



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

September 16, 2016

Board of Selectmen  
Town Hall  
600 Chief Justice Cushing Way  
Scituate, MA 02066

**SCITUATE – BRP/WMA**  
Scituate Water Division  
PWS ID #4264000  
Water Management Act Permit #9P4421264.02

Dear Sirs,

Attached please find:

- Findings of Fact in support of the renewal of Permit #9P4421264.02, and
- WMA Permit #9P4421264.02 for the Scituate Water Division.

If you have any questions regarding this information, please contact Elizabeth McCann at (617) 292-5901 or via e-mail at [elizabeth.mccann@state.ma.us](mailto:elizabeth.mccann@state.ma.us).

Sincerely,

Rebecca Weidman  
Director, Division of Watershed Management  
Bureau of Resource Protection

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Ecc: Sean Anderson, Town of Scituate  
Kevin Cafferty, Town of Scituate  
Duane LeVangie, MassDEP  
Patti Kellogg, MassDEP SERO  
Michele Drury, DCR OWR  
Michelle Craddock, DFW  
Jen Pederson, MWWA

Cc: Samantha Woods, NSRWA, PO Box 43, Norwell, MA 02061  
Dorrie Stolley, WAA, 2173 Washington Str., Canton, MA 02021  
John Clarkeson, Scituate Water Resources Comm., 600 Chief Justice Cushing Hwy., Scituate MA 02066

**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 đã dạng tại các số điện thoại được liệt kê dưới đây.



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

ឯកសារនេះគឺមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាម។ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងភ្នាក់ងារនាយក MassDEP នៅលេខទូរស័ព្ទដែលបានរាយខាងក្រោម។



**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)**

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MassRelay Service 1-800-439-2370.

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(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.



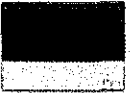
13 فارسی (Farsi (Persian):

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.



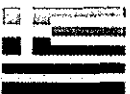
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15 Deutsch (German):

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.



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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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# Department of Environmental Protection

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## Findings of Fact in Support of Water Management Permit #9P4421264.02 Town of Scituate

The Department of Environmental Protection (the Department) makes the following Findings of Fact in support of the attached Water Management Permit #9P4421264.02, and includes herewith its reasons for issuing the Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11. The issuance of this permit is in response to a water withdrawal permit renewal application by the Town of Scituate Department of Public Works, Water Division, (Scituate) for the purpose of public water supply.

**The Department adopted revised Water Management Regulations at 310 CMR 36.00 on November 7, 2014, (described in greater detail below). Since that time, the Department has been working closely with each Water Management Act (WMA) permittee to fully consider all aspects of their individual situations and ensure thoughtful and implementable permits.**

The Department met with Scituate's representatives on three occasions regarding the conditions in this permit and, in particular, the streamflow augmentation and restoration of the herring run in the Old Oaken Bucket Pond system. Consequently, the permit continues to incorporate Scituate's ongoing First Herring Brook Interim Operational Plan. This plan is an example of forward-looking environmental stewardship undertaken in conjunction with providing reliable water supply for public health and safety and ensuring water supplies for future economic growth.

The Department has included Scituate's independently developed Scituate Water Resources Committee Conservation Plan, adopted in March 2016, as one aspect of Scituate's minimization plan (Condition 11) of this permit. Scituate has been proactive in promoting conservation practices that recognize water as a limited and precious resource needed for the community's health and safety and economic development, while also protecting the ecological health of local resources.

### **The Permit Extensions**

WMA permits issued during the first 20-year permitting cycle for the South Coastal Basin expired on August 31, 2010. All permittees seeking to renew their Water Management permit were required to file a renewal application on or before May 31, 2010. Scituate filed a timely renewal application and received a one-year Interim Permit, to August 31, 2011, to continue operations while the permit renewal review was ongoing. The Department published notice of the permit renewal application in the Environmental Monitor on June 23, 2010. One comment was received from North & South Rivers Watershed Association which is addressed in the Response to Comments section below.

Subsequently, the expiration dates for all Water Management permits were extended for four years 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. In addition, in a letter of September 25, 2015, the Department informed Scituate that the Department would need additional time before making a determination on the application in order to ensure that all permit renewal applicants in the South Coastal Basin fully understood the new Water Management Regulations (discussed below), and to give proper consideration to all permit renewal applications within the basin. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), Scituate's permit continues in force and effect until the Department issues a final decision on the permit renewal application.

The expiration date for all permits going forward in the South Coastal Basin will be August 31, 2030, in order to restore the staggered permitting schedule set forth in the regulations.

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

The Water Management Act (Act) requires the Department to issue permits that 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.

### **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 the 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 *Massachusetts Sustainable Water Management Initiative Framework Summary* (<http://www.mass.gov/eea/docs/eea/water/swmi-framework-nov-2012.pdf>) was released.

On November 7, 2014, 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 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 South Coastal Basin section of this document);
- Water needs forecasts for public water suppliers developed by the Department of Conservation and Recreation, Office of Water Resources (DCR), using a methodology reviewed and approved by the Massachusetts WRC;
- 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);

- Water conservation and performance standards reviewed and approved by the WRC in July 2006 and revised in June 2012 (<http://www.mass.gov/eea/docs/eea/wrc/water-conservation-standards-rev-june-2012.pdf>), including without limitation;
  - performance standard of 65 residential gallons per capita day or less;
  - performance standard of 10% or less unaccounted-for-water;
  - seasonal limits on nonessential outdoor water use;
  - 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;
  - protection for coldwater fish resources;
  - minimization of withdrawal impacts in areas stressed by groundwater use;
  - mitigation of the impacts of increasing withdrawals.

