



SUSQUEHANNA RIVER BASIN COMMISSION

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Docket No. 20020614

Approval Date: June 12, 2002

MANADA GOLF CLUB

Surface-Water Withdrawal of up to 0.295 mgd, when available, from Bow Creek, and a Consumptive Water Use of up to 0.295 mgd, for Golf Course Irrigation, East Hanover Township, Dauphin 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, §803.42, relating to the consumptive use of water, and §803.44, relating to surface-water withdrawals. The Commission received the application for the consumptive use of water on August 21, 2000, and the application for the surface-water withdrawal on April 30, 2002.

Description

Purpose. The purpose of the application is to request approval for a surface-water withdrawal and the consumptive use of that water for irrigation of greens, tees, and fairways at an existing 18-hole golf course.

Location. The project is located in the Lower Susquehanna Subbasin, Bow Creek watershed, HUC 02050305, East Hanover Township, Dauphin County, Pennsylvania.

Project Features. The project sponsor has requested approval for a maximum daily withdrawal of up to 0.295 million gallons per day (mgd) of water from Bow Creek, when available, and a consumptive use of water of up to 0.295 mgd. Based on irrigation data submitted by the project sponsor for the year 2001, the project has a maximum average 30-day consumptive use of water of 0.129 mgd and a current peak day consumptive water use of 0.268 mgd.

Irrigation water is withdrawn from a pond which is constructed in Bow Creek, near the fourth fairway of the golf course. The pond receives water from Bow Creek, from springs located between the eighth and ninth fairways, and from three wells. Ground water is used as a supplemental source, as needed, to meet the golf course irrigation demands. The fourth Tee Well has a reported yield of 40 gallons per minute (gpm), the fifth Tee Well has a reported yield of 20 gpm, and the Barn Well has a reported yield of 20 gpm. The irrigation water usage is metered.

The project was constructed as an 18-hole course in 1963 and has been in continuous operation since that time. As part of the project, the project sponsor constructed one holding pond on Bow Creek to provide for water storage at the site. Commission staff has calculated the surface area of the pond to be 3.37 acres and the pond volume is reported to be approximately 4.2 million gallons. The location of the irrigation system intake currently limits the effective, usable storage of the pond to approximately 2.1 million gallons, which is sufficient storage for approximately 16 days of irrigation, based on the maximum 30-day average use. The project sponsor has withdrawn water from the on-stream pond over the life of the project with no passby structure or engineering controls in place.

The original irrigation system was installed in 1963 and the current system, which was modified to include fairway irrigation in 1995, was activated in 1996. Irrigation water is pumped directly from the on-stream pond to irrigate greens, tees, and fairways. The current water withdrawal from the pond is accomplished via a pump that has a capacity of 850 gpm.

Ground water is withdrawn from the three on-site wells and discharged to the on-stream pond, as needed for the irrigation system. The total pumping capacity of the three wells, as reported by the project sponsor, is 80 gpm, however, the project sponsor has reported that the wells are utilized at less than 100,000 gallons during a 24-hour pumping period. The ground-water withdrawal for the irrigation system is not metered.

Findings

The project's consumptive water use and surface-water withdrawal are subject to Commission approval and reporting requirements as per Commission Regulations §803.42 and 803.44, respectively.

The project sponsor has requested a consumptive water use approval of up to 0.295 mgd. Based on an analysis of irrigation records supplied by the project sponsor, Commission staff is recommending approval of the requested amount, which represents an increase of approximately 10 percent above the current peak day use of 0.268 mgd. This will allow for an anticipated increase in water usage over the 25-year duration of this approval. Should the project's future consumptive water use exceed or be expected to exceed 0.295 mgd, the project sponsor must apply for a modification to this docket at that time.

