ARC 2053C

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

Pursuant to the authority of Iowa Code sections 455B.105, 455B.173 and 455B.263, the Environmental Protection Commission hereby amends Chapter 50, "Scope of Division—Definitions—Forms—Rules of Practice," Chapter 52, "Criteria and Conditions for Authorizing Withdrawal, Diversion and Storage of Water," and Chapter 53, "Protected Water Sources—Purposes—Designation Procedures—Information in Withdrawal Applications—Limitations—List of Protected Resources," Iowa Administrative Code.

The amendments revise the rules governing the use of the Cambrian-Ordovician Aquifer (commonly called the Jordan Aquifer) in Iowa. The amendments are a result of the recommendations made to the Commission by the Executive Order 80 Stakeholder Group (Stakeholder Group) that was tasked with evaluating the current rules to better manage the usage of the Jordan Aquifer. Department of Natural Resources (Department) staff and the Stakeholder Group made a joint presentation addressing each recommendation at the Commission meeting held November 19, 2014. The Commission directed the Stakeholder Group and the Department to develop rules for those recommendations that required rule changes. The Stakeholder Group and Department staff met on December 30, 2014, to finalize the recommended rule revisions. The amended rules, including the jobs impact statement and the fiscal impact statement, were presented to the Commission at its meeting held February 17, 2015, where the request for formal rule making was approved.

The Jordan Aquifer extends underneath much of Iowa and is a significant well water source in the state. Protection from overuse of the resource (also known as dewatering the aquifer) is needed in some parts of the state. The Stakeholder Group developed a tiered classification system for existing and future Jordan wells that are required to be permitted under the state's water allocation rules, so that the resource will have a sustainable use into the future. A water allocation permit must be obtained by anyone withdrawing at least 25,000 gallons in a single day during the year. A permit holder withdrawing more water than the aquifer can sustain at that well location will be required to develop a water use reduction plan and implement measures so that the aquifer can recover to a sustainable level. Other rule amendments require activities that result in closer oversight of the aquifer. The amendments are summarized below:

1. In Chapter 50, the definition of "aquifer" is amended, and definitions of "confined aquifer" and "water use reduction plan" are added.

2. In Chapter 52, the current subrule pertaining to the withdrawal of water from the Cambrian-Ordovician (Jordan) Aquifer is rescinded and replaced with a new subrule that:

- Adds tiering criteria to classify each Jordan well requiring a water allocation permit into one of three tiers, depending upon the pumping water levels as compared to the 1978 Horick and Steinhilber potentiometric surface and the top of the Jordan Aquifer at that location. Permittees whose wells are in the Tier 1 category shall follow standard water use reporting procedures with no additional requirements. Permittees with Tier 2 and Tier 3 category wells have the additional requirements of site-specific water use reduction plans. The new subrule also includes the actions the Department may take if water levels continue to decline beyond the Tier 3 level.
- Changes the permit cycle for Jordan water allocation permits from ten years to five years.
- For new Jordan wells, requires that a water allocation permit be obtained before a water well construction permit is issued (to ensure adequate water allocation before the expense of the well construction is incurred).
- Retains the current 200-gallons-per-minute restriction on irrigation, recreational, and aesthetic uses.
- Retains the 2,000-gallons-per-minute restriction on industrial and power generation uses.
- Replaces the measurement level of piezometric head with the pumping level.
- Prohibits once-through cooling or geothermal use, with an allowance for geothermal use only if all of the withdrawn water is injected back into the aquifer.

A new paragraph 52.9(3)"d" pertaining to water conservation and water use reduction planning is also added to Chapter 52.

3. In Chapter 53, two areas, one in Johnson and Linn Counties and one in Webster County, are added to the protected-source rule, and a requirement that only the Department issue the well construction permits inside of those defined areas is included.

