Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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July 5, 2017

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480 Pleasant Street, Suite B110
Watertown, MA 02472

Walter Ramsey, Town Planner
Town of Montague
1 Avenue A
Turners Falls, MA 01376

Re. Montague - SWM - Landfill
Photovoltaic Power System
BWP SW 36 - Post-Closure Use, Major
File No. 17-192-001
Transmittal No. X274807

Dear Mr. Bernstein and Mr. Ramsey:

On April 27, 2017, the Department of Environmental Protection, Western Regional Office ("MassDEP"), received a BWP SW 36 permit application for a post-closure use at the closed landfill off Sandy Lane in Montague, MA. The proposed post-closure use is the construction and operation of a 5.92+/- MW photovoltaic power array (based on nameplate DC capacity). The array will be placed both on closed landfill areas and in a nearby area that was site-assigned but never developed as a landfill. The application is contained in the following Report:

Sandy Lane Solar Project
Montague, MA
Major Post-Closure Use
Permit Application
Prepared For:
Kearsarge Energy, LLC
April 2017
(one volume bound text and 4 plan sheets)

The application and Report were prepared on behalf of Kearsarge Energy, LLC ("Kearsarge") and the Town of Montague ("Town") by Tighe & Bond of Westfield, MA. The plans were signed and stamped by Brian S. Huntley, Massachusetts Registered Professional Engineer (Civil) No. 46273 and Francis J. Hoey, III, Massachusetts Registered Professional Engineer (Civil) No. 40111. A package of structural calculations was signed and stamped by Mohamed Aly,

Massachusetts Registered Professional Engineer No. 50028. A Stormwater Management Report was signed and stamped by Jean E. Christy, Massachusetts Registered Professional Engineer No. 47080.

The application states that Kearsarge and the Town will enter into a long term ground lease for the landfill property as the host site for the project.

Tighe & Bond submitted additional information on June 7 and June 21, 2017, and revised plans on June 12, 2017, in response to MassDEP questions and comments.

## Project Description

Kearsarge proposes to construct and operate an approximately 5.92 MW DC/4.1 MW AC photovoltaic ("PV") power system on the surface of the former basin area, consisting of approximately 15,174 PV modules, 169 string inverters, and three pad-mounted transformers. The project will be constructed on portions of five Town-owned parcels off Sandy Lane.

### 1. Site History

The Town reportedly began operating a burn dump at the site in the 1930s, which continued into the early 1970s. The burn dump was later used for disposal of wood waste and construction and demolition waste. The burn dump site is about 7.6 acres in size. The Town began filling an unlined sanitary landfill at a location near the burn dump in 1974, and operations continued until 1996. The 12-acre sanitary landfill was closed in three phases between 1981 and 1997. The Town site-assigned a total of 166 acres on March 14, 1988 so that an additional area to the west could be developed as a landfill (the 166 acres also included the existing landfill areas). However, the new site-assigned area was never developed into a landfill.

The sanitary landfill was developed in four phases, known as Phases I, II, III, and III Extension. Phases I and II were capped with a 2-layer final cover system consisting of a 12-inch Fiberclay (i.e. paper mill sludge) barrier layer and a 12-inch loam vegetative support layer. This cap design is referred to in the Report as the 1981 cap. Phase III and Phase III Extension were capped with a 4-layer cover system consisting of a 6-inch sand gas venting layer, a 24- to 30-inch Fiberclay barrier layer, a 9-inch sand drainage layer, and a 12-inch Biosoil (mixture of paper mill sludge and soil) vegetative support layer. This cap design is referred to as the 1997 cap.

As currently proposed, the solar array will be developed on the closed sanitary landfill and some of the undeveloped site-assigned land to the west of the burn dump. The applicants previously planned to place part of the array on the burn dump. However, MassDEP cannot issue a post-closure use permit for a landfill if it hasn't been closed in accordance with the solid waste regulations.

The closure status of the burn dump and elimination of a leachate discharge to Randall Brook has been discussed by MassDEP and the Town at various times in the past. A Corrective Action Alternatives Analysis was submitted to address these issues on March 3, 1998, but MassDEP determined that the Town's preferred alternative was insufficient to address the environmental impacts of the site. Tighe & Bond developed a scope of work on behalf of the Town, dated February 2, 2000, to evaluate the existing cover material to determine the extent to

which it conformed to the 1971 closure requirements that were in effect when the site ceased operation. However, it appears that this assessment was not completed. It was anticipated that this process would ultimately lead to the development of closure plans and completion of final closure, but the project did not proceed.

The applicants recently developed preliminary closure plans in anticipation of the proposed post-closure use. However, the Town reportedly does not have enough money budgeted to complete the closure before construction of the array commences. It is anticipated that closure of the burn dump will be completed in the future, and additional solar panels may be placed on its surface at that time. This Permit sets deadlines for development of final closure plans and completion of final closure.

