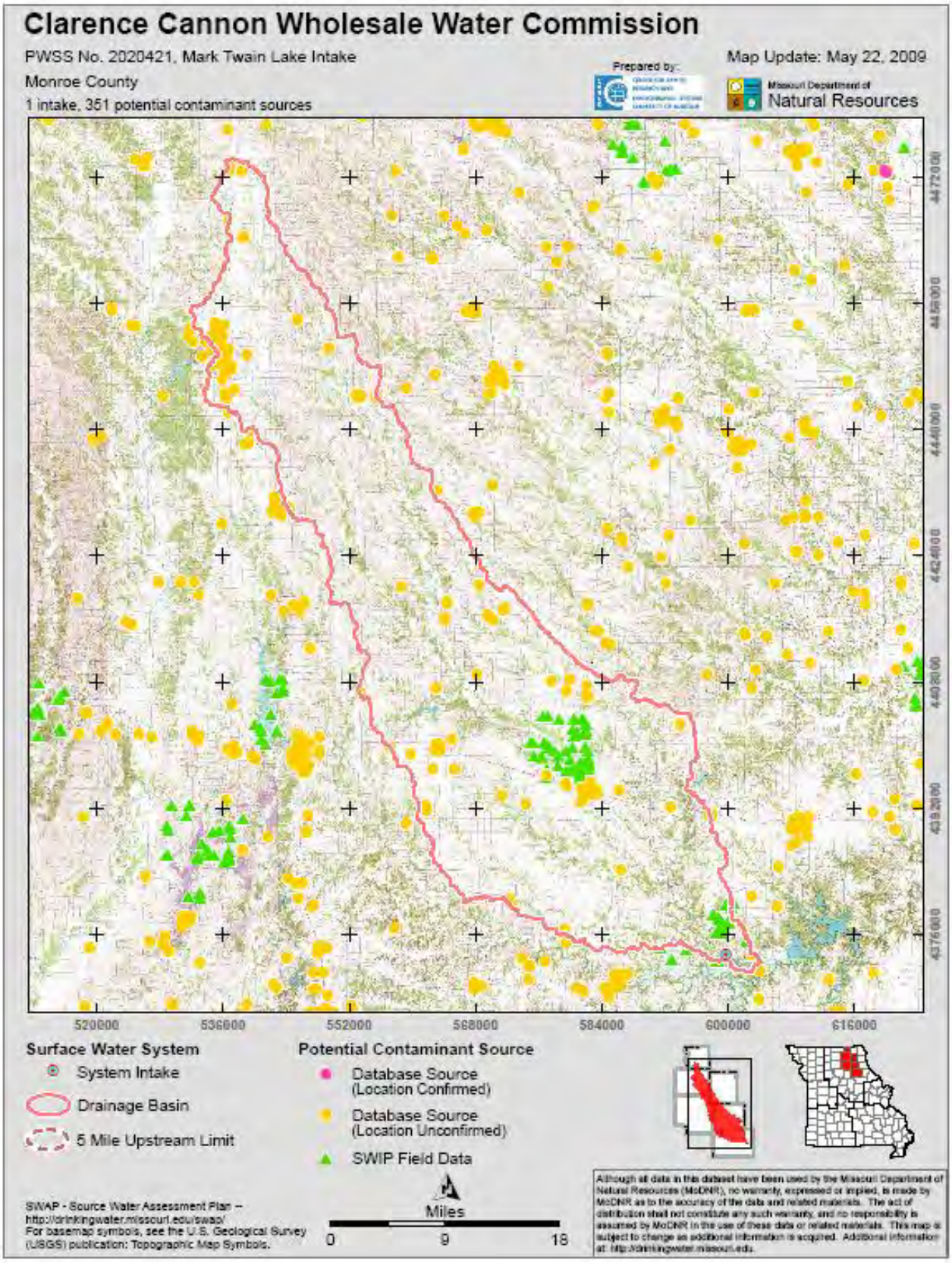
Clarence Cannon Wholesale Water Commission
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Database Source (Location Confirmed)
Database Source (Location Unconfirmed)
SWIP Field Data
Miles
0
9
18
SWAP - Source Water Assessment Plan -- http://drinkingwater.missouri.edu/swap/
For basemap symbols, see the U.S. Geological Survey (USGS) publication: Topographic Map Symbols.
Although all data in this dataset have been used by the Missouri Department of Natural Resources (MoDNR), no warranty, expressed or implied, is made by MoDNR as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by MoDNR in the use of these data or related materials. This map is subject to change as additional information is acquired. Additional information at: http://drinkingwater.missouri.edu.

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421
Monroe County
1 intake

Prepared by:

Sheet Update: May 21, 2009

Missouri Department of Natural Resources

Intake ID	20220
Extended PWS #	2020421201
Local Intake Name	Mark Twain Lake
Intake Type	Impoundment Intake
Contributing Acres	570,858.22
Latitude	-91.84016
Longitude	39.50587
Location Method	GPS: Post Processed
Method Accuracy (ft)	75
USGS 7.5 Quadrangle	Stoutsville
County	Monroe
MoDNR Region	Northeast

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 1 of 8

351 potential contaminant sources

Sheet Update: May 26, 2009

Prepared by:

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
C1	139818	Johns Seed & Supply		UN	NV	UN	Dealcov
C2	139884	Ecolab Pest Elimination		UN	NV	UN	Dealcov
C3	139886	MFA Plant Foods		UN	NV	UN	Dealcov
C4	139896	Midwest		UN	NV	UN	Dealcov
C5	139897	MFA Exchange		UN	NV	UN	Dealcov
C6	139917	Brashear Ag Services		UN	NV	UN	Dealcov
C7	139965	MFA Exchange		UN	NV	UN	Dealcov
C8	139966	MFA Exchange		UN	NV	UN	Dealcov
C9	139967	MFA Agri Services		UN	NV	UN	Dealcov
C10	140001	Bradley Seed Service		UN	NV	UN	Dealcov
C11	140002	Bichsel Brothers Fertilizer		UN	NV	UN	Dealcov
C12	140005	Salt River Ag Service		UN	NV	UN	Dealcov
C13	140006	Belt Fur Wool & Seed		UN	NV	UN	Dealcov
C14	140022	Hays Ten Mile Store		UN	NV	UN	Dealcov
C15	140069	Triple S Fertilizer		UN	NV	UN	Dealcov
C16	140071	MFA Agri Services		UN	NV	UN	Dealcov
C17	140072	Green Acres Crop		UN	NV	UN	Dealcov
C18	140073	Vigoro Industries		UN	NV	UN	Dealcov
C19	140091	Hy-Way Farm Supply		UN	NV	UN	Dealcov
C20	140092	MFA Exchange		UN	NV	UN	Dealcov
C21	139420	DOWNTOWN SERVICE		UN	NV	UN	LUST
C22	139625	GEO SMITH STANDARD SERVICE		UN	NV	UN	LUST
C23	100001	Adair Foods Company		UN	NV	UN	WQIS
C24	100002	Adkins, Dean		UN	NV	UN	WQIS
C25	100003	Bear Creek Court		UN	NV	UN	WQIS
C26	100004	Brashear Ag Service		UN	NV	UN	WQIS
C27	100005	Brashear Wwtf		UN	NV	UN	WQIS
C28	100006	Burk Subdivision Wwtf		UN	NV	UN	WQIS
C29	100007	Kimberling Heights		UN	NV	UN	WQIS
C30	100008	Kimberling Hts Subd		UN	NV	UN	WQIS
C31	100009	Kirksville Concrete C		UN	NV	UN	WQIS
C32	100010	Kirksville Concrete C		UN	NV	UN	WQIS
C33	100014	Kirksville Wwtp		UN	NV	UN	WQIS
C34	100015	Kirksville Wwtp		UN	NV	UN	WQIS
C35	100016	Mfa Agri Service-kirk		UN	NV	UN	WQIS
C36	103672	La Plata Water Filtra		UN	NV	UN	WQIS
C37	103894	Walker, Kent		UN	NV	UN	WQIS
C38	103895	Walker, Kent		UN	NV	UN	WQIS
C39	104424	Baldwin Finishing Far		UN	NV	UN	WQIS
C40	104430	Crain, Bill		UN	NV	UN	WQIS
C41	104459	Wilson, Ronnie		UN	NV	UN	WQIS
C42	105926	Queen City Wwtf		UN	NV	UN	WQIS
C43	105913	Bichsel Spreading Ser		UN	NV	UN	WQIS
C44	105914	Bradley, John		UN	NV	UN	WQIS
C45	105915	Broughton Brothers Jk		UN	NV	UN	WQIS
C46	105917	Chinn/thrasher/thrash		UN	NV	UN	WQIS
C47	105918	Chinn, Gary		UN	NV	UN	WQIS
C48	105919	Clarence Wwtf		UN	NV	UN	WQIS
C49	105920	Clarence Wwtf		UN	NV	UN	WQIS
C50	105921	Clarence Wwtf		UN	NV	UN	WQIS

