



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

July 26, 2023

Mr. Daniel Barrett
General Manager
Department of Integrated Solid Waste Management
Town of Bourne
24 Perry Avenue
Buzzards Bay, Massachusetts 02532

RE: **ERRATA NOTICE**
DRAFT PERMIT - APPROVAL WITH CONDITIONS
Phase 9 Landfill Expansion

BWP SW 26 - Authorization to Construct – Major Expansion (Landfill)
Application No. 22-SW26-0001-APP

BWP SW10 – Authorization to Operate
Application No. 23-SW10-0002-APP

AT: Bourne Landfill
201 MacArthur Boulevard
Bourne, MA 02532
Facility # 39101
Regulated Object # 172356

Dear Mr. Barrett:

On July 21, 2023, the Massachusetts Department of Environmental Protection, Solid Waste Section (“MassDEP” or “Department”) issued a Draft Permit – Approval with Conditions, with cover letter, for Phase 9 Landfill Expansion of Bourne Landfill in Bourne.

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

The Department determined that it inadvertently cited an incorrect Solid Waste regulations regarding the Right to Appeal language in the Draft Approval. MassDEP has modified the Draft Approval accordingly and has attached it to this correspondence. Please disregard the Draft Approval with the cover letter issued to you on Friday, July 21, 2023, now invalid, and shall be replaced in its entirety, with the attached Cover Letter and revised Draft Approval dated July 26, 2023.

The Department apologizes for any inconvenience. If you have any questions or comments regarding this approval letter, please contact me at (508) 946-2847 or Elza Bystrom at (508) 946-2856 or at the letterhead address.

Very truly yours,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Mark Dakers, Chief
Solid Waste Management Section

ec: Bourne Board of Selectmen
via kthut@townofbourne.com

Bourne Department of Public Works
S. Patterson – Director
spatterson@townofbourne.com

Bourne Board of Health
T. Guarino – Health Agent
tguarino@townofbourne.com

Bourne Integrated Solid Waste Management
amintz@townofbourne.com
pgoddard@townofbourne.com

Cape Cod Commission
kseatori@capecodcommission.org

SITEC Environmental, Inc.
rquinn@sitec-engineering.com

DEP – BOSTON
ATTN: G. Cooper
J. Fischer

DEP – SERO
ATTN: S. Pickering
M. Dakers



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**RE: DRAFT PERMIT - APPROVAL WITH CONDITIONS
Phase 9 Landfill Expansion**

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Application No. 23-SW10-0002-APP

AT: Bourne Landfill
201 MacArthur Boulevard
Bourne, MA 02532
Facility # 39101
Regulated Object # 172356

Dear Mr. Barrett:

The BWP SW 26 and BWP SW 10 applications (“Applications”) were received by the Massachusetts Department of Environmental Protection, Solid Waste Management Section (“MassDEP”) on December 16, 2022, and February 9, 2023 prepared by SITEC Environmental, Inc. (“SITEC”) of Marshfield, Massachusetts. The Applications were submitted on behalf of Town of Bourne – Department of Integrated Solid Waste Management (“Town”) requesting approval to vertically expand the Bourne landfill from elevation 185-ft mean sea level (“MSL”) to 225-ft MSL, designated as Phase 9, and to operate the Phase 9 landfill (“Landfill”) at 201 MacArthur Boulevard, Bourne, Massachusetts.

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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MassDEP has completed its Technical Review of the Applications and has determined that the applications are technically complete. Accordingly, MassDEP has prepared the attached **DRAFT** Permit for Authorization to Construct and Authorization to Operate. Pursuant to the provisions of 310 CMR 19.032, the Town, as the proponent of the project, is now required to give Public Notice in accordance with the requirements contained at 310 CMR 19.032(3). Public Notice shall be served by publishing the Public Notice in the legal notice section of a newspaper of general circulation in the area affected by the proposed permit action and by promptly mailing the enclosed Public Notice to the Bourne Board of Health, the Board of Health of any city or town within ½ mile of the proposed expansion, and all abutters of the proposed expansion.

Following the issuance/publication of the Public Notice of the **DRAFT** permit, the Town is required to provide MassDEP with documentation that public notice was properly and sufficiently given. This should include submitting a dated newspaper clipping of the legal notice as published in a newspaper of general circulation in the locality of the proposed permit action and proof that notice was provided to the Board(s) of Health and abutters.

A listing of abutters from the Bourne Assessors' office and copies of registered mail receipts should be submitted to MassDEP when the Public Notice is sent to abutters. Copies of signed registered return receipts should be submitted to MassDEP if/when available.

Although additional outreach is not a regulatory/statutory requirement for the public notice of the Draft permit, MassDEP encourages the Town to consider outreach to the residents at the Joint Base of Cape Cod, much similar to what has been done during the site assignment process, to enhance opportunities for these residents to participate in the decision-making process and to build relationship and trust with the neighboring community.

MassDEP will accept written comments from all interested persons for a period of thirty (30) days following the date Public Notice is first published in the newspaper. During the thirty (30) day Public Comment Period, interested persons shall be entitled to review the "DRAFT" permit decision and send comments to MassDEP regarding the proposal.

Once MassDEP has been provided proof that public notice was properly and sufficiently given, MassDEP will review the comments and render a decision regarding the proposed action. Predicated on such comments, MassDEP's final permit decision will include written responses to any major comments and may include modified language in order to address any such comments. In the event MassDEP is unable to sufficiently address the public comments based on the information contained in the record file regarding the proposal at the time of issuance of this "DRAFT" permit, MassDEP will solicit additional information from the Town in order to sufficiently respond to the comments. In the event, MassDEP or the Town are unable to sufficiently address any such comments, MassDEP reserves the right to modify or rescind this DRAFT determination in its final decision regarding the proposal.

Any correspondence regarding this matter should reference Application No. 22-SW26-0001-APP and 23-SW10-0002-APP.

Should there be any questions, please contact MassDEP at the letterhead address or telephone me at (508) 946-2847, email at Mark.Dakers@mass.gov or Elza Bystrom at (617) 413-2711, email at Elza.Bystrom@mass.gov.

Very truly yours,

*This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.*

Mark Dakers, Chief
Solid Waste Management Section

ec: Bourne Board of Selectmen
via kthut@townofbourne.com

Bourne Department of Public Works
S. Patterson – Director
spatterson@townofbourne.com

Bourne Board of Health
T. Guarino – Health Agent
tguarino@townofbourne.com

Bourne Integrated Solid Waste Management
amintz@townofbourne.com
pgoddard@townofbourne.com

Cape Cod Commission
ksempati@capecodcommission.org

SITEC Environmental, Inc.
rquinn@sitec-engineering.com

DEP – BOSTON
ATTN: G. Cooper
J. Fischer

DEP – SERO
ATTN: S. Pickering
M. Dakers

PUBLIC NOTICE OF DRAFT LANDFILL EXPANSION PERMIT

**Bourne Landfill
Proposed Phase 9 Landfill Expansion
201 MacArthur Boulevard
Bourne, Massachusetts 02532**

**Authorization to Construct
Major Expansion – Landfill**

**Authorization to Operate
a Landfill**

Notice is hereby given, pursuant to M.G.L., Chapter 111, Section 150A and Section 150A1/2, that the Massachusetts Department of Environmental Protection, (“MassDEP”) has prepared a **DRAFT** Authorization to Construct (“ATC”) for a major expansion on a landfill and Authorization to Operate a landfill (“ATO”) permit located on a parcel at 201 MacArthur Boulevard, Bourne, Massachusetts (the “Landfill”). The entire Site consists of approximately 74 acres of land that has been site-assigned for a landfill by the Bourne Board of Health. The proponent is Town of Bourne – Department of Integrated Solid Waste Management (the “Town” or “ISWM”) of 24 Perry Avenue, Buzzards Bay, Massachusetts 02532.

The Town is proposing to vertically expand the Landfill, encompassing 28 acres of total footprint, from elevation 185-foot mean sea level (“MSL”) to elevation 225-ft MSL, which has been designated as Phase 9. The expansion will completely overlay previously lined and landfilled areas, over portions of the Phase 2, Phase 3, Phase 2A/3A, Phase 4, Phase 5 and Phase 6 landfills. As a result, there will be no liner construction conducted for the proposed Phase 9 vertical expansion. The existing final caps of Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1 will be sequentially removed for the expansion. These areas of landfill (Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1) were constructed with double composite liner system with leak detection, which meets the liner requirements under 310 CMR 19.110(4). The gross available volume for Phase 9 will be approximately 1,255,000 cubic yards, extending the life of the landfill for approximately 5 years.

