

## City of Albany Cooperative Water-Resources Program

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 Cooperator     Albany Water, Gas, and Light Commission  
 Year Started    1977



### Problem

Long-term heavy pumping from the Claiborne, Clayton, and Cretaceous aquifers, which underlie the Upper Floridan aquifer, has resulted in substantial water-level declines in the deep aquifers in the Albany area. These declines have raised concern about the capacity of the deep aquifers to meet the increasing demand for potable water supply. To provide additional water supply and reduce the demand on the deep aquifers, the Albany Water, Gas, and Light Commission has developed a large wellfield southwest of Albany. The supply wells at this location primarily tap the Upper Floridan aquifer, a karstic unit that is the uppermost reliable source of water in the area. Because of local recharge to the aquifer, water quality may be affected by land-use practices. Nitrate levels exceeding the 10-milligrams per liter Maximum Contaminant Level (U.S. Environmental Protection Agency, 2000) have been detected in some wells upgradient of the proposed wellfield. The ground-water flow system and water quality of the Upper Floridan aquifer in the vicinity of the wellfield are complex and poorly understood.

### Objectives

- Monitor water-level fluctuations in the four aquifers used in the Albany area and relate water-level trends to changes in climatic conditions and pumping patterns.
- Describe the ground-water flow and water quality of the Upper Floridan aquifer in the southwestern Albany area: identify ground-water flow directions and gradients for the Upper Floridan aquifer; determine if there is a rapid hydrologic response of ground-water levels to rainfall; describe the distribution of ground-water ages for the Upper Floridan aquifer in the study area; and describe ground-water quality, with a particular emphasis on nitrate concentrations.

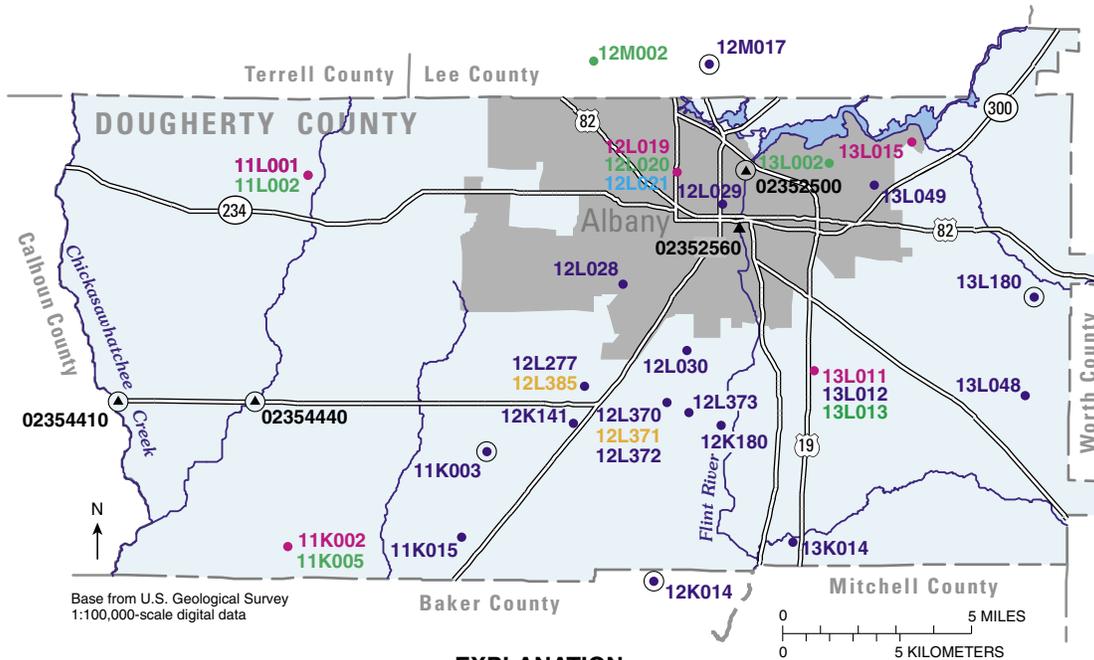
### Progress and Significant Results, 2002–03

- Continued hydrologic and water-quality monitoring, operation of continuous ground-water-level monitoring network, and added two wells to continuous recorder network in the vicinity of the wellfield. The network consists of 28 wells tapping four aquifers.

