



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

June 29, 2018

Steven Souza, Superintendent
Buzzards Bay Water District
15 Wallace Avenue
Buzzards Bay, MA 02532

RE: Buzzards Bay Water District
PWS ID#: 4036001
Water Management Permit 9P-4-24-036.01
Action: WMA Permit Amendment

Dear Mr. Souza:

Please find attached the following:

- Findings of Fact in Support of the Permit Amendment Decision, and
- Water Management Act Permit #9P-4-24-036.01 for the Buzzards Bay Water District, Bourne, Massachusetts.

If you have any questions regarding this permit, please contact Beth McCann at (617) 292-5901 or via email at elizabeth.mccann@state.ma.us.

Very truly yours,

Duane LeVangie
Water Management Program Chief

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Ecc: P. Kellogg, MassDEP SERO
R. Rondeau, MassDEP, SERO
T. Guarino, Bourne Board of Health: tguarino@townofbourne.com
M. Davis, Tata and Howard: mdavis@tataandhoward.com
Julia Blatt, Mass Rivers Alliance
Jennifer Pederson, MWWA

Communication For Non-English Speaking Parties - 310 CMR 1.03(5)(a)

Contact Michelle Waters-Ekanem, Diversity Director/Civil Rights: 617-292-5751 TTY#
 MassRelay Service 1-800-439-2370.
<http://www.mass.gov/eea/agencies/massdep/service/justice/> (Version 3.30.15)

**1 English:**

This document is important and should be translated immediately. If you need this document translated, please contact MassDEP's Diversity Director at the telephone numbers listed below.

**2 Español (Spanish):**

Este documento es importante y debe ser traducido inmediatamente. Si necesita este documento traducido, por favor póngase en contacto con el Director de Diversidad MassDEP a los números de teléfono que aparecen más abajo.

**3 Português (Portuguese):**

Este documento é importante e deve ser traduzida imediatamente. Se você precisa deste documento traduzido, por favor, entre em contato com Diretor de Diversidade da MassDEP para os números de telefone listados abaixo.

**4(a) 中國（傳統）(Chinese (Traditional)):**

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與 MassDEP 的多樣性總監聯繫。

**4(b) 中国（简体中文）(Chinese (Simplified)):**

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與 MassDEP 的多样性总监联系。

**5 Ayisyen (franse kreyòl) (Haitian) (French Creole):**

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradui imedyatman. Si ou bezwen dokiman sa a tradui, tanpri kontakte Divèsite Direktè MassDEP a nan nimewo telefòn ki nan lis pi ba a.

**6 Việt (Vietnamese):**

Tài liệu này là rất quan trọng và cần được dịch ngay lập tức. Nếu bạn cần dịch tài liệu này, xin vui lòng liên hệ với Giám đốc MassDEP đa dạng tại các số điện thoại được liệt kê dưới đây.

**7 ប្រទេសកម្ពុជា (Kmer (Cambodian)):**

ឯកសារនេះគឺមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាមៗ ប្រសិនបើអ្នកត្រូវបានបកប្រែ ឯកសារនេះសូមទំនាក់ទំនងអង្គភាពជាតិសម្រាប់ការប្រកួតប្រជែង MassDEP នៅលេខទូរស័ព្ទដែលបានរាយ ខាងក្រោម។

**8 Kriolu Kabuverdianu (Cape Verdean):**

Es documento é importante e deve ser traduzido imidiatamente. Se bo precisa des documento traduzido, por favor contacta Director de Diversidade na MassDEP's pa es numero indicode li d'boche.

**9 Русский язык (Russian):**

Этот документ является важным и должно быть переведено сразу. Если вам нужен этот документ переведенный, пожалуйста, свяжитесь с директором разнообразия MassDEP по адресу телефонных номеров, указанных ниже.

Communication For Non-English Speaking Parties - 310 CMR 1.03(5)(a)

Contact Michelle Waters-Ekanem, Diversity Director/Civil Rights: 617-292-5751 TTY#
MassRelay Service 1-800-439-2370.

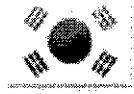
<http://www.mass.gov/eea/agencies/massdep/service/justice/>

(Version 3.30.15)



10 العربية (Arabic):

هذه الوثيقة الهامة وينبغي أن تترجم على الفور. إذا كنت بحاجة إلى هذه الوثيقة المترجمة، يرجى الاتصال مدير التنوع في MassDEP على أرقام الهواتف المدرجة أدناه.



