Introduction

In Illinois, major aquifers are defined by combining isopach maps of the sand and gravel deposits of the Ashmore Tongue of the Henry Formation and the Glasford Formation. These units lack the continuity of a single aquifer, but locally may have hydraulic connection. Curry and Seaber (1990) had previously identified assemblages of these hydrostratigraphic units as the Kaneville aquifer. Following the descriptions of Curry and Seaber (1990), Vaiden and Curry (1990) mapped four Quaternary aquifers in Kane County listed in Table 2. These aquifers may be delineated by combining isopach maps of the sand and gravel deposits of the Ashmore Tongue of the Henry Formation and the Glasford Formation. These coarse-textured units were delineated by combining isopach maps of the sand and gravel deposits of the Ashmore Tongue of the Henry Formation and sand and gravel deposits of the Glasford Formation. These units are in hydraulic contact in a large portion of the mapped area.

Major Quaternary Aquifers

In Kane County, major aquifers are defined as deposits of sand and gravel in units that collectively have the following characteristics: (1) are greater than 50 feet thick; (2) have an areal extent of greater than 50 square miles; (3) have a high probability of producing greater than 75 gpm of water; and (4) are underlain by confining units such as Tiskilwa diamicton. If these units delineated by isopach maps are at least 50 feet thick and have an areal extent of greater than 50 square miles, they are considered major aquifers.

The Gilberts and Virgil aquifers were delineated by combining isopach maps of the sand and gravel of the Ashmore Tongue of the Henry Formation and sand and gravel deposits of the Glasford Formation. These coarse-textured units are in hydraulic contact in a large portion of the mapped area. Where the Tiskilwa Formation is absent or where the Gilberts and Virgil aquifers are separated by the Tiskilwa diamicton, the Gilberts and Virgil aquifers can be considered separate major aquifers. The Gilberts and Virgil aquifers are under confined conditions.

The Hampshire aquifer was delineated by combining isopach maps of the sand and gravel of the Ashmore Tongue of the Henry Formation and sand and gravel deposits of the Glasford Formation. These coarse-textured units are in hydraulic contact in a large portion of the mapped area. Where the Tiskilwa Formation is absent or where the Hampshire aquifer is separated from the Gilberts and Virgil aquifers by the Tiskilwa diamicton, the Hampshire aquifer can be considered a separate major aquifer. The Hampshire aquifer is under confined conditions.

The Carpentersville aquifer, named for the town of Carpentersville, is located in northeastern Kane County. It is composed of the Ashmore Tongue of the Henry Formation and sand and gravel deposits of the Glasford Formation. These coarse-textured units are in hydraulic contact in the area north and west of Elgin. The Carpentersville aquifer includes parts of both the Hampshire and Gilberts aquifers.

The Virgil aquifer, named for the town of Virgil, is located in west-central Kane County. It is composed of the Ashmore Tongue of the Henry Formation and sand and gravel deposits of the Glasford Formation. These coarse-textured units are in hydraulic contact in a large portion of the mapped area. The Virgil aquifer includes parts of both the Hampshire and Gilberts aquifers.

The St Charles, Hampshire, Virgil, and Gilberts aquifers share most of the same lithostratigraphic units, but there is some overlap of mapped units. All of these aquifers are under confined conditions.

The Hampshire aquifer is under confined conditions. Following the descriptions of Curry and Seaber (1990), Vaiden and Curry (1990) mapped four Quaternary aquifers in Kane County. These aquifers may be delineated by combining isopach maps of the sand and gravel deposits of the Ashmore Tongue of the Henry Formation and sand and gravel deposits of the Glasford Formation. These coarse-textured units were delineated by combining isopach maps of the sand and gravel deposits of the Ashmore Tongue of the Henry Formation and sand and gravel deposits of the Glasford Formation. These units are in hydraulic contact in a large portion of the mapped area.

Major Quaternary Aquifers

KANE COUNTY, ILLINOIS

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Recommendations