The Landfill is permitted to accept an average of 600 tons per day of waste with a maximum of 700 tons per day, not to exceed 4,900 tons per week, with a maximum annual disposal rate of 219,000 tons per year. The Town is not proposing any additional tonnage capacity. The Landfill accepts waste on Monday through Friday from 7:00 AM to 4:00 PM and Saturdays from 7:00 AM to 12:00 PM,

The application and DRAFT Permit may be reviewed at **(INSERT THE PUBLIC LOCATION(S) AND HOURS WHERE THE APPLICATION MAY BE REVIEWED)**. The application and DRAFT permit may be reviewed online at: <https://eeaonline.eea.state.ma.us/EEA/PublicApp/>. Scroll down on the first screen and in the “Site Name/Location Name” box type “Bourne Landfill” and then click on the orange “Search” box the bottom of the page. Under “Record Type”, select

the “Application” file with the 12/6/22 (for the ATC) or 2/9/2023 (for the ATO) “Application Date”. The applications, supporting documents, and DRAFT permit will appear in blue links. Click on one link at a time to access each separate document.

MassDEP will accept written comments regarding the proposed Phase 9 landfill vertical expansion for a period of thirty (30) days from the date of publication of this Notice. Public Comments can be submitted to MassDEP in one of three ways: **mailed** to Mark Dakers, Chief, Solid Waste Management Section, Massachusetts Department of Environmental Protection, 20 Riverside Drive, Lakeville, MA 02347; or **emailed** to “sero.solidwaste@mass.gov”; or **submitted online** at <https://eeaonline.eea.state.ma.us/EEA/PublicApp/>.

FACT SHEET

**Bourne Landfill
Proposed Phase 9 Landfill Expansion
201 MacArthur Boulevard
Bourne, Massachusetts 02532**

**Authorization to Construct
Major Expansion – Landfill**

**Authorization to Operate
a Landfill**

The Massachusetts Department of Environmental Protection, (“MassDEP”) has prepared a **DRAFT** Authorization to Construct (“ATC”) for a major expansion on a landfill and Authorization to Operate a landfill (“ATO”) permit located on a parcel at 201 MacArthur Boulevard, Bourne, Massachusetts (the “Landfill”). The entire Site consists of approximately 74 acres of land that has been site-assigned for a landfill by the Bourne Board of Health. The proponent is Town of Bourne – Department of Integrated Solid Waste Management (the “Town” or “ISWM”) of 24 Perry Avenue, Buzzards Bay, Massachusetts 02532.

The Town is proposing to vertically expand the Landfill, encompassing 28 acres of total footprint, from elevation 185-foot mean sea level (“MSL”) to elevation 225-ft MSL, which has been designated as Phase 9. The expansion will completely overlay previously lined and landfilled areas, over portions of the Phase 2, Phase 3, Phase 2A/3A, Phase 4, Phase 5 and Phase 6 landfills. As a result, there will be no liner construction conducted for the proposed Phase 9 vertical expansion. The existing final caps of Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1 will be sequentially removed for the expansion. These areas of landfill (Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1) were constructed with double composite liner system with leak detection, which meets the liner requirements under 310 CMR 19.110(4). The gross available volume for Phase 9 will be approximately 1,255,000 cubic yards, extending the life of the landfill for approximately 5 years.

The Landfill is permitted to accept an average of 600 tons per day of waste with a maximum of 700 tons per day, not to exceed 4,900 tons per week, with a maximum annual disposal rate of 219,000 tons per year. The Town is not proposing any additional tonnage capacity. The Landfill accepts waste on Monday through Friday from 7:00 AM to 4:00 PM and Saturdays from 7:00 AM to 12:00 PM.

MassDEP has reviewed the submitted information and has determined that the proposal complies with the requirements established at 310 CMR 19.000 concerning the construction and operation of a landfill expansion.

The following numbered paragraphs explain the basis for the conditions in the **DRAFT** Authorization to Construct and Authorization to Operate permit for the proposed Phase 9 landfill vertical expansion:

1. Standard Department Language (self-explanatory) regarding regulatory compliance.
2. Standard Department Language (self-explanatory) regarding submittal of a copy of Deed Notice for the Phase 9 expansion, upon issuance.
3. Standard Department Language (self-explanatory) regarding the life of Authorization to Operate permit.
4. Standard Department Language (self-explanatory) regarding reserve capacity.
5. Standard Department Language (self-explanatory) regarding waste types and tonnage limits.
6. Standard Department Language (self-explanatory) regarding hours of operation.
7. Standard Department Language (self-explanatory) regarding potential nuisance conditions and mitigation measures.
8. Standard Department Language (self-explanatory) regarding landfill gas monitoring consultant services.
9. Standard Department Language (self-explanatory) regarding waste inspections.
10. Standard Department Language (self-explanatory) regarding asbestos requirements.
11. Standard Department Language (self-explanatory) regarding leachate management.
12. Standard Department Language (self-explanatory) regarding cover requirements.
13. Standard Department Language (self-explanatory) regarding stormwater runoff.
14. Standard Department Language (self-explanatory) regarding environmental monitoring.
15. Standard Department Language (self-explanatory) regarding facility inspections.
16. Standard Department Language (self-explanatory) regarding recordkeeping.
17. Standard Department Language (self-explanatory) regarding financial assurance mechanisms.

18. Standard Department Language (self-explanatory) regarding annual report submittal to MassDEP's upload portal.
19. Standard Department Language (self-explanatory) regarding training records.
20. Standard Department Language (self-explanatory) regarding facility modifications.
21. Standard Department Language (self-explanatory) regarding leakage action plan.
22. Standard Department Language (self-explanatory) regarding local, state, and federal requirements.
23. Standard Department Language (self-explanatory) regarding permit limitations.



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General Manager
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24 Perry Avenue
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RE: **APPROVAL WITH CONDITIONS**
Phase 9 Landfill Expansion

BWP SW 26 - Authorization to Construct
Application No. 22-SW26-0001-APP
Authorization No. [to be inserted in final decision]

BWP SW10 – Authorization to Operate
Application No. 23-SW10-0002-APP
Authorization No. [to be inserted in final decision]

AT: Bourne Landfill
201 MacArthur Boulevard
Bourne, MA 02532
Facility # 39101
Regulated Object # 172356

Dear Mr. Barrett:

The Massachusetts Department of Environmental Protection (“MassDEP”) has completed its Technical Review of the permit applications (“Application”) listed above, determined that the applications are Technically Complete, and is issuing this **DRAFT** Approval with conditions for an Authorization to Construct - Major Expansion (“ATC”) and for an Authorization to Operate (“ATO”) for Bourne Landfill (“Landfill”). The ATC and ATO is for Phase 9, a 40 feet vertical expansion from elevation 185-ft mean sea level (“MSL”) to elevation 225-ft MSL. The Applications were submitted on behalf of the Town of Bourne Department of Integrated Solid Waste Management (the “Applicant” or the “Town”) by SITEC Environmental, Inc. (“SITEC”) of Marshfield, Massachusetts.

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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I. SUBMITTALS:

MassDEP has reviewed the Application pursuant to 310 CMR 19.000: *Solid Waste Regulations*, and MassDEP's *Landfill Technical Guidance Manual, May 1997* (the "Manual"). The Application consists of the following:

For the BWP SW26 – Authorization to Construct:

- A completed BWP SW26 application form for Authorization to Construct – Major Expansion with assigned application no: 22-SW26-0001-APP, signed by Daniel Barrett of Town of Bourne Department Integrated Solid Waste Management and A. Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 32861;
- A Supplemental Permit Information prepared by SITEC dated December 6, 2022 describing the proposed plan for construction, operations, monitoring and closure for Phase 9 Landfill Expansion, with appendices that include a copy of MassDEP's BWP SW10 ATO permit approval for Phase 6 Landfill Expansion dated January 17, 2020 (Authorization No. SW10-0000008), a copy of the Town Bourne Board of Health's decision for Major Modification of Site Assignment Application No. 21-SW38-001-APP dated March 14, 2022, a copy of Certificate of the Secretary of Energy and Environmental Affairs on the Single Supplemental Environmental Impact Report dated December 30, 2020, a copy of the Town of Bourne Board of Health letter dated June 6, 2020 and Bourne Water District letter dated May 26, 2020, and a copy of MassDEP's Review of the Interim Risk Assessment and Cumulative Impact Assessment of the Proposed Phased Landfill Development of the Town of Bourne Integrated Solid Waste Management Facility dated July 1, 2003;
- A Design Plan, a Construction Quality Assurance Plan, and Technical Specifications, signed and stamped by A. Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 3286;
- A set of fourteen (14) engineering drawings dated December 20, 2022 signed by A. Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 32861.

