

MASSACHUSETTS PERMIT TO DISCHARGE POLLUTANTS TO SURFACE WATERS

In compliance with the provisions of the Massachusetts Clean Waters Act, as amended (M.G.L. Chap. 21, §§ 26 - 53) and the implementing regulations at 314 CMR 3.00 and 4.00,

Harvard University

is authorized to discharge from the facility located at

Blackstone Steam Plant
46 Blackstone Street
Cambridge, MA 02139

to receiving water named

Charles River
Charles River Watershed

in accordance with the following effluent limitations, monitoring requirements and additional conditions:

1. This permit shall become effective on April 1, 2021.
2. This permit shall expire five years after the effective date.
3. This permit supersedes the permit issued on April 22, 2014.
4. This permit incorporates by reference Part IA., Effluent Limitations and Monitoring Requirements, Part IB., Unauthorized Discharges, Part IC., Special Conditions, Part ID. Reporting Requirements, and Part IIE., Standard Conditions, as set forth in the 2021 NPDES Permit No. MA0004901, issued by the United States Environmental Protection Agency (EPA), Region 1, issued to Harvard University on January 27, 2021 (the 2021 NPDES Permit) and attached hereto as Appendix A; provided, however:
 - a. that the notification required by Part IA.8. shall also be provided to MassDEP;
 - b. that the reporting required by Part IB.1 shall be in accordance with 314 CMR 3.19(20)(e) (24 hour reporting);
 - c. that discharges of a new chemical or additive authorized under Part IC.1. are only authorized under this permit 30 days following written notification to MassDEP, unless otherwise notified in writing by MassDEP;
 - d. that a copy of the requests, reports, and information required by Part ID.3. to be submitted to EPA shall also be submitted to MassDEP electronically to massdep.npdes@mass.gov;
 - e. that, if there is a conflict between the definitions in 314 CMR 3.02 and/or 314 CMR 4.00 and the definitions in Part IIE, the definitions in 314 CMR 3.02 and/or 314 CMR 4.00 shall control, as applicable;
 - f. that the notifications required by 4.a. and 4.c. above shall be provided as follows:

Susannah King, NPDES Section Chief
Division of Watershed Management
Department of Environmental Protection
1 Winter Street – 5th Floor
Boston, MA 02108

5. This permit incorporates by reference the Standard Permit Conditions set forth in 314 CMR 3.19.
6. This permit includes the following additional conditions:
 - a. Within six (6) months of the effective date of the permit, the permittee shall submit to MassDEP an evaluation of whether the facility uses any products containing any per- and polyfluoroalkyl substances (PFAS) and whether use of those products can be reduced or eliminated. The analysis shall be submitted electronically to massdep.npdes@mass.gov.
 - b. Within six (6) months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's Clean Water Act methods program website¹, or two (2) years from the effective date of the NPDES permit, whichever is earlier, the permittee shall conduct monitoring of the effluent for PFAS compounds as detailed in the table below. If EPA has not issued a validated test method by twenty (20) months after the effective date of the NPDES permit, the permittee shall contact MassDEP (massdep.npdes@mass.gov) for guidance on an appropriate analytical method.

Effluent (Outfall 002)

Parameter	Units	Measurement Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Quarterly ²	24-hour Composite
Perfluoroheptanoic acid (PFHpA)	ng/L	Quarterly	24-hour Composite
Perfluorononanoic acid (PFNA)	ng/L	Quarterly	24-hour Composite
Perfluorooctanesulfonic acid (PFOS)	ng/L	Quarterly	24-hour Composite
Perfluorooctanoic acid (PFOA)	ng/L	Quarterly	24-hour Composite
Perfluorodecanoic acid (PFDA)	ng/L	Quarterly	24-hour Composite

Notwithstanding any other provision of the 2021 Federal NPDES permit to the contrary, monitoring results shall be reported to MassDEP electronically at massdep.npdes@mass.gov, or as otherwise specified, within 30 days after they are received. Those results do not need to be reported to EPA through NetDMR unless EPA establishes a requirement through a future permitting action.