**Safe Yield in the South Coastal Basin**

This permit is being issued under the safe yield methodology adopted by the Department 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 South Coastal Basin is 70.1 million gallons per day (MGD), and total registered and permitted withdrawals are 47.4 MGD, leaving 22.70 MGD potentially available. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the South Coastal Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

**Findings of Fact for Permit Conditions in Scituate’s Water Management Act Permit**

The following Findings of Fact for the special conditions included in the permit generally describe the rationale and background for each special condition in the 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.

Water for the Humarock section of Scituate is currently purchased from the Town of Marshfield. Scituate might connect Humarock to the water distribution system in the future. Should Scituate decide to connect Humarock, Scituate is required to file BRP WS 32 Permit, Distribution Modifications for Systems That Serve More Than 3,300 People, and receive approval from the Department prior to connecting Humarock to the water supply distribution system.

**Special Condition 1, Maximum Authorized Annual Average Withdrawal** for this renewed permit cannot exceed Scituate’s 1.80 MGD baseline withdrawal rate without a permit amendment (BRPWM02) to incorporate a mitigation plan (see Special Condition 12).

Thereafter withdrawals cannot exceed the lesser of either:

- a) the maximum withdrawal volume authorized in the expiring permit, or
- b) the water needs forecasts developed for Scituate by DCR.

The table below compares the maximum withdrawal volumes authorized by Scituate’s expiring permit and the maximum water needs forecasts for Scituate. The maximum withdrawal volumes to be authorized in this permit are highlighted in bold print.

	Maximum Authorized in Scituate’s Expiring Permit	DCR 2030 Water Needs Projection + Five Percent Buffer
Without Humarock on the Supply System	<b>1.85 MGD</b>	1.78 MGD + 0.09 = 1.87 MGD
With Humarock on the Supply System	2.01 MGD	1.88 MGD + 0.09 = <b>1.97 MGD</b>

Special Condition 1 authorizes Scituate to withdraw water in five-year increments (permit periods) up to the maximum authorized, 1.85 MGD without supplying Humarock, or 1.97 if Humarock is connected to the system. If Scituate's water demand increases more quickly than anticipated in the DCR water needs forecasts, Scituate may withdraw volumes authorized for later permit periods provided that all other conditions of this permit are met.

If water needs are expected to exceed the maximum authorized in this permit, Scituate may apply for additional volume at any time by submitting a new Water Management Permit application BRPWM03.

Please note that the Department has recalculated Scituate's net raw water withdrawals for water supply distribution that were reported on Scituate's Annual Statistical Reports. The recalculation was done because Scituate currently withdraws water from Well #17A and pumps it directly into Old Oaken Bucket Pond to maintain water levels in the pond and to provide dilution for elevated manganese levels in the well. In order to avoid double counting water withdrawn from Well #17A, the Department recalculated the net raw water withdrawals by totaling water withdrawals from all permitted sources as reported on Scituate's Annual Statistical Reports, and subtracting withdrawals from Well #17A. The recalculation shows that net raw water withdrawals for water supply distribution were 1.54 MGD for 2014 and 1.43 MGD for 2013. Raw water withdrawals for 2015 were 1.46 MGD and were reported without double counting Well #17A.

**Special Condition 2, Maximum Daily Withdrawals from Groundwater Withdrawal Points**, reflects the MassDEP-approved Zone II maximum daily pumping rate for each of Scituate's permitted wells based on prolonged pumping tests. Withdrawals in excess of these maximum daily rates require approval from the Department.

**Special Condition 3, Maximum Withdrawals from Old Oaken Bucket Pond**, reflects the Mass-DEP approved maximum withdrawal rates from Scituate's reservoir system.

- The maximum daily withdrawal rate reflects the capacity of the intake structure at Old Oaken Bucket Pond.
- The annual daily average withdrawal rate and total annual withdrawal volume for Old Oaken Bucket Pond are based on the Old Oaken Bucket Pond Firm Yield, dated June 2003, and approved by the Department on May 13, 2004, which determined the firm yield to be 0.79 MGD under the drought of record (1960's drought) for Massachusetts with no downstream releases.
- MassDEP notes that the USGS Refinement and Evaluation of the Massachusetts Firm-Yield Estimator Model Version 2.0 (SIR 2011-5125) shows significant reductions in firm yield for Scituate's Main Reservoir in scenarios that include downstream releases similar to the release included in the First Herring Brook Interim Operational Plan, Version 2. Scituate's Water Conservation Plan and Drought Management Plan include shut-off of downstream releases when the reservoir reaches specified levels that are expected to provide sufficient protection for water supply purposes with a Firm Yield of 0.79 MGD.

**Special Condition 4, Zone II Delineation** requirements have been met and no further delineations are required as a condition of this permit.

**Special Condition 5, Wellhead and Surface Water Protection** requirements have been met and are up to date as of the issuance of this permit.

**Special Condition 6, Development of Minimum Streamflow Targets for Fish Passage at First Herring Brook** updates this condition to require Scituate's continuing work to refine and implement the First Herring Brook Interim Operational Plan.

**Special Condition 7, Performance Standard for Residential Gallons Per Capita Day Water** has changed from 80 RGPCD required in Scituate's permit of June 12, 2007. The RGPCD required for all PWS permittees is now 65 gallons. Permittees that cannot comply within the timeframe in the permit must meet Functional Equivalence requirements outlined in Attachment A. Scituate's 2015 RGPCD was 58 as reported in the 2015 ASR.