The Application was submitted electronically via the Massachusetts Executive Office of Energy and Environmental Affairs ePlace Portal at <https://permitting.state.ma.us/CitizenAccess/> on December 6, 2022.

For the BWP SW10 – Authorization to Operate

- A completed BWP SW10 application form for Authorization to Operate – Major Expansion with assigned application no: 23-SW10-0002-APP, signed by Daniel Barrett of Town of Bourne Department Integrated Solid Waste Management and A. Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 32861;
- A Narrative Report prepared by SITEC dated February 8, 2023 to document the operations ready status for the Phase 9 Landfill Expansion;

- One (1) engineering drawing of Existing Site Conditions and Proposed Stage 9 Staging Plan dated February 6, 2023, signed and stamped by A. Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 32861;
- A copy of letter dated January 26, 2023 to the MassDEP regarding Phase 9 – Financial Assurance Mechanism, a copy of Waste Ban Compliance Plan, and Action Flow Rate Calculations;
- An Operation & Maintenance Plan dated February 6, 2022, signed and stamped by A. Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 32861.
- A Design Plan, a Construction Quality Assurance Plan, and Technical Specifications, signed and stamped by A. Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 3286.
- A set of fourteen (14) engineering drawings dated December 20, 2022 signed by A Raymond Quinn of SITEC, Massachusetts Registered Professional Engineer No. 32861.

The Application was submitted electronically via the Massachusetts Executive Office of Energy and Environmental Affairs ePlace Portal at <https://permitting.state.ma.us/CitizenAccess/> on February 9, 2023.

- Response to Review Comments dated May 25, 2023 submitted electronically via email on May 25, 2023.

The Application and DRAFT permit may be reviewed online at <https://eeaonline.eea.state.ma.us/EEA/PublicApp/> using the “Site Name” Bourne Landfill and the “Search” tab. Under “Record Type”, select the “Application” file with the 12/6/2022 or 2/9/23 “Application Date” and the “Authorization” file with the 12/6/22 or 2/9/23 “Authorization Date”.

II. APPLICATION REVIEW AND DECISION PROCESS:

The Applications were submitted and reviewed pursuant to 310 CMR 19.000: *Solid Waste Regulations*, 310 CMR 19.038: *Review Criteria for a New or Expanded Facility Permit or Permit Modification*, and MassDEP's *Landfill Technical Guidance Manual, May 1997* (the "Manual"). According to these review procedures under 310 CMR 19.029(1): *Use of Permit Procedure at 310 CMR 19.032* and 310 CMR 19.032: *Permit Procedure for a New Facility or Expansion Permit Application*, MassDEP shall prepare a DRAFT Decision and cause Public Notice to be given. According to these review procedures, MassDEP shall prepare a DRAFT Decision and cause Public Notice to be given. Accordingly, a DRAFT Decision is being issued under a cover letter that requires the Applicant to publish a Public Notice establishing a 30-day public comment period.

III. PROJECT BACKGROUND:

Massachusetts Environmental Policy Act (MEPA)

A Single Supplemental Environmental Impact Report (SSEIR) was submitted to MEPA on November 12, 2020. MEPA issued a final certificate on the SSEIR on December 30, 2020, determining that no further MEPA review was required.

Site Assignment

On January 3, 2022, MassDEP issued a Report on Suitability for Site Assignment based on its review of the Site Suitability Application (BWP SW38, Application No. 21-SW38-0001-APP) prepared by SITEC Environmental, Inc. and determined that the proposed location was suitable for the proposed use. The Report on Suitability for Site Assignment was for the modification of the existing Site Assignment for the 99-acre solid waste management facility located on two parcels of land at the site. The first area is a 25-acre parcel that would allow approximately 17.34-acre of area for a horizontal landfill expansion (designated as Phases 7 and 8), and the proposed Phase 9 vertical expansion on the second area consists of 74-acre parcel (the “Site”).

On March 14, 2022, the Bourne Board of Health issued a Report on Suitability for Site Assignment for the proposed Phase 7, 8 and 9 expansions. Notice of a public hearing was published in the Cape Cod Times on January 10, 2022, and a public hearing commenced on February 2, 2022 and continued to February 16, 2022.

IV. PROJECT DESCRIPTION:

The proposed Phase 9 vertical expansion is located within the central portion of the Landfill property. The total footprint of the area to be filled for the expansion will encompass approximately 28-acres. The expansion will completely overlay previously lined and landfilled areas, over portions of the Phase 2, Phase 3, Phase 2A/3A, Phase 4, Phase 5 and Phase 6 landfills. As a result, **there will be no liner construction conducted for the proposed Phase 9 vertical expansion.** The gross available volume for Phase 9 will be approximately 1,255,000 cubic yards, which could extend the life of the landfill for approximately 5 years.

Phases 2 and 3 have received final cover system. Phase 4 and 5 have received final cover system, with the exception of the southern slopes and top plateau of the Phase 4, Stage 2 Landfill area and the top plateau of the Phase 5. Intermediate cover that is at least 12-inch thick, in addition to at least 6-inch-thick daily cover has been approved for those areas that have yet to receive final cover system. The Phase 9 expansion over capped and closed landfill areas will require the existing final cover systems to be removed to provide a hydraulic connection for leachate generation in Phase 9 landfill area. The Town indicates that with the exception of an area on the southside of the Landfill (see Stage 7 sequencing), the proposed expansion will not disturb the sideslopes.

The Town indicates that approximately 86% of Phase 9 capacity will be used for disposal of combustor ash from SEMASS Resource Recovery Facility in Rochester. The remaining capacity will be for disposal of Municipal Solid Waste (MSW) from the Town of Bourne and Falmouth. The maximum disposal capacity will be approximately 1,192,000 tons for the Phase 9 life expectancy of approximately 5 years.

Phase 2 and Phase 3

MassDEP approved a BWP SW43 – Landfill Closure Completion for Phase 2 and Phase 3 Landfill area on September 29, 2016 (Transmittal No. X231654), with the following summary of the final cover system for each area:

- Phase 1 Landfill Area – Constructed in Spring 1999 – 22.8 Acres;
- Phase 2 Landfill Area – Constructed in Fall 2002 – 4.97 Acres;
- Phase 3, Stage 1 and Stage 2 Landfill Area Landfill – Constructed in Fall 2004 – 5.85 Acres;
- Phase 3, Stage 3 Landfill Area Landfill – Constructed in Fall 2006 – 1.23 Acres;
- Phase 2A/3A, Contract 1 Landfill Area – Constructed in Fall 2010 – 5.00 Acres;
- Phase 2A/3A, Contract 2 Landfill Area – Constructed in Fall 2012 – 5.00 Acres.

The final cover system consists of the following components, from bottom to top:

- Subgrade Layer – a suitably prepared landfill surface beneath the final cover system;
- Geomembrane Subgrade/Gas Venting Layer consisting of a minimum of 6-inch thickness of soil with a minimum permeability of 1×10^{-3} centimeter per second (cm/sec);
- Low Permeability Layer consisting of a 40-mil high-density polyethylene (HDPE) textured geomembrane cap and a 60-mil HDPE textured geomembrane cap for Phase 3, Stage 1 and Stage 2 Landfill areas only;
- Drainage Layer consisting of a 12-inch-thick sand for Phase 2A/3A and a 9-inch-thick sand for Phase 1, Phase 2 and Phase 3;
- Vegetative Support Layer consisting of a 12-inch soil layer for Phase 1, Phase 2 and Phase 3, and a 9-inch soil layer for Phase 2A/3A.

