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Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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December 29, 2016

Jim McGonagle, Commissioner
City of Newton
Department of Public Works
1000 Commonwealth Avenue
City Hall, Room 101
Newton, MA 02459

Geri Kantor
Ameresco, Inc.
Rumford Avenue Solar, LLC
111 Speen Street, Suite 410
Framingham, MA 01701

Re: NEWTON – Solid Waste Management
Rumford Avenue Landfill
115 Rumford Avenue
FMF# 39962

BWP SW36 / Post-Closure Use – Solar Power Generating Facility
Transmittal Number: X272932

Approval and Authorization to Construct

Dear Mr. McGonagle and Ms. Kantor:

The Massachusetts Department of Environmental Protection, Northeast Regional Office, Bureau of Air and Waste, Solid Waste Management Section (“MassDEP”) has reviewed your application, category BWP SW36 *Post-Closure Use – Major*, Transmittal Number: X272932 (the “Application”), for the post-closure use of the Rumford Avenue Landfill located at 115 Rumford Avenue in Newton, Massachusetts (the “Landfill”). The Application was prepared and submitted to MassDEP on behalf of the City of Newton (the “City”) and Ameresco, Inc. (d/b/a Rumford Avenue Solar, LLC; “RAS”) by AMEC Massachusetts, Inc. of Chelmsford, Massachusetts (“AMEC”).

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MassDEP Website: www.mass.gov/dep

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The Application proposes the installation of a 2.137-megawatt (MW) solar photovoltaic power generating facility (the “PV Facility”) on a 9-acre portion of the Landfill. Included with the Application are design plans for the solar array and an engineer’s report describing and supporting the design of the facility.

The Landfill is owned by the City and was operated as a municipal solid waste landfill by the City from approximately the 1960’s to 1975. The City continued to utilize the Landfill for disposal of inert materials from DPW operations. On July 1, 1996, the City and MassDEP entered into an Administrative Consent Order, File No. ACO-NE-95-4005 (the “1995 Order”). The 1995 Order provided for, but was not limited to, the capping of the Landfill and the post-closure use of a portion of the Landfill by the City of Newton Department of Public Works (the “DPW”). On August 13, 1997, MassDEP approved the Corrective Action Design, Transmittal Number: 103516 for closure and capping of the Landfill (the “Closure Plans”), and issued a Post-Closure Use Permit, Transmittal Number: 102385 (the “Post-Closure Permit”). The Post-Closure Permit approved approximately 11 acres of the Landfill for a composting operation and the management of excavate from DPW construction projects (the “Post-Closure Uses”).

Pursuant to the Closure Plans, the cap on the Landfill was constructed between 1997 and 1998. The cap consists of a 40-mil textured high-density polyethylene flexible membrane liner (“FML”) as the impervious layer over waste, overlain by a 12-inch thick sand drainage layer and an 8-inch thick vegetative support layer on the side-slopes of the Landfill. In the areas of the Post-Closure Uses, the cap consists of a 12-inch thick sand drainage layer and a 12-inch thick protective layer above the FML.

On October 12, 1999, MassDEP approved the City’s report titled: Newton, Massachusetts, Certification Report, Closure of the Rumford Avenue Landfill, July 1998 (the “Certification Report”), and notified the City that it had fulfilled the requirements of the 1995 Order.

On August 27, 2014, the City and MassDEP entered into an Administrative Consent Order, File No. ACOP-NE-14-4001, (the “2014 Order”) regarding excavate and concrete dumped by the DPW at the Landfill impacting the northern side of the capped Landfill. The 2014 Order required, without limitation, the removal of excavate from the side-slope of the Landfill and repair of the Landfill cap.

In accordance with the approved Corrective Action Scope of Work, Transmittal Number: X263193, materials were removed from the northern side-slope of the Landfill, drainage swales and access road. Following removal, the City performed repairs to the FML in two areas on the northern side-slope of the Landfill.

As discussed in the Application, 9 acres of the Landfill plateau will be utilized for the proposed PV Facility. The City will utilize approximately 2 acres of the Landfill for the relocated DPW activities. The City has entered into a lease and energy purchase arrangement with RAS for the installation and operation of the PV Facility.

The proposed PV Facility will consist of approximately 6,680 solar modules. The solar modules will be supported by a galvanized steel racking system mounted on precast concrete foundation ballasts. The ballast blocks will be utilized to stabilize the brackets and panels from sliding on the Landfill cap and uplift from wind. Three transformers will be mounted on concrete pads located on the Landfill cap. Medium voltage power from the transformers will be run in surface mounted electrical conduit. Seven utility poles will be installed beyond the limits of the Landfill cap to allow for connection to the Eversource electric utility grid. A permanent access road will also be installed on top of the Landfill cap to allow vehicle access to the solar arrays for inspection and maintenance services. The proposed PV

Facility will be enclosed with a perimeter fence installed and supported using ballast blocks set on the ground surface of the Landfill cap.

The area to be utilized for the PV Facility will be graded utilizing existing on-site materials and a 6-inch thick layer of topsoil will be placed and seeded prior to installation of the PV Facility. The relocated DPW area will be graded utilizing existing on-site materials to provide a level working surface.

Ongoing maintenance and monitoring of the Landfill will continue. RAS will be responsible for the mowing and maintenance of the vegetative cover of the Landfill within the solar arrays. Maintenance of the remainder of the Landfill and routine environmental monitoring of the site will continue to be performed by the City pursuant to the Landfill's existing post-closure monitoring plan dated May 1998 as approved and amended by MassDEP on September 16, 1998 and October 28, 1998. The design and layout of the solar modules will allow for the continued environmental monitoring at the site.

Additional details on the proposed project can be found in the Application and the Fact Sheet attached hereto as Attachment 1.

DECISION

MassDEP has determined that the Application is administratively and technically complete and that, subject to the terms and conditions of this decision and permit, the proposed post-closure use complies with the applicable requirements of 310 CMR 19.000, the Massachusetts Solid Waste Regulations (the "Solid Waste Regulations"). The Application demonstrates pursuant to 310 CMR 19.143(3) that the installation and operation of the PV Facility as proposed and approved by this decision:

- Will not result in a disturbance of the Landfill cap that could cause an adverse impact to public health, safety or the environment;
- Will not impair the integrity or functioning of the final cover, the components of the containment system, the Landfill gas control system, and the environmental monitoring systems; and
- Provides for the maintenance of the Landfill cap's storm water drainage facilities, basins, swales, and other erosion/sedimentation controls.

Therefore, in accordance with M.G.L. Chapter 111, § 150A and 310 CMR 19.143, MassDEP approves the application and issues this Post-Closure Use Permit subject to the City's and RAS' compliance with 310 CMR 19.000 and the following conditions, imposed by MassDEP pursuant to 310 CMR 19.043(1) *Items Subject to Conditions* and 310 CMR 19.142(7) *Additional Measures*. This decision is a Post-Closure Use Permit pursuant to 310 CMR 19.143 *Post-Closure Use of Landfills*. Pursuant to 310 CMR 19.043(5)(a) *Duty to Comply*, this decision does not relieve the City, RAS, or any other person, of the responsibility to comply with all other applicable federal and state laws and regulations including, but not limited to, acquiring applicable permits and approvals, including local permits. The City and RAS are hereafter collectively referred to as the "Permittee."

In issuing this decision, MassDEP is also requiring the City to submit a modified operation and maintenance plan for the relocated DPW material handling area at the Landfill. Refer to Condition 25, below.

CONDITIONS

1. The Permittee shall comply with this permit and the requirements of 310 CMR 19.000, including, but not limited to, the requirements established at 310 CMR 19.043(5) *Standard Conditions*.
2. The Permittee shall assure persons conducting activities¹ at the PV Facility and Landfill are familiar with the applicable provisions of this permit and the approved plans, and that all work performed at the Landfill complies with 310 CMR 19.000 and the applicable requirements of this permit.
3. Prior to commencing construction pursuant to the Application and this permit, the Permittee shall notify MassDEP in writing of the scheduled date of the commencement of construction at the site. In addition, the notification shall include:
 - a. The projected schedule for completion of the major construction milestones of the PV Facility;
 - b. The name and contact information of an on-site contact for the construction;
 - c. A health and safety plan for MassDEP's files that includes, but is not limited to:
 - i. protocols for monitoring for landfill gas (methane, hydrogen sulfide, etc.) as needed;
 - ii. protocols for modifying work practices if landfill gas is detected at levels of concern (action levels);
 - iii. instruction and training of all personnel working on the site regarding the potential health and safety hazards at the Landfill including, but not limited to those associated with landfill gas;
 - iv. instruction and training of all personnel in compliance with the conditions of this permit and how to perform authorized activities in a manner that is not hazardous to public health, safety, and the environment: and
 - d. The National Pollutant Discharge Elimination System (NPDES) Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) for the project.
4. The Permittee shall not commence construction of the PV Facility until it has provided the plans and notification to MassDEP and the City of Newton Board of Health pursuant to Condition 3 above.
5. All construction work shall be completed and conducted under the supervision of an independent Massachusetts Registered Professional Engineer ("Engineer of Record") who shall have sufficient qualified staff on-site to provide field supervision and quality assurance/quality control for all construction activities.
6. The Permittee and the Engineer of Record are responsible to ensure that all necessary precautions are taken to protect the health and safety of workers and the general public during the construction and operation of the PV Facility and during its decommissioning.
7. The Permittee shall maintain a minimum ten (10) foot radius buffer between the closest edge of the solar array and existing gas venting structures.

¹ Activities include, but are not limited to, the construction, installation, operation, and maintenance of the PV Facility and the Landfill.

8. Vehicles operating on the Landfill cap shall only be operated and parked on designated access roads, except for low-pressure construction equipment, which may operate off the access roads. All operators of vehicles entering the capped area of the Landfill shall, prior to their arrival, be instructed by the Engineer of Record or his/her designee and/or contractor of the requirements of this decision and permit, to avoid damage to the Landfill cap and appurtenances thereto.
9. Only low ground pressure construction equipment (with ground pressures of less than 7 PSI) may operate on the Landfill cap off of the access road, and only in accordance with the conditions of this decision. Prior to use of any specific equipment off the access road on the cap, the Engineer shall document that the equipment, fully loaded, will have a ground pressure of less than 7 PSI.
10. Electrical, grounding system components, security fence posts, and other solar project components shall not penetrate the FML.
11. All disturbance of the Landfill shall be limited to the proposed excavations and installations as depicted and described in the Application and the approved plans and this permit. The Permittee and any other contractors performing work at the Landfill shall without delay notify the Engineer of Record or his/her on-site representative upon encountering or damaging the FML.
12. In the event that damage to the FML occurs or is observed, the Permittee shall notify MassDEP without delay and in no case later than the close of business of the next business day after it becomes aware of any incident or such damage. This notification requirement is in addition to any other notification requirements required by statute or regulation including, but not limited to, 310 CMR 19.000 and 310 CMR 40.0000.
13. Any and all damage to the FML shall be promptly repaired. The FML shall be restored to the conditions as specified within the approved closure/post-closure plans. All work to repair damaged FML shall be completed and conducted under the supervision of the Engineer of Record who shall have sufficient qualified staff on-site to provide field supervision and quality assurance/quality control for all cap repair activities. Any and all cap repairs shall be shown on the as-built plans and discussed in the construction certification report required by Condition 18 of this decision.
14. Prior to construction of the PV Facility, any suspect settlement areas on the Landfill project area shall be surveyed to determine the lowest spot. The surrounding area should be surveyed to find the “relief point” defined as the lowest surrounding area where ponded water would flow off the Landfill cap. The elevation difference is defined as the “pond value”. Minor settlement shall be defined as less than 12 inch pond values. Any Landfill project area that has undergone minor settlement shall be corrected by the placement of additional vegetative support soil to promote runoff and the area shall be reseeded. Any area repaired should be surveyed and the location marked on a plan and submitted and submitted as part of the construction certification report required by Condition 18 of this decision.

Major settlement is defined as a pond value of 12 inches or more. When this occurs, the final cover system must be repaired to prevent water from ponding above the low permeability layer. The Applicant may either:

- a. Strip off the final cover soils above the low permeability layer, inspect and repair the low permeability layer if/as necessary, place low permeability soil as necessary to promote runoff, replace final cover soils; or
- b. Expose the low permeability soil or geomembrane in a trench around the perimeter of

the settled area. Fill the area with soil to form slopes promoting runoff. Cap the area with a new low permeability membrane, geosynthetic clay liner (GCL), or low permeability soil layer that ties into the existing low permeability layer at the identified perimeter. Place new drainage sand and vegetative support material over the new cap area.

Areas of minor settlement may be repaired as routine maintenance, provided the Permittee reports the settlement to MassDEP and states the intention to perform repairs, and provides to MassDEP the final survey results and a summary letter report within 60 days of completing the repairs. Any proposal to conduct major settlement repair must be submitted to MassDEP together with an application, category BWP SW25 *Corrective Action Design*, which shall include, without limitation, detailed information of the proposed repair.

15. The Permittee shall maintain copies of this decision and permit, the application, the health and safety plan, and documentation that site personnel have been trained pursuant to the health and safety plan at the site during construction of the PV Facility.
16. Pursuant to 310 CMR 19.043 *Standard Conditions*, MassDEP and its agents and employees shall have the right to inspect the Landfill, any equipment, structure or land located thereon, to take samples, to perform tests, and have access to and photocopy records, and to otherwise monitor compliance with this permit and all environmental laws and regulations administered by MassDEP.
17. The Permittee shall cause to be recorded with the Registry of Deeds, or if the land is Registered Land, with the registry section of the land court for the district in which it lies, a Record Notice of Landfill Operation complying with M.G.L. Chapter 111, § 150A and 310 CMR 19.141. The Notice shall include the Facility Master File Facility Number as part of identification of the MassDEP file for the Landfill.
18. Prior to commencing operation of the PV Facility, and in no event on or before ninety (90) days after the date of completion of the construction of the PV Facility, the Permittee shall submit for review and approval by MassDEP a construction certification report, together with an application, category BWP SW45 *Alternative Review Process*, that includes, but is not limited to:
 - a. As-built plans for the final as constructed PV Facility amended to incorporate all modifications and alterations, if any, made during construction;
 - b. A narrative, prepared by the Engineer of Record that discusses in part, any modifications made to the design of the PV Facility;
 - c. Certifications by the City, RAS, and the Engineer of Record pursuant to 310 CMR 19.011; and
 - d. A copy of the Notice of Landfill Operation, pursuant to 310 CMR 19.141, as recorded in the registry of deeds or in the registry section of the land court for the district wherein the Landfill lies in accordance with M.G.L. c. 111, sec 150A.
19. On or before thirty (30) days after the date the PV Facility ceases operation, the Permittee shall submit to MassDEP an application pursuant to 310 CMR 4.00 and 310 CMR 19.000 for the decommissioning of the PV Facility and the restoration of the Landfill cap and appurtenances thereto. The application shall include, but not be limited to, a narrative, plans and schedule for

the decommissioning of the PV Facility and the restoration of the Landfill's cap and appurtenances.²

20. MassDEP reserves the right to amend, modify, suspend or revoke this permit pursuant to 310 CMR 19.036 *Department's Modification, Suspension, or Revocation of a Permit*. This does not limit or restrict MassDEP from implementing any other applicable authority at the Landfill including, but not limited to authority pursuant to 310 CMR 40.0000.
21. This permit is effective on the date signed by MassDEP below, except as provided by the Notice of Appeal Rights below and 310 CMR 19.033(4) (b). This permit shall expire on December 31, 2036, provided that MassDEP may amend the term of the permit in accordance with a modification pursuant to 310 CMR 19.033 or 310 CMR 19.034. The Permittee shall submit to MassDEP on or before June 30, 2036 either an application to renew the permit or notice of its intent to close the PV Facility. Wherein the Permittee elects to close the facility, the Permittee shall submit an application for the decommissioning of the PV Facility and the restoration of the Landfill cap and appurtenances thereto pursuant to paragraph 18, above.
22. The Permittee shall not deviate from this permit and the approved design plans. The Permittee shall notify MassDEP prior to any modification(s) of the design and of any significant changes in the project schedule. MassDEP may, at its sole discretion, require the Permittee to submit an application to MassDEP for review and approval for any modification/alteration to the design. In the event that MassDEP determines that a permit application is required for a modification, the Permittee shall submit such application to the MassDEP in accordance with the schedule specified by MassDEP.
23. No transfer of this permit shall be permitted except in accordance with the requirements of 310 CMR 19.044. If at any time, the permittee for this project does not include a municipal entity, the permittee shall provide to MassDEP a financial assurance mechanism, in accordance with 310 CMR 19.051, for the costs of decommissioning and site restoration activities.
24. The City shall coordinate with RAS to submit one combined comprehensive Third-Party Inspection Report for the entire Landfill as set forth in this decision. Pursuant to 310 CMR 19.142(6), inspections shall be conducted by a Third-Party Inspector registered with MassDEP, pursuant to 310 CMR 19.018.
 - a. During the first year after completion of construction of the PV Facility, the Permittee shall ensure that inspections of the Landfill and final cover system are conducted on a quarterly basis. Quarterly inspection reports shall be submitted to MassDEP within fourteen (14) days of the inspection date. The landfill cover inspection report shall include, without limitation, all location(s) where landfill cover requires repair, the method(s) of repair, and the timeline to implement the repair(s).
 - b. Following the first year of operation of the PV Facility, and if no problems have been documented, the Permittee shall ensure that inspections of the Landfill are conducted on an annual basis and a report shall be submitted to MassDEP in accordance with the requirements of 310 CMR 19.018.
25. On or before March 1, 2017, the City shall submit to MassDEP for review and approval an updated plan for continuing the DPW post-closure activities at the Landfill (the "DPW PCU

² Appurtenances include, but are not limited to storm water controls, landfill gas control structures, landfill gas and groundwater monitoring wells.

Plan”), together with an application, category BWP SW37 *Post Closure Use-Minor*. The DPW PCU Plan shall describe the procedures the City will implement to continue the relocated DPW activities at the Landfill, and shall include, but not be limited to, the following:

- a. A description of the Post-Closure Uses including types and quantities of materials;
- b. A site plan that shows, without limitations, the areas within which each Post-Closure Use will occur;
- c. Procedures for delineating the area(s) in which the Post-Closure Use will be conducted; and
- d. Post-closure maintenance procedures.

26. The City shall complete the corrective actions recommended in the Annual Post-Closure Landfill Inspection Report prepared by Langdon Environmental, LLC (dated November 2016) including, but not limited to, the removal of sedimentation in the perimeter drainage swale. On or before May 1, 2017, the City shall submit to MassDEP a certification report, together with an application, category BWP SW45 *Alternative Review*, that includes, without limitation:

- a. A statement and documentation that the corrective actions have been completed in accordance with the Corrective Action Plan submitted with the November 2016 Landfill Inspection Report and 310 CMR 19.000;
- b. The location(s) of the corrective actions and repairs, if any, shown on a site plan; and
- c. Certification in accordance with the requirements of 310 CMR 19.011.

NOTICE OF RIGHT TO APPEAL

The City of Newton (“City”) and Rumford Avenue Solar, LLC (“RAS”) are hereby notified that it may within twenty-one (21) days of the date of issuance file a request that this decision and permit be deemed a provisional decision under 310 CMR 19.033(4)(b), by submitting a written statement of the basis on which the City and RAS believes it is aggrieved, together with any supporting materials. Upon timely filing of such a request, the decision shall be deemed a provisional decision with an effective date twenty-one (21) days after the MassDEP’s receipt of the request. Such a request shall reopen the administrative record, and the MassDEP may rescind, supplement, modify, or reaffirm its decision. Failure by the City and RAS to exercise the right provided in this section shall constitute a waiver of the City’s and RAS’ right to appeal.

Appeal. Any person aggrieved by the issuance of this decision may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, s. 150A, and M.G.L. c. 30A, not later than thirty (30) days following the date of issuance of the final decision. 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.

Notice of Action. Any aggrieved person intending to appeal this decision to the Superior Court shall first provide notice to the MassDEP of their intention to commence such action. Said notice of intention shall include the MassDEP’s file number and shall identify with particularity the issues and reasons why it is believed the decision was not proper. Such notice shall be provided to the Office of General Counsel of the MassDEP and the Regional Director for the regional office which processed the application at least five (5) days prior to the filing of an appeal. The appropriate addresses to which to send such notices are:

General Counsel
Massachusetts Department of Environmental Protection
One Winter Street – 3rd Floor
Boston, MA 02108

Eric Worrall, Regional Director
Massachusetts Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

No allegation shall be made in any judicial appeal of this decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in those regulations, 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.

Should you have any questions relative to this approval, please contact Richard Spieler at phone number 978-694-3317.

Sincerely,

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 G. Fairbrother
Section Chief
Solid Waste Management

Richard J. Spieler
Environmental Engineer
Solid Waste Management

MGF/RJS/rjs

Attachment: Application Review Fact Sheet (Attachment 1)

Enclosure: Communication for Non-English Speaking Parties

Cc: Susan Ruch, Deputy Regional Director, MassDEP-NERO, Bureau of Air and Waste
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