

April 7, 1999

Jack Cross
Director, Farmdale Municipal Water Supply
919 S. Water Plant Drive
Farmdale, IA 56666

Dear Mr. Cross,

In 1998, the Iowa Department of Natural Resources (IDNR) initiated a Source Water Assessment and Protection program. Source Water Protection is an effort to protect public drinking water supplies from contamination, and the program is designed to provide you with the initial information needed to begin protecting your drinking water source. We hope the program will help initiate a dialog, both within your community and with IDNR staff, about your water supply and possible measures to protect it.

The initial phase of Source Water Protection involves delineating and assessing the zones that contribute water to public water supplies. An inventory and evaluation of known potential sources of contamination, and a determination of your supply's susceptibility to these contamination sources are also part of this assessment. The reporting of this information to public water suppliers is required by amendments to the 1996 Safe Drinking Water Act, and the work is funded by a grant from the Environmental Protection Agency.

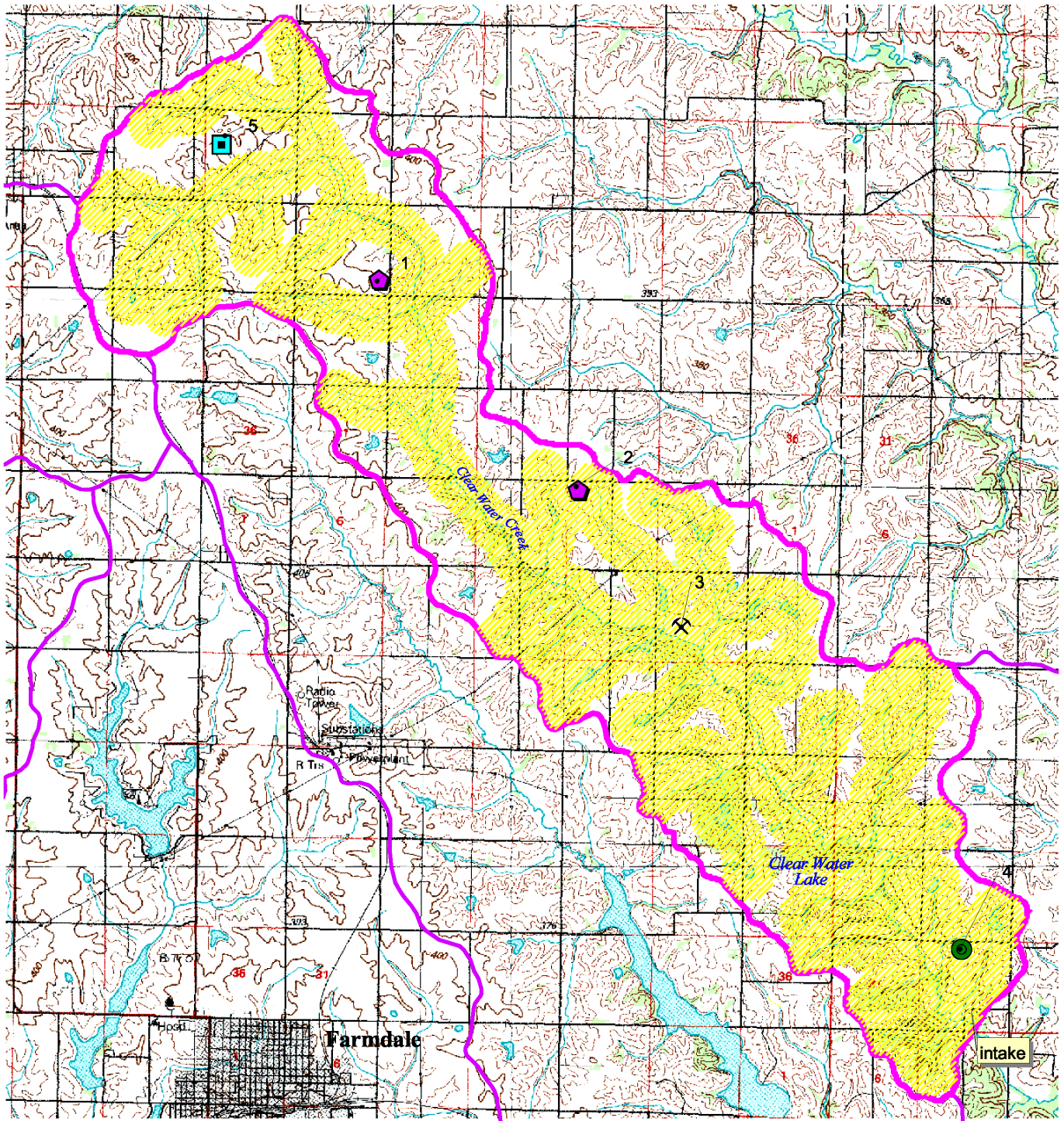
The enclosed documents describe the source water zones identified for Farmdale's water supply, how they were delineated, the vulnerability, and the locations of known potential contaminant sources in the area. A relative ranking of the risk posed by the potential contaminant sources to your water supply are also included.

The delineations and contaminant source inventory for Farmdale can be improved by community efforts. The enclosed documents suggest how such improvements can be made. In addition, a copy of the state Source Water Protection Plan that provides details on implementing source water protection efforts locally is enclosed. Within the upcoming months, we will schedule two public meetings in southwest Iowa to provide further explanation of the attached information. Dates, times and locations will be sent to you as soon as they are available. We encourage you to review the reports for Farmdale, and to consider what kinds of protection activities would be appropriate for your community. We hope you will be able to attend one of the upcoming meetings. Please contact us with any questions or for assistance with your efforts.