**Special Condition 8, Performance Standard for Unaccounted for Water** has changed from 15% UAW required annually in Scituate's permit of June 12, 2007. The UAW required for all PWS permittees is now 10% for 2 out of every 3 years. MassDEP has found that most PWS's year-to-year reported UAW varies by several percentage points. MassDEP's review of UAW values reported over the last ten years has shown that a rolling three-year average is a better indicator of a PWS's long-term compliance with the standard, and assessing compliance based on the rolling three-year average avoids most instances of a PWS falling out of compliance because of an anomalous year. Permittees that cannot comply within the timeframe in the permit must meet Functional Equivalence requirements based on the AWWA/IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices M36, as outlined in Attachment B. Scituate's UAW for the most recent three years has been:

2015	2014	2013
19%	17%	14%

**Special Condition 9, Seasonal Limits on Nonessential Outdoor Water Use** for Scituate is based upon the Town's independently developed nonessential outdoor water use restrictions. Scituate analyzed water use data and determined that the top 5% of water users increased their water usage an average of 25% during the summer months, accounting for over 300,000 additional gallons per day. Based on that analysis, the use of inground irrigation systems was restricted to one day per week between Memorial Day and Labor Day. In 2015 Scituate expanded the timeframe for its outdoor water use restrictions to May 1<sup>st</sup> through September 30<sup>th</sup> and adopted the authority to implement a total ban on nonessential outdoor water use when Scituate's Reservoir falls to a level of 36 feet (49% full). Since implementation of the nonessential water use restrictions, summer water use has fallen by approximately 30%.

The Department has determined that Scituate's limits are at least as restrictive as the Department's standard seasonal limits on nonessential outdoor water use. Scituate's limits are also uniquely suited to the water supply system which includes both surface and groundwater supplies, and are an integral part of Scituate's First Herring Brook Interim Operational Plan, which is incorporated into this permit in **Special Condition 6, Development of Minimum Streamflow Targets for Fish Passage at First Herring Brook**.

**Special Condition 10, Water Conservation Requirements**, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the WRC in July 2006 and revised in June 2012. (<http://www.mass.gov/eea/docs/eea/wrc/water-conservation-standards-rev-june-2012.pdf>). The Department recognizes that the Town of Scituate is currently implementing a conservation program that incorporates these requirements as documented in the Scituate Water Resources Committee Conservation Plan, adopted in March, 2016.

**Special Condition 11, Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins**, requires permittees with permitted groundwater sources in subbasins<sup>1</sup> with net groundwater depletion of 25% or more during August to minimize their withdrawal impacts on those subbasins to the greatest extent feasible through

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<sup>1</sup> 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).



optimization of groundwater sources, surface water releases to improve streamflows, outdoor water use restrictions and conservation programs that go beyond standard Water Management permit requirements.

The Department reviewed Scituate's performance relative to these requirements based on Department records and information submitted by Scituate and finds that minimization requirements will be met as follows:

- Scituate's groundwater sources 4264000-01G, 02G, 03G, 05G and 11G are located in Subbasin 22132, which is 94.3% August net groundwater depleted. Scituate has one groundwater source, Well #18B (4264000-12G), in Subbasin 22091 which is near the coast where August net groundwater depletion cannot be readily determined. Department review of Scituate's pumping records show that Scituate has consistently pumped Well #18B at between 70% and 80% of its Department-approved maximum daily capacity throughout the past 5 years. This permit does not require that Scituate shift additional pumping to Well #18B because prolonged pumping at a higher rate could risk degradation of the source.
- Scituate is required to work with the Scituate Water Study Committee and First Herring Brook Watershed Initiative to refine and implement the First Herring Brook Interim Operational Plan in **Special Condition 6**.
- Scituate is required to continue implementation of nonessential outdoor water use restrictions in **Special Condition 8** that go beyond MassDEP's standard permit requirement.
- Scituate has developed a progressive water conservation program as outlined in the Scituate Water Resources Committee Conservation Plan, adopted in March 2016. Continued implementation of the plan, and of specific elements of the plan that go beyond the standard permit requirements is required in **Special Condition 11**.

**Special Condition 12, Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals** requires mitigation of the impacts of withdrawals above the permittee's 2003-2005 baseline withdrawal rate. Mitigating the impacts of increasing withdrawals can be through direct mitigation including surface water releases, stormwater recharge, and projects to remove infiltration/inflow removal from the wastewater collection system. If additional mitigation is required after direct mitigation measures have been put in place, indirect mitigation activities that will result in streamflow and habitat improvements may be required.

Scituate's baseline withdrawal rate is 1.80 MGD, based on Scituate's 2005 withdrawals plus 5%. **Prior to making average annual withdrawals greater than the 1.80 MGD baseline, Scituate is required to develop a mitigation plan for review and approval by MassDEP, incorporate the approved mitigation plan into this permit through a permit amendment (BRPWM02), and implement required mitigation activities.** MassDEP's Water Management Act Permit Guidance Document provides additional information on mitigation planning. In addition, Water Management Program staff is available for consultation as a mitigation plan is prepared.

The summary below outlines Scituate's mitigation requirement. The summary assumes that Scituate's future withdrawals will be discharged to on-site septic systems at the same rate (60%) as current water withdrawals.

<b>Scituate's Mitigation without Supplying Humarock = 0.0245 MGD or 24,500 gpd</b>
<b>Permitted amount above Baseline = 0.05 MGD</b>
<ul style="list-style-type: none"> <li>• Permitted amount above Baseline: <math>1.85 - 1.80 = 0.05</math> MGD</li> </ul>
<b>Adjustment for Wastewater Discharge to Local Groundwater = 0.0255 MGD</b>
<ul style="list-style-type: none"> <li>• 60% of increased withdrawals are delivered to areas with on-site septic systems: <math>0.05 \text{ MGD} \times 0.6 (60\%) = 0.03</math> MGD</li> <li>• 85% of water delivered to areas with on-site septic systems returns to groundwater: <math>0.03 \text{ MGD} \times 0.85 (85\%) = 0.0255</math> MGD</li> </ul>
<b>Amount to be Mitigated after Adjustment for Wastewater Discharge to Local Groundwater = 0.0245 MGD</b>