- Collected water-level measurements from 68 wells in the southwestern Albany area, October 1–3, 2002, and constructed a potentiometric-surface map.
- Collected water-level measurements from 74 wells in the southwestern Albany area, September 8–9, 2003, and constructed a potentiometric-surface map.
- Collected water samples from 12 wells in the southwestern Albany area, November 18–20, 2002, and analyzed samples for cations, anions, and nutrients. Collected water samples on May 13, 2003, from four wells—two upgradient and two downgradient from the wellfield. Collected a sample from the Flint River on May 13, 2003, to compare the water-quality characteristics of ground and surface water. These data were used to construct a trilinear diagram showing the percentage composition of major cations and anions.
- Collected water samples from 14 wells in the southwestern Albany area, November 3–5, 2003, and analyzed samples for cations, anions, and nutrients. Collected a sample from the Flint River on November 4, 2003, to compare the water-quality characteristics of ground and surface water. These data were used to construct a trilinear diagram showing the percentage composition of selected major cations and anions.
- Updated the Web site for the Albany program to provide the public with hydrologic information in the Albany area. Included on the Web site is information on ground-water activities; references and publications; ground-water, surface-water, and drought monitoring; ground-water-quality data; and links to other Web pages related to Albany's water issues. The Web site may be accessed at <http://ga.water.usgs.gov/projects/albany/>

### References Cited

- U.S. Environmental Protection Agency, 2000, Maximum contaminant levels (Part 143, National Secondary Drinking Water Regulations): U.S. Code of Federal Regulations, Title 40, Parts 100–149, revised as of July 1, 2000, p. 612–614.



**EXPLANATION**

- |                               |   |
|-------------------------------|---|
| ● Recorder well and site name | ● Monthly site measurement              |
| ● Upper Floridan aquifer      | ● Surficial aquifer                     |
| ⊙ Real time                   | ▲ Real-time streamgauge and site number |
| ● Claiborne Group             | ▲ Flint River sample                    |
| ● Clayton Formation           |   |
| ● Cretaceous aquifer system   |   |

The USGS continuously records water levels at 30 wells and 3 streamgages in the Albany area, shown on the map above. Data from four of these wells and the three streamgages are available in real time at <http://ga.waterdata.usgs.gov/nwis>




### Ground-water monitoring in the Albany, Georgia area

Working together to protect Albany's water supply

Long-term heavy pumping from the Claiborne, Clayton, and Upper Cretaceous aquifers, which underlie the Upper Floridan aquifer, has resulted in significant water-level declines in these deep aquifers in the Albany area. These declines have raised concern over the ability of the deeper aquifers to meet the increasing demand for potable water supply. To provide additional water and reduce the demand on the deeper aquifers, the Albany Water Gas, and Light Commission (WGL) is developing a large well field southwest of Albany. The supply wells at this location will primarily tap the Upper Floridan aquifer, a karstic unit that is the uppermost reliable source of water in the area. Because of local recharge to the aquifer, water quality may be affected by land use. The ground-water flow system and water quality of the Upper Floridan aquifer in the vicinity of the wellfield is complex. Monitoring is necessary to detect changes in the water level and water quality. The U.S. Geological Survey (USGS), in cooperation with WGL, is conducting a monitoring program for early detection of water-level declines and water-quality changes.

Ground-water conditions in the Albany area

 **Ground-water activities**

 **Publications**

 **Site information**

 **References**

**USGS Real-Time Hydrologic Data in the Albany area**

- [Precipitation](#)
- [Streamflow](#)
- [Ground-water levels](#)
- [All real-time monitoring sites](#)

**USGS Georgia Water Information Network for Dougherty County**

[Albany Weather](#) from GeorgiaWeather.net

[Additional Albany-area water information](#)



Visit the Albany program Web site at <http://ga.waterdata.usgs.gov/projects/albany>