11 한국어 (Korean):

이 문서는 중요하고 즉시 번역해야 합니다. 당신이 번역이 문서가 필요하다면 아래의 전화 번호로 MassDEP의 다양성 감독에 문의하시기 바랍니다.



12 հայերեն (Armenian):

Այս փաստաթուղթը շատ կարևոր է եւ պետք է թարգմանել անմիջապես. Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանվել դիմել MassDEP բազմազանությունը տնօրեն է հեռախոսահամարների թվարկված են ստորև.



13 فارسی (Farsi (Persian):

این سند مهم است و باید فوراً ترجمه شده است. اگر شما نیاز به این سند ترجمه شده، لطفاً با ما تماس تنوع مدیر MassDEP در شماره تلفن های ذکر شده در زیر.



14 Français (French):

Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, s'il vous plaît communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.



15 Deutsch (German):

Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Wenn Sie dieses Dokument übersetzt benötigen, wenden Sie sich bitte Diversity Director MassDEP die in den unten aufgeführten Telefonnummern.



16 Ελληνική (Greek):

Το έγγραφο αυτό είναι σημαντικό και θα πρέπει να μεταφραστούν αμέσως. Αν χρειάζεστε αυτό το έγγραφο μεταφράζεται, παρακαλούμε επικοινωνήστε Diversity Director MassDEP κατά τους αριθμούς τηλεφώνου που αναγράφεται πιο κάτω.



17 Italiano (Italian):

Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, si prega di contattare la diversità Direttore di MassDEP ai numeri di telefono elencati di seguito.



18 Język Polski (Polish):

Dokument ten jest ważny i powinien być natychmiast przetłumaczone. Jeśli potrzebujesz tego dokumentu tłumaczone, prosimy o kontakt z Dyrektorem MassDEP w różnorodności na numery telefonów wymienionych poniżej.



19 हिन्दी (Hindi):

यह दस्तावेज महत्वपूर्ण है और तुरंत अनुवाद किया जाना चाहिए. आप अनुवाद इस दस्तावेज़ की जरूरत है, नीचे सूचीबद्ध फोन नंबरों पर MassDEP की विविधता निदेशक से संपर्क करें.



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Findings of Fact in Support of Permit Amendment Buzzards Bay Water District Water Management Permit #9P-4-24-036.01

The Department of Environmental Protection (MassDEP) makes the following Findings of Fact in support of the attached amendment to Water Management Permit #9P-4-24-036.01, and includes herewith its reasons for issuing the permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11. This permit adds the District's newly constructed Pumping Station #5 as an authorized withdrawal point. It is issued in response to a water withdrawal permit application of June 30, 2015, by the Buzzards Bay Water District (the District) which included both Well #5 and a request for additional withdrawal volumes that will be needed in the District's renewed Water Management Permit in order to meet projected water demands through 2031.

For the reasons outlined below, all Water Management permits in the Buzzards Bay Basin, including the District's, have been extended and will be renewed as a whole beginning in 2019. MassDEP has retained the District's permit renewal application filed on May 29, 2015, and the new permit application for additional water withdrawals filed on June 30, 2015 to be reviewed during the permit renewal process. The District's permit renewal application and request for additional water will be reviewed in accordance with the revised WMA regulations, promulgated on November 7, 2014, which are outlined below. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), the attached permit will continue in force and effect until MassDEP issues a final decision on the District's renewal application.

The Water Management Act (M.G.L. c. 21G)

The Water Management Act requires the Department to issue permits on a 20-year permitting cycle in each of the 27 major watersheds in Massachusetts. Water Management permits must balance a variety of factors including without limitation:

- Impact of the withdrawal on other water sources;
- Water available within the safe yield of the water 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, flood plains; and
- Reasonable economic development and job creation.

The first 20-year permitting cycle in the Buzzards Bay Basin began in 1991 with all permits scheduled to expire on May 31, 2011.

The Permit Extension Act

In 2010, the expiration dates for all Water Management permits were extended for two years by Chapter 240 of the Acts of 2010. This permit extension was subsequently extended for an additional two years by Chapter 238 of the Acts of 2012. These Acts are collectively known as the Permit Extension Act (PEA).