Phase 4 and 5

- MassDEP approved a BWP SW43 Landfill Closure Completion for Phase 4, Stage 1 Landfill area on October 11, 2018 (Transmittal No. X269125).
- For Phase 5 Landfill area - MassDEP approved a BWP SW27 Authorization to Construct on June 14, 2016 (Transmittal No. X266784) and a BWP SW10 Authorization to Operate on March 30, 2017 (Transmittal No. X272125).
- MassDEP approved a BWP SW25 Corrective Action Design for Phase 4, Stage 2 and Phase 5 Landfill area on February 19, 2021 (Authorization No. SW25-0000006, Application No. 20-SW25-0001-APP).

The final cover system for Phase 4 and 5 consists of the following components, from bottom to top:

- Subgrade Layer – a suitably prepared landfill surface beneath the final cover system;
- Geomembrane Subgrade/Gas Venting Layer consisting of a minimum of 6-inch thickness of soil with a minimum permeability of 1×10^{-3} centimeter per second (cm/sec);
- Low Permeability Layer consisting of a 40-mil high-density polyethylene (HDPE) textured geomembrane cap and a 60-mil HDPE textured geomembrane cap for Phase 5 Landfill area only;
- Drainage Layer consisting of a 12-inch-thick sand;
- Vegetative Support Layer consisting of a 9-inch soil layer.

Phase 4, Stage 1 and sideslopes of Phase 4, Stage 2 and Phase 5, encompassing a total area of 8.4 acres, have received final cover. The plateau areas of Phase 4, Stage 2 and Phase 5 have not been capped but have approved interim cover, in anticipation of the overlying Phase 9 expansion, which is the subject of this approval.

Phase 6

Phase 6 Landfill area is currently an active landfill area and anticipated to reach its approved subgrade in late 2023. MassDEP approved a BWP SW26 Authorization to Construct on July 16, 2018 (Transmittal No. X272912) and a BWP SW10 Authorization to Operate on January 17, 2020 (Authorization No. SW10-0000008, Application No. 19-SW10-000002-APP).

The design and construction of Phase 6 was divided into at least two separate liner construction stages (Stage 1 and Stage 2). Temporary berm has been constructed that allows for the phased liner construction, Stage 1 liner construction has been completed and consists of existing components from the surrounding Phase 4, Stage 2 and Phase 3, Stage 3 Landfills, as well as a new double composite liner system with leak detection capabilities designed in accordance with 310 CMR 19.110.

MassDEP approved the double composite liner system, constructed over 6.9 acres, consists of the following components, from bottom to top:

- A subgrade layer providing structural support to the overlying liner system;
- A low permeability soil layer comprised of 12 inches of compacted low permeability soil having a maximum in-place, saturated hydraulic conductivity of 1×10^{-7} cm/s;
- A secondary geosynthetic clay liner (“GCL”) fabricated of a layer of granular sodium bentonite encapsulated between two sheets of needle-punched geotextile placed above the low permeability layer¹;
- A secondary geomembrane made of 60-mil thick textured high-density polyethylene (“HDPE”) placed on top of the secondary GCL or low permeable soil and extending over the entire liner area;

¹ On side slopes greater than 4:1. (4’horizontal to 1 foot vertical), this layer will extend only to a height that is 5 feet vertically above areas with a slope of less than 4:1

- A bi-planar, geocomposite drainage layer, consisting of an HDPE geonet bonded on both sides with a non-woven geotextile, placed on the secondary geomembrane covering the entire liner area;
- A primary GCL placed above the geocomposite drainage layer covering the entire liner area;
- A primary geomembrane made of a 60-mil thick textured HDPE placed above the primary GCL covering the entire liner area’
- A primary drainage/protection layer placed above the primary geomembrane consisting of an 18-inch-thick layer of clean sand having a minimum hydraulic conductivity of 1×10^{-2} cm/s, covering the entire liner area.

Phase 9 Stage Sequencing

The Phase 9 design will have a final fill elevation of approximately 225-feet above mean sea level (MSL) before placement of the final cover system. The development of Phase 9 is proposed in stages. The first stage is to fill the area over the Phase 5 Landfill area, which will allow the final closure of the northwest corner of the Landfill. The second stage is to fill over the Phase 6 once it reaches its approved grades. The last stage is to fill the area over the Phase 4, Stage 2 plateau that has yet to receive final cover system.

The Town indicates that the proposed plan to develop the Phase 9 expansion in stages is to allow the postponement of removal of the existing final cap over the remainder of the Phase 9 footprint and for the progressive modification to the existing gas collection system that underlays the Phase 9 Landfill area. The Phase 9 expansion will require sequentially removing the existing final caps of the Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1 landfills. These areas of landfill (Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1) were constructed with double composite liner system with leak detection, which meets the liner requirements under 310 CMR 19.110(4).

The Town proposes that for areas that will not have a final cover before the Phase 9 landfilling occurs, an intermediate cover that meets the requirement under 310 CMR 19.130(15)(d). shall be constructed. In addition to the daily cover, the Town has indicated that a minimum of 12-inch-thick of uniformly compacted intermediate cover shall be applied, which will provide a total of eighteen inches of cover. MassDEP is to be consulted prior to conducting any cover repair or installing a temporary sacrificial, geosynthetic cap, should the intermediate cover materials fail to prevent nuisance condition or generate excessive leachate.

In details, the proposed expansion consists of specific stages of development, operation and closure, which summary for each stage is described below:

Phase 9, Stage 1 Grading and Phase 6 Interim

Landfilling during this stage will occur on Phase 5 landfill area which some portion of it has yet to receive final cover system. The Phase 5 Landfill area consists of a 3.5 acre, constructed across the top plateau of the Phase 1 ABC Landfill and overlays the western sideslope of the Phase

2A/3A Landfill and northern side slope of the Phase 4, Stage 1 Landfill. Phase 5 sideslopes were capped in 2021. During Stage 1 landfilling, the Town also proposes to conduct work in the active Phase 6 landfill area in preparation for the next sequencing stage. Three existing gas extraction wells (EW-49, EW-50 and EW-51), which have been vertically extended during Phase 6 buildout, may be extended during Stage 1. As an alternative, a horizontal collection system may be installed as an interim measure, which may result in abandonment of these wells along with two of their remote well heads (RWH-49 and RWH-50).

Phase 9, Stage 2 Grading Preparation

Stage 2 will occur on the uncapped landfill areas of Phase 4, Stage 2 and Phase 6, with interim work for Stage 2 site preparation grades. The Town proposes to construct a berm around the Stage 2 area to contain leachate to the area over the supplemental leachate collection line.

Phase 9, Stage 2 Landfilling and Stage 3 Grading Preparation

Landfilling will occur on Stage 2 footprint after completion of site preparation grades. During landfilling, the Town will work to prepare the site grades for the next stage. Site preparations for Stage 3 include the removal of the existing cap and the berm construction for containment of this area. A supplemental 6-inch solid HDPE leachate collection pipe will be extended into Stage 3 from the existing 6-inch leachate interceptor line on the west side of the Landfill. The leachate line will be valved to allow the bleeding of leachate collected in the Stage 3 area following storms, into the leachate system. Modifications will be done to the existing gas collection system within this area. The Town will expand the gas collection system, including ten and eight-inch gas header extensions, as well as installing eight gas extraction wells.

Gas system extensions will be constructed within the Stage 1 area for future connections, mainly to convert the existing direct mounted wellhead systems to remote wellheads:

- installation of 6-inch lateral to a new extraction well with 8-inch header and 10-inch by 8-inch HDPE tee, which will connect to the existing 10-inch HDPE header pipe
- installation of 10-inch HDPE header that will extend from the existing 10-inch HDPE header pipe, with terminus of 10-inch butterfly valve and blind flange to the south and 8-inch header with blind flange to the east.
- addition of two (2) horizontal gas collection systems.

Phase 9, Stage 3 Landfilling and Stage 4 Grading Preparation

After completion of site preparation grades, landfilling will occur on Stage 3 footprint, covering previously capped landfill areas of Phase 1-ABC and Phase 2A/3A. Stage 4 preparation work includes removing the existing cap and grading to berm the area, as well as adding a leachate collection line connected to the leachate line that was extended into Stage 3 and the modification of existing gas wells in this area to being remote wellheads. The Town indicates that Phase 9, Stage 1 final cap, encompassing an area of approximately 1.5 acres, will be constructed after Stage 3 landfilling begins.