The EO80 Stakeholder Group included the following people:

Name	Organization	Representing
John Crotty	Iowa Environmental Council	Environmental advocacy group
Shawn Kerrick	Koch Nitrogen	Industrial user from business located in affected area
Gale McIntosh	Northway Pump	Water well contractor
Jill Soenen	Iowa Association of Municipal Utilities	Municipal utility association
Todd Steigerwaldt	City of Marion (Water Works)	Municipal user in affected area
Becky Svatos	Stanley Consultants, Iowa Association of Business and Industry	Professional consulting engineering firm, business association
Nancy Couser	Environmental Protection Commission	State agency

Notice of Intended Action was published in the Iowa Administrative Bulletin on March 18, 2015, as **ARC 1914C**. Three public hearings were held to receive public response to the proposed amendments. There were 52 attendees, not including Department staff, at the hearings. Oral comments were received from six people at the hearings, and written comments were received from six people. A Responsiveness Summary which addresses all comments received during the public comment period is available from the Department, upon request, by contacting Diane Moles at (515)725-0281 or diane.moles@dnr.iowa.gov. There were no adverse comments received as a result of the public comment process; however, the following changes have been made to the Notice of Intended Action to clarify the amendments:

1. In rule 567—50.2(455B), the definition of "water use reduction plan" has been clarified to indicate that the water use reduction goals can be met through one or more of the categories and that a separate goal for each category is not required.

2. In paragraph 52.4(3)"d," the language differentiating well construction permitting duties for the Jordan Aquifer wells from those of the county has been clarified. The Department will issue the well construction permits for all public water supply wells and for the wells within a protected source area withdrawing water from the Jordan Aquifer. The county will issue the well construction permits for the non-public water supply wells withdrawing water from the Jordan Aquifer that are not within a protected source area as outlined in 567—53.7(455B).

3. In subparagraphs 53.7(2)"a"(1) and (2) and 53.7(3)"a"(1) and (2), the language has been clarified to indicate that, within the delineated protected source areas, the Department will issue the permits for the construction of wells withdrawing water from the Jordan Aquifer, and not for all water wells within the delineated area.

After analysis and review of this rule making, no impact on jobs has been found.

These amendments are intended to implement Iowa Code sections 455B.105, 455B.171, 455B.173, 455B.261 to 455B.274 and 455B.278.

These amendments will become effective on August 12, 2015.

The following amendments are adopted.

ITEM 1. Amend rule **567—50.2(455B)**, definition of "Aquifer," as follows:

"Aquifer" means a water-bearing geologic formation (soil or rock) of sufficient volume, porosity, and permeability to be capable of yielding a usable quantity of water to a well or spring.

ITEM 2. Adopt the following **new** definitions of "Confined aquifer" and "Water use reduction plan" in rule **567—50.2(455B)**:

"Confined aquifer" means an aquifer which contains water under pressure overlain by impermeable formations such as clay or shale. In a well penetrating a confined aquifer, pressure will cause water to

rise above the top of the aquifer. If the pressure in a confined aquifer is sufficiently great, water will rise above the ground surface and flow from a well, thus resulting in a "flowing artesian well" or a "naturally flowing well."

"Water use reduction plan" means a program that establishes numeric water reduction goals (e.g., percent or volume of water per day) on a short-term time frame through either voluntary or mandatory conservation regulatory requirements (e.g., plumbing codes, sprinkling ordinances, et al.) for each customer category (residential, commercial, industrial, landscape irrigation, agricultural, recreational, or other). Such a plan shall include a mechanism for evaluating the system's unaccounted-for water (water audit or the equivalent). An industrial permittee water use reduction plan shall examine reduction of the use of water in heat transfer, use of water in materials transfer, use of water for washing, and use of water as an incorporated ingredient. Each customer category or use category should be evaluated by the permittee. The permittee will then determine how to meet the water reduction goals.

ITEM 3. Rescind subrule 52.4(3) and adopt the following **new** subrule in lieu thereof:

52.4(3) *Withdrawals from the Cambrian-Ordovician (Jordan) aquifer.* Withdrawals of water from the Cambrian-Ordovician (Jordan) aquifer, including the St. Peter sandstone formation, the Prairie du Chien group and the Jordan sandstone formation, shall be subject to the following conditions:

a. Two-hundred-gallon-per-minute restriction on irrigation, recreational, or aesthetic uses. New withdrawals of water for irrigation, recreational, or aesthetic uses shall not be in excess of 200 gallons per minute. Existing permits for irrigation, recreational and aesthetic uses that authorize withdrawal rates in excess of 200 gallons per minute may be modified or rescinded by the department if, as determined by the department, any well in the vicinity experiences loss of water due to pumping or if the pumping water level is reduced to or below the levels described in paragraphs *"f"* and *"g"* of this subrule.