2. Panel, Rack, and Electrical System Design

3,312 PV modules will be installed on the closed sanitary landfill, while the remainder will be installed on about 7.5 acres of land not previously used for waste disposal.

Kearsarge proposes to install the solar panels on the sanitary landfill using a rack system manufactured by RBI. The racks will be mounted to 9.5-foot long by 1.45-foot or 2.0-foot wide by 1.5-foot thick precast concrete ballasts. The ballasts will be placed directly on the existing vegetated surface, except that crushed stone or crushed uncoated asphalt, brick, and concrete ("ABC") will be placed under the ballasts as necessary to level them. Threaded anchor rods will be precast into the ballasts so that two vertical posts can be bolted to each ballast to support the rack system.

In non-landfill areas, the rack system will be supported by driven posts or ground screws.

The rows of racks will be laid out on an east-west alignment and the panels will be mounted at a 20° angle facing south. There will be about 15 feet of space between rows.

Kearsarge proposes to conduct no significant clearing, grading, or compaction of the landfill final cover system during construction or operation of the project. There are some existing trees and large brush that will be removed at the beginning of the project. No excavations or penetrations into the final cover system are proposed, except in limited cases (described below) for electrical grounding.

Each string of panels will provided with a string inverter. From each string inverter, energy will be transmitted to one of the three transformers located on equipment pads. There will be three equipment pads, including one on the sanitary landfill and two at the western off-landfill array.

Low voltage wiring to the transformers will be routed via aboveground cable trays supported by 12-inch high (minimum) blocks placed directly on the surface. Wiring from the transformers to the exterior of the arrays will be via buried conduit in the off-landfill area and aboveground conduit within the sanitary landfill area. Where access road crossings are necessary, electrical ductbank will be provided, consisting of conduit encased in concrete. Once outside the array perimeters, power will be transferred to the grid interconnection point via overhead wires.

Panel arrays, transformer pads, fencing, and other system components will need to be grounded. The array grounds will consist of 1-inch × 12-inch grounding plates installed at the bottom of the vegetative support layer of the caps. Excavation into the caps to a depth no

greater than the bottom of the vegetative support layer, which is 12 inches thick, will be required to install the grounding plates, followed by backfilling of the holes with vegetative support soil. Grounding between panel racks will be accomplished using copper wire within conduit, which will be supported by small blocks placed directly on the surface. The concrete equipment pads will be grounded using #4/0 AWG stranded tinned bare copper ground rings surrounding each slab, which will be buried 12 inches into the surface (approximately the depth of the vegetative support soil). Where equipment pads and panels are installed off of the landfill cap, the depth of burial of grounds may be greater, as shown on the submitted plans. Certain fence posts will be grounded using grounding plates buried five inches below the surface.

The concrete inverter/transformer pads will be 13-feet 4-inches by 13-feet 8-inches. Each pad will be installed on a pad consisting of 24 inches of crushed stone. Electrical conduits will be cast into the concrete such that wiring will enter the pad horizontally and then bend 90 degrees to enter vertically into the transformers, panels, and other equipment installed on the pads.

3. Access Roads

The project area will accessed from the end of Sandy Lane. From that point, a new access road will run to the west to the off-landfill array. This road will be constructed by removing existing vegetation and native soil to a depth of 12 inches, placing a woven geotextile on the excavated subgrade, and installing 12 inches of compacted road base material.

The sanitary landfill area will be accessed via existing dirt or gravel access roads. A new access road will be constructed to the top of the Phase III/Extension landfill. It will be constructed by placing a woven geotextile directly on the existing surface, placing a 12-inch minimum layer of processed gravel on the geotextile, and then an addition 6 inches of dense graded crushed stone (or crushed clean uncoated ABC). The road will have a turn-around areas at the end, approximately in the center of the Phase III/Extension area. A stone-lined stormwater channel will run along the western side of the access road.

No additional access road will be constructed on the Phase I/II landfill, because that part of the landfill has gradual slopes that can be accessed directly from the existing access road.

4. Stormwater Handling and Erosion Control

A stormwater analysis indicates that the project will not significantly change stormwater patterns or peak discharge rates.

The off-landfill array does not have any existing or proposed stormwater management features. The solar array and access roads will not interrupt the generally west-to-east surface drainage in that area.

The stormwater management system for the sanitary landfill will remain essentially unchanged except for the stone-lined stormwater channel alongside the new access road, as described above. Two new 12-inch culverts will carry flow from the channel under the new access road, to discharge on the eastern side of the landfill.

The project does not involve much grading work other than placement of fill for the access road. The vegetated areas of the site generally should control erosion, except for localized areas

where the vegetation may be damaged temporarily during construction. The plans depict standard sedimentation controls to protect nearby wetland areas from sedimentation. The solar array construction areas will be surrounded by compost filter tubes, which will be held in place by stakes (off landfill) or sandbags (on landfill).