Phase 9, Stage 4 Landfilling and Stage 5 Grading Preparation

After completion of site preparation grades, landfilling will occur on Stage 4 footprint, with the majority will be on previously capped Phase 4 and the remaining will be on uncapped landfill areas of Phase 4 and the active Phase 6. Stage 5 preparation work includes berming the area for containment, gas well modifications to remote wellheads and the extension of a leachate line from the Phase 3, Stage 3 primary leachate sump. The Town indicates that Phase 9, Stages 3 and 4 final cap, encompassing an area of approximately 6.8 acres, will be constructed after Stage 5 landfilling begins.

Phase 9, Stage 5 Landfilling and Stage 6 Grading Preparation

After completion of site preparation grades Landfilling will occur on Stage 5 footprint, covering the previously capped landfill areas of Phases 2 and 3. Stage 6 preparation work includes removing the existing cap and grading to berm the area, as well as adding a leachate collection line connected to the line that was extended into Stage 5 and the modification of existing gas wells to being remote wellheads.

Phase 9, Stage 6 Landfilling and Stage 7 Grading Preparation

After completion of site preparation grades Landfilling will occur on Stage 6 footprint, covering the previously capped landfill area of Phase 3. Stage 7 preparation work includes berming, gas well modifications to remote wellheads and adding a leachate collection line and connecting to the line that was extended into Stage 5. Proposed gas modification systems include the addition of ten- and eight-inch gas header extensions and installation of ten (10) gas extraction wells.

Phase 9, Stage 7 Landfilling and Final Grading

After completion of site preparation grades, landfilling will occur on Stage 7 footprint, with the majority will be on the previously capped Phase 3 and an area of the active Phase 6. The Town indicates that Phase 9, Stages 5 and 6 final cap, encompassing an area of approximately 6.7 acres, will be constructed after Stage 7 landfilling begins.

Final Cover System

The Town proposes the final cover system for Phase 9 that meets the requirements under 310 CMR 19.112: *Landfill Final Cover Systems*, and is comprised of the components described below, from bottom to top:

- A suitably prepared landfill surface beneath the final cover system;
- A geomembrane subgrade/gas venting layer consisting of 6-inch thick of soil;
- A low permeability layer consisting of a 40-mil HDPE textured geomembrane cap;
- A drainage layer consisting of 12-inch thick of soil with a minimum saturated hydraulic conductivity of 1×10^{-2} cm/s;
- A vegetative support layer consisting of at least 9-inch thick of soil capable of supporting a healthy vegetative growth on the final cover.

The Town proposes stormwater control system that is designed to maintain the integrity of the final cover and prevent ponding of water on the final cover areas. The stormwater control system will consist of:

- Earthen diversion berms to be built on the final cover above the vegetative layer to divert run-off to side slope let-down channels, which will reduce the travel distance of the overland run-off hence reducing the volume of overland flow and erosion of the final cover.
- Side slope stone-lined let-down channels to convey slope run-off from the diversion berms to perimeter drainage swales and interceptor piping at the toe of the slopes.
- Rip-rap lined perimeter swales to be constructed along portions of the toe of the landfill slopes, which will convey the run-off from the let-down channels to the existing stormwater retention basins or the drainage interceptor piping.
- Drainage interceptor piping, which has been constructed along the eastern toe of the landfill slope, beginning within the Phase 3, Stage 3 Landfill area and flowing south, past Phase 6 to Sedimentation Basin No. 2 at the southeast corner of the 25-acre parcel.
- Stormwater basins to capture sediment and for discharge through infiltration.
- Sub-drains, constructed of perforated pipe, to be installed above the geomembrane cap at maximum intervals on the side slopes and across the plateau areas. Sub-drains are to divert drainage water percolated through the topsoil layer to the let-down channels and the perimeter swales, and to minimize the build-up of water within the drainage layer.

To determine that the proposed drainage layer provide enough capacity to manage all the water, the Town has performed an evaluation utilizing the USEPA HELP Model to determine the spacing of sub-drains within the drainage layer. The resulting analysis show that the proposed drainage layer will have sufficient capacity to manage all infiltrations, provided sub-drains are installed above the geomembrane barrier at a maximum spacing of 75 feet on the 3:1 sideslopes and the 5% slope plateaus.

EFFECT ON CURRENT OPERATION

The proposed vertical expansion will not require additional personnel and equipment at the Landfill as the exiting personnel and equipment at the active face area will be sufficient to manage the additional waste received as similar environmental procedures currently in place are adequate to handle and mitigate potential concerns regarding noise odor, dust and vectors.

EFFECT ON CAPACITY AND OPERATING LIFE

The gross available volume for Phase 9 is approximately 1,255,000 cubic yards. The expansion is estimated to provide maximum disposal capacity of 1,192,000 tons which will extend the site life of the Landfill by approximately 5 years. There will be no change in the Landfill's permitted average daily disposal capacity of 600 tons/day with a maximum of 700 tons/day, with a maximum annual disposal capacity of 219,000 tons/year.

LEACHATE GENERATION AND COLLECTION SYSTEM

The Town has indicated that the Phase 9 Expansion will not create a significant change in leachate generation since the Phase 9 will completely overlay previously lined and landfilled areas, over portions of the Phase 2, Phase 3, Phase 2A/3A, Phase 4, Phase 5 and Phase 6. Leachate generated by Phase 9 is designed to flow vertically into the existing collection systems. As landfilling occurs and to reduce the volume, the Town will extend the existing system, as necessary, to provide a direct path for leachate to the existing leachate collection system sumps. The sumps will be pumped through force mains into either of the two (2) aboveground leachate storage gas fused steel tanks: a 207,000-gallon tank located along the easterly property line opposite the Phase 3, Stage 3 Landfill area, and a 125,000-gallon tank located to the south of the southwest corner of the Phase 6 Landfill. Both tanks are equipped with secondary containment systems that have sufficient capacity to contain at least 110% of the total volume of the primary containers.

Submersible pumps from the primary and secondary leachate collection systems lift leachate from the sumps and convey the leachate to one of the existing storage tanks. The pumps include switches to control the operation of the pumps and are located within a section of perforated HDPE piping resting on the floor of the sumps and connected to solid risers placed up the sideslopes of the Landfill. A control panel controls the pumps, meters the amount of leachate pumped and provides both audio and visual alarms. The panel also displays the depth of leachate in the sumps by digital read-out. To provide redundancy and in case of failure, the Facility has a back-up pumps available on site.

Leachate is pumped out of the storage tanks for off-site disposal to a permitted facility. The quantity of leachate generated will be recorded and the leachate quality will be monitored in accordance with 310 CMR 19.132 and/or as specified by the leachate disposal permit.

STORMWATER MANAGEMENT SYSTEM

The Town indicates that the Phase 9 expansion will not significantly alter the existing drainage patterns, surface conditions or runoff characteristics. In addition, the design stormwater flow rates were analyzed for the stormwater retention basins utilizing HydroCAD Stormwater Modeling program, which utilizes the TR-20 method for runoff calculations. The results of the analysis with printed date of November 17, 2022 shows that the drainage system will be able to sustain the discharge from a 25-year storm condition and contain a 100-year storm condition. The analysis also shows that the existing Stormwater Basin No. 1 and No. 2 will have adequate volume and surface area to accommodate design condition storm events.

Stormwater Basin No. 1 will provide about 585,400 cubic feet of storage, which exceeds the storage volume required to accommodate the run-off from a 25-year, 24-hour storm event (approximately 182,300 cubic feet) and is sufficient for managing the stormwater run-off from a 100-year storm event (approximately 307,700 cubic feet of storage) or from back-to-back rainfall events.

Stormwater Basin No. 2 will provide about 777,400 cubic feet of storage, which exceeds the storage volume required to accommodate the run-off from a 25-year, 24-hour storm event (approximately 349,500 cubic feet) and is sufficient for managing the stormwater run-off from a 100-year storm event (approximately 503,500 cubic feet of storage) or from back-to-back rainfall events.

MassDEP noted that the 100-year storm condition analysis showed that storm pipes (labeled in the Routing Diagram as Reach 1-2A, Reach 3-2, Reach 5-4-3 and Reach 12-2) may surcharge into the adjacent manhole and catch basin structures, which will then drain down as the storm intensity reduces. If any of the drainage system components indicated above fail, MassDEP will require the Town to replace the pipes and conduct necessary backfilling.