Method Codes

Code	Address Matching (Geocoding)	Code	Global Positioning System	Code	Other
A2	Block/Group	G1	Static Mode	P1	Land Survey
A3	Street Centerline	G2	Kinematic Mode	S2	Quarter Description
A4	Nearest Street Intersection	G3	Differential Post Processing	UN	Unknown
A5	Primary Street Name	G4	Precise Positioning Service		
A6	Digitization	G5	Signal Averaging		
AO	Other Address Matching	G6	Real Time Differential Processing		
Z1	ZIP Code Centroid		Interpolation		
	Census - 1990	I1	Topo Map		
C1	Block Centroid	I2	Aerial Photography (DOQQ)		
C2	Block/Group Centroid	I3	Satellite Imagery		
C3	Tract Centroid				

Location Codes

BL	Building
CF	Center of Facility
IN	Intersection
LS	Lagoon or Pond
MG	Main Access Point (Gate)
MA	Main Office
OT	Other
PL	Pile
RD	Road
TK	Tank, Standpipe, or Tower
WL	Well
UN	Unknown

Accuracy Codes

Code	Metric
m	Meters
km	Kilometers
	English
ft	Feet
yd	Yards
mi	Miles
UN	Unknown
NF	Site not found at database position
NV	Site position not verified

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 2 of 8

351 potential contaminant sources

Prepared by:

Sheet Update: May 26, 2009

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
C51	05922	Clarence Well		UN	NV	UN	WQIS
C52	05923	Gill, Tom		UN	NV	UN	WQIS
C53	05924	Hicks Sawmill		UN	NV	UN	WQIS
C54	05926	Inc Farmarket		UN	NV	UN	WQIS
C55	05927	Leo O'laughlin inc-e		UN	NV	UN	WQIS
C56	05928	Leo O'laughlin inc-n		UN	NV	UN	WQIS
C57	05929	Magruder, Richard		UN	NV	UN	WQIS
C58	05930	Magruders, Richard		UN	NV	UN	WQIS
C59	05931	Maytag, Heatube Compa		UN	NV	UN	WQIS
C60	05932	Maytag, Heatube Compa		UN	NV	UN	WQIS
C61	05934	Mfa Agri Service-shel		UN	NV	UN	WQIS
C62	05935	Miles, Russell		UN	NV	UN	WQIS
C63	05936	Ricketts Farm Service		UN	NV	UN	WQIS
C64	05937	Salt River Ag Service		UN	NV	UN	WQIS
C65	05938	Shelbina Well		UN	NV	UN	WQIS
C66	05939	Shelbina Well		UN	NV	UN	WQIS
C67	05940	Shelbyville Well		UN	NV	UN	WQIS
C68	05941	South Shelby High Sch	Wqis Entry	UN	33 ft	I2	WQIS
C69	05942	Summers Farm Center I		UN	NV	UN	WQIS
C70	05943	Will's Farm Service		UN	NV	UN	WQIS
C71	07283	MFA Bulk Plant		UN	NV	UN	Chemcov
C72	07290	Kirksville S MGD RBS Plant Effluent		UN	NV	UN	Chemcov
C73	07300	Florsheim Shoes		UN	NV	UN	Chemcov
C74	07307	Brashear Ag Services		UN	NV	UN	Chemcov
C75	07309	Brashear Ag Services		UN	NV	UN	Chemcov
C76	07373	Well D60000D06		UN	NV	UN	Chemcov
C77	07377	Salt River Ag Services		UN	NV	UN	Chemcov
C78	07385	Well #135		UN	NV	UN	Chemcov
C79	07386	Well #133		UN	NV	UN	Chemcov
C80	07425	Heatube		UN	NV	UN	Chemcov
C81	07428	Vigoro Industries		UN	NV	UN	Chemcov
C82	07439	Well D60000D07		UN	NV	UN	Chemcov
C83	07440	Well #125		UN	NV	UN	Chemcov
C84	07444	City of Shelbina	Chemcov Entry	SL	33 ft	I2	Chemcov
C85	07445	MFA Fertilizer Plant		UN	NV	UN	Chemcov
C86	07446	Rickett's Farm Services		UN	NV	UN	Chemcov
C87	07447	Rickett's Farm Services		UN	NV	UN	Chemcov
C88	07448	MFA Agri Services		UN	NV	UN	Chemcov
C89	07453	Well #124a		UN	NV	UN	Chemcov
C90	07454	Well #123		UN	NV	UN	Chemcov
C91	07461	Well D60000D11		UN	NV	UN	Chemcov
C92	09908	1000 Hills Service		UN	NV	UN	Tanks
C93	09134	Adair County Road & Bridge		UN	NV	UN	Tanks
C94	09135	Adair County Road & Bridge Dept		UN	NV	UN	Tanks
C95	09367	Amoco Oil - Per Enforcement Case		UN	NV	UN	Tanks
C96	09790	Automotive Wholesalers		UN	NV	UN	Tanks
C97	09817	Ayerco #29		UN	NV	UN	Tanks
C98	09819	Ayerco #30		UN	NV	UN	Tanks
C99	09822	Ayerco #35		UN	NV	UN	Tanks
C100	09865	Baiotto Con Prod Inc		UN	NV	UN	Tanks

Method Codes

Code	Address Matching (Geocoding)	Code	Global Positioning System	Code	Other
A2	Block/Group	G1	Static Mode	P1	Land Survey
A3	Street Centerline	G2	Kinematic Mode	I2	Quarter Description
A4	Nearest Street Intersection	G3	Differential Post Processing	UN	Unknown
A5	Primary Street Name	G4	Precise Positioning Service		
A6	Digitization	G5	Signal Averaging		
A0	Other Address Matching	G6	Real Time Differential Processing		
Z1	ZIP Code Centroid		Interpolation		
	Census - 1990	I1	Topo Map		
C1	Block Centroid	I2	Aerial Photography (DOQQ)		
C2	Block/Group Centroid	I3	Satellite Imagery		
C3	Tract Centroid				

Location Codes

BL	Building
CF	Center of Facility
IN	Intersection
LS	Lagoon or Pond
MG	Main Access Point (Gate)
MA	Main Office
OT	Other
PL	Pile
RD	Road
TK	Tank, Standpipe, or Tower
WL	Well
UN	Unknown

Accuracy Codes

Code	Metric
m	Meters
km	Kilometers
	English
ft	Feet
yd	Yards
mi	Miles
UN	Unknown
NF	Site not found at database position
NV	Site position not verified

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 3 of 8

351 potential contaminant sources

Prepared by:

Sheet Update: May 26, 2009

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
C101	110708	C Mart #1039		UN	NV	UN	Tanks
C102	110869	Carlyle Walker		UN	NV	UN	Tanks
C103	110884	Carroll's 66 Service		UN	NV	UN	Tanks
C104	110923	Casey's General Store		UN	NV	UN	Tanks
C105	110972	Casey's General Store		UN	NV	UN	Tanks
C106	111033	Casey's General Store #1016		UN	NV	UN	Tanks
C107	111037	Casey's General Store #1034		UN	NV	UN	Tanks
C108	111236	Central Garage - Street Shed		UN	NV	UN	Tanks
C109	111302	Charles White		UN	NV	UN	Tanks
C110	111372	Churchill Truck Lines, Inc		UN	NV	UN	Tanks
C111	111502	City Of Kirksville		UN	NV	UN	Tanks
C112	111777	Collers Food Mart		UN	NV	UN	Tanks
C113	112541	Doug's Service		UN	NV	UN	Tanks
C114	112749	Elf Asphalt, Kirksville Facility		UN	NV	UN	Tanks
C115	113333	Floyd Oil, Inc.		UN	NV	UN	Tanks
C116	113486	Fuel Maxz F-230		UN	NV	UN	Tanks
C117	113556	Gary's Super Shell		UN	NV	UN	Tanks
C118	113650	Geo Smith Standard Service		UN	NV	UN	Tanks
C119	113896	Grim Smith Hospital		UN	NV	UN	Tanks
C120	114025	Hardy Oil Co Bulk Plant		UN	NV	UN	Tanks
C121	114312	Hollister Incorporated		UN	NV	UN	Tanks
C122	114467	Ice House #1		UN	NV	UN	Tanks
C123	114468	Ice House #15		UN	NV	UN	Tanks
C124	114470	Ice House #3		UN	NV	UN	Tanks
C125	114471	Ice House #4		UN	NV	UN	Tanks
C126	114899	Jones Service		UN	NV	UN	Tanks
C127	115112	Kerr-mcgee #7441		UN	NV	UN	Tanks
C128	115198	Kirksville Bus Garage		UN	NV	UN	Tanks
C129	115199	Kirksville Maint Lot		UN	NV	UN	Tanks
C130	115200	Kirksville Motors		UN	NV	UN	Tanks
C131	115201	Kirksville Municipal Airport		UN	NV	UN	Tanks
C132	115203	Kirksville Regional Center		UN	NV	UN	Tanks
C133	115204	Kirksville Service Center(ue Co)		UN	NV	UN	Tanks
C134	115205	Kirksville Vor, Arsr, Rcag		UN	NV	UN	Tanks
C135	115253	Kmart #9155		UN	NV	UN	Tanks
C136	115315	Kum & Go #780		UN	NV	UN	Tanks
C137	115316	Kum & Go #781		UN	NV	UN	Tanks
C138	115508	Lasley Mfg Service		UN	NV	UN	Tanks
C139	115513	Laughlin Pavilion		UN	NV	UN	Tanks
C140	115518	Law Office		UN	NV	UN	Tanks
C141	115810	M-15 Kirksville		UN	NV	UN	Tanks
C142	115946	Mansur Threlkeld Store		UN	NV	UN	Tanks
C143	116294	Mfg Feed Mill		UN	NV	UN	Tanks
C144	116763	Morris 66 Serv		UN	NV	UN	Tanks
C145	116767	Morris Oil Company		UN	NV	UN	Tanks
C146	117098	Northeast Missouri State University		UN	NV	UN	Tanks
C147	117933	Queen City Maint Lot		UN	NV	UN	Tanks
C148	118091	R.f. Siegle Station		UN	NV	UN	Tanks
C149	118503	Ron's Tire		UN	NV	UN	Tanks
C150	118889	Shelbina Co		UN	NV	UN	Tanks

Method Codes

Code	Address Matching (Geocoding)
A2	Block/Group
A3	Street Centerline
A4	Nearest Street Intersection
A5	Primary Street Name
A6	Digitization
A0	Other Address Matching
Z1	ZIP Code Centroid
	Census - 1990
C1	Block Centroid
C2	Block/Group Centroid
C3	Tract Centroid

Code	Global Positioning System
G1	Static Mode
G2	Kinematic Mode
G3	Differential Post Processing
G4	Precise Positioning Service
G5	Signal Averaging
G6	Real Time Differential Processing
	Interpolation
I1	Topo Map
I2	Aerial Photography (DOQQ)
I3	Satellite Imagery

Code	Other
P1	Land Survey
S2	Quarter Description
UN	Unknown

Location Codes

BL	Building
CF	Center of Facility
IN	Intersection
LS	Lagoon or Pond
MG	Main Access Point (Gate)
MA	Main Office
OT	Other
PL	Pile
RD	Road
TK	Tank, Standpipe, or Tower
WL	Well
UN	Unknown

Accuracy Codes

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Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 4 of 8

351 potential contaminant sources

Prepared by

Sheet Update: May 26, 2009

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
C151	118890	Shelbina Maint Lot		UN	NV	UN	Tanks
C152	118892	Shelby County R-Iv School		UN	NV	UN	Tanks
C153	118897	Shelbyville Bulk Refined Fuels		UN	NV	UN	Tanks
C154	119036	Shockey's Amoco Station		UN	NV	UN	Tanks
C155	119120	Simpson Oil Company		UN	NV	UN	Tanks
C156	119408	Southwestern Bell		UN	NV	UN	Tanks
C157	119454	Southwestern Bell		UN	NV	UN	Tanks
C158	119496	Southwestern Bell Telephone Co 2894		UN	NV	UN	Tanks
C159	119651	Ss 5206		UN	NV	UN	Tanks
C160	119858	Standard Register		UN	NV	UN	Tanks
C161	120069	Sunny Shope		UN	NV	UN	Tanks
C162	120451	Tipsell Service		UN	NV	UN	Tanks
C163	120478	Toastmaster, Inc		UN	NV	UN	Tanks
C164	120805	United Parcel Service, Inc		UN	NV	UN	Tanks
C165	120839	Updyke Motor Co		UN	NV	UN	Tanks
C166	120841	U-pump		UN	NV	UN	Tanks
C167	121004	Van Houten Service		UN	NV	UN	Tanks
C168	121007	Van Wye & Sons		UN	NV	UN	Tanks
C169	121372	Weber Gmc		UN	NV	UN	Tanks
C170	121512	White's Auto Supply & Service		UN	NV	UN	Tanks
C171	121569	Willow Bend		UN	NV	UN	Tanks
C172	121853	Kirksville FMGP		UN	NV	UN	SWARS
C173	122046	RESOURCE RECOVERY CTR		UN	NV	UN	RCRIS
C174	122206	Truman State University		UN	NV	UN	HW Gen
C175	122345	B & H Petroleum Ice House #3		UN	NV	UN	HW Gen
C176	122573	Kirksville College Of Osteopathy		UN	NV	UN	HW Gen
C177	122838	Hy-test Inc		UN	NV	UN	HW Gen
C178	122881	Leo O'laughlin, Inc.		UN	NV	UN	HW Gen
C179	122893	Clarence Components Parts		UN	NV	UN	HW Gen
C180	122898	Adair Foods Co.		UN	NV	UN	HW Gen
C181	123495	Northeast Automotive Whse. Inc		UN	NV	UN	HW Gen
C182	123580	Holtsler, Inc.		UN	NV	UN	HW Gen
C183	123941	Northeast Missouri State University		UN	NV	UN	HW Gen
C184	124298	Reiser Ford-mercury		UN	NV	UN	HW Gen
C185	124304	Jim Robertson Chevrolet		UN	NV	UN	HW Gen
C186	124337	Cerro Copper Tube Co		UN	NV	UN	HW Gen
C187	124542	Goodwin's Auto Body		UN	NV	UN	HW Gen
C188	124655	Standard Register Co The		UN	NV	UN	HW Gen
C189	124871	Hines Body Shop		UN	NV	UN	HW Gen
C190	125493	Ortech		UN	NV	UN	HW Gen
C191	125699	Northeast Diesel Service		UN	NV	UN	HW Gen
C192	125832	Loren Hatfield Body & Frame		UN	NV	UN	HW Gen
C193	126328	Buck's Auto Body		UN	NV	UN	HW Gen
C194	126967	Custom Auto Body		UN	NV	UN	HW Gen
C195	127111	Floyd Oil Inc.		UN	NV	UN	HW Gen
C196	127847	Churchill Truck Lines, Inc.		UN	NV	UN	HW Gen
C197	128036	Vic Cleaners		UN	NV	UN	HW Gen
C198	128691	Kirksville College Of Osteopathic		UN	NV	UN	HW Gen
C199	128786	Wal Mart Store #06-0199		UN	NV	UN	HW Gen
C200	128863	Kirksville College Ost. Medicine		UN	NV	UN	HW Gen

Method Codes

Code	Address Matching (Geocoding)	Code	Global Positioning System	Code	Other
A2	Block/Group	G1	Static Mode	P1	Land Survey
A3	Street Centerline	G2	Kinematic Mode	P2	Quarter Description
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A6	Digitization	G5	Signal Averaging		
A0	Other Address Matching	G6	Real Time Differential Processing		
Z1	ZIP Code Centroid		Interpolation		
	Census - 1990	I1	Topo Map		
C1	Block Centroid	I2	Aerial Photography (DOQQ)		
C2	Block/Group Centroid	I3	Satellite Imagery		
C3	Tract Centroid				