In the Buzzards Bay Basin, the 2010 PEA's provisions extended the term of Water Management permits from May 31, 2011 to May 31, 2013, and the 2012 amendment further extended the term of all permits for an additional two years until May 31, 2015. Permit renewal applications were to be filed by May 31, 2015. The District filed a timely permit renewal application on May 29, 2015. Therefore, pursuant to M.G.L. c. 30A, section 13, and 310 CMR 36.18(7), the District's current permit will continue in force and effect until the MassDEP issues a decision on the renewal application.

Revisions to the Water Management Program Regulations at 310 CMR 36.00

Beginning in 2010, MassDEP participated in a stakeholder process known as the Sustainable Water Management Initiative (SWMI). SWMI was started by the Executive Office of Energy and Environmental Affairs (EEA) for the purpose of incorporating the best available science into the management of the Commonwealth's water resources. When the SWMI process was completed, MassDEP has adopted revised Water Management Program Regulations at 310 CMR 36.00, effective November 7, 2014, that incorporate important elements of the SWMI framework. The regulations can be found at:

<http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-36-00-the-water-management-act-regulations.html>. All renewal applications will be reviewed in accordance with the amended Water management Program regulations.

The regulations reflect a carefully developed balance to protect the health of our water bodies while meeting the needs of businesses and communities for water. The amended regulations also clarify WMA permitting requirements and processes. The amended WMA regulations incorporate:

- a new methodology for calculating "safe yield" of the 27 major river basins in Massachusetts;
- "streamflow criteria" and "coldwater fish resources" that will be used to identify environmental conditions within river subbasins;
- 2003-2005 "baseline" water withdrawals;
- "permit tiers" determined according to the size of each permittee's withdrawal relative to their baseline and potential impact on streamflow criteria and coldwater fish resources;
- "mitigation" to offset increasing withdrawals by improving streamflow or aquatic habitat; and
- "minimization" to protect streamflows in subbasins that are net groundwater depleted during August.

Since adopting the revised regulations, MassDEP has been working closely with each permittee as they proceed through the permit renewal process to fully consider all aspects of their individual situations and ensure thoughtful and implementable permits. This has required taking additional time in order to ensure that all permit renewal applicants fully understand the new regulations, and to give proper consideration to all permit renewal applications within each basin.

Accordingly, the Water Management Permit Renewal Schedule has been revised. MassDEP now anticipates beginning the permit renewal process in the Buzzards Bay Basin in 2019. The Water Management Permit

Renewal Schedule can be found at www.mass.gov/lists/water-management-act-permit-renewal-schedule-outreach.

Buzzard's Bay Water District's Water Management Withdrawal History

Registration #4-24-036.06: The District has registered withdrawals of 0.37 million gallons per day (MGD) from two sources, Pumping Stations #1 and #2 (4036001-01G and 02G).

Original Permit #9P-4-24-036.01, July 28, 1992: The District's original permit authorized increased withdrawals of up to 0.16 MGD through May 31, 2011, from Pumping Stations #3 and #4 (4036001-03G and 04G), for a total allocation of 0.53 MGD.

Amended Permit #9P-4-24-036.01, June 24, 2003: The amended permit was issued at the conclusion of a five-year review of the permit.

The permit included maximum daily withdrawal rates for Pumping Stations #3 (0.86 MGD) and #4 (0.58 MGD) based on the Zone II delineation for the two wells which was by MassDEP in January 1994.

Special Condition 4: Wetlands Monitoring, required monitoring of the wetlands adjacent to Pumping Stations #3 and #4. Monitoring was to continue through the 2003 season, after which MassDEP would review the data and determine whether to continue, revise, or discontinue the monitoring. The data was subsequently reviewed, and in a letter of June 15, 2004, MassDEP concurred that the data did not indicate a significant change in vegetation, and that groundwater elevation data did not indicate any abnormal patterns, and therefore, MassDEP discontinued the monitoring requirement.

