



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

Kathleen A. Theoharides  
Secretary

Martin Suuberg  
Commissioner

**FINAL**

November 4, 2020

Black Rock Golf Course  
Attention: Charles Welch  
25 Clubhouse Road  
Hingham, MA 02043-4881

Town: Hingham  
Program: Water Management Act (WMA)  
WMA Permit #: 9P2-4-19-131.01  
Action: Final Permit

Dear Mr. Welch:

Please find the following attached:

- Findings of Fact in Support of the renewal of FINAL permit #9P2-4-19-131.01; and,
- FINAL Water Management Act Permit #9P2-4-19-131.01 for the Black Rock Golf Course.

If you have any questions regarding this information, please contact Linjun Yao at (617) 556-1166 or via e-mail at [Linjun.Yao@mass.gov](mailto:Linjun.Yao@mass.gov).

Sincerely,

Duane LeVangie, Chief  
Water Management Program  
Bureau of Water Resources

ecc: Samantha Woods, North and South Rivers Watershed Association  
Julia Blatt, Massachusetts River Alliance

Y:\DWPWMA\Permit Renewals\Boston Harbor\Hingham- Black Rock GC-WMA Final Permit-2020-11-4  
Y:\DWPARCHIVE\SERO\2020\ Hingham- Black Rock GC-WMA Final Permit-2020-11-4



**Massachusetts Department of Environmental Protection**  
**One Winter Street, Boston MA 02108 • Phone: 617-292-5751**

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



**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，应立即翻译。如果您需要翻译这份文件，请用下面列出的电话号码与 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 ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងឆ្នោតជាតិរបស់ 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.*



**10 العربية (Arabic):**

*هذه الوثيقة الهامة وينبغي أن تترجم على الفور. اذا كنت بحاجة الى هذه الوثيقة المترجمة، يرجى الاتصال مدير التنوع في PMassDE 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 PMassDE 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 दस्तावेज़ 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.*



# Department of Environmental Protection

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## **Findings of Fact in Support of FINAL Water Management Permit #9P2-4-19-131.01 Black Rock Golf Course**

The Department of Environmental Protection (“MassDEP” or “the Department”) has completed its review of the Black Rock Golf Course Water Management Act (WMA) permit renewal application. This review was conducted of Black Rock Golf Course’s permit to withdraw water from the Boston Harbor Basin. The Department hereby proposes to issue Water Management Permit #9P2-4-19-131.01 (the “Permit”) in accordance with the Water Management Act (M.G.L.c.21G). The Department makes the following Findings of Fact issuing the Final Permit and for conditions of approval imposed, as required by M.G.L. c.21G, s. 11, and 310 CMR 36.00. The Permit is being issued since such action is necessary for the promotion of the purposes of M.G.L.c.21G. The Department may modify, suspend or terminate the Permit, after notice and hearing, for violations of its conditions, of M.G.L.c.21G, or of regulations adopted or orders issued by the Department, and when deemed necessary for the promotion of the purposes of the Water Management Act.

**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.**

### **Black Rock Golf Course Water Withdrawal History**

The Black Rock Golf Course is an 18-hole golf course located in the Hingham, Massachusetts. Black Rock Golf Course was first issued a Water Management Act permit on June 6, 2001 for its withdrawal from four wells in the Boston Harbor Basin at a rate of 21.5 million gallons over 122 days, or 0.176 million gallons per day (MGD).

### **The Permit Extension Act**

Black Rock Golf Course’s WMA permit was initially set to expire on February 28, 2010. The Department accepted a renewal application from the Black Rock Golf Course on November 30, 2009. MassDEP issued an interim permit on February 28, 2010 to provide time for review of the renewal application. The interim permit was valid for one year from the date of issuance until

February 28, 2011. Subsequently, the Permit Extension Act, Section 173 of Chapter 240 of the Acts of 2010, as amended by Sections 74 and 75 of Chapter 238 of the Acts of 2012, extended all existing interim permits by four years. Therefore, WMA interim permit for withdrawals in the Boston Harbor Basin was extended to February 28, 2015. Because the term of the interim permit extends beyond the term of the original permit, Black Rock Golf Course's interim permit is the controlling permit.

On January 9, 2015, the Department informed the Black Rock Golf Course 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 Boston Harbor 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), Black Rock Golf Course's interim permit continues in force and effect until the Department issues a final decision on the permit renewal application.