The project's ground-water withdrawal has been in operation since 1996 but is not metered. The three on-site wells are used to fill the pond and supplement Bow Creek inflow, if needed. The project sponsor has reported that the wells are utilized at less than 100,000 gallons during a 24-hour pumping period and, thus, this withdrawal is less than the threshold contained in Commission Regulation §803.43. However, since the project sponsor currently does not meter the actual quantity of ground water withdrawn, and the wells are capable of producing 115,200 gpd, Commission staff recommends that the project sponsor install the appropriate metering to provide to the Commission documentation of the wells' combined usage.

If the ground-water withdrawal exceeds 3,000,000 gallons in any consecutive 30-day period, the project sponsor must submit a ground-water withdrawal application to the Commission.

All water withdrawn from the pond and used for golf course irrigation is considered to be used consumptively. The irrigation system has a meter that measures the quantity of water pumped. The pre-1971 consumptive water use by the project sponsor is 0.045 mgd and, for purposes of this docket, this quantity of water is considered "grandfathered" and is exempt from water compensation requirements. Since the storage pond predates the Commission's consumptive use regulation, the project sponsor is not required to provide compensation for the evaporative losses from the pond.

The project sponsor has requested a consumptive water use approval of up to 0.295 mgd. Commission staff analyzed irrigation records supplied by the project sponsor and, based on this analysis, is recommending an increase of 10 percent above the current peak day use of 0.268 mgd. This will allow for increased water usage over the 25-year duration of this approval. Should the project's future consumptive water use exceed or be expected to exceed 0.295 mgd, the project sponsor must apply for a modification to this docket at that time.

The primary source of water is an existing surface-water withdrawal from Bow Creek. Although the withdrawal predates Commission Regulation §803.44, relating to surface-water withdrawals, the project sponsor has increased its withdrawal by more than 0.100 mgd since November 11, 1995.

The project's surface-water withdrawal has been in operation since 1963 with no passby criteria in use at the site. Bow Creek is a warm-water fishery (WWF) with an annual average daily flow (ADF) rate at the site of 1.22 cubic feet per second (cfs) or 548 gallons per minute (gpm). Commission staff has calculated the 7-day 10-year low flow (Q7-10 flow) in Bow Creek to be 0.031 cfs or 13.9 gpm. The surface-water intake has a pump with the capacity of 850 gpm. The withdrawal is greater than 10 percent of the Q7-10 flow (0.003 cfs or 1.3 gpm) at the point of taking, thereby requiring a passby flow to protect aquatic resources and downstream users.

Commission guidelines for calculating passby flows require that the passby flow at the point of taking for a stream classified as a WWF be 20 percent of annual ADF. Therefore, Commission staff has calculated a passby flow of 20 percent of annual ADF to be 110 gpm. Because the project sponsor is using an on-stream pond as its source of water, the passby criteria must be modified to accommodate conditions when natural streamflow drops below 20 percent ADF. Therefore, staff recommends that the project sponsor maintain a downstream release of water from the pond of 110 gpm, or an amount equal to the inflow of the stream and springs to the pond, when streamflow drops below 110 gpm.

The project's consumptive use of water in excess of the grandfathered quantity is subject to water compensation requirements, as per Commission Regulation §803.42. To satisfy these requirements, the project sponsor proposes to make quarterly payments to the Commission in-lieu-of providing actual compensation water. The payment will be based on the daily quantity of water used for irrigation minus the pre-1971 consumptive use of 0.045 mgd. If the daily grandfathered quantity exceeds the project's calculated daily consumptive water use, that day's consumptive water use is considered to be zero.

The project is subject to water conservation requirements, as per Commission Regulation §804.20(b).