Amended Permit #9P-4-24-036.01, January 3, 2008: The amended permit was issued at the conclusion of a five-year review of the permit. Modifications to the permit were to:

- formally remove Special Condition 4: Wetlands Monitoring, requiring monitoring of the wetlands adjacent to Pumping Stations #3 and #4;
- add Performance Standards for Residential Gallons Per Capita Day Water Use (RGPCD) of 80 gallons per day or less, and for Unaccounted-for-Water of 15% or less; and
- include expanded water conservation requirements based on the Water Resources Commission's 2006 Water Conservation Standards for the Commonwealth of Massachusetts.

The Water Management Act

Permit Factors

Section 7 of the Act requires that MassDEP issue permits that balance a variety of factors including:

- Reasonable protection of existing water uses, land values, investments and enterprises;
- 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, flood plains; and
- Reasonable economic development and job creation

Safe Yield Permit Factor

Among the minimum permit factors Section 7 of the WMA requires is a determination by MassDEP that permitted water withdrawals are within the safe yield of the water source from which they are made. Section 2 of the Act defines "safe yield" as: "the maximum dependable withdrawal that can be made continuously from a

water source including ground or surface water during a period of years in which the probable driest period or period of greatest water deficiency is likely to occur; provided however, that such dependability is relative and is a function of storage and drought probability". The calculation of safe yield is further described in Section 36.13 of the WMA regulations promulgated on November 7, 2014. The calculation takes into account all existing allocated registered and permitted volumes. This permit amendment includes a request for an additional withdrawal point to access the withdrawal volume already allocated through the District's existing permit. No additional water has been allocated in this permit; therefore there are no changes to the safe yield of the Buzzards Bay Basin.

For the purposes of the Water Management Program, MassDEP considers a water source to be the river basins delineated by the Water Resources Commission at 31 CMR 4.03. A map of the major river basins delineated by the Commission can be viewed in the Department of Conservation and Recreation guidance document "A Guide to the Interbasin Transfer Act and Regulations".

Findings of Fact for Permit Conditions

In issuing permits, MassDEP looks primarily at site-specific impacts and other issues specific to the system, such as impacts to nearby streams, wetlands, or other water users, justification of long-term demand projections and the capacity of permitted withdrawal points. The conditions are intended to ensure the efficient use of water and to mitigate the potential impact of withdrawals. As noted above the District's permit will undergo a 20-Year Permit Renewal that is expected to be completed in 2019. The renewal process will include a review and update of the Special Conditions of this permit.

The summary of permit conditions, as part of MassDEP's findings of fact, is not intended to, and should not be construed as, modifying any of the Permit conditions. In the event of any ambiguity between the summary and the actual permit conditions, the Permit language shall be controlling.

Special Condition 1, Maximum Authorized Annual Average Withdrawal Volume reflects the total authorized (registered plus permitted) annual average withdrawal volume. This condition is unchanged from the January 3, 2008 permit.

Special Condition 2, Maximum Authorized Daily Withdrawals from Groundwater Withdrawal Points, reflects the MassDEP-approved Zone II maximum daily pumping rate, expressed in million gallons per day (mgd), for each of the District's permitted wells based on prolonged pumping tests. The approved maximum daily rate of 1.18 mgd for Pumping Station #5 has been added to the permit.

Withdrawals in excess of these maximum daily rates require prior approval from the Department.

Special Condition 3, Zone II Delineations, requires DEP-approved Zone II delineations for all permitted PWS groundwater sources. The Zone II delineation for Pumping Station #5 was approved by MassDEP on September 10, 2015. Therefore, this permit requirement has been met and no further delineations are required as a condition of this permit at this time.

Special Condition 4, Wellhead Protection, requires PWS permittees to implement appropriate wellhead protection zoning and non-zoning controls in accordance with Wellhead Protection Regulations at 310 CMR 22.21(2). Pumping Station #5 is in an existing Zone II of other wells that are in compliance with the Wellhead Protection Regulations. The Zone II that extends into the Town of Plymouth is also fully protected, therefore no demonstration of Best Efforts is required. MassDEP informed the District that wellhead protection requirements were met by letter in February 2016.

Special Condition 5, Performance Standard for Residential Gallons Per Capita Day Water Use (RGPCD), is unchanged from the January 3, 2008 permit. The District's Performance Standard for Residential Gallons Per Capita Day (RGPCD) is 80 gallons. This Special Condition will be modified during the 20-year renewal process to reflect the new performance standard of 65 RGPCD for public water supply systems.