The Department published notice of the permit renewal application in the Environmental Monitor on September 5, 2018. No comments were received.

The expiration date for all permits going forward in the Boston Harbor Basin will be February 28, 2030, in order to restore the staggered permitting schedule, set forth in the regulations.

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

The WMA 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 Boston Harbor Basin section of this document);
- 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; and
- The special permit conditions in each Water Management Act permit.

### **Safe Yield in the Boston Harbor 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 Boston Harbor Basin is 54.9 million gallons per day (MGD), and total registered and permitted withdrawals are 37.94 MGD. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Boston Harbor Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

### **Findings of Fact for Permit Conditions**

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.

**Special Condition 1, Maximum Authorized Annual Average Withdrawal Volume**, reflects the permitted withdrawal volume of 0.176 million gallons per day (MGD) over a 122 day seasonal period through February 28, 2030 for a total of 21.5 million gallons per year. The Black Rock Golf Course requested in its permit renewal application that the irrigation withdrawal period be increased from 122 days (June-September) to 153 days (May-September) without increasing their annual authorized withdrawal volume to reflect the current irrigation practice at the course. The renewed permit reflects this change by reducing the maximum authorized annual average daily withdrawal volume to 0.14 MGD while keeping the total annual withdrawal volume of 21.5 million gallons unchanged.

**Special Condition 2, Maximum Authorized Daily Withdrawal From Withdrawal Point,** reflects the volume of groundwater withdrawal expressed as a maximum daily rate for the designated wells included in the permit. Withdrawals in excess of these maximum daily rates require approval from the Department. The Black Rock Golf Course requested in its OTC response that the maximum authorized daily rate of well OB-1 be increased from 0.187 to 0.293 MGD based on the abandonment of the remaining authorized wells BR-2, BR-3, BR-6 to reflect the current well performance at the course. The renewed permit reflects this change by removing wells BR-2, BR-3, and BR-6 as authorized withdrawal points while keeping well OB-1 and increasing its maximum authorized daily withdrawal volume to 0.293 million gallons which was formerly the combined capacity of all the four wells.

**Former Special Condition 3, Wetlands Monitoring,** has been removed from this renewed permit. In the OTC response, the Black Rock Golf Course submitted a copy of a Certificate of Compliance by the Town of Hingham for MassDEP's Order of Conditions File #034-614, authorizing the discontinuation of the wetland monitoring program. Also, the Black Rock Golf Course submitted copies of their wetland monitoring reports from 2002 to 2006. Based on a review of the information submitted, MassDEP has removed wetlands monitoring as a condition of this permit.

**Special Condition 3, Minimum Streamflow Thresholds,** sets minimum cubic feet per second of flow in the Weir River for withdrawals from Black Rock Golf Course's wells. The renewed permit requires that streamflow be measured at U.S. Geologic Survey (USGS) stream gage #01105638-Weir River at Leavitt Street in Hingham. When streamflow falls below the minimum streamflows listed in the Special Condition 3, no withdrawal of water shall occur from the irrigation well included in the permit.

#### **Special Condition 4, Water Conservation Requirements**

The Water Conservation Practices Utilized at the Black Rock Golf Course, submitted on February 14, 2020 as part of its OTC response, has been combined with the Best Management Practices that Black Rock Golf Course indicated as being implemented (according to the Seasonal Demand Management Plan included in Special Condition 5). This combination constitutes the water conservation requirements of the renewed permit.

#### **Special Condition 5, Seasonal Demand Management Plan**

Consistent with sound water conservation practices, permitted golf courses will be required to implement a drought triggered Seasonal Demand Management Plan (SDMP) as a condition of their Water Management Permit. The SDMP, at a minimum, restricts nonessential outdoor water use between May 1<sup>st</sup> and September 30<sup>th</sup> when the Massachusetts Drought Management Task Force declares a drought Level 1 (Mild Drought) or higher Level 2 (Significant Drought), Level 3 (Critical Drought), Level 4 (Emergency Drought) for the region in which the golf course is located.

