



Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston MA 02114 | **Phone:** 617-292-5500

Maura T. Healey
Governor

Kim Driscoll
Lieutenant Governor

Rebecca Tepper
Secretary

Bonnie Heiple
Commissioner

September 9, 2026

Grafton Water District
Board of Water Commissioners
44 Millbury Street
P.O Box 537
Grafton, MA 01519

RE: Permittee: Grafton Water District
Town/City: Grafton
Public Water Supply ID: 2110000
Program: Water Management Act (WMA)
WMA Permit ID: 9P4-2-12-110.04
Action: **DRAFT** WMA Permit Amendment

Dear Commissioners:

This **DRAFT** permit amendment reflects updated permit requirements. Please find the following attached documents:

- Findings of Fact in Support of the **DRAFT** WMA Permit Amendment #9P4-2-12-110.04.
- **DRAFT** WMA Permit Amendment #9P4-2-12-110.04 for withdrawals by Grafton Water District in the Blackstone River Basin.

The Department of Environmental Protection (MassDEP) shared this document with the Permittee for review and comment until August 27, 2026. Following, pursuant to 310 CMR 36.27(6)-(8), MassDEP will publish notice in the Environmental Monitor that a **DRAFT** Permit is available for review and comment for 30 days. Notice of the comment period will also be sent to all registrants, permittees and those having non-consumptive use statements within the Blackstone River Basin. MassDEP expects to issue the final permit within 30 days of the close of the comment period. The signature on this cover letter indicates formal issuance of the attached document.

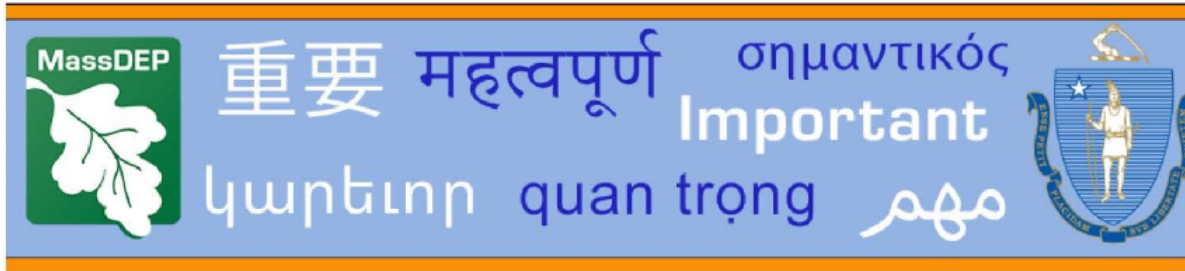
If you have any questions regarding the permit, please contact Andrew Brokowski at Andrew.Brokowski@mass.gov or (857) 278-5634.

Sincerely,

Duane LeVangie, Chief
Water Management Program
Bureau of Water Resources

ecc: Lauren Thistle, DWP Chief, Worcester; Matt Pearson, Grafton Manager of Special Projects; Lydia Olson & Melissa Shapiro, Mass Rivers Alliance; Jennifer Pederson, MA Water Works Association; and, Duane LeVangie, Water Management Program Chief

[massgov.sharepoint.com/W:\DWPWMA\Permit \(New\) Applications\Grafton\Grafton-2110000-DRAFT WMA Permit Amendment-9P4-2-12-110.04-2026-09-09](https://massgov.sharepoint.com/W:\DWPWMA\Permit (New) Applications\Grafton\Grafton-2110000-DRAFT WMA Permit Amendment-9P4-2-12-110.04-2026-09-09)



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

If you need this document translated, please contact MassDEP's Director of Environmental Justice at the telephone number listed below.

Español Spanish

Este documento es importante y debe ser traducido inmediatamente. Si necesita traducir este documento, póngase en contacto con el Director de Justicia Ambiental de MassDEP (*MassDEP's Director of Environmental Justice*) en el número de teléfono que figura más abajo.

Português Portuguese

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繁體中文 Chinese Traditional

本文檔很重要，需要即刻進行翻譯。
如需對本文檔進行翻譯，請透過如下列示電話號碼與 MassDEP 的環境司法總監聯絡。

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如果您需要翻译这份文件，请通过下方电话与 MassDEP 环境司法主任联系。

Ayisyen Kreyòl Haitian Creole

Dokiman sa a enpòtan epi yo ta dwe tradui l imedyatman. Si w bezwen tradui dokiman sa a, tanpri kontakte Direktè. Jistis Anviwònmanal MassDEP a nan nimewo telefòn ki endike anba a.

Việt Vietnamese

Tài liệu này và quan trọng và phải được dịch ngay. Nếu quý vị cần bản dịch của tài liệu này, vui lòng liên hệ với Giám Đốc Phòng Công Lý Môi Trường của MassDEP theo số điện thoại được liệt kê bên dưới.

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះមានសារៈសំខាន់
ហើយគួរត្រូវបានបកប្រែភ្លាមៗ។
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយដូចខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

Es dokumentu sta important i tenki ser tradusidu imediatamenti. Se nho ta presisa ke es dokumentu sta tradisidu, por favor kontata O Diretor di Justisia di Environman di DEP ku es numero di telefoni menxionadu di baixo.

Русский Russian

Это чрезвычайно важный документ, и он должен быть немедленно переведен. Если вам нужен перевод этого документа, обратитесь к директору Департамента экологического правосудия MassDEP (MassDEP's Director of Environmental Justice) по телефону, указанному ниже.

العربية Arabic

هذه الوثيقة مهمة وتجب ترجمتها على الفور.

إذا كنت بحاجة إلى ترجمة هذه الوثيقة، فيرجى الاتصال بمدير العدالة البيئية في MassDEP على رقم الهاتف المذكور أدناه.

한국어 Korean

이 문서는 중대하므로 즉시 번역되어야 합니다. 본 문서 번역이 필요하신 경우, 매사추세츠 환경보호부의 "환경정의" 담당자 분께 문의하십시오. 전화번호는 아래와 같습니다.

հայերեն Armenian

Այս փաստաթուղթը կարևոր է, և պետք է անհապաղ թարգմանել այն:
Եթե Ձեզ անհրաժեշտ է թարգմանել այս փաստաթուղթը, դիմեք Մասաչուսեթսի շրջակա միջավայրի պահպանության նախարարության (MassDEP) Բնապահպանական հարցերով արդարադատության ղեկավարին (Director of Environmental Justice)՝ ստորև նշված հեռախոսահամարով

فارسی Farsi Persian

این نوشتار بسیار مهمی است و باید فوراً ترجمه شود.
اگر نیاز به ترجمه این نوشتار دارید لطفاً با مدیر عدالت محیط زیستی MassDEP در شماره تلفن ذکر شده زیر تماس بگیرید.

Français French

Ce document est important et doit être traduit immédiatement. Si vous avez besoin d'une traduction de ce document, veuillez contacter le directeur de la justice environnementale du MassDEP au numéro de téléphone indiqué ci-dessous.

Deutsch German

Dieses Dokument ist wichtig und muss sofort übersetzt werden. Wenn Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an MassDEP's Director of Environmental Justice (Direktor für Umweltgerechtigkeit in Massachusetts) unter der unten angegebenen Telefonnummer.

Ελληνική Greek

Το έγγραφο αυτό είναι πολύ σημαντικό και πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του εγγράφου αυτού, παρακαλώ επικοινωνήστε με τον Διευθυντή του Τμήματος Περιβαλλοντικής Δικαιοσύνης της Μασαχουσέτης στον αριθμό τηλεφώνου που αναγράφεται παρακάτω

Italiano Italian

Questo documento è importante e deve essere tradotto immediatamente. Se hai bisogno di tradurre questo documento, contatta il Direttore della Giustizia Ambientale di MassDEP al numero di telefono sotto indicato.

Język Polski Polish

Ten dokument jest ważny i powinien zostać niezwłocznie przetłumaczony. Jeśli potrzebne jest tłumaczenie tego dokumentu, należy skontaktować się z dyrektorem ds. sprawiedliwości środowiskowej MassDEP pod numerem telefonu podanym poniżej.

हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका अनुवाद तुरंत किया जाना चाहिए। यदि आपको इस दस्तावेज का अनुवाद कराने की जरूरत है, तो कृपया नीचे दिए गए टेलीफोन नंबर पर MassDEP के पर्यावरणीय न्याय निदेशक से संपर्क करें।



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Findings of Fact in Support of

DRAFT Water Management Act Permit Amendment #9P4-2-12-110.04

The Department of Environmental Protection (the Department or MassDEP) has completed its compliance review of the 2017 Water Management Act Permit (the 2017 WMA Permit) issued to Grafton Water District (Grafton). The Department has also completed its review of Grafton's 2024 permit amendment application to increase the maximum daily pumping rate of the Follette Street Well (05G). The Department requested additional information in Orders to Complete (OTCs) dated March 10, 2025 and June 12, 2025, and Grafton's respective responses thereto dated June 9, 2025 and June 18, 2025. The Department issues the **DRAFT** Permit Amendment Water Management Permit 9P4-2-12-110.04 (the "Permit Amendment") in accordance with the Water Management Act (M.G.L. c. 21G) and the January 20, 2023 regulations promulgated thereunder at 310 CMR 36.00. The Final Amended WMA Permit will supersede the 2017 WMA Permit.

The Department makes the following *Findings of Fact* in support of the attached WMA Permit Amendment and herewith includes its reasons for issuing the WMA Permit Amendment and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11, and 310 CMR 36.00. The WMA Permit Amendment is being issued since such action is necessary for the promotion of the purposes of M.G.L. c. 21G. The Department may amend, suspend, or terminate the WMA Permit Amendment, after notice and hearing, in accordance with the provisions of 310 CMR 36.29(1).

The Water Management Act

The Water Management Act (Act) requires that MassDEP issue permits that balance a variety of factors including without limitation:

- impact of the withdrawal on other sources of water,
- water availability within the *Safe Yield* of the source,
- reasonable protection of existing water uses, land values, investments, and enterprises,
- proposed use of the water and other existing or projected uses of water from the water source,
- municipal and Massachusetts Water Resources Commission (WRC) water resource management plans,
- reasonable conservation consistent with efficient water use,
- reasonable protection of public drinking water supplies, water quality, wastewater treatment capacity, waste assimilation capacity, groundwater recharge areas, navigation, hydropower resources, water-based recreation, wetland habitat, fish and wildlife, agriculture, floodplains, and,
- reasonable economic development and job creation.

Water Management Regulation Revisions

In 2010 the Executive Office of Energy and Environmental Affairs (EEA) convened the Sustainable Water Management Initiative (SWMI) for the purpose of incorporating best available science into the management of the Commonwealth's water resources. SWMI was a multi-year process that included a wide range of stakeholders and support from the Departments of Environmental Protection, Fish and Game and Conservation and Recreation. In November 2012 the [MA Sustainable Water Management Initiative Framework Summary](#) was released.

On January 20, 2023, the Department adopted revised Water Management Regulations at 310 CMR 36.00 that incorporate elements of the SWMI framework, and the Water Conservation Standards adopted by the Massachusetts Water Resource Commission (WRC). The regulations reflect a carefully developed balance to protect the health of Massachusetts' water bodies while meeting the needs of businesses and communities for water.

Without limitation, the Department has incorporated the following into Water Management permitting:

- safe yield determinations for the major river basins based on a new methodology developed through SWMI (see the Safe Yield in the Blackstone River Basin section of this document). For more information on the Safe Yield methodology, refer to the November 2012 SWMI Framework Summary and Appendices,
- water supply protection measures for public water supplies including Zone II delineations for groundwater sources, and wellhead and surface water protection measures as required by Massachusetts Drinking Water Regulations (310 CMR 22.00),
- the July 2018 [Massachusetts Water Conservation Standards](#), water conservation and performance standards reviewed and approved by the WRC in July 2018 and, including without limitation:
 1. performance standard of 65 residential gallons per capita day or less,
 2. performance standard of 10% or less unaccounted-for-water,
 3. seasonal limits on nonessential outdoor water use, and,
 4. a water conservation program that includes leak detection and repair, full metering of the system and proper maintenance of the meters, periodic review of pricing, and education and outreach to residents and industrial and commercial water users, and,
- environmental protections developed through SWMI, including without limitation:
 1. protection for Coldwater fish resources,
 2. minimization of withdrawal impacts in areas stressed by groundwater use, and,
 3. mitigation of the impacts of increasing withdrawals.

Safe Yield in the Blackstone River Basin

This permit has been issued in accordance with Safe Yield methodology adopted by MassDEP on November 7, 2014, and described in the Regulations at 310 CMR 36.13. As of the date of issuance of this permit, the safe yield for the Blackstone River Basin water source is 89.10 million gallons per day (MGD), and total allocated withdrawals are 35.15 MGD. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Blackstone River Basin, will be within the remaining safe yield and may be further conditioned as outlined in the regulations.

Findings of Fact for Permit Conditions in Grafton's Water Management Act Permit

The Findings of Fact for the special conditions included in the permit generally describe the rationale and background for each special condition in the WMA Permit. This summary of permit special conditions is not intended to and should not be construed as modifying any of the permit special conditions. In the event of any ambiguity between this summary and the actual permit conditions, the permit language shall control.

Grafton's 2017 permit amendment reduced the maximum daily withdrawals from the Follette Street Well (05G) from 0.70 MGD to 0.44 MGD following activation of the Trinity Wellfield; therefore, water level monitoring requirements were removed as a permit condition. However, based on the needs of the District over the next few years to address periods where production is lost or reduced at the Worcester Street (02G), East Street (04G) and Trinity wellfield (07G) sources due to construction and testing of PWS treatment facilities for Perfluoroalkyl Substances (PFAS), the permit amendment will return the maximum daily withdrawal rate of the Follette Street Well to 0.70 MGD and reinstate an updated monitoring plan for the Coldwater Fishery Resource (CFR) in Cronin Brook.

Grafton's Withdrawal History

Grafton holds a registration statement (2-12-110.04) for an average annual daily withdrawal volume of 0.6 million gallons per day (MGD) for wells, Worcester Street Well #1 (02G), East Street Well #2 (03G), and East Street Well #3 (04G). Grafton also holds a permit for an additional average annual daily withdrawal volume of 0.93 MGD, for a total authorized withdrawal up to 1.53 MGD. Grafton's permit includes two registered wells 02G and 04G, Follette Street Well (05G), East Street Well #2A (06G) which replaced East Street Well #2 (03G), Trinity Wellfield (07G) and the Lake Ripple Well (0CG).

A Water Management Act Permit was first issued in May 1997 to increase the system-wide authorized withdrawal volume and add the Follette Street Well (05G). That permit also required Grafton to implement water level monitoring of the Coldwater Fishery Resource (CFR) in Cronin Brook. The Lake Ripple Well was approved through MassDEP's New Source Approval Process in a June 6, 2003 letter and assigned the source ID suffix (0CG) until online operation was approved by the Drinking Water Program. The WMA Permit was amended in July 2007 to add the Lake Ripple Well, but a BRP WS20 permit application to construct the well had not been submitted. The new source approval subsequently expired on June 6, 2008. Grafton may therefore be required to reapply for a New Source Approval, contingent upon compliance with the terms and conditions of the source approval process in place at that time. Grafton's permit was renewed on February 28, 2010, authorizing the continued withdrawal of the previously permitted volume. A March 2017 permit amendment added Trinity Wellfield (07G) and East Street Well #2A (06G), removed Cronin Brook water level monitoring requirements and, following activation of the Trinity Wellfield (07G), reduced the maximum daily withdrawal rate of the Follette Street Well (05G) from 0.70 MGD to 0.44 MGD.

The permit amendment returns the Follette Street Well (05G) authorized maximum daily pumping rate from 0.44 MGD to 0.70 MGD.

The Permit Extensions

Blackstone River Basin water withdrawal permits were originally intended to expire on February 28, 2029. The expiration date in the Blackstone River Basin for all Water Management Permits was extended for two years by Chapter 240 of the Acts of 2010 and further extended for two years by Chapter 238 of the Acts of 2012, collectively known as the Permit Extension Act. Subsequent to that, permit expiration dates were also extended by 462 days by the Governors COVID-19 Order No. 42 “Order Resuming State Permitting Deadlines and Continuing to Extend the Validity of Certain State Permits,” July 2, 2020, and then again for another 2 years by Section 280 of Chapter 238 of the Acts of 2024. Grafton’s existing permit continues in force and effect until the Department issues a final decision on your permit amendment application. Therefore, the expiration date for Grafton’s permit going forward in the Blackstone River Basin will be June 5, 2036.

SPECIAL CONDITIONS

Special Condition 1, Maximum Authorized Annual Withdrawal Volume, recognizes the 0.60 MGD Grafton is registered to withdraw and the additional 0.93 MGD authorized to be withdrawn by this permit, for a total authorized withdrawal volume of 1.53 MGD in Blackstone River Basin. With the exception of year 2024, the past 5 years of Grafton’s total withdrawal volumes were significantly less than their total authorized volume, as shown in **Table 1**.

