



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

June 28, 2016

SENT VIA E-MAIL: Mike.Collins@harrisonburg.va.gov

RECEIPT CONFIRMATION REQUESTED

City of Harrisonburg
c/o Mr. A. Mike Collins, Director of Public Utilities
21255 Beery Road
Harrisonburg, Virginia 22801

Re: Virginia Water Protection (VWP) Individual Permit Number 16-0730
City of Harrisonburg Public Water System, Rockingham County, Virginia
Notice of Final Permit

Dear Mr. Collins:

Pursuant to the VWP Permit Program Regulation 9 VAC 25-210-10 and § 401 of the Clean Water Act Amendments of 1977, Public Law 95-217, the Department of Environmental Quality has enclosed the VWP Individual Permit for the "City of Harrisonburg Public Water System" project.

This permit is valid for 15 years from the date of issuance. No re-issuance or extension of the permit may occur, as the permit term cannot exceed the maximum of 15 years.

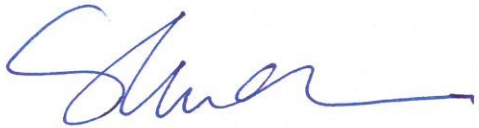
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have **30 calendar days** from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period. Refer to Part 2A of the Rules of the Supreme Court of Virginia for additional requirements governing appeals from administrative agencies.

Alternatively, an owner may request a formal hearing for the formal taking of evidence upon relevant fact issues under Section 2.2-4020 of the Administrative Process Act. A petition for a formal hearing must meet the requirements set forth in 9 VAC 25-230-130.B of the Virginia Administrative Code. In cases involving actions of the board, such petition must be filed within 30 calendar days after notice of such action is sent to such owner by certified mail.

Mr. A. Mike Collins
VWP Individual Permit No. 16-0730
June 28, 2016
Page 2 of 2

Should you have any questions, please contact Brian McGurk at (804) 698-4180,
Brian.McGurk@deq.virginia.gov, or at the above address.

Respectfully,

A handwritten signature in blue ink, appearing to read "Skudlas", with a long horizontal flourish extending to the right.

Scott W. Kudlas
Director, Office of Water Supply

Enclosures: Permit Cover Page, Part I - Special Conditions, Part II - General Conditions, Attachment
A, Permit Fact Sheet

cc: VDH Office of Drinking Water – VIA EMAIL



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

VWP Individual Permit Number 16-0730

Effective Date: June 28, 2016

Expiration Date: June 28, 2031

VIRGINIA WATER PROTECTION PERMIT ISSUED PURSUANT TO THE STATE WATER CONTROL LAW AND SECTION 401 OF THE CLEAN WATER ACT

Based upon an examination of the information submitted by the owner, and in compliance with § 401 of the Clean Water Act as amended (33 USC 1341 et seq.) and the State Water Control Law and regulations adopted pursuant thereto, the State Water Control Board (board) has determined that there is a reasonable assurance that the activity authorized by this permit, if conducted in accordance with the conditions set forth herein, will protect instream beneficial uses and will not violate applicable water quality standards. The board finds that the effect of the impact, together with other existing or proposed impacts to surface waters, will not cause or contribute to a significant impairment to state waters or fish and wildlife resources.

Permittee: City of Harrisonburg

Address: c/o Mr. A. Mike Collins,
2155 Beery Road
Harrisonburg, Virginia 22801

Activity Location: The project consists of three separate existing surface water intakes that comprise an integrated surface water supply project. These intakes are 1) the South Fork intake on the South Fork of the Shenandoah River, 2) the North River intake on the North River, and 3) the Dry River intake on the Dry River near Rawley Springs. All three intakes are located in Rockingham County.

Activity Description: The City of Harrisonburg proposes to continue operation of an integrated surface water withdrawal system to withdraw surface water at the following intake locations:

- a. South Fork Intake on the South Fork of the Shenandoah River
- b. North River intake on the North River, a tributary to the South Fork of the Shenandoah River
- c. Dry River intake on the Dry River, a tributary to the North River

The permitted activity shall be in accordance with this Permit Cover Page, Part I - Special Conditions, and Part II - General Conditions.

A handwritten signature in blue ink, appearing to read "J. Paul", written over a horizontal line.