b. Two-thousand-gallon-per-minute restriction on industrial or power generation uses. New withdrawals of water for industrial or power generation uses at one plant location shall not exceed 2,000 gallons per minute. Existing permits for industrial or power generation use that authorize withdrawal rates in excess of 2,000 gallons per minute may be modified or rescinded by the department if any well in the vicinity experiences loss of water due to pumping or if the pumping water level is reduced to or below the levels described in paragraphs *"f"* and *"g"* of this subrule.

c. Limited cooling and geothermal use. No once-through (single pass with disposal to storm sewer or equivalent) cooling water or geothermal usage is allowed. Withdrawals for geothermal purposes are prohibited unless 100 percent of the withdrawn water is reinjected into the aquifer in accordance with the requirements of the department.

d. Jordan aquifer high-capacity permits and wells. Water use permits for the Jordan aquifer shall be issued on a five-year permit cycle. The water use permit for wells expected to pump over 25,000 gallons per day from the Jordan aquifer must be obtained from the department before any water well construction permit is issued. After the water use permit has been obtained, the county may issue a Cambrian-Ordovician (Jordan) aquifer water well construction permit for any nonpublic water supply system unless that well is located in one of the protected-source areas listed in 567—subrules 53.7(2) and 53.7(3). The department may issue a Cambrian-Ordovician (Jordan) aquifer water well construction permit for a public water supply system or a well located in the protected source areas listed in 567—subrules 53.7(2) and 53.7(3). All driller's logs for water use wells completed in the Jordan aquifer shall be submitted to the department and the Iowa Geological Survey.

e. Tier 1 Jordan wells. A Jordan water use well is classified as Tier 1 when pumping water levels have not reached Tier 2 or Tier 3 levels described in paragraphs *"f"* and *"g"* of this subrule. Permittees with Tier 1 Jordan wells shall follow standard water use reporting procedures for the Jordan aquifer pursuant to rule 567—52.6(455B).

f. Tier 2 Jordan wells. A Jordan well is classified as Tier 2 when the pumping water level measured at the well declines over 300 feet below the 1978 Horick and Steinhilber potentiometric surface or the pumping water level declines over 50 percent from the 1978 Horick and Steinhilber potentiometric surface and the top of the Jordan aquifer, whichever is more conservative. Permittees with Tier 2 wells shall comply with paragraph *"h"* of this subrule.

g. Tier 3 Jordan wells. A Jordan well is classified as Tier 3 when the pumping water level measured at the well declines over 400 feet below the 1978 Horick and Steinhilber potentiometric surface or the pumping water level declines over 75 percent from the 1978 Horick and Steinhilber potentiometric surface and the top of the Jordan aquifer, whichever is more conservative. Permittees with Tier 3 wells shall comply with paragraph *"i"* of this subrule.

h. Site-specific water use reduction plan for Tier 2 Jordan wells. Permittees with Jordan wells that have reached the Tier 2 level pursuant to paragraph *"f"* of this subrule shall develop a water use reduction plan and submit the plan to the department. The plan must be reviewed and approved by the department. The water use reduction plan shall set a defined usage percent reduction target that will minimize Jordan aquifer withdrawals and prevent the decline of the water level from reaching the Tier 3 category pursuant to paragraph *"g"* of this subrule. Guidance for writing and implementing water use reduction plans is available in paragraph *"k"* of this subrule. If the water use reduction plan is not implemented, the department may reduce the permitted water use allocation, pursue enforcement of the permit, or rescind the permit.

i. Enhanced site-specific water use reduction plan and predictive model for Tier 3 Jordan wells. Permittees with Jordan wells that have reached the Tier 3 level pursuant to paragraph *"g"* of this subrule shall develop an aggressive water use reduction plan using an approved predictive model that will lead to recovery of the pumping water level to elevations above Tier 3 levels. The plan and model predictions shall be reviewed and approved by the department. If water levels continue to decline beyond the Tier 3 level, the department may reduce the permitted water use allocation, pursue enforcement of the permit including aspects of the water use reduction plan, or rescind the permit.

j. Variances. Variances from the restrictions imposed by these rules will be considered by the department through the procedures found in rule 567—50.9(455B) and in 561—Chapter 10.

k. Resources for developing water use reduction plans. The resources suggested by and available from the department as guidance for developing water use reduction plans are listed in paragraph 52.9(3)*"d."*

ITEM 4. Adopt the following **new** paragraph **52.9(3)"d"**:

d. Resources for water conservation and water use reduction planning.