TABLE 1: Grafton’s Recent Annual Average Daily Withdrawal Volumes

Year	Annual Withdrawal Volumes (MGD)
2021	1.14
2022	1.14
2023	1.12
2024	1.50
2025	1.22*

* under DEP review

Special Condition 2, Maximum Authorized Daily Withdrawals from each Withdrawal Point, reflects MassDEP-approved Zone II maximum daily pumping rates, expressed in million gallons per day, for each of Grafton’s permitted wells based on prolonged pumping tests. Follette Street Well’s (05G) maximum daily withdrawal rate has been increased from 0.44 to 0.70 MGD. Withdrawals in excess of these maximum daily rates require prior approval from the Department.

Special Condition 3, Zone of Contribution Delineation establishes the area in which Grafton’s permitted groundwater sources have an approved Zone II. No further delineations are required as a condition of this permit.

Special Condition 4, Water Supply Source Protection reflects Public Water Systems (PWSs) requirement to implement land use controls protective of its water supply in accordance with wellhead protection requirements at 310 CMR 22.21(2). MassDEP records indicate Grafton’s delineated Zone II sources extend into the Towns of Millbury and Sutton. MassDEP correspondence dated June 16, 2015, indicated that “Best Effort” requirements were met for Grafton’s wellhead protection in their delineated Zone II’s which extend into Millbury and Sutton. At MassDEP’s direction, Grafton will need to periodically satisfy Best Effort Requirements with these municipalities until all of Grafton’s groundwater sources meet wellhead protection requirements.

Special Condition 5 Performance Standard for Residential Gallons Per Capita Day Water Use requires Grafton to maintain their RGPCD at or below 65 gallons. For all public water suppliers (PWSs), the performance standard for RGPCD has been revised to 65. Grafton has met RGPCD Performance Standards in the past 5 years, as shown below in **Table 2**. Permittees that cannot comply with the RGPCD Performance Standard are required to develop and implement a functional equivalence program as set forth in **Appendix A**.

TABLE 2:**Grafton's Recent RGPCD and % UAW**

Year	RGPCD	% UAW
2021	53	28
2022	56	22
2023	51	33
2024	33	42
2025	30*	26*

* values under review

Special Condition 6, Performance Standard for Unaccounted for Water (UAW) requires Grafton to maintain their UAW at 10% or less for two out of every three years on a rolling review. As shown in **Table 2** above, Grafton has significantly exceeded the 10% UAW performance standard since at least 2021. Grafton has been required to meet 10% UAW since 2011.

Exceedances of the 10% UAW performance standard in Grafton's 2017 Permit required Grafton to adopt, implement and file a UAW Functional Equivalence Plan (Plan). Grafton submitted a UAW Compliance Plan in 2024 which met some of the Plan's requirements like completing inspections and evaluations of certain types of water meters but did not meet several of the Plan's outlined measures. As such, the associated special condition of the permit amendment includes additional work like the performance of an American Water Works Association (AWWA) top-down bottom-up M36 Water Audit, an annual minimum number of meter replacements, the testing and calibration of larger meters more frequently and a review and update of Confidentially Estimated Municipal Use (CEMU) procedures.

Special Condition 7, Water Conservation Requirements incorporates the July 2018 revised Massachusetts Water Conservation Standards adopted by Massachusetts Water Resources Commission. Grafton's June 9, 2025 responses to MassDEP's Order To Complete (OTC) reported municipal buildings were not outfitted with water-saving devices. As a water district, Grafton will need to periodically fulfill "best effort" requirements and work with the Grafton Board of Selectman to conduct an audit and schedule to retrofit municipal buildings with water-savings devices, including details of potential water savings per building.

Special Condition 8, Seasonal Limits on Nonessential Outdoor Water Use sets Grafton's Nonessential Outdoor Water Use Restrictions ("Restrictions") based on whether the permittee's reported RGPCD for the previous year was in compliance with the RGPCD Performance Standard (see Special Condition #5).

In addition, outdoor water use restrictions for permittees with wells in subbasins[1] that are 25% or more August Net Groundwater Depleted (Aug NGD[2]) are set to minimize withdrawals from the "depleted" subbasins. Grafton's six (6) groundwater sources (02G, 04G, 05G, 06G, 07G and 0CG) are located in four depleted (4) subbasins (23030, 23037, 23045 and 23047) with a minimum % Aug NGD of 39.3%, therefore, nonessential outdoor water use is limited to 1 or 2 days per week.

Each year, Grafton shall choose one of two options for implementing nonessential outdoor water use restrictions:

- **Calendar triggered restrictions** are in place from May 1 through September 30. Many public water suppliers find this option easier to implement and enforce than the streamflow triggered approach. Note that restrictions must be reduced to 1 day per week if the 7-day low flow trigger is reached at the stream gage (see below).
- **Streamflow triggered restrictions** are implemented at those times when streamflow falls below designated flow triggers measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) stream gage from May 1 through September 30. At a minimum, restrictions commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days.

If Grafton selects the streamflow trigger approach, it has been assigned **USGS Gage 01111212, located on the on the Blackstone River at Uxbridge, MA**. The May-June streamflow trigger is **221** cubic feet per second (**cfs**), and the July-September streamflow trigger is **86 cfs**. Should the reliability of flow measurement at this gage be so impaired as to question its accuracy, the applicant may request that MassDEP review and approve the transfer to another gage that will trigger restrictions. MassDEP reserves the right to require use of a different gage.

- **The 7-Day Low-flow Trigger**, at which restrictions increase is incorporated into both Calendar and Streamflow Triggered restrictions to provide additional protection when flows are very low. The 7-day low flow trigger is based on the median value of the annual 7-day low flows for the period of record. The 7-day low flow trigger for **USGS Gage 01111212**, is **62 cfs**.

To the extent feasible all summer outdoor water use should take place before 9 a.m. and after 5 p.m. when evaporation and evapotranspiration rates are lower.

The permittee may choose to implement limits on nonessential outdoor water use that are stricter than those required by the permit.

Guidance for Permittees Concerning Enforcement Authority

This permit condition does not confer enforcement authority to the permittee. For permittees that do not have the necessary local enforcement authority, MassDEP has developed a Model Outdoor Water Use Bylaw/Ordinance to help municipalities implement nonessential water use restrictions. The Model Bylaw also includes options for regulating private wells and in-ground irrigation systems. See [Model Water Use Restriction Bylaw/Ordinance Update | Mass.gov](#). DEP strongly advises permittees to consult with Town or City Counsel to ensure adoption of an appropriate, enforceable and legally valid bylaw that will meet municipal/district needs.

Note that if the permittee also holds a Water Management Act registration, **the nonessential outdoor water use restrictions in the permit shall be controlling**.

Special Condition 9, Cronin Brook Water Level Monitoring, sets forth a water level monitoring plan based on Brook Trout being a *Massachusetts Species of Greatest Conservation Need (SGCN)* which may populate Cronin Brook, the CFR in the subbasin containing the Follette Street Well (05G). Concern over Brook Trout habitat established the basis for previous permit monitoring plans of water levels in Cronin Brook. The most recent 2017 permit amendment removed the monitoring requirements associated with Cronin Brook due to the reduction of Follette Street Well's maximum daily withdrawal rate from 0.70 MGD to 0.44 MGD. Grafton is required to reinstitute a revised water level monitoring plan because this permit amendment returns the maximum daily withdrawal rate of the Follette Street Well to 0.70 MGD.

Special Condition 10, Minimization, requires permittees with groundwater sources in subbasins with an August NGD of 25% or more to minimize withdrawal impacts on subbasins through optimization of groundwater source use, surface water releases, outdoor water use restrictions, and water conservation programs that go beyond standard Water Management permit requirements.

Grafton has groundwater sources in subbasins #23030, #23037, #23045 and #23047 with respective August NGD values of 50%, 99.7%, 39.3% and 79.1%. Grafton submitted a Minimization Plan with elements accepted by MassDEP and incorporated as a condition of this permit. Being a non-municipally operated water district, Grafton will employ Best Effort to implement the following minimization measures:

1. Incorporate in the Town's Water Restriction bylaw additional provisions which may include registering automatic irrigation systems, high efficiency irrigation systems, infiltration of rainwater on municipal properties, minimizing high-water use landscaping, restricting land clearing size, additional topsoil thickness to retain moisture and prohibiting stripping topsoil.
2. Adopt additional conservation measures such as a rebate program as incentive for using high efficiency Water-Sense and Energy Star rated products, higher rate structures during the period of seasonal outdoor water use restrictions and targeting highest water users by comparing their water use with more efficient customers. Within 6 months of the permit issuance date, submit to MassDEP a report detailing the additional conservation measures to be implemented within 1 year of the permit issuance date.