The District's RGPCD for the most recent three years has been:

2017	2016	2015
45	52	51

Special Condition 6, Performance Standard for Unaccounted for Water, is unchanged from the January 3, 2008 permit. The District's Performance Standard for Unaccounted for Water (UAW) is 15% of the raw water withdrawal. This Special Condition will be modified during the 20-year renewal process to reflect the new performance standard of 10% for 2 out of every 3 years for public water supply systems.

The District's UAW for the most recent three years has been:

2017	2016	2015
9%	8%	10%

Special Condition 7, Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts adopted by the MA Water Resources Commission in July 2006 (<http://www.mass.gov/eea/docs/eea/wrc/water-conservation-standards-rev-june-2012.pdf>). This condition is unchanged from the January 3, 2008 permit.

Special Condition 8, Requirement to Report Raw and Finished Water Volumes, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported. This condition is unchanged from the January 3, 2008 permit.



Department of Environmental Protection

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WATER WITHDRAWAL PERMIT
9P-4-24-036.01
Buzzards Bay Water District

This amendment of Permit 9P-4-24-036.01 is issued pursuant to the Massachusetts Water Management Act 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: 9P-4-24-036.01 **BASIN:** Buzzards Bay

PERMITTEE: Buzzards Bay Water District
15 Wallace Avenue
Buzzards Bay, MA 02532

EFFECTIVE DATE: July 28, 1992

AMENDMENT DATE: June 28, 2018

EXPIRATION DATE: May 11, 2011
The expiration date of this permit has been extended by 4 years beyond the original expiration date by Chapter 240 of the Acts of 2010, as amended by Chapter 238 of the Acts of 2012, collectively known as the Permit Extension Act, and further extended pursuant to M.G.L. c. 30A § 13, and 310 CMR 36.18(7) to allow sufficient time for permit renewal review.

NUMBER OF WITHDRAWAL POINTS: Groundwater: 3 Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

AUTHORIZED WITHDRAWAL POINTS:

Table 1: Authorized Withdrawal Points		
Source Name	PWS Source ID	Location
Well #3	4036001-03G	Bournedale Rd., Bourne, MA
Well #4	4036001-04G	Bournedale Rd., Bourne, MA
Well #5	4036001-05G	Bournedale Rd., Bourne, MA

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Buzzards Bay Water District (the District) to withdraw water from the Buzzards Bay Basin at the rate described in Table 2 below. The permitted withdrawal rate is in addition to the 0.37 million gallons per day (MGD) previously authorized for the District in WMA Registration #424036.06. The permitted volume is expressed both as an average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY) for each permit period.

MassDEP bases these withdrawal volumes on the raw water withdrawn from the authorized withdrawal points, and will use the raw water amount to assess compliance with the registered and permitted withdrawal volumes.

Table 2: Authorized Withdrawals				
Permit Periods	Total Raw Water Withdrawal Volumes			
	Permit		Registration + Permit	
	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
7/28/1992 to 5/31/1996	0	0	0.37 + 0 = 0.37	135.05
6/1/1996 – 5/31/2001	0.11	40.15	0.37 + 0.11 = 0.48	175.20
6/1/2001 – 5/31/2006	0.14	51.10	0.37 + 0.14 = 0.51	186.15
6/1/2006 – 5/31/2011*	0.16	58.40	0.37 + 0.16 = 0.53	193.45

* Permit will continue in force and effect pursuant to M.G.L. c. 30A § 13, and 310 CMR 36.18(7) until MassDEP issues a decision on the District's permit renewal application.

2. Maximum Authorized Daily Withdrawals from Groundwater Withdrawal Points

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed in Table 3 without specific advance written approval from MassDEP. The authorized maximum daily volume is the approved rate of each source. In no event shall the combined withdrawals from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 3: Maximum Daily Withdrawal Rates		
Well Name	PWS Source ID Code	Maximum Daily Rate (MGD)
Well #3	4036001-03G	0.86
Well #4	4036001-04G	0.58
Well #5	4036001-05G	1.18

3. Zone II Delineations

MassDEP records show that Wells #3, #4 and #5 have MassDEP-approved Zone II delineations. Therefore, no further Zone II work is required as a condition of this permit.

