

DOCKET NO. D-2003-037 CP-2

DELAWARE RIVER BASIN COMMISSION

**Southeastern Pennsylvania
Ground Water Protected Area**

**Milford Township Water Authority
Groundwater Withdrawal
Milford Township, Bucks County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted by Pennoni Associates, Inc. on behalf of Milford Township Water Authority (MTWA) to the Delaware River Basin Commission (DRBC or Commission) on October 3, 2014 (Application), for a renewal and approval of an allocation of groundwater and review of a groundwater withdrawal project in the Ground Water Protected Area of Southeastern Pennsylvania. The prior docket was approved by the Commission on September 1, 2004. The project wells were reviewed under the Pennsylvania Safe Drinking Water Act for public water supply permits and approved by the Pennsylvania Department of Environmental Protection (PADEP) as follows:

WELL NO.	PADEP PERMIT NO.	PADEP APPROVAL DATE
1	0986511	February 2, 1987
2	0997513	September 22, 1997
4	0989507-T1	June 15, 1990
5	0903507	June 17, 2004
6	1090125	Pending

The Application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 and for a withdrawal permit under Section 10.3 of the *Delaware River Basin Compact*. The Bucks County Planning Commission has been notified of pending action on this docket. A public hearing on this project was held by the DRBC on December 9, 2014.

A. DESCRIPTION

1. **Purpose.** The purpose of this project is to approve new Well No. 6 for inclusion in the MTWA system and to approve an increase in withdrawal allocation from 16.04 million gallons per month (mgm) to 23.18 mgm of water to the docket holder’s public water supply distribution system from existing Wells Nos. 1, 2, 4, 5 and new Well No. 6.

2. **Location.** The project wells are located in the Unami Creek Watershed, in Milford Township, Bucks County, Pennsylvania. The Unami Creek near the project site is designated by the PADEP as supporting High Quality-Trout Stocking (HQ-TSF). The wells are completed in the Brunswick Formation.

Specific location information has been withheld for security reasons.

3. **Area Served.** The docket holder’s distribution system supplies water to Milford Township and a small portion of the Borough of Trumbauersville, Bucks County, Pennsylvania, as shown on the map entitled “Water Distribution System and Future projects” submitted with the Application. For the purpose of defining Area Served, the Application is incorporated herein by reference consistent with conditions contained in the DECISION section of this docket.

4. **Physical features.**

a. **Design criteria.** The MTWA system currently serves an estimated population of 4,026 through 1,150 domestic service connections and an additional 53 commercial connections with an average and maximum water demand of 0.317 million gallons per day (mgd) and 0.410 mgd, respectively. The docket holder projects an average and maximum water demand of 0.441 mgd and 0.747 mgd, respectively, by the year 2024. The allocation of 23.18 mgm should be sufficient to supply the docket holder’s public water supply system.

b. **Facilities.** The docket holder’s existing wells have the following characteristics:

WELL NO.	DEPTH (FEET)	CASED DEPTH/ CASING DIAMETER	PUMP CAPACITY (GPM)	YEAR DRILLED
1	274	75’/ 8”	60	1986
2	450	100’/ 8”	100	1988
4	400	100’/ 12”	100	1987
5	280	100’/ 10”	150	1999
6	360	110’/ 12”	160	2006

The wells and all water service connections are metered.

Prior to entering the distribution system, the groundwater is disinfected with chlorine.

The project facilities are above the 100-year flood elevation.

The MTWA water distribution system is presently interconnected with the Richland Township Quaker Mill Estates and Walnut Bank Farms systems and the Trumbauersville Municipal waterworks system. All interconnections are only used in case of an emergency.

System storage facilities are 0.750 mg, which is approximately 2 days' supply for the MTWA system.

c. Other. Wastewater is conveyed to the Milford Trumbauersville Area Sewer Authority sewage treatment facility which received approval most by DRBC Docket No. D-1996-041 CP, which was approved on December 11, 1996. The PADEP issued its most recent NPDES Permit No. PA0042021 on October 3, 2012 for this treatment facility.

d. Relationship to the Comprehensive Plan. The docket holder's Well No. 1 was previously included in the Comprehensive Plan by Docket No. D-1989-029 CP, which was approved on June 28, 1989. Well No. 4 was included in the Comprehensive Plan in Docket No. D-1990-085 CP, which was approved on May 22, 1991. Well No. 2 was included in the Comprehensive Plan in Docket No. D-1997-024 CP, which was approved on December 17, 1997. Well No. 5 was included in the Comprehensive Plan in Docket No. D-2003-037 CP, which was approved on September 1, 2004. Issuance of this docket will include Well No. 6 and continue the public water supply distribution system in the Comprehensive Plan.