- c. After completing one year of monitoring, if four (4) consecutive samples are reported as non-detect for all six PFAS compounds, then the permittee may submit a request to discontinue PFAS monitoring. Any such request shall be made in writing and sent to: massdep.npdes@mass.gov. The permittee shall continue such monitoring pending written approval from MassDEP to discontinue it.

Signed this 2nd day of March, 2021

¹ See <https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical> and <https://www.epa.gov/cwa-methods>.

² Quarters are defined as January to March, April to June, July to September, and October to December. Samples shall be taken during the same month each quarter and shall be taken 3 months apart (e.g., an example sampling schedule could be February, May, August, and November).

A handwritten signature in black ink, appearing to read 'Lealdon Langley', with a stylized flourish at the end.

Lealdon Langley, Director
Division of Watershed Management
Department of Environmental Protection

RESPONSE TO COMMENTS

**MA Permit No. MA0004901
Harvard University Blackstone Steam Plant
46 Blackstone Street Cambridge, Massachusetts**

The Massachusetts Department of Environmental Protection (MassDEP or the “Department”) is issuing a Surface Water Discharge (SWD) Permit to the Harvard University (the Permittee) for the Blackstone Steam Plant (the Facility) located in Cambridge, Massachusetts. The permit is being issued under the Massachusetts Clean Waters Act, as amended (M.G.L. Chap. 21, §§ 26 - 53) and the implementing regulations at 314 CMR 3.00 and 4.00.

In accordance with the provisions of 314 CMR 2.09, MassDEP is obligated to prepare a response to comments received on the draft SWD Permit No. MA0004901 (the “Draft Permit”). The Response to Comments explains and supports MassDEP’s determinations that form the basis of the final permit (the “Final Permit”). From July 14, 2020 through August 13, 2020, MassDEP solicited public comments on the Draft Permit for the (re)issuance of a permit to discharge reverse osmosis (RO) reject water from Outfall Serial Number 002 to the Charles River and the associated Draft WQC.

During the public comment period for the draft NPDES permit (June 30, 2020 through July 29, 2020), EPA received comments from:

1. Kathryn Kaminski, Director of Central EH&S Management Systems and Programs, Harvard University, dated July 29, 2020

EPA’s Response to Comments is included as part of the final NPDES permit issuance.

During the public comment period for the draft SWD Permit, MassDEP received comments from:

1. Kathryn Kaminski, Director of Central EH&S Management Systems and Programs, Harvard University, dated August 13, 2020
2. Heather Miller, General Counsel & Policy Director, Charles River Watershed Association, dated August 13, 2020

MassDEP’s knowledge of the Facility has benefited from the various comments and additional information submitted during the public comment period but the information and arguments presented did not raise any substantial new questions concerning the Permit that warranted MassDEP exercising the discretion to reopen the public comment period. MassDEP does, however, make certain clarifications in response to comments. Any improvements and changes are explained in this document and reflected in the Final Permit. Below, MassDEP provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

A copy of the Final Permit and this Response to Comments document will be posted on the MassDEP website.

A copy of the Final Permit may be also obtained by writing or calling Xiaodan Ruan, MassDEP, Surface Water Discharge Permitting Program, Bureau of Water Resources, 1 Winter Street – 5th Floor, Boston 02108; telephone: 617-654-6517; email: xiaodan.ruan@mass.gov. During this current COVID-19 emergency, MassDEP is working remotely. As such, interested parties are strongly encouraged to email MassDEP PERMIT WRITER if they wish to obtain a copy of the Final Permit.

I. Summary of Changes to the Final Permit

1. Paragraph 6.b. has been revised to clarify that results shall be reported through email, or otherwise specified, if MassDEP directs permittees to report through another mechanism.

II. Responses to Comments

Comments are reproduced below as received; they have not been edited, corrected or otherwise modified.

A. Comments from Kathryn Kaminski, Director of Central EH&S Management Systems and Programs, Harvard University, dated August 13, 2020**Comment 1**

Harvard respectfully requests that the PFAS evaluation and sampling requirements found in section 6 a. and b. of Harvard's draft permit be removed.