The SDMP shall also be implemented at times when streamflow falls below a designated flow trigger measured at an assigned, web-based, real-time USGS stream gage from May 1<sup>st</sup> through September 30<sup>th</sup>. At a minimum, restrictions shall commence when streamflow falls below the trigger for three consecutive days. The streamflow-triggered response actions shall be consistent



with the drought-triggered response actions at the Mild Drought level. Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days. The low-flow statistic being applied, referred to as the “7-day low-flow statistic,” is the median value of the annual 7-day low flows for the period of record for the assigned gage. The 7-day low flow statistic is expected to respond more quickly to low-flow conditions than the State’s Drought Level Declaration.

Black Rock Golf Course has been assigned the USGS stream gage # 01105638 – Weir River at Leavitt Street in Hingham, MA. The 7-day low flow at this site is 0.62 cubic feet per second (cfs). Should the reliability of the flow measurement on the Weir River at Leavitt Street gage be so impaired as to question its accuracy, the Permittee may request MassDEP’s review and approval to transfer to another gage to trigger restrictions. MassDEP reserves the right to require use of a different groundwater trigger.

Black Rock Golf Course shall be responsible for tracking the Massachusetts Drought Levels and recording when drought-triggered restrictions are implemented. Black Rock Golf Course shall also be responsible for tracking streamflow and recording when streamflow-triggered restrictions are implemented. See the SDMP in Table 5 and attached USGS Water Alert instructions for tracking information (Appendix A).

The SDMP is intended to address the necessary minimums of acceptable demand management required as dry conditions begin to impact our environment from May through September. Of particular importance in developing your SDMP and in evaluating its effect on your golf course’s irrigation, is the recognition of nonessential outside water uses. MassDEP considers the irrigation of tees and greens as essential uses, but fairways and roughs less so.

Section C of the SDMP provides three options for water use reduction. Two options for water use reduction are in table format with the third option being an open-ended alternative approach. The Acres Table requires that you identify the number of acres you irrigate for tees and greens, fairways, roughs, landscaping and ornamentals, along with a percent reduction per unit area with worsening drought. The Time Table requires that you identify irrigation in timing reduction cycles.

As part of the Order to Complete responses, Black Rock Golf Course submitted an SDMP using the Time Table reductions. MassDEP has accepted Black Rock Golf Course’s proposed SDMP and it is included as a condition of this renewed permit.

Please note that all permitted golf courses will be required to notify MassDEP when you put your SDMP or other required restrictions in place. Copies of the notification forms for golf courses can be found at <https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses>.

**Special Condition 6, Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins**, requires permittees with permitted groundwater sources in subbasins<sup>1</sup> with a net groundwater depletion (NGD) of 25% or more during August to minimize their withdrawal impacts on those subbasins to the greatest extent feasible, through an extension of water conservation and demand management that go beyond standard the Water Management Act permit requirements.

As part of the Order to Complete response, Black Rock Golf Course outlined the following conservation measures that go beyond standard the Water Management Act permit requirements.

- Lining irrigation ponds with impervious material.
- Use of a weather app or an onsite weather station combined with an automated irrigation system.
- Installation of rain shutoff switches on all new and existing irrigation systems.
- Reduction of irrigation rates in rough areas and, where possible, elimination of irrigation in non-play areas.
- Use of low-water-use turf grass where applicable.
- Use of native, drought-tolerant plants, or mulch materials in landscaping.
- Employee training in water conservation and management as a regular practice.
- Improving irrigation uniformity through careful evaluation of design criteria such as nozzle size, spacing, scheduling coefficient and pressure selection.
- Installation of 3<sup>rd</sup>-party retrofit nozzles.
- Use of two water storage ponds.
- Installation of low-pressure alarms on water pumps.

The implementation of the above measures are required in **Special Condition 6**.

**Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals** requires mitigation of the impacts of withdrawals above the permittee's baseline, which is based on withdrawals made during 2003-2005. The calculated baseline withdrawal volume for Black Rock Golf Course is 0.176 MGD or 21.5 MGY, the authorized withdrawal volume for 2005 over 122 operation days. Mitigation is not required at this time because volumes greater than the baseline are not allocated by this permit. Should Black Rock Golf Course need more than 0.14 MGD, the revised allocation volume based on withdrawals over the extended 153 day period, they will need a new permit and mitigation will be required if feasible.

**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 Black Rock Golf Course's withdrawal do not impact any waters that MA Division of Fisheries and Wildlife has identified as supporting coldwater fish at this time.

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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).