Director, Office of Water Supply

6/28/16

Date

Part I – Special Conditions

A. Authorized Activities

1. This permit authorizes the operation of an integrated surface water supply project to withdraw surface water at the following intake locations as described in Part I.D:
 - a. South Fork Intake on the South Fork of the Shenandoah River
 - b. North River intake on the North River, a tributary to the South Fork of the Shenandoah River
 - c. Dry River intake on the Dry River, a tributary to the North River
2. Authorized activities shall be conducted as described in the Joint Permit Application dated July 2, 2014 and received July 2, 2014, as well as supplemental materials, revisions and clarifications received through January 29, 2016.
3. The permittee shall notify the DEQ prior to any impacts to surface waters, including wetlands; and of any modifications to any of the intake structures. Any additional impacts, modifications, or changes shall be subject to individual permit review and/or modification of this permit.

B. Permit Term

1. This permit is valid for fifteen (15) years from the date of issuance. A new permit may be necessary for the continuance of the authorized activities, including water withdrawals, or any permit requirement that has not been completed. If the authorized activities will continue beyond the expiration date of the permit, submittal of an application for reissuance shall be made within 180 days of the date of permit expiration.

C. Standard Project Conditions

1. The activities authorized by this permit shall be executed in such a manner that any impacts to beneficial uses are minimized. As defined in § 62.1-10(b) of the Code, "beneficial use" means both instream and offstream uses. Instream beneficial uses include, but are not limited to, the protection of fish and wildlife habitat, maintenance of waste assimilation, recreation, navigation, and cultural and aesthetic values. Offstream beneficial uses include, but are not limited to, domestic (including public water supply), agricultural, electric power generation, commercial, and industrial uses. Public water supply uses for human consumption shall be considered the highest priority.
2. No activity shall substantially disrupt the movement of aquatic life indigenous to the water body, including those species that normally migrate through the area, unless the primary purpose of the activity is to impound water.
3. Flows downstream of the project area shall be maintained to protect all uses.
4. Virginia Water Quality Standards shall not be violated in any surface waters as a result of the project activities.

5. All required notifications and submittals shall include project name and permit number and be submitted to the DEQ office stated below, to the attention of the Water Withdrawal Permit Manager, unless directed in writing by DEQ subsequent to the issuance of this permit: Department of Environmental Quality-Office of Water Supply, P.O. Box 1105, Richmond, Virginia 23219.
6. All reports required by this permit and other information requested by DEQ shall be signed by the permittee or a person acting in the permittee's behalf, with the authority to bind the permittee. A person is a duly authorized representative only if *both* criteria below are met. If a representative authorization is no longer valid because of a change in responsibility for the overall operation of the facility, a new authorization shall be immediately submitted to DEQ.
 - a. The authorization is made in writing by the permittee.
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
7. All submittals shall contain the following signed certification statement:
 - a. *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*
8. Any fish kills or spills of fuels or oils shall be reported to DEQ immediately upon discovery at (804) 698-4000. If DEQ cannot be reached, the spill shall be reported to the Virginia Department of Emergency Management (DEM) at 1-800-468-8892 or the National Response Center (NRC) at 1-800-424-8802.
9. DEQ shall be notified in writing within 24 hours or as soon as possible on the next business day when potential environmentally threatening conditions are encountered which require debris removal or involve potentially toxic substances. Measures to remove the obstruction, material, or toxic substance or to change the location of any structure are prohibited until approved by DEQ.

D. Surface Water Withdrawals

1. Surface water withdrawn from the South Fork of the Shenandoah River, the Dry River and the North River and authorized under this permit shall be only used for public water supply.

2. The safe yield of the surface water withdrawal project as authorized under this permit is the annual average daily volume of 11.88 million gallons per day (mgd).
3. The combined total withdrawal of water from the permittee's intakes on the South Fork of the Shenandoah River, the North River and the Dry River shall not exceed the limits established in the table below. The withdrawal limits described as Tier 2 are to be phased in based upon documentation of a higher total demand growth rate in comparison with that used to forecast the Tier 1 withdrawal volume and/or completion of service agreements and related capital improvements necessary to begin water service to new customers that would cause demand to exceed the Tier 1 limits.

Tier	Maximum Daily Withdrawal (mgd)	Maximum Annual Withdrawal (mg)
1	12.24	3158
2	15.33	4348

- a. Tier 1 contains the withdrawal limits to meet the justified demands of the Harrisonburg service area for the 15-year permit period ending in 2031.
 - b. Tier 2 contains the withdrawal limits to meet the justified demands of the service area identified in Tier 1, plus additional demands documented by the submittal of one or more signed agreements for new customers and/or documentation of increased service to previously unserved portions of the City's service area.
4. The permittee may submit to DEQ for review and approval a request for authorization of withdrawal limits established for Tier 2. Any such request shall include a justification for the requested increase in allowable withdrawal volumes. Justification shall consist of one or more of the following:
 - a. Sales or usage records over a minimum period of five years that indicate an increasing trend in demand growth rate that would cause the Tier 1 withdrawal limits to be exceeded prior to the permit expiration date,
 - b. A signed agreement(s) for providing water service to new commercial, industrial or municipal customer(s) that would cause the Tier 1 withdrawal limits to be exceeded prior to the permit expiration date ,
 - c. A schedule for completion of capital improvements needed to supply water to new commercial, industrial or municipal customer(s) identified in Part I.D.4.b prior to the permit expiration date.