<ul style="list-style-type: none"><li>Permitted amount above baseline (0.05 MGD) – adjustment for wastewater discharge to local groundwater (0.0255 MGD) = 0.0245 MGD</li></ul>
<b>Scituate’s Mitigation if Humarock is Added to the Distribution System = 0.0833 MGD or 83,300 gpd</b>
<b>Permitted amount above Baseline = 0.17 MGD</b> <ul style="list-style-type: none"><li>Permitted amount above Baseline: 1.97 – 1.80 = 0.17 MGD</li></ul>
<b>Adjustment for Wastewater Discharge to Local Groundwater = 0.0867 MGD</b> <ul style="list-style-type: none"><li>60% of increased withdrawals are delivered to areas with on-site septic systems: 0.17 MGD x 0.6 (60%) = 0.102 MGD</li><li>85% of water delivered to areas with on-site septic systems returns to groundwater: 0.102 MGD x 0.85 (85%) = 0.0867MGD</li></ul>
<b>Amount to be Mitigated after Adjustment for Wastewater Discharge to Local Groundwater = 0.0833</b> <ul style="list-style-type: none"><li>Permitted amount above baseline (0.17 MGD) – adjustment for wastewater discharge to local groundwater (0.0867 MGD) = 0.0833 MGD</li></ul>

**Special Condition 13, Reporting Requirements**, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

**Coldwater Fish Resource Protection** was incorporated into the Water Management Regulations in November 2014. Coldwater Fish Resource Protection is not a condition of this permit because Scituate’s withdrawals do not impact any waters that MA Division of Fisheries and Wildlife has identified as supporting coldwater fish.

**Response to Comments**

One comment on Scituate’s permit renewal application was received from the North & South Rivers Watershed Association, dated February 13, 2010, urging the Department to review the work of the team of stakeholders working on the First Herring Brook Watershed Initiative and incorporate that work into the renewed permit. The Department has reviewed all studies cited in the letter, and has reviewed the subsequent work of the Initiative. The First Herring Brook Interim Operation Plan continues to be incorporated into this renewed permit in **Special Condition 6, Development of Minimum Streamflow Targets for Fish Passage at First Herring Brook**, and related seasonal limits on nonessential outdoor water use are incorporated into **Special Condition 9, Seasonal Limits on Nonessential Outdoor Water Use**.

Two comments on Scituate’s June 1, 2016, draft permit were received from the North & South Rivers Watershed Association (July 8, 2016) and the Massachusetts Rivers Alliance (July 8, 2016). Comments that related directly to this permit are outlined below.

**Comments on Target Releases at First Herring Brook and Mitigation Requirements in the Draft Permit**

The draft permit released for public comment on June 8, 2016, included a requirement that Scituate mitigate the impacts of its withdrawals above its 1.80 MGD baseline withdrawal rate (based on 2003-2005 withdrawal rates) by:

- Continuing to participate in the work of First Herring Brook Watershed Initiative to explore the development of minimum flow targets for fish passage at Old Oaken Bucket Pond and Tack Factory Pond;
- Implementing the First Herring Brook Operation Plan, prepared in conjunction with the North & South Rivers Watershed Association and the MA Division of Ecological Restoration, to improve streamflow and fisheries habitat; and
- Submitting a detailed annual report of actions taken during the previous year.

Comments received on the draft permit’s mitigation requirements included:

- Scituate may have trouble meeting release requirements at current withdrawals rates, and may be unable to meet the permit target releases as withdrawals increase over the life of the permit.
- If Scituate cannot make the target releases due to low water levels in the reservoir, then mitigation credit should be reduced.
- The target releases to First Herring Brook exceed the gallon amount that Scituate is required to mitigate. Scituate should not be able to “bank” extra mitigation credit.
- Mitigation activities, such as stormwater remediation projects, that return water upgradient of Scituate’s water sources could be more environmentally beneficial than surface water releases to First Herring Brook downstream of Scituate’s wells and reservoir.
- Additional mitigation activities should be required in the permit because the subbasin is 94.3% August net groundwater depleted.

Upon consideration of the issues raised by the commenters, and in light of the 2016 drought when releases at Old Oaken Bucket Pond were curtailed on August 1<sup>st</sup> due to low reservoir levels, MassDEP has reassessed the feasibility of including stream flow releases from Old Oaken Bucket Pond as Scituate’s mitigation plan.

- The permit now requires that Scituate, prior to making average annual withdrawals greater than the 1.80 MGD baseline, develop a mitigation plan for review and approval by MassDEP, incorporate the approved mitigation plan into this permit through a permit amendment (BRPWM02), and implement required mitigation activities.
- Development of water release targets for fish passage at First Herring Brook, which was included in the expiring permit, is now included as Special Condition 6 in the permit. The permit continues to require that Scituate work to refine and implement the First Herring Brook Interim Operational Plan, but does not require specific downstream releases.
- More detailed requirements for reporting refinements to the flow targets, plan implementation, and measured flows vs. target flows at First Herring Brook have been incorporated into Special Condition 6.
- August net groundwater depletion is addressed through minimization requirements in Water Management permitting (310 CMR 36.22(5)).

#### **Comments on Minimization Requirements in the Draft Permit**

Comments received on the draft permit’s mitigation requirements included (with MassDEP’s response immediately below):

- Scituate did not submit a plan to minimize impacts to the greatest extent feasible per 310 CMR 36.22(5) (a)-(d) with the renewal application.
  - MassDEP’s Water Management Act Permit Guidance (November 7, 2014) outlines 4 required elements of a Minimization Plan. MassDEP reviewed Scituate’s performance relative to those requirements based on information submitted by the Town.
- Scituate’s nonessential outdoor water use limits are not more protective than MassDEP standard.
  - Suppliers with surface water supplies may submit a plan that ties outdoor watering restrictions to reservoir elevation and environmental considerations, which Scituate’s does.
  - MassDEP allows permittees to present locally adopted outdoor water use restrictions that are at least as restrictive as the standard restrictions outlined in the Water Management Act Permit Guidance. After review of Scituate’s outdoor water use restrictions and the water use reductions seen when the restrictions were implemented, MassDEP determined that, in Scituate’s case, locally adopted outdoor water use restrictions were more effective.
- Scituate’s permit should require specific conservation measures rather than reference the Scituate *Board of Water Commissioners and Water Committee Draft Water Conservation Plan, March 2014* (updated March 2016).