Special Condition 11, Mitigation,

The Water Management Regulations, 310 CMR 36.03, define baseline to mean the volume of water withdrawn during calendar year 2005 plus 5%, or the average annual volume withdrawn from 2003 through 2005 plus 5%, whichever is greater provided that:

1. baseline cannot be less than a permittee's registered volume;
2. baseline cannot be greater than the permittee's authorized volume for 2005; and
3. if during the period from 2003 to 2005, the permittee's withdrawals from the water source were interrupted due to contamination of the source or construction of a treatment plant, the Department will use best available data to establish a baseline volume from the water source.

Grafton's baseline is 1.21 MGD, based on their 2005 withdrawal volume plus 5%.

Grafton's renewed permit maintains the total authorized withdrawal volume of 1.53 MGD (See Special Condition #1). Since this value is 0.32 MGD above its system-wide baseline, mitigation is required. A wastewater adjustment can be applied against the volume to be mitigated for systems returning wastewater to the ground within the same major basin as the withdrawal. Grafton reported on its permit renewal application that 10% of the water withdrawn will be supplied to users discharging wastewater through on-site disposal systems in the Blackstone River Basin. MassDEP assumes that 85% of the water supplied to these on-site disposal systems will be returned to the ground within the same major basin as the withdrawal due to 15% loss through consumption. The returned wastewater volume is represented by the following equation: **volume of water over baseline x % wastewater discharged through on-site septic systems to the major basin (10%) x % returned volume due to consumptive loss (85%)**. Therefore, Grafton's total wastewater adjustment amounts to $0.32 \text{ MGD} \times 0.10 \times 0.85$, as depicted below in **Table 3**.

TABLE 3:
Grafton's Wastewater Adjustment and Mitigation Volume Calculation

Permitted amount above Baseline = 0.32 MGD
Permitted amount above Baseline: $1.53 - 1.21 = 0.32 \text{ MGD}$
Adjustment for Wastewater Discharge to Local Groundwater = 0.0272 MGD
10% of increased withdrawals are delivered to areas with on-site septic systems: $0.32 \text{ MGD} \times 0.10 (10\%) = 0.032 \text{ MGD}$ 85% of water delivered to areas with on-site septic systems returns to groundwater: $0.032 \text{ MGD} \times 0.85 (85\%) = 0.0272 \text{ MGD}$
Amount to be Mitigated following Wastewater Adjustment to Local Groundwater = 0.29 MGD
Permitted amount above baseline (0.32 MGD) – adjustment for wastewater discharge to local groundwater (0.0272 MGD) = 0.2928 MGD or 292,800 gallons per day (GPD)

Grafton's mitigation amount after accounting for the wastewater return adjustment is 290,000 GPD. Mitigation is achieved by implementation of activities which offset impact to streamflow and aquatic habitat. A Mitigation Plan is required to evaluate permittee's proposed mitigation activities.

Mitigation Plan: WMA permits can include both direct and indirect mitigation activities to compensate for withdrawals over baseline. **Direct mitigation** must be considered first in mitigation planning and is quantifiable on a gallon per gallon basis. It includes activities which improve streamflow as a result of increased groundwater recharge, decreased stormwater runoff to streams, or surface water releases. If the required mitigation amount cannot be achieved by direct mitigation, then **indirect mitigation** must be evaluated. Indirect mitigation activities improve fluvial habitat but cannot be volumetrically quantified. Each indirect credit is equal to a mitigation amount of 10,000 GPD.

Grafton's mitigation plan did not include direct mitigation since Grafton does not control surface water releases, reported no known recent redevelopment projects resulting in an appreciable volume of stormwater recharge, and had no available documentation of recent sanitary system inflow/infiltration repair work conducted. Therefore, Grafton's Mitigation Plan submitted in response to MassDEP's Order To Complete consisted solely of Indirect Mitigation activities, with the types, qualifying aspects and credit amounts of MassDEP-accepted Indirect Mitigation activities summarized in **Appendix C** of the permit.

As outlined in **Appendix C**, MassDEP accepted 28.4 Indirect Credits of mitigation activities from Grafton resulting in a total of 0.29 MGD of Mitigation by rounding up to the next indirect credit, thereby satisfying their required Mitigation Amount of 0.29 MGD.

Special Condition 12, Requirement to Report Raw and Finished Water Volumes ensures the information necessary to evaluate compliance with the conditions included herein as accurately reported. Grafton's ASRs have reported both raw and finished withdrawal volumes.

Other Considerations

Coldwater Fishery Resource (CFR) Protection

Permittees with withdrawals point(s) impacting a CFR must evaluate options for shifting withdrawals to other withdrawal points and/or utilizing potentially alternative withdrawal sources to minimize the impacts to CFRs through feasible optimization. Since Grafton has one (1) withdrawal point (02G) located in a subbasin (#23037) with a CFR (Axtell Brook) and one (1) withdrawal point (05G) located in a subbasin (#23045) with a CFR (Cronin Brook), an evaluation of shifting withdrawals was conducted.

Consultation with the Department with Division of Fisheries and Wildlife (DFW) and WMA permit history indicate that Brook Trout are a species of concern which populate Cronin Brook, the CFR in the subbasin with the Follette Street Well (05G). Because the permit amendment will increase the maximum daily withdrawal rate of the Follette Street Well, Grafton will be required to reinstitute a water level monitoring plan for Cronin Brook (see Special Condition 9). Since the permit amendment increases the maximum daily pumping rate of the Follette Street Well to compensate for reduced production rates from Grafton's other wells during construction and startup of new source treatment plants, shifting withdrawals between sources will not be possible during this period due to the unpredictable and dynamic nature of construction schedules. MassDEP may revisit optimization following completion of treatment plants and review of Cronin Brook stream monitoring reports.



Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

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Lieutenant Governor

Rebecca Tepper
Secretary

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Commissioner

DRAFT WATER WITHDRAWAL PERMIT **M.G.L. c. 21G**

This permit is issued pursuant to the Massachusetts Water Management Act (WMA) for the sole purpose of authorizing the withdrawal of a volume of water as stated below and subject to the following special and general conditions. This permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

PERMIT NUMBER: 9P4-2-12-110.04

RIVER BASIN: BLACKSTONE

PERMITTEE: Grafton Water District
44 Millbury Street
P.O. Box 537
Grafton, Massachusetts 01519

EFFECTIVE DATE: [Month Day], 2026

EXPIRATION DATE: June 5, 2036

NUMBER OF WITHDRAWAL POINTS: 7

Groundwater: 7 Surface water: 0

USE: Public Water Supply (PWS)

DAYS OF OPERATION: 365

LOCATIONS:

TABLE 1: Withdrawal Points Information

Source ID	Source name
2110000-02G	Worcester Street (GP WELL#1)
2110000-04G	East Street #3 (GP WELL #3)
2110000-05G	Follette Street (GP WELL#4)
2110000-06G	East Street #2A (GP WELL #2A)
2110000-07G	Trinity Wellfield
2110000-0CG*	Lake Ripple Well

* Source ID assignment pending final approval letter for water quality sampling plan and online status.

SPECIAL CONDITIONS**1. Maximum Authorized Annual Average Withdrawal Volume**

This permit authorizes Grafton to withdraw water at the rates described below in **Table 2**. Volumes reflected by these rates are in addition to the 0.60 million gallons per day (MGD) previously authorized to Grafton under the WMA registration statement #2-12-110.04 for withdrawal from the Blackstone River Basin. Permit and registered authorized volumes are expressed as an annual average daily withdrawal rate in MGD, and as a total annual withdrawal volume in million gallons per year (MGY) for the calendar year.

The Department of Environmental Protection (MassDEP) bases withdrawal volumes on raw water volumes from authorized withdrawal points and will use the raw water amount to assess compliance with registered and permitted withdrawal volumes.

TABLE 2:
Grafton's Raw Water Maximum Authorized Withdrawal Volumes

Permit Period	Permit Daily Average (MGD)	Permit Total Annual (MGY)	Registration + Permit Daily Average (MGD)	Registration + Permit Total Annual (MGY)
XX/XX/2026 to 6/5/2036	0.93	339.45	0.60 + 0.93 = 1.53	219 + 339.5 = 558.45

2. Maximum Authorized Daily Withdrawals from each Withdrawal Point

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed below in **Table 3** without specific advance written approval from MassDEP. The authorized maximum daily volume is the approved rate of each source.