4. Wellhead Protection

MassDEP records indicate that The District has adopted land use controls and water supply protection measures meeting the requirements of the Wellhead Protection Regulations at 310 CMR 22.21(2) for all wells included in this permit. No further wellhead protection work is required as a condition of this permit.

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

The District's Performance Standard for Residential Gallons Per Capita Day (RGPCD) is 80 gallons. The District shall document compliance with this RGPCD water use Performance Standard annually in its Annual Statistical Report (ASR).

The District shall report its RGPCD and the calculation used to derive that figure as part of its ASR 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 the requirements if the Performance Standard for RGPCD is not met.

6. Performance Standard for Unaccounted-for-Water (UAW)

The District’s Performance Standard for Unaccounted for Water (UAW) is 15% of the raw water withdrawal. The District shall document compliance with this UAW Performance Standard annually in its ASR.

The District shall report its UAW and the calculation used to derive that figure as part of its ASR. UAW is defined as the difference between water pumped or purchased and water that is metered or use of which is confidently estimated. UAW shall include, without limitation, water that cannot be accounted for due to meter problems, unauthorized hydrant openings, unavoidable leakage, recoverable leakage, illegal connections, stand pipe overflows, and fire protection where it cannot be confidently estimated. The need for water main flushing and the use of water in construction or meter calibration shall be metered or estimated as appropriate to assist in determining actual demand. Volumes flushed to waste shall be reported on the District’s ASR. See Appendix B for additional information on requirements if the Performance Standard for UAW is not met.

7. Water Conservation Requirements

At a minimum, the District shall implement the following conservation measures forthwith. Compliance with the water conservation requirements shall be reported to MassDEP upon request or at the time of permit renewal unless otherwise noted below.

Table 4: Minimum Water Conservation Requirements	
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 MassDEP a report detailing the leak detection 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 <u>AWWA Manual 36</u> .
4.	Repair reports shall be kept available for inspection by MassDEP. The permittee shall establish a schedule for repairing leaks that is at least as stringent as the following: <ul style="list-style-type: none"> o Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection. o Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible. o 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 that leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway. <p>Leaks shall be repaired in accordance with the permit holder’s priority schedule including leaks up to the property line, curb stop or service meter, as applicable. The Town shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.</p>
Metering	
1.	Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2.	One hundred percent (100%) metering of the system is required. All water distribution system users shall have

Table 4: Minimum Water Conservation Requirements	
	properly sized service lines and meters that meet AWWA calibration and accuracy performance standards as set forth in <u>AWWA Manual M6 – Water Meters</u> .
3.	The permittee shall have an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by its customers. The metering program shall include regular meter maintenance, including testing, calibration, repair, replacement and checks for tampering to identify and correct illegal connections. The plan shall continue to include placement of sufficient funds in the annual budget to calibrate, repair, or replace meters as necessary.
Pricing	
1.	Establish a water pricing structure that includes the full cost of operating the water supply system. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices. Evaluate rates at a minimum every three to five years and adjust costs as needed.
2.	Decreasing block rates which charge lower prices as water use increases during the billing period, are prohibited by M.G.L. Chapter 40 Section 39L.
Residential and Public Sector Conservation	
1.	Meet all standards set forth in the Federal Energy Policy Act, 1992, and the Massachusetts Plumbing Code.
2.	Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
3.	Municipal Buildings: By June 1, 2008, submit to MassDEP a status report detailing which municipally owned public buildings in the permittee's service area have been retrofitted with water saving devices (faucet aerators, low flow shower heads and low flow toilets) and which of those buildings have yet to be retrofitted, along with a schedule to complete the retrofitting by January 1, 2012. On or before January 1, 2012, ensure that all municipally owned public buildings in the service area are retrofitted, or for Water Districts, demonstrate to MassDEP's satisfaction that a "Best Effort" was made by the District to get the Town to make those retrofits. Note: Municipally owned public buildings that may be scheduled for rehab or demolition after the January 1, 2012, deadline for completing the retrofits may, with MassDEP's approval, be exempted from this condition based on the schedule of work. The status report required above should identify those buildings and schedule for repairs/demolition.
Industrial and Commercial Water Conservation	
1.	Review the use records for its industrial, commercial and institutional water users and develop an inventory of the largest water users and develop and implement an outreach program designed to inform and (where appropriate) work with its largest industrial, commercial and institutional water users on ways to reduce their water use by the permit renewal date. Such outreach plans can include, but are not limited to: information on water audits, meter sizing, water reuse, low-flow plumbing fixtures, mandatory outdoor water use restrictions, suggestions for contacting trade associations for process specific information on water use reductions, and information on contacting the Executive Office of Environmental Affairs Office of Technical Assistance for Toxics Use Reduction (OTA) which offers a range of assistance and information to help facilities improve water use efficiency and reduce wastewater discharge. OTA can be contacted at (617) 626-1060 or at www.mass.gov/envir/ota .
2.	Upon request by MassDEP, the permittee shall report on industrial, commercial and institutional water conservation including the results of its review of water use records for industrial, commercial and institutional water users, the inventory of the largest water users, copies of any outreach materials distributed to industrial, commercial and institutional water users, and to the extent practical, a summary of water use reductions or savings that have resulted. Upon receipt of this report, MassDEP will take whatever action it deems appropriate to promote the interests of the Water Management Act, including without limitation requiring the permittee to take additional actions to reduce industrial, commercial and institutional water use.
a.	Develop and implement a water conservation and education plan designed to educate water customers on ways to