Upon review and approval by DEQ of the request, the allowable maximum daily and maximum annual withdrawal volumes shall equal those listed for Tier 2 in Part I.D.3. If the justification for an increase in withdrawal limits indicates that the demand will exceed the Tier 1 limits, but not reach the Tier 2 limits listed in Part I.D. 3 within the 15-year permit term, DEQ may revise the Tier 2 limits to equal the revised demand projected for the end of the permit term. Unless and until a request is made and approved for Tier 2 limits, the total allowable withdrawal volumes equal the Tier 1 values in Part. I.D.3.

South Fork Intake:

5. The permittee shall estimate stream flows at the South Fork Intake in units of cubic feet per second (cfs) on a daily basis by monitoring the stream flow gage described below and by applying the equation “Flows at the intake = $Q_{SF} * 1.01$,” where:
- Q_{SF} is the previous day’s provisional mean daily flow at the DEQ gage no. 01628500 (South Fork Shenandoah River near Lynnwood, VA);
 - 1.01 is the adjustment factor for drainage area.
6. At no time shall Net Withdrawals from the South Fork Intake exceed 10% of the stream flow at the South Fork Intake as estimated using the equation described by Part I.D.5, where:
- Net Withdrawal = the total volume withdrawn from the South Fork intake minus Return Flow, where
 - Return Flow = $(Flow_{SFI} * 0.1) * 0.66$, where
 - $Flow_{SFI}$ = flow at the South Fork Intake estimated as described by Part I.D.5, and 0.66 represents the approximate portion of the total withdrawal returned to the South Fork of the Shenandoah River upstream via treated wastewater discharge
 - Example calculation for the lowest recorded flow at DEQ gage no. 01628500 (84 cfs):
 - $Flow_{SFI} = 84 * 1.01 = 84.8$ cfs
 - Return Flow = $(84.8 * 0.1) * 0.66 = 5.6$ cfs
 - Maximum Net Withdrawal = $84.8 * 0.1 = 8.5$ cfs
 - Maximum Total Withdrawal = $8.5 + 5.6 = 14.1$ cfs (9.1 mgd)

North River Intake:

7. The permittee shall estimate flows at the North River Intake in cfs on a daily basis by monitoring the stream flow gage described below and by applying the equation “Flows at the intake = $Q_{NR} * 0.75$,” where:
- Q_{NR} is the previous day’s provisional mean daily flow at the DEQ gage no. 01622000 (North River near Burketown, VA);
 - 0.75 is the adjustment factor for drainage area.
8. At no time shall withdrawals from the North River Intake exceed 12% of the stream flow at the North River Intake as estimated using the equation described by Part I.D.7.
- Example calculation for the lowest recorded daily mean flow at DEQ gage no. 01622000:
 - Flow at the North River intake = 22 cfs * $0.75 = 16.5$ cfs
 - Maximum allowable withdrawal from the North River Intake = 16.5 cfs * $0.12 = 2$ cfs (1.3 mgd)

Dry River Intake:

9. The permittee shall estimate flows in the Dry River in cfs on a daily basis and adjust withdrawals from the Dry River intake so that a minimum of 0.774 cfs (0.5 mgd) is released to the Dry River

below the low-head dam at the Dry River intake. No withdrawals will be allowed from this intake if the estimated flow at the intake is 0.774 cfs or less

10. The permittee shall submit a plan to DEQ review and approval for monitoring stream flow at the Dry River intake within 120 days of permit issuance. The monitoring plan shall contain, at a minimum:
 - a. A detailed description of the methodology used to monitor flow at the location of the intake to ensure that withdrawals will be in compliance with Part I.D.9.
 - b. A detailed design and description of any existing or planned structure(s) to be used or installed for stream flow monitoring at the intake location.