(1) The following resources are suggested by and available from the department as guidance for the development of water conservation plans and water use reduction plans:

1. "Water Wise—Efficiency Planning and Water Conservation Plan Workbook for Water and Wastewater Utilities," Iowa Association of Municipal Utilities, 2013 (available online through the department's Web site).

2. "Water Conservation Programs—A Planning Manual," Manual of Water Supply Practices M52, American Water Works Association, 2006.

3. "Handbook of Water Use and Conservation," Amy Vickers, Waterplow Press, Amherst, Massachusetts, 2001.

(2) Water conservation plans and water use reduction plans shall comply with the standards of the American Water Works Association or a reasonable equivalent as determined by the department.

ITEM 5. Adopt the following **new** subrules 53.7(2) and 53.7(3):

53.7(2) *Cambrian-Ordovician (Jordan) aquifer in Johnson and Linn Counties.*

a. Geographical area. The protected water source area includes portions of Johnson and Linn Counties. The actual geographical boundaries of the area are defined in subparagraph 53.7(2)*"a"*(3).

(1) New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted withdrawal of groundwater from the Cambrian-Ordovician (Jordan) aquifer within the protected water source area will be restricted or denied if necessary to preserve public health and welfare.

(2) Withdrawal of groundwater. Withdrawal of groundwater from within the protected water source area may also be restricted or denied from water supply wells constructed in the Cambrian-Ordovician (Jordan) aquifer, public or private, and the construction of all new water supply wells in the Cambrian-Ordovician (Jordan) aquifer shall be restricted or denied, if necessary, to

preserve public health and welfare or to minimize adverse effects to the "available" head (i.e., the original pressure head above the top of the aquifer). The Johnson County and Linn County health departments are not authorized to issue a construction permit for a private well drilled into or through the Cambrian-Ordovician (Jordan) aquifer within the protected water source area without the approval of the department. The department's water supply engineering section will determine whether the proposed well can be constructed and may require that the well meet public water well standards.

(3) Map of protected water source area. The department shall maintain a map of the protected water source area.

1. The entire following described area within Johnson County and within Linn County is defined as a protected water source.