The project sponsor has paid the appropriate application fee in accordance with Commission Regulation §803.28 and in accordance with Commission Resolution 98-19, as amended by Commission Resolution 2000-06. The project sponsor has provided all proofs of notification as called for in 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 withdrawn and consumed in violation of Commission Regulations §803.42 and §803.44 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 surface-water withdrawal from Bow Creek of up to 0.295 mgd, when available, and the consumptive use of water of up to 0.295 mgd are 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 and surface-water withdrawal reporting requirements as per Commission Regulation §803.44.

b. The project sponsor shall keep daily records of the project's consumptive water use, and shall provide the results to the Commission quarterly, and as otherwise required. The daily quantity of water consumptively used shall be the quantity pumped to the irrigation system. The project sponsor shall maintain metering on the irrigation system, accurate to within five percent.

c. Within 60 days of the date of this approval, the project sponsor shall install and maintain metering on the three on-site wells, accurate to within five percent, and keep daily records of the project's ground-water withdrawal. The project sponsor shall provide the results to the Commission quarterly, and as otherwise required. The project sponsor may propose alternative monitoring to the Commission for staff review and approval. If the ground-water withdrawal exceeds the threshold contained in Commission Regulation §803.43, the project sponsor shall submit the appropriate application for review and approval by the Commission. The Commission reserves the right to inspect all measurement equipment and audit all measurement records.

d. The project sponsor shall keep daily records of the project's surface-water withdrawal and shall provide the results to the Commission quarterly, and as otherwise required. The Commission reserves the right to inspect the intake structure at any time, inspect all measurement equipment, and audit all measurement records.

e. The project sponsor shall maintain a downstream release of water from the pond of 110 gpm, or when streamflow into the pond is less than 110 gpm, an amount equal to the total inflow of the stream and springs to the pond. The project sponsor shall install flow measurement devices that measure the inflow and outflow of the pond. The project sponsor shall keep daily records of the inflow and outflow of the pond and shall provide the results to the Commission quarterly, and as otherwise required.

f. The project sponsor shall submit its design and a proposed construction schedule for the flow measurement devices within 90 days of the date of this approval for review and approval by Commission staff prior to any construction. Following approval, the project sponsor shall complete construction in accordance with the approved schedule and shall provide to the Commission documentation that construction has been completed. The passby system shall be kept fully functional and free of debris. The Commission reserves the right to inspect the passby flow device and the flow measurement devices at any time.

g. 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 in excess of the grandfathered quantity. The daily quantity of water consumptively used shall be the quantity pumped to the irrigation system. Payment amounts shall be calculated by applying this rate to the daily amount of water used consumptively by the project, less the grandfathered quantity of 0.045 mgd, during the preceding calendar quarter. If the daily grandfathered quantity exceeds the project's calculated daily consumptive water use, that day's consumptive water use is considered to be zero. Quarterly payments are due and payable within 30 days after the close of the preceding quarter. The rate of payment, after appropriate notice to all consumptive users of water using this method of compliance, is subject to change at the Commission's discretion.

h. The project sponsor shall comply with Commission water conservation requirements, as per Commission Regulation §804.20(b).

i. The project sponsor is eligible to participate in the Commission's Compliance Incentive Program. Therefore, the project sponsor is not subject to any penalties for 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 used consumptively 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, above the grandfathered quantity of 0.045 mgd, during the period from January 1, 2001 until the effective date of this approval. This payment shall be included in the first quarterly payment made by the project sponsor in accordance with the requirements of condition (g) above.

j. 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.

k. 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. 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.

l. The Commission reserves the right to reopen any project docket and make additional orders that may be necessary to mitigate or avoid adverse impacts or otherwise to protect the public health, safety, welfare or the environment.

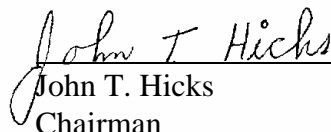
m. Commission approval confers no property rights upon the project sponsor. The securing of all rights necessary and incident to the project sponsor's development and operation of the project shall be the sole and exclusive responsibility of the project sponsor, and this approval shall be subject thereto.

n. This approval is effective until June 12, 2027. The project sponsor shall submit a renewal application by December 12, 2026 and obtain Commission approval prior to continuing operation beyond June 12, 2027.

o. 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: June 12, 2002



John T. Hicks
Chairman