B. FINDINGS

The project is located within the Southeastern Pennsylvania Ground Water Protected Area delineated by the DRBC pursuant to *Compact* Section 10.2. The project is designed to conform to the requirements of the *Water Code*, *Water Quality Regulations* and *Ground Water Protected Area Regulations (GWPAR)* of the DRBC.

Review and analysis of the application pursuant to Section 6.D. of the *GWPAR* result in the following:

1. The withdrawal is consistent with the Commission's Comprehensive Plan and the policies and purposes of these regulations.

2. Opportunities to satisfy water requirements on a timely basis from existing available supplies and facilities have been explored and found infeasible.

3. The withdrawal, in conjunction with other withdrawals in the applicable ground water basin, should not exceed withdrawal limits of the ground water basin, aquifer or aquifer system.

4. The withdrawal should not significantly impair or reduce the flow of perennial streams in the area.

5. Existing ground and surface water withdrawals should not be adversely impacted, or will be otherwise assured of adequate supplies in accordance with the requirements of Section 10 of the *GWPAR*.

6. The withdrawal should not cause substantial, permanent adverse impact to the overlying environment.

7. The docket holder adopted and will implement conservation and management programs as required by Section 7 of the *GWPAR*.

72-Hour Pumping Test of Well No. 6

On September 16 through September 19, 2013, a 72-hour continuous-rate pumping test was conducted to assess withdrawal capabilities of Well No. 6. The constant rate pumping test was also conducted to assess the underlying aquifer characteristics and potential impacts to the local hydrologic system. The average pumping rate of the test on Well No. 6 was approximately 162.2 gallons per minute (gpm). Discharge from the pumping well was directed away from the pumping well, outside of the estimated area where recharge effects might be expected. Well No. 6 was pumped for a total period of 4,320 minutes.

Groundwater response monitoring was conducted in the pumping well (Well No. 6), 27 monitoring wells (monitored frequently each day) and an additional 23 monitoring wells (monitored at least once daily). The pumping well and monitoring wells at St. John's Church (Well B) and 2115 Keiper Road (Well E) were monitored with electronic dataloggers; the remaining wells were monitored manually. Monitoring wells ranged in distance to the pumping well from approximately 100 feet (monitoring Well A) to approximately 4,200 feet (monitoring Well X).

Prior to the start of the pumping test, Well No. 6 had a static water level of 67.60 feet below top of casing. Maximum drawdown observed at the pumping well, after approximately 72 hours of pumping was 81.43 feet (water level of 149.03 feet). Drawdown of more than a foot as a result of pumping at Well No. 6 was observed in fifteen (15) monitoring wells, ranging from 36.07 feet (Well B) to 1.02 feet (Well R). Drawdown of less than a foot as a result of pumping at Well No. 6 was observed in ten (10) additional monitoring wells, ranging from 0.84 feet to 0.15 feet.

The observed drawdown in Well No. 6 was used to calculate aquifer parameters to characterize the underlying aquifer. The estimated average transmissivity value for the Well No. 6 test data was 460 ft²/day at the test rate of 162.2 gpm. An average Storativity of 4.5×10^{-5} was

calculated from the drawdown data observed at monitoring wells B, C and E monitored during the pumping test.

The DRBC has reviewed the hydrogeological report for the Well No. 6 pumping test. There was significant drawdown in the residential wells along Keiper Road and Sheetz Church Road due to pumping from Well No. 6. To prevent interference with the domestic water supply to the houses, MTWA will be expanding their water main to serve thirty-nine (39) homes along these two roads. Residences have been notified about the impacts to the local hydrology from the pumping of Well No. 6 and MTWA's intent to extend their water main to resolve any water issues. MTWA sent letters to the residents along Keiper and Sheetz Church Roads in April 2014. The letters informed the residents that their well was impacted by the pumping of Well No. 6 and the Authority will extend their water main to service the areas affected by the pumping at no cost to the residents. The residents will just have to pay a quarterly water bill once the water mains are in operation.

The docket holder will also need to submit a revised monitoring network to include additional monitoring wells in the vicinity of Well No. 6 and also monitor potential impacts to the unnamed tributary to Schmoutz Creek (Decision Section Condition II.m.).