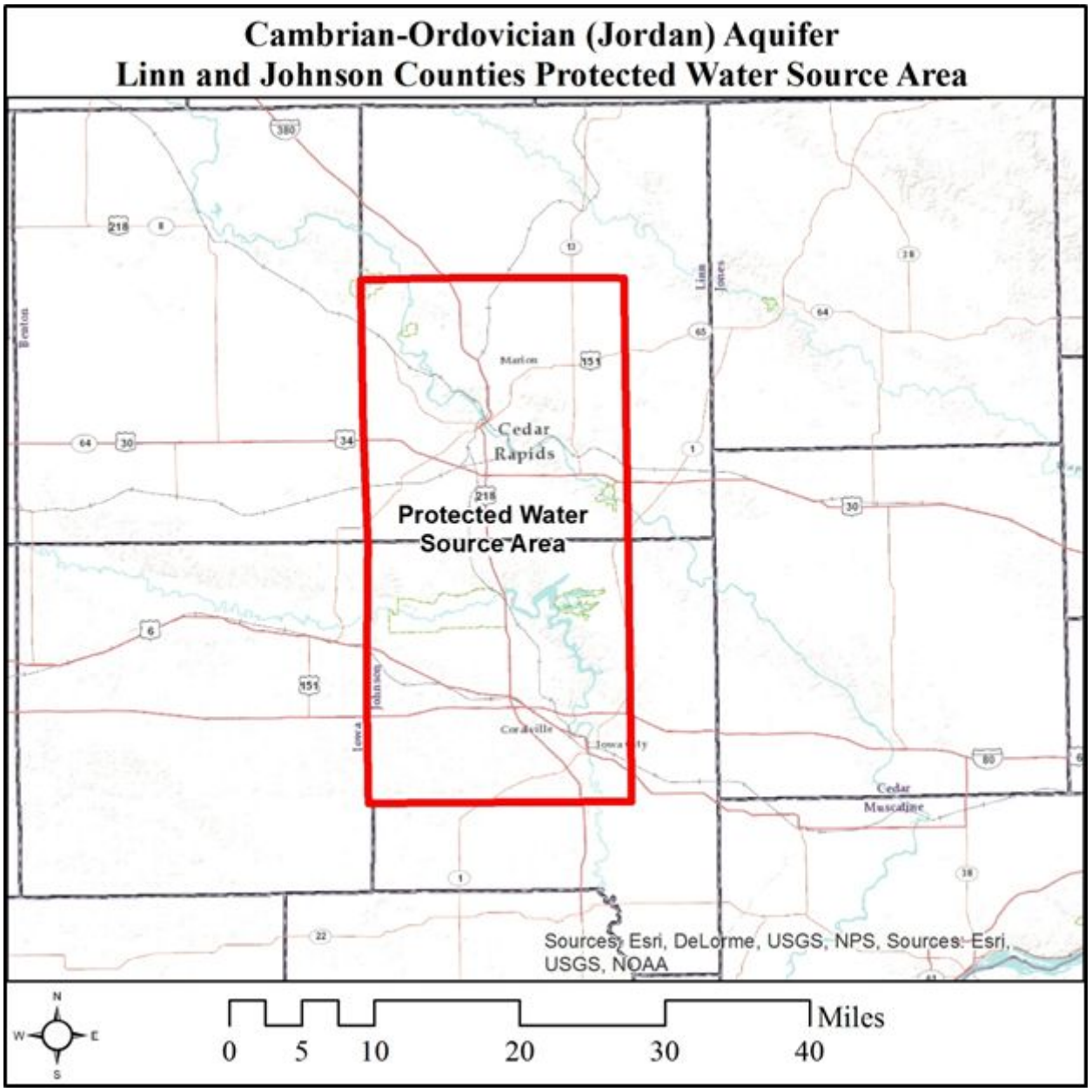
Johnson County

- All areas of Township 79 North, Range 6 West.
- All areas of Township 79 North, Range 7 West.
- All areas of Township 79 North, Range 8 West.
- All areas of Township 80 North, Range 6 West.
- All areas of Township 80 North, Range 7 West.
- All areas of Township 80 North, Range 8 West.
- All areas of Township 81 North, Range 6 West.
- All areas of Township 81 North, Range 7 West.
- All areas of Township 81 North, Range 8 West.

Linn County

- All areas of Township 82 North, Range 6 West.
- All areas of Township 82 North, Range 7 West.
- All areas of Township 82 North, Range 8 West.
- All areas of Township 83 North, Range 6 West.
- All areas of Township 83 North, Range 7 West.
- All areas of Township 83 North, Range 8 West.
- All areas of Township 84 North, Range 6 West.
- All areas of Township 84 North, Range 7 West.
- All areas of Township 84 North, Range 8 West.

2. Map of the described protected water source area in Linn and Johnson Counties.



b. Reserved.

53.7(3) *Cambrian-Ordovician (Jordan) aquifer in Webster County.*

a. Geographical area. The protected water source area includes portions of Webster County. The actual geographical boundaries of the area are defined in subparagraph 53.7(3)*"a"*(3).

(1) New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted withdrawal of groundwater from the Cambrian-Ordovician (Jordan) aquifer within the protected water source area will be restricted or denied if necessary to preserve public health and welfare.

(2) Withdrawal of groundwater. Withdrawal of groundwater from within the protected water source area may also be restricted or denied from water supply wells constructed in the Cambrian-Ordovician (Jordan) aquifer, public or private, and the construction of all new water supply wells in the Cambrian-Ordovician (Jordan) aquifer shall be restricted or denied, if necessary, to preserve public health and welfare or to minimize adverse effects to the "available" head (i.e., the original pressure head above the top of the aquifer). The Webster County health department is not authorized to

issue a construction permit for a private well drilled into or through the Cambrian-Ordovician (Jordan) aquifer within the protected water source area without the approval of the department. The department's water supply engineering section will determine whether the proposed well can be constructed and may require that the well meet public water well standards.

