Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota

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## CONTENTS

Abstract ................................................................................................................................................................. 1
Introduction ................................................................................................................................................................... 3
  Purpose and Scope ...................................................................................................................................................... 3
  Previous Investigations ............................................................................................................................................... 3
  Acknowledgments ..................................................................................................................................................... 4
Description of Study Area ......................................................................................................................................... 4
  Geologic Setting ........................................................................................................................................................ 4
  Hydrologic Setting ................................................................................................................................................... 10
    Regional Setting .................................................................................................................................................. 10
    Local Setting ....................................................................................................................................................... 12
Methods Used and Data Sets Considered ................................................................................................................... 16
Geochemistry of Madison and Minnelusa Aquifers .................................................................................................... 16
  Major-Ion Chemistry ............................................................................................................................................. 16
    Distribution of Major Ions ..................................................................................................................................... 17
    Saturation State .................................................................................................................................................... 20
    Evolutionary Processes ........................................................................................................................................ 24
  Isotope Chemistry .................................................................................................................................................. 26
    Background Information and Isotopic Composition of Recharge Water .............................................................. 26
      Stable Isotopes of Oxygen and Hydrogen .......................................................................................................... 29
      Tritium ............................................................................................................................................................. 32
    Conceptual Mixing Models .................................................................................................................................. 36
      Description of Models ...................................................................................................................................... 36
      Limitations of Models ....................................................................................................................................... 40
Areal Flowpaths, Ages, and Mixing Conditions ......................................................................................................... 41
  Isotope Distributions and General Considerations ................................................................................................ 41
    Stable Isotopes ..................................................................................................................................................... 41
    Tritium ............................................................................................................................................................... 46
Site-Specific Considerations ...................................................................................................................................... 51
  Rapid City Area ...................................................................................................................................................... 51
  Headwater Springs .................................................................................................................................................. 54
  Northern Black Hills Area ..................................................................................................................................... 55
  Southern Black Hills Area ..................................................................................................................................... 56
Regional Flowpaths ..................................................................................................................................................... 56
Interactions Between Madison and Minnelusa Aquifers ................................................................................................. 60
  Interactions at Well Pairs ........................................................................................................................................ 60
    Hydraulic Considerations .................................................................................................................................. 60
    Geochemical Considerations .............................................................................................................................. 61
  Interactions at Artesian Springs .............................................................................................................................. 63
    Hydraulic Considerations .................................................................................................................................. 63
    Geochemical Considerations .............................................................................................................................. 65
  Synopsis of Interaction Processes .......................................................................................................................... 67
Summary and Conclusions .......................................................................................................................................... 68
References ................................................................................................................................................................. 72
Supplemental Information ........................................................................................................................................... 77
FIGURES

1. Map showing generalized outcrops of Madison Limestone, Minnelusa Formation, and outer extent of Inyan Kara Group within the study area for Black Hills Hydrology Study

2. Stratigraphic section for the Black Hills

3. Map showing distribution of hydrogeologic units in the Black Hills area

4. Geologic cross section A-A’

5. Schematic showing hydrogeologic setting of the Black Hills area

6. Map showing general direction of ground-water flow in Paleozoic aquifers in the northern Great Plains

7. Map showing potentiometric surface of the Madison aquifer and locations of major artesian springs

8. Map showing potentiometric surface of the Minnelusa aquifer and locations of major artesian springs

9. Trilinear diagrams showing proportional concentrations of major ions in the Madison and Minnelusa aquifers

10. Selected Stiff diagrams showing the distribution of major-ion chemistry in the Madison aquifer

11. Selected Stiff diagrams showing the distribution of major-ion chemistry in the Minnelusa aquifer

12. Graph showing relation between gypsum saturation index and dissolved sulfate in the Madison and Minnelusa aquifers

13. Boxplots showing calcite and dolomite saturation indices for selected samples from the Madison and Minnelusa aquifers

14-17. Graphs showing:

14. Modeled relations between calcium and magnesium concentrations, pH, and dissolved sulfate

15. Relations between dissolved calcium and magnesium concentrations and dissolved sulfate in the Madison and Minnelusa aquifers

16. Relation between pH and dissolved sulfate in the Madison and Minnelusa aquifers

17. Relation between dissolved oxygen and distance from outcrop in the Madison and Minnelusa aquifers

18. Schematic showing fractionation of stable oxygen and hydrogen isotopes during rainout

19. Graph showing relation between $\delta^{18}O$ and $\delta D$ in Black Hills samples in comparison to the Global Meteoric Water Line

20. Map showing generalized distribution of $\delta^{18}O$ in surface water and ground water in near-recharge areas

21. Graphs showing temporal variation of $\delta^{18}O$ for selected sites

22. Map showing cumulative tritium deposition on the continental United States, 1953-83, and location of selected collection sites

23. Graph showing monthly tritium concentrations in precipitation at Ottawa, Canada

24. Graph showing weighted annual tritium concentrations in precipitation at selected locations

25. Schematic diagrams illustrating mixing models for age dating for various ground-water flow conditions

26. Graph showing estimated tritium concentrations in precipitation for Black Hills area and decay curves for selected years