- The Minimization requirement in the permit (Special Condition 11) has been revised to incorporate Scituate's final Water Resources Committee Conservation Plan, adopted in March, 2016, and specifies certain water conservation measures in the Scituate plan that go beyond the standard conservation measures required in all public water supply permits.
- It is unclear whether Scituate is meeting the standard conservation requirement to retrofit municipally owned public buildings with water saving devices.
  - Retrofitting public buildings is expensive with relatively little return in water savings for the investment. MassDEP allows communities with public buildings slated for renovation to defer retrofitting. Scituate's plans for a new Middle School, new Public Safety Complex and renovated Library will meet the conservation requirements in the permit.
- It appears that Scituate is not meeting the standard conservation requirement to review the water use records of industrial, commercial and institutional water users, inventory the largest water users and develop an outreach program to reduce water use.
  - Scituate's water conservation plan notes the industrial and commercial sector uses only 6.9% of municipal water annually and so this has not been a focus of the Town's conservation program.
  - Each community's circumstances are different and, in Scituate's case, MassDEP concurs that using limited resources to concentrate on seasonal water use and capital investments in infrastructure to address high UAW will better meet the requirements of the permit.
  - The Industrial and Commercial Water Conservation in Special Condition 9 has been updated to better reflect Scituate's circumstances.

#### **Comment on the Draft Finding of Fact**

- The Findings of Fact in the permit should identify Scituate's Permit Tier, and the Biological Category and Groundwater Category of each subbasin where Scituate's supply sources are located, and should identify the location of Coldwater Fish Resources.
    - MassDEP notes that WMA permits are very long. The Findings of Fact for each permit are drafted to include information that explains the requirements of the permit and will help the permittee understand what is required and how to meet those requirements. Including background information on GWC and BC in the permit will lengthen the permit document without adding to the Town's understanding of the permit requirements.
    - MassDEP, as part of its review of the permit renewal application, examined the impact of Scituate's proposed withdrawals and found no change to the Biological Category or Groundwater Category in any subbasin. There are no Coldwater Fish Resources that could be impacted by Scituate's withdrawals.
-



# 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

## WATER WITHDRAWAL PERMIT RENEWAL

#9P4421264.02

Town of Scituate

This renewal of Permit #9P4421264.02 is approved 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.

**PERMIT NUMBER:** 9P4421264.02 **RIVER BASIN:** South Coastal

**PERMITTEE:** Town of Scituate  
Board of Selectmen  
Town Hall, 600 Chief Justice Cushing Way  
Scituate, MA 02066

**EFFECTIVE DATE:** September 16, 2016

**EXPIRATION DATE:** August 31, 2030

**TYPE AND NUMBER OF WITHDRAWAL POINTS:** Groundwater: 6 Surface Water: 1

**USE:** Public Water Supply

**DAYS OF OPERATION:** 365

### AUTHORIZED WITHDRAWAL POINTS:

Source	Source Code
Old Oaken Bucket Pond	4264000-01S
Well #10, Websters Meadow	4264000-01G
Well #11, Websters Meadow	4264000-02G
Well #17A, Stearns Meadow	4264000-03G
Well #19, Edison Station	4264000-05G
Well #22, Barnes Meadow	4264000-11G
Well #18B, Boston Sand	4264000-12G

**SPECIAL CONDITIONS – PERMIT #9P4421264.02**

**1. Maximum Authorized Annual Average Withdrawal**

This permit authorizes the Town of Scituate to withdraw water from the South Coastal Basin at the rate described in Tables 2A and 2B below. The volume reflected by this rate is in addition to the 1.49 MGD previously authorized to Scituate under WMA Registration #421264.01. 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 five-year period of the permit term.

**Prior to making average annual withdrawals greater than the 1.80 MGD baseline, Scituate is required to develop a mitigation plan for review and approval by MassDEP, incorporate the approved mitigation plan into this permit through a permit amendment (BRPWM02), and implement required mitigation activities (see Special Condition 12).**

<b>Table 2A: Authorized Withdrawals - Without Humarock</b>				
<b>Permit Periods</b>	<b>Total Raw Water Withdrawal Volumes</b>			
	<b>Permit</b>		<b>Registration + Permit</b>	
	<b>Daily Average (MGD)</b>	<b>Total Annual (MGY)</b>	<b>Daily Average (MGD)</b>	<b>Total Annual (MGY)</b>
9/16 /2016 to 8/31/2020	0.26	94.90	1.49 + 0.26 = 1.75	638.75
9/1/2020 to 8/31/2025	0.28	102.20	1.49 + 0.28 = 1.77	646.05
9/1/2025 to 8/31/2030	0.27 + 0.04 buffer = 0.31	113.15	1.49 + 0.31 = 1.80	657.00
Prior to making withdrawals greater than Scituate's baseline of 1.80 MGD, a mitigation plan must be incorporated into this permit through a permit amendment (BRPWM02), and required mitigation activities must be implemented.				
9/1/2025 to 8/31/2030	0.27 + 0.09 buffer = 0.36	131.4	1.49 + 0.36 = 1.85	675.25

Should Scituate connect the Humarock area of town to the water system, the following withdrawal volume is authorized by this permit. Until such time as Humarock is connected to the water system, Scituate is limited to the withdrawal volumes listed in Table 2A above.