The Blackstone Steam plant NPDES discharge is almost entirely driven by the makeup of the source water. Which includes the City of Cambridge drinking water and the Charles River. MWRA water, via the Cambridge distribution system, may also be used during an emergency or when maintenance and/or testing is being completed on the Cambridge water supply system.

All three sources are out of Harvard's operational control and there is no way for Harvard to dictate what levels of PFAS are or are not acceptable, particularly with the water sourced from the Charles. There are minimal water treatment chemicals used in Harvard's water process all which do not list PFAS as constituents. In addition, the water is processed through a water softener system, which may be helping to remove any PFAS in the source water.

The Cambridge Water Department has sampled for and detected PFAS (see attached table of results) in the Cambridge Water supply and in a 2019 letter indicated that:

*"The combined concentration of these 6 PFAS compounds detected in Cambridge water (19.9 parts per trillion) is well below the current MassDEP and EPA Health Advisory Level for all users (70 parts per trillion) and just below the MassDEP advisory range for public notification (20-70 parts per trillion)."*¹

The MWRA also tested for PFAS with results indicating PFAS concentrations are significantly lower than those present in Cambridge water.²

¹ Letter from Cambridge City Councilor to MassDEP.

a. <https://www.cambridgema.gov/Water/wateroperationsdivision/waterchemistryinformation/pfasinformation>

² Current Information about PFAS Testing – MWRA

b. <http://www.mwra.com/watertesting/pfas/pfastestsinfo.html>

Since PFAS in the source water can't be controlled by Harvard and PFAS are not listed as constituent of chemicals used in the water process, Harvard requests that PFAS sampling be eliminated as a requirement of our permit.

Response 1

The Permittee indicated in the comment that the PFAS in the source waters, including the City of Cambridge drinking water, MWRA water, and the Charles River water, if present, are out of the Permittee's operational control. MassDEP agrees with this statement. However, this does not change MassDEP's decision to include monitoring of PFAS in the facility's effluent because it is still important to understand the levels of PFAS being discharged into the Charles River. Given that reverse osmosis reject water typically contains the same contaminants in the source water, but at higher concentrations, it is possible that the facility's effluent will contain PFAS at levels higher than have been measured in the source water. The PFAS monitoring in the SWD Permit is a report-only requirement; therefore, the Permittee will not be out of compliance even PFAS is detected in the effluent.

The Permittee also stated that minimal water treatment chemicals are used in the water processes, and PFAS are not listed as those chemicals' constituent. Paragraph 6.a., requires the Permittee to submit the evaluation of whether the Facility uses any products containing PFAS to MassDEP for review. This evaluation can be used to demonstrate that chemicals used in the water treatment process do not contribute PFAS to the facility's effluent.

The Final SWD Permit remains unchanged.

B. Comments from Heather Miller, General Counsel & Policy Director, Charles River Watershed Association, dated August 13, 2020

Comment 2

Charles River Watershed Association ("CRWA") submits the following comments on MA Permit No. MA0004901 proposed to be issued to Harvard University for the Blackstone Steam Plant's pollutant discharges to the Charles River. CRWA's mission is to protect, preserve, and enhance the Charles River and its watershed through science, advocacy, and the law. Harvard is requesting a National Pollution Discharge Elimination Permit ("NPDES") permit to discharge reverse osmosis reject water to the Charles River.

The permit documents indicate that "[r]aw water is sourced from both the City of Cambridge's municipal water supply and the Charles River." They also indicate that water enters the Facility through a 48-inch intake pipe which connects to an underground reservoir/intake well in which water levels are controlled by water levels in the Charles River and which has a pump that can draw water into the turbine building where steam power is generated.

It is unclear from the permit documents how much water is being taken into the Facility from the Charles River. As drought and cyanobacteria blooms become more significant issues in the Charles, the amount of river water being used at this Facility should be clearly documented. We request that the amount of river water taken in be monitored and reported. It also does not appear that the temperature

of the effluent is monitored. For the same reasons, we request that an effluent limit for temperature be established, or at least that a monitoring requirement be added for temperature.

