



# SUSQUEHANNA RIVER BASIN COMMISSION

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**Docket No. 20030409**

**Approval Date: April 10, 2003**

## LEBANON VALLEY COLLEGE

Consumptive Water Use of Up to 0.132 mgd for Institutional Use,  
Annville and North Annville Townships, Lebanon County, Pennsylvania

### Review Authority

This project is subject to review pursuant to Article 3, Section 3.10 of the Susquehanna River Basin Compact, P.L. 91-575, and Commission Regulations §803.4, relating to projects requiring review and approval, and §803.42, relating to the consumptive use of water. The Commission received the application on June 29, 2001.

### Description

**Purpose.** The purpose of the application is to request approval for the consumptive use of water at Lebanon Valley College (the College) associated with the irrigation of athletic fields and landscaped areas, evaporative cooling for facility air conditioning, and steam losses from facility heating.

**Location.** The project is located in the Lower Susquehanna Subbasin, HUC 02050305, Swatara Creek Watershed, Annville and North Annville Townships, Lebanon County, Pennsylvania.

**Project Features.** The project sponsor has requested approval for the consumptive use of water of up to 0.132 million gallons per day (mgd). The Pennsylvania American Water Company—Hershey District (PAWC-HD) provides water to the College for the campus potable water system, a portion of which is consumed for the irrigation of landscaped areas at the Peace Garden, for building air conditioning (via wet chiller cooling towers) at four separate building complexes, and for building heating (via steam losses). A central steam plant with two natural gas-fired boilers provides steam heat to the original part of the campus. Newer campus buildings are heated individually by electric, heat pump, or small boiler systems.

Currently, water supplied by PAWC-HD averages 0.075 mgd on a yearly basis, and is metered monthly at 34 locations throughout the campus system. The College was founded in 1866.

The College also withdraws water from three wells (Football, Baseball, and West Wells) to irrigate its athletic fields. These athletic fields comprise a total of 16.3 acres of irrigated turf.

Withdrawals from each well are individually metered and have been monitored daily since August 1, 2002. The following table provides construction information for the three wells:

<b>Well Name</b>	<b>Date of Initial Use</b>	<b>Diameter (inches)</b>	<b>Depth (feet)</b>	<b>Pump Capacity (gallons per minute)</b>
Football Field	1986	6	157	200
Baseball Field	1997	6	400	200
West	1997	6	500	200

Combined withdrawals from the three wells average 0.034 mgd during peak months. Peak daily combined irrigation withdrawals from the three wells are estimated to reach 0.098 mgd.

Two waterbodies, both constructed in 1998, are located on the College's campus near the football field: a 0.4-acre ornamental pond providing habitat for resident waterfowl, and a 1.75-acre stormwater retention pond. In November 2000 and July 2001, two sinkholes developed in the stormwater retention pond and, since that time, the pond has not retained water. The 0.4-acre ornamental pond is filled only by spring flow and stormwater runoff.

The College's maximum average 30-day consumptive water use is estimated to be 0.046 mgd, and its peak-day consumptive water use is estimated to be 0.110 mgd. These estimates are based on design calculations of makeup water requirements for the four chiller cooling towers, daily metered usage since August 1, 2003, for the athletic field irrigation system, daily metered usage since January 1, 2001, for the Peace Garden, and estimates of daily makeup water requirements for the two boilers at the steam plant. The makeup water to the boilers and the makeup water to the four chiller cooling towers currently are not metered.

All of the wastewater generated from the College campus is discharged to the sanitary sewer system through one unmetered outfall, and is treated in the Annville Township Authority wastewater treatment facility.

### **Findings**

The project is subject to Commission approval and reporting requirements, as per Commission Regulation §803.42.

The College obtains the water for its campus potable system from a public supplier. This water is metered at 34 locations on a monthly basis throughout the campus system. Wastewater generated on the campus leaves the campus through one unmetered outfall. The College also withdraws water from three wells to irrigate turf grass on 16.3 acres of athletic fields. These well withdrawals are individually metered on a daily basis.

All water used for makeup water for the chiller cooling towers and for the two boilers at the central steam plant, as well as all water used for irrigation, is considered to be used consumptively. Commission staff has determined that consumptive water use resulting from the

irrigation of ornamental plantings and landscaped areas on the campus, other than at the Peace Garden, is of a nominal amount.

The project sponsor has agreed to install new meters on the makeup water lines to the four chiller cooling towers before the 2003 cooling season begins. Further, the project sponsor agrees to monitor the metered use of makeup water by all campus chiller units on a weekly basis. Within 60 days of the date of this approval, the project sponsor also has agreed to install meters on the makeup water lines to the two boilers at the central steam plant and to monitor and record this use daily. Water used to irrigate the athletic fields and the Peace Garden is currently metered and monitored daily.