Sincerely,

Dennis Alt
Water Supply Section
515/281-8998

Robert D. Libra
Geological Survey Bureau
319/335-5159



Farmdale Municipal Water Supply Clear Water Lake - Source Water Protection Area

SWPA Delineation

- Susceptible Area
1/4-mile buffer zone (1,320 ft.)
- Clear Water Creek watershed

Potential Contaminant Sources

- Underground storage tank sites
- Sanitary disposal site
- Permitted confinement livestock operations
- Mines, quarries, pits (non-coal)

Source Water Protection Evaluation for Farmdale

Source Water Delineation

Farmdale's water supply is withdrawn from Clearwater Lake, a reservoir on Clearwater Creek. The enclosed map titled "Farmdale – Municipal Water Supply" outlines the watershed area of Clearwater Creek above Farmdale's water intake. Runoff, tile drainage, and shallow groundwater seepage from this area, and any contamination carried by the water, is ultimately delivered to Clearwater Lake. The watershed above the reservoir is about 36 square miles in size. Also shown is a ¼-mile wide buffer along the creek, the lake, and their tributaries. This marks the primary Source Water protection area for Farmdale's water supply. This primary protection area is defined as the area where water in the creek and its tributaries will reach Clearwater Lake within 72 hours under typical flow conditions.. The primary protection area covers 26 square miles, which is most of the watershed area.

Contaminant Source Inventory

The delineation map shows the potential contamination sources identified within Farmdale's primary Source Water Protection Area, and within the watershed above Farmdale's intake. The databases used for the inventory are described in Table 1 of the Source Water Protection Plan. This inventory includes facilities and land uses that incorporate materials that may result in water contamination if they are released to the environment. Information about the facilities found within Farmdale's Source Water Protection Area is included on the accompanying table, "Potential Contaminant Sources for the Farmdale Public Water Supply".

In addition to the individual "point" sources listed in the table, "nonpoint" sources of contamination also exist in your source water zones. In Iowa, a significant potential nonpoint source of contamination is row crop agriculture. While we do not have annual land use summaries for the state, land use for 1992 is available to describe the typical intensity of row cropping in your watershed and primary source water protection area. These are given below:

Land cover type	Primary protection area	Watershed
Grass, pasture	66.2%	61.8%
Row crops	26.2%	32.0%
Woody vegetation	5.5%	4.2%
Other	2.1%	2%

Not all potential contaminant sources are known to us or have been accurately located and recorded in our databases. As a result, some potential sources may be located inaccurately or not included in the inventory. The Source Water Protection Plan provides listings of additional types of facilities and land use that may result in contamination, and

describes how community-based inventories can be successfully carried out. We encourage you review the attached materials and consider using your knowledge of the community to improve the contaminant source inventory.

Susceptibility Analysis

Susceptibility is a relative measure of risk. Surface water streams and reservoirs, like the one used by Farmdale, have a high potential to be affected by contamination from society's land surface activities, compared to many other sources of water (such as deep groundwater aquifers). Therefore, Farmdale's supply is classified as "Highly Susceptible to Contamination".

Potential sources of contamination in Farmdales' Primary and watershed areas include a gas station, a landfill, and livestock confinements, along with nonpoint source agricultural activities. This information was obtained from existing current and historical databases, and is unverified. It is important that your community verify this information and record any additional potential contamination sources within your source water protection area during the development of your community source water protection plan. Should you locate additional potential contaminant sources, please notify IDNR so that your records can be updated.

Because surface water supplies are inherently susceptible to contamination, we do not rank the different potential contaminant sources in terms of the relative risk they pose. However, the contaminant inventory table does indicate sources within both Farmdale's Primary area and watershed area that store or handle relatively large volumes of liquids. Spills from these facilities could have an adverse impact on Farmdale's water supply. Note that transportation of liquids that may be contaminants, along roads, railroads, or pipelines, also involves risks or spills.

Consumer Confidence Language

As the agency responsible for conducting drinking water programs in the state of Iowa, IDNR must provide each public water supply with language to be included in their Consumer Confidence Report. The following language, at a minimum, must be included in each Consumer Confidence Report you produce from now on:

"The Farmdale Municipal Water Supply obtains its water from Clearwater Lake, which is fed by Clearwater Creek. Reservoirs and streams are highly susceptible to contamination because contaminants can move through them quickly. Farmdale's water supply will be susceptible to contaminant releases from Gas Stations, landfills, livestock confinements, and agricultural activities. A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources, and is available from (Insert Local Water Supply Name or Designee here) at (Insert Telephone Number of Local Water Supply or Designee here)."

You may modify this language or include additional information if you so desire, but you must identify the source of your system's drinking water and identify known sources of potential contamination.

Potential Contaminant Sources for the Farmdale Public Water Supply

No. on map	Site Name	SWPA Zone ¹	Large liquid vol. Y/N	Land use type
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Confined Animal Feeding Operations

1	Pork Squared	watershed	Y	Commercial use: confined animal feeding operations
2	Clear Water Creek Eggs	primary SWPA	Y	Commercial use: confined animal feeding operations

Mines, quarries, pits (non-coal)

3	Farmdale Sand and Gravel	primary SWPA	Y	Quarries
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Underground Storage Tanks

4	Bob's Marina	primary SWPA	Y	Retail commercial:gasoline distributors
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Solid Waste Disposal

5	Farmdale Municipal Landfill	watershed	N	Waste disposal: landfills
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¹primary SWPA = Primary Source Water Protection area