Location Codes

BL	Building
CP	Center of Facility
IN	Intersection
LS	Lagoon or Pond
MG	Main Access Point (Gate)
MA	Main Office
OT	Other
PL	Pile
RD	Road
TK	Tank, Standpipe, or Tower
WL	Well
UN	Unknown

Accuracy Codes

Code	Metric
m	Meters
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Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 5 of 8

351 potential contaminant sources

Sheet Update: May 26, 2009

Prepared by

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
C201	128945	Donaldson Company, Inc.		UN	NV	UN	HW Gen
C202	129963	Mo Power & Light: Kirksville		UN	NV	UN	HW Gen
C203	129369	Queen City, City Of		UN	NV	UN	HW Gen
C204	129773	Shelbina, City Of		UN	NV	UN	HW Gen
C205	130186	Kirksville Afs (former) % Corps Of Eng.		UN	NV	UN	HW Gen
C206	130685	Stewart Agri Research Svc Inc		UN	NV	UN	HW Gen
C207	130792	Raul Walters Properties		UN	NV	UN	HW Gen
C208	131062	Shelbina Elementary		UN	NV	UN	HW Gen
C209	131086	Gleason Auto Parts		UN	NV	UN	HW Gen
C210	131161	Burlington Northern		UN	NV	UN	HW Gen
C211	131363	Kirksville Armory		UN	NV	UN	HW Gen
C212	131417	Kirksville Daily Express		UN	NV	UN	HW Gen
C213	131520	Faa Old Radar Site % Raytheon Support Svc		UN	NV	UN	HW Gen
C214	131538	United Parcel Service		UN	NV	UN	HW Gen
C215	131615	Greentop Lisar Center		UN	NV	UN	HW Gen
C216	131981	Faa Vortac		UN	NV	UN	HW Gen
C217	132001	Caseys General Store No 1034		UN	NV	UN	HW Gen
C218	132068	Caseys General Store No 1016		UN	NV	UN	HW Gen
C219	132153	Caseys General Store No 1741		UN	NV	UN	HW Gen
C220	132367	Toastmaster Inc.		UN	NV	UN	HW Gen
C221	132862	Kirksville Plant		UN	NV	UN	APCP
C222	132863	Truman State University		UN	NV	UN	APCP
C223	132864	Kirksville Concrete		UN	NV	UN	APCP
C224	132865	Kirksville Substation		UN	NV	UN	APCP
C225	132866	Toastmaster Inc.		UN	NV	UN	APCP
C226	132867	Shahan Pallet Co		UN	NV	UN	APCP
C227	132868	Kirksville Plant		UN	NV	UN	APCP
C228	132869	Express Publishing Co		UN	NV	UN	APCP
C229	132870	Holster Inc		UN	NV	UN	APCP
C230	132871	Kirksville		UN	NV	UN	APCP
C231	132872	Wal-mart		UN	NV	UN	APCP
C232	132873	Hy-vee Food Store		UN	NV	UN	APCP
C233	132874	Kirksville		UN	NV	UN	APCP
C234	132876	Kirksville		UN	NV	UN	APCP
C235	132877	Kirksville Concrete - Plant 1		UN	NV	UN	APCP
C236	132878	Grim-smith Hospital & Clinic Inc		UN	NV	UN	APCP
C237	132879	Kirksville Plant		UN	NV	UN	APCP
C238	132882	Century Steps Inc		UN	NV	UN	APCP
C239	132883	Adair Foods		UN	NV	UN	APCP
C240	132884	Vic Cleaners		UN	NV	UN	APCP
C241	134999	Paris Asphalt Company		UN	NV	UN	APCP
C242	135473	Greentop Elevator		UN	NV	UN	APCP
C243	135476	Lancaster		UN	NV	UN	APCP
C244	135598	Shelbina Elevator		UN	NV	UN	APCP
C245	135599	Healube Div		UN	NV	UN	APCP
C246	136560	Divisions Of Vigoro Industries		UN	NV	UN	APCP
C247	136561	Shelbina		UN	NV	UN	APCP
C248	136562	Clarence		UN	NV	UN	APCP
C249	136563	Shelbina		UN	NV	UN	APCP
C250	136564	Leo O'laughlin Inc		UN	NV	UN	APCP

Method Codes

Code	Address Matching (Geocoding)	Code	Global Positioning System	Code	Other
A2	Block/Group	G1	Static Mode	P1	Land Survey
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AO	Other Address Matching	G6	Real Time Differential Processing		
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Code	Metric
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Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 8 of 8

351 potential contaminant sources

Prepared by

Sheet Update: May 26, 2009

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
C251	135565	Hy-way Farm Supply		UN	NV	UN	APCP
C252	135566	Cerro Copper Tube Company		UN	NV	UN	APCP
C253	135567	Shelbina Power Plant		UN	NV	UN	APCP
C254	135568	Leo O'Laughlin Inc (quarry)		UN	NV	UN	APCP
C255	137142	Producers Creamery		UN	NV	UN	APCP
C256	137425	Shelbina Plant		UN	NV	UN	APCP
C257	137452	Kirksville		UN	NV	UN	APCP
C258	137762	MFA INC		UN	NV	UN	AFS
C259	138111	HEATUBE CO.		UN	NV	UN	TRI
C260	138118	CERRO COPPER TUBE CO.		UN	NV	UN	TRI
C261	139534	Queen City		UN	NV	UN	MoDOT
C262	139561	Shelbyville		UN	NV	UN	MoDOT
C263	139562	Shelbina		UN	NV	UN	MoDOT
C264	384851	Kirksville Air Force Station P-64	Hazardous waste (Federal facility)	OT	33 ft	I2	CARES
C265	385919		Car wash	BL	33 ft	I2	CARES
C266	385920	Northeast Veterinary Clinic	Veterinary service	BL	33 ft	I2	CARES
C267	385921		Other	WL	33 ft	I2	CARES
C268	385922		Pit toilet	BL	33 ft	I2	CARES
C269	385923	Dump Station	Other	IN	33 ft	I2	CARES
C270	385924		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C271	385925		Lagoon (residential)	UN	33 ft	I2	CARES
C272	385926		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C273	385927	Shelbina Lake Golf Course	Golf courses	CF	33 ft	I2	CARES
C274	385928		Pit toilet	BL	33 ft	I2	CARES
C275	385929		Pit toilet	BL	33 ft	I2	CARES
C276	385930	SHelbina Lake Golf Course	Well (irrigation)	WL	33 ft	I2	CARES
C277	385931		Lagoon (residential)	UN	33 ft	I2	CARES
C278	385932		Well (domestic)	WL	33 ft	I2	CARES
C279	385933	Shelbina intake	Other	BL	33 ft	I2	CARES
C280	385934		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C281	385935		Lagoon (residential)	UN	33 ft	I2	CARES
C282	385936		Well (domestic)	WL	33 ft	I2	CARES
C283	385937		Well (domestic)	WL	33 ft	I2	CARES
C284	385938		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C285	385939		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C286	385940		Well (domestic)	WL	33 ft	I2	CARES
C287	385941		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C288	385942	Hog Farm	CAFO	CF	33 ft	I2	CARES
C289	385943		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C290	385944		Well (domestic)	WL	33 ft	I2	CARES
C291	385945		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C292	385946		Well (domestic)	WL	33 ft	I2	CARES
C293	385947		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C294	385948		Well (domestic)	WL	33 ft	I2	CARES
C295	385949	Hog Farm	CAFO	BL	33 ft	I2	CARES
C296	385950		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C297	385951		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C298	385952		Well (domestic)	WL	33 ft	I2	CARES
C299	385953		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C300	385954		Tank (above-ground fuel)	TK	33 ft	I2	CARES

Method Codes

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A5	Primary Street Name	G4	Precise Positioning Service		
A6	Digitization	G5	Signal Averaging		
A0	Other Address Matching	G6	Real Time Differential Processing		
Z1	ZIP Code Centroid		Interpolation		
	Census - 1990	I1	Topo Map		
C1	Block Centroid	I2	Aerial Photography (DOQQ)		
C2	Block/Group Centroid	I3	Satellite Imagery		
C3	Tract Centroid				