The project sponsor installed one chiller cooling tower at the Lynch Building and boilers at the central steam plant prior to 1971. However, the quantity of these minimal pre-1971 consumptive water uses cannot be documented. All other campus consumptive water uses were initiated since 1986. Therefore, the project sponsor concurs that the project has no consumptive water use predating the effective date of Commission Regulation §803.42.

The consumptive use of water by the project is subject to water compensation requirements, as per Commission Regulation §803.42. To satisfy these requirements, the project sponsor proposes to pay the Commission quarterly in-lieu-of providing actual compensation water.

The project sponsor has proposed a spreadsheet accounting procedure quantifying four categories of consumptive water use for quarterly reporting to the Commission. First, metered ground-water withdrawals from the three wells will be monitored daily to obtain the quantity of water used for the irrigation of athletic fields. Second, metered water from the campus potable water system will be monitored daily to determine the quantity of water used for irrigation of the Peace Garden.

Third, individually metered makeup water for the four chiller cooling towers will be monitored weekly, summed, and prorated to a daily basis to obtain the daily quantity of water used for building complex air conditioning. Last, the metered makeup water to the two boilers at the campus central steam plant will be monitored and summed daily to obtain the daily quantity of boiler feed makeup water used for building and hot water heating.

The daily quantities of the project's four categories of consumptive water use will be summed to obtain the project's total consumptive water use. Commission staff recommends approval of the project sponsor's proposed spreadsheet accounting procedure for use in calculating daily consumptive water use for the project.

The project's maximum daily consumptive water use currently reaches 0.110 mgd during peak summer days. The project sponsor has requested an approval of up to 0.132 mgd of consumptive water use, based on an expected 20 percent increase in future chiller cooling tower makeup and athletic field irrigation water requirements. Should the project's future consumptive water use exceed 0.132 mgd, the project sponsor must apply for a modification to this docket at that time.

The total withdrawal from the College's three wells is less than 100,000 gallons per day (gpd), based on a 30-day average. Commission staff finds that the ground-water withdrawal by the project sponsor is not subject to approval under Commission Regulation §803.43 unless the project sponsor increases its combined withdrawal from the three wells to more than 100,000 gpd, based on a 30-day average. The project sponsor will continue to keep daily records of the project's ground-water withdrawals from each well. Before the next irrigation season, the project sponsor also has agreed to install measuring devices and begin monitoring depth to water in each of the project's three wells on a weekly basis. Should the project's future combined withdrawal from the three wells exceed or be expected to exceed a total of 100,000 gpd, based on a 30-day average, the project sponsor must apply for approval of a ground-water withdrawal at that time.

The project is subject to the Commission's water conservation requirements, as per Commission Regulation §804.20(a) and (c).

The project sponsor has paid the appropriate application fee in accordance with Commission Regulation §803.28 and Commission Resolution 98-19, as amended by Commission Resolution 2000-06. The project sponsor has provided all other proofs of notification, as required by Commission Regulation §803.25.

The project is physically feasible, does not conflict with or adversely affect the Commission's Comprehensive Plan, and does not adversely influence the present or future use and development of the water resources of the basin.

### **Compliance Incentive Program**

Commission staff has determined that the project sponsor is eligible to participate in the Commission's Compliance Incentive Program (CIP). Therefore, the project sponsor would not be subject to penalties for water consumed in violation of Commission Regulation §803.42 prior to January 1, 2001. In accordance with the CIP, payment to the Commission as a method of compensation for the project's consumptive water use shall be effective and applicable to all consumptive water used by the project beginning January 1, 2001.

### **Decision**

The project's consumptive water use of up to 0.132 mgd is approved pursuant to Article 3, Section 3.10 of the Compact subject to the following conditions:

- a. The project sponsor shall comply with all Commission regulations, including consumptive water use reporting requirements, as per Commission Regulation §803.42.
- b. Within sixty (60) days from the date of this approval, the project sponsor shall install and then maintain meters, accurate to within five (5) percent, on the makeup water lines to the chiller cooling towers at four separate building complexes on campus and to the two boilers at the central steam plant.

c. The project sponsor shall keep daily records of the project's consumptive water use, and shall report the data to the Commission quarterly, and as otherwise required. The daily quantity of water consumptively used shall be the quantity pumped from the wells to the irrigation systems at the athletic fields and water required from the campus potable system for makeup water to the chiller cooling towers, makeup water to the boilers at the central steam plant and water required to irrigate the Peace Garden. The project sponsor shall compute the project's daily consumptive water use by summing daily metered ground-water withdrawals from the three wells for athletic field irrigation, daily metered makeup water to the boilers, daily metered irrigation of the Peace Garden, and weekly metered makeup water to the chiller cooling towers, prorated to a daily basis. The project sponsor shall maintain the existing and proposed meters, accurate to within five (5) percent, to calculate the consumptive water use.