TABLE 3:
Permitted Annual Maximum Average Daily Withdrawal Rates (MGD)

Source Name	Source ID	Permit Maximum Daily Average Withdrawal Rate
Worcester Street (GP WELL#1)	02G	1.01
East Street #3 (GP WELL #3)	04G	1.01
Follette Street (GP WELL#4)	05G	0.70
East St #2A (GP WELL #2A)	06G	0.61
Trinity wellfield	07G	1.21
Lake Ripple Well	0CG	0.864

3. Zone of Contribution Delineations

MassDEP records indicate Grafton has approved Zone II delineations for its groundwater sources. Therefore, no further Zone II delineation work is required as a condition of this permit.

4. Water Supply Source Protection

MassDEP records indicate that Grafton's wellhead protection requirements meet 310 CMR 22.21(2) for Zone II areas within Grafton. Per 310 CMR 22.21(1)(d), Best Effort Requirements which address wellhead protection for the delineated Zone IIs of Grafton's sources that extend into the Towns of Millbury and Sutton shall be repeated for permit reviews, amendments, new source approvals, replacement source wells, monitoring waiver applications, Zone II re-delineations and Sanitary Survey stipulations until such time as Millbury and Sutton adopt appropriate wellhead protection controls. Since Grafton is amending their permit, Grafton is again subject to satisfying the Best Effort Requirements with the Towns of Millbury and Sutton. Refer to the attached **Wellhead Protection Guidance | Best Effort Requirements** for guidance.

5. Performance Standard for Residential Gallons Per Capita Day Water Use (RGPCD)

Grafton is required to meet the 65 RGPCD or less performance standard. Grafton shall report its RGPCD water use annually in its Annual Statistical Report (ASR), and document compliance with this performance standard in its ASR for 2027 and each year thereafter. As part of its ASR submittals, Grafton shall report its RGPCD and the method of calculation used to derive it including, without limitation, the source of the data used to establish the service population and the year in which this data was developed.

See **Appendix A** for additional information on requirements if the performance standard for RGPCD is not met.

6. Performance Standard for Unaccounted for Water (UAW)

Grafton's Performance Standard for UAW is 10% or less per year. Permittees that cannot comply with the UAW Performance Standard are required to develop and implement Functional Equivalence requirements for UAW which are based on the American Water Works Association (AWWA) Water Audits and Loss Control Program, Manual of Water Supply Practices M36, as outlined in **Appendix B**. Grafton shall report its UAW annually in its Annual Statistical Report (ASR).

Grafton shall feasibly complete the following elements included in their 2024 UAW Compliance Plan:

- 1) Conduct an American Water Works Association (AWWA) "Bottom-up Component Analysis" M36 Water Audit by the due date of their 2027 ASRs.
- 2) Replace (2" or greater) meters over 20 years old within three years.
- 3) Calibrate large (2" or greater) meters every fifth year.
- 4) Continue to conduct annual leak detection surveys.
- 5) Test and calibrate master meters at the supply sources every year.
- 6) Check valves at all interconnections to confirm that each interconnection is completely closed and replace when ineffectually closing.
- 7) Review and update procedures for estimating CEMU, including standardizing electronic estimating forms

Grafton shall submit results of completed tasks of the UAW Compliance Plan as attachments to the ASR and make results available to MassDEP upon request.

7. Water Conservation Requirements

At a minimum, Grafton shall implement conservation measures listed below in **Table 4**. Compliance with the water conservation requirements shall be reported to MassDEP upon request, unless otherwise noted in **Table 4**.

TABLE 4: Minimum Water Conservation Requirements**System Water Audits and Leak Detection**

1. At a minimum, conduct a full leak detection survey every three years. The first full leak detection survey shall be completed no later than 3 years from the date of the last documented leak detection survey.
2. Conduct leak detection of the entire distribution system within one year whenever the percentage of UAW increases by 5% or more (for example an increase from 3% to 8%) over the percentage reported on the ASR for the prior calendar year. Within 60 days of completing the leak detection survey, submit to the Department a report detailing the survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.
3. Conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36.
4. Grafton shall have repair reports available for inspection by MassDEP. Grafton shall establish a schedule for repairing leaks that is at least as stringent as the following:
 - Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection.
 - Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible.
 - Leaks of less than 3 gallons per minute shall be repaired in a timely manner, but in no event more than 6 months from detection, except leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway.

Leaks shall be repaired in accordance with Grafton's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. Grafton shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.

Metering

1. Grafton shall continue to calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2. Grafton shall maintain its 100% metered system.
3. Grafton shall continue their meter replacement program that is based on AWWA standards.

Pricing

1. Grafton shall have a plan and schedule for establishing and maintaining a water pricing structure that includes the full cost of operating the water supply system. Thereafter, Grafton shall implement the plan and schedule as approved by MassDEP. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.
2. Evaluate rates at a minimum every three to five years and adjust costs as needed.
3. Grafton shall continue to implement an increasing block rate structure.
4. Grafton shall continue to bill at least quarterly.

TABLE 4 (continued): Minimum Water Conservation Requirements**Residential and Public Sector Conservation**

1. Grafton shall ensure that the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code are met when buildings are constructed or renovated.
2. Grafton reports metering water used by contractors using fire hydrants for pipe flushing and construction and shall continue to do so.
3. Municipal buildings:
 - A water audit of the municipal buildings in GWD's service area was prepared in 2006 and submitted to MassDEP.
 - The audit details potential water savings per building. A letter to the Grafton Board of Selectmen dated August 7, 2007 was submitted to MassDEP demonstrating a "Best Effort" to get the Town of Grafton to make retrofits identified in the audit.
 - Repeat the request for retrofit of Grafton's municipal buildings by [6-months following permit issuance], as part of this permit amendment.
4. Grafton shall ensure that water-conservation landscaping practices are incorporated into the design, construction, management, and operation of public parks, playing fields and other facilities.

Industrial and Commercial Water Conservation

1. Grafton shall continue to inspect industrial facilities and recommend the use of separate meters for process water where appropriate.

Public Education and Outreach

1. Within six months of the effective date of this permit, Grafton shall submit to MassDEP a plan and schedule for the development and implementation of a water conservation education and outreach plan designed to educate customers on ways to conserve water.

Without limitation, the plan may include the following actions:

- Include in bill stuffers and/or bills, a work sheet to enable customers to track water use and conservation efforts and estimate the dollar savings,
 - Public space advertising/media stories on successes (and failures),
 - Conservation information centers perhaps run jointly with electric or gas company,
 - Speakers for community organizations,
 - Public service announcements; radio/T.V./audio-visual presentations
 - Joint advertising with hardware stores to promote conservation devices,
 - Use of civic and professional organization resources,
 - Special events such as Conservation Fairs,
 - Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and
 - Provide multilingual materials as needed.
2. Thereafter, Grafton shall develop and implement the water conservation education and outreach plan and schedule as approved by MassDEP. Upon request of MassDEP, Grafton shall report on its public education and outreach efforts.

8. Seasonal Limits on Nonessential Outdoor Water Use

Grafton shall limit nonessential outdoor water use through mandatory restrictions from May 1 through September 30, as outlined in **Table 5** below. Grafton shall be responsible for tracking streamflow gages and recording and reporting when restrictions are implemented (see **Table 6**). The permittee shall document compliance with the limits on nonessential outdoor water use annually in its ASR.

TABLE 5: Limits on Nonessential Outdoor Water Use

Restrictions are triggered by:
USGS Gage 01111212, Blackstone River at Uxbridge, MA (the Gage).
For Permittees Meeting the 65 RGPCD Standard for the Preceding Year
When RGPCD was 65 or below as reported in the ASR and accepted by MassDEP, choose either Calendar Triggered Restrictions or Streamflow Triggered Restrictions from this section of the Table.
CALENDAR Triggered Restrictions:
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m.:
a) Two (2) days per week, and, b) One (1) day per week when flow at the Gage falls below 62 cfs for three (3) consecutive days. Once implemented, restrictions shall remain in place until streamflow at the gage meets or exceeds 62 cfs for seven (7) consecutive days.
STREAMFLOW Triggered Restrictions:
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m.:
a) Two (2) days per week when flow at the Gage falls for three (3) consecutive days below: ➤ 221 cfs from May 1 – June 30, and ➤ 86 cfs from July 1 – September 30; except a) One (1) day per week whenever flow at the Gage falls below 62 cfs for three (3) consecutive days. Once implemented, restrictions shall remain in place until streamflow at the Gage meets or exceeds the trigger streamflow for seven (7) consecutive days.
For Permittees NOT Meeting the 65 RGPCD Standard for the Preceding Year
When RGPCD was above 65 as reported in the ASR and accepted by MassDEP, choose either Calendar Triggered Restrictions or Streamflow Triggered Restrictions from this section of the Table
CALENDAR Triggered Restrictions:
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m. one (1) day per week .
STREAMFLOW Triggered Restrictions:
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m. one (1) day per week when flow at the Gage falls for three (3) consecutive days below:
➤ 221 cfs from May 1 – June 30, and ➤ 86 cfs from July 1 – September 30. Once implemented, restrictions shall remain in place until streamflow at the gage meets or exceeds the triggering streamflow for seven (7) consecutive days.

