

**CHAPTER 89-04-03**  
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**89-04-03-01. General.** A water management plan shall include, but shall not be limited to, the size, amount, or locations of all dams, dikes, drainage, ditches, wells, water uses, and all other water retention devices, water diversion devices, and potential hydrologic alterations.

**General Authority:** NDCC 28-32-02, 61-02-11, 61-03-13

**Law Implemented:** NDCC 61-02-14

**89-04-03-02. Information on hydrologic system.** Because water supplies may be affected several miles beyond the mined area, it is necessary to develop an analysis of the potentially affected area prior to mining. The hydrologic data to be submitted as part of the water management plan shall include:

1. A general account of the ground water hydrology (the water resources of the area).
2. A contour map or maps showing the water table or piezometric surface of the water in each aquifer (including water-bearing coal seams) that will be affected by mining. These maps shall be prepared using a minimum of one data point (a piezometer nest) per four square miles [10.4 square kilometers]. The locations of data points shall be shown on the map and given to the nearest ten acres [4.04 hectares]. Data accompanying the map or maps should include the lithologic and geophysical logs of the holes in which piezometers are installed, piezometer construction details, and elevations of the water level and land surface to the accuracy necessary for valid analysis of the ground water hydrology of the area. The area covered by the map or maps shall be the potentially affected area. Where feasible, water samples shall be collected from each of the data points for chemical analyses. The analyses shall include:
  - a. Total dissolved solids.
  - b. Hardness.
  - c. Sodium.
  - d. Iron.
  - e. Bicarbonate.

- f. Nitrate.
  - g. Sulfate.
  - h. Chloride.
  - i. Acidity (pH).
  - j. Sodium adsorption ratio (include calcium, magnesium, and sodium cation concentrations).
  - k. Electrical conductivity.
3. A general accounting of the water use in the area.
  4. A general accounting of the surface water hydrology. This shall include the location and identification of streams, lakes, sloughs, ponds, natural drainageways, and watersheds.
  5. A map showing all sources of water to be used annually by the facility. The map or report should indicate the water permit number of each source, and the amount of use.
  6. A map showing all proposed reservoirs, impoundments, and dikes. Appropriate engineering data should be submitted for each of the structures.
  7. A map showing the amounts and location of proposed discharges.
  8. A map showing the natural drainage patterns of the area and how the proposed operation will alter these natural conditions.

**General Authority:** NDCC 28-32-02, 61-02-11, 61-03-13

**Law Implemented:** NDCC 61-02-14

**89-04-03-03. Compliance provisions.** The total water management plan shall include engineering plans and specifications for proposed construction sufficient to meet the requirements of this article.

**General Authority:** NDCC 28-32-02, 61-02-11, 61-03-13

**Law Implemented:** NDCC 61-02-14

**89-04-03-04. Maps.** Maps required pursuant to this chapter shall be at a scale of 1:12,000 (one inch equals one thousand feet) [2.54 centimeters equals 300 meters] with legible contours.

**General Authority:** NDCC 28-32-02, 61-02-11, 61-03-13

**Law Implemented:** NDCC 61-02-14