27-32. Maps showing:

27. Distribution of $\delta^{18}O$ in selected Madison and Minnelusa wells and springs in the northern Black Hills area

28. Distribution of $\delta^{18}O$ in selected Madison and Minnelusa wells and springs in the Rapid City area

29. Distribution of $\delta^{18}O$ in selected Madison and Minnelusa wells and springs in the southern Black Hills area

30. Distribution of tritium for selected sites in the northern Black Hills

31. Distribution of tritium for selected sites in the Rapid City area

32. Distribution of tritium for selected sites in the southern Black Hills area

33. Boxplots of tritium concentrations for selected ground-water and surface-water samples collected during 1990-98 in the Black Hills area

34. Map showing distribution of $\delta^{18}O$ in selected Madison wells and springs and generalized flowpaths in the Black Hills of South Dakota and Wyoming

35. Selected Stiff diagrams showing the distribution of major-ion chemistry in selected well pairs and artesian springs in the Black Hills area

36. Graphs showing decay-curve families for time-delay mixing model

37. Hydrographs of selected well pairs
TABLES

1. Saturation indices for selected samples from wells completed in the Madison and Minnelusa aquifers.............. 21
2. Selected results of geochemical modeling........................................................................................................ 25
3. Selected data for observation well pairs............................................................................................................. 45
4. Tritium data for selected sites having data for 2000........................................................................................... 52
5. Generalized age estimates for headwater springs, derived using immediate-arrival mixing model......................... 54
6. Selected hydraulic and geochemical information for major artesian springs.......................................................... 64
7. Selected site information and isotope data for sites used in report...................................................................... 87
8. Stable isotope data for sites with multiple samples............................................................................................ 103
9. Weighted annual tritium concentrations in precipitation for Black Hills area......................................................... 114
10. Monthly estimated tritium concentrations in precipitation, monthly precipitation, and weighted annual tritium concentrations in precipitation for Black Hills area........................................................................ 115
11. Estimated tritium concentrations in precipitation for Black Hills area, adjusted for decay.................................. 117

CONVERSION FACTORS, ACRONYMS, AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Multiply</th>
<th>By</th>
<th>To obtain</th>
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<tbody>
<tr>
<td>acre</td>
<td>4,047</td>
<td>square meter</td>
</tr>
<tr>
<td>acre</td>
<td>0.4047</td>
<td>hectare</td>
</tr>
<tr>
<td>acre-foot per year (acre-ft/yr)</td>
<td>1,233</td>
<td>cubic meter per year</td>
</tr>
<tr>
<td>acre-foot per year (acre-ft/yr)</td>
<td>0.001233</td>
<td>cubic hectometer per year</td>
</tr>
<tr>
<td>cubic foot per second (ft³/s)</td>
<td>0.02832</td>
<td>cubic meter per second</td>
</tr>
<tr>
<td>foot per year (ft/yr)</td>
<td>0.3048</td>
<td>meter per year</td>
</tr>
<tr>
<td>gallon per minute (gal/min)</td>
<td>0.06309</td>
<td>liter per second</td>
</tr>
<tr>
<td>inch</td>
<td>2.54</td>
<td>centimeter</td>
</tr>
<tr>
<td>inch</td>
<td>25.4</td>
<td>millimeter</td>
</tr>
<tr>
<td>inch per year (in/yr)</td>
<td>25.4</td>
<td>millimeter per year</td>
</tr>
<tr>
<td>foot (ft)</td>
<td>0.3048</td>
<td>meter</td>
</tr>
<tr>
<td>mile (mi)</td>
<td>1.609</td>
<td>kilometer</td>
</tr>
</tbody>
</table>

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

°F = (1.8 × °C) + 32

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:

°C = (°F - 32) / 1.8

Water year: Water year is the 12-month period, October 1 through September 30, and is designated by the calendar year in which it ends. Thus, the water year ending September 30, 1998, is called the “1998 water year.”

Per mil (%ε): A unit expressing the ratio of stable-isotopic abundances of an element in a sample to those of a standard material. Per mil units are equivalent to parts per thousand. Stable-isotopic ratios are computed as follows:

δX = \left(\frac{R_{\text{sample}}}{R_{\text{standard}}} - 1\right) × 1,000

where

X is the heavier isotope and
R is the ratio of the heavier, less abundant stable isotope to the lighter, stable isotope in a sample or standard.

The δ values for oxygen and hydrogen stable isotopic ratios discussed in this report are referenced to the following standard material:

<table>
<thead>
<tr>
<th>Ratio (R)</th>
<th>Standard identity and reference</th>
</tr>
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<tbody>
<tr>
<td>hydrogen-2:hydrogen-1</td>
<td>Vienna Standard Mean Ocean Water (VSMOW)</td>
</tr>
<tr>
<td>oxygen-18:oxygen-16</td>
<td>Vienna Standard Mean Ocean Water (VSMOW)</td>
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