TABLE 6: Tracking Streamflows through the USGS Website**Instructions for Accessing Streamflow Website Information**

The permittee shall be responsible for tracking stream flows and recording and reporting to MassDEP when restrictions are implemented.

Streamflow information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflows in real time, i.e., the most recent, usually quarterly hourly reading made at each USGS stream gage.

Seasonal Limits on Nonessential Outdoor Water Use are implemented when the mean daily streamflow falls below the designated trigger for 3 consecutive days. The mean daily flow is not calculated until after midnight each day when the USGS computes the hourly data into a mean daily streamflow. As a result, the Permittee must use the mean daily streamflow from the preceding day when tracking streamflows.

Mean daily streamflow gage readings are also available by following the instructions on MassDEP's [USGS Stream Gage and Well-Monitoring Data webpage](#).

For additional questions and additional support, contact the MassDEP Water Management Program at DEP.WMA@mass.gov (preferred), or the WMA Program contact identified in this permit.

Should the reliability of flow measurement at the **USGS Gage 01111212** at the Blackstone River at Uxbridge, MA be so impaired as to question its accuracy, Grafton may request MassDEP's review and approval to transfer to another gage to trigger restrictions.

MassDEP reserves the right to require the use of a different gage.

Nonessential Outdoor Water Use means a use that is not required:

- (a) for health or safety reasons, including public facilities used for cooling such as splash pads and swimming pools, and for washing of boats, engines, or marine equipment to prevent negative saltwater impacts or the transfer of invasive aquatic species;
- (b) by permit, license, statute or regulation;
- (c) for the production of food, including vegetable gardens, and fiber;
- (d) for the maintenance of livestock;
- (e) to meet the core functions (those functions essential to the commercial operations) of a business, including but not limited to:
 - 1. plant nurseries as necessary to maintain stock;
 - 2. golf courses as necessary to maintain greens and tees, and limited fairway watering per 310 CMR 36.07(2)(c)2.a. through c.;
 - 3. venues used for weddings or similar special events that limit watering to hand-held hose or drip irrigation as necessary to maintain gardens, flowers and ornamental plants;
 - 4. professional washing of exterior building surfaces, parking lots, driveways and/or sidewalks as necessary to apply surface treatments such as paint, preservatives, stucco, pavement, or cement in the course of construction, reconstruction or renovation work;

- (f) for irrigation of public parks before 9:00 a.m. and after 5:00 p.m.,
- (g) for irrigation of public and private recreation fields, including those operated by schools, colleges, universities and athletic associations, before 9:00 a.m. and after 5:00 p.m.,
- (h) for irrigation of publicly funded shade trees and trees in the public right-of-way; or
- (i) to establish a new lawn as necessary to stabilize soil in response to new construction or following the repair or replacement of a Title 5 system.

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

The Permittee shall notify its customers of the restrictions and the consequences of failing to adhere to the restrictions.

- **For calendar-triggered restrictions**, customers shall be notified by April 15 each year.
- **For streamflow-triggered restrictions**, when streamflow at the assigned USGS local stream gage falls below a streamflow trigger for three consecutive days, customers shall be notified as soon as possible, but within three days of implementing the restrictions.

Notice that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the form "Notification of Water Use Restrictions" available on MassDEP's website link [Outdoor Water Use Restrictions for Cities, Towns, and Golf Courses | Mass.gov](#).

Enforcement Authority

This permit condition does not confer enforcement authority to the permittee. If Grafton does not have appropriate enforcement authority, then beginning as soon as possible, but no later than 24 months after issuance of the permit, the permittee shall establish enforceable restrictions limiting nonessential outdoor water use.

Nothing in the permit shall prevent the Permittee from implementing water use restrictions that are more stringent than those set forth in this permit.

9. Cronin Brook Water Level Monitoring

Grafton shall reinstitute the following elements of the modified water level monitoring plan for Cronin Brook due to concern of impact of wild Brook Trout recorded to populate the Coldwater Fishery Resource, Cronin Brook, and the increase of the Follette Street well (05G) maximum daily pumping rate from 0.44 MGD to 0.70 MGD (see Special Condition 2):

1. Once per hour and year-round, water level measurements shall be collected from an observation well outfitted with a data-logging pressure transducer with a minimal accuracy of 0.01 feet. The observation well shall be constructed of 10-slot, continuous wrap, 2-inch stainless steel well-screen, installed at least four feet into the subsurface and to minimum depth 1-foot below the lowest bottom elevation of the adjacent Cronin Brook, or, at an approved alternative depth or construction method which would ensure the integrity of its structure and achieve described depths. The observation well shall be installed on the south side of the estimated edge of the bank-full channel width of Cronin Brook with the screen terminating above the bank full channel height, in-line with Follette Street Zone II report figures of monitoring wells 3-03, 2-03 and Follette Street well and, protected from vandalism.
2. Once per hour and year-round, measurements collected from existing wells 3-03 and 2-03S shall resume using the measurement method described for the observation well.

3. On a weekly basis, measure Cronin Brook water levels at a stream gauge placed near the observation well.
4. Assign an arbitrary datum of 100.00 feet to the deepest point in Cronin Brook, lateral to the observation well, and represent all subsequently graphed water elevation levels relative to this datum by initially conducting a level survey of the measurement reference point for each monitored location to enable applying the surveyed elevation correction factor to reduced water level data.
5. Represent water level data from Cronin Brook and other monitored wells vs. time in graphic format, include precipitation amounts and Follette Street well withdrawal rates.
6. Submit an annual status report briefly summarizing water level changes relative to trends of monitored locations and Follette Street well pumping rates; a figure showing monitored locations; a time continuous graph depicting reduced observation well water levels superimposed with other reduced monitoring well water levels, Follette Street withdrawal volumes and precipitation. Include the status report and raw data as an attachment to your Annual Statistical Report submittal or by an otherwise indicated or approved method.

10. Minimization.

In accordance with 310 CMR 36.22(5), Grafton shall implement the following minimization plan and, if necessary, employ Best Effort measures with the Town to assist in compliance:

- Incorporate additional provisions into the Town's Water Restriction bylaw which implement some of the following:
 1. Requirement to register automatic irrigation systems;
 2. Incentives for high efficiency irrigation systems and infiltration of rainwater;
 3. Infiltration of rainwater on municipal properties;
 4. Requirements to minimize high-water use landscaping;
 5. Restrictions on land clearing and lawn size;
 6. Requirement to provide 6 inches of topsoil to retain moisture; and,
 7. Prohibition of topsoil stripping.
- Within 6 months of the final permit's issuance date, submit a plan to MassDEP which outlines the implementation within 1 year from the permit's issuance date of some of the following additional water conservation measures which are beyond the scope of other permit conditions herein:
 1. A rebate program for residential customers for high efficiency Water-Sense labeled products and Energy Star clothes washers;
 2. Incentives for those seeking municipal approvals to install high efficiency WaterSense labeled products and Energy Star clothes washers in new construction and renovations;
 3. Higher rate structures during the period of seasonal outdoor water use restrictions; and,
 4. Targeting highest water users by comparing their water use with more efficient customers.

11. Mitigation

Grafton is required to mitigate for 0.29 MGD of permitted withdrawals over baseline. Grafton's mitigation requirement of 0.29 MGD was met by MassDEP's acceptance of the following mitigation activities and associated indirect credits: 1) Land Purchase, 7 credits, 2) Stormwater Bylaw, 4 credits, 3) Wetlands Bylaw, 5 credits, 4) Municipal Separate Storm Sewer System (MS4) maintenance and permit implementations, 2 credits, 5) MS4 procedures and infiltration plans, studies and reporting, 2 credits, 6) Culvert replacement work, 7 credits, and 7) Dam removals, 2 credits. As outlined in **Appendix C**, 29 indirect credits worth 10,000 GPD per credit yielded an amount of Mitigation worth 290,000 GPD, or 0.29 MGD. Therefore, at this time, no further mitigation work is required as a condition of the permit.