d. The project sponsor shall keep daily records of the project's ground-water withdrawal from each well and report the data to the Commission quarterly, and as otherwise required. If the combined ground-water withdrawal from the three wells exceeds the threshold specified in Commission Regulation §803.43, the project sponsor shall submit the appropriate application for review and approval by the Commission. Additionally, within sixty (60) days of the date of this approval, the project sponsor will install devices to measure depth to water in each of the three wells, monitor depth to water in each well on a weekly basis, and report this data to the Commission quarterly.

e. To satisfy the Commission's current compensation requirements for consumptive water use set forth in Commission Regulation §803.42, the project sponsor shall make quarterly payments to the Commission based on the rate of \$0.14 per 1,000 gallons of water consumptively used by the project. The daily quantity of water consumptively used shall be the quantity of irrigation water applied to athletic fields and the Peace Garden plus the chiller cooling tower and boiler makeup water. Payments shall be made quarterly and shall be calculated by applying this rate to the daily amount of water consumptively used by the project during the preceding calendar quarter. Quarterly payments are due and payable within thirty (30) days after the close of the preceding quarter. The rate of payment, after appropriate notice to consumptive users of water using this method of compliance, is subject to change at the Commission's discretion.

f. The project sponsor shall comply with the water conservation requirements specified in Commission Regulation §804.20(a) and (c).

g. The project sponsor is eligible to participate in the Commission's Compliance Incentive Program (CIP). Therefore, the project sponsor is not subject to penalties for its prior noncompliance. In accordance with the CIP, payment to the Commission as a method of compensation for the project's consumptive water use shall be effective and applicable to all water consumptively used by the project beginning January 1, 2001. The project sponsor shall provide records of its consumptive water use and make a payment to the Commission based on the rate of \$0.14 per 1,000 gallons of water consumptively used during the period from January 1, 2001, until the effective date of this approval. This payment shall be calculated and included in the first quarterly payment made by the project sponsor in accordance with the requirements of condition (e) above. Pending review and approval by Commission staff,

consumptive use occurring before monitoring of the meters shall be estimated, based on design specifications and approximate operating time of athletic field irrigation systems, chiller cooling towers and boilers.

h. Commission approval shall not be construed to exempt the project sponsor from obtaining all necessary permits and/or approvals required for the project from other federal, state, or local government agencies having jurisdiction over the project. The Commission reserves the right to modify, suspend, or revoke this action if the project sponsor fails to obtain or maintain such approvals.

i. The Commission reserves the right to inspect or investigate the project facility, and the project sponsor shall allow authorized employees or agents of the Commission, without advance notice or a search warrant, at any reasonable time and upon presentation of appropriate credentials, and without delay, to have access to and to inspect all areas where the project is being constructed, operated, or maintained. Such employees or agents shall be authorized to conduct tests or sampling, to take photographs, to perform measurements, surveys, and other tests, to inspect the methods of construction, operation, or maintenance, to inspect all measurement equipment, to audit, examine, and copy books, papers, and records pertinent to any matter under investigation, and to take any other action necessary to assure that the project is constructed, operated, or maintained in accordance with the terms and conditions of this approval or any other rule, regulation, or order of the Commission.

j. If the project sponsor fails to comply with any term or condition of this docket, the Commission may suspend, modify, or revoke its approval of same, and may impose appropriate fines and penalties. Upon written notice by the Commission, the project sponsor shall have thirty (30) days to correct such noncompliance, unless an alternate period is specified in the notice. Failure to comply within thirty (30) days, or within the alternate period identified in the notice, shall result in a ninety (90)-day suspension of approval of this docket. If the project sponsor fails to address the noncompliance to the satisfaction of the Commission within the suspension period, this approval may be revoked. Nothing herein shall preclude the Commission from exercising its authority to immediately modify, suspend, or revoke this approval where it determines exigent circumstances warrant such action, or from imposing fines and penalties, regardless of the period of noncompliance.

k. The Commission reserves the right to reopen any project docket or issue such additional orders, as may be necessary, to mitigate or avoid adverse impacts or otherwise to protect public health, safety, welfare, or the environment.

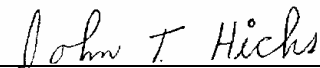
l. Commission approval confers no property rights upon the project sponsor. The securing of all rights necessary and incident to the project sponsor's development and operation of the project shall be the sole and exclusive responsibility of the project sponsor, and this approval shall be subject thereto.

m. This approval is effective until April 10, 2028. The project sponsor shall submit a renewal application by October 10, 2027, and obtain Commission approval prior to continuing operation beyond April 10, 2028.

n. If the project is discontinued for such a period of time and under such circumstances that an abandonment of the project may reasonably be inferred, the Commission may rescind the approval of the project unless a renewal is requested by the project sponsor and approved by the Commission.

By the Commission:

Dated: April 10, 2003

  
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John T. Hicks, Chairman  
New York Commissioner