# Department of Environmental Protection

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Commissioner

**FINAL WATER WITHDRAWAL PERMIT**  
**#9P241913101**  
**Black Rock Golf Course**

This renewal of Permit #9P241913101 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:** 9P2-4-19-131.01

**RIVER BASIN:** Boston Harbor

**PERMITTEE:** Black Rock Golf Course

**EFFECTIVE DATE:** November 4, 2020

**EXPIRATION DATE:** February 28, 2030

**NUMBER OF WITHDRAWAL POINTS:** 1

Groundwater: 1

**USE:** Golf Course Irrigation

**DAYS OF OPERATION:** 153

**LOCATION(S):**

Source	Latitude	Longitude	Location
Well #OB-1	42° 11' 44"	70° 54' 25"	25 Clubhouse Road, Hingham

**SPECIAL CONDITIONS**

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

This Permit authorizes Black Rock Golf Course to withdraw water from the Boston Harbor Basin at the rate described below (Table 1). The permitted volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY).

The Department of Environmental Protection (“MassDEP”) will use the water withdrawal volume from all authorized withdrawal points to assess compliance with the permitted withdrawal volume.

**Table 1. Maximum Authorized Annual Average Withdrawal Volumes**

Permit Periods	Total Water Withdrawal Volumes	
	Daily Average (MGD)	Total Annual (MGY)
11/04/2020 to 02/28/2025	0.14	21.5
03/01/2025 to 02/28/2030	0.14	21.5

**2. Maximum Authorized Daily Withdrawals From Withdrawal Point**

Withdrawals from withdrawal points are not to exceed the approved maximum daily volume listed below (Table 2) without specific advance written approval from MassDEP.

**Table 2. Maximum Daily Withdrawal Volumes**

Source	Maximum Daily Rate (MGD)
Well #OB-1	0.293

**3. Minimum Streamflow Thresholds**

No withdrawals of water shall occur from irrigation Well #OB-1 when streamflow as measured at USGS gage #01105638 on the Weir River at Leavitt Street in Hingham falls below the following daily average values:

**Table 3. Minimum Streamflow Thresholds**

Time Period	Streamflow in Cubic Feet per Second (cfs)
March 1 – May 31	33.8
June 1 – September 15	2.1
September 15- October 15	14.1

Should the reliability of flow measurement at the Weir River gage be so impaired as to question its accuracy, Black Rock may request MassDEP’s review and approval to transfer to another gage to trigger restrictions. MassDEP reserves the right to require use of a different gage.

**4. Water Conservation Requirements**

The Water Conservation Practices Utilized at Black Rock Golf Course, submitted as part of its renewal application, has been combined with the Best Management Practices that Black Rock Golf Course indicated as being implemented (according to the Seasonal Demand Management Plan included in Special Condition 5). This combination constitutes the water conservation requirements of the renewed permit.

**Table 4. Water Conservation Requirements**

a. Metering 100% of water use, and calibrating source meters annually.
b. Implementation of an irrigation system inspection and maintenance program that includes the following on a routine basis: <ul style="list-style-type: none"> <li>• Leak detection and repair: Daily monitoring of the golf course to ensure no leaks throughout the system are present.</li> <li>• Weekly Sprinkler head maintenance and replacement to ensure proper trajectory, pressure, and rotation</li> <li>• Weekly cleaning or replacing clogged nozzles.</li> </ul>
c. Use of portable soil moisture sensors and golf weather apps to increase the efficiency of the irrigation system
d. Irrigating in the early morning or evening hours when evaporation rates are at their lowest, to extent practicable to maintain the turf
e. Regular aerating of turf to increase the percolation of water into the soil
f. Use of mulch materials in planting beds to improve water-holding capacity of the landscaping
g. Use of environmentally safe wetting agents to improve water infiltration and minimize evaporation
h. Use of low water use or native drought tolerant plants to the greatest extent practicable
i. Employee training in water conservation and management

**5. Seasonal Demand Management Plan**

The Black Rock Golf Course shall limit nonessential outdoor water use through mandatory restrictions from May 1<sup>st</sup> through September 30<sup>th</sup> as outlined in the Seasonal Demand Management Plan (SDMP). At a minimum, restrictions shall commence when the Massachusetts Drought Management Task Force declares a Level 1- Mild Drought or higher Level 2- Significant Drought, Level 3-Critical Drought, or Level 4-Emergency Drought for the region in which the golf course is located.