Location Codes

BL	Building
CF	Center of Facility
IN	Intersection
LS	Lagoon or Pond
MG	Main Access Point (Gate)
MA	Main Office
OT	Other
PL	Pile
RD	Road
TK	Tank, Standpipe, or Tower
WL	Well
UN	Unknown

Accuracy Codes

Code	Metric
m	Meters
km	Kilometers
	English
ft	Feet
yd	Yards
mi	Miles
UN	Unknown
NF	Site not found at database position
NV	Site position not verified

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 7 of 8

351 potential contaminant sources

Prepared by

Sheet Update: May 26, 2009

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
C301	395965		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C302	395966		Other	TK	33 ft	I2	CARES
C303	395967		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C304	395968		Farm machinery storage	CF	33 ft	I2	CARES
C305	395969		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C306	395960		Well (domestic)	WL	33 ft	I2	CARES
C307	395961		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C308	395962		Well (domestic)	WL	33 ft	I2	CARES
C309	395963		Well (domestic)	WL	33 ft	I2	CARES
C310	395964		Well (domestic)	WL	33 ft	I2	CARES
C311	395965		Lagoon (residential)	LIN	33 ft	I2	CARES
C312	395966		Well (domestic)	WL	33 ft	I2	CARES
C313	395967		Well (domestic)	WL	33 ft	I2	CARES
C314	395968		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C315	395969		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C316	395970		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C317	395971		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C318	395972		Other	TK	33 ft	I2	CARES
C319	395973		Electric substation	CF	33 ft	I2	CARES
C320	395974		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C321	395975		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C322	395976		Well (domestic)	WL	33 ft	I2	CARES
C323	395977		Well (domestic)	WL	33 ft	I2	CARES
C324	395978		Well (domestic)	WL	33 ft	I2	CARES
C325	395979		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C326	395980		Well (domestic)	WL	33 ft	I2	CARES
C327	395981		Well (domestic)	WL	33 ft	I2	CARES
C328	395982		Well (domestic)	WL	33 ft	I2	CARES
C329	395983		Lagoon (residential)	LIN	33 ft	I2	CARES
C330	395984		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C331	395985		Well (domestic)	WL	33 ft	I2	CARES
C332	395986		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C333	395987		Well (domestic)	WL	33 ft	I2	CARES
C334	395990		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C335	395991		Well (domestic)	WL	33 ft	I2	CARES
C336	395992		Well (domestic)	WL	33 ft	I2	CARES
C337	395993		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C338	395994		Well (domestic)	WL	33 ft	I2	CARES
C339	395995		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C340	395996		Cemetery	CF	33 ft	I2	CARES
C341	395997		Well (domestic)	WL	33 ft	I2	CARES
C342	395998		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C343	395999		Lagoon (residential)	LIN	33 ft	I2	CARES
C344	396000		Well (domestic)	WL	33 ft	I2	CARES
C345	396001	Chigger Hill Bait & Tackle	Tank (above-ground fuel)	TK	33 ft	I2	CARES
C346	396002		Well (domestic)	WL	33 ft	I2	CARES
C347	396003		Pit toilet	BL	33 ft	I2	CARES
C348	396004		Well (domestic)	WL	33 ft	I2	CARES
C349	396005		Tank (above-ground fuel)	TK	33 ft	I2	CARES
C350	396009	Windmill Camp Store	Tank (above-ground fuel)	TK	33 ft	I2	CARES

Method Codes

Code	Address Matching (Geocoding)	Code	Global Positioning System	Code	Other
A2	Block/Group	G1	Static Mode	P1	Land Survey
A3	Street Centerline	G2	Kinematic Mode	S2	Quarter Description
A4	Nearest Street Intersection	G3	Differential Post Processing	UN	Unknown
A5	Primary Street Name	G4	Precise Positioning Service		
A6	Digitization	G5	Signal Averaging		
A0	Other Address Matching	G6	Real Time Differential Processing		
Z1	ZIP Code Centroid		Interpolation		
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UN	Unknown

Accuracy Codes

Code	Metric
m	Meters
km	Kilometers
	English
ft	Feet
yd	Yards
mi	Miles
UN	Unknown
NF	Site not found at database position
NV	Site position not verified

Although all data in the dataset have been used by the Missouri Department of Natural Resources (MoDNR), no warranty, expressed or implied, is made by MoDNR as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by MoDNR in the use of these data or related materials. This sheet is subject to change as additional information is acquired. Additional information at: http://dnrlaqpwater.dnr.mo.gov/sdwis

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Monroe County, sheet 8 of 8

351 potential contaminant sources

Sheet Update: May 26, 2009

Prepared by:

Missouri Department of Natural Resources

Map C.No.	CARES ID	Site Name	Type	Location Code	Accuracy Code	Method Code	Database Code
0351	3880-3		Net (domestic)	NL	33 ft	2	CARES

Method Codes

Code	Address Matching (Geocoding)	Code	Global Positioning System	Code	Other
A2	Block/Group	G1	Static Mode	P1	Land Survey
A3	Street Centerline	G2	Kinematic Mode	S2	Quarter Description
A4	Nearest Street Intersection	G3	Differential Post Processing	UN	Unknown
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Location Codes

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Accuracy Codes

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Although all data in the dataset have been used by the Missouri Department of Natural Resources (MoDNR), no warranty, expressed or implied, is made by MoDNR as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by MoDNR in the use of these data or related materials. This sheet is subject to change as additional information is acquired. Additional information: http://dnrwaterweb.dnr.mo.gov

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Contaminant Summary Sheet

351 potential contaminant sources

Sheet Update: Jun 01, 2009

Prepared by

Missouri Department of Natural Resources

351 Potential Contaminant Sources in the Listed Databases:

1	AFS (EPA AIRS Facility Sites)		Perchlo (MoDNR Perchlorate Sites in Missouri)
37	APCP (MoDNR Air Pollution Control Program Sites)		Pest Ap (MDA Licensed Pesticide Applicators)
	APF (MoDNR Active Permitted Landfills & Transfer Stations)	1	RCRIS (EPA Resource Conservation and Recovery Information System)
	CERCLIS (EPA CERCLIS)		Silos (USGS Minuteman II Missile Silos)
21	Chemcov (VA Selected Chemical Sites)	1	SMARS (MoDNR Superfund Management and Registry System)
20	Dealcov (MDA Pesticide Dealer Locations)	50	Tanks (MoDNR Petroleum Tank Database)
	Dioxin (MoDNR Confirmed Dioxin List)		Tier 2 (MERC Tier II Reports)
	Grain B (USDA Former Grain Bin Sites)		Tire D (MoDNR Resolved and Unresolved Waste Tire Dumps)
47	HW Gen (MoDNR Hazardous Waste Generators)	2	TRI (EPA Toxic Release Inventory)
	HW Tran (MoDNR Hazardous Waste Transporters)		VCP (MoDNR Voluntary Cleanup Program Sites)
2	LUST (MoDNR Leaking Underground Storage Tanks)	46	WQIS (MoDNR Water Quality Information System)
3	MoDOT (MoDOT Highway Maintenance Facilities)		
	PADS (EPA PCB Activity Data Base System)	88	SWIP Field Inventory (see below)