Stormwater Basin No. 1

Stormwater Basin No. 1 is an existing retention/infiltration pond located in the northwest corner of the Site. The basin currently receives stormwater runoff from the westerly sideslopes and the plateau areas of the Phase 1 ABC, Phase 2A/3A, Phase 4, Phase 5 and Phase 6 Landfills and the northerly sideslopes of the Phase 2 and Phase 2A/3A Landfills. Stormwater run-off from the Site's access road areas also drain into Stormwater Basin No. 1. Stormwater Basin No. 1 was enlarged as part of the Phase 4 Landfill construction, which provides sufficient capacity for the active Phase 6 as well as Phase 9. A perimeter drainage channel, or swale, was constructed along the western toe of the Phase 4 sideslope and most of the Phase 6 area, as part of the Phase 4 and Phase 6 site construction work. The drainage channel conveys, along with a series of diversion berms and let-down channels, stormwater run-off from the tributary areas to the expanded Stormwater Basin No. 1.

Stormwater Basin No. 2

Stormwater Basin No. 2 is an existing retention basin located at the southwestern corner of the site assigned 25-acre parcel. Currently, drainage from the C&D Transfer Station, the Residential Recycling Center, the Single Stream Recycling facility and the surrounding materials storage and staging areas, flow into Stormwater Basin No. 2. Runoff from the eastern sides and plateau areas of Phase 2, Phase 3, Phase 2A/3A and Phase 6 is diverted to Stormwater Basin No. 2 by the drainage interceptor line that runs along the eastern toe of the landfill area.

LANDFILL GAS CONTROL SYSTEM

The Town proposes installation of new vertical extraction wells and horizontal gas collectors and the modification of portions of the existing collection system within the Phase 9 footprint. The design also includes the installation of a new network of piping to collect generated landfill gases and convey them to a flare station for treatment. The existing flare station is located to the northeast of the Phase 2 Landfill area and prevents the occurrence of odors and the off-site migration of landfill gas.

Gas Extraction Wells

The Town proposes to install eighteen (18) new gas extraction wells for the collection and management of gas from within the full build out area of the Phase 9 Landfill that does not currently have collection wells. The gas extraction wells have been designed to have a constructed well diameter of at least two feet. To construct each extraction well, a minimum two-foot diameter boring will be drilled into the waste to the designed well depth, by using a bucket auger-drilling rig. Once the well boring has been completed, the gas extraction well will be installed.

Each extraction well will consist of the following:

- An eight-inch diameter perforated SCH.80 CPVC well screen, provided with a bottom end cap, joined to a six-inch solid SCH.80 CPVC riser pipe via a slip coupling connection.
- One to one and one half-inch (1" - 1 ½") washed stone placed around the well screen to a minimum of one-foot above the top of the well screen.
- A well washer to provide a separation between the wash stone gravel pack and the next layer.
- A two-foot-thick bentonite plug consisting of medium bentonite chips or pellets placed above the stone and hydrated with water.
- Well-graded soil backfill placed above the bentonite plug to the Landfill's subgrade surface.

All of the vertical wells will be drilled to a maximum depth of ten feet above the sand drainage layer elevations of the primary underlying liner systems. MassDEP is requiring the Town to include individual well depth information as part of the final closure plan based on actual surveyed elevations of the landfill surface.

The top of the six-inch diameter solid SCH. 80 CPVC riser will extend approximately six feet above the intermediate cover landfill surface to allow for the final cover thickness. Accu-Flo™ (or equal) wellhead assemblies will be attached to the well riser and will extend the well to approximately eight feet above the Landfill's subgrade elevation, prior to final cover.

Wellhead Assemblies

Accu-Flo™ (or equal) wellhead assemblies will be installed on each well, which include the following:

- A two-inch by six-inch adapter bushing connecting the well riser or collector with the two-inch wellhead tube assembly.
- Quick connect instrument ports compatible with landfill gas monitoring instruments for measuring gas flows and gas quality.
- A two-inch valve used to regulate the gas extraction rate from the well. A two-inch dust cap will be installed on the top of the tee covering the instrument reading ports and temperature indicator to protect them from dust or debris.
- A two-inch flexible hose will be attached from the valve to the four-inch HDPE riser piping via a two-inch by four-inch adapter bushing.

Gas Extraction Header and Lateral Piping

The Town proposes that the pipes be installed with a minimum slope of five percent (5%) toward condensate collection points. Underground piping and fittings will be constructed of SDR-17 HDPE. The piping may be joined by heat fusion to provide a stronger joint connection. Flange connections will be made at valves and other fittings, as required for proper installation. Materials resistant to corrosion will be used for the flange connections. The piping will be pressure tested to document the integrity of the installation.

Gas Condensate Traps

The Town proposes condensate traps along the eastern and western perimeters of the Phase 9 Landfill, each connected to the 10-inch gas header pipes located on each side of the Landfill. The condensate will travel downgradient through the gas collection lines in Phase 9 and surrounding areas and discharge into the condensate traps. Gas will be conveyed to the north toward the flare station located at the northeast corner of the site, near the Phase 2 Landfill. Condensate collected by the condensate traps will flow into the leachate collection system and to the primary leachate collection sump. When the mixed condensate and leachate level rises to a specific depth, the primary leachate collection sump pump will turn on and will discharge the liquid through the existing force main to either of the existing leachate collection tanks. Each condensate trap will be equipped with a four-inch valve for temporary shut-off flow for maintenance purposes.

Horizontal Gas Collection System

Within the areas that have existing vertical gas collection wells, the Town proposes to modify them to remote wellhead systems and install horizontal gas extraction systems within the 40-foot vertical expansion volume. The horizontal collector systems will be constructed just below and connected to the geomembrane subgrade/gas venting sand layer. A total of three (3) horizontal gas collection systems are proposed for construction, which will consist of 6-inch HDPE solid header piping and 6-inch HDPE corrugated slotted lateral piping. Butterfly valves or wellhead assemblies will be installed in each header pipe section. Sampling ports will be installed adjacent to the valves for monitoring and maintenance purposes.

LANDFILL STABILITY

As part of the application submittal, the Town submitted a seismic and static stability analysis results, conducted by GeoComp of Acton, Massachusetts, signed by Martin Hawkes, P.E. and Anant Panwalkar, P.E. The analysis was done as the Phase 9 expansion includes filling operations over existing lined landfill areas and the construction of a multi-layered final cover system. The analysis is to determine if the proposed filling will impose additional loads as well as to summarize the design basis for the suitability of the landfill structure and final cover system components and establishes the minimum acceptable properties for these components.

The results show that the Phase 9 expansion meets the criteria under 310 CMR 19.038(2)(d)2. through 4., subject to the following provisions:

- The expansion does not include any new liners separating it from the existing waste fills.

- The as-placed cap (including soil, geosynthetics and the interface between soil and geosynthetics) must have strengths that equal or exceed the specified minimum requirements in Table 2 of the Geocomp Report included as part of the application submittal.
- All waste material placed in the Landfill is assumed to be any combination of MSW, Fly Ash or Processed Boiler Aggregate (PBA) from SEMASS, and that it is compacted to average densities not exceeding the values shown in Table I of the Geocomp Report included in Appendix C-3.

The Town indicates that provisions will be made in the contract documents to have the Contractor demonstrate with test data that meets the requirements specified in the report.

FINANCIAL ASSURANCE MECHANISM

The Town maintains a Financial Assurance Mechanism for closure and post closure costs. The Town has estimated a closure cost of \$7,043,600 for Phase 9. The Town is funding the closure liability over a 4 year pay-in period. According to the letter dated January 6, 2023 signed by Erica Flemming, Finance Director for the Town of Bourne, in March 2023, the Town has set aside an initial payment of approximately \$1,760,900 in a dedicated, restricted account within the ISWM Enterprise Fund for the Phase 9 closure. In accordance with 310 CMR 19.051(12)(b)(2) the Town will review and adjust the Final Closure Cost Estimate and make subsequent payments to the Closure Account annually in March 2024, 2025, and 2026.

V. APPROVAL WITH CONDITIONS: [as it would appear in any decision following the draft permit comment period]

MassDEP has determined the application is satisfactory and in accordance with the authority granted pursuant to Massachusetts General Laws, Chapter 111, Section 150A, hereby [to be inserted in final decision] the vertical expansion and disposal operations in Phase 9 of the Bourne Landfill subject to the following conditions:

1. Regulatory Compliance: The Town shall operate and maintain the Landfill in accordance MassDEP regulations, requirements, the Manual, or as specified by this permit. This includes, but is not limited to, 310 CMR 19.043(5) *Standard Conditions*, 310 CMR 19.051 *Financial Assurance Requirements*, and 310 CMR 19.130 *Operation and Maintenance Requirements*. There shall be no deviation from the approved plan/permit without prior written approval from MassDEP.
2. Deed Notice: The Town shall submit a copy of the Notice for the Phase 9 expansion once it is recorded in the Barnstable County Registry of Deeds, upon its issuance.
3. Life of Permit: The Authorization to Operate shall be valid until Phase 9 reaches capacity or for a period of five (5) years, whichever comes first.