Grafton shall submit to MassDEP a copy of the Wetlands Protections Act Final Order of Conditions following completion of culvert work at Cronin Brook and Fitzpatrick Road and notify MassDEP if there are any significant changes to the status of identified eligible criteria used to qualify an activity for Mitigation.

12. Requirement to Report Raw and Finished Water Volumes

Grafton shall report the raw and finished water volumes for the entire water system and the raw water volumes for each individual withdrawal point on the Annual Statistical report. Grafton's ASRs have reported both raw and finished withdrawal volumes.

GENERAL PERMIT CONDITIONS (applicable to all permittees except Cranberry permits)

No withdrawal in excess of 100,000 gallons per day over the registered volume (if any) shall be made following the expiration of this permit, unless the Department has received a timely permit renewal application pursuant to 310 CMR 36.00.

1. **Duty to Comply:** The permittee shall comply at all times with the terms and conditions of this permit, the Act, the Water Management Act regulations at 310 CMR 36.00, and all other applicable State and Federal statutes and regulations.
2. **Operation and Maintenance:** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw water so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections:** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine at reasonable times any property, facility, operation, equipment or activity involving the withdrawal of water, and to inspect and copy any relevant records, for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency:** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by the Department pursuant to M.G.L. c. 21G, §§ 15-17, M.G.L. c. 111, §§ 160, or any other enabling authority.
5. **Transfer of Permits:** This permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to the submittal of a transfer application in accordance with 310 CMR 36.33 on forms provided by the Department requesting such approval and received by the Department at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee as set forth in 310 CMR 4.00.
6. **Duty to Report:** The permittee shall complete and submit annually, on a form provided by the Department, all of the information required by said form including, without limitation, a certified statement of the withdrawal. Such report shall be received by the Department by the date specified on the form each year. For public water supplier permittees, the report form is the MassDEP Drinking Water Program Public Water Supply Annual Statistical Report.
7. **Annual Compliance Fee:** The permittee shall submit any applicable annual compliance fee as established in 310 CMR 4.00.
8. **Duty to Maintain Records:** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.
9. **Metering:** All withdrawal points included within the permit shall be metered. Meters are to be calibrated annually. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
10. **Amendment, Suspension or Termination:** The Department may amend, suspend or terminate the permit in accordance with M.G.L. c. 21G and 310 CMR 36.29.

NOTICE OF APPEAL RIGHTS

Any person aggrieved by this decision may request an adjudicatory hearing by timely filing a Notice of Claim for an Adjudicatory Appeal (“Notice of Claim”) in accordance with 310 CMR 36.37 and 310 CMR 1.01 within twenty-one (21) days of receipt of this Permit. The Notice of Claim shall state specifically, clearly, and concisely the facts that are grounds for the appeal, the relief sought, and any additional information required by applicable law or regulation. A copy of this Permit shall be included with the Notice of Claim. No request for an appeal of this permit shall be validly filed unless a copy of the request is sent at the same time by certified mail, or delivered by hand, to the local water resources management official in the community in which the withdrawal point is located; and for any person appealing this decision, who is not the Permittee, unless such person notifies the Permittee of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to the Department.

The Notice of Claim and supporting documentation, including a copy of the fee transmittal form and a copy of the check, must be sent by certified mail or hand delivered to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
100 Cambridge Street, Suite 900
Boston, MA 02114

In addition, the Department’s fee transmittal form, together with a valid check or money order made payable to the Commonwealth of Massachusetts in the amount of \$100 for the appeal filing fee, if required, must be mailed to:

Commonwealth of Massachusetts Lock Box
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The Notice of Claim may be dismissed if the filing fee is not paid unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Duane LeVangie
Water Management Program Chief
Bureau of Water Resources

Date

Endnotes

Appendix A: Functional Equivalence with the RGPCD Performance Standard

Appendix B: Functional Equivalence with the 10% UAW Performance Standard

Appendix C: Summary of Grafton’s MassDEP-Accepted Indirect Mitigation Activities

Attachment: Wellhead Protection Guidance | Best Effort Requirements

Endnotes

- [1] Subbasins used for WMA permitting are the 1,395 subbasins delineated by the U.S. Geological Survey in “Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover, and Water Quality for Massachusetts Stream Basins” (Weiskel et al., 2010, USGS SIR 2009-5272) at [USGS Publication | sir20095272](#). The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion (NGD) to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by U.S. Geological Survey in Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover and Water Quality for Massachusetts Stream Basins. A subbasin is groundwater, depleted if it has an August NGD of greater than 25%.
- [2] The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by U.S. Geological Survey in Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover and Water Quality for Massachusetts Stream Basins.

APPENDIX A: Functional Equivalence with the Residential Gallons Per Capita Day (RGPCD) Performance Standard

I. Compliance Plan Requirement

If the permittee fails to achieve and document compliance with the RGPCD performance standard in its Annual Statistical Report (ASR), then the permittee must file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall:

- a. meet the requirement set forth below in Section II,
- b. include measures to be implemented to meet the performance standard), and
- c. include the schedule for implementing such measures.

The filing of an RGPCD Plan shall not constitute a return to compliance, nor shall it affect MassDEP's authority to take action in response to the permittee's failure to meet the performance standard.

If an RGPCD Plan is required, the permittee must:

- a. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD Plan annually at the time it files its ASR, and
- b. continue to implement the RGPCD Plan until it complies with the performance standard and such compliance is documented in the permittee's ASR for the calendar year in which the standard is met.

II. Contents of an RGPCD Plan

A permittee that does not meet the 65 RGPCD performance standard within 2 years, has the choice to file an RGPCD Plan containing measures that the permittee believes will be sufficient to bring the system into compliance with the performance standard (Individual RGPCD Plan) or may adopt the MassDEP RGPCD Functional Equivalence Plan that includes mandated Best Management Practices (BMPs).

A permittee that has been unable to meet the 65 RGPCD performance standard within 5 years must implement the MassDEP RGPCD Functional Equivalence Plan to be considered functionally equivalent with the performance standard.

At a minimum, all RGPCD Compliance Plans must include a detailed:

- a. description of the actions taken during the prior calendar year to meet the performance standard,
- b. analysis of the cause of the failure to meet the performance standard,
- c. description and schedule of the actions that will be taken to meet the performance standard, and
- d. analysis of how the actions described in c. will address the specific circumstances that resulted in the failure to meet the performance standard.

RGPCD Plans may be amended to revise the actions that will be taken to meet the performance standard.

Individual RGPCD Plan

Individual RGPCD Plan will document a plan to adopt and implement measures tailored to the specific needs of the water supply system that the permittee believes will be sufficient to bring the system into compliance with the performance standard within three years.

At a minimum, all Individual RGPCD Plans for failure to meet the RGPCD performance standard must include implementation of at least one of the following residential conservation programs:

- a. a program that provides water saving devices such as faucet aerators and low flow shower heads at cost,
- b. a program that provides rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets), or
- c. the adoption and enforcement of an ordinance, bylaw, or regulation to require the installation of moisture sensors or similar climate-related control technology on all automatic irrigation systems.

If the permittee is already implementing one or more of these programs, it must include in its Individual RGPCD Plan the continued implementation of such program(s), as well as implementation of at least one additional program. All programs must include a public information component designed to inform customers of the program and to encourage participation in the program.

Without limitation, the Individual RGPCD Plan for failure to meet the RGPCD performance standard may include any of the actions set forth in the MassDEP RGPCD Functional Equivalence Plan below.

MassDEP RGPCD Functional Equivalence Plan

In order to be considered functionally equivalent with the RGPCD performance standard, the permittee must be in compliance with the permit Special Condition, Seasonal Limits on Nonessential Outdoor Water Use, and must adopt and implement the MassDEP RGPCD Functional Equivalence Plan that requires all the following residential conservation programs:

- a. a program that provides water saving devices such as faucet aerators and low flow shower heads at cost,
- b. a program that provides rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets),
- c. the adoption and enforcement of an ordinance, bylaw, or regulation to require the installation of soil moisture sensors or similar climate related control technology on all automatic irrigation systems,
- d. the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation,
- e. the adoption and enforcement of an ordinance, bylaw, or regulation to require that all new construction include water saving devices and low water use appliances; and
- f. the implementation of monthly or quarterly billing.