5. Geotechnical Analysis

Calculations are provided showing the potential ground pressure on the final cover from the weight of the ballasts, racks, and panels. As noted above, the sanitary landfill has two cap types, referred to as the 1981 and 1997 caps. The calculations indicate that the maximum ground pressure from ballast blocks and the electrical equipment pad on the 1981 cap will be about 2.7 and 3.4 pounds per square inch (psi), respectively, at the top of the low permeability layer. The maximum ground pressure from ballast blocks and the electrical equipment pad on the 1997 cap will be about 2.7 and 3.4 psi, respectively, at the top of the sand drainage layer (the ground pressure on the low permeability layer would be slightly lower). These loads include the weight of the ballast, racking system, snow load, and wind downforce or uplift.

Tighe & Bond states that the ground pressure on the waste mass will be even lower, and contribution to landfill settlement will be insignificant. Tighe & Bond also points out that these ground pressures are much less than the equipment used to construct the final cover (assumed to be 7 psi low ground pressure equipment).

It is expected that settlement due to decomposition of the waste mass will continue, which may impact the alignment of the solar panels over time. However, the rack system will be adjustable to allow periodic realignment as necessary.

A calculation package evaluates the ballast/rack/panel system for the effects of wind and snow loads. The modeled wind speed was 60 miles per hour. A modeling analysis was submitted to determine extreme wind speeds in the project location, which projected that the maximum wind gust with a 50-year return period was 44.8 miles per hour at 10 meters and 25.5 miles per hour at 2 meters. Considering various scenarios, the calculations show that the rack system has a minimum Factor of Safety (FS) of 2.19 against sliding, 1.93 against uplift, and 1.10 against overturning.

6. Site Security

The entire western array (off landfill) will be surrounded by chain link fence with driven posts. The Phase I/II cap and Phase III/Extension cap will each have a ballasted chain link fence around the perimeter of the solar arrays.

According to the application and supplemental materials, the project is required to comply with the National Electric Code (NEC) as well as all other applicable codes and regulations. Wiring, conduit, raceways and all other aspects of the project reportedly will be designed and constructed in accordance with NEC requirements.

7. Operation and Maintenance

In general, existing operation and maintenance practices for the final cover system are not expected to change following solar system installation, except in areas containing solar system

components described below. The application proposes no changes to the environmental monitoring program.

Kearsarge will be responsible for operating and maintaining the solar system. It is expected that Kearsarge or its designee will visit the site periodically for scheduled inspections and maintenance of electrical system components. The application contains an O&M Plan for the solar facility that details the minimum frequencies of inspections and maintenance tasks. The plan states that inspections of general site conditions, vegetation, animal damage, and erosion will take place once per year. However, MassDEP is initially requiring monthly inspections following construction because the sanitary landfill cap has tended to be soft over the years since its construction. The permittees will have an opportunity to request less frequent inspections after one year following construction.

Kearsarge will be responsible for mowing and other vegetation management within the solar facility area and the Town will be responsible outside the solar facility. Vegetation will be mowed a minimum of once per year. Grass within the solar facility will be cut to no less than four inches.

8. Decommissioning

The application states that the applicants will decommission and remove the system from the site upon expiration of the lease agreement. Components to be removed include solar panels, mounting substrates, system foundations, wiring and connections, power inverters, service and metering equipment, and the utility interconnection. Disturbed surfaces will be restored with loam and seeded. The application further states that the site "will be left in similar condition to pre-installation and the Landfill arrays will be in compliance with applicable regulations and permits supervised by MassDEP."

9. Compliance with Other Laws and Regulations

The application discusses the applicability of other federal, state, and local laws and regulations.

The project is not within areas designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife, nor are there any certified or potential vernal pools at the site. Therefore, review under the Massachusetts Endangered Species Act is not required.

The application states that the project does not exceed any review thresholds under the Massachusetts Environmental Policy Act ("MEPA"). Therefore, MEPA review is not required.

The application states that a National Pollutant Discharge Elimination System General Construction Permit, issued by the U.S. Environmental Protection Agency, will be required. It further states that the permit will be obtained and a Stormwater Pollution Prevention Plan will be submitted to EPA prior to construction.

The application states that Town of Montague permits will be obtained as necessary, including a Site Plan Review/Special Permit Approval, Building Permit, and Electrical Permit. Kearsarge has prepared a draft Emergency Response Plan for review by the Town.

The application states that the proposed limited work in wetland buffer areas qualifies for an exemption of the Wetlands Protection Act. A Request for Determination of Applicability will be submitted to the Montague Conservation Commission seeking verification that the project is exempt.

## Determination

This Approval is issued pursuant to Massachusetts General Laws Chapter 111, Section 150A and 310 CMR 19.000, subject to the conditions set forth below and the standard conditions at 310 CMR 19.043(5) and any amendments thereto. In the event this Approval conflicts with all or parts of prior plan approvals or permits issued pursuant to c. 111, s. 150A or solid waste regulations in effect prior to July 1, 1990 the terms and conditions of this Approval shall supersede the conflicting provisions of the prior permits or approvals. This Approval does not convey property rights of any sort or any exclusive privilege.