4. Reserve Capacity: Notwithstanding the capacity and waste-type restrictions in this permit, the Landfill may accept additional waste **upon request** to, and written approval by MassDEP. MassDEP may grant such approval if it determines that a capacity shortfall may occur, and that alternate disposal facilities are not able to handle the shortfall adequately.
5. Waste Types and Tonnage Limits: The Town may accept an average of 600 tons per day of waste with a maximum of 700 tons per day not to exceed 4,900 tons per week. The Town shall not accept more than 219,000 tons of waste for disposal per year. Waste approved to be disposed at the Landfill includes municipal solid waste (MSW), residual Construction & Demolition (C&D) material, ash and other non-MSW material. The definition of non-MSW for the purpose of this permit includes construction and demolition waste residuals from a C&D processing facility, bulky waste, difficult to manage waste, and other special wastes that have received prior written approval from MassDEP and only in accordance with Department policy.
6. Hours of Operation: The Town may operate the Facility seven days per week, fifty-two (52) weeks per year, Monday through Saturday 7:00 AM to 4:00 PM and Sunday from 7:00 AM to 12:00 PM.
7. Nuisance Conditions: The Town shall ensure that Facility operations do not create nuisance problems with vectors, odors, dust, noise, litter or other nuisance conditions. Measures shall be undertaken immediately to mitigate any potential impacts from nuisance conditions including temporarily ceasing operation on any given day. Operations shall be modified to prevent these conditions from reoccurring. The Town shall comply with 310 CMR 7.00 and 19.000 and shall implement measures to effectively prevent nuisance conditions and conditions of air pollution during construction or operations. In the event a nuisance condition develops, abatement measures shall be implemented immediately. Pursuant to 310 CMR 7.00 and 19.000, MassDEP reserves the right to require additional equipment and/or measures to prevent or control nuisance conditions and/or conditions of air pollution.
8. Landfill Gas Monitoring Consultant Services: The Town shall continue to engage the services of a third-party consultant, experienced in the optimization of the performance of landfill gas collections systems, to review the landfill gas collection system performance and advise the Town regarding necessary adjustments to the system vacuum and/or design based on temperature, methane, oxygen, and nitrogen levels. Performance data shall be collected at each landfill gas extraction well at least monthly, or more frequently as necessary. Adjustments to the landfill gas extraction rate shall be made as appropriate to maintain maximum efficiency, control landfill soil gas migration and emissions including odors. The results of each test and records of each adjustment to the landfill gas collection system shall be recorded and maintained on-site for MassDEP review upon request.

9. Waste Inspections: The Town shall conduct waste inspections for banned waste and other unacceptable materials in accordance with MassDEP’s recycling rules, the approved Waste Ban Plan, or as required by this permit. Routine operations shall include supervised unloading and inspection of all waste for unacceptable materials including asbestos, hazardous materials, and waste ban materials. All unacceptable materials shall be managed in accordance with procedures contained in the operation and maintenance plan and as modified by this permit.
10. Asbestos Requirements: The Town shall adhere to the following protocol for testing and inspecting incoming waste material to prevent the acceptance and processing of Asbestos Containing Materials (ACM).
- (a) A sign shall be posted at the Facility entrance stating that asbestos waste and asbestos-containing materials are not accepted at the Facility.
 - (b) An on-site asbestos inspector certified by the Massachusetts Department of Labor Standards Asbestos Program for landfill / transfer station type operations shall visually inspect all incoming loads of waste in order to determine the presence and/or likelihood of ACM. In addition to classroom certification, inspectors must have a minimum of forty (40) hours of on-the-job training and/or experience in identifying potential ACM and sampling protocols. A minimum of two employees shall maintain an asbestos inspector license. All other operations staff shall attend asbestos awareness class.
 - (c) For each load where ACM is suspected the Town shall notify the MassDEP Southeast Regional Office, Solid Waste Management Section, by telephone (508) 946-2828 within two (2) hours after identifying the load as containing suspect ACM. The Town shall also submit a written report that identifies the source (name of hauler and vehicle license number), and, if known, the generator name and address, the type, quantity, handling procedures and disposition of the suspect ACM, to the MassDEP Southeast Regional Office, Solid Waste Management Section via email mark.dakers@mass.gov within two (2) hours of observing the suspect ACM, and submit a written report via mail within twenty-four (24) hours, of observing the suspect ACM.

Pursuant to 310 CMR 19.061(2) certain asbestos-containing asphaltic roofing and siding materials may be disposed of in any landfill permitted by MassDEP to accept solid waste pursuant to 310 CMR 19.000. Provided the requirements of 310 CMR 7.15(10) “Requirements for the Removal of Asbestos-containing Asphaltic Roofing and Siding Materials” are followed and best management practices are used to prevent emissions at the Landfill, and if the Town determines that the only suspect ACM within a waste load is intact and unbroken vinyl asbestos tile and asphalt based asbestos-containing siding products and asphalt based asbestos-containing roofing materials, then the load may be disposed at the Landfill. The load does not require notification to MassDEP. The load should not be culled, compacted or otherwise

handled in a manner that causes breakage of the suspect ACM material. Recyclable materials that are banned from disposal pursuant to 310 CMR 19.017, should be culled from the load prior to disposal, whenever this can be performed without causing a threat to worker safety and/or result in a discharge of asbestos to the environment. Recyclable materials that are likely to be contaminated by exposure to asbestos containing materials do not need to be culled and may be transferred for disposal.

11. Leachate Management: The Town shall operate and maintain the leachate collection and handling equipment at the Landfill in accordance with 310 CMR 19.130(30), the approved plan or as required by this permit. At a minimum, the Town shall conduct quarterly analysis of the leachate for the parameters listed at 310 CMR 19.132(2)(h) or as required to comply with the monitoring requirements and standards of all leachate disposal permits. The quantity of leachate generated shall be reported in the Facility Inspection reports required pursuant to Condition #15.
12. (Alternative) Daily Cover Requirements: The Town shall apply daily, intermediate, and final cover materials at the Landfill in accordance with 310 CMR 19.130(15) and the approved plan. The quantity of (alternative) daily cover materials that may be used at the Landfill shall not exceed the quantity necessary to meet the performance standards for daily cover materials specified at 310 CMR 19.130(15). A quantity in excess of amount specified in the regulations shall be considered disposal.
13. Stormwater runoff: The Town shall control and collect all stormwater that comes in contact with solid waste and/or daily cover within the leachate collection system such that this contact water is not allowed to flow into unlined areas of the site.
14. Environmental Monitoring: At a minimum, the Town shall conduct quarterly environmental monitoring of all existing groundwater, surface water, and soil gas monitoring points at the Landfill in accordance with MassDEP regulations, as modified by MassDEP through review of monitoring data and the Comprehensive Site Assessment (CSA). All sampling results including leachate sampling shall be submitted to the MassDEP through its upload portal called the Compliance Reporting System (<https://eeaonline.eea.state.ma.us/EEA/ComplianceReport/>) within 60-days after the scheduled sampling period or as required to notify MassDEP of any exceedances.
15. Facility Inspections: The Town shall provide for the Facility to be inspected on a bi-monthly basis by a Massachusetts Registered Professional Engineer, or other qualified professional approved by MassDEP. An inspection report shall be submitted to the MassDEP through its upload portal called the Compliance Reporting System (<https://eeaonline.eea.state.ma.us/EEA/ComplianceReport/>) no later than 14 days following the inspection. The report shall address all aspects of the Facility including the compost and recycling operations, the C&D transfer operations, all Landfill disposal operations, leachate volumes, leachate management, stormwater controls, and all other

site features. The report shall indicate whether all items are in compliance and propose remedies and establish a schedule for correcting any problems.