Hardship

A permittee may present an analysis of the cost effectiveness of implementing certain conservation measures included in the MassDEP RGPCD Functional Equivalence Plan and offer alternative measures. Any analysis must explicitly consider environmental impacts and must produce equal or greater environmental benefits. Suppliers will be able to present:

- a. Reasons why specific measures are not cost effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard,
- b. Alternative specific conservation measures that would result in equal or greater system-wide water savings or equal or greater environmental benefits than the conservation measures included in the MassDEP RGPCD Functional Equivalence Plan, and
- c. When applicable, an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship.

APPENDIX B

Functional Equivalence with the 10% Unaccounted for Water (UAW) Performance Standard

Water Loss Control Program: MassDEP will consider PWS permittees who cannot meet the 10% UAW performance standard to be functionally equivalent, and in compliance with their permit, if they have an ongoing Water Loss Control Program in place that ensures best practices for controlling water loss.

Developing a Municipal Water Loss Control Program: A permittee who fails to document compliance with the 10% UAW performance standard for 2 out of the 3 years during the permit period, shall develop a Municipal Water Loss Control Program in accordance with the *AWWA M36 Water Audits and Loss Control Program*. Within 5 full calendar years of failing to meet the standard, the permittee shall:

1. Conduct an annual “top down” water audit, calculate the data validity level/score using AWWA Water Loss Control Committee’s Free Water Audit Software, and submit the AWWA WLCC Free Water Audit Software Reporting Worksheet and data validity score annually as an attachment to the Annual Statistical Report (ASR).
 - If a PWS’s data validity level/score is less than Level III (51-70), steps recommended through the audit(s) shall be taken to improve the reliability of the data prior to developing a component analysis and long-term program to reduce real and apparent water losses.
 - i. Data with a validity score of 50 or less are considered too weak to be used to develop a component analysis or for infrastructure planning and maintenance.
 - ii. Developing data with an acceptably strong validity score can be a multi-year process.
2. When the data validity score meets the Level III (51-70) requirement, conduct a component analysis to identify causes of real and apparent water loss and develop a program to control losses based on the results of the component analysis.
3. Submit the Municipal Water Loss Control Program that includes an M36 component analysis and implementation schedule and identifies implementation funding to the Department.
4. Upon request of the Department, the permittee shall report on its implementation of the water loss control program.
5. Continued implementation of the Program will be required for the permittee to be considered functionally equivalent with the 10% UAW performance standard and in compliance with their permit.

A PWS permittee may choose to discontinue the Municipal Water Loss Control Program implementation if UAW, as reported on the ASR and approved by the Department, is below 10% for four consecutive years, and the water audit data validity scores are at least Level III (51-70) for the same four years.

NOTE FOR SMALL SYSTEMS: For small systems with less than 3,000 service connections or a service connection density of less than 16 connections per mile of pipeline, the Unavoidable Annual Real Loss (UARL) calculation and the Infrastructure Leak Index (ILI) developed as the final steps of the *Top-Down* water audit may not result in valid performance indicators and may not be comparable to the UARL and ILI calculations for larger systems.

However, these small systems can benefit from developing reliable data and conducting an annual top-down water audit. Small systems can rely on the real losses (gallons per mile of main per day) performance indicator developed in the water audit as a measure of real water loss when developing a water loss control program. The M36 Manual discusses the audit process for small systems and includes a chapter to guide small systems in understanding the results of their audits and in developing a water loss control program (*Manual of Water Supply Practices – M36, Fourth Edition, Chapter 9: Considerations for Small Systems*, pp. 293-305).

MassDEP Water Loss Control Program: If the permittee is required to develop a Water Loss Control Program in order to be functionally equivalent with the 10% Unaccounted for Water Performance Standard, and the permittee has not developed a Municipal Water Loss Control Program that includes a component analysis and identifies implementation funding after 5 full calendar years of failing to meet the standard, the permittee will be required to implement the MassDEP UAW Water Loss Control Program measures outlined below:

- Complete an annual water audit and leak detection survey, as described in the AWWA M36 Manual, for the entire system:
 - Within one year, repair 75% (by water volume) of all leaks detected in the survey that are under the control of the public water system.
 - Thereafter, repair leaks as necessary to reduce permittee's UAW to 10% or the minimum level possible.
- Meter inspection and, as appropriate, repair, replace and calibrate water meters:
 - Large Meters (2" or greater) – within one year.
 - Medium Meters (1" or greater and less than 2") – within 2 years.
 - Small Meters (less than 1") - within three years
 - Thereafter, calibrate and or replace all meters according to type and specification.
- Bill at least quarterly within three years.
- Review the permittee's water pricing structure and ensure revenues are sufficient to pay the full cost of operating the system.

Hardship: A permittee may present an analysis of the cost-effectiveness of implementing certain conservation measures included in the MassDEP Water Loss Control Program and offer alternative measures. Any analysis must explicitly consider environmental impacts and must produce equal or greater environmental benefits.

A permittee's hardship analysis shall:

- Document economic hardship and present an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship.
- Present reasons why specific measures are not cost-effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard, and
- Propose specific conservation measures that would result in equal or greater system-wide water savings or equal or greater environmental benefits than the conservation measures included in the MassDEP UAW Water Loss Control Program.

MassDEP will review a permittee's detailed, written analysis to determine whether unique circumstances make specific water loss control measures less cost-effective than alternatives, or infeasible for the permittee.

Appendix C

Summary of Grafton's MassDEP-Accepted Indirect Mitigation Activities

Indirect Credit	Eligible criteria for Indirect Credits	Credits
Land Purchasing	Water Supply Protection Zone II, Town owned and controlled	
	Certification and documentation provided	
Property #1	33 Follette Street: 13.5 acres of land x 0.1 credit per acre =	1.4
Property #2	8 Doris Drive: 4.75 acres of land x 0.1 credit per acre =	0.5
Land Purchasing	Non-water supply, Conservation Restricted Land deed in perpetuity	
	Land Owner Agreement for Grafton to use for Mitigation	
	Certification and documentation provided	
Property #1 (1):	67 George Hill Rd/8 Soap Hill Rd: 153.4 acres x 0.1 credit per acre =	5.0
Stormwater Bylaw	Promulgated regulation with enforcement process	
	Geographic extent includes entire municipality =	2.0
	Regulated project size, 1.0 acre or larger =	1.0
	Stormwater Runoff Infiltration per MA Stormwater Handbook =	1.0
Wetlands Bylaw	Implemented and enforced by Grafton	
	Defines jurisdiction, authorizes fees and enforcement =	1.0
	Riverfront status and wetland resource areas control expanded =	2.0
	Minimum 25-ft setback and 75% upland with limited development =	2.0
MS4 Implementation	Completion of MS4 Summary Table and Permit requirements	
	Certification of completed and remaining MS4 requirements =	2.0
Infiltration/Inflow	Wastewater Treatment compliance with MassDEP plan to control I/I	
	Follows MassDEP's guidelines for I/I Analyses and SSESs (2)	
	Has sewer system Operation and Maintenance Plan and funding =	1.0
	I/I Analysis Plan and Study completed with Report =	1.0
Culvert	Culvert at Miscoe Brook crossing at Stowe Road	
	Meets General Stream Crossing Standards	
	Moderate Stream Crossing improvement (3)	1.5
Culvert	Culvert at Miscoe Brook and 46 and 60 Adams Road	
	Meets General Stream Crossing Standards	
	Moderate/Significant Stream Crossing improvement (3)	2.0
Culvert	Culvert at Cronin Brook and Fitzpatrick Road	
	Meets General Stream Crossing Standards	
	Moderate/Significant Stream Crossing improvement (3)	2.0
	Local Priority work; approved study, includes stormwater management	1.0
Dam Removal	Stowe Road Culvert beaver dam removal	
	Single dam removal in CFR (Miscoe Brook) – Ecological Integrity (20%) (4)	1.0
Dam Removal	Fitzpatrick Road Culvert upstream beaver dam removal	
	Single dam removal in CFR (Cronin Brook) – Ecological Integrity (20%) (4)	1.0
	Sum of Indirect Credits*	28.4
	Total Indirect Credit value (MGD**)	0.29

(1) = 5 credits maximum; (2) = Sewer System Evaluation Survey;
 (3) = per [MA stream crossings Handbook](#); (4) = per [DER's Restoration Potential Model Tool](#)

* Per credit value = 10,000 gallons per day (GPD)

** (Rounded to next Indirect Credit of 29 x per credit value in GPD) / 1,000,000 = MGD