



SUSQUEHANNA RIVER BASIN COMMISSION

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Docket No. 20061204

Approval Date: December 5, 2006

COUNTRY CLUB OF HARRISBURG

Groundwater Withdrawal (30-Day Averages) of 0.162 mgd from Well 1, When Available,
and 0.043 mgd from Well 2, for Golf Course Irrigation,
Middle Paxton 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 (Compact), P.L. 91-575, 84 Stat. 1509 et seq., and Susquehanna River Basin Commission (Commission) Regulations §803.4, relating to projects requiring review and approval, and §803.43, relating to groundwater withdrawals. The Commission received the application for withdrawal of groundwater on October 26, 2006, which was updated on November 2, 2006.

Description

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

Location. The project is located in the Lower Susquehanna Subbasin, Fishing Creek Watershed, HUC 02050305, Middle Paxton Township, Dauphin County, Pennsylvania.

Project Features. The project sponsor requested approval for the withdrawal (30-day averages) of 0.162 million gallons per day (mgd) from Well 1 and 0.065 mgd from Well 2, which Commission staff recommends be reduced due to identified impacts to a neighboring well at the requested pumping rates. Wells 1 and 2 will be used as additional sources of water for the irrigation of greens, tees, and fairways at an existing 18-hole golf course.

Well 2 was previously approved for withdrawal at less than 0.100 mgd as a source for consumptive water use in Commission Docket No. 20020616-1.

Well 1 is located approximately 100 feet north of Fishing Creek, and approximately 350 feet west of the eastern property boundary. Well 1 is located on the overbank of Fishing Creek and is proximal to a small unnamed tributary. Well 2 is located in a small valley that is

the headwaters for the unnamed tributary that flows to the west of Well 1. Well 2 is approximately 900 feet northwest of Well 1.

Well 1 is an open-rock well, drilled to a total depth of 560 feet. The well is constructed with 8-inch-diameter steel casing to a depth of 48 feet, and is an open-rock borehole with a diameter of 8 inches to 560 feet.

Well 2 is an open-rock well, drilled to a total depth of 650 feet. The well is constructed with 8-inch-diameter steel casing to a depth of 38 feet, and is an open-rock borehole with a diameter of 8 inches to 650 feet.

Wells 1 and 2 penetrate approximately 40 and 35 feet, respectively, of unconsolidated overburden materials, and are completed in siltstones, sandstones, and shales of the Irish Valley Member of the Catskill Formation. Major water-bearing zones in the wells are structurally and stratigraphically controlled, based on the strongly directional drawdown exhibited during the pumping test(s). The near-vertical bedding and the low-angle faulting appear to be the primary source of water.

Pumping Test. The testing procedures for both wells were pre-approved by Commission staff. The project conducted a 69-hour pumping test at Well 1, starting on November 23, 2003, and ending on November 26, 2003. The average pumping rate was 152 gallons per minute (gpm). Four surface water features were monitored (Well 1 weir, Pascotti weir, Fishing Creek staff gage, and the North Slope Pond staff gage); seven groundwater locations were monitored (Well 2, Pascotti Well, Maintenance Building Well, Lundeen Residence Well, Green No. 11 Well, Well 1 piezometer, and the Pascotti piezometer). The monitoring points were located approximately along strike and perpendicular to strike, covering a representative area. During the testing period, pumping-induced drawdown was observed at the Well 1 piezometer and the North Slope Pond staff gage. One water-bearing zone was intersected, with no apparent impact to the discharge volume. At the conclusion of the test, the net drawdown was 84.42 feet, the average transmissivity was estimated at 6,500 gallons per day per foot (gpd/ft), and the end-of-test specific capacity was calculated at 1.74 gallons per minute per foot (gpm/ft).

The project conducted a 48-hour pumping test at Well 2, starting on January 22, 2004, and ending on January 24, 2004. The average pumping rate was 64 gpm. The same four surface water features and seven groundwater locations were monitored. During the testing period, pumping-induced drawdown was observed at the Pascotti Well. Three water-bearing zones were intersected, and the sum of the yields was estimated to be 60 gpm. At the conclusion of the test, the net drawdown was 211.62 feet, the average transmissivity was estimated at 375 gpd/ft, and the end-of-test specific capacity was calculated at 0.30 gpm/ft.

During the Well 2 pumping test, an ice jam occurred at a downstream constriction in Fishing Creek (just downstream of the staff gage monitoring point), causing the stream level to increase. The rising stream level was reflected in the Well 1 piezometer, Well 1 weir, Well 1, Pascotti weir, and Fishing Creek staff gage.

Findings

The project is subject to Commission approval and reporting requirements, as per Commission Regulation §803.43.

Commission staff reviewed the groundwater availability analysis, pumping test results, and supporting information submitted by the project sponsor. Pumping test results indicate that Wells 1 and 2 draw water from a moderately transmissive fractured rock aquifer, with near-vertical bedding and low-angle faulting. Commission staff has concluded that no hydraulic communication exists between Wells 1 and 2.

Recharge in the project area is strongly controlled by structure, and thus limited. Commission staff recommends approval (30-day averages) of 0.162 mgd from Well 1, when available, and 0.043 mgd from Well 2 (which is less than the requested quantity of 0.065 mgd). Should the project's groundwater withdrawal exceed or be expected to exceed the approved amount, the project sponsor must apply for a modification to this docket at that time.

Commission staff recommends that the maximum instantaneous rates of production from Well 1 not exceed 152 gpm and Well 2 not exceed 64 gpm.

Commission staff recommends that the project sponsor install appropriate metering on Wells 1 and 2, monitor withdrawals daily, and report these data quarterly.