Table 4: Minimum Water Conservation Requirements

<p>conserve water. Without limitation, the plan may include the following actions:</p> <ul style="list-style-type: none">○ 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.
<p>b. Upon request of MassDEP, report on its public education and outreach efforts, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.</p>

8. Requirement to Report Raw and Finished Water Volumes

The District shall report annually on its ASR the raw water volumes and finished water volumes for the entire water system. Monthly raw water volumes for individual water withdrawal points shall be reported annually in the ASR.

GENERAL CONDITIONS (applicable to all permittees)

1. **Duty to Comply** The permittee shall comply at all times with the terms and conditions of this permit, the Act and all 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 up to the authorized volume 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 at reasonable times to enter and examine any property or inspect and copy any 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, s. 15-17, M.G.L. c. 111, s. 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 a transfer application 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 established by 310 CMR 36.33.
6. **Duty to Report** The permittee shall submit annually, on the electronic Annual Statistical Report (eASR) accessed through the Department's eDEP website, a statement of the withdrawal. Such report must be

submitted annually by the date identified on eDEP each year, unless the permittee has explicit permission from the MassDEP Drinking Water program for an extension of time.

7. **Duty to Maintain Records** The permittee shall be responsible for maintaining withdrawal records in sufficient detail to assess compliance with the conditions of this permit.
8. **Metering** All withdrawal points included within the permit shall be metered. Meters are to be calibrated annually.
9. **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.

APPEAL RIGHTS AND TIME LIMITS

This permit is a decision of MassDEP. Any person aggrieved by this decision and any person who has been allowed pursuant to 310 CMR 1.01(7) to intervene in the adjudicatory proceeding that resulted in this decision may request an adjudicatory hearing. Any such request must be made in writing, by certified mail or hand delivered, and received by MassDEP within twenty-one (21) days of the date of receipt of this permit. No request for an appeal of this permit shall be validly filed unless a copy of the request is sent by certified mail, or delivered by hand to the local water resources management official in the city or town in which the withdrawal point is located; and for any person appealing this decision, who is not the applicant, unless such person notifies the permit applicant of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to MassDEP.

CONTENTS OF HEARING REQUEST

The request for a hearing shall state specifically, clearly and concisely the facts which are the grounds for the appeal, the relief sought, and any additional information required by 310 CMR 1.01(6)(b) or other applicable law or regulation. For any person appealing this decision who is not the applicant, the request must include sufficient written facts to demonstrate status as a person aggrieved and documentation to demonstrate previous participation where required.

FILING FEE AND ADDRESS

The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

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

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

EXEMPTIONS

The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

WAIVER

MassDEP may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of MassDEP that the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request, an affidavit setting forth the facts which support the claim of undue hardship.

Appendix A – Residential Gallons Per Capita Day

I. Compliance Plan Requirement

If the District fails to document compliance with the RGPCD performance standard in its ASR, then the District 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 District's failure to meet the performance standard.

If an RGPCD Plan is required, the District 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 District's ASR for the calendar year in which the standard is met.