<b>Table 2B: Authorized Withdrawals - With Humarock</b>				
Scituate will be required to file an application for a BRP WS 32 Permit, Distribution Modifications for Systems that serve more than 3,300 people, and receive approval from the Department prior to connecting Humarock to the current distribution system.				
<b>Permit Periods</b>	<b>Total Raw Water Withdrawal Volumes</b>			
	<b>Permit</b>		<b>Registration + Permit</b>	
	<b>Daily Average (MGD)</b>	<b>Total Annual (MGY)</b>	<b>Daily Average (MGD)</b>	<b>Total Annual (MGY)</b>
9/16/2016 to 8/31/2020	0.31	113.15	1.49 + 0.31 = 1.80	657.00
Prior to making withdrawals greater than Scituate's baseline of 1.80 MGD, a mitigation plan must be incorporated into this permit through a permit amendment (BRPWM02), and required mitigation activities must be implemented.				
9/16/2016 to 8/31/2020	0.36	131.40	1.49 + 0.36 = 1.85	675.25
9/1/2020 to 8/31/2025	0.38	138.70	1.49 + 0.38 = 1.87	682.55
9/1/2025 to 8/31/2030	0.39 + 0.09 buffer = 0.48	175.20	1.49 + 0.48 = 1.97	719.05

Should Scituate's water demand increase more quickly than anticipated by the withdrawal rates authorized in the Permit Periods in Tables 2A and 2B above, Scituate may withdraw volumes authorized for later Permit Periods, up to Scituate's baseline of 1.80 MGD, provided that all other conditions of this permit are met.

**2. Maximum Daily Withdrawals from Groundwater Withdrawal Points**

Withdrawals from permitted groundwater sources are not to exceed the approved maximum daily rates listed in Table 3 below without advance approval from the Department.

<b>Table 3: Maximum Daily Withdrawal Rates from the Authorized Groundwater Withdrawal Points</b>	
<b>Source</b>	<b>Maximum Daily Rate</b>
Well #10, Websters Meadow, 4264000-01G	0.20 MGD (138 gpm)
Well #11, Websters Meadow, 4264000-02G	0.12 MGD (81 gpm)
Well #17A, Stearns Meadow, 4264000-03G	0.39 MGD (270 gpm)
Well #19, Edison Station, 4264000-05G	0.41 MGD (288 gpm)
Well #22, Barnes Meadow, 4264000-11G	0.50 MGD (350 gpm)
Well #18B, Boston Sand, 4264000-12G	0.22 MGD (153 gpm)

**3. Maximum Withdrawals from Old Oaken Bucket Pond**

Withdrawals are not to exceed the approved maximum withdrawals listed in Table 4 below without advance approval from the Department.

<b>Table 4: Maximum Withdrawals from Old Oaken Bucket Pond</b>		
<b>Maximum Daily Withdrawal</b>	<b>Maximum Annual Average Daily Withdrawal</b>	<b>Maximum Annual Withdrawal</b>
3.0 MGD	0.79 MGD	288.35 million gallons

**4. Zone II Delineation**

Department records show that all of the Town of Scituate's sources have approved Zone II delineations, therefore, no further Zone II work is required.

**5. Wellhead and Surface Water Protection**

Department records show that Scituate has implemented municipal controls that comply with Wellhead Protection Regulations at 310 CMR 22.21(2), has an approved Surface Water Supply Protection Plan that complies with Surface Water Supply Protection Regulations at 310 CMR 22.20B, and, in August 2014, passed an updated Surface Water Supply Protection bylaw which is in compliance with 310 CMR 22.20C.

**6. Development of Minimum Streamflow Targets for Fish Passage at First Herring Brook**

Scituate shall continue to participate in the work of the Scituate Water Study Committee and First Herring Brook Watershed Initiative to refine and implement the minimum flow targets in First Herring Brook Interim Operational Plan, Version 2, and as amended during the term of this permit.

Each year Scituate shall submit with its Annual Statistical Report (ASR) a detailed report of actions taken during the previous year. The report shall contain, at a minimum, a detailed description of any refinements made to the minimum flow targets, a description of any infrastructure improvements made to facilitate plan implementation and graphic representations of measured average daily flows and measured median monthly flows compared to target flows at the Reservoir (Eisenhower Lane) and Old Oaken Bucket Pond (Country Way).

**7. Performance Standard for Residential Gallons Per Capita Day Water Use**

Scituate's performance standard for residential gallons per capita day (RGPCD) is 65 gallons or less. Scituate shall be in compliance with this performance standard by December 31, 2018, or, if Scituate does not meet the standard, shall be in compliance with the functional equivalence requirements (Appendix A).

**8. Performance Standard for Unaccounted for Water**

Scituate's Performance Standard for Unaccounted for Water (UAW) is 10% or less of overall water withdrawal for 2 of the most recent years 3 throughout the permit period. Scituate shall be in compliance with this performance standard by December 31, 2019 or, if Scituate does not meet the standard, shall be in compliance with the functional equivalence requirements (Appendix B).

Nothing in the permit shall prevent a permittee who meets the 10% performance standard from demonstrating compliance with the UAW performance standard by developing and implementing a water loss control program following the *AWWA M36 Water Audits and Loss Control Programs*.

Permittees meeting the Performance Standard for Unaccounted for Water through implementation of a water loss control program based on AWWA M36 annual water audits and guidance shall continue to report UAW annually as required in the Annual Statistical Report for public water suppliers.

**9. Seasonal Limits on Nonessential Outdoor Water Use**

Between May 1<sup>st</sup> and September 30<sup>th</sup> all nonessential outdoor water use must occur before 9 am and after 5 pm. Between May 1<sup>st</sup> and September 30<sup>th</sup>, **automatic irrigation systems** may be used **one day per week**, before 9 am and after 5 pm. When Scituate's Reservoir falls to or below a level of 36 feet (49% full), Scituate shall implement a total ban on all nonessential outdoor water use.