The SDMP shall also be implemented at times when streamflow falls below a designated flow trigger measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) groundwater gage from May 1<sup>st</sup> through September 30<sup>th</sup>. At a minimum, restrictions shall commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days. The low-flow statistic being applied, referred to as the “7-day low-flow statistic,” is the median value of annual 7-day low flows for the period of record for the assigned gage. The 7-day

low-flow statistic is expected to respond more quickly to low-flow conditions than the Drought Level Declaration.

Black Rock Golf Course has been assigned USGS stream gage # 01105638-Weir River at Leavitt Street in Hingham, MA. The 7-day low flow at this site is 0.62 cubic feet per second (cfs).

Black Rock Golf Course selected a time-reduction approach, which requires that the club reduces irrigation by time (Table 5).

**Table 5. Black Rock Golf Course Time-Reduction in its SDMP**

Massachusetts Drought Levels	Irrigating for Shorter Durations as Drought Severity Increases Reduced Minutes in Irrigation Cycles							
	Irrigated Tees & Greens		Irrigated Fairways		Irrigated Roughs		Irrigated Landscape & Ornamentals	
	Percent	Time (min.)	Percent	Time (min.)	Percent	Time (min.)	Percent	Time (min.)
Normal	Full cycle	12	Full cycle	15	Full cycle	15	Full cycle	20
Level 1- Mild Drought or WMA SDMP Streamflow Trigger (0.62 cfs) is reached	Full cycle	12	80%†	12	50%†	7.5	0%	0
Level 2- Significant Drought	Full cycle	12	60%†	9	0%	0	0%	0
Level 3- Critical Drought	Full cycle	12	40%†	6	0%	0	0%	0
Level 4- Emergency Drought**	TBD	Hose	0%	Hose	0%	0	0%	0

† Irrigation shall not occur between the hours of 9am and 5 pm, except that hand-watering of hot spots may occur at any time.

\*\* Mitigation actions to be determined by the Governor`s Emergency Proclamation.

Golf permittees must notify MassDEP within 14 days of the effective date for triggering and implementing their SDMP. Notification is required for the initial implementation only each year. Copies of the notification forms for golf courses can be found at <https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses>

## 6. Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins

The Black Rock Golf Course shall minimize the impacts of its groundwater withdrawal from Well #OB-1 in Subbasin 21038, as follows:

- Lining irrigation ponds with impervious material.
- Use of a weather app or an onsite weather station combined with an automated irrigation system.
- Installation of rain shutoff switches on all new and existing irrigation systems.
- Reduction of irrigation rates in rough areas and, where possible, elimination of irrigation in non-play areas.
- Use of low-water-use turf grass where applicable.

- Use of native, drought-tolerant plants, or mulch materials in landscaping.
- Employee training in water conservation and management as a regular practice.
- Improving irrigation uniformity through careful evaluation of design criteria such as nozzle size, spacing, scheduling coefficient and pressure selection.
- Installation of 3<sup>rd</sup>-party retrofit nozzles.
- Use of two water storage ponds.
- Installation of low-pressure alarms on water pumps.

**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. 150, § 111, 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.



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Duane LeVangie  
Water Management Program Chief  
Bureau of Water Resources

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11/4/2020

Date

### **Appendix A – Instructions for Accessing Streamflow Website Information**

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

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

**Mean daily streamflow gage** readings are available at the USGS NWIS Web Interface at <http://waterdata.usgs.gov/ma/nwis/current/?type=flow>.

- Scroll down to 01105638 – Weir River at Leavitt Street in Hingham, MA
- Click on the gage number.
- Scroll down to “Provisional Date Subject to Revision – Available data for this site” and click on the drop-down menu.
- Click on “Time-series: Daily data” and hit GO.
- Scroll down to the “Available Parameters” box. Within the box, be sure “00060 Discharge (Mean)” is checked, then, under “Output Format” click “Table” and hit GO.
- Scroll down to “Daily Mean Discharge, cubic feet per second” table and find the current date on the table.
- Compare the cubic feet per second (cfs) measurement shown on the table to the cfs shown under Streamflow Triggered Restrictions above.

Black Rock Golf Course shall document compliance with the Seasonal Nonessential Outdoor Water Use Restrictions annually. All permitted golf courses must notify MassDEP within 14 days of the effective date for triggering and implementing their SDMP. Notification is required for the initial implementation only each year. Copies of the notification forms for golf courses can be found at <https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses>.