



# SUSQUEHANNA RIVER BASIN COMMISSION

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**Docket No. 20060906**

**Approval Date: September 13, 2006**

## **MANHEIM BOROUGH AUTHORITY**

Groundwater Withdrawal (30-Day Average) of 0.936 mgd from Well 6,  
and a Total System Withdrawal Limit (30-Day Average) of 0.936 mgd,  
for Public Water Supply,  
Manheim Borough, Lancaster 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 on December 23, 2005.

### **Description**

**Purpose.** The purpose of the application is to request approval for the withdrawal of groundwater for distribution in a public water supply system.

**Location.** The project is located in the Lower Susquehanna Subbasin, HUC 02050306, Chiques Creek Watershed, Manheim Borough, Lancaster County, Pennsylvania.

**Project Features.** The project sponsor has requested approval for the withdrawal (30-day average) of 0.936 million gallons per day (mgd) from Well 6. Manheim Borough Authority (MBA) will use the well as a source for the public water supply system that currently relies on one well, Well 4 (approved for a withdrawal of 0.936 mgd as Commission Docket No. 19811204). MBA also currently has approval to operate two surface water withdrawals (Rife Run and a quarry) that predate the Commission's regulatory authority. MBA supplies water to sections of Manheim Borough, Penn Township, and Rapho Township. MBA proposes Well 6 to be a redundant well for Well 4.

The Commission previously approved Well 6 on September 16, 1993, as Commission Docket No. 19930902. However, the docket approval expired under Commission Regulation §803.30(b), when the project sponsor failed to connect the well to the water supply system after three years. The project sponsor was advised to reapply for the source when the

project sponsor initiated permitting of the well with the Pennsylvania Department of Environmental Protection (PADEP).

Well 6 is located near the confluence of Rife Run and Chiques Creek, approximately 400 feet south of Well 4, west of Logan Park and Chiques Creek. Well 6 was drilled in May 1989 in the Epler Formation, which is comprised of interbeds of various carbonate lithologies ranging from pure limestone to dolomite. The well is cased with 12-inch steel casing to a depth of 77 feet, and has an open-rock borehole from a depth of 77 feet to the bottom of the well at 215 feet below ground surface (bgs). A water-bearing zone reportedly yielding 2,000 gallons per minute (gpm) was encountered between 205 and 206.5 feet.

MBA has an average daily water demand of 0.636 mgd and has projected an increased demand of 0.936 mgd by 2030. The current maximum daily water demand is 1.010 mgd and is projected to be 1.400 mgd in 2030. The growth for the system will be focused mainly in Penn Township and to a lesser degree in Rapho Township.

Reportedly, 100 percent of the area served by public water also is served by public sewer. Wastewater from the water system is discharged to the sanitary sewer system and treated at MBA's wastewater treatment facility, which is located on Chiques Creek, approximately 440 feet downstream of Wells 4 and 6.

**Pumping Test.** The project sponsor submitted the results of two 48-hour constant-rate pumping tests of Well 6, neither conducted with prior Commission approval. Well 6 initially was tested in August 1989 at a rate of 900 gpm. A second pumping test was conducted in April 2004 at a constant pumping rate of 600 gpm. In addition to the pumping well, Well 4, a pasture well, an overbank piezometer at Chiques Creek, and a piezometer at the quarry were monitored during the second test.

Pumping at a rate of 600 gpm, drawdown at the end of the test in the pumping well was approximately 3.27 feet bgs. A recharge boundary was encountered within the first 10 minutes of pumping. Pumping of Well 6 caused drawdown at Well 4 and at the pasture well (1.93 feet of drawdown), and drawdown in the two piezometers.

Groundwater flow likely follows bedding plane partings and fractures, as detectable impacts were observed in the shallow groundwater system, Chiques Creek (upstream), and the quarry, in addition to the deep groundwater system.

**Coordination.** Commission staff has coordinated with the PADEP Southcentral Region Office (SCRO) during review of the project. PADEP staff has reviewed this docket for consistency with its requirements.

## Findings

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

Commission staff recommends waiving the constant-rate pumping test requirement for Well 6.

Commission staff reviewed the groundwater availability analysis, historic pumping test results, and supporting information submitted by the project sponsor. Based on this information, Commission staff concludes that Wells 4 and 6 likely draw water from the same groundwater flow system and should be approved as a well field. The operation of Wells 4 and 6 both impact Chiques Creek and the quarry.

Commission staff recommends approval of a maximum instantaneous pumping rate of 650 gpm for Well 6, which is equal to the maximum rate at which Well 4 has been used and is consistent with the approval by PADEP.

Based on a review of the testing data and an analysis of groundwater availability, Commission staff finds that Well 6 receives water from Chiques Creek through induced infiltration upgradient of where the carbonate lithologies intersect the creek. The project's requested groundwater withdrawal of 650 gpm is greater than 10 percent of the Q7-10 flow (0.4389 cubic feet per second [cfs] or 197 gpm) at a location adjacent to Well 6.