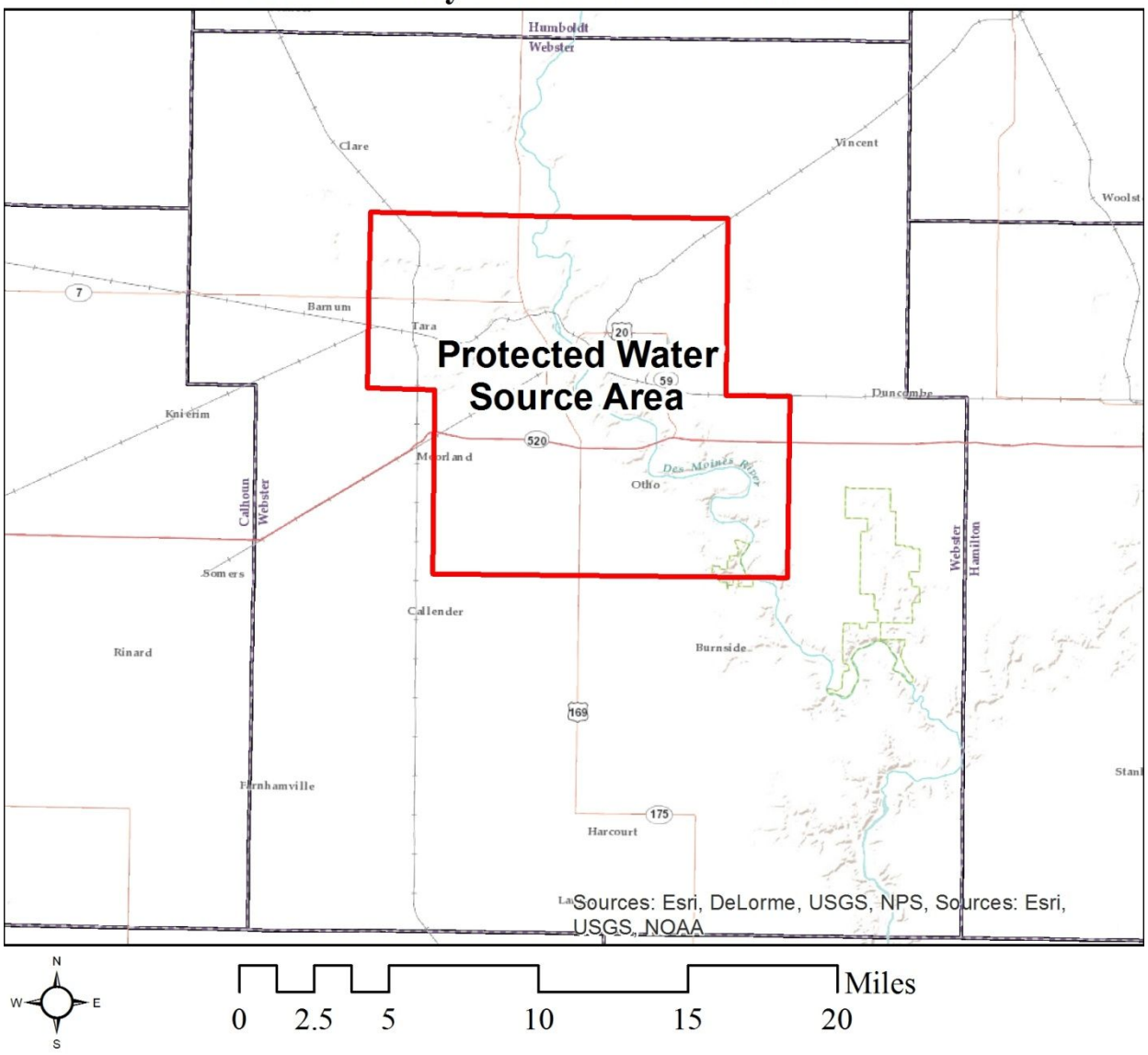
(3) Map of protected water source. The department shall maintain a map of the protected water source area.

1. The entire following described area within Webster County is defined as a protected water source.

- All areas of Township 88 North, Range 28 West.
- All areas of Township 88 North, Range 29 West.
- All areas of Township 89 North, Range 28 West.
- All areas of Township 89 North, Range 29 West.

2. Map of the described protected water source area in Webster County.

Cambrian-Ordovician (Jordan) Aquifer
Webster County Protected Water Source Area



b. Reserved.

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EDITOR'S NOTE: For replacement pages for IAC, see IAC Supplement 7/8/15.