II. Contents of a Residential Gallons Per Capita Day Compliance Plan

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. Amended RGPCD Plans must include the information set forth in paragraph above.

At a minimum, all 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 District is already implementing one or more of these programs, it must include in its 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, RGPCD Plans for failure to meet the RGPCD performance standard may include the following actions in addition to those outlined in the paragraph above:

- a. the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation;

- b. a program that provides rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
- c. 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;
- d. the adoption and enforcement of an ordinance, bylaw or regulation to require that all new construction minimize lawn area and/or irrigated lawn area, maximize the use of drought resistant landscaping, and maximize the use of top soil with a high water retention rate;
- e. the implementation of a program to encourage the use of cisterns or rain barrels for outside watering; and
- f. the implementation of monthly or quarterly billing.

Appendix B – Unaccounted for Water

UAW is defined as the residual resulting from the total amount of water supplied to a distribution system as measured by master meters, minus the sum of all amounts of water measured by consumption meters in the distribution systems, and minus confidently estimated and documented amounts used for certain necessary purposes.

Examples of UAW include, but are not limited to: leakage, meter inaccuracies (unless they fall under the category of adjustment per results of source meter calibration described in the ASR), errors in estimation of stopped meters, unauthorized hydrant openings, illegal connections, data processing errors, and undocumented fire fighting uses.

Examples of uses that can be confidently estimated and documented in writing include storage tank overflow and drainage; water main flushing and flow testing; fire fighting; bleeding or blow-offs; sewer and stormwater system flushing; and cleaning and street cleaning. Generally, leakage is considered to be UAW, however, individual water main breaks can be discounted on a case-by-case basis. Any adjustment in the calculation of UAW made as a result of confidently estimated uses shall be documented as required in the ASR.

I. Compliance Plan Requirement

If the District fails to document compliance with the UAW performance standard in its ASR, then the District must file with that ASR an Unaccounted for Water Compliance Plan (UAW Plan) which shall:

- a. meet the requirements 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 a UAW Plan shall not constitute a return to compliance, nor shall it affect MassDEP's authority to take action in response to the District's failure to meet the performance standard.

If a UAW Plan is required, the District must:

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

II. Contents of an Unaccounted for Water Compliance Plan

The District has the choice to file a UAW Plan with measures tailored to the specific needs of its water supply system (Individualized UAW Plan) or a UAW Plan that includes Best Management Practices (BMP UAW Plan).

At a minimum, all UAW Plans must include a detailed:

- a. description of the actions taken during the prior calendar year to meet the applicable 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.

UAW Plans may be amended to revise the actions that will be taken to meet the performance standard. Amended UAW Plans must include the information set forth in the paragraph above.

Individualized UAW Compliance Plan

Without limitation, Individualized UAW Compliance Plans for failure to meet the UAW performance standard may include any of the actions set forth in the BMP UAW Compliance Plan below.

BMP UAW Compliance Plan

At a minimum, all BMP UAW Plans for failure to meet the UAW performance standard must include all of the following actions:

- a. within one year of filing the UAW Plan, complete a water audit and leak detection survey of the entire system and submit completed audit and survey to MassDEP;
- b. within one year of completing the audit and leak detection survey, conduct sufficient repairs to reduce by 75% (by water volume) all leaks detected in the survey; and
- c. within one year of completing such repairs, conduct additional repairs of leaks detected in the survey as may be necessary to reduce permittee's UAW to 10% or less;
- d. implementation of a program that ensures the inspection and evaluation of all water meters and, as appropriate, the repair, replacement and calibration of water meters in accordance with the following schedule:
 - Large Meters (2" or greater) - within one year of filing the BMP UAW Plan
 - Medium Meters (1" or greater and less than 2") - within two years of filing the BMP UAW Plan
 - Small Meters (less than 1") - within three years of filing the BMP UAW Plan
- e. implementation of monthly or quarterly billing within three years of filing the BMP UAW Plan; and
- f. within one year of filing the UAW Plan, implementation of a water pricing structure that achieves sufficient revenues to pay the full cost of operating the system including, without limitation, the costs of repairs under paragraph a., the costs of meter repairs, replacements and calibrations under paragraph b., the costs of employees and equipment, and ongoing maintenance and capital costs.