Water Audits for Public Water Supply Systems Serving Greater than 100,000 gpd

Section 2.1.8 of the Water Code states that it is the policy of the Commission to establish a standardized water audit methodology for owners of water supply systems serving the public to ensure accountability in the management of water resources. Effective January 1, 2012, the owners of each public water supply system are required to implement an annual calendar year water audit program conforming to IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding AWWA guidance (Section 2.1.8.C). Water audits shall be submitted annually to the Commission by March 31. MTWA submitted their most recent Water Audit on February 11, 2014.

MTWA Wells Nos. 1, 2, 4, 5 and 6 are located in the Unami-Licking Creeks subbasin, where total net annual groundwater withdrawal (105.2 mgy) is less than the withdrawal limit set in Section 6.I of the *GWPAR* (1,322 mgy). The total annual groundwater allocation from the project wells is approximately 278.16 mgy, a fraction of which will be returned to groundwater. However, even if no water from this project were returned to groundwater, the total net annual groundwater withdrawal from this subbasin would remain below the withdrawal limits set in Section 6.I of the *GWPAR*. Therefore, the withdrawals from the MTWA wells, in conjunction with other withdrawals in the subbasin, are in accordance with the requirements of Section 6.I of the *GWPAR*.

The project does not conflict with the Comprehensive Plan, and is designed to prevent substantial adverse impact to the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The DRBC estimates that the project withdrawals, used for the purpose of public water supply, result in a consumptive use of 10 percent of the total water use. The DRBC definition of

consumptive use is defined in Article 5.5.1.D. of the *Administrative Manual – Part III – Basin Regulations – Water Supply Charges*.

C. DECISION

I. Effective on the approval date for Docket No. D-2003-037 CP-2 below:

a. The project described in Docket No. D-2003-037 CP-1 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-2003-037 CP-2 ; and

b. Docket No. D-2003-037 CP-1 is rescinded and replaced by Docket No. D-2003-037 CP-2 ; and

c. The project and the appurtenant facilities described in the Section A “Physical Features” of this docket shall be added to the Comprehensive Plan.

II. The project as described in the Section A “Physical features” is approved pursuant to Section 3.8 of the *Compact* and is granted this withdrawal permit pursuant to Section 10.3 of the *Compact* and *GWPAR*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission’s. The wells and operational records shall be available at all times for inspection by the DRBC.

b. The wells shall be operated at all times to comply with the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

c. During any month, the combined withdrawal from all well sources shall not exceed 23.18 mgm or 278.16 mgy. No well shall be pumped above the maximum instantaneous rate and monthly allocation as indicated below:

WELL NO.	INSTANTANEOUS RATE (GPM)	MONTHLY ALLOCATION (MILLION GALLONS)
1	60	1.30
2	100	3.58
4	100	4.46
5	150	6.70
6	160	7.14

d. The wells shall be equipped with readily accessible capped ports and drop pipes so that water levels may be measured under all conditions. Existing wells are to be similarly equipped, where possible, with readily accessible ports and drop pipes as repairs or modifications are made at each existing well.

e. The project withdrawals shall be metered with an automatic continuous recording device that measures to within 5 percent of actual flow. An exception to the 5 percent performance standard, but no greater than 10 percent, may be granted if maintenance of the 5 percent performance is not technically feasible or economically practicable. A record of daily withdrawals shall be maintained, and monthly totals shall be reported annually by March 31, to the PADEP. Withdrawal records shall be available at any time to the Commission if requested by the Executive Director.

f. Each new water service connection shall include a water meter in accordance with the DRBC's Resolution No. 87-7 (Revised).

g. The docket holder shall continue to implement its Water Conservation Plan as approved by PADEP, and shall report to the PADEP on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

h. No water service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

i. The docket holder shall implement to the satisfaction of the PADEP, a drought or other water supply emergency plan.

j. In accordance with DRBC Resolutions No. 87-6 (Revised) and No. 2009-1, the docket holder shall continue to implement to the satisfaction of the PADEP, the systematic program to monitor and control leakage within the water supply system. The program shall at a minimum include: periodic surveys to monitor leakage, enumerate non-revenue water and determine the current status of system infrastructure; recommendations to monitor and control leakage; and a schedule for the implementation of such recommendations. The docket holder shall proceed expeditiously to correct leakages and unnecessary usage identified by the program.