Based on the stream's classification as Warm Water Fishery (WWF) (Title 25, Chapter 93, Pa. Code) and the anticipated associated aquatic resources, Commission staff recommends that the project sponsor allow a passby flow of not less than 20 percent of the annual average daily flow (ADF) to protect downstream withdrawals and instream uses, including the dilution needs of the downstream wastewater treatment plant.

Commission staff recommends that the project sponsor use the nearby U.S. Geological Survey (USGS) gaging station on the Conestoga River as a reference gage for the operation of Well 6. The mean ADF at the Conestoga River gage (near Lancaster, Pennsylvania) is 399 cfs or 179,071.2 gpm; using the 20 percent ADF passby requirement, the passby trigger at the Conestoga River gage would be 79.8 cfs or 35,814.4 gpm.

Commission staff recommends approval of a 30-day average withdrawal of 0.936 mgd from Well 6, and a total system groundwater withdrawal limit of a 30-day average of 0.936 mgd from both wells. Commission staff recommends that the project sponsor maintain the appropriate metering on Well 4 using the meter at the water treatment plant, accurate to within five (5) percent. Well 6 should be individually metered in compliance with Commission regulations. Daily flow meter readings of Wells 4 and 6 should be collected and reported to the Commission annually.

The system groundwater withdrawal limit of 0.936 mgd is adequate to supply Manheim Borough with its current needs without using the existing surface water allocation permit for Rife Run, or the emergency use of withdrawals from the quarry. MBA intends to replace its withdrawal from both surface water sources with the withdrawal from Well 6.

The project is subject to the Commission's water conservation requirements, as per Commission Regulation §804.20(a). The water system is 100 percent metered, which is in

compliance with this regulation, and the system estimates its current unaccounted for water loss at 46 percent. The unaccounted for water losses exceed the 20 percent maximum set forth in Commission Regulation §804.20(a)(1), and Commission staff recommends that the project sponsor work to reduce system losses to 20 percent or less over the next 5 years. The project sponsor should report to the Commission annually on the progress made pursuant to this requirement.

Commission staff recommends that the pasture well be properly decommissioned and abandoned in accordance with American Water Works Association (AWWA) standards.

The project sponsor has paid the appropriate application fee pursuant to Commission Regulation §803.28, and in accordance with 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.

This project is not required for the optimum planning, development, conservation, utilization, management, and control of the water resources of the basin and will not significantly affect the water resources of the basin.

### **Decision**

1. The project's groundwater withdrawal of 0.936 mgd (30-day average) from Well 6, and a total system withdrawal limit (30-day average) of 0.936 mgd, 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 withdrawal and weekly water levels in Well 6. The required reporting data shall be submitted to the Commission annually, and as otherwise required. Annual monitoring reports are due within sixty (60) days after the close of the preceding year.

5. The project sponsor shall install a meter, accurate to within five (5) percent, on Well 6. The project sponsor shall notify the Commission, in writing, when the meter is installed.

6. The maximum instantaneous rate of production from Well 6 shall not exceed 650 gpm.

7. The project sponsor shall cease all withdrawals from Well 6 when the streamflow, as measured at USGS stream gage 01576500 on the Conestoga River near Lancaster, Pennsylvania, is less than 35,814.4 gpm (79.8 cfs), and shall not reinstate withdrawals until streamflow is above 35,814.4 gpm (79.8 cfs). The project sponsor may propose alternative monitoring to the Commission for staff review and approval.

8. The project sponsor shall comply with the water conservation requirements specified in Commission Regulation §804.20(a). The project sponsor shall have reduced system losses and achieved 100 percent compliance with the requirements by September 13, 2011. The project sponsor shall report to the Commission annually on the progress made pursuant to this requirement. Annual reports are due within sixty (60) days after the close of the preceding year.

9. Within one (1) year of the date of this approval, the project sponsor shall decommission and abandon the pasture well in accordance with AWWA standards. The project sponsor shall notify the Commission, in writing, when the work is completed.

10. 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.

11. Pursuant to Article 12, Section 12.2, of the Compact, this project is hereby included in the Commission's Comprehensive Plan.

12. 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.

13. This approval shall not become effective until the project sponsor certifies to the Commission that it has received a permit from PADEP authorizing the construction of the water supply facilities related to this application.

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 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 September 13, 2031. The project sponsor shall submit a renewal application by March 13, 2031, and obtain Commission approval prior to continuing operation beyond September 13, 2031.

19. The project sponsor has a period of three (3) years from the date of this approval to initiate the project or such approval will automatically expire, unless an extension is requested by the project sponsor and approved by the Commission. Likewise, if the project is discontinued for such a time and under such circumstances that an abandonment of the project may be reasonably 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: September 13, 2006



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Kenneth P. Lynch, Chair  
New York Commissioner