Commission staff finds that the proposed withdrawal from Well 1 induces flow from Fishing Creek at a rate that exceeds 10 percent of the 7-day, 10-year low flow (Q7-10 flow). Fishing Creek is a warm water fishery (WWF), and the passby flow required at the site for the surface water withdrawal is 20 percent of annual average daily flow (ADF). Commission staff recommends that the project sponsor also observe the passby flow of 20 percent ADF for withdrawals from Well 1.

During times when the natural flow of Fishing Creek is less than 20 percent ADF, Commission staff recommends that the project sponsor discontinue use of Well 1. As an alternative and provided appropriate flow measurement structures are in place, functional, and free from obstruction, the project sponsor may mitigate adverse impacts to the stream by insuring that streamflow downstream and outside of the zone of influence of the well is maintained at the rate equal to or greater than streamflow upstream of the zone of influence, plus any intervening drainage. The project sponsor may reduce its rate of pumping Well 1 or augment streamflow from groundwater or storage. For purposes of this docket, Commission staff recommends that 20 percent ADF equal 4.63 cubic feet per second (cfs) or 2,079 gpm be satisfied at the downstream point of compliance.

Commission staff recommends that the project sponsor install weirs or flumes, or other flow measurement devices, to provide for the required passby flow. The project sponsor should submit its designs and a proposed construction schedule for review and approval by Commission staff prior to any construction. Commission staff also should review and approve the location of the measuring devices. Following approval, the project sponsor should complete construction in

accordance with the approved schedule and shall certify to the Commission that construction has been completed in accordance with the approved design. The project sponsor must maintain the passby system, keeping it fully functional and free of debris.

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

The project sponsor has paid the appropriate application fee pursuant to Commission Regulation §803.28, and in accordance with Commission Resolution 98-19, as amended by Commission Resolution 2005-03. The project sponsor has provided all 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.

Decision

1. The project's groundwater withdrawal (30-day averages) of 0.162 mgd from Well 1, when available, and 0.043 mgd from Well 2, are approved pursuant to Article 3, Section 3.10, of the Compact.

2. The foregoing findings are hereby adopted and shall be incorporated into and made a part of this decision.

3. The project sponsor shall comply with all Commission regulations, including groundwater withdrawal reporting requirements, as per Commission Regulation §803.43.

4. The project sponsor shall keep daily records of the metered withdrawals and weekly water levels in Wells 1 and 2. The required reporting data shall be submitted to the Commission quarterly, and as otherwise required. Quarterly monitoring reports are due within thirty (30) days after the close of the preceding quarter.

5. Within sixty (60) days of the date of this approval, the project sponsor shall install separate meters, accurate to within five (5) percent, on Wells 1 and 2. The project sponsor shall notify the Commission, in writing, when the meters are installed.

6. The maximum instantaneous rates of production from Wells 1 and 2 shall not exceed 152 and 64 gpm, respectively.

7. The project sponsor shall allow a passby flow on Fishing Creek downstream of the project of not less than 20 percent of annual average daily flow, which equals 4.63 cfs or 2,079 gpm, or when streamflow upstream of the zone of influence is less than 20 percent ADF, an amount equal to the total upstream flow of the stream, plus any intervening drainage. The project sponsor shall install flow measurement devices that measure the flows upstream and downstream of the zone of influence of Well 1. The project sponsor shall keep daily records

during the irrigation season of the upstream and downstream flows, and shall report the data to the Commission quarterly, and as otherwise required. Quarterly monitoring reports are due within thirty (30) days after the close of the preceding quarter.

8. The project sponsor shall submit its proposed locations, designs, and a proposed construction schedule for the flow measurement devices within ninety (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 certify to the Commission that construction has been completed in accordance with the approved design. The passby system shall be kept fully functional and free of debris.

9. The project sponsor shall mitigate the residential well identified as impacted during the testing within sixty (60) days of this approval and prior to the initiation of operation of Well 2. The project sponsor shall report its mitigation within ninety (90) days of the date of this approval.

10. To satisfy the Commission's registration requirement, the project sponsor shall register with the Pennsylvania Department of Environmental Protection (PADEP) all surface water and groundwater sources described in this docket in accordance with the Pennsylvania Water Resources Planning Act (Pennsylvania Act 220).

11. The project sponsor shall comply with the water conservation requirements specified in Commission Regulation §804.20(b).

12. If the Commission determines that the operation of the project's groundwater withdrawal adversely affects any existing groundwater or surface water withdrawal, the project sponsor shall be required to provide, at its expense, an alternate water supply or other mitigating measure.

13. 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.

14. 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.

15. If the project sponsor fails to comply with the provisions of the Compact or any rule, regulation, or order of the Commission, or any term or condition of this docket, the Commission may suspend, modify, or revoke its approval of same, and may impose appropriate 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. 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.

16. 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.

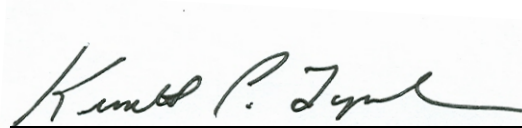
17. Commission approval confers no property rights upon the project sponsor. The securing of all rights necessary and incident to the project sponsor's development and operation of the project shall be the sole and exclusive responsibility of the project sponsor, and this approval shall be subject thereto.

18. This approval is effective until December 5, 2031. The project sponsor shall submit a renewal application by June 5, 2031, and obtain Commission approval prior to continuing operation beyond December 5, 2031.

19. 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: December 5, 2006



Kenneth P. Lynch, Chair
New York Commissioner