88 Potential Contaminant Sources in the SWIP Field Inventory:

0	Airport or abandoned airfield	0	Machine or metalworking shop
0	Animal feedlot	0	Manufacturing (general)
0	Apartments and condominiums	0	Material stockpile (industrial)
0	Asphalt plant	0	Medical institution
0	Auto repair shop	0	Metal production facility
0	Automotive dealership	0	Mining operation
0	Barber and beauty shop	5	Other
0	Boat yard and marina	0	Paint store
2	CAFO	0	Park land
0	Campground	0	Parking lot
1	Car wash	0	Petroleum production or storage
0	Cement Plant	0	Pharmacies
1	Cemetery	0	Photography shop or processing lab
0	Communication equipment mfg	4	Pit toilet
0	Country club	0	Plastic material and synthetic mfg
0	Dry cleaner	0	Print shop
0	Dumping and/or burning site	0	Railroad yard
0	Electric equipment mfg or storage	0	Recycling/reduction facility
1	Electric substation	0	Research lab
1	Farm machinery storage	0	Restaurant
0	Feed/Fertilizer/Co-op	0	Sawdust pile
0	Fire station	0	School
0	Funeral service and crematory	0	Sports and hobby shop
0	Furniture manufacturer	0	Swimming pool
0	Furniture repair or finishing shop	0	Tailing pond
0	Garden and/or nursery	33	Tank (above-ground fuel)
0	Garden, nursery, and/or florist	0	Tank (other)
0	Gasoline service station	0	Tank (pesticide)
1	Golf courses	0	Tank (underground fuel)
0	Government office	0	Trucking terminal
0	Grain bin	1	Veterinary service
0	Hardware and lumber store	0	Wastewater treatment facility
1	Hazardous waste (Federal facility)	0	Well (abandoned)
0	Highway maintenance facility	30	Well (domestic)
0	Jewelry or metal plating shop	1	Well (irrigation)
0	Junk yard or salvage yard	0	Well (livestock)
0	Lagoon (commercial)	0	Well (monitoring)
0	Lagoon (industrial)	0	Well (public water supply)
0	Lagoon (municipal)	0	Well (unknown)
6	Lagoon (residential)		
0	Landfill (municipal)		
0	Laundromat		
0	Livestock auction		

Clarence Cannon Wholesale Water Commission

PWSS No. 2020421

Susceptibility Determination Sheet

1 intake

Prepared by:

Sheet Update: Jun 03, 2009

Missouri Department of Natural Resources

The Missouri Department of Natural Resources (MoDNR) has assembled this information to assess the susceptibility of drinking water sources to contamination. There are many unforseen and unpredictable factors that may cause a source to be contaminated. MoDNR routinely monitors all public supplies to ensure public health is protected. Public water systems and local communities are encouraged to take all measures possible to reduce the susceptibility of their drinking water source to chemical contamination. For more information, call 1-800-361-4827.	Not Susceptible	Moderately Susceptible	Highly Susceptible	Incomplete Data
A system is highly susceptible based on detection histories if:				
Volatile Organic Chemicals (VOCs) have been consistently detected the source water.				X
Synthetic Organic Chemicals (SOCs) have been consistently detected the source water.				X
Inorganic Chemicals (IOCs) have been detected in a well above naturally occuring levels.				X
Nitrates have been consistently detected at or above one-half the MCL, or				X
Viruses or microbiological contaminants are consistently detected in the source water.			X (1)	
A system is moderately susceptible to contaminants if:				
Any contaminants listed in Appendix F-a are found in the source water area.		X (2)		
Land use in the source water area is a likely non-point source of contamination.				X
The water body receives recharge from a contaminated groundwater source, or				X
There is a high density of transportation corridors in the source water area.				X
A system is highly susceptible to contamination if:				
Any contaminant sites identified in the source water area are known to have released contaminants into the environment and may reach the water body, or				X
A large portion of the land use in the source water area is a likely non-point source of contamination, or				X
The source water is affected by contaminated groundwater.				X

(1) This system uses a water source that shows signs of contamination. The Department of Natural Resources will monitor the degree of contamination. The water system should treat the water accordingly to remove contamination before it enters the distribution system. The water system and watershed protection team should also make an effort to eliminate contaminants entering the source water.

(2) An intake (or intakes) serving this system has been determined to be susceptible due to the presence of potential contaminant sources. The water system and the watershed protection team should take extra care to ensure that all potential contaminants in the source water area are handled properly to avoid contamination of the drinking water supply. Periodic monitoring will be required to track contamination of the source water. If possible, contaminant sources should be removed from the source water area.

Back-up plan for providing water in the event of a service disruption.

The Commission has agreements in place with the Cities of Monroe City, Macon and Moberly to provide or receive water in a shortage emergency. The construction of the plant and distribution system was made with provisions to prevent service disruptions. The water treatment plant has an emergency diesel generator capable of supplying one hundred percent of electrical requirements of the plant. Booster pump stations have emergency diesel generators permanently installed for service outages.

The most likely outage would In the event of a service disruption due to tornado, earthquake or prolonged drought. The Commission, and the contractor, United Water Service, will comply with the Missouri Drought Response Plan. Prior to 2003, northeast Missouri experienced seven years of drought. Although Mark Twain Lake was at low levels, the entire sixteen million gallons per day for Municipal and Industrial Water Supply contracted by the State of Missouri was available for use, if needed. Therefore, it is unlikely that drought will cause service disruption in the near term.

Water Shortage Response Plan

Introduction

Water shortage planning is an important aspect of any public water supply. Proper planning and preparation will allow a drinking water supplier to meet demands placed on the system in times when shortages occur. Decisions will be made based on sound practices and thought rather than in a panic situation. System officials will not have to rely on decisions based on the emergency but rather on carefully thought out plans that have been communicated to the public prior to the situation occurring.

Water shortage situations do not just apply to drought conditions. Shortages can occur due to major water system breakdowns, contamination of supplies or water distribution systems or limits of treatment capacity. It is important that conditions other than drought be considered when developing a water shortage plan of action. In the case of member systems of the Clarence Cannon Wholesale Water Commission, shortages can occur due to any of the above conditions and also to the limit of the member's contract allowance and the desire by the member system to not increase their contractual commitment for additional water.

Water Use Classifications

Defining water use classifications is an important step in developing a water shortage response plan. By defining water uses in the system, it is clear to the customers of the system the priority placed on differing water uses.

1. **Essential Water Uses** – This is water use that is necessary for health and public protection purposes. Specific categories in this classification are:

   Domestic Use: Water in amounts reasonably needed to sustain human life, and to maintain reasonable standards of hygiene, cleanliness and sanitation.

   Health Care Facilities: Patient care and rehabilitation.

   Public Use: Firefighting – local officials should institute a "burn ban" at this time. Flushing of sewers and hydrants as needed to ensure public health and safety and if approved by the municipal governing body.

2. **Socially or Economically Important Uses** – To the extent that sources of water other than fresh water are not available or feasible to use, socially or economically important uses of water include:

   Agricultural irrigation – for production of food and fiber and maintenance of livestock.

   Commercial nurseries – watering at a minimum level to maintain stock.

   Arboretums and public gardens of national, state or regional significance – watering where necessary to preserve specimens.

   Sod and turf industry – minimal watering to maintain stock.

   Sedimentation and erosion control – minimum watering necessary to implement revegetation which is required pursuant to an erosion and sedimentation control plan adopted pursuant to law or regulations.

   Commercial Laundromats.

   Restaurants and other eating establishments.

   Commercial air conditioning systems.

   Schools, churches, motels/hotels and similar commercial establishments.

3. **Non-essential uses** – Non-essential uses include:

Outdoor commercial and non-commercial watering (public & private).

Fountains, reflecting pools, artificial waterfalls, etc.

Gardens, lawns, parks, playing fields and other recreational areas that do not have access to other water supplies.

Filling and operation of swimming pools (public & private).

Golf courses.

Commercial car and truck washes.

Testing of fire hydrants and sprinkler caps. In general, the use of fire hydrants for all purposes except those for fire fighting, health protection or certain testing and drills by the fire department it is in the interest of public safety and is approved by the governing body.

Flushing of sewers and water mains.

Serving water in restaurants, clubs or other eating establishments except by specific request.

Each water supply system will need to modify this list to fit their particular situation.

Defining Triggers

A trigger is a specific indicator of the potential for and severity of a water supply shortage based on accurate assessments of available water supply. Triggers are used to initiate and remove restrictions. They take the pressure off decision-makers and reduce the need for local officials to make "judgment calls" in the heat of a crisis. Triggers also help to alleviate public disagreement over restrictions. If the public understands why and when water use restrictions are put into effect, they will be more likely to cooperate.

Each system will need to determine the appropriate triggers based on their particular situation. For CCWWC members, triggers could include percentage of peak usage of contract or number of days total contracted water is used. Members need to consider the system growth rate, the type of customers the system serves and the availability of more water from the CCWWC itself. The rural water districts especially need to consider the demand of farmers or livestock producers during periods of drought. Many producers will approach the water district about setting a meter for livestock when local ponds go dry. As soon as the rain begins and the ponds fill, the producer no longer wants or needs the metered water. The districts should be careful that such demands do not jeopardize their contractual obligations to the CCWWC and that the producer is on the system long enough to recapture the capital costs of providing service. Districts need to have a written policy in place when dealing with these situations.