k. In accordance with DRBC Resolution No. 2009-1 and Section 2.1.8 of the Water Code, the docket holder shall implement an annual calendar year water audit program conforming to IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding guidance. Water audits shall be submitted annually to the Commission by March 31.

l. A long-term monitoring program is required to obtain data on ground water and surface water hydrologic conditions in the project area. The docket holder shall continue to implement the long-term monitoring program as submitted by the docket holder in a letter dated August 18, 2004, the only exception is the surface water monitoring was discontinued in letter dated December 22, 2010. In addition, the docket holder shall submit to the Commission within 60 days of approval a modified monitoring network including wells that

were impacted during the long-term pumping test of Well No. 6. This program will include the following:

1. **Ground Water Level Monitoring** – Sixteen (16) monitoring wells plus additional wells that surround Well No. 6 shall be measured to estimate annual ground water fluctuations caused by seasonal changes and/or production well pumping, and detect water level declines that may affect the performance of public and private wells in the respective areas surrounding the MTWA production wells.
2. **Reports** - All monitoring data, including records required in Conditions “e.” and “l.” herein shall be submitted to the Commission annually, due by April 1. The docket holder is encouraged to submit the annual report electronically. The report shall be prepared by a hydrogeologist and shall assess the effects of well withdrawals on hydrologic conditions in the area. This report shall include an evaluation of the monitoring data required by this docket approval and such information as deemed appropriate by the hydrogeologist or required by the Executive Director.
3. The Executive Director may modify the monitoring program or temporarily suspend or modify this docket at any time if review of the hydrologic data and/or any other information indicates such action is necessary or appropriate.
 - m. The docket holder shall submit to the Commission within 60 days of docket approval a modified monitoring network, which includes wells impacted by the pumping test of Well No. 6.
 - n. No new water service connections shall be made to premises connected to sewerage systems which are not in compliance with all applicable effluent limits contained in State permits and the *Water Quality Regulations* of the Commission.
 - o. The docket holder shall implement to the satisfaction of the PADEP, a continuous program to encourage water conservation in all types of use within the facilities served by this docket approval. The docket holder will report to the PADEP, on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.
 - p. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.
 - q. The area served by this project is limited to the service area as described above. Any expansion beyond this area is subject to review in accordance with Section 3.8 of the *Compact* and the *GWPAR*.

r. Unless an extension is requested and approved by the Commission in advance, in accordance with paragraph 11 of the Commission's Project Review Fee schedule (Resolution No. 2009-2), the docket holder is responsible for timely submittal of a docket renewal application on the appropriate DRBC application form at least 12 months in advance of the docket expiration date set forth below. The docket holder will be subject to late charges in the event of untimely submittal of its renewal application, whether or not DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below (or the later date established by an extension that has been timely requested and approved), the terms and conditions of the current docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

s. The issuance of this docket approval shall not create any private or proprietary rights in the water of the Basin, and the Commission reserves the right to amend, alter or rescind any actions taken hereunder in order to insure the proper control, use and management of the water resources of the Basin.

t. If the monitoring required herein, or any other data or information demonstrates that the operation of this project significantly affects or interferes with any domestic or other existing wells or surface water supplies, or if the docket holder receives a complaint by any user of wells or surface water supplies within the zone of influence of the withdrawal, the docket holder shall immediately notify the Executive Director of any complaints by users of wells or surface water supplies within the zone of influence of the withdrawal, and unless excused by the Executive Director, shall investigate such complaints. Any well or surface water supply which is substantially adversely affected, or rendered dry or otherwise unusable as a result of the docket holder's project withdrawal, shall be repaired, replaced or otherwise mitigated at the expense of the docket holder in accordance with Section 10B of the *GWPAR*. A report of investigation and/or mitigation plan prepared by a hydrologist shall be submitted to the Executive Director as soon as practicable. The Executive Director shall make the final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and the extent of appropriate mitigation measures, if required. The Executive Director may modify or suspend this docket approval, or require mitigating measures, pending additional review.

u. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

v. For the duration of any drought emergency declared by either Pennsylvania or the Commission, water service or use by the docket holder pursuant to this approval shall be subject to the prohibition of those nonessential uses specified by the Governor of Pennsylvania, the Pennsylvania Emergency Management Council, PADEP, or the

Commonwealth Drought Coordinator, to the extent that they may be applicable, and to any other emergency resolutions or orders adopted hereafter by the Commission.

w. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

BY THE COMMISSION

APPROVAL DATE: December 10, 2014

EXPIRATION DATE: December 10, 2024