Response 2

CRWA commented that it is unclear how much water is being taken from the Charles River, and requested the amount of river water being used at the Facility be monitored and reported. In the Facility's application and the flow diagram in Figure 3 of the Fact Sheet, the Permittee estimates that river withdrawal is approximately 20,000 gpd. It stated on page 11 of the fact sheet, *"Design and implementation of a closed loop cooling system during the 2007-2012 permit term resulted in termination of non-contact cooling water discharges from the Facility."* This statement remains valid for the 2021 Final NPDES Permit, and there is no non-contact cooling water being discharged from the Facility. Neither EPA's NPDES program, nor MassDEP's Surface Water Discharge Program have jurisdiction through NPDES and Surface Water Discharge permits to regulate water withdrawals not associated with non-contact cooling water discharges. The water withdrawal activities from surface water are regulated by MassDEP's Water Management Act Program. Further questions on this issue should be directed to the Water Management Act Program.

CRWA requested an effluent limit for temperature be established or at least a monitoring requirement be added for temperature. The wastewater being discharged from the Facility and regulated by the NPDES permit is reverse osmosis (RO) reject water. As stated above, the river water is not being used for non-contact cooling, and there are no processes that are adding heat to the discharge; therefore, temperature limitations and monitoring are not necessary.



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, comuníquese con el Director de Diversidad de MassDEP a los números de teléfono que aparecen más abajo.



3 Português (Portuguese):

Este documento é importante e deve ser traduzido imediatamente. Se você precisa deste documento traduzido, 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 的多元化總監聯繫。



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 的多元化总监联系。



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 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 Đa dạng của MassDEP theo các số điện thoại được liệt kê dưới đây.



7 ប្រទេសកម្ពុជា (Kmer (Cambodian)):

ឯកសារនេះគឺមានសារៈសំខាន់និងត្រូវបានបកប្រែភាសា ប្រសិនបើអ្នកត្រូវបានបកប្រែ ឯកសារនេះសូមទំនាក់ទំនងឆ្នោតជានាយក 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):

Это важный документ и он должен быть безотлагательно переведен. Если вам нужен перевод данного документа, пожалуйста, свяжитесь с директором по разнообразию компании MassDEP по телефону указанному ниже

**10 العربية (Arabic):**

هذه الوثيقة مهمة ويجب ترجمتها على الفور. إذا كنت بحاجة إلى هذه الوثيقة المترجمة، يرجى الاتصال بمدير التنوع في MassDEP على أرقام الهواتف المدرجة أدناه.

**11 한국어 (Korean):**

이 문서는 중요하고 즉시 번역해야 합니다. 이 문서의 번역이 필요하시다면, 아래의 전화 번호로 MassDEP의 다양성 감독에 문의하시기 바랍니다.

**12 հայերեն (Armenian):**

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

**13 فارسی (Farsi [Persian]):**

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

**14 Français (French):**

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

**15 Deutsch (German):**

Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Sofern Sie die Übersetzung von diesem Dokument benötigen, wenden Sie sich bitte an den Diversity Director MassDEP unter der unten aufgeführten Telefonnummer.

**16 Ελληνική (Greek):**

Το παρόν έγγραφο είναι σημαντικό και θα πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του παρόντος εγγράφου, παρακαλούμε επικοινωνήστε με τον Διευθυντή Διαφορετικότητας του MassDEP στους αριθμούς τηλεφώνου που αναγράφονται παρακάτω.

**17 Italiano (Italian):**

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

**18 Język Polski (Polish):**

Dokument ten jest ważny i powinien zostać natychmiast przetłumaczony. Jeśli potrzebujesz przetłumaczonej wersji dokumentu, prosimy o kontakt z dyrektorem ds. różnorodności MassDEP pod jednym z numerów telefonu wymienionych poniżej.

**19 हिन्दी (Hindi):**

यह दस्तावेज़ महत्वपूर्ण है और तुरंत अनुवाद किया जाना चाहिए. यदि आपको इस दस्तावेज़ का अनुवाद करने की आवश्यकता है, तो कृपया नीचे सूचीबद्ध टेलीफोन नंबरों पर मासडेप्स डाइवर्सिटी के निदेशक से संपर्क करें।.