Defining Conservation Phases and Actions for Each

If conditions indicate the potential for a water shortage, the water system and local officials should begin planning the actions that will need to be taken. The water system should begin by taking the following steps:

1. Locate and repair any leaks in the system.
2. Explore possibilities for supplementing the existing supply. This may include agreements with nearby systems for additional supply or increasing the contractual obligation to the CCWWC. This should be done well before a critical shortage is realized.
3. Evaluate whether changing the rate structure to encourage conservation should be implemented. This would be particularly applicable in an extended drought period.
4. Advise customers to take conservation measures according the severity of the shortage.
5. Monitor supply conditions and usage and the effectiveness of any actions taken on a continuous basis throughout the shortage.

Northeast Missouri is in a moderate area for earthquakes from the New Madrid fault. The State of Missouri has the following earthquake response plans. At a 5.0 magnitude MoDOT will conduct land based damage assessment of bridges and roadways in the impacted area. At a 6.5 magnitude the Civil Air Patrol will begin aerial damage assessment of roadway infrastructure in the impact area. At a 6.5 magnitude or greater key state departments/agencies will activate their plans for an earthquake response (i.e. aerial assessment of bridges and roads) and report to the SEOC. Two State Area Coordination Centers will be established to enhance state respond to impacted counties. Those centers will be in Region C for St. Louis and Region E for Southeast Missouri. The Commission will coordinate with the coordination centers to ascertain the extent of damage in the event of a service outage caused by an earthquake in the region.

In the event of a service outage caused by a tornado, the damage will be isolated and water will be routed around the damaged area, if possible. Rapid repair of the damage will be the goal of the Commission.

CLARENCE CANNON WHOLESALE WATER COMMISSION

Communications Plan __**UWS Incident Hotline 888-853-7284**

In the event of an emergency the primary goals driving the decision process shall be as follows.

- Protect the safety and health of the on duty United Water and CCWWC employees.
- Protect the safety and health of the public.
- Protect the safety of the surrounding environment.
- Maintain water quality.

Key staff should be contacted at once and the emergency evaluated. Use the emergency contacts list to determine the key personnel to be contacted.

Contact the Incident Hotline as early as possible to implement the communications plan. Make any immediate announcements to protect the safety and health of the public, using the attached media listings. All non-essential communications should be coordinated through Rich Henning

KEY STAFF

- Scott Allen Home: 573-249-5324 Mobile Phone: 573-473-6302
  573-473-5908
- Joe Smith Home: 660-327-4311
- Fred Omer Home: 573-565-3556
- Kurtis Arnett Home: 660-327-4738
- Bill Arnett Home: 660-327-4866 Mobile Phone: 573-473-4077
- Howard Smothers Home: 660-266-3314
- Darin Clithero Home: 573-594-6195
- Mark McNally Home: 573-735-2611 Mobile Phone: 573-303-4771
- CCWWC Cell phone Work: 573-473-5651

MEDIA CONTACT

Rich Henning (First contact if possible, should be contacted by the Incident Hotline)
UWS Emergency Communications 201-767-2869

- KRES Radio Moberly 660-263-2424
- KWWR Radio Mexico 573-581-5500 (Also does KXEO Mexico)
- KHMO Radio Hannibal 573-221-3450
- KGRC Radio Hannibal 573-221-2221
- KHQA TV Hannibal 573-221-0209
- WGEM TV Quincy, IL 217-228-6600
- KOMU TV Columbia 573-442-1122
- Hannibal Courier Post 573-221-2800
- Moberly Monitor Index 660-263-4123
- Mexico Ledger 573-581-1111
- Quincy Herald Whig 800-619-8080
- Shelby County Herald 573-633-2261

CLARENCE CANNON WATER TREATMENT PLANT

Emergency Response Plan

CONTACT LIST

TREATMENT PLANT FAILURES:
KEY STAFF

- **UWS Incident Hotline 888-853-7284**
- Scott Allen Home: 573-249-5324 Mobile Phone: 573-473-6302
  573-473-5908
- Mark McNally Home: 573-735-2611 Mobile Phone: 573-473-5651
  573-303-4771
- Joe Smith Home: 660-327-4311
- Fred Omer Home: 573-565-3556
- Kurtis Arnett Home: 660-327-4738
- Bill Arnett Home: 660-327-4866 Mobile Phone: 573-473-4077
- Howard Smothers Home: 660-266-3314
- Adam Dreisewerd Home: 573-822-3190
- Darin Clithero Home: 573-594-6195
- CCWWC Cell phone Work: 573-473-5651

EMERGENCY SUPPORT SERVICES

- Heintz Electric 800-424-3468
- Brown Electric 217-222-3483
- Tri-County Electric 573-565-3469 Jon Barnes: 573-470-0999
- Altorfer 573-221-8600 Richard Cody: 573-221-2924
  Emergency #: 217-277-9415
- Ralls County Electric 573-985-8711 For Treatment Plant Electric
  See Attached Utility Directory
  For All Other Electric

DISTRIBUTION SYSTEM FAILURES: (As needed from previous plus)

- D & J Construction Don Miller: 573-406-8035
- C & S Construction 573-221-8789 Construction : 573-221-2702
  Lee Steinman: 573-221-9246
- Willis Brothers 660-385-3327 Jim Willis: 660-768-5677
  Tom Willis: 660-773-6640

- Member Systems - (See Member Systems Directory In CCWWC Office)

RAW WATER CONTAMINATION:

- UWS Indianapolis Headquarters 317-637-6200 Gerald Addington
- DNR Macon NERO 660-385-2129
- DNR Environmental Emergency Response 573-634-2436 24-hour number
- Missouri ERC 573-526-3901
- Missouri Emergency Management 573-526-9101
- Department of Health Northeast District 660-385-3125
- FBI St. Louis 314-231-4324
- FBI Kansas City 816-512-8200
- U.S. Army Corps 573-735-4097 Mark Twain Lake Office
- Clarence Cannon Dam 573-735-4843
- Member Systems (See Member Systems Directory)

FINISHED WATER CONTAMINATION:

- UWS Indianapolis Headquarters 317-637-6200 Gerald Addington
- DNR Macon NERO 660-385-8000
- DNR Environmental Emergency Response 573-634-2436 24-hour number
- Chemtrec 1-800-424-9300
- Missouri ERC 573-526-3901
- U.S. EPA Region VII 913-281-0991
- Missouri Emergency Management 573-526-9101
- Department of Health Northeast District 660-385-3125
- FBI St. Louis 314-231-4324
- FBI Kansas City 816-512-8200
- U.S. Army Corps 573-735-4097 Mark Twain Lake Office
- Clarence Cannon Dam 573-735-4843
- Member Systems (See Member Systems Directory in CCWWC office)

MEDIA CONTACT LIST:

- Rich Henning 201-767-2869 (will be contacted by the Incident Hotline)
  Emergency Communications 414-744-1328
- KRES Radio Moberly 660-263-2424
- KWWR Radio Mexico 573-581-5500 (Also does KXEO Mexico)
- KHMO Radio Hannibal 573-221-3450
- KGRC Radio Hannibal 573-221-2221
- KHQA TV Hannibal 573-221-0209
- WGEM TV Quincy, IL 217-228-6600
- KOMU TV Columbia 573-442-1122
- Hannibal Courier Post 573-221-2800
- Moberly Monitor Index 660-263-4123
- Mexico Ledger 573-581-1111
- Quincy Herald Whig 800-619-8080
- Shelby County Herald 573-633-2261

SHERIFF DEPARTMENTS:

- Monroe County Monroe County 911 system or 660-327-4820
- Ralls County 573-985-7271
- Marion County 573-221-0678
- Shelby County 573-633-2161
- Randolph County 660-263-0095
- Pike County 573-324-3202
- Audrain County 573-581-5800
- Lewis County 573-767-5311
- Knox County 660-397-2186

HIGHWAY PATROL:

- Macon Troop B 660-385-2132
- Jefferson City Troop F 800-525-5555

AMBULANCE DISTRICTS:

- Monroe County Monroe County 911 system or 660-327-4252
- Monroe City 573-735-4111
- Marion County 573-221-5000
- Ralls County 573-221-5000 (Hannibal Regional Hospital Dispatch)

FIRE DEPARTMENTS:

- Paris Fire Department — Monroe County 911 system or 660-327-4141
- Monroe City — 573-735-4431
- Perry — 573-565-3300
- Shelby County — 573-633-2444

HOSPITALS:

- Hannibal Regional — 573-248-1300
- Audrain Medical — 573-582-5000
- Columbia Regional — 573-875-9000
- Moberly Regional — 660-263-8400
- University Hospitals — 573-882-4141

Chlorine Release Response

Call Monroe County 911 Dispatch – Mutual Aid Agreement is With Hannibal Fire Department

Ask Dispatcher to Contact:

Region B Homeland Security Emergency Response Team / Hannibal Fire Department HAZ MAT

Direct Line for Hannibal Fire – 573-221-0657

CLARENCE CANNON WHOLESALE WTR COMM

MO2020421

2014 Annual Water Quality Report

(Consumer Confidence Report)

This report is intended to provide you with important information about your drinking water and the efforts made to provide safe drinking water.