## Conditions

A. GENERAL PERMIT CONDITIONS

1. Kearsarge Energy, LLC ("Kearsarge" or "Operator") is a co-applicant and Permittee for this Post-Closure Use Permit and also Owner and Operator of the photovoltaic system, for the construction and operation of the photovoltaic system on the final cover system, and is responsible for compliance with the conditions of this Permit, as an Owner and the Operator as defined by 310 CMR 19.000.

2. The Town of Montague ("Town" or "property owner") is the Owner and Operator of the site as defined by 310 CMR 19.000. The Town is also a co-applicant and Permittee for this Post-Closure Use Permit. The Town is responsible for continued maintenance and environmental monitoring of the site in accordance with the requirements of 310 CMR 19.000, the Closure Certification Report approval issued May 24, 2000, any other relevant permits or requirements issued by MassDEP, and this Permit.

3. The Permittees, Operators, contractor(s), and subcontractor(s) shall install the solar panels and appurtenances and modify the landfill only in accordance with the application and the supplemental submittals referenced above, except as modified by this Permit or otherwise approved by the MassDEP in writing. Should the Permittees wish to make any design changes, they shall notify MassDEP as soon as possible and provide full design data for the proposed changes. Such changes shall not be made without prior written approval by MassDEP.

4. A minimum of seven (7) days prior to the start of construction, the Operator shall submit a detailed schedule for the project to MassDEP.

5. A minimum of seven (7) days prior to the start of construction, the Operator shall submit a list of project personnel and their contact information. The Operator shall advise MassDEP in writing of any changes in the project personnel list.

6. A Quality Assurance/Quality Control ("QA/QC") program shall be implemented during construction. The responsibilities described in the Landfill Technical Guidance Manual -

Revised May 1997 ("LTGM"), pp. 2-1 to 2-3 are hereby incorporated by reference into this Permit.

7. Construction Oversight:

   a. A third-party, independent Massachusetts-registered professional engineer knowledgeable in landfill design and construction (the "Construction Engineer") shall supervise the overall construction of the photovoltaic system. The Construction Engineer and/or a qualified QA/QC officer shall be present at the site at all times during construction of the road, fence installation, and installation of the electrical equipment, ballast blocks, and rack/panel installation, and when any construction equipment is operating on the final cover system. The QA/QC officer shall work under the direct supervision of the Construction Engineer.

   b. The Construction Engineer's duties shall include, but not be limited to; oversee installation and construction of the components of the photovoltaic system as outlined above; oversee QA/QC testing and verify all data generated through the testing program; document all construction and QA/QC activities; and submit monthly construction progress reports to the MassDEP and the property owner, which shall summarize the work performed during the month.

   c. The Construction Engineer shall inspect the site at least once per week during periods of construction when daily oversight is unnecessary. The Construction Engineer may contact MassDEP for guidance if the need for daily engineering oversight is unclear in a given circumstance.

   d. The Construction Engineer shall have sufficient staff onsite to provide QA/QC oversight for all construction work at the site, and shall submit monthly construction progress reports to MassDEP summarizing the work performed during the month. The Construction Engineer shall submit one copy of the monthly report to the MassDEP and one copy to the property owner no later than seven (7) days following the end of the previous month.

   e. Within 60 days following the completion of construction, the Construction Engineer shall submit a completion report, signed and stamped by a Massachusetts-registered P.E., either certifying that the work was completed in accordance with the approved plans and specifications and the conditions of this Permit or detailing any and all deviations from this approval.

   f. MassDEP reserves the right to require greater or more frequent oversight by the Construction Engineer than specified herein if it believes such increased oversight is necessary to protect the final cover system cover or appurtenances, public health, safety, or the environment.

8. The Construction Engineer's monthly construction report shall include at a minimum the following:

   a. Updated schedule;

   b. Copies of daily field inspection reports;

c. Summary of any and all deviations from compliance with requirements approved or set forth in this Permit or subsequent MassDEP approvals;

d. Any actions taken to correct such deviations, as required by MassDEP or recommended by the Construction Engineer;

e. Proposed schedules to correct identified problems;

f. Review of QA/QC testing data generated, and documentation for construction and QA/QC activities; and

g. A certification statement in accordance with 310 CMR 19.011 (1) and (2), which shall be signed and stamped by the Construction Engineer.

B. SPECIFIC PERMIT CONDITIONS

9. The Permittees, Owner, Operators and their contractor(s) and subcontractor(s) are responsible to ensure that all necessary precautions are taken to protect the health and safety of workers and the general public during both construction and maintenance of the photovoltaic system. A site-specific Health and Safety Plan for the construction and maintenance of the photovoltaic system shall be submitted to MassDEP prior to the beginning of any photovoltaic system construction work, which shall include protocols for monitoring of landfill gas as needed and protocols for modifying work practices if landfill gas is detected at levels deemed unsuitable. The Health and Safety Plan shall address, in detail, the hazards posed by landfill gas. It shall include provisions for landfill gas monitoring during maintenance of any electrical equipment box, and for regular calibration and maintenance of the landfill gas monitors used by maintenance workers on the site. The plan shall be provided to, and reviewed with, all site workers, contractors, and maintenance staff prior to entering the site.

10. All necessary precautions shall be taken to ensure that the proposed construction and maintenance work associated with the photovoltaic system shall not in any way damage the impermeable layer of the final cover system, stormwater control structures, monitoring wells, gas vents, and/or other appurtenances.

    a. Prior to the commencement of construction activities, all groundwater monitoring wells, gas vents, and other existing, above-ground structures of the final cover system and appurtenances shall be flagged for visibility, and protective barriers shall be placed around such structures as needed to prevent damage by vehicles and construction on the cap area.

    b. If any damage occurs to any of the above-listed components, the Permittee shall notify MassDEP immediately (within 24 hours maximum), a written plan for repair of the components shall be submitted to MassDEP within 48 hours, and any repair work shall be completed on the schedule determined by MassDEP.

11. Prior to the start of construction, the Operator shall submit information on any cranes that it proposes to operate on the final cover system during construction, an analysis of the ground pressure of such equipment, including any outriggers or stabilizers, and protocols for preventing damage to the final cover system (e.g. use of sufficiently large pads placed

beneath outriggers/stabilizers to avoid damage to the cap). Heavy vehicles or equipment, including but not limited to cranes, may operate only on the proposed access road when on the final cover system, provided that the Operator demonstrates that such vehicles and equipment shall not present a ground pressure on the vegetative support layer greater than 7 psi.

12. Care shall be taken not to damage or block any existing, stormwater swales, diversion berms, or natural flow paths that may direct stormwater to the two existing down chutes on the Phase III/Extension cap, as well as any other stormwater management structures located on or off the sanitary landfill.

13. MassDEP reserves the right to require noise reduction measures if noise from the inverters or other electrical components exceed noise limits or cause a nuisance condition.

14. Vehicles operating directly on the vegetative support layer shall not have a ground pressure greater than 7 psi.

15. Disturbance of the final cover system shall be limited to the installations on top of the vegetative support layer of the cap, except as provided below. No other excavations or other penetrations shall be performed into the vegetative support layer or underlying layers of the cap without separate written approval from the MassDEP.

    a. All equipment supports, pads and concrete blocks (including associated gravel or crushed stone pads) placed on the cap shall be placed on top of, or above, the vegetative support layer of the cap, unless otherwise approved by the MassDEP in writing.

    b. Excavation approved by this Permit is limited to the installation of grounding wires and plates a maximum 12 inches below the existing surface of the cap or the top of the fiberclay barrier layer (whichever is less), and the following activities beyond the limits of the cap: installation of utility poles, installation of grounding wires and plates, and burial of conduits.

    c. Survey and control stakes shall not be driven greater than six inches into the vegetative support layer. In no case shall stakes be driven into any area where the vegetative support layer may be less than six inches (e.g. eroded or rutted areas).

16. The Owners, Operators and contractors are responsible to ensure that the inverter, transformer and other electrical equipment boxes on the final cover system area will not accumulate landfill gas within the boxes during the construction and operation of the photovoltaic system. Any landfill gas levels exceeding 10% of the Lower Explosive Limit ("LEL") within any electrical equipment box shall trigger the requirements of 310 CMR 19.132(5)(g), for notification and action. The requirements for the electrical equipment pads include the following:

    a. The maximum size of the electrical equipment concrete pads shall not exceed the dimensions proposed in the application;

    b. The design of transformers and any other electrical cabinets/equipment shall not allow the entry of landfill gas, and in the event that gas does enter, the equipment shall be designed to prevent the ignition of the gas;

c. Any required electrical line penetrations through the bottom of the concrete pad shall be fully sealed to prevent landfill gas entry into the electrical boxes. Electrical lines and conduits associated with these penetrations shall not extend down into the vegetative support layer of the cap;

d. The electrical equipment boxes and equipment shall meet all electrical code requirements, including any requirements for fencing; and

e. No additional or other equipment may be installed on the surface of, or in proximity to, the final cover (i.e. equipment not specifically identified in the application), unless documentation and specifications for such equipment are submitted prior to construction for MassDEP review and approval in relation to potential landfill gas impacts.

17. The Permittees, Construction Engineer, contractor(s), and subcontractor(s) are responsible to ensure that there is no significant rutting or other damage to the vegetative support layer of the cap. MassDEP shall be notified immediately of rutting or other damage and steps shall be taken to eliminate or avoid such damage. In no case shall rutting or other damage greater than 6 inches deep into the vegetative support layer be allowed to occur, nor shall there be any rutting at all into the drainage layer or fiberclay barrier layer. Low-pressure construction equipment shall limit turning on the vegetative support layer as much as possible. If MassDEP determines that the use of any equipment is creating the potential for damage to the barrier layer, the usage of such equipment shall cease immediately upon notification by MassDEP, or be modified as required by MassDEP.

18. Prior to the start of construction, the Operator, the Construction Engineer, contractor(s), and subcontractor(s) shall determine the actual ground pressure of all equipment to be used on the cap, at fully loaded capacity (i.e. including full loads of grading materials or concrete ballast), and document that the loaded ground pressure is less than 7 PSI. The Operator shall provide to MassDEP the actual ground pressure of all fully loaded equipment to be used on the cap.

19. MassDEP specifically reserves the right to restrict or prohibit heavy vehicular loads from operating on the final cover system or roadways, either as a weight restriction or a usage restriction, should inspections or other information reveal the potential for damage to the cap from heavy vehicle loads. MassDEP also specifically reserves the right to impose, at any time deemed necessary by MassDEP, additional requirements for construction on the cap, should construction activities pose a danger to the integrity of the final cover system or appurtenances.

20 If MassDEP determines that the use of equipment is creating the potential for damage to, or is damaging, the final cover system barrier layer, the usage of such equipment shall cease immediately upon discovery or upon notification by MassDEP, and alternative work practices for operation of equipment on the cap in the affected area(s) shall be instituted.

21. The Operator and its contractor(s) are responsible to ensure that the proposed work complies with all applicable local, state and federal electrical codes and permits, including the National Electrical Code (NEC), 2014 Edition, Article 690 –“Solar Photovoltaic (PV) Systems” (or most recent revision thereof). The Permittees, contractor(s), and subcontractor(s) are also responsible to ensure that the proposed work complies with all other applicable local, state and federal regulations.

22. All grounding of the solar array shall be performed in accordance with the applicable portions of the NEC and state/local electrical codes. Grounding and electrical equipment shall not penetrate or otherwise damage the final cover system, except as specifically approved in this Permit or otherwise approved by MassDEP in writing.

23. The construction staging area(s) shall be located off of the final cover system.

24. If the Permittees, Operators or their contractor(s) or subcontractors intend to modify the design to use different solar panels, panel racks, ladder racks, or electrical equipment other than that detailed in the application, the Permittees shall notify MassDEP, provide design information, and document that the alternative equipment does not increase calculated ground pressures or decrease calculated Factors of Safety for solar array stability. MassDEP reserves the right to deny or require changes to any proposed alternative design.

25. All areas disturbed during construction shall be repaired. Additional vegetative support material shall be placed as needed, seeded and acceptable grass shall be established except for within the limits of the gravel road surfaces and stone-lined stormwater channel.

26. A satisfactory stand of grassy vegetation shall be established and maintained at the conclusion of photovoltaic system installation. A satisfactory stand of grass shall consist of a uniform stand of at least 60% established permanent grass species, with a uniform count of at least 100 plants per square foot. MassDEP reserves the right to require testing of the final cover system to ensure this condition is met.

27. Any equipment used in decommissioning shall have a ground pressure no greater than 7 psi to avoid damage to the final cover system.

28. The Town shall mow the landfill surface outside the area of the solar arrays a minimum of once per year. All trees and woody shrubs shall be removed, and the Town shall remove new tree and woody shrub growth at least once per year thereafter. Vegetation within down chutes, drainage channels, and at the entrances and exits of culverts shall be trimmed at least once per year. Herbicides shall not be used to control vegetation.

29. The Town shall comply with the following schedule regarding closure of the burn dump landill:

    A. The Town shall submit a Corrective Action Alternatives Analysis (“CAAA”) application by January 1, 2018. However, the Town may opt to provide preliminary plans to MassDEP depicting its preferred closure alternative. If MassDEP agrees with the proposed alternative, the Town may proceed directly to the design stage.

    B. The Town shall submit a Corrective Action Design (“CAD”) application within 120 days after MassDEP issues a CAAA approval, or by June 1, 2018, if no CAAA application is required. The CAD application shall contain complete plans and specifications for the final cover system.

C. OPERATIONS AND MAINTENANCE CONDITIONS FOR PHOTOVOLTAIC SYSTEM

30. The following conditions apply to the minimum required maintenance of the final cover system within the photovoltaic system area:

    a. As proposed in the application, the final cover surface shall be mowed at least once per year. Herbicides shall not be used to control vegetation.

    b. Vegetation that has been established in areas where stone or gravel surfaces exist shall be trimmed once per year to avoid the establishment of woody vegetation.

    c. Any erosion problems, damage to fences and/or access gates, settlement problems, or other issues observed on the final cover system (inside or outside of the limits of the photovoltaic system) by the Permittee, Construction Engineer, contractors, or subcontractors shall be reported to MassDEP and the property owner within seven days of discovery. Any such problems within the limits of the photovoltaic system shall be stabilized immediately and repaired within 30 days of discovery. Any damage to fences or access gates shall be repaired within 24 hours of discovery unless other temporary methods of controlling access can be established.

    d. The Operator is responsible for fully cooperating with the property owner in preventing and repairing rodent damage to the final cover system. The Operator shall notify MassDEP and the property owner within 2 days if burrowing activity is observed within the limits of the photovoltaic system. The Operator shall promptly comply with any request by the property owner or MassDEP to remove system components or other equipment to allow for repairs to the final cover system. Any failure of the Operator to cooperate with such a request shall be considered a violation of this Permit.

31. Following completion of the installation, inspections of the photovoltaic system shall be performed on a monthly basis by a qualified, independent third-party inspector in accordance with 310 CMR 19.018. After one year of monthly inspections, the Permittees may petition MassDEP in writing to reduce the frequency of inspections. The following conditions shall apply:

    a. The entire final cover system and access roads shall be walked and any problems with the final cover system, erosion, unusual or excessive settlement, stressed vegetation, damage to monitoring wells, landfill gas vents, and other appurtenances, and any other problems with the final cover system shall be identified.

    b. An inspection report summarizing the inspection shall be prepared. The report shall be signed, certified, and submitted to MassDEP and to the Board of Health within 30 days of the date of the inspection.

    c. Any problems with security/access controls such as damaged gates and/or fences shall be identified, as well as any evidence that unauthorized access to the solar array area that may have occurred.

    d. Actions taken to correct any problems shall be described.

32. If stormwater flowing off of the panels results in erosion to the final cover system, the Permittees shall notify MassDEP within 7 days and propose actions to prevent future

erosion. The Operator shall take such action(s) approved or required by MassDEP to repair the erosion and prevent future erosion.

33. At the completion of the use of the photovoltaic system, the following actions shall be taken.

    a. All panels, racks, and concrete blocks located on the final cover, and exposed conduits shall be removed and sealed.

    b. Buried conduits may remain, provided they are cut off below grade and permanently plugged.

    c. Final cover grades shall be restored and vegetative support layer shall be replaced/ repaired as necessary.

    d. All disturbed areas except for gravel road surfaces shall be reseeded.

    e. Vegetation shall be established and maintained.

D. SUBMITTALS

34. All submittals to MassDEP shall be certified in accordance with 310 CMR 19.011, Signatories, Certification and Engineer's Supervision, which requires:

    *(1) Signatories and General Certification. Any application for a permit, authorization to construct, authorization to operate, permit modification, and any determination, certification, report and any other document submitted to the Department pursuant to 310 CMR 19.000, shall be signed by the appropriate responsible official. Any person required by 310 CMR 19.000 or any order or other enforcement document issued by the Department, to submit any document to the Department shall identify himself or herself by name, profession, and relationship to the applicant and legal interest in the facility, and make the following statements:*

    *I, [name of responsible official], attest under the pains and penalties of perjury that:*
    *(a) I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification statement;*
    *(b) based on my inquiry of those persons responsible for obtaining the information, the information contained in this submittal is, to the best of my knowledge, true, accurate, and complete;*
    *(c) I am fully authorized to bind the entity required to submit these documents and to make this attestation on behalf of such entity; and*
    *(d) I am aware that there are significant penalties, including, but not limited to, possible administrative and civil penalties for submitting false, inaccurate, or incomplete information and possible fines and imprisonment for knowingly submitting false, inaccurate, or incomplete information; and*
    *(e) (for a responsible official submitting a third-party inspection report pursuant to 310 CMR 19.018(8)(b)1.) The facility [name of facility] provided any information required by 310 CMR 19.018 and requested by the third-party inspector in a timely fashion and any employee or contractor of [name of facility] did not unduly influence the third-party inspector; and....*

*(2) Engineering Supervision. 310 CMR 19.011(2) does not apply to any documents submitted to the Department pursuant to 310 CMR 19.018. All papers pertaining to design, construction, operation, maintenance, or engineering of a site or a facility shall be completed under the supervision of a Massachusetts registered professional engineer knowledgeable in solid waste facility design, construction and operation and shall bear the seal, signature and discipline of said engineer. The soils, geology, air modeling, air monitoring and groundwater sections of an application or monitoring report shall be completed by competent professionals experienced in the fields of soil science and soil engineering, geology, air modeling, air monitoring and groundwater, respectively, under the supervision of a Massachusetts registered professional engineer. All mapping and surveying shall be completed by a registered surveyor.*

35. Unless otherwise directed herein, all submissions required pursuant to this Permit shall be sent to:

Section Chief, Solid Waste Management
Department of Environmental Protection
436 Dwight Street
Springfield, MA 01103

E. STANDARD CONDITIONS

36. This post-closure use Permit shall be valid for a period of thirty (30) years from the date of this Permit, provided that MassDEP may amend the term of the Permit in accordance with an approved modification pursuant to either 310 CMR 19.032 or 19.033.

37. If construction of the solar panel installation has not been completed within three years of the date of issuance of this Permit, this Permit shall expire. The Permittee may apply to the MassDEP for an extension of the Permit at any time prior to or after it expires.

38. If either Permitee intends to operate the photovoltaic system after the expiration of this Permit, it shall submit a request for a renewal of the Permit at least 90 days prior to the expiration of the Permit.

39. If either Permittee intends to transfer this Permit to any other entity for operation of the photovoltaic system, the requirements at 310 CMR 19.044, Transfer of Permits, shall be satisfactorily completed. The notification shall be submitted on an application form for a BWP SW49 Permit Transfer Certification with transmittal form and the applicable filing fee.

40. This Permit is issued subject to the conditions of joint liability of the Permittees, the Owner(s) and the Operator(s) in accordance with 310 CMR 19.043(3).

41. The Permittees, Owner(s), Operator(s) their contractors and subcontractors and the Construction Engineer shall be considered Operators with respect to the construction of the photovoltaic system and compliance with plans and specifications. The Permittees shall also be considered operators during the operational life and decommissioning of the photovoltaic system. As such, MassDEP may take enforcement action against the Permittees, Owners, Operators or the Construction Engineer, consistent with its authority under applicable Massachusetts law and regulation, for any failure to construct the photovoltaic system in

accordance with approved plans and specifications of which the Permittees or the Engineer were, or should have been, aware. 310 CMR 19.006, defines "Operator" as:

*"Operator means any person who has care, charge or control of a facility subject to 310 CMR 19.000, including without limitation, an agent, lessee of the owner or an independent contractor."*

42 The Permittees, the Owners, the Operators, the contractor(s), and subcontractors shall comply with 310 CMR 19.015 Compliance, which states:

*"No person shall construct, modify, operate or maintain a facility except in compliance with a site assignment, permit or plan approved by the board of health or the Department, as applicable, and any authorizations issued by the Department and all conditions included in a permit, approval or authorization for said facility."*

43. The Applicants in this permit application seek no variances from any applicable regulations.

44 This approval pertains only to the Solid Waste Management aspects of the proposal and does not negate the responsibilities of the Permittees, Owners, Operators or contractors to comply with any other local, state or federal laws, statutes and regulations or enforcement actions, including orders issued by another agency now or in the future. Nor does this approval limit the liability of owners, operators or otherwise legally responsible parties from any other applicable laws, statutes or regulations now or in the future.

45. MassDEP and its agents and employees shall have the right to enter upon the site at all reasonable times, to inspect the project area and any equipment, structure or land located thereon, take samples, recover materials or discharges, have access to and photocopy records, to perform tests and to otherwise monitor compliance with this Permit and all environmental laws and regulations. This right of entry and inspection shall be in addition to MassDEP's access authorities and rights under applicable federal and states laws and regulations, as well as any permits or other agreements between the Permittees and MassDEP.

46. MassDEP reserves the right to require additional or increased monitoring or maintenance activities in the event that the post-closure use is, or may be, having a detrimental effect on the final cover system or appurtenances. MassDEP reserves all rights to suspend, modify or rescind this Permit, should the conditions of this Permit not be met, should the photovoltaic system create nuisance conditions or threats to public health, safety or the environment, or should MassDEP otherwise determine that continued post-closure use is negatively impacting the final cover system or appurtenances. The management of actual or potential nuisance conditions and the prevention of threats to public health or safety from any aspect of the management of the site shall take precedence over the operation and maintenance of the photovoltaic system.

47. Compliance with submissions required pursuant to this approval shall be determined by the date of receipt by MassDEP or by the postmarked date, whichever is earlier.

48. All verbal notifications shall be followed by written notification within 48 hours.

49. This Permit is being issued as a Final Permit. Any appeal of this Permit is subject to 310 CMR 19.033(5) Legal Challenges, which states:

*(a) Appeal. Any person aggrieved by the final permit decision, except as provided for under 310 CMR 19.033(4)(b), may file an appeal for judicial review of said permit decision in accordance with the provisions of M.G.L. c. 111, § 150A and M.G.L. c. 30A no later than 30 days following the date of issuance of the final permit decision to the applicant. 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 final permit decision by a court of competent jurisdiction, the final permit decision shall be effective in accordance with 310 CMR 19.033(3).*

*(b) Notice of Action. 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 the Department file number 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 the Department and the Regional Director for the regional office which processed the permit application, if applicable, at least five days prior to the filing of an appeal.*

*(c) 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 a 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.*

The MassDEP File Number for this Permit is 17-192-001. The appropriate addresses to which to send such notices are:

General Counsel
Department of Environmental Protection
One Winter Street-Third floor
Boston, MA 02108

Regional Director
Department of Environmental Protection
436 Dwight Street - Fifth Floor
Springfield, MA 01103

If you have any questions or comments regarding any of the matters stated above in this Approval, please contact Jim Scheffler of my office at (413) 755-2127.

Sincerely,

Daniel Hall
Solid Waste Chief
Bureau of Air and Waste
Western Region

JPS/jps

cc: Montague Health Department
Electronic cc:
Brian Huntley - Tighe & Bond
Peter Czapienski - DEP WERO