Scituate shall continue to implement and enforce its limits on nonessential outdoor water use through Section 30660 of the Town of Scituate General Bylaws.

**Restricted Nonessential Outdoor Water Uses**

**Nonessential outdoor water uses that are subject to mandatory restrictions** include:

- irrigation of lawns via automatic irrigation systems;
- filling swimming pools;
- washing vehicles, except in a commercial car wash or as necessary for operator safety; and
- washing exterior building surfaces, parking lots, driveways or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, stucco, pavement or cement.

**The following uses may be allowed** when mandatory restrictions are in place:

- irrigation to establish a new lawn and new plantings during the months of May and September;
- irrigation of public parks and recreational fields before 9 am and after 5 pm;
- irrigation of gardens, flowers and ornamental plants by means of a hand-held hose or drip irrigation system; and
- irrigation of lawns by means of a hand-held hose.

**Water uses NOT subject to mandatory restrictions** are those required:

- for health or safety reasons;
- by regulation;
- for the production of food and fiber;
- for the maintenance of livestock; or
- to meet the core functions of a business (for example, irrigation by golf courses as necessary to maintain tees, greens, and minimal fairway watering, or irrigation by plant nurseries as necessary to maintain stock).

**Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions**

Scituate shall notify its customers of the restrictions, including a detailed description of the restrictions and penalties for violating the restrictions, by April 15<sup>th</sup> each year.



Notice that restrictions have been put in place shall be filed each year with the Department 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.

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

**10. Water Conservation Requirements**

At a minimum, Scituate shall implement the following conservation measures forthwith and shall be in compliance with these measures on or before September 1, 2018. Compliance with the water conservation requirements shall be reported to the Department upon request, unless otherwise noted below.

<b>Table 5: Minimum Water Conservation Requirements</b>	
<b>Leak Detection</b>	
1.	At a minimum, conduct a full leak detection survey every three years. See also Special Condition 7.
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 <u>AWWA Manual 36</u> .
4.	<p>Scituate shall have repair reports available for inspection by the Department. Scituate shall establish a schedule for repairing leaks that is at least as stringent as the following:</p> <ul style="list-style-type: none"> <li>○ Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection.</li> <li>○ Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible.</li> <li>○ 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.</li> </ul> <p>Leaks shall be repaired in accordance with Scituate's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. Scituate shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.</p>
<b>Metering</b>	
1.	Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2.	Scituate reports its system is 100% metered. All water distribution system users shall have 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.	Scituate 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.
<b>Pricing</b>	
1.	Scituate shall maintain a water pricing structure that includes the full cost of operating the water supply system. Scituate shall evaluate rates at a minimum every three to five years and adjust costs as needed. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts,

<b>Table 5: Minimum Water Conservation Requirements</b>	
watershed protection) - into prices.	
2. Scituate shall not use decreasing block rates. Decreasing block rates which charge lower prices as water use increases during the billing period, are not allowed by M.G.L. Chapter 40 Section 39L.	
<b>Residential and Public Sector Conservation</b>	
1. Scituate shall meet the 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. Scituate shall continue to ensure that water savings devices are installed in all municipal buildings as they are renovated, and shall ensure water conserving fixtures and landscaping practices are incorporating into the design of new municipal capital projects.	
<b>Industrial and Commercial Water Conservation</b>	
1. Scituate shall ensure water conservation practices in all development proposals, particularly low flow devices and water-wise landscaping practices.	
<b>Public Education and Outreach</b>	
1. Scituate shall continue to implement its water conservation and education efforts designed to educate the Town's water customers on ways to conserve water. Without limitation, Scituate's plan may include the following actions: <ul style="list-style-type: none"> <li>○ 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;</li> <li>○ Public space advertising/media stories on successes (and failures);</li> <li>○ Conservation information centers perhaps run jointly with electric or gas company;</li> <li>○ Speakers for community organizations;</li> <li>○ Public service announcements; radio/T.V./audio-visual presentations;</li> <li>○ Joint advertising with hardware stores to promote conservation devices;</li> <li>○ Use of civic and professional organization resources;</li> <li>○ Special events such as Conservation Fairs;</li> <li>○ Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and</li> <li>○ Provide multilingual materials as needed.</li> </ul>	
2. Upon request of the Department, the Town of Scituate shall report on its public education and outreach effort, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.	

**11. Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins**

Scituate shall minimize the impacts of its groundwater withdrawals from sources 4264000-01G, 02G, 03G, 05G and 011G, located in Subbasin 22132 as follows:

- Withdraw water from Well #18B, (4264000-12G), located in Subbasin 22091, to the extent practicable while still protecting the capacity and water quality of the source. Scituate has consistently pumped Well #18B at between 70% and 80% of its Department-approved maximum daily capacity throughout the 5 years prior to this permit renewal. This permit does not require that Scituate shift additional pumping to Well #18B because prolonged pumping at a higher rate could risk degradation of the source;
- Continue to participate in the work of the Scituate Water Study Committee and First Herring Brook Watershed Initiative to refine and implement the First Herring Brook Interim Operational Plan as outlined in **Special Condition 6**;
- Implement seasonal limits on nonessential outdoor water use as outlined in **Special Condition 9**;

- Implement the conservation program outlined in the Scituate Water Resources Committee Conservation Plan, adopted in March 2016, including but not limited to:
  - Installation and maintenance of radio-read meters;
  - Quarterly billing based on actual meter readings and comparing water use from year to year;
  - Continued use of an increasing block rate for residential water use explicitly designed to target increased summer outdoor water use;
  - Implementation of the pipe replacement program funded through a \$22 million 2014 capital spending authorization.