Intake Screens and Drought Management:

11. Within two years of permit issuance, the permittee shall submit for DEQ review and approval a plan to install new screens at the South Fork intake, the North River intake and the Dry River intake in order to protect aquatic species from impingement and entrainment. The plan shall include, at a minimum:
 - a. A schedule for installing new screens at each intake that are designed so that screen openings are not larger than 1 millimeter in width and height and the screen face intake velocities are not greater than 0.25 feet per second. The permittee may propose alternative screen mesh and intake velocity designs for each intake. For each alternative design proposed, the plan shall include an entrainment/impingement monitoring strategy. Each entrainment/impingement monitoring strategy shall be designed with the input of the Virginia Department of Game and Inland Fisheries (VDGIF) and shall include a schedule for implementation of entrainment/impingement monitoring. The results of the impingement/entrainment monitoring shall be submitted to DEQ and VDGIF for review and approval. If the monitoring results indicate that the proposed alternative design is not protective of aquatic species, maximum screen openings of 1 millimeter in width and height and a maximum screen face intake velocity of 0.25 feet per second will be required.
 - b. Detailed design plans for each intake that will allow withdrawals at the maximum allowable rates while remaining in compliance with Part I.D.11.a.
12. The permittee shall submit a drought management plan to DEQ for review and approval within 120 days of permit issuance. Any future revisions to the approved plan shall be submitted to DEQ for review and approval prior to implementing the change. The plan shall include, at a minimum, the following:
 - a. Development of drought stages, including when and how each stage will be implemented. The emergency drought stage shall be initiated when a drought emergency is declared by the Commonwealth of Virginia in the Shenandoah Drought Evaluation Region or by either Rockingham County or the City of Harrisonburg in compliance with either municipality's Drought Management Ordinance.
 - b. A description of the conservation measures to be implemented during each drought stage.

13. When a drought emergency is declared by the Commonwealth of Virginia in the Shenandoah Drought Evaluation Region or by either Rockingham County or the City of Harrisonburg in accordance with either municipality's Drought Management Ordinance, the permittee shall implement either the provisions directed by the Commonwealth, the Drought Management Ordinance, the Drought Management Plan required by Part I.D.13 of this permit or the mandatory conservation measures as detailed in Attachment A of this permit, whichever is the most restrictive. The permittee shall be responsible for determining when drought emergencies are declared. The permittee shall retain records documenting that mandatory conservation measures were implemented during declared drought emergencies.

E. Monitoring, Recordation and Reporting Conditions

1. The permittee shall monitor withdrawals from the South Fork of the Shenandoah River, the North River and the Dry River on a daily basis using flow totalizer technology to confirm that the withdrawals at each intake are in compliance with this permit. Such meters shall produce volume determinations within plus or minus 10% of actual flows. A defective meter or other device must be repaired or replaced within 60 days. A defective meter is not grounds for not reporting the withdrawals. During any period when a meter is defective, generally accepted engineering practice shall be used to estimate withdrawals and the period during which the meter was defective must be clearly identified in the report.
2. On each day that pumping occurs, the permittee must monitor and record the following, for each intake:
 - a. Date and time.
 - b. Total amount of water withdrawn each day.
 - c. The maximum rate of withdrawal that occurred each date (in gpm).
 - d. The provisional stream flow in cfs as measured at the following stream gages: DEQ gage no. 01628500 (South Fork Shenandoah River near Lynnwood, VA) and DEQ gage no. 01622000 (North River near Burketown, VA)
 - e. The provisional stream flow at the South Fork intake and at the North River intake in cfs as estimated in accordance with Part I.D.5 and Part I.D.7, respectively
 - f. The stream flow at the Dry River intake in cfs as estimated in accordance with Part I.D.9
3. The permittee shall submit a water withdrawal monitoring report to DEQ semi-annually. The semi-annual monitoring period shall be as follows: January through June and July through December. The daily records shall be tabulated by month. The report shall be submitted to DEQ by January 31st and July 31st of every year within the permit term. Submittal of the report may take the form of electronic reporting or another form determined to be acceptable by DEQ. In the

event the electronic reporting system is not available, the permittee may submit the report by electronic mail. The report shall include the following information:

- a. The permittee's name and address.
 - b. The permit number.
 - c. The source(s) from which water is withdrawn.
 - d. The location (latitude and longitude) of the water withdrawal.
 - e. Information listed in Part I.E.2.
 - f. The cumulative volume (million gallons) of water withdrawn each month and for the calendar year.
 - g. The average daily volume (mgd) of water withdrawn as calculated the last day of the monitoring period.
 - h. In the last report for the calendar year, the largest single day withdrawal volume (mgd) that occurred in the year and the month in which it occurred.
 - i. The method of measuring each withdrawal.
 - j. If during a semi-annual reporting period a drought emergency is declared, the report shall include a summary of mandatory conservation measures implemented during the drought event.
4. Water withdrawal monitoring and reporting activities shall comply with this section, Part I.C, and Part II. All records and information that result from the monitoring and reporting activities required by this permit, including any records of maintenance activities to the withdrawal system, shall be retained for the life of the permit. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or as requested by the State Water Control Board.