16. Records: The Town shall maintain daily logs at the Facility at all times to record the operational information required pursuant to 310 CMR 19.130(34) with copies periodically forwarded to the Board of Health. The Town shall retain copies of all personnel training records regarding operation and maintenance procedures, health and safety training, asbestos training, first aid, emergency procedures and any other training. All logs and records shall be available for Department review upon request.
17. Financial Assurance Mechanism: The Town shall continually maintain the approved financial assurance mechanism, revise the cost estimates, and submit the revised estimates in accordance with 310 CMR 19.051.
18. Annual Report: The Town shall submit an Annual Report to MassDEP through its upload portal called the Compliance Reporting System (<https://eeaonline.eea.state.ma.us/EEA/ComplianceReport/>) by February 15th of each year which summarizes the facility operations for the previous calendar year on a form as provided by MassDEP.
19. Training Records: The Town shall retain copies of all personnel training records regarding operation and maintenance procedures, health and safety training, asbestos training, first aid, emergency procedures and any other training.
20. Facility Modification(s): The Town shall submit a permit modification application to MassDEP for review and approval for any activities proposed to be conducted on the site assigned property including any construction or substantial changes or additions to site operations.
21. Leakage Action Plan: The Town shall conduct leak detection monitoring each operational day to determine the amount of leakage into the secondary liner. The leakage shall be measured in units of “gallons per acre per day”.

Notification Flow Rates (“NFR”) shall be one hundred (100) gallons per acre per day (gpad) for the daily measurements and an average of fifty (50) gpad, calculated on a 30-day running average basis.

Action Flow Rates (“AFR”) shall be 200 gpad for daily measurements and an average one-hundred (100) gpad, calculated on a 30-day running average basis.

If a NFR is exceeded for any one day, the Town shall notify MassDEP, evaluate the Landfill operations and maintenance, and take other actions as deemed appropriate by MassDEP. If an AFR is exceeded for any one day, the Town shall notify MassDEP by the next business day and shall commence all other contingency actions stated in the Leakage

Action Plan including meeting with MassDEP and submitting an engineering evaluation report within 30-days of the exceedance. MassDEP reserves the right to modify the NFR and AFR and/or the required responses at any time.

22. Local, State, Federal Requirements: The Town shall fully comply with all applicable local, state, and federal laws, regulations, and policies, by-laws, ordinances and agreements. Applicable federal regulations include, but are not limited to, 29 CFR Part 1910, OSHA standards governing employee health and safety in the workplace.
23. Permit Limitations: The issuance of this approval is limited to the construction and disposal operations in Phase 9 Landfill expansion and does not relieve the Town from the responsibility to comply with all other regulatory or permitting requirements. MassDEP reserves the right to require additional assessment or action, as deemed necessary to protect and maintain the environment free from objectionable nuisance conditions, dangers or threats to public health or the environment.

VI. RIGHT TO APPEAL:

[as it would appear in any decision following the draft permit comment period]

Right to Appeal:

This decision has been issued pursuant to M.G.L. Chapter 111, Section 150A, and 310 CMR 19.032. Pursuant to 310 CMR 19.032(6)(d)(1), any person aggrieved by the final permit decision may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. Chapter 111, Section 150A and M.G.L. Chapter 30A not later than thirty days following the date of issuance of the final permit decision to the Applicant (the Town). The standing of a person to file an appeal and the procedures for filing such appeal shall be governed by the provisions of M.G.L. c. 30A. Unless the person requesting an appeal requests and is granted a stay of the terms and conditions of the decision by a court of competent jurisdiction, the decision shall remain effective or become effective in accordance with 310 CMR 19.032(6)(b), i.e. the date of issuance.

Notice of Appeal:

Any aggrieved person intending to appeal a final permit decision to the Superior Court shall first provide notice of intention to commence such action. Said notices of intention shall include MassDEP Authorization Number [to be inserted in final decision] and shall identify with particularity the issues and reason why it is believed the final permit decision was not proper. Such notice shall be provided to the Office of General Counsel of MassDEP and the Regional Director for the regional office which processed the permit application, if applicable at least five days prior to filing of an appeal. The appropriate addresses to send such notices are:

Office of General Counsel
Department of Environmental Protection
100 Cambridge St., Suite 900
Boston, MA 02114

Regional Director
Department of Environmental Protection
20 Riverside Drive
Lakeville, MA 02347

No allegation shall be made in any judicial appeal of a final permit decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in 310 CMR 19.000, provided that a matter may be raised upon showing that it is material and that it was not reasonably possible with due diligence to have been raised during such procedures or that matter sought to be raised is of critical importance to the environmental impact of the permitted activity.

Please direct any questions regarding this matter to me at (508) 946-2847 or via email at mark.dakers@mass.gov or Elza Bystrom (617) 413-2711 or via email at elza.bystrom@mass.gov, or write to the letterhead address. Refer to Authorization Number [to be inserted in final decision] in any correspondence to this office regarding this project.

Very truly yours,

DRAFT

Mark Dakers, Chief
Solid Waste Management Section

D/EB

ec: Bourne Board of Selectmen
kthut@townofbourne.com

Bourne Department of Public Works
S. Patterson – Director
spatterson@townofbourne.com

Bourne Board of Health
T. Guarino – Health Agent
tguarino@townofbourne.com

Bourne Integrated Solid Waste Management
amintz@townofbourne.com
pgoddard@townofbourne.com

Cape Cod Commission
kseatori@capecodcommission.org

SITEC Environmental, Inc.
rquinn@sitec-engineering.com

DEP – BOSTON
ATTN: G. Cooper
J. Fischer

DEP – SERO
ATTN: S. Pickering
M. Dakers



重要 महत्वपूर्ण σημαντικός
Important
կարևոր quan trọng مهم



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

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

Español Spanish

Este documento es importante y debe ser traducido de inmediato. Si necesita este documento traducido, comuníquese con la Directora de Diversidad de MassDEP al número de teléfono que aparece más abajo.

Português Portuguese

Este é um documento importante e deve ser traduzido imediatamente. Se precisar de uma tradução deste documento, entre em contato com o Diretor de Diversidade da MassDEP nos números de telefone listados abaixo.

繁體中文 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聯絡 MassDEP 多元化負責人。

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 的多元化主任联系。

Ayisyen Kreyòl Haitian Creole

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradwi l imedyatman. Si ou bezwen dokimar sa a tradwi, tanpri kontakte Direktè Divèsite MassDEP la nan nimewo telefòn endike anba.

Việt Vietnamese

Tài liệu này rất quan trọng và cần được dịch ngay lập tức. Nếu quý vị cần dịch tài liệu này, xin liên lạc với Giám đốc Đa dạng của MassDEP theo các số điện thoại ghi dưới đây.

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះគឺសំខាន់ហើយគួរត្រូវបានបកប្រែភ្លាមៗ។ ប្រសិនបើអ្នកត្រូវការឱ្យគេបកប្រែឯកសារនេះ:

សូមទាក់ទងមកនាយកផ្នែកពិពិធកម្មរបស់ MassDEP តាមលេខទូរស័ព្ទខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

Kel dokumentu li é inportáti y debe ser traduzidu imediatamenti. Se bu meste di kel dokumentu traduzidu, pur favor kontakta Diretor di Diversidádi di MassDEP na numeru abaxu indikadu.



Contact Deneen Simpson 857-406-0738

**Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114**

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>
(Version revised 4.21.2023) 310 CMR 1.03(5)(a)

Русский Russian

Это важный документ, и он должен быть безотлагательно переведен. Если вам нужен перевод данного документа, пожалуйста, свяжитесь с директором по вопросам многообразия (Diversity Director) компании MassDEP по указанному ниже телефону.

العربية Arabic

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

한국어 Korean

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

հայերեն Armenian

Այս փաստաթուղթը կարևոր է և պետք է անմիջապես թարգմանվի:
Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանել, դիմեք MassDEP-ի բազմազանության տնօրենին ստորև նշված հեռախոսահամարով:

فارسی Farsi Persian

این سند مهم است و باید فوراً ترجمه شود.
اگر به ترجمه این سند نیاز دارید، لطفاً با مدیر بخش تنوع نژادی MassDEP به شماره تلفن ذکر شده در زیر تماس بگیرید.

Français French

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

Deutsch German

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

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.

Italiano Italian

Comunicazione per parti che non parlano inglese. Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, potete contattare il Direttore di Diversità di MassDEP al numero di telefono elencato di seguito.

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.

हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका 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.

Contact Deneen Simpson 857-406-0738

Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114

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