Attencion!

Este informe contiene información muy importante. Tradúscalo o prequntele a alguien que lo entienda bien.
[Translated: This report contains very important information. Translate or ask someone who understands this very well.]

What is the source of my water?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater 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.

Our water comes from the following source(s):

Source Name	Type
MARK TWAIN LAKE	SURFACE WATER

Source Water Assessment

The Department of Natural Resources conducted a source water assessment to determine the susceptibility of our water source to potential contaminants. This process involved the establishment of source water area delineations for each well or surface water intake and then a contaminant inventory was performed within those delineated areas to assess potential threats to each source. Assessment maps and summary information sheets are available on the internet at http://maproom.missouri.edu/swipmaps/pwssid.htm. To access the maps for your water system you will need the State-assigned identification code, which is printed at the top of this report. The Source Water Inventory Project maps and information sheets provide a foundation upon which a more comprehensive source water protection plan can be developed.

Why are there contaminants in my water?

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 (800-426-4791).

Contaminants that may be present in source water include:
A. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
B. 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.
C. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
D. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
E. 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 Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Is our water system meeting other rules that govern our operations?

The Missouri Department of Natural Resources regulates our water system and requires us to test our water on a regular basis to ensure its safety. Our system has been assigned the identification number MO2020421 for the purposes of tracking our test results. Last year, we tested for a variety of contaminants. The detectable results of these tests are on the following pages of this report. Any violations of state requirements or standards will be further explained later in this report.

How might I become actively involved?

If you would like to observe the decision-making process that affect drinking water quality or if you have any further questions about your drinking water report, please call us at **573-672-3221** to inquire about scheduled meetings or contact persons.

Do I need to take any special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 (800-426-4791).

Terms and Abbreviations

Population: 25. This is the equivalent residential population served including non-bill paying customers.
MCLG: Maximum Contaminant Level Goal, or 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, or 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.
SMCL. Secondary Maximum Contaminant Level, or the secondary standards that are non-enforceable guidelines for contaminants and may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. EPA recommends these standards but does not require water systems to comply
AL: Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow..
TT: Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.
90th percentile: For lead and Copper testing. 10% of test results are above this level and 90% are below this level.
Range of Results: Shows the lowest and highest levels found during a testing period, if only one sample was taken, then this number equals the Highest Value.
RAA: Running Annual Average, or the average of sample analytical results for samples taken during the previous four calendar quarters.
LRAA: Locational Running Annual Average, or the locational average of sample analytical results for samples taken during the previous four calendar quarters.
TTHM: Total Trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) as a group.
HAA5: Haloacetic Acids (mono-, di- and tri-chloracetic acid, and mono- and di-bormoacetic acid) as a group.
ppb: parts per billion or micrograms per liter.
ppm: parts per million or milligrams per liter.
n/a: not applicable.
NTU: Nephelometric Turbidity Unit, used to measure cloudiness in drinking water.
nd: not detectable at testing limits.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

CLARENCE CANNON WHOLESALE WTR COMM

MO2020421

2014 Annual Water Quality Report

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Contaminants Report

The state has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Records with a sample year more than one year old are still considered representative.

Regulated Contaminants

Regulated Contaminants	Collection Date	Highest Value	Range of Results (low – high)	Unit	MCL	MCLG	Typical Source
BARIUM	11/12/2014	0.0435	0.0435	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
CHROMIUM	11/12/2014	1	1	ppb	100	100	Discharge from steel and pulp mills
FLUORIDE	11/12/2014	0.18	0.18	ppm	4	4	Natural deposits; Water additive which promotes strong teeth
NITRATE-NITRITE	6/17/2014	1.63	1.63	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
SIMAZINE	2/25/2014	0.51	0 - 0.51	ppb	4	4	Herbicide runoff

Disinfection Byproducts	Sample Point	Monitoring Period	Highest LRAA	Range of Results (low/high)	Unit	MCL	MCLG	Typical Source
(HAA5)	DBPDUAL-01	2014	41	22.8 - 51.2	ppb	60	0	Byproduct of drinking water disinfection
TTHM	DBPDUAL-01	2014	43	28.3 - 57.2	ppb	80	0	Byproduct of drinking water disinfection

TOC	Collection Date	Highest Value	Range	Unit	TT	Typical Source
CARBON, TOTAL	2/26/2014	4.66	2.58 - 4.66	MG/L	0	Naturally present in the environment

Turbidity					
Turbidity is a measure of cloudiness of water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system.					
Percentage of samples in compliance with Std	Months Occurred	Violation	Highest Single Measurement	Month Occurred	Sources
100	12	NO	0.13	8	SOIL RUNOFF

Microbiological	Result	MCL	MCLG	Typical Source
COLIFORM (TCR)	In the month of September, 1 sample(s) returned as positive	MCL: Systems that Collect Less Than 40 Samples per Month - No more than 1 positive monthly sample	0	Naturally present in the environment

Violations and Health Effects Information

During the 2014 calendar year, we had the below noted violation(s) of drinking water regulations.

Compliance Period	Analyte	Type
No Violations Occurred in the Calendar Year of 2014		

Special Lead and Copper Notice:

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. CLARENCE CANNON WHOLESALE WTR COMM 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 (800-426-4791) or at http://water.epa.gov/drink/info/lead/index.cfm.

You can also find sample results for all contaminants from both past and present compliance monitoring online at the Missouri DNR Drinking Water Watch website http://dnr.mo.gov/DWW/indexSearchDNR.jsp. To find Lead and Copper results for your system, type your water system name in the box titled Water System Name and select *Find Water Systems* at the bottom of the page. The new screen will show you the water system name and number, select and click the Water System Number. At the top of the next page, under the *Help* column find, *Other Chemical Results by Analyte*, select and click on it. Scroll down alphabetically to Lead and click the blue Analyte Code (1030). The Lead and Copper locations will be displayed under the heading *Sample Comments*. Scroll to find your location and click on the *Sample No*. for the results. If your house was selected by the water system and you assisted in taking a Lead and Copper sample from your home but cannot find your location in the list, please contact CLARENCE CANNON WHOLESALE WTR COMM for your results.

Optional Monitoring (not required by EPA)

Optional Contaminants

Monitoring is not required for optional contaminants.

Secondary Contaminants	Collection Date	Your Water System Highest Value	Range (low - high)	Unit	SMCL
ALKALINITY, CACO3 STABILITY	11/12/2014	87.5	87.5	MG/L	
ALKALINITY, TOTAL	12/15/2014	86	52 - 86	MG/L	
CALCIUM	11/12/2014	52.4	52.4	MG/L	
CHLORIDE	11/12/2014	49.4	49.4	MG/L	250
HARDNESS, CARBONATE	11/12/2014	147	147	MG/L	
MAGNESIUM	11/12/2014	3.96	3.96	MG/L	
NICKEL	11/12/2014	0.00371	0.00371	MG/L	0.1
PH	11/12/2014	7.82	7.82	PH	8.5
POTASSIUM	11/12/2014	7.12	7.12	MG/L	
SODIUM	11/12/2014	8.9	8.9	MG/L	
SULFATE	11/12/2014	8.76	8.76	MG/L	250
TDS	11/12/2014	243	243	MG/L	500
ZINC	11/12/2014	0.00293	0.00293	MG/L	5

Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. EPA recommends these standards but does not require water systems to comply.