## 12. Mitigation of Impacts for Withdrawals that Exceed Baseline

Scituate's Baseline Withdrawal is 1.80 MGD, based on Scituate's 2005 withdrawals plus 5%. **Prior to making average annual withdrawals greater than the 1.80 MGD baseline, Scituate is required to develop a mitigation plan for review and approval by MassDEP, incorporate the approved mitigation plan into this permit through a permit amendment (BRPWM02), and implement required mitigation activities.**

Thereafter, this renewed permit authorizes Scituate to withdraw up to 1.85 MGD without supplying Humarock, or 1.97 if Humarock is connected to the system. After calculating the adjustment for authorized withdrawals over baseline that will be returned to groundwater through septic system discharge, Scituate's total mitigation requirement will be up to 0.0245 MGD (24,500 gallons per day) without supplying Humarock, or 0.0833 MGD (83,300 gallons per day) if Humarock is connected to the system.

## 13. Reporting Requirements

Scituate shall report annually as required by completing the electronic Annual Statistical Report (eASR) for public water suppliers, and shall provide other reporting as specified in the Special Conditions above.

### General Permit Conditions (applicable to all Permittees)

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 before that date the Department has received a renewal permit application pursuant to and in compliance with 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 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 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 any property over which Permittee has authority, title or control, 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 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 a form provided by the Department, a certified statement of the withdrawal. Such report is to be received by the Department by the date specified by the Department. Such report must be submitted as specified on the report form.
7. **Duty to Maintain Records** The Permittee shall be responsible for maintaining withdrawal and all other records as specified by this permit.
8. **Metering** Withdrawal points shall be metered. Meters shall be calibrated annually. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
9. **Right to Amend, Suspend or Terminate** 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 the Department. Any person aggrieved by this decision may request an adjudicatory hearing as described herein and in accordance with the procedures described at 310 CMR 36.37. Any such request must be made in writing, by certified mail or hand delivered and received by the Department within twenty-one (21) days of the date of receipt of this permit. The hearing request, including proof of payment of the filing fee, must be mailed to:

Case Administrator  
MassDEP Office of Appeals and Dispute Resolution  
One Winter Street  
Boston, MA 02108

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 community 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 the Department.

#### **CONTENTS OF HEARING REQUEST**

310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. In addition, the request must include a statement of the reasons why the decision of the Department is not consistent with applicable rules and regulations, and for any person appealing this decision who is not the applicant, a clear and concise statement of how that person is aggrieved by the issuance of his permit.

#### **FILING FEE AND ADDRESS**

The Department's fee transmittal form, 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**

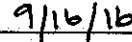
The filing fee is not required if the appellant is a municipality (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

**WAIVER**

The Department may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of the Department 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.



\_\_\_\_\_  
Rebecca Weidman  
Director, Division of Watershed Management  
Bureau of Resource Protection



\_\_\_\_\_  
Date

**Appendix A – Functional Equivalence with the 65 Residential Gallons Per Capita Day Performance Standard**

MassDEP will consider PWS permittees who cannot meet the 65 RGPCD performance standard to be functionally equivalent, and in compliance with their permit, if they have an on-going program in place that ensures “best practices” for controlling residential water use as described below.

If the permittee fails to document compliance with the RGPCD performance standard in its 2018 Annual Statistical Report (ASR), or in any ASR thereafter, then the permittee must file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall include, at a minimum:

1. A description of the actions taken during the prior calendar year to meet the performance standard;
2. An analysis of the cause of the failure to meet the performance standard;
3. A description of the actions that will be taken to meet the performance standard which must include, at a minimum, at least one of the following:
  - 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, by-law or regulation to require the installation of moisture sensors or similar climate related control technology on all automatic irrigation systems;and may include, without limitation, the following:
  - d) the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation;
  - e) a program that provides rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
  - f) the adoption and enforcement of an ordinance, by-law or regulation to require that all new construction include water saving devices and low water use appliances;
  - g) the adoption and enforcement of an ordinance, by-law 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;
  - h) the implementation of a program to encourage the use of cisterns or rain barrels for outside watering;
  - i) the implementation of monthly or quarterly billing.
4. A schedule for implementation; and
5. An analysis of how the planned actions will address the specific circumstances that resulted in the failure to meet the performance standard.

If the permittee 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.

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 above.

If a RGPCD plan is required, the permittee must:

1. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD plan annually at the time it files its ASR, and
2. 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.

### **Appendix B – Functional Equivalence with the 10% Unaccounted for Water Performance Standard**

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 on-going program in place that ensures “best practices” for controlling water loss. The water loss control program will be based on annual water audits and guidance as described in the *AWWA/IWA Manual of Water Supply Practices – M36, Water Audits and Loss Control Programs* (AWWA M36).

If, as of December 31, 2019, the permittee fails to document compliance with the Unaccounted for Water performance standard (UAW of 10% or less for 2 of the 3 most recent years throughout the permit period), then the permittee shall develop and implement a water loss control program following the *AWWA M36 Water Audits and Loss Control Programs* within 5 full calendar years.

1. Conduct an annual “top down” Level 1 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 with its 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 long-term program to reduce real and apparent water losses.
  - 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.
  - 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, the permittee shall 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. The Permittee shall submit the component analysis and water loss control program with a proposed implementation schedule to the Department.
3. Continued implementation will be a condition of the permit in place of meeting the 10% UAW performance standard.
4. Upon request of the Department, the permittee shall report on its implementation of the water loss control program.

A PWS permittee may choose to discontinue the water loss program implementation if UAW, as reported on the ASR and approved by MassDEP, 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 UAW Water Loss Control Measures:** Permittees who do not have MassDEP approved Water Loss Control Programs in place by 6<sup>th</sup> calendar year after 2019 will be required to implement the MassDEP UAW Water Loss Control Measures outlined below:

- An annual water audit and leak detection survey, as described in the AWWA M36 Manual, of 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.
- Water pricing structure 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 UAW Water Loss Control Measures 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:

- Reasons why specific measures are not cost effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard;
- 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 UAW Functional Equivalence Plan; and
- When applicable, an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship.