



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

Mr. David Veleta, P.E.
Department of Public Works
125 Locust St.
Northampton, MA 01060

May 31, 2016

RE: Northampton-DSWM- Landfill
170 Glendale Road
Post Closure Use – Solar Power
Permit Approval
BWPSW36
Transmittal #X270815
SWM File #16-214-002
FMF # 39572

Dear Mr. Veleta:

The Massachusetts Department of Environmental Protection (the MassDEP) is issuing this permit to the City of Northampton ("City", "Permittee" and "Applicant") approving the post closure use of the City of Northampton Landfill (the "Landfill") located at 170 Glendale Road as a solar power farm (Solar Farm).

On May 5, 2016, MassDEP received the BWPSW36 Major Post Closure Use Permit Application, under transmittal # X270815 (the "Application"). The Application was prepared by AMEC Massachusetts, Inc. This Application includes:

- The Transmittal Form and Application Form.
- Full size prints of the design plans.
- Loose leaf bond text.
- On May 23 and May 24, 2016, MassDEP received two emails from Robert J. Bukowski, responding to questions contained in emails from MassDEP dated May 23, 2016. These emails are considered part of the record for this application.
- The Application bears the certification of David J. Narkewicz, Mayor of Northampton.
- The Application and some of the Design Plans bear the seal and signature of Robert J. Bukowski, Massachusetts Registered Professional Civil Engineer # 41492.
- Design plans sheets S-501 and S-502 bear the seal and signature of Douglas E. Tate, Massachusetts Registered Professional Civil Engineer # 40808.

Existing Facilities

The Northampton Glendale Road Landfill was operated and closed in several phases:

- In 1996, the closure of the unlined landfill located west of the lined landfill was completed.
- The Phase 1 closure, substantially completed in 2004, included the capping of approximately 4.4 acres of the eastern slope of the lined landfill and modifications to the landfill gas collection system.
- The Phase 2 closure, substantially completed in 2005, included the capping of approximately 5.7 acres of the lined landfill and modifications to the landfill gas collection system. Phase 2 is located west of Phase 1. On September 20, 2006, MassDEP issued a Closure Certification for Phases 1 and 2.
- The Phase 3A closure completed in 2008 included the capping of approximately 4.3 acres of the lined landfill. Phase 3A is located west of Phase 2. On May 14, 2009, MassDEP issued a Closure Certification for Phase 3A.
- The Phase 3B closure, substantially completed in 2010, included the capping of approximately 2.4 acres of the lined landfill and modifications to the landfill gas collection system and the access road over the landfill. Phase 3B is located west of Phase 3A and east of Phase 4. On May 17, 2011, MassDEP issued a Closure Certification for Phase 3B.
- The Phase 4 closure included the capping of approximately 6.5 acres of the lined landfill including modifications to the landfill gas collection system and the access road over the cap. The Phase 4 closure also included the construction of an extension of a roadway above the landfill cap. On December 22, 2014, MassDEP issued a Closure Certification for Phase 4.

The Closure Certification Permits required post closure environmental monitoring and maintenance of the Landfill. Present requirements for maintenance and environmental monitoring are included in the December 22, 2014 Phase 4 Closure Certification. The present Application proposes no changes in the environmental monitoring program.

The landfill is located on land owned by the City of Northampton. The City owns additional property to the south of the Landfill. The City operates a Transfer Station, compost facility and recycling center at the site. Access for construction will be partially through the Transfer Station and construction may impact Transfer Station operations.

Summary of Proposal

The Application proposes the construction of a 3.12MW solar farm located on the closed Northampton Glendale Road Landfill. In addition, solar panels will also be installed on City owned property located to the south of the Landfill. The proposed construction includes:

- The solar array will be placed on the flatter top portions of the Landfill. The solar panels will be tilted from horizontal, facing south;
- The existing access road from the north and south sides of the Landfill will be used for construction access;
- Extension of the existing access road on top of the landfill further to the west;
- Installation on the Landfill of approximately 7,847 Canadian Solar photovoltaic modules

mounted on rack systems and set on 786 precast concrete foundation ballasts (two per rack assembly);

- Installation on property to the south of the Landfill of approximately 2,052 Canadian Solar photovoltaic modules mounted on rack systems and supported by ground screws;
- Installation of 68 Solectria inverters;
- Installation of electrical conduits on precast concrete blocks for locations on the landfill cap;
- Installation of five AC combiner panels and transformer pads. Four of these pads will be located on the Landfill;
- Proposed excavation into the landfill cap is limited to the excavation of test pits to confirm the thickness of the landfill cap, excavation to a maximum depth of 6 inches of the vegetative support layer for leveling of the ballast blocks and excavation for the anchor trench for erosion control blanket installation;
- Excavation beyond the limits of the landfill cap is limited to test pits, excavation for the equipment pad, installation of mounting screws and the excavation for the installation of the grounding of the system located outside of the landfill cap and the installation of power poles and guy wires;
- Light displacement equipment will transport all materials from the access roads, across the landfill cap and to the installation locations;
- Installation of a fence with gates on precast concrete ballast blocks around the perimeter of the portions of the Solar Farm located on the Landfill to control access;
- Installation of overhead electrical transmission located beyond the limits of the landfill cap;
- Wiring from the panels will be mounted on the rack assemblies and will run above-ground in conduits or cable trays to the inverter on the electrical equipment pads and then to the power poles;
- It is proposed that all photovoltaic rack assemblies, equipment pads and wiring will be kept at least 10 feet from any landfill gas vents; and
- Access road crossings will be in H20 load rated tray and installed above the existing roads. Gravel ramps will be constructed to allow vehicles to drive over.

Calculations were submitted estimating the potential pressure on the landfill liner from the weight of the racks, panels, ballasts and snow and wind loads. The calculations indicate that the maximum pressure will be less than 7.0 pounds per square inch (psi).

There are no proposed changes to the existing, long-term maintenance and monitoring programs for the Landfill.

Appendix C of the Application is a review of the MEPA thresholds. Section 6.1 of the Application states:

"The findings, which are a point by point review of the MEPA thresholds, indicate that no thresholds will be exceeded and therefore no MEPA review is required."

Section 6.6 of the Application discusses the Qualitative Risk Assessment.

MassDEP DETERMINATIONS

Personnel of MassDEP have reviewed the Post-Closure Use permit application for the Landfill in accordance with MGL c. 111 s. 150A, MGL c. 30A, 310 CMR 19.000, and MassDEP's publication Landfill Technical Guidance Manual (the LAC), revised in May, 1997. MassDEP has determined that the application is approved in accordance with MGL c. 111, s. 150A, MGL c. 30A and the regulations promulgated thereunder, subject to the conditions outlined below.

REGULATORY AUTHORITY

This document is a permit issued pursuant to Massachusetts General Laws Chapter 111, Section 150A and the regulations promulgated thereunder at 310 CMR 19.000, subject to the conditions set forth at 310 CMR 19.043(5). This permit is subject to the standard conditions of 310 CMR 19.000 and the conditions presented herein. This permit does not convey property rights of any sort or any exclusive privilege.

A. GENERAL PERMIT CONDITIONS

1. This Permit approves the construction of the Solar Farm as proposed in the Application received by MassDEP on May 18, 2016 and revisions proposed in the referenced emails.
2. Glendale Road Solar, LLC, a wholly owned subsidiary of Ameresco, Inc., is the Owner and Operator of the Solar Farm, for this post-closure use permit, for the construction and operation of the Solar Farm on the landfill, and is responsible to comply with the conditions of this permit, as an Owner and the Operator as defined by 310 CMR 19.000.
3. The City of Northampton (the "City"), is the Applicant and Permittee for this Post-Closure Use Permit and is also the Owner and Operator of the landfill as defined by 310 CMR 19.000. The City is responsible for continued maintenance and environmental monitoring of the landfill in accordance with the requirements of 310 CMR 19.000, the December 22, 2014 Phase 4 Closure Certification Permit from MassDEP and this Permit.
4. The Permittee, Operator(s), Contractor(s) and subcontractors shall install the solar panels and appurtenances and modify the landfill only in accordance with the Application, except as modified by this permit or otherwise approved by the MassDEP in writing.
5. Not later than fourteen (14) days prior to the start of construction, the Applicant shall submit to MassDEP for review and approval additional information and updated/revised Plan Sheets that address the items discussed in the May 23 and May 24, 2016 emails and any subsequent revisions/modifications. The submittal shall include a detailed summary of each change. Revised Plans shall be clearly marked to indicate the change and the date of the revision and sealed and dated by the Engineer. The submittal shall address the following items:
 - a. Upgrading of the east access road over the landfill, if this road will be used for loads greater than light displacement.

- b. Calculations that demonstrate that existing landfill gas piping will not be adversely impacted by the proposed construction.
 - c. Location and design of system's grounding system. Grounding shall not adversely impact the landfill cap.
 - d. Submission of the electrical drawings.
 - e. Revision to Appendix F of the Application, *O&M Service Procedures* to include discussions of the landfill, landfill gas, methane, use of gas meters, smoking, open flames and other operational and maintenance issues related to the landfill.
6. Not later than seven (7) days prior to the start of construction, the Applicant shall submit to MassDEP the proposed schedule for the project. Within seven (7) prior to a change in schedule, the Permittee shall submit a revised schedule for the project to MassDEP.
7. Not later than seven (7) days prior to the start of construction, the Applicant shall submit to MassDEP the proposed project key personnel and their contact information. Within seven (7) prior to a change in project personnel, the Permittee shall submit a revised list of project personnel and their contact information.
8. 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* ("LAC Manual"), pp: 2-1 to 2-3 are hereby incorporated by reference into this permit.
9. 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 Solar Farm. 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 landfill cap. 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 Solar Farm as outlined above; oversee quality assurance/quality control (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 City, 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 quality assurance/quality control (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.
 - 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 landfill cover or appurtenances, public health, safety, or the environment.

10. 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 Engineer;
- e. Proposed schedules to correct identified problems;
- f. Review of quality assurance/quality control (QA/QC) testing data generated, and documentation for construction and QA/QC activities;
- g. The construction report shall be signed, sealed and certified by the Engineer in accordance with 310 CMR 19.011 (1&2); and
- h. The Engineer shall submit one copy of the monthly report to the MassDEP and one copy to the City no later than seven (7) days following the end of the previous month.

B. SPECIFIC PERMIT CONDITIONS

11. The Permittee, Owner(s), Operator(s) and their Contractor(s) and subcontractors 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 Solar Farm. A copy of the site-specific Health & Safety Plan for the construction and maintenance of the Solar Farm shall be submitted to the MassDEP prior to the beginning of any 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.

12. As part of the site-specific H&S Plan, a written protocol shall be prepared and submitted for the maintenance of the inverters, /transformers and other equipment, and for the regular calibration and maintenance of landfill gas monitors used by workers on the site.

13. If the east access (Phase 2) road running north-south over the Landfill will be used for construction access, the road shall be improved, to provide a minimum of 36 inch thickness of materials above the HDPE. The road surface shall include a minimum of 6 inch thickness of gravel material. Upslope areas that may divert runoff shall be stabilized with riprap. If culverts are installed, outlets shall also be stabilized.

14. Prior to the start of any construction on the landfill cap, the City shall submit to MassDEP a written protocol for the use of equipment on the cap, including load restriction on each of the access road(s), and a restriction on the use of outriggers or stabilizers unless specifically approved by MassDEP.

15. All necessary precautions shall be taken to ensure that the proposed construction and maintenance work associated with the Solar Farm shall not in any way damage the impermeable layer of the landfill cap, landfill stormwater control structures, landfill monitoring wells, or the landfill gas venting wells and collection pipes.

- a. Prior to the commencement of construction activities, all landfill gas vents and interconnecting pipes, landfill gas monitoring wells, groundwater monitoring wells, and other above-ground structures 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. Prior to the commencement of construction activities, the entire solar array area including proposed access roads shall be mowed. All areas previously eroded or damaged shall be filled and reshaped to uniform prior grades.
- c. Herbicides may not be used to control vegetation.
- d. Prior to the installation of any control stakes, erosion control stakes, fence posts, grounding systems, duct banks, power poles, guide wires or any construction requiring excavation within 10 feet horizontally of the landfill cap, test pits shall be excavated to confirm the location and depth of the landfill cap components, including sand thickness and elevation of the HDPE. Test pits may be terminated when the depth of soils exceeds 3 foot thickness.
- e. All test pits shall be witnessed by the Construction Engineer or their QA/QC officer.
- f. Excavation equipment with teeth (on the bucket or shovel) shall not be used within 10 feet of the limits of the landfill cap.
- g. If any damage occurs to any of the landfill components, the Contractor 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.

16. Excavations on the landfill cap shall be limited to:

- a. Test pits only when witnessed by the Construction Engineer or their QA/QC officer;
- b. Removal of a maximum of 6 inch depth of vegetative support layer for the leveling/placement of the precast blocks;
- c. Excavation of an anchor trench a maximum of six inch depth for the erosion control blanket installation.
- d. No other penetrations shall be performed into the landfill cap without separate written approval from MassDEP;
- e. No penetrations shall be performed into the sand drainage layer of the cap except for test pits excavated by hand when witnessed by the Construction Engineer or their QA/QC Officer;
- f. All other equipment, conduits, supports, pads and concrete blocks placed on the cap shall be placed on top of, or above, the vegetative support layer or existing road surface of the cap, unless otherwise approved by the MassDEP in writing;
- g. Survey and control stakes shall not be driven into the landfill cap unless the total length of

the stake is one foot less than the thickness of the soils above the HDPE; and

- h. Erosion control devices within the limits of the cap shall not be installed using stakes,
- i. Staples used for erosion control devices shall be less than 6 inches in depth.

17. The Owners, Operators and Contractors are responsible to ensure that the inverter, transformer and other electrical equipment boxes will not accumulate landfill gas within the boxes during the construction and operation of the Solar Farm. 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 area include the following:

- a. All photovoltaic rack assemblies and above-ground wiring shall be kept at least 10 feet from any landfill gas vents;
- b. The design of any transformers, inverters, 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. Electrical lines, trays and conduits 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;
- e. The site-specific H&S Plan, shall be submitted for the maintenance of the electrical equipment area, including 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; and
- f. No additional or other equipment may be installed on the surface of the landfill or in proximity of the landfill (i.e. equipment not specifically identified in the application), unless documentation and specifications for such equipment prior to construction are submitted to MassDEP for review and approval.

18. The Permittee, Construction Engineer, Operators, and the Contractor(s) are responsible to ensure that there is no significant rutting or other damage to the vegetative support layer or gravel surface of the cap of the Landfill. 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 or other surface materials be allowed to occur.** 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 impermeable cap layer, the usage of such equipment shall cease immediately upon notification by MassDEP, or be modified as required by MassDEP.

19. Prior to the start of construction, the Construction Engineer, Operators and Contractor(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 load on the HDPE is less than 7 PSI. The Permittee shall provide to MassDEP the actual ground pressure of all fully loaded equipment to be used on the cap.

20. MassDEP specifically reserves the right to restrict or prohibit heavy vehicular loads from operating on the landfill cap 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 landfill cap or appurtenances.

21. The existing access roads shall be maintained and the use shall be limited as required by condition 4 of the December 22, 2014 Closure Certification Permit which requires:

4. Access roads shall be maintained and monitored:

- (a) The limits of the Access Roads shall be clearly marked. The roads shall be maintained to prevent vehicle traffic from driving or parking on the landfill cap beyond the limits of the Access Roads.*
- (b) The use of gravel roads constructed as part of Phase 2 closure and the east/west connector road from the Phase 2 to Phase 3 and Phase 4 road on top of the landfill shall only be used for access by smaller or light displacement vehicles as required for routine monitoring, maintenance and inspection of the landfill.*
- (c) The Access Roads shall be monitored for movement, separation and settlement, and be repaired when required. The locations and nature of the roadway repairs shall be documented and included in Landfill operations and inspection reports submitted to MassDEP.*

22. Prior to the use of the existing roadways, the existing hardened surface shall be repaired as necessary on all staging areas and access routes. The surface shall be maintained and repaired as necessary throughout the construction of the Solar Farm.

23. The proposed location and design of any additional roadways (those not proposed in the application) shall be submitted to MassDEP for review and approval, prior to construction of the modification. If a proposed roadway will divert surface runoff, the need for additional culverts and upslope stabilization shall be evaluated and installed as required.

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

25. The City, Owners and Operators and their 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 and revisions, Article 690 –“Solar Photovoltaic (PV) Systems”. MassDEP notes that Article 690.31(a) – “Wiring Systems” of the NEC states that “Where PV source output circuits operating at maximum system voltage greater than 30 volts are installed in readily accessible locations, circuit conductors shall be installed in a raceway”. The City and their contractor(s) are also responsible to ensure that the proposed work complies with all other applicable local, state and federal regulations.

26. The proposed Solar Farm array shall be fully fenced. In accordance with 310 CMR 19.130 (23) the City shall provide sufficient fencing and other barriers to prevent access to the facility except at designated points of entry and all points of entry shall be equipped with locking gates that

are secured when the operator is not onsite. The fence shall be constructed and in place prior to the operation of the solar farm. Fence post shall not be placed directly into soil within 10 feet horizontally of the landfill cap and shall be supported with concrete footings.

27. The construction staging area(s) where equipment and materials will be unloaded or stored shall be located off of the Landfill cap unless the location is approved by MassDEP prior to use.
 - a. A written request shall be submitted to MassDEP for approval that details the location of the staging area.
 - b. Staging on the existing or proposed roadways is acceptable except that the use of the east (Phase 2) roadway **may not** be used unless otherwise approved by MassDEP in writing.
 - c. At a minimum, staging areas where equipment other than light displacement will be operated shall be prepared in accordance with Detail 3 on Plan Sheet C-501 of the Application unless otherwise approved by MassDEP.
 - d. Delivery of materials and operations of the staging area(s) shall not interfere with Transfer Station operations.
28. 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 the landfill cap, or otherwise damage the cap.
29. If the Permittee, Owner, Operators or their Contractor(s) modify the design and intends to use different solar panels, panel racks, ladder racks, or electrical equipment other than that detailed in the application, the Permittee shall notify MassDEP and provide documentation that the alternative equipment does not increase calculated ground pressures or decrease calculated Factors of Safety for solar array stability.
30. Clean, gravel or crushed stone may be used for leveling beneath ballast blocks and cable trays. Compaction of the leveling materials must not damage the cap, and shall not be compacted more than 6 inches into the vegetative support layer.
31. All areas disturbed during construction shall be repaired. Additional vegetative support material shall be placed as required, seeded and an acceptable grass cover shall be established except for within the limits of the gravel road surfaces.

C. OPERATIONS AND MAINTENANCE CONDITIONS-SOLAR FARM

32. The following conditions apply to the minimum required maintenance of the landfill:
 - a. The entire landfill surface shall be mowed/cut at least once per year.
 - 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. Herbicides may not be used to control vegetation.
 - d. The condition of the fences and access gates shall be inspected at least once a month. Any damage to the fence or gates shall be repaired within 24 hours of discovery unless other temporary methods of controlling access can be established.

- e. Any erosion problems, settlement problems, or other issues observed on the landfill cap (inside or outside of the limits of the Solar Farm) shall be reported to MassDEP, stabilized immediately and repaired within 30 days of discovery.
33. Following completion of the installation, inspections of the Solar Farm shall be performed on a quarterly basis by a qualified, independent registered third-party inspector in accordance with 310 CMR 19.018. After one year of quarterly inspections, the Permittee may petition MassDEP in writing to reduce the frequency of inspections. The following conditions shall apply:
- a. The entire landfill cap, access roads and fences shall be walked and any problems with the landfill cap, erosion, unusual or excessive settlement, stressed vegetation, damage to landfill gas monitoring wells, vents, and other appurtenances, and any other problems with the landfill cap shall be identified.
 - b. Preparation and submittal of an inspection report summarizing the inspection in accordance with 310 CMR 19.01=8.
 - c. Identification of any problems with security/access controls such as damaged gates and/or fences, as well as any evidence that unauthorized access to the solar array area that may have occurred.
 - d. Any damage to monitoring wells or other monitoring points, landfill gas vents, or other landfill appurtenances.
 - e. A description of actions taken to correct any problems.
 - f. A signed and certified copy (prepared on MassDEP standard Inspection Form) of the Inspection Report shall be submitted to MassDEP and to the Board of Health within 30 days of the date of the inspection.
34. The Permittee, Owners, and Operators shall ensure that any erosion, unusual or excessive settlement, stressed vegetation, damage to landfill gas monitoring wells, vents, and other appurtenances, and any other problems with the landfill cap identified during any inspection or site visit are reported to MassDEP within 24 hours of discovery. Such problems shall be evaluated and appropriately repaired within 7 days of discovery or in accordance with an alternative schedule approved by MassDEP.
35. At the completion of the use of the Solar Farm, the following actions shall be taken.
- a. All panels, racks, concrete blocks located on the landfill cap, and exposed conduits shall be removed and sealed.
 - b. Buried conduits may remain provide they are cut off below grade and permanently plugged.
 - c. Landfill 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

36. Submittals required by this Permit include but are not limited to the following:
- a. The Construction Engineer's monthly construction report required by condition 10 of this Permit;
 - b. Construction schedule and revisions as required by condition 6 of this Permit;

- c. Project personnel list and their contact information and changes in accordance with condition 7 of this Permit;
 - d. Construction Certification Report in accordance with condition 9e of this Permit and 310 CMR 19.107;
 - e. Health and Safety Plan in accordance with condition 11 & 12 of this Permit;
 - f. Wheel loading protocol in accordance with conditions 19 of this Permit;
 - g. Maintenance/erosion/settlement notification in accordance with condition 32e. of this Permit;
 - h. Quarterly Landfill/Solar Farm inspection reports in accordance with 310 CMR 19.018 and condition 33 of this Permit;
 - i. Notification of change in owner or operator in accordance with conditions 42 and 43 of this Permit;
 - j. Environmental monitoring, notifications, maintenance and other reports required by the December 22, 2014 Closure Certification Permit; and
 - k. Submissions of Monthly Leachate System Reports are no longer required. Annual Leachate Reports shall be submitted and may be submitted as part of the Annual Operations Report.
37. All submittals to MassDEP shall be certified in accordance with 310 CMR 19.011 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*
 - (f) (for a responsible official submitting a transfer station certification pursuant to 19.035(4)):*
 - 1. I have accurately stated whether the transfer station is in compliance with its*

permit and all other applicable requirements in 310 CMR 16.00: Site Assignment Regulations for Solid Waste Facilities and 19.000 including, but not limited to, 310 CMR 19.043;

2. I have accurately identified any and all violations of 310 CMR 16.00: Site Assignment Regulations for Solid Waste Facilities or 19.000 or the terms and conditions of any permits or other approvals issued thereunder by the Department;

3. If the transfer station is not in compliance, I have stated what the owner and operator will do to return the transfer station to compliance and the date by which compliance will be achieved; and,

4. Plans and procedures to maintain compliance are in place at the transfer station and will be maintained even if processes or operating procedures are changed.

(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.

38. 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

39. 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.

40. 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 its expiration.

41. If the Operator intends to operate the Solar Farm after the expiration of this permit, the Permittee is required to submit a request for a renewal of the permit at least 90 days prior to the expiration of the permit.

42. If the Permittee intends to transfer this permit to any other entity, 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 BWPSW49 Permit Transfer Certification with transmittal form and the applicable filing fee. Prior to a change in the Owner or Operator of the Solar Farm, MassDEP must be notified and approve a Permit Application for a Post Closure Use-Minor BWP-SW 37.

43. Not later than seven (7) days prior to a change in the Owner and/or Operator of the Solar Farm, MassDEP shall be notified in writing of the change. The notification shall include contact information for the new Owner/Operator.

44. If the Permittee or Operator discontinues operation of the Solar Farm, the Permittee and the Operator are responsible to perform decommissioning activities as outlined in the permit application, including removal of the solar array equipment, ballasts, and associated leveling pads.

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

46. The Permittee, Owner(s), Operator(s) their contractors and subcontractors and the Construction Engineer shall be considered Operators with respect to the construction of the Solar Farm and compliance with plans and specifications. The Permittee shall also be considered an operator during the operational life and decommissioning of the Solar Farm. As such, MassDEP may take enforcement action against the Permittee, Owners, Operators or the Construction Engineer, consistent with its authority under applicable Massachusetts law and regulation, for any failure to construct the Solar Farm in accordance with approved plans and specifications of which the Permittee 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."

47. The Permittee, 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."

48. The Applicant in this permit application seeks no variances from any applicable regulations.

49. This approval pertains only to the Solid Waste Management aspects of the proposal and does not negate the responsibilities of the Permittee, 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.

50. MassDEP and its agents and employees shall have the right to enter upon the Landfill at all

reasonable times, to inspect the landfill 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 Permittee and MassDEP.

51. 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 landfill cap or appurtenances. MassDEP reserves all rights to suspend, modify or rescind this permit, should the conditions of this permit not be met, should the Solar Farm 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 landfill cap or appurtenances.

52. 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.

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

This Permit is being issued as a Final Permit. Pursuant to 310 CMR 19.033(5):

(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.

Northampton Landfill - 170 Glendale Road
Solar Farm

Page 16 of 16

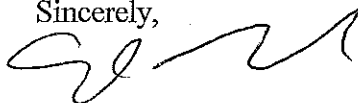
The MassDEP File Number for this Permit is 16-214-002. The appropriate addresses to which to send such notices are:

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

Michael J. Gorski
Regional Director
Department of Environmental Protection
436 Dwight Street
Springfield, MA 01103

If you have any questions about this matter, please contact Charles Clines of this office at 413-755-2120.

Sincerely,



Daniel Hall
Section Chief, Solid Waste Management

DH/CAC/cac

2143solar.0516

Certified Mail 7015 0640 0005 7966 0431, Return Receipt

cc: Board of Health, City Hall, 210 Main Street, Northampton, MA 01060
Robert J. Bukowski, AMEC Massachusetts, Inc., 271 Mill Road, Chelmsford, MA 01824
Ameresco, Inc., 111 Speen Street, Suite 410 Framingham, MA 01701
Glendale Road Solar, LLC., 111 Speen Street, Suite 410 Framingham, MA 01701